Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Main Result

Calculation: Curtailment Stratedy

Assumptions for shadow calculations

Maximum distance for influence
Calculate only when more than 20 % of sun is covered by the blade
Please look in WTG table

Minimum sun height over horizon for influence	3 °
Day step for calculation	1 days
Time step for calculation	1 minutes

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

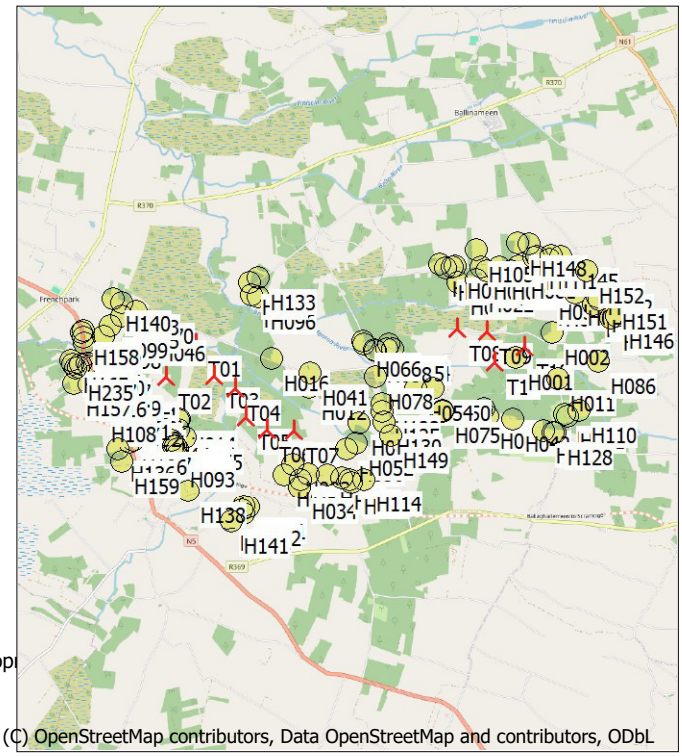
N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW
220	198	165	317	218	306	541	740	684	712	1,330	910

W	WNW	NW	NNW	Sum
725	710	432	552	8,760

Monthly aggregation of real case reduction
Flicker curtailment by stopping specific turbines

A ZVI (Zones of Visual Influence) calculation is performed before flicker calculation so non visible WTG do not contribute to calculated flicker values. A WTG will be visible if it is visible from any part of the receiver window. The ZVI calculation is based on the following assumptions:
DHM: Height Contours: CONTOURLINE_Carrigeen Renewable Energy Develop
Receptor grid resolution: 1.0 m
Topographic shadow included in calculation

All coordinates are in
Irish ITM-IRENET95 (IE), geocentric, GRS80



(C) OpenStreetMap contributors, Data OpenStreetMap and contributors, ODbL

Scale 1:125,000

New WTG Shadow receptor

WTGs

	Easting	Northing	Z	Row data/Description	WTG type Valid	Manufact.	Type-generator	Power, rated	Rotor diameter	Hub height	Shadow data Calculation distance	RPM
			[m]					[kW]	[m]	[m]	[m]	[RPM]
1	575,477	790,430	67.0	T01	Yes	NORDEX	N163/5.X-5,700	5,700	163.0	103.5	1,789	10.7
2	574,977	789,898	68.1	T02	Yes	NORDEX	N163/5.X-5,700	5,700	163.0	103.5	1,789	10.7
3	575,779	789,896	69.4	T03	Yes	NORDEX	N163/5.X-5,700	5,700	163.0	103.5	1,789	10.7
4	576,135	789,684	77.4	T04	Yes	NORDEX	N163/5.X-5,700	5,700	163.0	103.5	1,789	10.7
5	576,298	789,215	82.7	T05	Yes	NORDEX	N163/5.X-5,700	5,700	163.0	103.5	1,789	10.7
6	576,648	789,007	89.4	T06	Yes	NORDEX	N163/5.X-5,700	5,700	163.0	103.5	1,789	10.7
7	577,096	788,988	80.8	T07	Yes	NORDEX	N163/5.X-5,700	5,700	163.0	103.5	1,789	10.7
8	579,819	790,661	74.6	T08	Yes	NORDEX	N163/5.X-5,700	5,700	163.0	103.5	1,789	10.7
9	580,296	790,613	75.0	T09	Yes	NORDEX	N163/5.X-5,700	5,700	163.0	103.5	1,789	10.7
10	580,937	790,353	75.1	T10	Yes	NORDEX	N163/5.X-5,700	5,700	163.0	103.5	1,789	10.7
11	580,433	790,105	90.8	T11	Yes	NORDEX	N163/5.X-5,700	5,700	163.0	103.5	1,789	10.7

Shadow receptor-Input

No.	Name	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
				[m]	[m]	[m]	[m]	[°]		[m]
A	H001	580,789	790,181	77.9	2.0	2.0	0.5	90.0	"Green house mode"	2.5
B	H002	581,390	790,585	74.4	2.0	2.0	0.5	90.0	"Green house mode"	2.5
C	H003	577,081	788,430	72.0	2.0	2.0	0.5	90.0	"Green house mode"	2.5
D	H004	578,745	790,321	76.4	2.0	2.0	0.5	90.0	"Green house mode"	2.5
E	H005	578,683	790,413	75.6	2.0	2.0	0.5	90.0	"Green house mode"	2.5
F	H006	579,527	791,732	81.1	2.0	2.0	0.5	90.0	"Green house mode"	2.5
G	H007	575,204	789,190	80.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5
H	H008	576,938	788,257	74.8	2.0	2.0	0.5	90.0	"Green house mode"	2.5
I	H009	577,329	788,268	77.1	2.0	2.0	0.5	90.0	"Green house mode"	2.5
J	H010	579,831	791,411	77.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
K	H011	581,475	789,829	74.9	2.0	2.0	0.5	90.0	"Green house mode"	2.5
L	H012	577,359	789,698	72.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5

To be continued on next page...

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Main Result

Calculation: Curtailment Stratedy

...continued from previous page

No.	Name	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
				[m]	[m]	[m]	[m]	[°]		[m]
M	H013	579,616	791,664	78.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
N	H014	575,185	789,166	82.0	2.0	2.0	0.5	90.0	"Green house mode"	2.5
O	H015	578,641	790,334	77.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
P	H016	576,727	790,172	69.1	2.0	2.0	0.5	90.0	"Green house mode"	2.5
Q	H018	580,249	789,333	74.9	2.0	2.0	0.5	90.0	"Green house mode"	2.5
R	H019	577,194	788,164	78.8	2.0	2.0	0.5	90.0	"Green house mode"	2.5
S	H020	580,201	789,297	74.6	2.0	2.0	0.5	90.0	"Green house mode"	2.5
T	H021	579,730	791,677	80.8	2.0	2.0	0.5	90.0	"Green house mode"	2.5
U	H022	580,133	791,471	79.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
V	H023	575,080	789,037	88.4	2.0	2.0	0.5	90.0	"Green house mode"	2.5
W	H024	580,303	789,219	79.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
X	H025	575,035	789,036	88.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
Y	H027	577,645	788,259	76.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
Z	H028	579,790	791,684	80.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AA	H029	575,178	789,011	84.9	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AB	H030	577,980	788,684	76.6	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AC	H031	574,231	789,656	86.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AD	H032	575,109	788,998	88.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AE	H033	574,894	789,011	92.1	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AF	H034	577,186	788,041	77.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AG	H035	581,288	791,234	81.4	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AH	H036	574,858	789,015	91.8	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AI	H037	578,453	790,291	74.0	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AJ	H038	578,431	790,315	75.1	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AK	H039	575,107	788,949	89.4	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AL	H040	574,780	789,003	91.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AM	H041	577,369	789,939	69.1	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AN	H042	580,724	789,157	75.0	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AO	H043	581,408	791,228	83.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AP	H044	574,754	788,997	91.6	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AQ	H045	580,309	791,616	78.4	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AR	H046	574,684	790,678	70.0	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AS	H047	574,299	789,325	86.0	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AT	H048	574,222	789,442	85.4	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AU	H049	580,641	791,582	78.8	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AV	H050	579,419	789,670	72.0	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AW	H052	578,121	788,772	73.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AX	H053	581,297	791,327	83.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AY	H054	579,122	789,675	73.4	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AZ	H055	575,293	788,892	82.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BA	H056	574,345	789,211	88.9	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BB	H058	580,214	791,675	78.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BC	H059	578,168	789,100	78.6	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BD	H060	574,251	789,308	87.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BE	H061	580,699	791,604	80.4	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BF	H062	574,274	789,274	88.1	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BG	H063	578,242	790,463	75.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BH	H064	580,503	791,665	78.9	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BI	H065	574,105	789,577	89.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BJ	H066	578,262	790,401	74.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BK	H067	575,080	788,834	91.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BL	H068	577,895	788,194	78.8	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BM	H070	574,487	790,963	71.1	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BN	H071	574,111	789,384	88.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BO	H072	573,979	789,757	80.9	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BP	H073	573,981	789,674	85.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BQ	H074	579,571	789,300	77.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BR	H075	579,562	789,305	77.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BS	H076	575,108	788,747	90.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BT	H077	575,142	788,747	90.1	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BU	H078	578,462	789,878	69.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BV	H079	573,944	789,778	80.4	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BW	H081	580,831	791,693	82.4	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BX	H083	578,010	788,170	81.1	2.0	2.0	0.5	90.0	"Green house mode"	2.5

To be continued on next page...

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Main Result

Calculation: Curtailment Stratedy

...continued from previous page

No.	Name	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
				[m]	[m]	[m]	[m]	[°]		[m]
BY	H084	581,772	791,238	92.9	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BZ	H085	576,405	791,229	73.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CA	H086	582,149	790,105	79.0	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CB	H087	575,168	788,691	89.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CC	H089	576,255	787,731	79.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CD	H090	578,052	788,124	82.0	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CE	H091	576,332	787,706	80.6	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CF	H093	575,167	788,598	88.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CG	H094	581,583	789,236	78.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CH	H095	574,258	790,891	72.1	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CI	H096	576,524	791,190	73.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CJ	H097	574,426	788,836	92.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CK	H098	573,960	790,550	72.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CL	H099	574,065	790,731	71.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CM	H100	582,072	791,047	103.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CN	H101	581,635	789,213	79.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CO	H102	576,223	787,673	80.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CP	H103	576,377	791,424	75.6	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CQ	H104	573,778	789,924	79.6	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CR	H105	580,135	791,968	82.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CS	H106	574,375	788,805	93.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CT	H107	573,775	790,044	77.1	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CU	H108	573,872	789,358	91.9	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CV	H110	581,834	789,296	74.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CW	H111	581,238	788,967	75.8	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CX	H112	576,252	787,605	80.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CY	H113	574,255	791,111	71.0	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CZ	H114	578,254	788,161	83.0	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DA	H115	573,709	790,073	78.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DB	H116	573,701	789,762	85.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DC	H117	582,142	791,162	103.9	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DD	H118	582,175	791,120	106.0	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DE	H119	581,101	791,829	86.0	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DF	H120	573,670	790,116	78.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DG	H123	578,571	789,420	71.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DH	H124	581,131	791,834	86.6	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DI	H125	578,555	789,301	74.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DJ	H126	581,390	788,941	75.8	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DK	H128	581,429	788,941	76.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DL	H129	582,357	790,827	88.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DM	H130	578,600	789,118	78.6	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DN	H131	581,345	791,802	90.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DO	H132	576,088	787,540	78.8	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DP	H133	576,525	791,517	75.9	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DQ	H135	580,831	792,068	89.1	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DR	H136	574,166	788,703	98.1	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DS	H137	575,978	787,531	78.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DT	H138	575,347	787,982	72.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DU	H139	573,573	790,098	80.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DV	H140	574,110	791,177	72.1	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DW	H141	576,056	787,492	79.6	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DX	H142	582,096	791,405	102.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DY	H143	581,382	791,862	88.4	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DZ	H144	573,630	790,453	76.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5
EA	H145	581,531	791,829	93.4	2.0	2.0	0.5	90.0	"Green house mode"	2.5
EB	H146	582,452	790,855	95.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
EC	H147	573,530	790,061	81.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
ED	H148	581,005	792,045	90.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
EE	H149	578,706	788,900	80.9	2.0	2.0	0.5	90.0	"Green house mode"	2.5
EF	H151	582,347	791,161	100.0	2.0	2.0	0.5	90.0	"Green house mode"	2.5
EG	H152	581,965	791,612	98.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
EH	H153	573,614	790,539	78.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
EI	H156	573,611	790,654	77.9	2.0	2.0	0.5	90.0	"Green house mode"	2.5
EJ	H157	573,450	789,791	86.0	2.0	2.0	0.5	90.0	"Green house mode"	2.5

To be continued on next page...

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Main Result

Calculation: Curtailment Stratedy

...continued from previous page

No.	Name	Easting	Northing	Z [m]	Width [m]	Height [m]	Elevation a.g.l. [m]	Slope of window [°]	Direction mode	Eye height (ZVI) a.g.l. [m]
EK	H158	573,584	790,617	78.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5
EL	H159	574,239	788,490	98.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
EM	H161	573,440	790,099	81.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
EN	H165	573,397	790,172	80.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
EO	H235	573,483	790,037	82.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5

Calculation Results

Shadow receptor

		Shadow, worst case					Shadow, expected values	
No.	Name	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Avoided hours per year [h/year]	Avoided days per year [days/year]	Shadow hours per year [h/year]	Avoided hours per year [h/year]
A*	H001	0:00	0	0:00	177:45	158	0:00	30:13
B*	H002	37:52	92	0:36	69:47	39	5:47	10:04
C	H003	0:00	0	0:00			0:00	
D*	H004	12:42	56	0:22	20:35	44	2:06	3:46
E*	H005	21:26	84	0:26	5:08		3:41	0:55
F*	H006	7:37	42	0:13	7:13		0:36	0:33
G*	H007	8:34	32	0:25	62:48	128	1:17	10:36
H	H008	0:00	0	0:00			0:00	
I	H009	0:00	0	0:00			0:00	
J*	H010	12:52	50	0:25	50:15	30	1:23	4:18
K*	H011	21:01	65	0:28	25:35	56	3:11	4:30
L*	H012	6:11	28	0:22	113:05	174	1:06	13:11
M*	H013	3:23	42	0:06	13:17	2	0:15	1:02
N*	H014	12:39	111	0:25	55:04	46	1:59	9:17
O*	H015	8:30	54	0:22	12:06	8	1:32	2:12
P*	H016	12:23	40	0:29	21:00	49	2:11	3:04
Q	H018	0:00	0	0:00			0:00	
R	H019	0:00	0	0:00			0:00	
S	H020	0:00	0	0:00			0:00	
T*	H021	0:00	0	0:00	3:47	20	0:00	0:16
U*	H022	17:40	46	0:28	18:09		1:25	1:31
V*	H023	18:47	114	0:22	31:06	29	3:01	5:17
W	H024	0:00	0	0:00			0:00	
X*	H025	14:47	110	0:22	33:02	32	2:23	5:36
Y	H027	13:23	54	0:22			2:01	
Z	H028	14:26	52	0:21			1:13	
AA*	H029	21:21	85	0:24	22:07	48	3:28	3:53
AB*	H030	5:54	29	0:20	38:23	62	1:02	6:42
AC*	H031	26:53	98	0:25	47:59	56	4:27	8:39
AD*	H032	20:12	84	0:23	23:56	52	3:16	4:07
AE*	H033	5:25	42	0:19	24:03	75	0:52	4:10
AF	H034	0:00	0	0:00			0:00	
AG*	H035	13:30	52	0:22	37:26	66	1:25	3:58
AH*	H036	0:58	19	0:06	20:56	64	0:10	3:40
AI*	H037	2:12	28	0:11	8:24	10	0:24	1:31
AJ*	H038	4:03	32	0:15	5:49	4	0:44	1:03
AK*	H039	20:17	88	0:23	15:19	37	3:21	2:44
AL*	H040	1:01	24	0:06	16:40	49	0:10	2:56
AM*	H041	5:57	26	0:21	64:51	147	0:54	7:21
AN	H042	0:00	0	0:00			0:00	
AO*	H043	23:58	105	0:23	35:50	14	2:45	3:25
AP*	H044	1:04	24	0:06	15:21	46	0:11	2:43
AQ*	H045	10:31	32	0:23	0:31		0:52	0:02
AR*	H046	6:31	30	0:21	63:05	118	0:45	7:18
AS*	H047	7:55	54	0:21	2:01	6	1:26	0:20
AT*	H048	8:18	58	0:20	45:16	52	1:28	7:23
AU*	H049	0:00	0	0:00	30:47	74	0:00	3:05
AV*	H050	8:56	38	0:22	27:08	45	1:36	4:42
AW*	H052	6:57	34	0:21	18:02	26	1:14	3:11
AX*	H053	15:20	105	0:21	18:27	4	1:52	1:52
AY*	H054	11:48	69	0:26	4:49	2	2:07	0:53

To be continued on next page...

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Main Result

Calculation: Curtailment Stratedy

...continued from previous page

		Shadow, worst case					Shadow, expected values	
No.	Name	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Avoided hours per year [h/year]	Avoided days per year [days/year]	Shadow hours per year [h/year]	Avoided hours per year [h/year]
AZ*	H055	10:43	36	0:27	25:19	59	1:55	4:37
BA	H056	7:59	37	0:21			1:24	
BB	H058	0:00	0	0:00			0:00	
BC*	H059	7:37	30	0:24	10:56	13	1:09	1:41
BD*	H060	7:03	52	0:19	5:06	15	1:17	0:49
BE*	H061	2:59	36	0:07	23:12	40	0:20	2:21
BF	H062	6:27	32	0:20			1:11	
BG	H063	0:00	0	0:00			0:00	
BH*	H064	0:00	0	0:00	20:59	50	0:00	1:48
BI*	H065	23:28	119	0:21	27:42	29	3:56	5:00
BJ	H066	0:00	0	0:00			0:00	
BK*	H067	8:53	56	0:22	13:34	43	1:33	2:29
BL	H068	23:09	67	0:27			3:32	
BM*	H070	5:13	36	0:15	19:32	45	0:34	2:28
BN*	H071	8:00	63	0:17	40:05	46	1:23	6:33
BO*	H072	7:21	34	0:20	20:17	50	1:19	3:39
BP*	H073	0:49	14	0:07	19:31	36	0:08	3:32
BQ	H074	3:44	34	0:10			0:36	
BR	H075	4:35	37	0:11			0:44	
BS*	H076	7:15	36	0:22	15:20	42	1:18	2:47
BT*	H077	8:06	42	0:23	16:45	40	1:27	3:01
BU	H078	28:59	112	0:25			4:28	
BV*	H079	9:25	72	0:20	15:45	8	1:42	2:50
BW*	H081	4:30	34	0:11	13:05	40	0:31	1:21
BX	H083	21:52	74	0:25			3:23	
BY*	H084	12:09	59	0:21	26:29	50	1:31	2:44
BZ*	H085	0:00	0	0:00	18:24	55	0:00	2:12
CA	H086	18:50	67	0:30			3:13	
CB*	H087	8:12	32	0:24	20:42	60	1:28	3:39
CC	H089	0:00	0	0:00			0:00	
CD	H090	20:03	71	0:23			3:05	
CE	H091	0:00	0	0:00			0:00	
CF*	H093	28:57	107	0:27	9:01	15	4:54	1:33
CG	H094	8:49	43	0:18			1:20	
CH*	H095	2:02	20	0:11	34:39	70	0:16	3:22
CI*	H096	8:59	34	0:26	4:32	8	1:08	0:32
CJ	H097	2:06	29	0:06			0:20	
CK*	H098	6:31	28	0:23	15:13	44	0:59	1:52
CL*	H099	3:52	23	0:15	23:36	64	0:33	2:44
CM*	H100	2:11	16	0:16	6:33	18	0:16	0:51
CN	H101	10:11	47	0:19			1:32	
CO	H102	0:00	0	0:00			0:00	
CP*	H103	24:34	70	0:30	0:13		2:26	0:01
CQ	H104	16:26	62	0:30			2:46	
CR	H105	0:00	0	0:00			0:00	
CS	H106	2:20	30	0:07			0:23	
CT	H107	16:17	61	0:30			2:35	
CU*	H108	5:26	46	0:13	13:03	13	0:57	2:16
CV	H110	19:50	80	0:25			3:07	
CW	H111	0:00	0	0:00			0:00	
CX	H112	0:00	0	0:00			0:00	
CY*	H113	1:53	19	0:09	9:57	30	0:08	1:15
CZ	H114	14:52	55	0:24			2:14	
DA	H115	9:53	33	0:28			1:28	
DB*	H116	0:56	17	0:07	8:54	19	0:10	1:36
DC*	H117	4:40	26	0:21	2:23	6	0:34	0:18
DD*	H118	2:00	16	0:15	4:24	14	0:14	0:34
DE*	H119	10:58	58	0:20	0:30	2	1:07	0:03
DF	H120	9:02	31	0:27			1:20	
DG	H123	7:24	29	0:24			1:04	
DH	H124	12:40	60	0:19			1:15	
DI*	H125	6:33	29	0:23	1:13		0:57	0:11
DJ	H126	0:00	0	0:00			0:00	

To be continued on next page...

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Main Result

Calculation: Curtailment Stratedy

...continued from previous page

No.	Name	Shadow, worst case: Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Avoided hours per year [h/year]	Avoided days per year [days/year]	Shadow, expected values: Shadow hours per year [h/year]	Avoided hours per year [h/year]
DK	H128	0:00	0	0:00			0:00	
DL*	H129	5:45	27	0:20	0:29		0:49	0:04
DM*	H130	0:04	4	0:01	7:00	24	0:00	1:03
DN	H131	16:05	55	0:24			1:29	
DO	H132	0:00	0	0:00			0:00	
DP	H133	0:00	0	0:00			0:00	
DQ*	H135	0:00	0	0:00	1:18	12	0:00	0:06
DR	H136	0:00	0	0:00			0:00	
DS	H137	0:00	0	0:00			0:00	
DT	H138	2:12	26	0:07			0:21	
DU	H139	7:20	29	0:24			1:05	
DV*	H140	0:00	0	0:00	13:47	57	0:00	1:25
DW	H141	0:00	0	0:00			0:00	
DX*	H142	4:41	26	0:18	3:12	12	0:32	0:22
DY	H143	14:57	52	0:23			1:20	
DZ	H144	7:37	30	0:24			1:00	
EA	H145	0:00	0	0:00			0:00	
EB	H146	4:38	23	0:19			0:39	
EC	H147	6:43	28	0:23			1:00	
ED	H148	0:00	0	0:00			0:00	
EE	H149	5:48	26	0:21			1:00	
EF*	H151	0:21	6	0:06	4:23	20	0:02	0:34
EG*	H152	4:58	40	0:10	7:29		0:24	0:37
EH	H153	7:00	30	0:23			0:54	
EI*	H156	3:08	20	0:14	3:35	10	0:24	0:27
EJ*	H157	2:11	21	0:12	3:31	5	0:22	0:37
EK*	H158	5:04	24	0:22	1:20	4	0:39	0:10
EL	H159	0:00	0	0:00			0:00	
EM	H161	5:34	26	0:21			0:50	
EN	H165	5:02	25	0:19			0:44	
EO	H235	6:01	26	0:21			0:54	

** Receptors where shadow flicker is reduced by curtailment*

Total amount of flickering on the shadow receptors caused by each WTG

No.	Name	Worst case [h/year]	Stopped due to flicker curtailment [h/year]	Expected [h/year]
1	T01	100:06	66:02	14:42
2	T02	48:40	201:15	7:21
3	T03	45:58	33:47	7:43
4	T04	20:02	70:45	2:58
5	T05	42:49	108:38	6:58
6	T06	87:36	87:17	14:23
7	T07	40:58	117:33	6:03
8	T08	68:43	102:48	10:01
9	T09	98:49	55:12	13:17
10	T10	97:46	137:13	11:34
11	T11	98:43	257:22	13:57

Total times in Receptor wise and WTG wise tables can differ, as a WTG can lead to flicker at 2 or more receptors simultaneously and/or receptors may receive flicker from 2 or more WTGs simultaneously.

The calculation of the total expected values for a given receptor assumes a weighted average directional reduction for all WTGs contributing to shadow flicker within the same day. In the case where shadow flicker from different WTGs is not concurrent within the day, the total expected time at a given receptor may deviate marginally from the individual flicker time caused by each turbine separately.

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Detailed Results

Calculation: Curtailment Stratedy

Worst case, Shadow hours per year [h/year]

Receptor	WTG 1	2	3	4	5	6	7	8	9	10	11	Total
A	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	*	0:00*
B	0:00	0:00	0:00	0:00	0:00	0:00	0:00	6:22	16:46	*	20:56	37:52*
C	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
D	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	6:55	0:00	5:47	12:42*
E	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	6:05	0:00	5:10	21:26*
F	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:00	7:37*
G	0:00	0:00	0:00	*	*	8:34	0:00	0:00	0:00	0:00	0:00	8:34*
H	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
I	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
J	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	*	12:52	0:00	12:52*
K	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	*	21:01*
L	0:00	0:00	6:11	*	*	*	*	0:00	0:00	0:00	0:00	6:11*
M	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:00	3:23*
N	0:00	0:00	0:00	*	*	8:13	0:00	0:00	0:00	0:00	0:00	12:39*
O	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	5:35	0:00	0:00	8:30*
P	12:23	0:00	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	12:23*
Q	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
R	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
S	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
T	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:00	0:00*
U	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	17:40	0:00	17:40*
V	0:00	0:00	0:00	*	*	6:29	0:00	0:00	0:00	0:00	0:00	18:47*
W	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
X	0:00	0:00	0:00	*	*	5:59	0:00	0:00	0:00	0:00	0:00	14:47*
Y	0:00	0:00	0:00	0:00	13:18	11:40	0:00	0:00	0:00	0:00	0:00	13:23
Z	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	14:26	0:00	14:26
AA	0:00	0:00	0:00	*	*	8:06	0:00	0:00	0:00	0:00	0:00	21:21*
AB	0:00	0:00	0:00	0:00	5:54	*	*	0:00	0:00	0:00	0:00	5:54*
AC	21:19	*	5:34	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	26:53*
AD	0:00	0:00	0:00	*	*	6:57	0:00	0:00	0:00	0:00	0:00	20:12*
AE	0:00	0:00	0:00	*	*	4:28	0:00	0:00	0:00	0:00	0:00	5:25*
AF	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
AG	0:00	0:00	0:00	0:00	0:00	0:00	0:00	5:57	*	7:33	*	13:30*
AH	0:00	0:00	0:00	*	*	0:00	0:00	0:00	0:00	0:00	0:00	0:58*
AI	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:00	0:00	2:12*
AJ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:00	0:00	4:03*
AK	0:00	0:00	0:00	*	*	6:53	0:00	0:00	0:00	0:00	0:00	20:17*
AL	0:00	0:00	0:00	*	*	0:00	0:00	0:00	0:00	0:00	0:00	1:01*
AM	0:00	0:00	5:57	*	*	*	0:00	0:00	0:00	0:00	0:00	5:57*
AN	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
AO	0:00	0:00	0:00	0:00	0:00	0:00	0:00	4:35	*	*	*	23:58*
AP	0:00	0:00	0:00	*	*	0:00	0:00	0:00	0:00	0:00	0:00	1:04*
AQ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:00	0:00	10:31*
AR	*	*	*	6:31	0:00	0:00	0:00	0:00	0:00	0:00	0:00	6:31*
AS	0:00	*	6:58	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	7:55*
AT	2:31	*	5:47	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	8:18*
AU	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:00	0:00	0:00*
AV	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	8:56	*	8:56*
AW	0:00	0:00	0:00	0:00	0:00	*	*	0:00	0:00	0:00	0:00	6:57*
AX	0:00	0:00	0:00	0:00	0:00	0:00	0:00	5:33	*	0:00	*	15:20*
AY	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	2:13	0:00	*	11:48*
AZ	0:00	0:00	0:00	0:00	*	10:43	0:00	0:00	0:00	0:00	0:00	10:43*
BA	0:00	0:00	7:59	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	7:59
BB	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
BC	0:00	0:00	0:00	0:00	0:00	7:37	*	0:00	0:00	0:00	0:00	7:37*
BD	0:00	*	6:06	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	7:03*
BE	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:00	0:00	2:59*
BF	0:00	0:00	6:27	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	6:27
BG	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
BH	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:00	0:00	0:00*
BI	15:23	*	4:06	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	23:28*
BJ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
BK	0:00	0:00	0:00	2:22	*	6:31	0:00	0:00	0:00	0:00	0:00	8:53*
BL	0:00	0:00	0:00	0:00	0:00	23:09	0:00	0:00	0:00	0:00	0:00	23:09

To be continued on next page...

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Detailed Results

Calculation: Curtailment Stratedy

...continued from previous page

Receptor	WTG 1	2	3	4	5	6	7	8	9	10	11	Total
BM	*	0:00	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	5:13*
BN	3:38	*	4:20	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	8:00*
BO	7:21	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	7:21*
BP	0:00	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:49*
BQ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	3:44	0:00	3:44
BR	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	4:35	0:00	4:35
BS	0:00	0:00	0:00	0:00	*	6:58	0:00	0:00	0:00	0:00	0:00	7:15*
BT	0:00	0:00	0:00	0:00	*	7:32	0:00	0:00	0:00	0:00	0:00	8:06*
BU	0:00	0:00	0:00	0:00	0:00	0:00	8:08	20:51	0:00	0:00	0:00	28:59
BV	6:42	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	9:25*
BW	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:00	0:00	4:30*
BX	0:00	0:00	0:00	0:00	0:00	21:52	0:00	0:00	0:00	0:00	0:00	21:52
BY	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	4:58	*	7:11	12:09*
BZ	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00*
CA	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	13:22	5:28	18:50
CB	0:00	0:00	0:00	0:00	*	8:12	0:00	0:00	0:00	0:00	0:00	8:12*
CC	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CD	0:00	0:00	0:00	0:00	0:00	20:03	0:00	0:00	0:00	0:00	0:00	20:03
CE	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CF	0:00	0:00	0:00	0:00	*	8:28	0:00	0:00	0:00	0:00	0:00	28:57*
CG	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	8:49	8:49
CH	*	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	2:02*
CI	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	8:59*
CJ	0:00	0:00	2:06	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	2:06
CK	6:31	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	6:31*
CL	*	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	3:52*
CM	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	2:11*
CN	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	10:11	10:11
CO	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CP	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	24:34*
CQ	4:29	11:57	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	16:26
CR	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CS	0:00	0:00	2:20	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	2:20
CT	4:33	11:44	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	16:17
CU	0:00	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	5:26*
CV	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	19:50	19:50
CW	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CX	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CY	*	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:53*
CZ	0:00	0:00	0:00	0:00	0:00	0:00	14:52	0:00	0:00	0:00	0:00	14:52
DA	0:00	9:53	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	9:53
DB	0:00	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:56*
DC	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	4:40*
DD	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	2:00*
DE	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	4:11	0:00	0:00	10:58*
DF	0:00	9:02	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	9:02
DG	0:00	0:00	0:00	0:00	0:00	0:00	7:24	0:00	0:00	0:00	0:00	7:24
DH	0:00	0:00	0:00	0:00	0:00	0:00	0:00	6:42	5:58	0:00	0:00	12:40
DI	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:00	0:00	0:00	6:33*
DJ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DK	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DL	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	5:45*
DM	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:00	0:00	0:00	0:04*
DN	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	16:05	0:00	0:00	16:05
DO	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DP	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DQ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:00	0:00	0:00*
DR	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DS	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DT	0:00	0:00	0:00	0:00	0:00	2:12	0:00	0:00	0:00	0:00	0:00	2:12
DU	0:00	7:20	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	7:20
DV	*	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00*
DW	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DX	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	4:41*
DY	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	14:57	0:00	0:00	14:57

To be continued on next page...

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Detailed Results

Calculation: Curtailment Stratedy

...continued from previous page

Receptor	WTG 1	2	3	4	5	6	7	8	9	10	11	Total
DZ	0:00	7:37	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	7:37
EA	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
EB	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	4:38	0:00	4:38
EC	0:00	6:43	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	6:43
ED	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
EE	0:00	0:00	0:00	0:00	0:00	0:00	5:48	0:00	0:00	0:00	0:00	5:48
EF	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:21*
EG	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	4:58*
EH	0:00	7:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	7:00
EI	0:00	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	3:08*
EJ	0:00	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	2:11*
EK	0:00	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	5:04*
EL	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
EM	0:00	5:34	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	5:34
EN	0:00	5:02	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	5:02
EO	0:00	6:01	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	6:01
Total	100:06*	48:40*	45:58*	20:02*	42:49*	87:36*	40:58*	68:43*	98:49*	97:46*	98:43*	

** Shadow flicker reduced by curtailment*

Worst case, Shadow days per year [days/year]

Receptor	WTG 1	2	3	4	5	6	7	8	9	10	11	Total
A	0	0	0	0	0	0	0	0	*	0	*	0*
B	0	0	0	0	0	0	0	27	43	*	49	92*
C	0	0	0	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	*	30	0	26	56*
E	0	0	0	0	0	0	0	*	27	0	24	84*
F	0	0	0	0	0	0	0	0	*	0	0	42*
G	0	0	0	*	*	32	0	0	0	0	0	32*
H	0	0	0	0	0	0	0	0	0	0	0	0
I	0	0	0	0	0	0	0	0	0	0	0	0
J	0	0	0	0	0	0	0	*	*	50	0	50*
K	0	0	0	0	0	0	0	0	*	0	*	65*
L	0	0	28	*	*	*	*	0	0	0	0	28*
M	0	0	0	0	0	0	0	0	*	0	0	42*
N	0	0	0	*	*	30	0	0	0	0	0	111*
O	0	0	0	0	0	0	0	*	26	0	0	54*
P	40	0	*	0	0	0	0	0	0	0	0	40*
Q	0	0	0	0	0	0	0	0	0	0	0	0
R	0	0	0	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0	0	0	0
T	0	0	0	0	0	0	0	0	*	0	0	0*
U	0	0	0	0	0	0	0	*	0	46	0	46*
V	0	0	0	*	*	27	0	0	0	0	0	114*
W	0	0	0	0	0	0	0	0	0	0	0	0
X	0	0	0	*	*	26	0	0	0	0	0	110*
Y	0	0	0	0	54	46	0	0	0	0	0	54
Z	0	0	0	0	0	0	0	0	0	52	0	52
AA	0	0	0	*	*	30	0	0	0	0	0	85*
AB	0	0	0	0	29	*	*	0	0	0	0	29*
AC	72	*	26	0	0	0	0	0	0	0	0	98*
AD	0	0	0	*	*	29	0	0	0	0	0	84*
AE	0	0	0	*	*	24	0	0	0	0	0	42*
AF	0	0	0	0	0	0	0	0	0	0	0	0
AG	0	0	0	0	0	0	0	26	*	26	*	52*
AH	0	0	0	*	*	0	0	0	0	0	0	19*
AI	0	0	0	0	0	0	0	*	0	0	0	28*
AJ	0	0	0	0	0	0	0	*	0	0	0	32*
AK	0	0	0	*	*	30	0	0	0	0	0	88*
AL	0	0	0	*	*	0	0	0	0	0	0	24*
AM	0	0	26	*	*	*	0	0	0	0	0	26*
AN	0	0	0	0	0	0	0	0	0	0	0	0
AO	0	0	0	0	0	0	0	24	*	*	*	105*
AP	0	0	0	*	*	0	0	0	0	0	0	24*
AQ	0	0	0	0	0	0	0	*	0	0	0	32*

To be continued on next page...

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Detailed Results

Calculation: Curtailment Stratedy

...continued from previous page

Receptor	WTG 1	2	3	4	5	6	7	8	9	10	11	Total
AR	*	*	*	30	0	0	0	0	0	0	0	30*
AS	0	*	32	0	0	0	0	0	0	0	0	54*
AT	30	*	28	0	0	0	0	0	0	0	0	58*
AU	0	0	0	0	0	0	0	*	0	0	0	0*
AV	0	0	0	0	0	0	0	0	0	38	*	38*
AW	0	0	0	0	0	*	*	0	0	0	0	34*
AX	0	0	0	0	0	0	0	27	*	0	*	105*
AY	0	0	0	0	0	0	0	0	27	0	*	69*
AZ	0	0	0	0	*	36	0	0	0	0	0	36*
BA	0	0	37	0	0	0	0	0	0	0	0	37
BB	0	0	0	0	0	0	0	0	0	0	0	0
BC	0	0	0	0	0	30	*	0	0	0	0	30*
BD	0	*	30	0	0	0	0	0	0	0	0	52*
BE	0	0	0	0	0	0	0	*	0	0	0	36*
BF	0	0	32	0	0	0	0	0	0	0	0	32
BG	0	0	0	0	0	0	0	0	0	0	0	0
BH	0	0	0	0	0	0	0	*	0	0	0	0*
BI	70	*	24	0	0	0	0	0	0	0	0	119*
BJ	0	0	0	0	0	0	0	0	0	0	0	0
BK	0	0	0	28	*	28	0	0	0	0	0	56*
BL	0	0	0	0	0	67	0	0	0	0	0	67
BM	*	0	*	0	0	0	0	0	0	0	0	36*
BN	35	*	26	0	0	0	0	0	0	0	0	63*
BO	34	*	0	0	0	0	0	0	0	0	0	34*
BP	0	*	0	0	0	0	0	0	0	0	0	14*
BQ	0	0	0	0	0	0	0	0	0	34	0	34
BR	0	0	0	0	0	0	0	0	0	37	0	37
BS	0	0	0	0	*	29	0	0	0	0	0	36*
BT	0	0	0	0	*	30	0	0	0	0	0	42*
BU	0	0	0	0	0	0	33	79	0	0	0	112
BV	32	*	0	0	0	0	0	0	0	0	0	72*
BW	0	0	0	0	0	0	0	*	0	0	0	34*
BX	0	0	0	0	0	74	0	0	0	0	0	74
BY	0	0	0	0	0	0	0	0	25	*	34	59*
BZ	*	0	0	0	0	0	0	0	0	0	0	0*
CA	0	0	0	0	0	0	0	0	0	42	25	67
CB	0	0	0	0	*	32	0	0	0	0	0	32*
CC	0	0	0	0	0	0	0	0	0	0	0	0
CD	0	0	0	0	0	71	0	0	0	0	0	71
CE	0	0	0	0	0	0	0	0	0	0	0	0
CF	0	0	0	0	*	34	0	0	0	0	0	107*
CG	0	0	0	0	0	0	0	0	0	0	43	43
CH	*	*	0	0	0	0	0	0	0	0	0	20*
CI	*	0	0	0	0	0	0	0	0	0	0	34*
CJ	0	0	29	0	0	0	0	0	0	0	0	29
CK	28	*	0	0	0	0	0	0	0	0	0	28*
CL	*	*	0	0	0	0	0	0	0	0	0	23*
CM	0	0	0	0	0	0	0	0	0	*	0	16*
CN	0	0	0	0	0	0	0	0	0	0	47	47
CO	0	0	0	0	0	0	0	0	0	0	0	0
CP	*	0	0	0	0	0	0	0	0	0	0	70*
CQ	24	38	0	0	0	0	0	0	0	0	0	62
CR	0	0	0	0	0	0	0	0	0	0	0	0
CS	0	0	30	0	0	0	0	0	0	0	0	30
CT	25	36	0	0	0	0	0	0	0	0	0	61
CU	0	*	0	0	0	0	0	0	0	0	0	46*
CV	0	0	0	0	0	0	0	0	0	0	80	80
CW	0	0	0	0	0	0	0	0	0	0	0	0
CX	0	0	0	0	0	0	0	0	0	0	0	0
CY	*	*	0	0	0	0	0	0	0	0	0	19*
CZ	0	0	0	0	0	0	55	0	0	0	0	55
DA	0	33	0	0	0	0	0	0	0	0	0	33
DB	0	*	0	0	0	0	0	0	0	0	0	17*
DC	0	0	0	0	0	0	0	0	0	*	0	26*
DD	0	0	0	0	0	0	0	0	0	*	0	16*

To be continued on next page...

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Detailed Results

Calculation: Curtailment Stratedy

...continued from previous page

Receptor	WTG 1	2	3	4	5	6	7	8	9	10	11	Total
DE	0	0	0	0	0	0	0	*	22	0	0	58*
DF	0	31	0	0	0	0	0	0	0	0	0	31
DG	0	0	0	0	0	0	29	0	0	0	0	29
DH	0	0	0	0	0	0	0	34	26	0	0	60
DI	0	0	0	0	0	0	*	0	0	0	0	29*
DJ	0	0	0	0	0	0	0	0	0	0	0	0
DK	0	0	0	0	0	0	0	0	0	0	0	0
DL	0	0	0	0	0	0	0	0	0	*	0	27*
DM	0	0	0	0	0	0	*	0	0	0	0	4*
DN	0	0	0	0	0	0	0	0	55	0	0	55
DO	0	0	0	0	0	0	0	0	0	0	0	0
DP	0	0	0	0	0	0	0	0	0	0	0	0
DQ	0	0	0	0	0	0	0	*	0	0	0	0*
DR	0	0	0	0	0	0	0	0	0	0	0	0
DS	0	0	0	0	0	0	0	0	0	0	0	0
DT	0	0	0	0	0	26	0	0	0	0	0	26
DU	0	29	0	0	0	0	0	0	0	0	0	29
DV	*	*	0	0	0	0	0	0	0	0	0	0*
DW	0	0	0	0	0	0	0	0	0	0	0	0
DX	0	0	0	0	0	0	0	0	0	*	0	26*
DY	0	0	0	0	0	0	0	0	52	0	0	52
DZ	0	30	0	0	0	0	0	0	0	0	0	30
EA	0	0	0	0	0	0	0	0	0	0	0	0
EB	0	0	0	0	0	0	0	0	0	23	0	23
EC	0	28	0	0	0	0	0	0	0	0	0	28
ED	0	0	0	0	0	0	0	0	0	0	0	0
EE	0	0	0	0	0	0	26	0	0	0	0	26
EF	0	0	0	0	0	0	0	0	0	*	0	6*
EG	0	0	0	0	0	0	0	0	0	*	0	40*
EH	0	30	0	0	0	0	0	0	0	0	0	30
EI	0	*	0	0	0	0	0	0	0	0	0	20*
EJ	0	*	0	0	0	0	0	0	0	0	0	21*
EK	0	*	0	0	0	0	0	0	0	0	0	24*
EL	0	0	0	0	0	0	0	0	0	0	0	0
EM	0	26	0	0	0	0	0	0	0	0	0	26
EN	0	25	0	0	0	0	0	0	0	0	0	25
EO	0	26	0	0	0	0	0	0	0	0	0	26
Total	390*	332*	348*	58*	83*	731*	143*	217*	333*	348*	328*	

** Shadow flicker reduced by curtailment*

Worst case, Max shadow hours per day [h/day]

Receptor	WTG 1	2	3	4	5	6	7	8	9	10	11	Total
A	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	*	0:00*
B	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:22	0:34	*	0:36	0:36*
C	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
D	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:22	0:00	0:21	0:22*
E	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:21	0:00	0:20	0:26*
F	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:00	0:13*
G	0:00	0:00	0:00	*	*	0:25	0:00	0:00	0:00	0:00	0:00	0:25*
H	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
I	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
J	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	*	0:25	0:00	0:25*
K	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	*	0:28*
L	0:00	0:00	0:22	*	*	*	*	0:00	0:00	0:00	0:00	0:22*
M	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:00	0:06*
N	0:00	0:00	0:00	*	*	0:25	0:00	0:00	0:00	0:00	0:00	0:25*
O	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:20	0:00	0:00	0:22*
P	0:29	0:00	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:29*
Q	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
R	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
S	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
T	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:00	0:00*
U	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:28	0:00	0:28*
V	0:00	0:00	0:00	*	*	0:22	0:00	0:00	0:00	0:00	0:00	0:22*

To be continued on next page...

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

SHADOW - Detailed Results

Calculation: Curtailment Stratedy

...continued from previous page

Receptor	WTG 1	2	3	4	5	6	7	8	9	10	11	Total
W	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
X	0:00	0:00	0:00	*	*	0:22	0:00	0:00	0:00	0:00	0:00	0:22*
Y	0:00	0:00	0:00	0:00	0:21	0:22	0:00	0:00	0:00	0:00	0:00	0:22
Z	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:21	0:00	0:21
AA	0:00	0:00	0:00	*	*	0:24	0:00	0:00	0:00	0:00	0:00	0:24*
AB	0:00	0:00	0:00	0:00	0:20	*	*	0:00	0:00	0:00	0:00	0:20*
AC	0:25	*	0:20	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:25*
AD	0:00	0:00	0:00	*	*	0:23	0:00	0:00	0:00	0:00	0:00	0:23*
AE	0:00	0:00	0:00	*	*	0:19	0:00	0:00	0:00	0:00	0:00	0:19*
AF	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
AG	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:21	*	0:22	*	0:22*
AH	0:00	0:00	0:00	*	*	0:00	0:00	0:00	0:00	0:00	0:00	0:06*
AI	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:00	0:00	0:11*
AJ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:00	0:00	0:15*
AK	0:00	0:00	0:00	*	*	0:23	0:00	0:00	0:00	0:00	0:00	0:23*
AL	0:00	0:00	0:00	*	*	0:00	0:00	0:00	0:00	0:00	0:00	0:06*
AM	0:00	0:00	0:21	*	*	*	0:00	0:00	0:00	0:00	0:00	0:21*
AN	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
AO	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:19	*	*	*	0:23*
AP	0:00	0:00	0:00	*	*	0:00	0:00	0:00	0:00	0:00	0:00	0:06*
AQ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:00	0:00	0:23*
AR	*	*	*	0:21	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:21*
AS	0:00	*	0:21	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:21*
AT	0:07	*	0:20	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:20*
AU	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:00	0:00	0:00*
AV	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:22	*	0:22*
AW	0:00	0:00	0:00	0:00	0:00	*	*	0:00	0:00	0:00	0:00	0:21*
AX	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:21	*	0:00	*	0:21*
AY	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:07	0:00	*	0:26*
AZ	0:00	0:00	0:00	0:00	*	0:27	0:00	0:00	0:00	0:00	0:00	0:27*
BA	0:00	0:00	0:21	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:21
BB	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
BC	0:00	0:00	0:00	0:00	0:00	0:24	*	0:00	0:00	0:00	0:00	0:24*
BD	0:00	*	0:19	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:19*
BE	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:00	0:00	0:07*
BF	0:00	0:00	0:20	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:20
BG	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
BH	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:00	0:00	0:00*
BI	0:21	*	0:17	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:21*
BJ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
BK	0:00	0:00	0:00	0:07	*	0:22	0:00	0:00	0:00	0:00	0:00	0:22*
BL	0:00	0:00	0:00	0:00	0:00	0:27	0:00	0:00	0:00	0:00	0:00	0:27
BM	*	0:00	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:15*
BN	0:09	*	0:17	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:17*
BO	0:20	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:20*
BP	0:00	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:07*
BQ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:10	0:00	0:10
BR	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:11	0:00	0:11
BS	0:00	0:00	0:00	0:00	*	0:22	0:00	0:00	0:00	0:00	0:00	0:22*
BT	0:00	0:00	0:00	0:00	*	0:23	0:00	0:00	0:00	0:00	0:00	0:23*
BU	0:00	0:00	0:00	0:00	0:00	0:00	0:24	0:25	0:00	0:00	0:00	0:25
BV	0:20	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:20*
BW	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:00	0:00	0:11*
BX	0:00	0:00	0:00	0:00	0:00	0:25	0:00	0:00	0:00	0:00	0:00	0:25
BY	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:20	*	0:21	0:21*
BZ	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00*
CA	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:30	0:21	0:30
CB	0:00	0:00	0:00	0:00	*	0:24	0:00	0:00	0:00	0:00	0:00	0:24*
CC	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CD	0:00	0:00	0:00	0:00	0:00	0:23	0:00	0:00	0:00	0:00	0:00	0:23
CE	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CF	0:00	0:00	0:00	0:00	*	0:24	0:00	0:00	0:00	0:00	0:00	0:27*
CG	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:18	0:18
CH	*	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:11*
CI	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:26*

To be continued on next page...

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Detailed Results

Calculation: Curtailment Stratedy

...continued from previous page

Receptor	WTG 1	2	3	4	5	6	7	8	9	10	11	Total
CJ	0:00	0:00	0:06	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:06
CK	0:23	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:23*
CL	*	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:15*
CM	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:16*
CN	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:19	0:19
CO	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CP	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:30*
CQ	0:17	0:30	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:30
CR	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CS	0:00	0:00	0:07	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:07
CT	0:17	0:30	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:30
CU	0:00	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:13*
CV	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:25	0:25
CW	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CX	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CY	*	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:09*
CZ	0:00	0:00	0:00	0:00	0:00	0:00	0:24	0:00	0:00	0:00	0:00	0:24
DA	0:00	0:28	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:28
DB	0:00	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:07*
DC	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:21*
DD	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:15*
DE	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:15	0:00	0:00	0:20*
DF	0:00	0:27	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:27
DG	0:00	0:00	0:00	0:00	0:00	0:00	0:24	0:00	0:00	0:00	0:00	0:24
DH	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:19	0:17	0:00	0:00	0:19
DI	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:00	0:00	0:00	0:23*
DJ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DK	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DL	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:20*
DM	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:00	0:00	0:00	0:01*
DN	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:24	0:00	0:00	0:24
DO	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DP	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DQ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:00	0:00	0:00*
DR	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DS	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DT	0:00	0:00	0:00	0:00	0:00	0:07	0:00	0:00	0:00	0:00	0:00	0:07
DU	0:00	0:24	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:24
DV	*	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00*
DW	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DX	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:18*
DY	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:23	0:00	0:00	0:23
DZ	0:00	0:24	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:24
EA	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
EB	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:19	0:00	0:19
EC	0:00	0:23	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:23
ED	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
EE	0:00	0:00	0:00	0:00	0:00	0:00	0:21	0:00	0:00	0:00	0:00	0:21
EF	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:06*
EG	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:10*
EH	0:00	0:23	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:23
EI	0:00	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:14*
EJ	0:00	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:12*
EK	0:00	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:22*
EL	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
EM	0:00	0:21	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:21
EN	0:00	0:19	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:19
EO	0:00	0:21	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:21
Total	3:08*	4:30*	3:31*	0:28*	0:41*	7:33*	1:33*	2:07*	3:23*	3:08*	3:01*	

**Shadow flicker reduced by curtailment*

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Detailed Results

Calculation: Curtailment Stratedy

Real case, Shadow hours per year [h/year]

Receptor	WTG 1	2	3	4	5	6	7	8	9	10	11	Total
A	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	*	0:00*
B	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:06	2:53	*	2:53	5:47*
C	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
D	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	1:15	0:00	0:52	2:06*
E	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	1:06	0:00	0:46	3:41*
F	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:00	0:36*
G	0:00	0:00	0:00	*	*	1:17	0:00	0:00	0:00	0:00	0:00	1:17*
H	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
I	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
J	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	*	1:23	0:00	1:23*
K	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	*	3:11*
L	0:00	0:00	1:06	*	*	*	*	0:00	0:00	0:00	0:00	1:06*
M	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:00	0:15*
N	0:00	0:00	0:00	*	*	1:14	0:00	0:00	0:00	0:00	0:00	1:59*
O	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	1:00	0:00	0:00	1:32*
P	2:11	0:00	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	2:11*
Q	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
R	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
S	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
T	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:00	0:00*
U	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	1:25	0:00	1:25*
V	0:00	0:00	0:00	*	*	1:02	0:00	0:00	0:00	0:00	0:00	3:01*
W	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
X	0:00	0:00	0:00	*	*	0:57	0:00	0:00	0:00	0:00	0:00	2:23*
Y	0:00	0:00	0:00	0:00	2:00	1:46	0:00	0:00	0:00	0:00	0:00	2:01
Z	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:14	0:00	1:13
AA	0:00	0:00	0:00	*	*	1:20	0:00	0:00	0:00	0:00	0:00	3:28*
AB	0:00	0:00	0:00	0:00	1:03	*	*	0:00	0:00	0:00	0:00	1:02*
AC	3:27	*	1:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	4:27*
AD	0:00	0:00	0:00	*	*	1:09	0:00	0:00	0:00	0:00	0:00	3:16*
AE	0:00	0:00	0:00	*	*	0:43	0:00	0:00	0:00	0:00	0:00	0:52*
AF	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
AG	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:50	*	0:36	*	1:25*
AH	0:00	0:00	0:00	*	*	0:00	0:00	0:00	0:00	0:00	0:00	0:10*
AI	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:00	0:00	0:24*
AJ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:00	0:00	0:44*
AK	0:00	0:00	0:00	*	*	1:12	0:00	0:00	0:00	0:00	0:00	3:21*
AL	0:00	0:00	0:00	*	*	0:00	0:00	0:00	0:00	0:00	0:00	0:10*
AM	0:00	0:00	0:55	*	*	*	0:00	0:00	0:00	0:00	0:00	0:54*
AN	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
AO	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:39	*	*	*	2:45*
AP	0:00	0:00	0:00	*	*	0:00	0:00	0:00	0:00	0:00	0:00	0:11*
AQ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:00	0:00	0:52*
AR	*	*	*	0:46	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:45*
AS	0:00	*	1:17	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:26*
AT	0:25	*	1:03	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:28*
AU	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:00	0:00	0:00*
AV	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:36	*	1:36*
AW	0:00	0:00	0:00	0:00	0:00	*	*	0:00	0:00	0:00	0:00	1:14*
AX	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:46	*	0:00	*	1:52*
AY	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:22	0:00	*	2:07*
AZ	0:00	0:00	0:00	0:00	*	1:56	0:00	0:00	0:00	0:00	0:00	1:55*
BA	0:00	0:00	1:25	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:24
BB	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
BC	0:00	0:00	0:00	0:00	0:00	1:10	*	0:00	0:00	0:00	0:00	1:09*
BD	0:00	*	1:08	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:17*
BE	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:00	0:00	0:20*
BF	0:00	0:00	1:11	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:11
BG	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
BH	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:00	0:00	0:00*
BI	2:30	*	0:44	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	3:56*
BJ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
BK	0:00	0:00	0:00	0:23	*	1:11	0:00	0:00	0:00	0:00	0:00	1:33*
BL	0:00	0:00	0:00	0:00	0:00	3:32	0:00	0:00	0:00	0:00	0:00	3:32
BM	*	0:00	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:34*

To be continued on next page...

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Detailed Results

Calculation: Curtailment Stratedy

...continued from previous page

Receptor	WTG 1	2	3	4	5	6	7	8	9	10	11	Total
BN	0:36	*	0:47	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:23*
BO	1:20	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:19*
BP	0:00	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:08*
BQ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:37	0:00	0:36
BR	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:45	0:00	0:44
BS	0:00	0:00	0:00	0:00	*	1:15	0:00	0:00	0:00	0:00	0:00	1:18*
BT	0:00	0:00	0:00	0:00	*	1:21	0:00	0:00	0:00	0:00	0:00	1:27*
BU	0:00	0:00	0:00	0:00	0:00	0:00	1:02	3:27	0:00	0:00	0:00	4:28
BV	1:14	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:42*
BW	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:00	0:00	0:31*
BX	0:00	0:00	0:00	0:00	0:00	3:23	0:00	0:00	0:00	0:00	0:00	3:23
BY	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:41	*	0:50	1:31*
BZ	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00*
CA	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	2:21	0:53	3:13
CB	0:00	0:00	0:00	0:00	*	1:29	0:00	0:00	0:00	0:00	0:00	1:28*
CC	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CD	0:00	0:00	0:00	0:00	0:00	3:05	0:00	0:00	0:00	0:00	0:00	3:05
CE	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CF	0:00	0:00	0:00	0:00	*	1:33	0:00	0:00	0:00	0:00	0:00	4:54*
CG	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:20	1:20
CH	*	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:16*
CI	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:08*
CJ	0:00	0:00	0:21	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:20
CK	0:59	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:59*
CL	*	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:33*
CM	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:16*
CN	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:32	1:32
CO	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CP	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	2:26*
CQ	0:49	1:57	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	2:46
CR	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CS	0:00	0:00	0:23	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:23
CT	0:49	1:46	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	2:35
CU	0:00	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:57*
CV	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	3:08	3:07
CW	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CX	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CY	*	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:08*
CZ	0:00	0:00	0:00	0:00	0:00	0:00	2:15	0:00	0:00	0:00	0:00	2:14
DA	0:00	1:29	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:28
DB	0:00	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:10*
DC	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:34*
DD	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:14*
DE	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:20	0:00	0:00	1:07*
DF	0:00	1:20	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:20
DG	0:00	0:00	0:00	0:00	0:00	0:00	1:04	0:00	0:00	0:00	0:00	1:04
DH	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:47	0:28	0:00	0:00	1:15
DI	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:00	0:00	0:00	0:57*
DJ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DK	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DL	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:49*
DM	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:00	0:00	0:00	0:00*
DN	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:29	0:00	0:00	1:29
DO	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DP	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DQ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:00	0:00	0:00*
DR	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DS	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DT	0:00	0:00	0:00	0:00	0:00	0:22	0:00	0:00	0:00	0:00	0:00	0:21
DU	0:00	1:06	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:05
DV	*	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00*
DW	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DX	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:32*
DY	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:21	0:00	0:00	1:20
DZ	0:00	1:01	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:00

To be continued on next page...

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Detailed Results

Calculation: Curtailment Stratedy

...continued from previous page

Receptor	WTG 1	2	3	4	5	6	7	8	9	10	11	Total
EA	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
EB	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:40	0:00	0:39
EC	0:00	1:01	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:00
ED	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
EE	0:00	0:00	0:00	0:00	0:00	0:00	1:00	0:00	0:00	0:00	0:00	1:00
EF	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:02*
EG	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	*	0:00	0:24*
EH	0:00	0:55	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:54
EI	0:00	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:24*
EJ	0:00	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:22*
EK	0:00	*	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:39*
EL	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
EM	0:00	0:50	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:50
EN	0:00	0:44	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:44
EO	0:00	0:55	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:54
Total	14:42*	7:22*	7:44*	2:58*	6:58*	14:24*	6:03*	10:01*	13:18*	11:35*	13:57*	

**Shadow flicker reduced by curtailment*

Total time can be different from the sum in case of concurrent Shadow flicker events

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** A - H001

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:40	07:34	07:32	08:27
	16:22	17:14	18:09	20:08	21:03	21:53	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:37	07:36	08:30
	16:24	17:18	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58	16:16
4	08:51	08:16	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:13	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11	21:58	22:06	21:25	20:16	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50	05:06	05:10	05:55	06:49	07:43	07:42	08:35
	16:28	17:24	18:19	20:17	21:12	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48	08:38
	16:32	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:48	08:05	07:03	06:47	05:42	05:04	05:14	06:02	06:56	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:12
11	08:48	08:03	07:00	06:45	05:40	05:03	05:16	06:03	06:58	07:52	07:52	08:41
	16:35	17:34	18:29	20:26	21:21	22:04	22:02	21:13	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:55	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:55	08:43
	16:39	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:26	22:06	21:59	21:07	19:54	18:41	16:38	16:12
15	08:44	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36	16:12
16	08:43	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16:12
17	08:42	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:31	22:07	21:56	21:01	19:47	18:34	16:33	16:12
18	08:41	07:49	06:43	06:28	05:28	05:02	05:24	06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:39	21:33	22:08	21:54	20:59	19:44	18:32	16:32	16:12
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:24	05:02	05:29	06:21	07:16	08:11	08:10	08:49
	16:52	17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:13
22	08:37	07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:39	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:19	08:15	08:14	08:50
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	16:14
24	08:34	07:36	06:29	06:15	05:19	05:03	05:33	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24	16:15
25	08:33	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17	08:51
	17:00	18:02	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:52
	17:02	18:03	18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	05:04	05:40	06:33	07:28	07:24	08:22	08:52
	17:06	18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11		05:44	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** B - H002

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February		March		April		May	June
1	08:52	08:22		07:24	16:49 (11)	07:09	19:12 (9)	06:00	05:10
	16:22	17:13		18:09	28 17:17 (11)	20:08	29 19:41 (9)	21:03	21:53
2	08:52	08:20		07:22	16:49 (11)	07:06	19:11 (9)	05:57	05:09
	16:23	17:15		18:11	26 17:15 (11)	20:10	32 19:43 (9)	21:05	21:55
3	08:52	08:18		07:19	16:51 (11)	07:04	19:11 (9)	05:55	05:08
	16:24	17:17		18:13	23 17:14 (11)	20:12	34 19:45 (9)	21:07	21:56
4	08:51	08:16		07:17	16:53 (11)	07:02	19:10 (9)	05:53	05:07
	16:26	17:19		18:15	19 17:12 (11)	20:13	36 19:46 (8)	21:09	21:57
5	08:51	08:15		07:15	16:56 (11)	06:59	19:10 (9)	05:51	05:07
	16:27	17:21		18:17	12 17:08 (11)	20:15	36 19:46 (8)	21:11	21:58
6	08:51	08:13		07:12		06:57	19:11 (9)	05:49	05:06
	16:28	17:23		18:19		20:17	34 19:45 (8)	21:12	21:59
7	08:50	08:11		07:10		06:54	19:11 (9)	05:48	05:05
	16:30	17:25		18:21		20:19	31 19:42 (9)	21:14	22:00
8	08:50	08:09		07:08		06:52	19:12 (9)	05:46	05:05
	16:31	17:28		18:23		20:21	30 19:42 (9)	21:16	22:01
9	08:49	08:07		07:05		06:49	19:12 (9)	05:44	05:04
	16:32	17:30		18:25		20:23	28 19:40 (9)	21:18	22:02
10	08:48	08:05	16:59 (11)	07:03		06:47	19:13 (9)	05:42	05:03
	16:34	17:32	3 17:02 (11)	18:27		20:25	25 19:38 (9)	21:20	22:03
11	08:48	08:03	16:56 (11)	07:00		06:45	19:15 (9)	05:40	05:03
	16:35	17:34	8 17:04 (11)	18:29		20:26	22 19:37 (9)	21:21	22:04
12	08:47	08:01	16:54 (11)	06:58		06:42	19:16 (9)	05:38	05:03
	16:37	17:36	12 17:06 (11)	18:31		20:28	18 19:34 (9)	21:23	22:04
13	08:46	07:59	16:51 (11)	06:55		06:40	19:19 (9)	05:36	05:02
	16:39	17:38	17 17:08 (11)	18:32		20:30	12 19:31 (9)	21:25	22:05
14	08:45	07:57	16:50 (11)	06:53		06:38		05:35	05:02
	16:40	17:40	20 17:10 (11)	18:34		20:32		21:26	22:06
15	08:44	07:55	16:49 (11)	06:51		06:35		05:33	05:02
	16:42	17:42	23 17:12 (11)	18:36		20:34		21:28	22:06
16	08:43	07:53	16:49 (11)	06:48		06:33		05:31	05:02
	16:44	17:44	26 17:15 (11)	18:38		20:36		21:30	22:07
17	08:42	07:51	16:48 (11)	06:46		06:31		05:30	05:02
	16:45	17:46	29 17:17 (11)	18:40		20:38		21:31	22:07
18	08:41	07:49	16:47 (11)	06:43		06:28		05:28	05:02
	16:47	17:48	31 17:18 (11)	18:42		20:39		21:33	22:08
19	08:40	07:47	16:46 (11)	06:41		06:26		05:26	05:02
	16:49	17:50	35 17:21 (11)	18:44		20:41		21:35	22:08
20	08:39	07:44	16:46 (11)	06:38		06:24		05:25	05:02
	16:51	17:52	36 17:22 (11)	18:46		20:43		21:36	22:09
21	08:38	07:42	16:46 (11)	06:36		06:21		05:23	05:02
	16:52	17:54	36 17:22 (11)	18:47		20:45		21:38	22:09
22	08:37	07:40	16:45 (11)	06:33		06:19		05:22	05:02
	16:54	17:56	36 17:21 (11)	18:49		20:47		21:39	22:09
23	08:35	07:38	16:46 (11)	06:31		06:17		05:21	05:02
	16:56	17:58	35 17:21 (11)	18:51		20:49		21:41	22:09
24	08:34	07:35	16:46 (11)	06:29	18:21 (9)	06:15		05:19	05:02
	16:58	18:00	35 17:21 (11)	18:53	5 18:26 (9)	20:51		21:42	22:09
25	08:33	07:33	16:46 (11)	06:26	18:19 (9)	06:12		05:18	05:03
	17:00	18:01	34 17:20 (11)	18:55	10 18:29 (9)	20:52		21:44	22:09
26	08:31	07:31	16:46 (11)	06:24	18:17 (9)	06:10		05:17	05:03
	17:02	18:03	34 17:20 (11)	18:57	13 18:30 (9)	20:54		21:45	22:09
27	08:30	07:29	16:46 (11)	06:21	18:16 (9)	06:08		05:15	05:04
	17:04	18:05	33 17:19 (11)	18:59	16 18:32 (9)	20:56		21:47	22:09
28	08:28	07:26	16:47 (11)	06:19	18:14 (9)	06:06		05:14	05:04
	17:06	18:07	31 17:18 (11)	19:00	19 18:33 (9)	20:58		21:48	22:09
29	08:27			07:16	19:13 (9)	06:04		05:13	05:05
	17:08			20:02	23 19:36 (9)	21:00		21:50	22:09
30	08:25			07:14	19:12 (9)	06:02		05:12	05:05
	17:10			20:04	25 19:37 (9)	21:02		21:51	22:09
31	08:23			07:11	19:12 (9)			05:11	
	17:12			20:06	27 19:39 (9)			21:52	
Potential sun hours	250	273		367		420		494	510
Total, worst case			514		246		367		
Sun reduction			0.19		0.22		0.31		
Oper. time red.			1.00		1.00		1.00		
Wind dir. red.			0.65		0.65		0.64		
Total reduction			0.13		0.14		0.20		
Total, real			65		35		73		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** B - H002

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August			September			October			November			December
1	05:06		05:46			06:40		19:14 (9)	07:34			07:32		16:29 (11)	08:27
	22:08		21:33			20:26	22	19:36 (9)	19:12			17:02	2	16:31 (11)	16:17
2	05:07		05:48			06:42		19:11 (9)	07:36			07:34			08:29
	22:08		21:31			20:24	25	19:36 (9)	19:10			17:00			16:16
3	05:08		05:49			06:44		19:10 (9)	07:37			07:36			08:30
	22:07		21:29			20:21	28	19:38 (9)	19:07			16:58			16:16
4	05:08		05:51			06:46		19:09 (9)	07:39			07:38			08:32
	22:07		21:27			20:19	30	19:39 (9)	19:05			16:56			16:15
5	05:09		05:53			06:48		19:08 (9)	07:41			07:40			08:33
	22:06		21:25			20:16	31	19:39 (9)	19:03			16:54			16:15
6	05:10		05:55			06:49		19:06 (9)	07:43			07:42			08:35
	22:06		21:23			20:14	34	19:40 (8)	19:00			16:52			16:14
7	05:11		05:56			06:51		19:06 (9)	07:45			07:44			08:36
	22:05		21:22			20:12	35	19:41 (8)	18:58			16:50			16:13
8	05:12		05:58			06:53		19:05 (9)	07:47		17:34 (11)	07:46			08:37
	22:04		21:20			20:09	36	19:41 (8)	18:55	7	17:41 (11)	16:48			16:13
9	05:13		06:00			06:55		19:04 (9)	07:48		17:29 (11)	07:48			08:38
	22:04		21:18			20:07	34	19:38 (9)	18:53	16	17:45 (11)	16:46			16:13
10	05:14		06:01			06:56		19:04 (9)	07:50		17:26 (11)	07:50			08:40
	22:03		21:16			20:04	32	19:36 (9)	18:50	21	17:47 (11)	16:45			16:12
11	05:15		06:03			06:58		19:04 (9)	07:52		17:24 (11)	07:52			08:41
	22:02		21:13			20:02	30	19:34 (9)	18:48	25	17:49 (11)	16:43			16:12
12	05:17		06:05			07:00		19:04 (9)	07:54		17:23 (11)	07:54			08:42
	22:01		21:11			19:59	28	19:32 (9)	18:46	27	17:50 (11)	16:41			16:12
13	05:18		06:07			07:02		19:03 (9)	07:56		17:21 (11)	07:55			08:43
	22:00		21:09			19:57	26	19:29 (9)	18:43	30	17:51 (11)	16:40			16:12
14	05:19		06:09			07:03		19:04 (9)	07:58		17:20 (11)	07:57			08:44
	21:59		21:07			19:54	22	19:26 (9)	18:41	32	17:52 (11)	16:38			16:12
15	05:20		06:10			07:05		19:04 (9)	08:00		17:19 (11)	07:59			08:45
	21:58		21:05			19:52	20	19:24 (9)	18:39	33	17:52 (11)	16:36			16:12
16	05:22		06:12			07:07		19:04 (9)	08:01		17:18 (11)	08:01			08:46
	21:57		21:03			19:49	17	19:21 (9)	18:36	34	17:52 (11)	16:35			16:12
17	05:23		06:14			07:09		19:05 (9)	08:03		17:18 (11)	08:03			08:47
	21:56		21:01			19:47	14	19:19 (9)	18:34	35	17:53 (11)	16:33			16:12
18	05:24		06:16			07:11		19:07 (9)	08:05		17:17 (11)	08:05			08:47
	21:54		20:58			19:44	9	19:16 (9)	18:32	36	17:53 (11)	16:32			16:12
19	05:26		06:17			07:12		19:08 (9)	08:07		17:17 (11)	08:07			08:48
	21:53		20:56			19:42	6	19:14 (9)	18:30	36	17:53 (11)	16:31			16:13
20	05:27		06:19			07:14		19:10 (9)	08:09		17:17 (11)	08:09			08:49
	21:52		20:54			19:39	1	19:11 (9)	18:27	36	17:53 (11)	16:29			16:13
21	05:29		06:21			07:16			08:11		17:17 (11)	08:10			08:49
	21:50		20:52			19:37			18:25	35	17:52 (11)	16:28			16:13
22	05:30		06:23			07:18			08:13		17:17 (11)	08:12			08:50
	21:49		20:50			19:35			18:23	35	17:52 (11)	16:27			16:14
23	05:32		06:24			07:19			08:15		17:17 (11)	08:14			08:50
	21:48		20:47			19:32			18:21	34	17:51 (11)	16:25			16:14
24	05:33		06:26			07:21			08:17		17:17 (11)	08:16			08:51
	21:46		20:45			19:30			18:18	31	17:48 (11)	16:24			16:15
25	05:35		06:28			07:23			07:19		16:18 (11)	08:17			08:51
	21:45		20:43			19:27			17:16	28	16:46 (11)	16:23			16:16
26	05:36		06:30			07:25			07:21		16:18 (11)	08:19			08:52
	21:43		20:40			19:25			17:14	26	16:44 (11)	16:22			16:16
27	05:38		06:32			07:27			07:22		16:19 (11)	08:21			08:52
	21:41		20:38			19:22			17:12	22	16:41 (11)	16:21			16:17
28	05:39		06:33			07:28			07:24		16:20 (11)	08:22			08:52
	21:40		20:36			19:20			17:10	19	16:39 (11)	16:20			16:18
29	05:41		06:35			07:30			07:26		16:21 (11)	08:24			08:52
	21:38		20:33			19:17			17:08	16	16:37 (11)	16:19			16:19
30	05:43		06:37		19:18 (9)	07:32			07:28		16:23 (11)	08:26			08:52
	21:36		20:31	13	19:31 (9)	19:15			17:06	11	16:34 (11)	16:18			16:20
31	05:44		06:39		19:16 (9)				07:30		16:25 (11)				08:52
	21:35		20:29	18	19:34 (9)				17:04	7	16:32 (11)				16:21
Potential sun hours	512		460			382			328			259			233
Total, worst case				31			480			632			2		
Sun reduction				0.26			0.25			0.23			0.20		
Oper. time red.				1.00			1.00			1.00			1.00		
Wind dir. red.				0.64			0.64			0.65			0.65		
Total reduction				0.17			0.16			0.15			0.13		
Total, real				5			78			93			0		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** C - H003

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:10	20:08	21:04	21:54	22:08	21:33	20:26	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:09	05:07	05:48	06:43	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:14	20:12	21:07	21:56	22:08	21:29	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:51	06:46	07:40	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52	05:07	05:10	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	21:58	22:06	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:55	05:48	05:06	05:12	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:56	16:49	16:13
9	08:49	08:07	07:05	06:50	05:44	05:04	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:01	06:45	05:40	05:03	05:16	06:04	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:13
12	08:47	08:01	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	22:00	21:09	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:34	16:12
18	08:42	07:49	06:44	06:29	05:28	05:02	05:25	06:16	07:11	08:05	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:28	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:28	16:30	16:13
21	08:38	07:42	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	05:02	05:31	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34	06:27	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	21:44	22:09	21:45	20:43	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:41	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:22	17:12	16:21	16:17
28	08:28	07:27	06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:14	05:05	05:41	06:35	07:30	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:29	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:12		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** D - H004

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March		April		May	June
1	08:52	08:22	07:24		07:09		06:00	05:10
	16:22	17:14	18:09		20:08		21:04	21:54
2	08:52	08:20	07:22		07:07		05:58	05:09
	16:23	17:16	18:11		20:10		21:05	21:55
3	08:52	08:18	07:20		07:04		05:56	05:08
	16:25	17:18	18:13		20:12		21:07	21:56
4	08:52	08:17	07:17		07:02		05:54	05:08
	16:26	17:20	18:15		20:14		21:09	21:57
5	08:51	08:15	07:15		06:59		05:52	05:07
	16:27	17:22	18:17		20:15		21:11	21:58
6	08:51	08:13	07:12		06:57		05:50	05:06
	16:28	17:24	18:19		20:17		21:13	21:59
7	08:50	08:11	07:10		06:54		05:48	05:05
	16:30	17:26	18:21		20:19		21:14	22:00
8	08:50	08:09	07:08		06:52		07:16 (9) 05:46	05:05
	16:31	17:28	18:23		20:21	1	07:17 (9) 21:16	22:01
9	08:49	08:07	07:05		06:50		07:14 (9) 05:44	05:04
	16:33	17:30	18:25		20:23	4	07:18 (9) 21:18	22:02
10	08:49	08:05	07:03		06:47		07:11 (9) 05:42	05:04
	16:34	17:32	18:27		20:25	7	07:18 (9) 21:20	22:03
11	08:48	08:03	07:00		06:45		07:09 (9) 05:40	05:03
	16:36	17:34	18:29		20:27	10	07:19 (9) 21:21	22:04
12	08:47	08:01	06:58		06:42		07:07 (9) 05:38	05:03
	16:37	17:36	18:31		20:28	12	07:19 (9) 21:23	22:05
13	08:46	07:59	06:56	07:20 (11)	06:40		07:04 (9) 05:37	05:02
	16:39	17:38	18:33	3 07:23 (11)	20:30	15	07:19 (9) 21:25	22:05
14	08:46	07:57	06:53	07:17 (11)	06:38		07:02 (9) 05:35	05:02
	16:40	17:40	18:34	7 07:24 (11)	20:32	17	07:19 (9) 21:27	22:06
15	08:45	07:55	06:51	07:15 (11)	06:35		07:00 (9) 05:33	05:02
	16:42	17:42	18:36	10 07:25 (11)	20:34	19	07:19 (9) 21:28	22:06
16	08:44	07:53	06:48	07:12 (11)	06:33		06:57 (9) 05:31	05:02
	16:44	17:44	18:38	13 07:25 (11)	20:36	20	07:17 (9) 21:30	22:07
17	08:43	07:51	06:46	07:10 (11)	06:31		06:55 (9) 05:30	05:02
	16:45	17:46	18:40	15 07:25 (11)	20:38	22	07:17 (9) 21:32	22:08
18	08:42	07:49	06:43	07:07 (11)	06:28		06:55 (9) 05:28	05:02
	16:47	17:48	18:42	17 07:24 (11)	20:40	21	07:16 (9) 21:33	22:08
19	08:40	07:47	06:41	07:05 (11)	06:26		06:56 (9) 05:27	05:02
	16:49	17:50	18:44	19 07:24 (11)	20:41	19	07:15 (9) 21:35	22:08
20	08:39	07:45	06:39	07:02 (11)	06:24		06:56 (9) 05:25	05:02
	16:51	17:52	18:46	21 07:23 (11)	20:43	17	07:13 (9) 21:36	22:09
21	08:38	07:42	06:36	07:03 (11)	06:22		06:58 (9) 05:24	05:02
	16:53	17:54	18:48	20 07:23 (11)	20:45	13	07:11 (9) 21:38	22:09
22	08:37	07:40	06:34	07:03 (11)	06:19		07:00 (9) 05:22	05:02
	16:54	17:56	18:49	18 07:21 (11)	20:47	9	07:09 (9) 21:40	22:09
23	08:35	07:38	06:31	07:04 (11)	06:17		05:21	05:02
	16:56	17:58	18:51	16 07:20 (11)	20:49		21:41	22:09
24	08:34	07:36	06:29	07:05 (11)	06:15		05:19	05:03
	16:58	18:00	18:53	12 07:17 (11)	20:51		21:43	22:09
25	08:33	07:33	06:26	07:10 (11)	06:13		05:18	05:03
	17:00	18:02	18:55	2 07:12 (11)	20:52		21:44	22:09
26	08:31	07:31	06:24		06:10		05:17	05:03
	17:02	18:04	18:57		20:54		21:46	22:09
27	08:30	07:29	06:21		06:08		05:16	05:04
	17:04	18:06	18:59		20:56		21:47	22:09
28	08:28	07:27	06:19		06:06		05:14	05:04
	17:06	18:08	19:01		20:58		21:48	22:09
29	08:27		07:16		06:04		05:13	05:05
	17:08		20:02		21:00		21:50	22:09
30	08:25		07:14		06:02		05:12	05:06
	17:10		20:04		21:02		21:51	22:09
31	08:23		07:11				05:11	
	17:12		20:06				21:52	
Potential sun hours	250	273	367		420		494	510
Total, worst case				173		206		
Sun reduction				0.22		0.31		
Oper. time red.				1.00		1.00		
Wind dir. red.				0.64		0.64		
Total reduction				0.14		0.20		
Total, real				24		40		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** D - H004

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August			September			October			November	December
1	05:06		05:46			06:41		07:08 (9)	07:34		08:00 (11)	07:32	08:27
	22:08		21:33			20:26	10	07:18 (9)	19:12	1	08:01 (11)	17:02	16:17
2	05:07		05:48			06:42		07:10 (9)	07:36			07:34	08:29
	22:08		21:31			20:24	7	07:17 (9)	19:10			17:00	16:17
3	05:08		05:50			06:44		07:11 (9)	07:38			07:36	08:30
	22:08		21:29			20:21	4	07:15 (9)	19:08			16:58	16:16
4	05:09		05:51			06:46		07:13 (9)	07:39			07:38	08:32
	22:07		21:27			20:19	1	07:14 (9)	19:05			16:56	16:15
5	05:09		05:53			06:48			07:41			07:40	08:33
	22:07		21:26			20:17			19:03			16:54	16:15
6	05:10		05:55			06:49			07:43			07:42	08:35
	22:06		21:24			20:14			19:00			16:52	16:14
7	05:11		05:56			06:51			07:45			07:44	08:36
	22:05		21:22			20:12			18:58			16:50	16:14
8	05:12		05:58			06:53			07:47			07:46	08:37
	22:05		21:20			20:09			18:55			16:48	16:13
9	05:13		06:00			06:55			07:49			07:48	08:39
	22:04		21:18			20:07			18:53			16:47	16:13
10	05:15		06:02			06:57			07:50			07:50	08:40
	22:03		21:16			20:04			18:51			16:45	16:13
11	05:16		06:03			06:58			07:52			07:52	08:41
	22:02		21:14			20:02			18:48			16:43	16:12
12	05:17		06:05			07:00			07:54			07:54	08:42
	22:01		21:12			19:59			18:46			16:41	16:12
13	05:18		06:07			07:02			07:56			07:56	08:43
	22:00		21:09			19:57			18:44			16:40	16:12
14	05:19		06:09			07:04			07:58			07:57	08:44
	21:59		21:07			19:55			18:41			16:38	16:12
15	05:21		06:10			07:05			08:00			07:59	08:45
	21:58		21:05			19:52			18:39			16:37	16:12
16	05:22		06:12			07:07			08:02			08:01	08:46
	21:57		21:03			19:50			18:37			16:35	16:12
17	05:23		06:14			07:09			08:04			08:03	08:47
	21:56		21:01			19:47			18:34			16:34	16:12
18	05:25		06:16			07:11			08:05			08:05	08:48
	21:54		20:59			19:45			18:32			16:32	16:12
19	05:26		06:18			07:12		07:54 (11)	08:07			08:07	08:48
	21:53		20:56			19:42	10	08:04 (11)	18:30			16:31	16:13
20	05:27		06:19			07:14		07:51 (11)	08:09			08:09	08:49
	21:52		20:54			19:40	15	08:06 (11)	18:27			16:29	16:13
21	05:29		06:21		07:04 (9)	07:16		07:49 (11)	08:11			08:10	08:50
	21:51		20:52	10	07:14 (9)	19:37	17	08:06 (11)	18:25			16:28	16:14
22	05:30		06:23		07:02 (9)	07:18		07:48 (11)	08:13			08:12	08:50
	21:49		20:50	14	07:16 (9)	19:35	19	08:07 (11)	18:23			16:27	16:14
23	05:32		06:25		07:01 (9)	07:20		07:47 (11)	08:15			08:14	08:51
	21:48		20:47	17	07:18 (9)	19:32	21	08:08 (11)	18:21			16:25	16:15
24	05:33		06:26		06:58 (9)	07:21		07:48 (11)	08:17			08:16	08:51
	21:46		20:45	20	07:18 (9)	19:30	20	08:08 (11)	18:19			16:24	16:15
25	05:35		06:28		06:58 (9)	07:23		07:49 (11)	07:19			08:18	08:51
	21:45		20:43	21	07:19 (9)	19:27	18	08:07 (11)	17:16			16:23	16:16
26	05:36		06:30		06:58 (9)	07:25		07:51 (11)	07:21			08:19	08:52
	21:43		20:40	22	07:20 (9)	19:25	16	08:07 (11)	17:14			16:22	16:16
27	05:38		06:32		07:00 (9)	07:27		07:53 (11)	07:23			08:21	08:52
	21:41		20:38	20	07:20 (9)	19:22	13	08:06 (11)	17:12			16:21	16:17
28	05:40		06:34		07:01 (9)	07:29		07:55 (11)	07:25			08:23	08:52
	21:40		20:36	19	07:20 (9)	19:20	11	08:06 (11)	17:10			16:20	16:18
29	05:41		06:35		07:03 (9)	07:30		07:57 (11)	07:27			08:24	08:52
	21:38		20:33	17	07:20 (9)	19:17	8	08:05 (11)	17:08			16:19	16:19
30	05:43		06:37		07:05 (9)	07:32		07:58 (11)	07:28			08:26	08:52
	21:36		20:31	15	07:20 (9)	19:15	5	08:03 (11)	17:06			16:18	16:20
31	05:45		06:39		07:06 (9)				07:30				08:52
	21:35		20:29	12	07:18 (9)				17:04				16:21
Potential sun hours	512		460			382			328			259	233
Total, worst case				187			195			1			
Sun reduction				0.26			0.25			0.23			
Oper. time red.				1.00			1.00			1.00			
Wind dir. red.				0.64			0.64			0.64			
Total reduction				0.16			0.16			0.14			
Total, real				31			31			0			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** E - H005

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March		April		May		June	
1	08:52		08:22		07:24		07:09		06:00		07:01 (8)	05:10
	16:22		17:14		18:09		20:08		21:04	7	07:08 (8)	21:54
2	08:52		08:20		07:22		07:07		05:58		07:01 (8)	05:09
	16:23		17:16		18:11		20:10		21:05	3	07:04 (8)	21:55
3	08:52		08:18		07:20		07:04		07:28 (9)	05:56		05:08
	16:25		17:18		18:13		20:12	2	07:30 (9)	21:07		21:56
4	08:52		08:17		07:17		07:02		07:25 (9)	05:54		05:08
	16:26		17:20		18:15		20:14	5	07:30 (9)	21:09		21:57
5	08:51		08:15		07:15		06:59		07:23 (9)	05:52		05:07
	16:27		17:22		18:17		20:15	8	07:31 (9)	21:11		21:58
6	08:51		08:13		07:12		06:57		07:21 (9)	05:50		05:06
	16:28		17:24		18:19		20:17	11	07:32 (9)	21:13		21:59
7	08:50		08:11		07:10		06:54		07:18 (9)	05:48		05:05
	16:30		17:26		18:21		20:19	13	07:31 (9)	21:14		22:00
8	08:50		08:09		07:08		06:52		07:16 (9)	05:46		05:05
	16:31		17:28		18:23		20:21	16	07:32 (9)	21:16		22:01
9	08:49		08:07		07:05		06:50		07:14 (9)	05:44		05:04
	16:33		17:30		18:25	2	07:31 (11)	20:23	18	07:32 (9)	21:18	22:02
10	08:49		08:05		07:03		07:27 (11)	06:47		07:11 (9)	05:42	05:04
	16:34		17:32		18:27	6	07:33 (11)	20:25	19	07:30 (9)	21:20	22:03
11	08:48		08:03		07:00		07:25 (11)	06:45		07:09 (9)	05:40	05:03
	16:36		17:34		18:29	9	07:34 (11)	20:27	21	07:30 (9)	21:21	22:04
12	08:47		08:01		06:58		07:22 (11)	06:42		07:07 (8)	05:38	05:03
	16:37		17:36		18:31	12	07:34 (11)	20:28	22	07:29 (9)	21:23	22:05
13	08:46		07:59		06:56		07:20 (11)	06:40		07:04 (8)	05:37	05:02
	16:39		17:38		18:33	14	07:34 (11)	20:30	23	07:27 (9)	21:25	22:05
14	08:46		07:57		06:53		07:17 (11)	06:38		07:02 (8)	05:35	05:02
	16:40		17:40		18:34	17	07:34 (11)	20:32	24	07:26 (9)	21:27	22:06
15	08:45		07:55		06:51		07:15 (11)	06:35		07:00 (8)	05:33	05:02
	16:42		17:42		18:36	19	07:34 (11)	20:34	24	07:24 (9)	21:28	22:07
16	08:44		07:53		06:48		07:12 (11)	06:33		06:57 (8)	05:31	05:02
	16:44		17:44		18:38	20	07:32 (11)	20:36	22	07:19 (8)	21:30	22:07
17	08:43		07:51		06:46		07:13 (11)	06:31		06:55 (8)	05:30	05:02
	16:45		17:46		18:40	19	07:32 (11)	20:38	24	07:19 (8)	21:32	22:08
18	08:42		07:49		06:43		07:13 (11)	06:28		06:54 (8)	05:28	05:02
	16:47		17:48		18:42	17	07:30 (11)	20:40	26	07:20 (8)	21:33	22:08
19	08:40		07:47		06:41		07:15 (11)	06:26		06:56 (8)	05:27	05:02
	16:49		17:50		18:44	13	07:28 (11)	20:41	24	07:20 (8)	21:35	22:08
20	08:39		07:45		06:39		07:17 (11)	06:24		06:57 (8)	05:25	05:02
	16:51		17:52		18:46	8	07:25 (11)	20:43	22	07:19 (8)	21:36	22:09
21	08:38		07:42		06:36			06:22		06:58 (8)	05:24	05:02
	16:53		17:54		18:48			20:45	21	07:19 (8)	21:38	22:09
22	08:37		07:40		06:34			06:19		06:59 (8)	05:22	05:02
	16:54		17:56		18:49			20:47	19	07:18 (8)	21:40	22:09
23	08:35		07:38		06:31			06:17		07:00 (8)	05:21	05:02
	16:56		17:58		18:51			20:49	18	07:18 (8)	21:41	22:09
24	08:34		07:36		06:29			06:15		07:01 (8)	05:19	05:03
	16:58		18:00		18:53			20:51	17	07:18 (8)	21:43	22:09
25	08:33		07:33		06:26			06:13		07:01 (8)	05:18	05:03
	17:00		18:02		18:55			20:53	16	07:17 (8)	21:44	22:09
26	08:31		07:31		06:24			06:10		07:01 (8)	05:17	05:03
	17:02		18:04		18:57			20:54	15	07:16 (8)	21:46	22:09
27	08:30		07:29		06:21			06:08		07:02 (8)	05:16	05:04
	17:04		18:06		18:59			20:56	13	07:15 (8)	21:47	22:09
28	08:28		07:27		06:19			06:06		07:01 (8)	05:14	05:04
	17:06		18:08		19:01			20:58	12	07:13 (8)	21:48	22:09
29	08:27				07:16			06:04		07:01 (8)	05:13	05:05
	17:08				20:02			21:00	10	07:11 (8)	21:50	22:09
30	08:25				07:14			06:02		07:00 (8)	05:12	05:06
	17:10				20:04			21:02	9	07:09 (8)	21:51	22:09
31	08:23				07:11					05:11		
	17:12				20:06					21:52		
Potential sun hours	250		273		367			420		494		510
Total, worst case						156			474		10	
Sun reduction						0.22			0.31		0.31	
Oper. time red.						1.00			1.00		1.00	
Wind dir. red.						0.63			0.64		0.64	
Total reduction						0.14			0.20		0.20	
Total, real						22			94		2	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** E - H005

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July	August		September		October		November	December
1	05:06	05:46		06:41		07:08 (9)	07:34	08:00 (11)	07:32	08:27
	22:08	21:33		20:26	21	07:29 (9)	19:12	13	08:13 (11)	17:02	16:17
2	05:07	05:48		06:42		07:10 (9)	07:36		08:02 (11)	07:34	08:29
	22:08	21:31		20:24	19	07:29 (9)	19:10	10	08:12 (11)	17:00	16:17
3	05:08	05:50		06:44		07:11 (9)	07:38		08:04 (11)	07:36	08:30
	22:08	21:29		20:21	18	07:29 (9)	19:08	7	08:11 (11)	16:58	16:16
4	05:09	05:51		06:46		07:13 (9)	07:39		08:06 (11)	07:38	08:32
	22:07	21:27		20:19	16	07:29 (9)	19:05	4	08:10 (11)	16:56	16:15
5	05:09	05:53		06:48		07:15 (9)	07:41			07:40	08:33
	22:07	21:26		20:17	13	07:28 (9)	19:03			16:54	16:15
6	05:10	05:55		06:49		07:16 (9)	07:43			07:42	08:35
	22:06	21:24		20:14	11	07:27 (9)	19:00			16:52	16:14
7	05:11	05:56		06:51		07:18 (9)	07:45			07:44	08:36
	22:05	21:22		20:12	9	07:27 (9)	18:58			16:50	16:14
8	05:12	05:58		06:53		07:20 (9)	07:47			07:46	08:37
	22:05	21:20		20:09	6	07:26 (9)	18:55			16:48	16:13
9	05:13	06:00		06:55		07:22 (9)	07:49			07:48	08:39
	22:04	21:18		20:07	3	07:25 (9)	18:53			16:47	16:13
10	05:15	06:02		06:57			07:50			07:50	08:40
	22:03	21:16		20:04			18:51			16:45	16:13
11	05:16	06:03	07:09 (8)	06:58			07:52			07:52	08:41
	22:02	21:14	5 07:14 (8)	20:02			18:48			16:43	16:12
12	05:17	06:05	07:09 (8)	07:00			07:54			07:54	08:42
	22:01	21:12	7 07:16 (8)	19:59			18:46			16:41	16:12
13	05:18	06:07	07:09 (8)	07:02			07:56			07:56	08:43
	22:00	21:09	9 07:18 (8)	19:57			18:44			16:40	16:12
14	05:19	06:09	07:09 (8)	07:04			07:58			07:57	08:44
	21:59	21:07	11 07:20 (8)	19:55			18:41			16:38	16:12
15	05:21	06:10	07:08 (8)	07:05			08:00			07:59	08:45
	21:58	21:05	13 07:21 (8)	19:52			18:39			16:37	16:12
16	05:22	06:12	07:08 (8)	07:07			08:02			08:01	08:46
	21:57	21:03	14 07:22 (8)	19:50			18:37			16:35	16:12
17	05:23	06:14	07:08 (8)	07:09			08:04			08:03	08:47
	21:56	21:01	15 07:23 (8)	19:47			18:34			16:34	16:12
18	05:25	06:16	07:07 (8)	07:11			08:05			08:05	08:48
	21:54	20:59	16 07:23 (8)	19:45			18:32			16:32	16:12
19	05:26	06:18	07:06 (8)	07:12			08:07			08:07	08:48
	21:53	20:56	17 07:23 (8)	19:42			18:30			16:31	16:13
20	05:27	06:19	07:06 (8)	07:14			08:09			08:09	08:49
	21:52	20:54	18 07:24 (8)	19:40			18:27			16:29	16:13
21	05:29	06:21	07:04 (8)	07:16			08:11			08:10	08:50
	21:51	20:52	19 07:23 (8)	19:37			18:25			16:28	16:14
22	05:30	06:23	07:03 (8)	07:18			08:13			08:12	08:50
	21:49	20:50	20 07:23 (8)	19:35			18:23			16:27	16:14
23	05:32	06:25	07:01 (8)	07:20		08:03 (11)	08:15			08:14	08:51
	21:48	20:47	23 07:24 (8)	19:32	5	08:08 (11)	18:21			16:25	16:15
24	05:33	06:26	06:59 (8)	07:21		08:00 (11)	08:17			08:16	08:51
	21:46	20:45	24 07:23 (8)	19:30	11	08:11 (11)	18:19			16:24	16:15
25	05:35	06:28	06:56 (8)	07:23		07:57 (11)	07:19			08:18	08:51
	21:45	20:43	26 07:22 (8)	19:27	15	08:12 (11)	17:16			16:23	16:16
26	05:36	06:30	06:58 (8)	07:25		07:55 (11)	07:21			08:19	08:52
	21:43	20:40	24 07:22 (8)	19:25	18	08:13 (11)	17:14			16:22	16:16
27	05:38	06:32	07:00 (8)	07:27		07:54 (11)	07:23			08:21	08:52
	21:41	20:38	22 07:22 (9)	19:22	20	08:14 (11)	17:12			16:21	16:17
28	05:40	06:34	07:01 (8)	07:29		07:55 (11)	07:25			08:23	08:52
	21:40	20:36	24 07:25 (9)	19:20	19	08:14 (11)	17:10			16:20	16:18
29	05:41	06:35	07:03 (8)	07:30		07:57 (11)	07:27			08:24	08:52
	21:38	20:33	24 07:27 (9)	19:17	17	08:14 (11)	17:08			16:19	16:19
30	05:43	06:37	07:05 (8)	07:32		07:58 (11)	07:28			08:26	08:52
	21:36	20:31	23 07:28 (9)	19:15	15	08:13 (11)	17:06			16:18	16:20
31	05:45	06:39	07:06 (8)				07:30				08:52
	21:35	20:29	22 07:28 (9)				17:04				16:21
Potential sun hours	512	460		382			328			259	233
Total, worst case			376		236			34			
Sun reduction			0.26		0.25			0.23			
Oper. time red.			1.00		1.00			1.00			
Wind dir. red.			0.64		0.64			0.63			
Total reduction			0.16		0.16			0.14			
Total, real			62		38			5			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** F - H006

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February	March	April	May	June	July	August	September	October	November	December		
1	08:52		09:48 (9)	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27		09:44 (9)
	16:22	11	09:59 (9)	17:14	18:09	20:08	21:04	21:54	22:08	21:33	20:26	19:12	17:02	16:17	4	09:48 (9)
2	08:52		09:49 (9)	08:20	07:22	07:07	05:58	05:09	05:07	05:48	06:42	07:36	07:34	08:29		09:42 (9)
	16:23	11	10:00 (9)	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17	7	09:49 (9)
3	08:52		09:50 (9)	08:18	07:19	07:04	05:56	05:08	05:08	05:49	06:44	07:38	07:36	08:30		09:40 (9)
	16:24	11	10:01 (9)	17:18	18:13	20:12	21:07	21:56	22:08	21:29	20:21	19:07	16:58	16:16	8	09:48 (9)
4	08:52		09:50 (9)	08:17	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38	08:32		09:39 (9)
	16:26	11	10:01 (9)	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15	10	09:49 (9)
5	08:51		09:52 (9)	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40	08:33		09:39 (9)
	16:27	11	10:03 (9)	17:22	18:17	20:15	21:11	21:58	22:07	21:26	20:17	19:03	16:54	16:15	10	09:49 (9)
6	08:51		09:52 (9)	08:13	07:12	06:57	05:50	05:06	05:10	05:55	06:49	07:43	07:42	08:35		09:39 (9)
	16:28	11	10:03 (9)	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14	10	09:49 (9)
7	08:50		09:53 (9)	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44	08:36		09:38 (9)
	16:30	10	10:03 (9)	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14	11	09:49 (9)
8	08:50		09:55 (9)	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37		09:38 (9)
	16:31	10	10:05 (9)	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:55	16:48	16:13	11	09:49 (9)
9	08:49		09:57 (9)	08:07	07:05	06:50	05:44	05:04	05:13	06:00	06:55	07:49	07:48	08:39		09:38 (9)
	16:32	8	10:05 (9)	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13	11	09:49 (9)
10	08:49		09:58 (9)	08:05	07:03	06:47	05:42	05:04	05:14	06:02	06:57	07:50	07:50	08:40		09:38 (9)
	16:34	8	10:06 (9)	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:12	11	09:49 (9)
11	08:48		10:01 (9)	08:03	07:00	06:45	05:40	05:03	05:16	06:03	06:58	07:52	07:52	08:41		09:39 (9)
	16:35	5	10:06 (9)	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:12	11	09:50 (9)
12	08:47			08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42		09:39 (9)
	16:37			17:36	18:31	20:28	21:23	22:05	22:01	21:12	19:59	18:46	16:41	16:12	12	09:51 (9)
13	08:46			07:59	06:56	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:56	08:43		09:39 (9)
	16:39			17:38	18:33	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12	12	09:51 (9)
14	08:46			07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57	08:44		09:39 (9)
	16:40			17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38	16:12	12	09:51 (9)
15	08:45			07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59	08:45		09:39 (9)
	16:42			17:42	18:36	20:34	21:28	22:07	21:58	21:05	19:52	18:39	16:37	16:12	13	09:52 (9)
16	08:44			07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01	08:46		09:40 (9)
	16:44			17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:36	16:35	16:12	12	09:52 (9)
17	08:43			07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03	08:47		09:40 (9)
	16:45			17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:33	16:12	13	09:53 (9)
18	08:42			07:49	06:43	06:28	05:28	05:02	05:24	06:16	07:11	08:05	08:05	08:48		09:40 (9)
	16:47			17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:12	12	09:52 (9)
19	08:40			07:47	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07	08:48		09:41 (9)
	16:49			17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13	12	09:53 (9)
20	08:39			07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49		09:41 (9)
	16:51			17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29	16:13	13	09:54 (9)
21	08:38			07:42	06:36	06:21	05:24	05:02	05:29	06:21	07:16	08:11	08:10	08:50		09:41 (9)
	16:52			17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:13	13	09:54 (9)
22	08:37			07:40	06:34	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50		09:42 (9)
	16:54			17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14	13	09:55 (9)
23	08:35			07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15	08:14	08:51		09:42 (9)
	16:56			17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	16:14	13	09:55 (9)
24	08:34			07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16	08:51		09:43 (9)
	16:58			18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24	16:15	12	09:55 (9)
25	08:33			07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51		09:44 (9)
	17:00			18:02	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	16:16	12	09:56 (9)
26	08:31			07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:52		09:44 (9)
	17:02			18:04	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22	16:16	12	09:56 (9)
27	08:30			07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52		09:45 (9)
	17:04			18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:22	17:12	16:21	16:17	12	09:57 (9)
28	08:28			07:26	06:19	06:06	05:14	05:04	05:40	06:33	07:29	07:25	08:23	08:52		09:45 (9)
	17:06			18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18	12	09:57 (9)
29	08:27				07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52		09:46 (9)
	17:08				20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19	12	09:58 (9)
30	08:25				07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26	08:52		09:47 (9)
	17:10				20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20	12	09:59 (9)
31	08:23				07:11		05:11		05:44	06:39		07:30		08:52		09:47 (9)
	17:12				20:06		21:52		21:35	20:29		17:04		16:21	12	09:59 (9)
Potential sun hours	250			273	367	420	494	510	513	460	382	328	259	233		
Total, worst case		107													350	
Sun reduction		0.16													0.12	
Oper. time red.		1.00													1.00	
Wind dir. red.		0.61													0.61	
Total reduction		0.10													0.07	
Total, real		11													26	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** G - H007

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March		April	May	June	July	August	September		October		November	December
1	08:52	08:22	07:24		07:09	06:00	05:10	05:07	05:46	06:41		07:34	08:01 (6)	07:33	08:28
	16:23	17:14	18:10		20:08	21:04	21:54	22:09	21:33	20:26		19:13	2 08:03 (6)	17:02	16:18
2	08:52	08:20	07:22		07:07	05:58	05:10	05:07	05:48	06:43		07:36		07:34	08:29
	16:24	17:16	18:12		20:10	21:06	21:55	22:08	21:31	20:24		19:10		17:00	16:17
3	08:52	08:19	07:20		07:04	05:56	05:09	05:08	05:50	06:44		07:38		07:36	08:31
	16:25	17:18	18:14		20:12	21:07	21:56	22:08	21:29	20:22		19:08		16:58	16:16
4	08:52	08:17	07:17		07:02	05:54	05:08	05:09	05:52	06:46		07:40		07:38	08:32
	16:26	17:20	18:16		20:14	21:09	21:57	22:07	21:28	20:19		19:05		16:56	16:16
5	08:51	08:15	07:15		06:59	05:52	05:07	05:10	05:53	06:48		07:41		07:40	08:33
	16:27	17:22	18:17		20:16	21:11	21:58	22:07	21:26	20:17		19:03		16:54	16:15
6	08:51	08:13	07:13		06:57	05:50	05:06	05:11	05:55	06:50		07:43		07:42	08:35
	16:29	17:24	18:19		20:18	21:13	21:59	22:06	21:24	20:14		19:00		16:52	16:14
7	08:51	08:11	07:10		06:55	05:48	05:06	05:12	05:57	06:51		07:45		07:44	08:36
	16:30	17:26	18:21		20:19	21:15	22:00	22:05	21:22	20:12		18:58		16:50	16:14
8	08:50	08:09	07:08		06:52	05:46	05:05	05:13	05:58	06:53		07:47		07:46	08:37
	16:31	17:28	18:23		20:21	21:16	22:01	22:05	21:20	20:09		18:56		16:49	16:14
9	08:49	08:07	07:05		06:50	05:44	05:04	05:14	06:00	06:55		07:49		07:48	08:39
	16:33	17:30	18:25		20:23	21:18	22:02	22:04	21:18	20:07		18:53		16:47	16:13
10	08:49	08:05	07:03		06:47	05:42	05:04	05:15	06:02	06:57		07:51		07:50	08:40
	16:34	17:32	18:27		20:25	21:20	22:03	22:03	21:16	20:05		18:51		16:45	16:13
11	08:48	08:04	07:01		06:45	05:40	05:04	05:16	06:04	06:59		07:53		07:52	08:41
	16:36	17:34	18:29		20:27	21:22	22:04	22:02	21:14	20:02		18:48		16:43	16:13
12	08:47	08:02	06:58	07:22 (6)	06:43	05:39	05:03	05:17	06:05	07:00		07:54		07:54	08:42
	16:37	17:36	18:31	1 07:23 (6)	20:29	21:23	22:05	22:01	21:12	20:00		18:46		16:42	16:12
13	08:47	07:59	06:56	07:20 (6)	06:40	05:37	05:03	05:18	06:07	07:02		07:56		07:56	08:43
	16:39	17:38	18:33	5 07:25 (6)	20:30	21:25	22:05	22:00	21:10	19:57		18:44		16:40	16:12
14	08:46	07:57	06:53	07:17 (6)	06:38	05:35	05:02	05:20	06:09	07:04		07:58		07:58	08:44
	16:41	17:40	18:35	8 07:25 (6)	20:32	21:27	22:06	21:59	21:08	19:55		18:41		16:38	16:12
15	08:45	07:55	06:51	07:15 (6)	06:36	05:33	05:02	05:21	06:11	07:06		08:00		08:00	08:45
	16:42	17:42	18:37	12 07:27 (6)	20:34	21:28	22:07	21:58	21:05	19:52		18:39		16:37	16:12
16	08:44	07:53	06:49	07:12 (6)	06:33	05:32	05:02	05:22	06:12	07:07	07:59 (6)	08:02		08:01	08:46
	16:44	17:44	18:38	15 07:27 (6)	20:36	21:30	22:07	21:57	21:03	19:50	3 08:02 (6)	18:37		16:35	16:12
17	08:43	07:51	06:46	07:10 (6)	06:31	05:30	05:02	05:23	06:14	07:09	07:54 (6)	08:04		08:03	08:47
	16:46	17:46	18:40	17 07:27 (6)	20:38	21:32	22:08	21:56	21:01	19:47	13 08:07 (6)	18:34		16:34	16:13
18	08:42	07:49	06:44	07:07 (6)	06:29	05:28	05:02	05:25	06:16	07:11	07:51 (6)	08:06		08:05	08:48
	16:47	17:48	18:42	20 07:27 (6)	20:40	21:33	22:08	21:55	20:59	19:45	17 08:08 (6)	18:32		16:32	16:13
19	08:41	07:47	06:41	07:05 (6)	06:26	05:27	05:02	05:26	06:18	07:13	07:49 (6)	08:07		08:07	08:48
	16:49	17:50	18:44	22 07:27 (6)	20:42	21:35	22:08	21:53	20:57	19:42	20 08:09 (6)	18:30		16:31	16:13
20	08:39	07:45	06:39	07:03 (6)	06:24	05:25	05:02	05:28	06:20	07:14	07:48 (6)	08:09		08:09	08:49
	16:51	17:52	18:46	24 07:27 (6)	20:43	21:37	22:09	21:52	20:54	19:40	22 08:10 (6)	18:28		16:30	16:13
21	08:38	07:43	06:36	07:01 (6)	06:22	05:24	05:02	05:29	06:21	07:16	07:47 (6)	08:11		08:11	08:50
	16:53	17:54	18:48	25 07:26 (6)	20:45	21:38	22:09	21:51	20:52	19:37	24 08:11 (6)	18:25		16:28	16:14
22	08:37	07:40	06:34	07:01 (6)	06:20	05:22	05:02	05:31	06:23	07:18	07:46 (6)	08:13		08:12	08:50
	16:55	17:56	18:50	25 07:26 (6)	20:47	21:40	22:09	21:49	20:50	19:35	25 08:11 (6)	18:23		16:27	16:14
23	08:36	07:38	06:31	07:01 (6)	06:17	05:21	05:03	05:32	06:25	07:20	07:46 (6)	08:15		08:14	08:51
	16:57	17:58	18:52	23 07:24 (6)	20:49	21:41	22:09	21:48	20:48	19:32	25 08:11 (6)	18:21		16:26	16:15
24	08:34	07:36	06:29	07:03 (6)	06:15	05:20	05:03	05:34	06:27	07:22	07:48 (6)	08:17		08:16	08:51
	16:58	18:00	18:53	20 07:23 (6)	20:51	21:43	22:10	21:46	20:45	19:30	23 08:11 (6)	18:19		16:25	16:15
25	08:33	07:34	06:26	07:03 (6)	06:13	05:18	05:03	05:35	06:28	07:23	07:50 (6)	07:19		08:18	08:52
	17:00	18:02	18:55	18 07:21 (6)	20:53	21:44	22:10	21:45	20:43	19:27	21 08:11 (6)	17:17		16:23	16:16
26	08:31	07:31	06:24	07:05 (6)	06:11	05:17	05:04	05:37	06:30	07:25	07:51 (6)	07:21		08:19	08:52
	17:02	18:04	18:57	14 07:19 (6)	20:55	21:46	22:10	21:43	20:41	19:25	18 08:09 (6)	17:14		16:22	16:17
27	08:30	07:29	06:22	07:08 (6)	06:08	05:16	05:04	05:38	06:32	07:27	07:53 (6)	07:23		08:21	08:52
	17:04	18:06	18:59	7 07:15 (6)	20:56	21:47	22:09	21:42	20:38	19:23	16 08:09 (6)	17:12		16:21	16:18
28	08:28	07:27	06:19		06:06	05:15	05:05	05:40	06:34	07:29	07:55 (6)	07:25		08:23	08:52
	17:06	18:08	19:01		20:58	21:49	22:09	21:40	20:36	19:20	13 08:08 (6)	17:10		16:20	16:18
29	08:27		07:17		06:04	05:14	05:05	05:42	06:36	07:31	07:57 (6)	07:27		08:24	08:52
	17:08		20:03		21:00	21:50	22:09	21:38	20:34	19:18	10 08:07 (6)	17:08		16:19	16:19
30	08:25		07:14		06:02	05:12	05:06	05:43	06:37	07:32	07:59 (6)	07:29		08:26	08:52
	17:10		20:05		21:02	21:51	22:09	21:37	20:31	19:15	6 08:05 (6)	17:06		16:19	16:20
31	08:24		07:12			05:11		05:45	06:39			07:31			08:52
	17:12		20:06			21:52		21:35	20:29			17:04			16:21
Potential sun hours	250	273	367		420	494	510	512	460	382		328		259	233
Total, worst case				256							256		2		
Sun reduction				0.22							0.25		0.23		
Oper. time red.				1.00							1.00		1.00		
Wind dir. red.				0.64							0.64		0.64		
Total reduction				0.14							0.16		0.14		
Total, real				36							41		0		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** H - H008

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:10	20:08	21:04	21:54	22:08	21:33	20:26	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:09	05:07	05:48	06:43	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:14	20:12	21:07	21:56	22:08	21:29	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:51	06:46	07:40	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52	05:07	05:10	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	21:58	22:06	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:55	05:48	05:06	05:12	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:56	16:49	16:13
9	08:49	08:07	07:05	06:50	05:44	05:04	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:01	06:45	05:40	05:03	05:16	06:04	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:13
12	08:47	08:01	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	22:00	21:09	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:34	16:13
18	08:42	07:49	06:44	06:29	05:28	05:02	05:25	06:16	07:11	08:05	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:28	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:28	16:30	16:13
21	08:38	07:42	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	05:02	05:31	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	21:44	22:09	21:45	20:43	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:41	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:22	17:12	16:21	16:17
28	08:28	07:27	06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:14	05:05	05:41	06:35	07:30	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:29	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:12		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** I - H009

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:10	20:08	21:04	21:54	22:08	21:33	20:26	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:09	05:07	05:48	06:43	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12	21:07	21:56	22:08	21:29	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:51	06:46	07:40	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52	05:07	05:10	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	21:58	22:06	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:55	05:48	05:06	05:12	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:56	16:49	16:13
9	08:49	08:07	07:05	06:50	05:44	05:04	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:01	06:45	05:40	05:03	05:16	06:04	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:13
12	08:47	08:01	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	22:00	21:09	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	05:33	05:02	05:21	06:11	07:06	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:07	21:56	21:01	19:47	18:34	16:34	16:12
18	08:42	07:49	06:43	06:29	05:28	05:02	05:25	06:16	07:11	08:05	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:28	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:28	16:30	16:13
21	08:38	07:42	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:10	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	05:02	05:31	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34	06:27	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	21:44	22:09	21:45	20:43	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:27	06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:12		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** J - H010

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February	March	April	May	June	July	August	September	October	November			December		
1	08:52			08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32			08:27		09:02 (10)
	16:22			17:14	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02			16:17	9	09:11 (10)
2	08:52			08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34			08:29		09:04 (10)
	16:23			17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00			16:17	8	09:12 (10)
3	08:52			08:18	07:19	07:04	05:56	05:08	05:08	05:49	06:44	07:38	07:36			08:30		09:05 (10)
	16:24			17:18	18:13	20:12	21:07	21:56	22:08	21:29	20:21	19:07	16:58			16:16	6	09:11 (10)
4	08:52			08:17	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38			08:32		09:07 (10)
	16:26			17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56			16:15	5	09:12 (10)
5	08:51			08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40			08:33		09:09 (10)
	16:27			17:22	18:17	20:15	21:11	21:58	22:06	21:26	20:17	19:03	16:54			16:15	3	09:12 (10)
6	08:51		09:24 (10)	08:13	07:12	06:57	05:50	05:06	05:10	05:55	06:49	07:43	07:42			08:35		09:10 (10)
	16:28	2	09:26 (10)	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52			16:14	2	09:12 (10)
7	08:50		09:23 (10)	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44			08:36		
	16:30	3	09:26 (10)	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50			16:14		
8	08:50		09:23 (10)	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46			08:37		
	16:31	5	09:28 (10)	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:55	16:48			16:13		
9	08:49		09:22 (10)	08:07	07:05	06:50	05:44	05:04	05:13	06:00	06:55	07:49	07:48			08:39		
	16:32	6	09:28 (10)	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47			16:13		
10	08:49		09:21 (10)	08:05	07:03	06:47	05:42	05:04	05:14	06:02	06:56	07:50	07:50			08:40		
	16:34	8	09:29 (10)	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45			16:12		
11	08:48		09:20 (10)	08:03	07:00	06:45	05:40	05:03	05:16	06:03	06:58	07:52	07:52			08:41		
	16:35	9	09:29 (10)	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43			16:12		
12	08:47		09:19 (10)	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54		08:50 (10)	08:42		
	16:37	11	09:30 (10)	17:36	18:31	20:28	21:23	22:05	22:01	21:12	19:59	18:46	16:41	8	08:58 (10)	16:12		
13	08:46		09:18 (10)	07:59	06:56	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:56		08:48 (10)	08:43		
	16:39	12	09:30 (10)	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	13	09:01 (10)	16:12		
14	08:45		09:17 (10)	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57		08:46 (10)	08:44		
	16:40	14	09:31 (10)	17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38	16	09:02 (10)	16:12		
15	08:45		09:16 (10)	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59		08:45 (10)	08:45		
	16:42	16	09:32 (10)	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	19	09:04 (10)	16:12		
16	08:44		09:15 (10)	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01		08:44 (10)	08:46		
	16:44	17	09:32 (10)	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	21	09:05 (10)	16:12		
17	08:43		09:14 (10)	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03		08:44 (10)	08:47		
	16:45	19	09:33 (10)	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:33	22	09:06 (10)	16:12		
18	08:42		09:12 (10)	07:49	06:43	06:28	05:28	05:02	05:24	06:16	07:11	08:05	08:05		08:44 (10)	08:48		
	16:47	21	09:33 (10)	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	24	09:08 (10)	16:12		
19	08:40		09:11 (10)	07:47	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07		08:44 (10)	08:48		
	16:49	22	09:33 (10)	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	24	09:08 (10)	16:13		
20	08:39		09:10 (10)	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09		08:44 (10)	08:49		
	16:51	24	09:34 (10)	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29	25	09:09 (10)	16:13		
21	08:38		09:08 (10)	07:42	06:36	06:21	05:24	05:02	05:29	06:21	07:16	08:11	08:10		08:44 (10)	08:50		
	16:52	25	09:33 (10)	17:54	18:48	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	25	09:09 (10)	16:13		
22	08:37		09:09 (10)	07:40	06:34	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12		08:46 (10)	08:50		
	16:54	25	09:34 (10)	17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	24	09:10 (10)	16:14		
23	08:35		09:09 (10)	07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15	08:14		08:48 (10)	08:51		
	16:56	24	09:33 (10)	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	22	09:10 (10)	16:14		
24	08:34		09:10 (10)	07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16		08:49 (10)	08:51		
	16:58	24	09:34 (10)	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24	21	09:10 (10)	16:15		
25	08:33		09:11 (10)	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:18		08:51 (10)	08:51		
	17:00	22	09:33 (10)	18:02	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	19	09:10 (10)	16:16		
26	08:31		09:11 (10)	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19		08:53 (10)	08:52		
	17:02	21	09:32 (10)	18:04	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22	17	09:10 (10)	16:16		
27	08:30		09:13 (10)	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21		08:55 (10)	08:52		
	17:04	19	09:32 (10)	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16	09:11 (10)	16:17		
28	08:28		09:14 (10)	07:26	06:19	06:06	05:14	05:04	05:40	06:33	07:29	07:25	08:23		08:57 (10)	08:52		
	17:06	16	09:30 (10)	18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	14	09:11 (10)	16:18		
29	08:27		09:16 (10)		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24		08:59 (10)	08:52		
	17:08	13	09:29 (10)		20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	13	09:12 (10)	16:19		
30	08:25		09:19 (10)		07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26		09:00 (10)	08:52		
	17:10	7	09:26 (10)		20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	11	09:11 (10)	16:20		
31	08:23				07:11		05:11		05:44	06:39		07:30				08:52		
	17:12				20:06		21:52		21:35	20:29		17:04				16:21		
Potential sun hours	250			273	367	420	494	510	513	460	382	328	259			233		
Total, worst case		385												354			33	
Sun reduction		0.16												0.20			0.12	
Oper. time red.		1.00												1.00			1.00	
Wind dir. red.		0.61												0.61			0.61	
Total reduction		0.10												0.12			0.07	
Total, real		38												43			2	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** K - H011

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May			June		July		August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00			05:10		05:06		05:46	06:40	07:34	07:32	08:27
	16:22	17:14	18:09	20:08	21:03			21:53	20	21:19 (9)	28	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:06	05:58			05:09		20:59 (9)		21:32 (9)	06:42	07:36	07:34	08:29
	16:23	17:15	18:11	20:10	21:05			21:55	21	21:20 (9)	27	21:31	20:24	19:10	17:00	16:16
3	08:52	08:18	07:19	07:04	05:55			05:08		20:58 (9)		21:32 (9)	06:44	07:37	07:36	08:30
	16:24	17:17	18:13	20:12	21:07			21:56	23	21:21 (9)	27	21:29	20:21	19:07	16:58	16:16
4	08:51	08:16	07:17	07:02	05:53			05:07		20:59 (9)		21:06 (9)	06:46	07:39	07:38	08:32
	16:26	17:19	18:15	20:13	21:09			21:57	23	21:22 (9)	26	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:51			05:07		20:59 (9)		21:05 (9)	06:48	07:41	07:40	08:33
	16:27	17:21	18:17	20:15	21:11			21:58	24	21:23 (9)	25	21:25	20:16	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:49			05:06		20:59 (9)		21:05 (9)	06:49	07:43	07:42	08:35
	16:28	17:23	18:19	20:17	21:12			21:59	24	21:23 (9)	25	21:23	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48			05:05		21:00 (9)		21:05 (9)	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14			22:00	25	21:25 (9)	25	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46			05:05		20:59 (9)		21:06 (9)	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16			22:01	26	21:25 (9)	23	21:20	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:49	05:44			05:04		21:00 (9)		21:06 (9)	06:55	07:48	07:48	08:38
	16:32	17:30	18:25	20:23	21:18			22:02	26	21:26 (9)	22	21:18	20:07	18:53	16:46	16:13
10	08:48	08:05	07:03	06:47	05:42			05:04		21:01 (9)		21:06 (9)	06:56	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:19			22:03	27	21:28 (9)	22	21:15	20:04	18:50	16:45	16:12
11	08:48	08:03	07:00	06:45	05:40			05:03		21:00 (9)		21:06 (9)	06:58	07:52	07:52	08:41
	16:35	17:34	18:29	20:26	21:21			22:04	28	21:28 (9)	21	21:13	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38			05:03		21:01 (9)		21:06 (9)	07:00	07:54	07:53	08:42
	16:37	17:36	18:31	20:28	21:23			22:04	26	21:27 (9)	20	21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:55	06:40	05:36			05:02		21:01 (9)		21:06 (9)	07:02	07:56	07:55	08:43
	16:39	17:38	18:32	20:30	21:25			22:05	26	21:27 (9)	19	21:09	19:57	18:43	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35			05:02		21:02 (9)		21:08 (9)	07:03	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:26			22:06	24	21:26 (9)	17	21:25 (9)	19:54	18:41	16:38	16:12
15	08:44	07:55	06:51	06:35	05:33			05:02		21:01 (9)		21:08 (9)	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28			22:06	24	21:25 (9)	16	21:24 (9)	19:52	18:39	16:36	16:12
16	08:43	07:53	06:48	06:33	05:31			05:02		21:01 (9)		21:08 (9)	07:07	08:01	08:01	08:46
	16:44	17:44	18:38	20:36	21:30			22:07	23	21:24 (9)	15	21:23 (9)	19:49	18:36	16:35	16:12
17	08:42	07:51	06:46	06:31	05:30			05:02		21:02 (9)		21:08 (9)	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:31			22:07	22	21:24 (9)	13	21:21 (9)	19:47	18:34	16:33	16:12
18	08:41	07:49	06:43	06:28	05:28			05:02		21:02 (9)		21:08 (9)	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:39	21:33			22:08	22	21:24 (9)	12	21:20 (9)	19:44	18:32	16:32	16:12
19	08:40	07:47	06:41	06:26	05:27			05:02		21:02 (9)		21:09 (9)	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35			22:08	22	21:24 (9)	11	21:20 (9)	19:42	18:30	16:31	16:13
20	08:39	07:44	06:38	06:24	05:25		21:02 (9)	05:02		21:03 (9)		21:09 (9)	07:14	08:09	08:08	08:49
	16:51	17:52	18:46	20:43	21:36	2	21:04 (9)	22:08	22	21:25 (9)	9	21:18 (9)	19:39	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:24		21:01 (9)	05:02		21:03 (9)		21:10 (9)	07:16	08:11	08:10	08:49
	16:52	17:54	18:47	20:45	21:38	3	21:04 (9)	22:09	22	21:25 (9)	7	21:17 (9)	19:37	18:25	16:28	16:13
22	08:37	07:40	06:33	06:19	05:22		21:00 (9)	05:02		21:03 (9)		21:11 (9)	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:39	6	21:06 (9)	22:09	22	21:25 (9)	5	21:16 (9)	19:34	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21		21:00 (9)	05:02		21:03 (9)		21:12 (9)	07:19	08:15	08:14	08:50
	16:56	17:58	18:51	20:49	21:41	8	21:08 (9)	22:09	22	21:25 (9)	2	21:14 (9)	19:32	18:21	16:25	16:14
24	08:34	07:35	06:29	06:15	05:19		21:00 (9)	05:02		21:04 (9)		06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:50	21:42	9	21:09 (9)	22:09	22	21:26 (9)		20:45	19:30	18:18	16:24	16:15
25	08:33	07:33	06:26	06:12	05:18		21:00 (9)	05:03		21:04 (9)		06:28	07:23	07:19	08:17	08:51
	17:00	18:01	18:55	20:52	21:44	11	21:11 (9)	22:09	22	21:26 (9)		20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17		20:58 (9)	05:03		21:04 (9)		06:30	07:25	07:21	08:19	08:51
	17:02	18:03	18:57	20:54	21:45	13	21:11 (9)	22:09	22	21:26 (9)		20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:15		20:58 (9)	05:04		21:04 (9)		06:32	07:27	07:22	08:21	08:52
	17:04	18:05	18:59	20:56	21:47	14	21:12 (9)	22:09	23	21:27 (9)		20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14		20:58 (9)	05:04		21:04 (9)		06:33	07:28	07:24	08:22	08:52
	17:06	18:07	19:00	20:58	21:48	16	21:14 (9)	22:09	24	21:28 (9)		20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13		20:58 (9)	05:05		21:04 (9)		06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:50	17	21:15 (9)	22:09	25	21:29 (9)		20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12		20:58 (9)	05:05		21:05 (9)		06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	18	21:16 (9)	22:08	26	21:31 (9)		20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11		20:59 (9)					06:39		07:30		08:52
	17:12		20:06		21:52	19	21:18 (9)					20:28		17:04		16:21
Potential sun hours	250	273	367	420	494			510		512		460	382	328	259	233
Total, worst case						136			708		417					
Sun reduction						0.31			0.26		0.22					
Oper. time red.						1.00			1.00		1.00					
Wind dir. red.						0.60			0.60		0.60					
Total reduction						0.19			0.16		0.13					
Total, real						26			110		56					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** L - H012

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April		May	June	July	August		September		October	November	December
1	08:52	08:22	07:24	07:09		06:00	05:10	05:06	05:46		06:41		19:36 (3)	07:34	07:32	08:27
	16:22	17:14	18:10	20:08		21:04	21:54	22:08	21:33		20:26	22	19:58 (3)	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	19:42 (3)	05:58	05:09	05:07	05:48		06:42		19:36 (3)	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	1	19:43 (3)	21:05	21:55	22:08	21:31	20:24	20	19:56 (3)	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	19:40 (3)	05:56	05:08	05:08	05:50		06:44		19:34 (3)	07:38	07:36	08:30
	16:25	17:18	18:13	20:12	5	19:45 (3)	21:07	21:56	22:08	21:29	20:22	19	19:53 (3)	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	19:40 (3)	05:54	05:08	05:09	05:51		06:46		19:34 (3)	07:40	07:38	08:32
	16:26	17:20	18:15	20:14	7	19:47 (3)	21:09	21:57	22:07	21:28	20:19	17	19:51 (3)	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	19:38 (3)	05:52	05:07	05:10	05:53		06:48		19:34 (3)	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	10	19:48 (3)	21:11	21:58	22:07	21:26	20:17	15	19:49 (3)	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	19:38 (3)	05:50	05:06	05:11	05:55		06:50		19:34 (3)	07:43	07:42	08:35
	16:28	17:24	18:19	20:17	12	19:50 (3)	21:13	21:59	22:06	21:24	20:14	13	19:47 (3)	19:00	16:52	16:14
7	08:50	08:11	07:10	06:55	19:37 (3)	05:48	05:05	05:11	05:57		06:51		19:33 (3)	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	15	19:52 (3)	21:14	22:00	22:05	21:22	20:12	11	19:44 (3)	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	19:37 (3)	05:46	05:05	05:12	05:58		06:53		19:34 (3)	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	17	19:54 (3)	21:16	22:01	22:05	21:20	20:09	7	19:41 (3)	18:56	16:49	16:13
9	08:49	08:07	07:05	06:50	19:37 (3)	05:44	05:04	05:14	06:00		06:55		19:35 (3)	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	19	19:56 (3)	21:18	22:02	22:04	21:18	20:07	4	19:39 (3)	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	19:37 (3)	05:42	05:04	05:15	06:02		06:57		19:35 (3)	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	20	19:57 (3)	21:20	22:03	22:03	21:16	20:04	1	19:36 (3)	18:51	16:45	16:13
11	08:48	08:03	07:01	06:45	19:38 (3)	05:40	05:03	05:16	06:04		06:58			07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21	19:59 (3)	21:21	22:04	22:02	21:14	20:02			18:48	16:43	16:12
12	08:47	08:01	06:58	06:43	19:39 (3)	05:38	05:03	05:17	06:05		07:00			07:54	07:54	08:42
	16:37	17:36	18:31	20:29	19	19:58 (3)	21:23	22:05	22:01	21:12	20:00			18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	19:39 (3)	05:37	05:03	05:18	06:07		07:02			07:56	07:56	08:43
	16:39	17:38	18:33	20:30	17	19:56 (3)	21:25	22:05	22:00	21:10	19:57			18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	19:41 (3)	05:35	05:02	05:19	06:09		07:04			07:58	07:58	08:44
	16:40	17:40	18:35	20:32	13	19:54 (3)	21:27	22:06	21:59	21:07	19:55			18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	19:44 (3)	05:33	05:02	05:21	06:11		07:05			08:00	07:59	08:45
	16:42	17:42	18:36	20:34	7	19:51 (3)	21:28	22:07	21:58	21:05	19:52			18:39	16:37	16:12
16	08:44	07:53	06:48	06:33		05:32	05:02	05:22	06:12		07:07			08:02	08:01	08:46
	16:44	17:44	18:38	20:36		21:30	22:07	21:57	21:03		19:50			18:37	16:35	16:12
17	08:43	07:51	06:46	06:31		05:30	05:02	05:23	06:14		07:09			08:04	08:03	08:47
	16:46	17:46	18:40	20:38		21:32	22:08	21:56	21:01		19:47			18:34	16:34	16:12
18	08:42	07:49	06:43	06:28		05:28	05:02	05:25	06:16		07:11			08:05	08:05	08:48
	16:47	17:48	18:42	20:40		21:33	22:08	21:55	20:59		19:45			18:32	16:32	16:13
19	08:40	07:47	06:41	06:26		05:27	05:02	05:26	06:18		07:13			08:07	08:07	08:48
	16:49	17:50	18:44	20:41		21:35	22:08	21:53	20:56		19:42			18:30	16:31	16:13
20	08:39	07:45	06:39	06:24		05:25	05:02	05:28	06:19		07:14			08:09	08:09	08:49
	16:51	17:52	18:46	20:43		21:37	22:09	21:52	20:54		19:40			18:28	16:29	16:13
21	08:38	07:42	06:36	06:22		05:24	05:02	05:29	06:21		07:16			08:11	08:11	08:50
	16:53	17:54	18:48	20:45		21:38	22:09	21:51	20:52		19:37			18:25	16:28	16:14
22	08:37	07:40	06:34	06:19		05:22	05:02	05:30	06:23		07:18			08:13	08:12	08:50
	16:55	17:56	18:50	20:47		21:40	22:09	21:49	20:50		19:35			18:23	16:27	16:14
23	08:36	07:38	06:31	06:17		05:21	05:02	05:32	06:25		07:20			08:15	08:14	08:51
	16:56	17:58	18:51	20:49		21:41	22:09	21:48	20:47		19:32			18:21	16:26	16:15
24	08:34	07:36	06:29	06:15		05:20	05:03	05:33	06:27		07:21			08:17	08:16	08:51
	16:58	18:00	18:53	20:51		21:43	22:09	21:46	20:45		19:30			18:19	16:24	16:15
25	08:33	07:33	06:26	06:13		05:18	05:03	05:35	06:28		07:23			07:19	08:18	08:51
	17:00	18:02	18:55	20:53		21:44	22:09	21:45	20:43		19:27			17:16	16:23	16:16
26	08:31	07:31	06:24	06:10		05:17	05:04	05:37	06:30		07:25			07:21	08:19	08:52
	17:02	18:04	18:57	20:54		21:46	22:09	21:43	20:41		19:25			17:14	16:22	16:17
27	08:30	07:29	06:21	06:08		05:16	05:04	05:38	06:32		07:27			07:23	08:21	08:52
	17:04	18:06	18:59	20:56		21:47	22:09	21:42	20:38		19:22			17:12	16:21	16:17
28	08:28	07:27	06:19	06:06		05:15	05:04	05:40	06:34	19:44 (3)	07:29			07:25	08:23	08:52
	17:06	18:08	19:01	20:58		21:48	22:09	21:40	20:36	8 19:52 (3)	19:20			17:10	16:20	16:18
29	08:27		07:16	06:04		05:13	05:05	05:41	06:35	19:41 (3)	07:30			07:27	08:24	08:52
	17:08		20:03	21:00		21:50	22:09	21:38	20:33	14 19:55 (3)	19:17			17:08	16:19	16:19
30	08:25		07:14	06:02		05:12	05:06	05:43	06:37	19:40 (3)	07:32			07:29	08:26	08:52
	17:10		20:04	21:02		21:51	22:09	21:37	20:31	17 19:57 (3)	19:15			17:06	16:18	16:20
31	08:24		07:12			05:11		05:45	06:39	19:37 (3)				07:30		08:52
	17:12		20:06			21:52		21:35	20:29	20 19:57 (3)				17:04		16:21
Potential sun hours	250	273	367	420		494	510	512	460		382		328	259	233	
Total, worst case					183					59		129				
Sun reduction					0.31					0.26		0.25				
Oper. time red.					1.00					1.00		1.00				
Wind dir. red.					0.64					0.64		0.64				
Total reduction					0.20					0.16		0.16				
Total, real					36					10		21				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** M - H013

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February	March	April	May	June	July	August	September	October	November	December		
1	08:52		09:54 (9)	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27		09:48 (9)
	16:22	5	09:59 (9)	17:14	18:09	20:08	21:04	21:54	22:08	21:33	20:26	19:12	17:02	16:17	1	09:49 (9)
2	08:52		09:55 (9)	08:20	07:22	07:07	05:58	05:09	05:07	05:48	06:42	07:36	07:34	08:29		09:47 (9)
	16:23	5	10:00 (9)	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17	2	09:49 (9)
3	08:52		09:56 (9)	08:18	07:19	07:04	05:56	05:08	05:08	05:49	06:44	07:38	07:36	08:30		09:46 (9)
	16:24	5	10:01 (9)	17:18	18:13	20:12	21:07	21:56	22:08	21:29	20:21	19:07	16:58	16:16	2	09:48 (9)
4	08:52		09:56 (9)	08:17	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38	08:32		09:45 (9)
	16:26	5	10:01 (9)	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15	4	09:49 (9)
5	08:51		09:58 (9)	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40	08:33		09:45 (9)
	16:27	5	10:03 (9)	17:22	18:17	20:15	21:11	21:58	22:07	21:26	20:17	19:03	16:54	16:15	4	09:49 (9)
6	08:51		09:59 (9)	08:13	07:12	06:57	05:50	05:06	05:10	05:55	06:49	07:43	07:42	08:35		09:45 (9)
	16:28	4	10:03 (9)	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14	4	09:49 (9)
7	08:50		09:59 (9)	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44	08:36		09:44 (9)
	16:30	4	10:03 (9)	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14	5	09:49 (9)
8	08:50		10:01 (9)	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37		09:45 (9)
	16:31	4	10:05 (9)	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:55	16:48	16:13	4	09:49 (9)
9	08:49		10:02 (9)	08:07	07:05	06:50	05:44	05:04	05:13	06:00	06:55	07:49	07:48	08:39		09:44 (9)
	16:32	3	10:05 (9)	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13	5	09:49 (9)
10	08:49		10:04 (9)	08:05	07:03	06:47	05:42	05:04	05:14	06:02	06:57	07:50	07:50	08:40		09:44 (9)
	16:34	2	10:06 (9)	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:12	5	09:49 (9)
11	08:48		10:06 (9)	08:03	07:00	06:45	05:40	05:03	05:16	06:03	06:58	07:52	07:52	08:41		09:45 (9)
	16:35	1	10:07 (9)	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:12	5	09:50 (9)
12	08:47			08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42		09:45 (9)
	16:37			17:36	18:31	20:28	21:23	22:05	22:01	21:12	19:59	18:46	16:41	16:12	6	09:51 (9)
13	08:46			07:59	06:56	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:56	08:43		09:45 (9)
	16:39			17:38	18:33	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12	6	09:51 (9)
14	08:46			07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57	08:44		09:45 (9)
	16:40			17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38	16:12	6	09:51 (9)
15	08:45			07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59	08:45		09:46 (9)
	16:42			17:42	18:36	20:34	21:28	22:07	21:58	21:05	19:52	18:39	16:37	16:12	6	09:52 (9)
16	08:44			07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01	08:46		09:46 (9)
	16:44			17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:36	16:35	16:12	6	09:52 (9)
17	08:43			07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03	08:47		09:47 (9)
	16:45			17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:33	16:12	6	09:53 (9)
18	08:42			07:49	06:43	06:28	05:28	05:02	05:24	06:16	07:11	08:05	08:05	08:48		09:46 (9)
	16:47			17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:12	6	09:52 (9)
19	08:40			07:47	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07	08:48		09:47 (9)
	16:49			17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13	6	09:53 (9)
20	08:39			07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49		09:48 (9)
	16:51			17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29	16:13	6	09:54 (9)
21	08:38			07:42	06:36	06:21	05:24	05:02	05:29	06:21	07:16	08:11	08:10	08:50		09:48 (9)
	16:52			17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:13	6	09:54 (9)
22	08:37			07:40	06:34	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50		09:49 (9)
	16:54			17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14	6	09:55 (9)
23	08:35			07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15	08:14	08:51		09:49 (9)
	16:56			17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	16:14	6	09:55 (9)
24	08:34			07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16	08:51		09:49 (9)
	16:58			18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24	16:15	6	09:55 (9)
25	08:33			07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51		09:50 (9)
	17:00			18:02	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	16:16	6	09:56 (9)
26	08:31			07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:52		09:50 (9)
	17:02			18:04	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22	16:16	6	09:56 (9)
27	08:30			07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52		09:51 (9)
	17:04			18:06	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17	6	09:57 (9)
28	08:28			07:26	06:19	06:06	05:14	05:04	05:40	06:33	07:29	07:25	08:23	08:52		09:51 (9)
	17:06			18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18	6	09:57 (9)
29	08:27				07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52		09:52 (9)
	17:08				20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19	6	09:58 (9)
30	08:25				07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26	08:52		09:53 (9)
	17:10				20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20	6	09:59 (9)
31	08:23				07:11		05:11		05:44	06:39		07:30		08:52		09:54 (9)
	17:12				20:06		21:52		21:35	20:29		17:04		16:21	5	09:59 (9)
Potential sun hours	250			273	367	420	494	510	513	460	382	328	259	233		
Total, worst case		43													160	
Sun reduction		0.16													0.12	
Oper. time red.		1.00													1.00	
Wind dir. red.		0.61													0.61	
Total reduction		0.10													0.07	
Total, real		4													12	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** N - H014

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March			April			May			June		
1	08:52		08:22		07:24			07:09			06:00			05:10		05:48 (4)
	16:23		17:14		18:10			20:08			21:04			21:54	2	05:50 (4)
2	08:52		08:20		07:22			07:07			05:58			05:10		05:48 (4)
	16:24		17:16		18:12			20:10			21:06			21:55	3	05:51 (4)
3	08:52		08:19		07:20			07:04			05:56			05:09		05:49 (4)
	16:25		17:18		18:14			20:12			21:07			21:56	3	05:52 (4)
4	08:52		08:17		07:17			07:02		07:26 (5)	05:54			05:08		05:49 (4)
	16:26		17:20		18:16			20:14	1	07:27 (5)	21:09			21:57	3	05:52 (4)
5	08:51		08:15		07:15			06:59		07:23 (5)	05:52			05:07		05:49 (4)
	16:27		17:22		18:17			20:16	3	07:26 (5)	21:11			21:58	3	05:52 (4)
6	08:51		08:13		07:13			06:57		07:22 (5)	05:50			05:06		05:50 (4)
	16:29		17:24		18:19			20:18	5	07:27 (5)	21:13			21:59	3	05:53 (4)
7	08:51		08:11		07:10			06:55		07:23 (5)	05:48			05:06		05:50 (4)
	16:30		17:26		18:21			20:19	4	07:27 (5)	21:15			22:00	3	05:53 (4)
8	08:50		08:09		07:08			06:52		07:24 (5)	05:46			05:05		05:51 (4)
	16:31		17:28		18:23			20:21	3	07:27 (5)	21:16			22:01	2	05:53 (4)
9	08:49		08:07		07:05			06:50		07:25 (5)	05:44			05:04		05:51 (4)
	16:33		17:30		18:25			20:23	3	07:28 (5)	21:18			22:02	2	05:53 (4)
10	08:49		08:05		07:03			06:47		07:25 (5)	05:42			05:04		05:51 (4)
	16:34		17:32		18:27			20:25	3	07:28 (5)	21:20			22:03	3	05:54 (4)
11	08:48		08:04		07:01			06:45		07:26 (5)	05:40			05:04		05:52 (4)
	16:36		17:34		18:29			20:27	3	07:29 (5)	21:22			22:04	3	05:55 (4)
12	08:47		08:02		06:58			06:43		07:27 (5)	05:39			05:03		05:52 (4)
	16:37		17:36		18:31			20:29	4	07:31 (5)	21:23			22:05	2	05:54 (4)
13	08:47		07:59		06:56			06:40		07:27 (5)	05:37			05:03		05:52 (4)
	16:39		17:38		18:33			20:30	5	07:32 (5)	21:25			22:05	3	05:55 (4)
14	08:46		07:57		06:53		07:17 (6)	06:38		07:27 (5)	05:35			05:02		05:53 (4)
	16:41		17:40		18:35	3	07:20 (6)	20:32	8	07:35 (5)	21:27			22:06	3	05:56 (4)
15	08:45		07:55		06:51		07:15 (6)	06:36		07:29 (5)	05:33			05:02		05:53 (4)
	16:42		17:42		18:37	6	07:21 (6)	20:34	15	07:44 (5)	21:28			22:07	3	05:56 (4)
16	08:44		07:53		06:49		07:12 (6)	06:33		07:35 (5)	05:32			05:02		05:54 (4)
	16:44		17:44		18:38	10	07:22 (6)	20:36	3	07:38 (5)	21:30			22:07	2	05:56 (4)
17	08:43		07:51		06:46		07:10 (6)	06:31			05:30			05:02		05:54 (4)
	16:46		17:46		18:40	13	07:23 (6)	20:38			21:32			22:08	3	05:57 (4)
18	08:42		07:49		06:44		07:07 (6)	06:29			05:28			05:02		05:54 (4)
	16:47		17:48		18:42	16	07:23 (6)	20:40			21:33			22:08	3	05:57 (4)
19	08:41		07:47		06:41		07:05 (6)	06:26			05:27			05:02		05:54 (4)
	16:49		17:50		18:44	18	07:23 (6)	20:42			21:35			22:08	3	05:57 (4)
20	08:39		07:45		06:39		07:03 (6)	06:24			05:25			05:02		05:55 (4)
	16:51		17:52		18:46	21	07:24 (6)	20:43			21:37			22:09	2	05:57 (4)
21	08:38		07:43		06:36		07:00 (6)	06:22			05:24			05:02		05:55 (4)
	16:53		17:54		18:48	23	07:23 (6)	20:45			21:38			22:09	2	05:57 (4)
22	08:37		07:40		06:34		06:58 (6)	06:20			05:22			05:02		05:55 (4)
	16:55		17:56		18:50	25	07:23 (6)	20:47			21:40			22:09	2	05:57 (4)
23	08:36		07:38		06:31		06:57 (6)	06:17			05:21			05:03		05:56 (4)
	16:57		17:58		18:52	24	07:21 (6)	20:49			21:41			22:09	2	05:58 (4)
24	08:34		07:36		06:29		06:58 (6)	06:15			05:20			05:03		05:55 (4)
	16:58		18:00		18:53	23	07:21 (6)	20:51			21:43			22:10	3	05:58 (4)
25	08:33		07:34		06:26		06:58 (6)	06:13			05:18		05:48 (4)	05:03		05:55 (4)
	17:00		18:02		18:55	21	07:19 (6)	20:53			21:44	1	05:49 (4)	22:10	3	05:58 (4)
26	08:31		07:31		06:24		06:59 (6)	06:11			05:17		05:47 (4)	05:04		05:56 (4)
	17:02		18:04		18:57	19	07:18 (6)	20:55			21:46	2	05:49 (4)	22:10	3	05:59 (4)
27	08:30		07:29		06:22		07:00 (6)	06:08			05:16		05:47 (4)	05:04		05:55 (4)
	17:04		18:06		18:59	15	07:15 (6)	20:56			21:47	2	05:49 (4)	22:09	3	05:58 (4)
28	08:28		07:27		06:19		07:03 (6)	06:06			05:15		05:47 (4)	05:05		05:56 (4)
	17:06		18:08		19:01	9	07:12 (6)	20:58			21:49	3	05:50 (4)	22:09	3	05:59 (4)
29	08:27				07:17			06:04			05:14		05:47 (4)	05:05		05:56 (4)
	17:08				20:03			21:00			21:50	3	05:50 (4)	22:09	2	05:58 (4)
30	08:25				07:14			06:02			05:12		05:48 (4)	05:06		05:56 (4)
	17:10				20:05			21:02			21:51	2	05:50 (4)	22:09	3	05:59 (4)
31	08:24				07:12						05:11		05:48 (4)			
	17:12				20:06						21:52	2	05:50 (4)			
Potential sun hours	250		273		367			420			494			510		
Total, worst case						246			60			15			80	
Sun reduction						0.22			0.31			0.31			0.26	
Oper. time red.						1.00			1.00			1.00			1.00	
Wind dir. red.						0.64			0.65			0.64			0.64	
Total reduction						0.14			0.20			0.20			0.17	
Total, real						35			12			3			13	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** N - H014

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August			September		October	November	December
1	05:07		05:56 (4)	05:46		06:41		07:25 (5)	07:34	07:33	08:28
	22:09	3	05:59 (4)	21:33		20:26	3	07:28 (5)	19:13	17:02	16:18
2	05:07		05:56 (4)	05:48		06:43		07:24 (5)	07:36	07:34	08:29
	22:08	2	05:58 (4)	21:31		20:24	3	07:27 (5)	19:10	17:00	16:17
3	05:08		05:56 (4)	05:50		06:44		07:23 (5)	07:38	07:36	08:31
	22:08	3	05:59 (4)	21:29		20:22	3	07:26 (5)	19:08	16:58	16:16
4	05:09		05:56 (4)	05:52		06:46		07:21 (5)	07:40	07:38	08:32
	22:07	3	05:59 (4)	21:28		20:19	3	07:24 (5)	19:05	16:56	16:16
5	05:10		05:56 (4)	05:53		06:48		07:19 (5)	07:41	07:40	08:33
	22:07	3	05:59 (4)	21:26		20:17	4	07:23 (5)	19:03	16:54	16:15
6	05:11		05:56 (4)	05:55		06:50		07:18 (5)	07:43	07:42	08:35
	22:06	3	05:59 (4)	21:24		20:14	5	07:23 (5)	19:00	16:52	16:14
7	05:12		05:56 (4)	05:57		06:51		07:18 (5)	07:45	07:44	08:36
	22:05	3	05:59 (4)	21:22		20:12	4	07:22 (5)	18:58	16:50	16:14
8	05:13		05:56 (4)	05:58		06:53		07:20 (5)	07:47	07:46	08:37
	22:05	2	05:58 (4)	21:20		20:09	1	07:21 (5)	18:56	16:49	16:14
9	05:14		05:55 (4)	06:00		06:55			07:49	07:48	08:39
	22:04	3	05:58 (4)	21:18		20:07			18:53	16:47	16:13
10	05:15		05:56 (4)	06:02		06:57			07:51	07:50	08:40
	22:03	3	05:59 (4)	21:16		20:05			18:51	16:45	16:13
11	05:16		05:56 (4)	06:04		06:59			07:53	07:52	08:41
	22:02	3	05:59 (4)	21:14		20:02			18:48	16:43	16:13
12	05:17		05:56 (4)	06:05		07:00			07:54	07:54	08:42
	22:01	3	05:59 (4)	21:12		20:00			18:46	16:42	16:12
13	05:18		05:56 (4)	06:07		07:02			07:56	07:56	08:43
	22:00	3	05:59 (4)	21:10		19:57			18:44	16:40	16:12
14	05:20		05:56 (4)	06:09		07:04			07:58	07:58	08:44
	21:59	2	05:58 (4)	21:08		19:55			18:41	16:38	16:12
15	05:21		05:56 (4)	06:11		07:06		07:54 (6)	08:00	08:00	08:45
	21:58	2	05:58 (4)	21:05		19:52	7	08:01 (6)	18:39	16:37	16:12
16	05:22		05:56 (4)	06:12		07:07		07:50 (6)	08:02	08:01	08:46
	21:57	2	05:58 (4)	21:03		19:50	14	08:04 (6)	18:37	16:35	16:12
17	05:23		05:56 (4)	06:14		07:09		07:48 (6)	08:04	08:03	08:47
	21:56	3	05:59 (4)	21:01		19:47	18	08:06 (6)	18:34	16:34	16:13
18	05:25		05:57 (4)	06:16		07:11		07:46 (6)	08:06	08:05	08:48
	21:55	2	05:59 (4)	20:59		19:45	20	08:06 (6)	18:32	16:32	16:13
19	05:26			06:18		07:13		07:45 (6)	08:07	08:07	08:48
	21:53			20:57		19:42	22	08:07 (6)	18:30	16:31	16:13
20	05:28			06:20		07:14		07:44 (6)	08:09	08:09	08:49
	21:52			20:54		19:40	24	08:08 (6)	18:28	16:30	16:13
21	05:29			06:21		07:16		07:43 (6)	08:11	08:11	08:50
	21:51			20:52		19:37	25	08:08 (6)	18:25	16:28	16:14
22	05:31			06:23		07:18		07:44 (6)	08:13	08:12	08:50
	21:49			20:50		19:35	23	08:07 (6)	18:23	16:27	16:14
23	05:32			06:25		07:20		07:46 (6)	08:15	08:14	08:51
	21:48			20:48		19:32	21	08:07 (6)	18:21	16:26	16:15
24	05:34			06:27		07:22		07:48 (6)	08:17	08:16	08:51
	21:46			20:45		19:30	19	08:07 (6)	18:19	16:25	16:15
25	05:35			06:28		07:23		07:50 (6)	07:19	08:18	08:52
	21:45			20:43		19:27	17	08:07 (6)	17:17	16:23	16:16
26	05:37			06:30		07:25		07:51 (6)	07:21	08:19	08:52
	21:43			20:41		19:25	14	08:05 (6)	17:14	16:22	16:17
27	05:38			06:32	07:36 (5)	07:27		07:53 (6)	07:23	08:21	08:52
	21:42			20:38	5 07:41 (5)	19:23	11	08:04 (6)	17:12	16:21	16:18
28	05:40			06:34	07:30 (5)	07:29		07:55 (6)	07:25	08:23	08:52
	21:40			20:36	15 07:45 (5)	19:20	8	08:03 (6)	17:10	16:20	16:18
29	05:42			06:36	07:28 (5)	07:31		07:57 (6)	07:27	08:24	08:52
	21:38			20:34	8 07:36 (5)	19:18	4	08:01 (6)	17:08	16:19	16:19
30	05:43			06:37	07:28 (5)	07:32			07:29	08:26	08:52
	21:37			20:31	5 07:33 (5)	19:15			17:06	16:19	16:20
31	05:45			06:39	07:27 (5)				07:31		08:52
	21:35			20:29	4 07:31 (5)				17:04		16:21
Potential sun hours	512			460		382			328	259	233
Total, worst case		48			37		273				
Sun reduction		0.22			0.26		0.25				
Oper. time red.		1.00			1.00		1.00				
Wind dir. red.		0.64			0.65		0.64				
Total reduction		0.14			0.17		0.16				
Total, real		7			6		44				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** O - H015

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April		May		June	July	August		September		October	November	December
1	08:52	08:22	07:24	07:09		06:00		07:01 (8)	05:10	05:06	05:46		06:41	07:08 (9)	07:34	07:32	08:27
	16:22	17:14	18:09	20:08		21:04	2	07:03 (8)	21:54	22:08	21:33		20:26	13 07:21 (9)	19:12	17:02	16:17
2	08:52	08:20	07:22	07:07		05:58		07:01 (8)	05:09	05:07	05:48		06:42	07:10 (9)	07:36	07:34	08:29
	16:23	17:16	18:11	20:10		21:05	1	07:02 (8)	21:55	22:08	21:31		20:24	11 07:21 (9)	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04		05:56		07:00 (8)	05:08	05:08	05:50		06:44	07:11 (9)	07:38	07:36	08:30
	16:25	17:18	18:13	20:12		21:07	1	07:01 (8)	21:56	22:08	21:29		20:21	8 07:19 (9)	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02		05:54			05:08	05:09	05:51		06:46	07:13 (9)	07:39	07:38	08:32
	16:26	17:20	18:15	20:14		21:09			21:57	22:07	21:27		20:19	5 07:18 (9)	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59		05:52			05:07	05:09	05:53		06:48	07:15 (9)	07:41	07:40	08:33
	16:27	17:22	18:17	20:15		21:11			21:58	22:07	21:26		20:17	2 07:17 (9)	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57		05:50			05:06	05:10	05:55		06:49		07:43	07:42	08:35
	16:28	17:24	18:19	20:17		21:13			21:59	22:06	21:24		20:14		19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	07:18 (9)	05:48			05:05	05:11	05:56		06:51		07:45	07:44	08:36
	16:30	17:26	18:21	20:19	2 07:20 (9)	21:14			22:00	22:05	21:22		20:12		18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	07:16 (9)	05:46			05:05	05:12	05:58		06:53		07:47	07:46	08:37
	16:31	17:28	18:23	20:21	5 07:21 (9)	21:16			22:01	22:05	21:20		20:09		18:55	16:48	16:13
9	08:49	08:07	07:05	06:50	07:14 (9)	05:44			05:04	05:13	06:00		06:55		07:49	07:48	08:39
	16:33	17:30	18:25	20:23	8 07:22 (9)	21:18			22:02	22:04	21:18		20:07		18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	07:11 (9)	05:42			05:04	05:15	06:02	07:09 (8)	06:57		07:50	07:50	08:40
	16:34	17:32	18:27	20:25	11 07:22 (9)	21:20			22:03	22:03	21:16	1 07:10 (8)	20:04		18:51	16:45	16:13
11	08:48	08:03	07:00	06:45	07:09 (9)	05:40			05:03	05:16	06:03	07:09 (8)	06:58		07:52	07:52	08:41
	16:36	17:34	18:29	20:27	13 07:22 (9)	21:21			22:04	22:02	21:14	2 07:11 (8)	20:02		18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	07:07 (9)	05:38			05:03	05:17	06:05	07:09 (8)	07:00		07:54	07:54	08:42
	16:37	17:36	18:31	20:28	15 07:22 (9)	21:23			22:05	22:01	21:12	2 07:11 (8)	19:59		18:46	16:41	16:12
13	08:46	07:59	06:56	06:40	07:04 (9)	05:37			05:02	05:18	06:07	07:09 (8)	07:02		07:56	07:56	08:43
	16:39	17:38	18:33	20:30	17 07:21 (9)	21:25			22:05	22:00	21:09	3 07:12 (8)	19:57		18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	07:02 (9)	05:35			05:02	05:19	06:09	07:09 (8)	07:04		07:58	07:57	08:44
	16:40	17:40	18:34	20:32	18 07:20 (9)	21:27			22:06	21:59	21:07	3 07:12 (8)	19:55		18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	07:00 (9)	05:33			05:02	05:21	06:10	07:08 (8)	07:05		08:00	07:59	08:45
	16:42	17:42	18:36	20:34	20 07:20 (9)	21:28			22:07	21:58	21:05	4 07:12 (8)	19:52		18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	06:57 (8)	05:31			05:02	05:22	06:12	07:08 (8)	07:07		08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21 07:18 (9)	21:30			22:07	21:57	21:03	5 07:13 (8)	19:50		18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	06:55 (8)	05:30			05:02	05:23	06:14	07:08 (8)	07:09		08:04	08:03	08:47
	16:45	17:46	18:40	20:38	22 07:17 (9)	21:32			22:08	21:56	21:01	5 07:13 (8)	19:47		18:34	16:34	16:12
18	08:42	07:49	06:43	06:28	06:54 (8)	05:28			05:02	05:25	06:16	07:07 (8)	07:11		08:05	08:05	08:48
	16:47	17:48	18:42	20:40	21 07:15 (9)	21:33			22:08	21:54	20:59	5 07:12 (8)	19:45		18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	06:56 (8)	05:27			05:02	05:26	06:18	07:06 (8)	07:13		08:07	08:07	08:48
	16:49	17:50	18:44	20:41	17 07:13 (9)	21:35			22:08	21:53	20:56	6 07:12 (8)	19:42		18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	06:57 (8)	05:25			05:02	05:27	06:19	07:06 (8)	07:14		08:09	08:09	08:49
	16:51	17:52	18:46	20:43	8 07:05 (8)	21:36			22:09	21:52	20:54	6 07:12 (8)	19:40		18:27	16:29	16:13
21	08:38	07:42	06:36	06:22	06:58 (8)	05:24			05:02	05:29	06:21	07:04 (8)	07:16		08:11	08:10	08:50
	16:53	17:54	18:48	20:45	8 07:06 (8)	21:38			22:09	21:51	20:52	7 07:11 (8)	19:37		18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	06:59 (8)	05:22			05:02	05:30	06:23	07:03 (8)	07:18		08:13	08:12	08:50
	16:54	17:56	18:49	20:47	7 07:06 (8)	21:40			22:09	21:49	20:50	8 07:11 (8)	19:35		18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	07:00 (8)	05:21			05:02	05:32	06:25	07:01 (8)	07:20		08:15	08:14	08:51
	16:56	17:58	18:51	20:49	6 07:06 (8)	21:41			22:09	21:48	20:47	9 07:10 (8)	19:32		18:21	16:25	16:15
24	08:34	07:36	06:29	06:15	07:01 (8)	05:19			05:03	05:33	06:26	06:59 (8)	07:21		08:17	08:16	08:51
	16:58	18:00	18:53	20:51	6 07:07 (8)	21:43			22:09	21:46	20:45	17 07:16 (9)	19:30		18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	07:01 (8)	05:18			05:03	05:35	06:28	06:56 (8)	07:23		07:19	08:18	08:51
	17:00	18:02	18:55	20:53	5 07:06 (8)	21:44			22:09	21:45	20:43	22 07:18 (9)	19:27		17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	07:01 (8)	05:17			05:03	05:36	06:30	06:58 (8)	07:25		07:21	08:19	08:52
	17:02	18:04	18:57	20:54	5 07:06 (8)	21:46			22:09	21:43	20:40	22 07:20 (9)	19:25		17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	07:02 (8)	05:16			05:04	05:38	06:32	07:00 (8)	07:27		07:23	08:21	08:52
	17:04	18:06	18:59	20:56	4 07:06 (8)	21:47			22:09	21:41	20:38	21 07:21 (9)	19:22		17:12	16:21	16:17
28	08:28	07:27	06:19	06:06	07:01 (8)	05:14			05:04	05:40	06:34	07:01 (9)	07:29		07:25	08:23	08:52
	17:06	18:08	19:01	20:58	4 07:05 (8)	21:48			22:09	21:40	20:36	20 07:21 (9)	19:20		17:10	16:20	16:18
29	08:27		07:16	06:04	07:01 (8)	05:13			05:05	05:41	06:35	07:03 (9)	07:30		07:27	08:24	08:52
	17:08		20:02	21:00	3 07:04 (8)	21:50			22:09	21:38	20:33	18 07:21 (9)	19:17		17:08	16:19	16:19
30	08:25		07:14	06:02	07:00 (8)	05:12			05:06	05:43	06:37	07:05 (9)	07:32		07:28	08:26	08:52
	17:10		20:04	21:02	3 07:03 (8)	21:51			22:09	21:36	20:31	17 07:22 (9)	19:15		17:06	16:18	16:20
31	08:23		07:11			05:11				05:45	06:39	07:06 (9)			07:30		08:52
	17:12		20:06			21:52				21:35	20:29	15 07:21 (9)			17:04		16:21
Potential sun hours	250	273	367	420		494		510	512	460		382		328	259	233	
Total, worst case					249		4				218		39				
Sun reduction					0.31		0.31				0.26		0.25				
Oper. time red.					1.00		1.00				1.00		1.00				
Wind dir. red.					0.64		0.65				0.64		0.64				
Total reduction					0.20		0.20				0.16		0.16				
Total, real					49		1				36		6				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** P - H016

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April		May	June	July	August		September		October	November	December
1	08:52	08:22	07:24	07:09		06:00	05:10	05:06	05:46		06:41		19:47 (1)	07:34	07:32	08:28
	16:22	17:14	18:10	20:08		21:04	21:54	22:08	21:33		20:26	11	19:58 (1)	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07		05:58	05:09	05:07	05:48		06:43		19:48 (1)	07:36	07:34	08:29
	16:24	17:16	18:12	20:10		21:05	21:55	22:08	21:31		20:24	8	19:56 (1)	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04		05:56	05:09	05:08	05:50		06:44		19:48 (1)	07:38	07:36	08:31
	16:25	17:18	18:14	20:12		21:07	21:56	22:08	21:29		20:22	5	19:53 (1)	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02		05:54	05:08	05:09	05:51		06:46		19:50 (1)	07:40	07:38	08:32
	16:26	17:20	18:15	20:14		21:09	21:57	22:07	21:28		20:19	1	19:51 (1)	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59		05:52	05:07	05:10	05:53		06:48			07:41	07:40	08:33
	16:27	17:22	18:17	20:16		21:11	21:58	22:07	21:26		20:17			19:03	16:54	16:15
6	08:51	08:13	07:13	06:57		05:50	05:06	05:11	05:55		06:50			07:43	07:42	08:35
	16:28	17:24	18:19	20:17		21:13	21:59	22:06	21:24		20:14			19:00	16:52	16:14
7	08:50	08:11	07:10	06:55		05:48	05:05	05:11	05:57		06:51			07:45	07:44	08:36
	16:30	17:26	18:21	20:19		21:14	22:00	22:05	21:22		20:12			18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	19:53 (1)	05:46	05:05	05:13	05:58		06:53			07:47	07:46	08:37
	16:31	17:28	18:23	20:21	1 19:54 (1)	21:16	22:01	22:05	21:20		20:09			18:56	16:49	16:13
9	08:49	08:07	07:05	06:50	19:51 (1)	05:44	05:04	05:14	06:00		06:55			07:49	07:48	08:39
	16:33	17:30	18:25	20:23	5 19:56 (1)	21:18	22:02	22:04	21:18		20:07			18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	19:49 (1)	05:42	05:04	05:15	06:02		06:57			07:51	07:50	08:40
	16:34	17:32	18:27	20:25	8 19:57 (1)	21:20	22:03	22:03	21:16		20:05			18:51	16:45	16:13
11	08:48	08:03	07:01	06:45	19:48 (1)	05:40	05:03	05:16	06:04		06:58			07:52	07:52	08:41
	16:36	17:34	18:29	20:27	11 19:59 (1)	21:22	22:04	22:02	21:14		20:02			18:48	16:43	16:12
12	08:47	08:01	06:58	06:43	19:47 (1)	05:38	05:03	05:17	06:05		07:00			07:54	07:54	08:42
	16:37	17:36	18:31	20:29	14 20:01 (1)	21:23	22:05	22:01	21:12		20:00			18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	19:46 (1)	05:37	05:03	05:18	06:07		07:02			07:56	07:56	08:43
	16:39	17:38	18:33	20:30	16 20:02 (1)	21:25	22:05	22:00	21:10		19:57			18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	19:45 (1)	05:35	05:02	05:19	06:09		07:04			07:58	07:58	08:44
	16:40	17:40	18:35	20:32	19 20:04 (1)	21:27	22:06	21:59	21:07		19:55			18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	19:45 (1)	05:33	05:02	05:21	06:11		07:06			08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21 20:06 (1)	21:28	22:07	21:58	21:05		19:52			18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	19:44 (1)	05:32	05:02	05:22	06:12	19:58 (1)	07:07			08:02	08:01	08:46
	16:44	17:44	18:38	20:36	23 20:07 (1)	21:30	22:07	21:57	21:03	11 20:09 (1)	19:50			18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	19:44 (1)	05:30	05:02	05:23	06:14	19:56 (1)	07:09			08:04	08:03	08:47
	16:46	17:46	18:40	20:38	25 20:09 (1)	21:32	22:08	21:56	21:01	16 20:12 (1)	19:47			18:34	16:34	16:12
18	08:42	07:49	06:44	06:29	19:44 (1)	05:28	05:02	05:25	06:16	19:54 (1)	07:11			08:06	08:05	08:48
	16:47	17:48	18:42	20:40	27 20:11 (1)	21:33	22:08	21:55	20:59	20 20:14 (1)	19:45			18:32	16:32	16:13
19	08:41	07:47	06:41	06:26	19:44 (1)	05:27	05:02	05:26	06:18	19:52 (1)	07:13			08:07	08:07	08:48
	16:49	17:50	18:44	20:42	29 20:13 (1)	21:35	22:08	21:53	20:57	22 20:14 (1)	19:42			18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	19:44 (1)	05:25	05:02	05:28	06:19	19:51 (1)	07:14			08:09	08:09	08:49
	16:51	17:52	18:46	20:43	29 20:13 (1)	21:37	22:09	21:52	20:54	24 20:15 (1)	19:40			18:28	16:29	16:13
21	08:38	07:42	06:36	06:22	19:44 (1)	05:24	05:02	05:29	06:21	19:50 (1)	07:16			08:11	08:11	08:50
	16:53	17:54	18:48	20:45	27 20:11 (1)	21:38	22:09	21:51	20:52	26 20:16 (1)	19:37			18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	19:45 (1)	05:22	05:02	05:30	06:23	19:49 (1)	07:18			08:13	08:12	08:50
	16:55	17:56	18:50	20:47	26 20:11 (1)	21:40	22:09	21:49	20:50	27 20:16 (1)	19:35			18:23	16:27	16:14
23	08:36	07:38	06:31	06:17	19:46 (1)	05:21	05:02	05:32	06:25	19:48 (1)	07:20			08:15	08:14	08:51
	16:56	17:58	18:51	20:49	24 20:10 (1)	21:41	22:09	21:48	20:48	29 20:17 (1)	19:32			18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	19:47 (1)	05:20	05:03	05:33	06:27	19:48 (1)	07:22			08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21 20:08 (1)	21:43	22:09	21:46	20:45	29 20:17 (1)	19:30			18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	19:48 (1)	05:18	05:03	05:35	06:28	19:47 (1)	07:23			07:19	08:18	08:51
	17:00	18:02	18:55	20:53	19 20:07 (1)	21:44	22:10	21:45	20:43	27 20:14 (1)	19:27			17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	19:50 (1)	05:17	05:04	05:37	06:30	19:47 (1)	07:25			07:21	08:19	08:52
	17:02	18:04	18:57	20:54	15 20:05 (1)	21:46	22:09	21:43	20:41	25 20:12 (1)	19:25			17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	19:53 (1)	05:16	05:04	05:38	06:32	19:47 (1)	07:27			07:23	08:21	08:52
	17:04	18:06	18:59	20:56	9 20:02 (1)	21:47	22:09	21:42	20:38	23 20:10 (1)	19:22			17:12	16:21	16:17
28	08:28	07:27	06:19	06:06		05:15	05:05	05:40	06:34	19:46 (1)	07:29			07:25	08:23	08:52
	17:06	18:08	19:01	20:58		21:48	22:09	21:40	20:36	21 20:07 (1)	19:20			17:10	16:20	16:18
29	08:27		07:16	06:04		05:13	05:05	05:41	06:35	19:46 (1)	07:30			07:27	08:24	08:52
	17:08		20:03	21:00		21:50	22:09	21:38	20:34	19 20:05 (1)	19:17			17:08	16:19	16:19
30	08:25		07:14	06:02		05:12	05:06	05:43	06:37	19:47 (1)	07:32			07:29	08:26	08:52
	17:10		20:04	21:02		21:51	22:09	21:37	20:31	16 20:03 (1)	19:15			17:06	16:18	16:20
31	08:24		07:12			05:11		05:45	06:39	19:46 (1)				07:31		08:52
	17:12		20:06			21:52		21:35	20:29	14 20:00 (1)				17:04		16:21
Potential sun hours	250	273	367	420		494	510	512	460		382		328	259	233	
Total, worst case					369					349		25				
Sun reduction					0.31					0.26		0.25				
Oper. time red.					1.00					1.00		1.00				
Wind dir. red.					0.63					0.63		0.63				
Total reduction					0.19					0.16		0.16				
Total, real					71					56		4				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** Q - H018

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:09	20:08	21:03	21:53	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:19	07:04	05:56	05:08	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58	16:16
4	08:51	08:16	07:17	07:02	05:54	05:07	05:09	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52	05:07	05:09	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11	21:58	22:06	21:25	20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50	05:06	05:10	05:55	06:49	07:43	07:42	08:35
	16:28	17:24	18:19	20:17	21:12	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:50	05:44	05:04	05:13	06:00	06:55	07:49	07:48	08:38
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:48	08:05	07:03	06:47	05:42	05:04	05:14	06:02	06:56	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:00	06:45	05:40	05:03	05:16	06:03	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:26	21:21	22:04	22:02	21:13	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:56	06:40	05:37	05:02	05:18	06:07	07:02	07:56	07:55	08:43
	16:39	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:26	22:06	21:59	21:07	19:54	18:41	16:38	16:12
15	08:44	07:55	06:51	06:35	05:33	05:02	05:21	06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:43	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16:12
17	08:42	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:31	22:07	21:56	21:01	19:47	18:34	16:34	16:12
18	08:41	07:49	06:43	06:28	05:28	05:02	05:25	06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:39	21:33	22:08	21:54	20:59	19:44	18:32	16:32	16:12
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:24	05:02	05:29	06:21	07:16	08:11	08:10	08:49
	16:53	17:54	18:48	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:13
22	08:37	07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:39	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15	08:14	08:50
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	16:14
24	08:34	07:36	06:29	06:15	05:19	05:03	05:33	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:42	22:09	21:46	20:45	19:30	18:18	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:17	08:51
	17:00	18:02	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	05:04	05:40	06:33	07:28	07:24	08:22	08:52
	17:06	18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** R - H019

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:10	20:08	21:04	21:54	22:08	21:33	20:26	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:09	05:07	05:48	06:43	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12	21:07	21:56	22:08	21:29	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:51	06:46	07:40	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52	05:07	05:10	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	21:58	22:06	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:55	05:48	05:06	05:12	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:56	16:49	16:13
9	08:49	08:07	07:05	06:50	05:44	05:04	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:01	06:45	05:40	05:03	05:16	06:04	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:13
12	08:47	08:01	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	22:00	21:09	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	05:33	05:02	05:21	06:11	07:06	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:34	16:12
18	08:42	07:49	06:44	06:29	05:28	05:02	05:25	06:16	07:11	08:05	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:28	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:28	16:30	16:13
21	08:38	07:42	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:10	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	05:02	05:31	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34	06:27	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	21:44	22:09	21:45	20:43	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:41	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:27	06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:14	05:05	05:41	06:35	07:30	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:12		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** S - H020

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:09	20:08	21:03	21:53	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:19	07:04	05:56	05:08	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58	16:16
4	08:51	08:16	07:17	07:02	05:54	05:08	05:09	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52	05:07	05:09	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11	21:58	22:06	21:25	20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50	05:06	05:10	05:55	06:49	07:43	07:42	08:35
	16:28	17:24	18:19	20:17	21:12	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:50	05:44	05:04	05:13	06:00	06:55	07:49	07:48	08:38
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:48	08:05	07:03	06:47	05:42	05:04	05:14	06:02	06:56	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:00	06:45	05:40	05:03	05:16	06:03	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:26	21:21	22:04	22:02	21:13	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:56	06:40	05:37	05:02	05:18	06:07	07:02	07:56	07:55	08:43
	16:39	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:26	22:06	21:59	21:07	19:54	18:41	16:38	16:12
15	08:44	07:55	06:51	06:35	05:33	05:02	05:21	06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:43	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16:12
17	08:42	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:31	22:07	21:56	21:01	19:47	18:34	16:34	16:12
18	08:41	07:49	06:43	06:28	05:28	05:02	05:25	06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:39	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:12
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:24	05:02	05:29	06:21	07:16	08:11	08:10	08:49
	16:53	17:54	18:48	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:13
22	08:37	07:40	06:34	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:39	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15	08:14	08:50
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	16:14
24	08:34	07:36	06:29	06:15	05:19	05:03	05:33	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:42	22:09	21:46	20:45	19:30	18:18	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:17	08:51
	17:00	18:02	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	05:04	05:40	06:33	07:28	07:24	08:22	08:52
	17:06	18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** T - H021

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:19	07:04	05:56	05:08	05:08	05:49	06:44	07:38	07:36	08:30
	16:24	17:18	18:13	20:12	21:07	21:56	22:08	21:29	20:21	19:07	16:58	16:16
4	08:52	08:17	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11	21:58	22:07	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50	05:06	05:10	05:55	06:49	07:43	07:42	08:35
	16:28	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:50	05:44	05:04	05:13	06:00	06:55	07:49	07:48	08:39
	16:32	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:14	06:02	06:56	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:12
11	08:48	08:03	07:00	06:45	05:40	05:03	05:16	06:03	06:58	07:52	07:52	08:41
	16:35	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23	22:05	22:01	21:12	19:59	18:46	16:41	16:12
13	08:46	07:59	06:56	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:07	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:36	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:33	16:12
18	08:42	07:49	06:43	06:28	05:28	05:02	05:24	06:16	07:11	08:05	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:12
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:24	05:02	05:29	06:21	07:16	08:11	08:10	08:50
	16:52	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:13
22	08:37	07:40	06:34	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	16:14
24	08:34	07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24	16:15
25	08:33	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	05:04	05:40	06:33	07:29	07:25	08:23	08:52
	17:06	18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11		05:44	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	513	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** U - H022

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February	March	April	May	June	July	August	September	October	November			December		
1	08:52		09:42 (10)	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32			08:27		09:33 (10)
	16:22	25	10:07 (10)	17:14	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02			16:17	15	09:48 (10)
2	08:52		09:43 (10)	08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34			08:29		09:33 (10)
	16:23	25	10:08 (10)	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00			16:17	17	09:50 (10)
3	08:52		09:44 (10)	08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:38	07:36			08:30		09:32 (10)
	16:24	24	10:08 (10)	17:18	18:13	20:12	21:07	21:56	22:08	21:29	20:21	19:07	16:58			16:16	19	09:51 (10)
4	08:52		09:44 (10)	08:17	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38			08:32		09:32 (10)
	16:26	24	10:08 (10)	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56			16:15	20	09:52 (10)
5	08:51		09:45 (10)	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40			08:33		09:32 (10)
	16:27	24	10:09 (10)	17:22	18:17	20:15	21:11	21:58	22:06	21:26	20:17	19:03	16:54			16:15	22	09:54 (10)
6	08:51		09:46 (10)	08:13	07:12	06:57	05:49	05:06	05:10	05:55	06:49	07:43	07:42			08:35		09:32 (10)
	16:28	22	10:08 (10)	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52			16:14	22	09:54 (10)
7	08:50		09:46 (10)	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44			08:36		09:31 (10)
	16:30	22	10:08 (10)	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50			16:14	24	09:55 (10)
8	08:50		09:48 (10)	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46			08:37		09:32 (10)
	16:31	20	10:08 (10)	17:28	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48			16:13	24	09:56 (10)
9	08:49		09:49 (10)	08:07	07:05	06:50	05:44	05:04	05:13	06:00	06:55	07:49	07:48			08:39		09:32 (10)
	16:32	19	10:08 (10)	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47			16:13	25	09:57 (10)
10	08:49		09:50 (10)	08:05	07:03	06:47	05:42	05:04	05:14	06:02	06:56	07:50	07:50			08:40		09:32 (10)
	16:34	17	10:07 (10)	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45			16:12	25	09:57 (10)
11	08:48		09:51 (10)	08:03	07:00	06:45	05:40	05:03	05:16	06:03	06:58	07:52	07:52			08:41		09:33 (10)
	16:35	15	10:06 (10)	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43			16:12	25	09:58 (10)
12	08:47		09:53 (10)	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54			08:42		09:33 (10)
	16:37	12	10:05 (10)	17:36	18:31	20:28	21:23	22:05	22:01	21:11	19:59	18:46	16:41			16:12	26	09:59 (10)
13	08:46		09:55 (10)	07:59	06:56	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:56			08:43		09:33 (10)
	16:39	9	10:04 (10)	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40			16:12	26	09:59 (10)
14	08:45			07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57			08:44		09:33 (10)
	16:40			17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38			16:12	27	10:00 (10)
15	08:45			07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59			08:45		09:34 (10)
	16:42			17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36			16:12	27	10:01 (10)
16	08:44			07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01			08:46		09:34 (10)
	16:44			17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35			16:12	27	10:01 (10)
17	08:43			07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03			08:47		09:35 (10)
	16:45			17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:33			16:12	27	10:02 (10)
18	08:41			07:49	06:43	06:28	05:28	05:02	05:24	06:16	07:11	08:05	08:05			08:48		09:34 (10)
	16:47			17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32			16:12	28	10:02 (10)
19	08:40			07:47	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07			08:48		09:35 (10)
	16:49			17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31			16:13	28	10:03 (10)
20	08:39			07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09			08:49		09:36 (10)
	16:51			17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29			16:13	28	10:04 (10)
21	08:38			07:42	06:36	06:21	05:24	05:02	05:29	06:21	07:16	08:11	08:10			08:50		09:36 (10)
	16:52			17:54	18:48	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28			16:13	27	10:03 (10)
22	08:37			07:40	06:34	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12			08:50		09:37 (10)
	16:54			17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27			16:14	27	10:04 (10)
23	08:35			07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15	08:14			08:51		09:37 (10)
	16:56			17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25			16:14	27	10:04 (10)
24	08:34			07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16			08:51		09:37 (10)
	16:58			18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24			16:15	28	10:05 (10)
25	08:33			07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:18			08:51		09:38 (10)
	17:00			18:02	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23			16:16	28	10:06 (10)
26	08:31			07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19			08:52		09:38 (10)
	17:02			18:04	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22			16:16	28	10:06 (10)
27	08:30			07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21			08:52		09:39 (10)
	17:04			18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21			16:17	27	10:06 (10)
28	08:28			07:26	06:19	06:06	05:14	05:04	05:40	06:33	07:28	07:25	08:23			08:52		09:39 (10)
	17:06			18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20			16:18	28	10:07 (10)
29	08:27				07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24		09:37 (10)	08:52		09:40 (10)
	17:08				20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	8	09:45 (10)	16:19	27	10:07 (10)
30	08:25				07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26		09:34 (10)	08:52		09:41 (10)
	17:10				20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	12	09:46 (10)	16:20	26	10:07 (10)
31	08:23				07:11		05:11		05:44	06:39		07:30				08:52		09:41 (10)
	17:12				20:06		21:52		21:35	20:29		17:04				16:21	27	10:08 (10)
Potential sun hours	250			273	367	420	494	510	513	460	382	328	259			233		
Total, worst case		258												20			782	
Sun reduction		0.16												0.20			0.12	
Oper. time red.		1.00												1.00			1.00	
Wind dir. red.		0.61												0.61			0.61	
Total reduction		0.10												0.12			0.07	
Total, real		25												2			57	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** V - H023

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March			April			May			June		
1	08:52	08:22	07:24			07:09		07:40 (6)	06:00			05:10		05:41 (4)
	16:23	17:14	18:10			20:08	18	07:58 (6)	21:04			21:54	9	05:50 (4)
2	08:52	08:20	07:22			07:07		07:41 (6)	05:58			05:10		05:40 (4)
	16:24	17:16	18:12			20:10	15	07:56 (6)	21:06			21:55	11	05:51 (4)
3	08:52	08:19	07:20			07:04		07:43 (6)	05:56			05:09		05:40 (4)
	16:25	17:18	18:14			20:12	10	07:53 (6)	21:07			21:56	12	05:52 (4)
4	08:52	08:17	07:17			07:02		07:26 (5)	05:54			05:08		05:39 (4)
	16:26	17:20	18:16			20:14	1	07:27 (5)	21:09			21:57	13	05:52 (4)
5	08:51	08:15	07:15			07:00		07:23 (5)	05:52			05:07		05:38 (4)
	16:27	17:22	18:17			20:16	3	07:26 (5)	21:11			21:58	14	05:52 (4)
6	08:51	08:13	07:13			06:57		07:21 (5)	05:50			05:06		05:39 (4)
	16:29	17:24	18:19			20:18	6	07:27 (5)	21:13			21:59	14	05:53 (4)
7	08:51	08:11	07:10			06:55		07:23 (5)	05:48			05:06		05:38 (4)
	16:30	17:26	18:21			20:19	4	07:27 (5)	21:15			22:00	15	05:53 (4)
8	08:50	08:09	07:08			06:52		07:24 (5)	05:46			05:05		05:39 (4)
	16:31	17:28	18:23			20:21	3	07:27 (5)	21:16			22:01	14	05:53 (4)
9	08:49	08:07	07:05			06:50		07:25 (5)	05:44			05:04		05:39 (4)
	16:33	17:30	18:25			20:23	3	07:28 (5)	21:18			22:02	14	05:53 (4)
10	08:49	08:05	07:03			06:47		07:25 (5)	05:42			05:04		05:40 (4)
	16:34	17:32	18:27			20:25	3	07:28 (5)	21:20			22:03	14	05:54 (4)
11	08:48	08:04	07:01			06:45		07:26 (5)	05:40			05:04		05:40 (4)
	16:36	17:34	18:29			20:27	3	07:29 (5)	21:22			22:04	15	05:55 (4)
12	08:47	08:02	06:58			06:43		07:27 (5)	05:39			05:03		05:40 (4)
	16:37	17:36	18:31			20:29	4	07:31 (5)	21:23			22:05	14	05:54 (4)
13	08:47	08:00	06:56			06:40		07:27 (5)	05:37			05:03		05:40 (4)
	16:39	17:38	18:33			20:31	5	07:32 (5)	21:25			22:05	15	05:55 (4)
14	08:46	07:57	06:53			06:38		07:27 (5)	05:35			05:03		05:41 (4)
	16:41	17:40	18:35			20:32	4	07:31 (5)	21:27			22:06	15	05:56 (4)
15	08:45	07:55	06:51			06:36		07:28 (5)	05:33			05:02		05:41 (4)
	16:42	17:42	18:37			20:34	3	07:31 (5)	21:28			22:07	15	05:56 (4)
16	08:44	07:53	06:49			06:33		07:28 (5)	05:32			05:02		05:42 (4)
	16:44	17:44	18:38			20:36	3	07:31 (5)	21:30			22:07	14	05:56 (4)
17	08:43	07:51	06:46			06:31		07:27 (5)	05:30			05:02		05:42 (4)
	16:46	17:46	18:40			20:38	2	07:29 (5)	21:32			22:08	15	05:57 (4)
18	08:42	07:49	06:44			06:29		07:27 (5)	05:29			05:02		05:42 (4)
	16:47	17:48	18:42			20:40	1	07:28 (5)	21:33			22:08	15	05:57 (4)
19	08:41	07:47	06:41			06:26		07:26 (5)	05:27			05:02		05:42 (4)
	16:49	17:50	18:44			20:42	1	07:27 (5)	21:35			22:08	15	05:57 (4)
20	08:39	07:45	06:39			06:24			05:25			05:02		05:43 (4)
	16:51	17:52	18:46			20:43			21:37			22:09	14	05:57 (4)
21	08:38	07:43	06:36			06:22			05:24			05:02		05:43 (4)
	16:53	17:54	18:48			20:45			21:38			22:09	14	05:57 (4)
22	08:37	07:40	06:34		06:58 (6)	06:20			05:22			05:02		05:43 (4)
	16:55	17:56	18:50	4	07:02 (6)	20:47			21:40			22:09	14	05:57 (4)
23	08:36	07:38	06:31		06:55 (6)	06:17			05:21			05:03		05:43 (4)
	16:57	17:58	18:52	7	07:02 (6)	20:49			21:41			22:09	15	05:58 (4)
24	08:34	07:36	06:29		06:53 (6)	06:15			05:20			05:03		05:43 (4)
	16:58	18:00	18:53	10	07:03 (6)	20:51			21:43			22:10	15	05:58 (4)
25	08:33	07:34	06:26		06:50 (6)	06:13			05:18		05:48 (4)	05:03		05:43 (4)
	17:00	18:02	18:55	13	07:03 (6)	20:53			21:44	1	05:49 (4)	22:10	15	05:58 (4)
26	08:31	07:31	06:24		06:48 (6)	06:11			05:17		05:47 (4)	05:04		05:44 (4)
	17:02	18:04	18:57	15	07:03 (6)	20:55			21:46	2	05:49 (4)	22:10	15	05:59 (4)
27	08:30	07:29	06:22		06:45 (6)	06:08			05:16		05:46 (4)	05:04		05:43 (4)
	17:04	18:06	18:59	17	07:02 (6)	20:56			21:47	3	05:49 (4)	22:09	15	05:58 (4)
28	08:28	07:27	06:19		06:43 (6)	06:06			05:15		05:45 (4)	05:05		05:44 (4)
	17:06	18:08	19:01	19	07:02 (6)	20:58			21:49	5	05:50 (4)	22:09	15	05:59 (4)
29	08:27		07:17		07:40 (6)	06:04			05:14		05:44 (4)	05:05		05:44 (4)
	17:08		20:03	21	08:01 (6)	21:00			21:50	6	05:50 (4)	22:09	14	05:58 (4)
30	08:25		07:14		07:39 (6)	06:02			05:13		05:43 (4)	05:06		05:44 (4)
	17:10		20:05	22	08:01 (6)	21:02			21:51	7	05:50 (4)	22:09	15	05:59 (4)
31	08:24		07:12		07:38 (6)				05:11		05:42 (4)			
	17:12		20:06	21	07:59 (6)				21:52	8	05:50 (4)			
Potential sun hours	250	273	367			420			494			510		
Total, worst case				149			92			32			424	
Sun reduction				0.22			0.31			0.31			0.26	
Oper. time red.				1.00			1.00			1.00			1.00	
Wind dir. red.				0.65			0.64			0.64			0.64	
Total reduction				0.14			0.20			0.20			0.17	
Total, real				21			18			6			70	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** V - H023

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July			August			September			October	November	December
1	05:07		05:45 (4)	05:47			06:41		07:25 (5)	07:34	07:33	08:28
	22:09	14	05:59 (4)	21:33			20:26	3	07:28 (5)	19:13	17:02	16:18
2	05:07		05:44 (4)	05:48			06:43		07:24 (5)	07:36	07:34	08:29
	22:08	14	05:58 (4)	21:31			20:24	3	07:27 (5)	19:10	17:00	16:17
3	05:08		05:44 (4)	05:50			06:44		07:23 (5)	07:38	07:36	08:31
	22:08	15	05:59 (4)	21:29			20:22	3	07:26 (5)	19:08	16:58	16:16
4	05:09		05:44 (4)	05:52			06:46		07:21 (5)	07:40	07:38	08:32
	22:07	15	05:59 (4)	21:28			20:19	3	07:24 (5)	19:05	16:56	16:16
5	05:10		05:45 (4)	05:53			06:48		07:19 (5)	07:41	07:40	08:33
	22:07	14	05:59 (4)	21:26			20:17	4	07:23 (5)	19:03	16:54	16:15
6	05:11		05:45 (4)	05:55			06:50		07:17 (5)	07:43	07:42	08:35
	22:06	14	05:59 (4)	21:24			20:14	6	07:23 (5)	19:00	16:52	16:14
7	05:12		05:45 (4)	05:57			06:51		07:18 (5)	07:45	07:44	08:36
	22:05	14	05:59 (4)	21:22			20:12	4	07:22 (5)	18:58	16:51	16:14
8	05:13		05:46 (4)	05:58			06:53		07:20 (5)	07:47	07:46	08:37
	22:05	12	05:58 (4)	21:20			20:10	1	07:21 (5)	18:56	16:49	16:14
9	05:14		05:46 (4)	06:00			06:55		07:37 (6)	07:49	07:48	08:39
	22:04	12	05:58 (4)	21:18			20:07	10	07:47 (6)	18:53	16:47	16:13
10	05:15		05:48 (4)	06:02			06:57		07:35 (6)	07:51	07:50	08:40
	22:03	11	05:59 (4)	21:16			20:05	14	07:49 (6)	18:51	16:45	16:13
11	05:16		05:49 (4)	06:04			06:59		07:32 (6)	07:53	07:52	08:41
	22:02	10	05:59 (4)	21:14			20:02	18	07:50 (6)	18:49	16:43	16:13
12	05:17		05:50 (4)	06:05			07:00		07:31 (6)	07:54	07:54	08:42
	22:01	9	05:59 (4)	21:12			20:00	20	07:51 (6)	18:46	16:42	16:12
13	05:18		05:51 (4)	06:07			07:02		07:30 (6)	07:56	07:56	08:43
	22:00	8	05:59 (4)	21:10			19:57	22	07:52 (6)	18:44	16:40	16:12
14	05:20		05:52 (4)	06:09			07:04		07:30 (6)	07:58	07:58	08:44
	21:59	6	05:58 (4)	21:08			19:55	21	07:51 (6)	18:41	16:38	16:12
15	05:21		05:53 (4)	06:11			07:06		07:32 (6)	08:00	08:00	08:45
	21:58	5	05:58 (4)	21:05			19:52	20	07:52 (6)	18:39	16:37	16:12
16	05:22		05:54 (4)	06:12			07:07		07:34 (6)	08:02	08:01	08:46
	21:57	4	05:58 (4)	21:03			19:50	18	07:52 (6)	18:37	16:35	16:12
17	05:23		05:56 (4)	06:14			07:09		07:36 (6)	08:04	08:03	08:47
	21:56	3	05:59 (4)	21:01			19:47	16	07:52 (6)	18:34	16:34	16:13
18	05:25		05:57 (4)	06:16			07:11		07:37 (6)	08:06	08:05	08:48
	21:55	2	05:59 (4)	20:59			19:45	13	07:50 (6)	18:32	16:32	16:13
19	05:26			06:18			07:13		07:39 (6)	08:07	08:07	08:48
	21:53			20:57			19:42	11	07:50 (6)	18:30	16:31	16:13
20	05:28			06:20			07:14		07:41 (6)	08:09	08:09	08:49
	21:52			20:54			19:40	8	07:49 (6)	18:28	16:30	16:13
21	05:29			06:21			07:16		07:43 (6)	08:11	08:11	08:50
	21:51			20:52			19:37	5	07:48 (6)	18:25	16:28	16:14
22	05:31			06:23			07:18		07:44 (6)	08:13	08:12	08:50
	21:49			20:50			19:35	1	07:45 (6)	18:23	16:27	16:14
23	05:32			06:25			07:20			08:15	08:14	08:51
	21:48			20:48			19:32			18:21	16:26	16:15
24	05:34			06:27		07:30 (5)	07:22			08:17	08:16	08:51
	21:46			20:45	1	07:31 (5)	19:30			18:19	16:25	16:15
25	05:35			06:28		07:29 (5)	07:23			07:19	08:18	08:52
	21:45			20:43	2	07:31 (5)	19:27			17:17	16:23	16:16
26	05:37			06:30		07:29 (5)	07:25			07:21	08:19	08:52
	21:43			20:41	3	07:32 (5)	19:25			17:14	16:22	16:17
27	05:38			06:32		07:30 (5)	07:27			07:23	08:21	08:52
	21:42			20:38	2	07:32 (5)	19:23			17:12	16:21	16:18
28	05:40			06:34		07:28 (5)	07:29			07:25	08:23	08:52
	21:40			20:36	4	07:32 (5)	19:20			17:10	16:20	16:18
29	05:42			06:36		07:28 (5)	07:31			07:27	08:24	08:52
	21:38			20:34	4	07:32 (5)	19:18			17:08	16:19	16:19
30	05:43			06:37		07:28 (5)	07:32			07:29	08:26	08:52
	21:37			20:31	4	07:32 (5)	19:15			17:06	16:19	16:20
31	05:45			06:39		07:27 (5)				07:31		08:52
	21:35			20:29	4	07:31 (5)				17:04		16:21
Potential sun hours	512			460			382			328	259	233
Total, worst case		182			24			224				
Sun reduction		0.22			0.26			0.25				
Oper. time red.		1.00			1.00			1.00				
Wind dir. red.		0.64			0.64			0.64				
Total reduction		0.14			0.16			0.16				
Total, real		26			4			36				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** W - H024

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:09	20:08	21:03	21:53	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:19	07:04	05:56	05:08	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58	16:16
4	08:51	08:16	07:17	07:02	05:54	05:08	05:09	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52	05:07	05:09	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11	21:58	22:06	21:25	20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50	05:06	05:10	05:55	06:49	07:43	07:42	08:35
	16:28	17:24	18:19	20:17	21:12	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:50	05:44	05:04	05:13	06:00	06:55	07:48	07:48	08:38
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:48	08:05	07:03	06:47	05:42	05:04	05:14	06:02	06:56	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:00	06:45	05:40	05:03	05:16	06:03	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:26	21:21	22:04	22:02	21:13	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:56	06:40	05:37	05:02	05:18	06:07	07:02	07:56	07:55	08:43
	16:39	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:26	22:06	21:59	21:07	19:54	18:41	16:38	16:12
15	08:44	07:55	06:51	06:35	05:33	05:02	05:21	06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:43	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16:12
17	08:42	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:31	22:07	21:56	21:01	19:47	18:34	16:34	16:12
18	08:41	07:49	06:43	06:28	05:28	05:02	05:25	06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:39	21:33	22:08	21:54	20:59	19:44	18:32	16:32	16:12
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:24	05:02	05:29	06:21	07:16	08:11	08:10	08:49
	16:53	17:54	18:48	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:13
22	08:37	07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:39	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15	08:14	08:50
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	16:14
24	08:34	07:36	06:29	06:15	05:19	05:03	05:33	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:42	22:09	21:46	20:45	19:30	18:18	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:17	08:51
	17:00	18:02	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	05:04	05:40	06:33	07:28	07:24	08:22	08:52
	17:06	18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** X - H025

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March		April		May		June	
1	08:52	08:22	07:24		07:09		07:40 (6)	06:00		05:10		05:41 (4)
	16:23	17:14	18:10		20:08	17	07:57 (6)	21:04		21:54	9	05:50 (4)
2	08:52	08:20	07:22		07:07		07:42 (6)	05:58		05:10		05:41 (4)
	16:24	17:16	18:12		20:10	13	07:55 (6)	21:06		21:55	10	05:51 (4)
3	08:52	08:19	07:20		07:04		07:44 (6)	05:56		05:09		05:43 (4)
	16:25	17:18	18:14		20:12	7	07:51 (6)	21:07		21:56	9	05:52 (4)
4	08:52	08:17	07:17		07:02		07:26 (5)	05:54		05:08		05:43 (4)
	16:26	17:20	18:16		20:14	1	07:27 (5)	21:09		21:57	9	05:52 (4)
5	08:51	08:15	07:15		07:00		07:23 (5)	05:52		05:07		05:43 (4)
	16:27	17:22	18:17		20:16	3	07:26 (5)	21:11		21:58	9	05:52 (4)
6	08:51	08:13	07:13		06:57		07:21 (5)	05:50		05:06		05:44 (4)
	16:29	17:24	18:19		20:18	6	07:27 (5)	21:13		21:59	9	05:53 (4)
7	08:51	08:11	07:10		06:55		07:23 (5)	05:48		05:06		05:43 (4)
	16:30	17:26	18:21		20:19	4	07:27 (5)	21:15		22:00	10	05:53 (4)
8	08:50	08:09	07:08		06:52		07:24 (5)	05:46		05:05		05:44 (4)
	16:31	17:28	18:23		20:21	3	07:27 (5)	21:16		22:01	9	05:53 (4)
9	08:49	08:07	07:05		06:50		07:25 (5)	05:44		05:04		05:44 (4)
	16:33	17:30	18:25		20:23	3	07:28 (5)	21:18		22:02	9	05:53 (4)
10	08:49	08:06	07:03		06:47		07:25 (5)	05:42		05:04		05:45 (4)
	16:34	17:32	18:27		20:25	3	07:28 (5)	21:20		22:03	9	05:54 (4)
11	08:48	08:04	07:01		06:45		07:26 (5)	05:40		05:04		05:46 (4)
	16:36	17:34	18:29		20:27	3	07:29 (5)	21:22		22:04	9	05:55 (4)
12	08:47	08:02	06:58		06:43		07:27 (5)	05:39		05:03		05:45 (4)
	16:37	17:36	18:31		20:29	4	07:31 (5)	21:23		22:05	9	05:54 (4)
13	08:47	08:00	06:56		06:40		07:27 (5)	05:37		05:03		05:46 (4)
	16:39	17:38	18:33		20:31	4	07:31 (5)	21:25		22:05	9	05:55 (4)
14	08:46	07:57	06:53		06:38		07:27 (5)	05:35		05:03		05:47 (4)
	16:41	17:40	18:35		20:32	4	07:31 (5)	21:27		22:06	9	05:56 (4)
15	08:45	07:55	06:51		06:36		07:28 (5)	05:33		05:02		05:47 (4)
	16:42	17:42	18:37		20:34	2	07:30 (5)	21:28		22:07	9	05:56 (4)
16	08:44	07:53	06:49		06:33		07:28 (5)	05:32		05:02		05:47 (4)
	16:44	17:44	18:38		20:36	2	07:30 (5)	21:30		22:07	9	05:56 (4)
17	08:43	07:51	06:46		06:31		07:27 (5)	05:30		05:02		05:48 (4)
	16:46	17:46	18:40		20:38	1	07:28 (5)	21:32		22:08	9	05:57 (4)
18	08:42	07:49	06:44		06:29			05:29		05:02		05:48 (4)
	16:47	17:48	18:42		20:40			21:33		22:08	9	05:57 (4)
19	08:41	07:47	06:41		06:26			05:27		05:02		05:48 (4)
	16:49	17:50	18:44		20:42			21:35		22:08	9	05:57 (4)
20	08:39	07:45	06:39		06:24			05:25		05:02		05:48 (4)
	16:51	17:52	18:46		20:43			21:37		22:09	9	05:57 (4)
21	08:38	07:43	06:36		06:22			05:24		05:02		05:48 (4)
	16:53	17:54	18:48		20:45			21:38		22:09	9	05:57 (4)
22	08:37	07:40	06:34	06:58 (6)	06:20			05:22		05:02		05:48 (4)
	16:55	17:56	18:50	3 07:01 (6)	20:47			21:40		22:09	9	05:57 (4)
23	08:36	07:38	06:31	06:55 (6)	06:17			05:21		05:03		05:49 (4)
	16:57	17:58	18:52	6 07:01 (6)	20:49			21:41		22:09	9	05:58 (4)
24	08:34	07:36	06:29	06:53 (6)	06:15			05:20		05:03		05:49 (4)
	16:58	18:00	18:53	9 07:02 (6)	20:51			21:43		22:10	9	05:58 (4)
25	08:33	07:34	06:26	06:50 (6)	06:13			05:18	05:48 (4)	05:03		05:49 (4)
	17:00	18:02	18:55	12 07:02 (6)	20:53			21:44	1 05:49 (4)	22:10	9	05:58 (4)
26	08:31	07:31	06:24	06:48 (6)	06:11			05:17	05:47 (4)	05:04		05:50 (4)
	17:02	18:04	18:57	14 07:02 (6)	20:55			21:46	2 05:49 (4)	22:10	9	05:59 (4)
27	08:30	07:29	06:22	06:45 (6)	06:08			05:16	05:46 (4)	05:04		05:49 (4)
	17:04	18:06	18:59	17 07:02 (6)	20:56			21:47	3 05:49 (4)	22:09	9	05:58 (4)
28	08:28	07:27	06:19	06:43 (6)	06:06			05:15	05:45 (4)	05:05		05:50 (4)
	17:06	18:08	19:01	18 07:01 (6)	20:58			21:49	5 05:50 (4)	22:09	9	05:59 (4)
29	08:27		07:17	07:40 (6)	06:04			05:14	05:44 (4)	05:05		05:49 (4)
	17:08		20:03	20 08:00 (6)	21:00			21:50	6 05:50 (4)	22:09	9	05:58 (4)
30	08:25		07:14	07:38 (6)	06:02			05:13	05:43 (4)	05:06		05:50 (4)
	17:10		20:05	22 08:00 (6)	21:02			21:51	7 05:50 (4)	22:09	9	05:59 (4)
31	08:24		07:12	07:39 (6)				05:11	05:42 (4)			
	17:12		20:06	19 07:58 (6)				21:52	8 05:50 (4)			
Potential sun hours	250	273	367		420			494		510		
Total, worst case				140		80			32			272
Sun reduction				0.22		0.31			0.31			0.26
Oper. time red.				1.00		1.00			1.00			1.00
Wind dir. red.				0.65		0.64			0.64			0.64
Total reduction				0.14		0.20			0.20			0.17
Total, real				20		16			6			45

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** X - H025

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August		September		October	November	December
1	05:07		05:50 (4)	05:47		06:41	07:25 (5)	07:34	07:33	08:28
	22:09	9	05:59 (4)	21:33		20:26	3	07:28 (5)	19:13	17:02	16:18
2	05:07		05:49 (4)	05:48		06:43		07:24 (5)	07:36	07:34	08:29
	22:08	9	05:58 (4)	21:31		20:24	3	07:27 (5)	19:10	17:00	16:17
3	05:08		05:50 (4)	05:50		06:44		07:23 (5)	07:38	07:36	08:31
	22:08	9	05:59 (4)	21:29		20:22	3	07:26 (5)	19:08	16:58	16:16
4	05:09		05:50 (4)	05:52		06:46		07:21 (5)	07:40	07:38	08:32
	22:07	9	05:59 (4)	21:28		20:19	3	07:24 (5)	19:05	16:56	16:16
5	05:10		05:50 (4)	05:53		06:48		07:19 (5)	07:41	07:40	08:33
	22:07	9	05:59 (4)	21:26		20:17	4	07:23 (5)	19:03	16:54	16:15
6	05:11		05:50 (4)	05:55		06:50		07:17 (5)	07:43	07:42	08:35
	22:06	9	05:59 (4)	21:24		20:14	6	07:23 (5)	19:00	16:52	16:14
7	05:12		05:50 (4)	05:57		06:52		07:18 (5)	07:45	07:44	08:36
	22:05	9	05:59 (4)	21:22		20:12	4	07:22 (5)	18:58	16:51	16:14
8	05:13		05:50 (4)	05:58		06:53		07:20 (5)	07:47	07:46	08:37
	22:05	8	05:58 (4)	21:20		20:10	1	07:21 (5)	18:56	16:49	16:14
9	05:14		05:50 (4)	06:00		06:55		07:38 (6)	07:49	07:48	08:39
	22:04	8	05:58 (4)	21:18		20:07	7	07:45 (6)	18:53	16:47	16:13
10	05:15		05:50 (4)	06:02		06:57		07:35 (6)	07:51	07:50	08:40
	22:03	9	05:59 (4)	21:16		20:05	13	07:48 (6)	18:51	16:45	16:13
11	05:16		05:50 (4)	06:04		06:59		07:32 (6)	07:53	07:52	08:41
	22:02	9	05:59 (4)	21:14		20:02	17	07:49 (6)	18:49	16:43	16:13
12	05:17		05:50 (4)	06:05		07:00		07:31 (6)	07:54	07:54	08:42
	22:01	9	05:59 (4)	21:12		20:00	19	07:50 (6)	18:46	16:42	16:12
13	05:18		05:51 (4)	06:07		07:02		07:30 (6)	07:56	07:56	08:43
	22:00	8	05:59 (4)	21:10		19:57	21	07:51 (6)	18:44	16:40	16:12
14	05:20		05:52 (4)	06:09		07:04		07:30 (6)	07:58	07:58	08:44
	21:59	6	05:58 (4)	21:08		19:55	21	07:51 (6)	18:41	16:38	16:12
15	05:21		05:53 (4)	06:11		07:06		07:32 (6)	08:00	08:00	08:45
	21:58	5	05:58 (4)	21:05		19:52	19	07:51 (6)	18:39	16:37	16:12
16	05:22		05:54 (4)	06:12		07:07		07:34 (6)	08:02	08:01	08:46
	21:57	4	05:58 (4)	21:03		19:50	17	07:51 (6)	18:37	16:35	16:12
17	05:23		05:56 (4)	06:14		07:09		07:36 (6)	08:04	08:03	08:47
	21:56	3	05:59 (4)	21:01		19:47	15	07:51 (6)	18:34	16:34	16:13
18	05:25		05:57 (4)	06:16		07:11		07:37 (6)	08:06	08:05	08:48
	21:55	2	05:59 (4)	20:59		19:45	12	07:49 (6)	18:32	16:32	16:13
19	05:26			06:18		07:13		07:39 (6)	08:08	08:07	08:48
	21:53			20:57		19:42	10	07:49 (6)	18:30	16:31	16:13
20	05:28			06:20		07:15		07:41 (6)	08:09	08:09	08:49
	21:52			20:54		19:40	7	07:48 (6)	18:28	16:30	16:13
21	05:29			06:21		07:16		07:43 (6)	08:11	08:11	08:50
	21:51			20:52		19:37	4	07:47 (6)	18:25	16:28	16:14
22	05:31			06:23		07:18			08:13	08:12	08:50
	21:49			20:50		19:35			18:23	16:27	16:14
23	05:32			06:25		07:20			08:15	08:14	08:51
	21:48			20:48		19:32			18:21	16:26	16:15
24	05:34			06:27		07:22			08:17	08:16	08:51
	21:46			20:45		19:30			18:19	16:25	16:15
25	05:35			06:28	07:29 (5)	07:23			07:19	08:18	08:52
	21:45			20:43	1	07:30 (5)	19:27			17:17	16:23	16:16
26	05:37			06:30	07:29 (5)	07:25			07:21	08:19	08:52
	21:43			20:41	2	07:31 (5)	19:25			17:14	16:22	16:17
27	05:38			06:32	07:30 (5)	07:27			07:23	08:21	08:52
	21:42			20:38	2	07:32 (5)	19:23			17:12	16:21	16:18
28	05:40			06:34	07:28 (5)	07:29			07:25	08:23	08:52
	21:40			20:36	3	07:31 (5)	19:20			17:10	16:20	16:18
29	05:42			06:36	07:28 (5)	07:31			07:27	08:24	08:52
	21:38			20:34	4	07:32 (5)	19:18			17:08	16:19	16:19
30	05:43			06:37	07:28 (5)	07:32			07:29	08:26	08:52
	21:37			20:31	4	07:32 (5)	19:15			17:06	16:19	16:20
31	05:45			06:39	07:27 (5)				07:31			08:52
	21:35			20:29	4	07:31 (5)				17:04		16:21
Potential sun hours	512			460		382			328	259	233	
Total, worst case		134			20			209				
Sun reduction		0.22			0.26			0.25				
Oper. time red.		1.00			1.00			1.00				
Wind dir. red.		0.64			0.64			0.64				
Total reduction		0.14			0.16			0.16				
Total, real		19			3			34				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** Y - H027

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May		June		July		August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00		05:10		21:08 (5)	05:06	21:14 (5)	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:10	20:08	21:04		21:54	11	21:19 (6)	22:08	19	21:33 (6)	21:33	20:26	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58		05:09		21:08 (5)	05:07	21:14 (6)	05:48	06:42	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:05		21:55	12	21:20 (6)	22:08	18	21:32 (6)	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56		05:09		21:09 (5)	05:08	21:14 (5)	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12	21:07		21:56	13	21:22 (6)	22:07	18	21:32 (6)	21:29	20:21	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54		05:08		21:09 (5)	05:09	21:15 (5)	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14	21:09		21:57	13	21:22 (6)	22:07	17	21:32 (6)	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52		05:07		21:08 (5)	05:10	21:15 (5)	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11		21:58	15	21:23 (6)	22:06	16	21:31 (6)	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50		05:06		21:09 (5)	05:11	21:15 (5)	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:17	21:13		21:59	15	21:24 (6)	22:06	16	21:31 (6)	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:55	05:48		05:06		21:09 (5)	05:12	21:15 (5)	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14		22:00	16	21:25 (6)	22:05	15	21:30 (6)	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46		05:05		21:09 (5)	05:13	21:15 (5)	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16		22:01	17	21:26 (6)	22:04	14	21:29 (6)	21:20	20:09	18:56	16:49	16:13
9	08:49	08:07	07:05	06:50	05:44		05:04		21:09 (5)	05:14	21:15 (5)	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18		22:02	17	21:26 (6)	22:04	13	21:28 (6)	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42		05:04		21:09 (5)	05:15	21:15 (5)	06:02	06:57	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20		22:03	19	21:28 (6)	22:03	13	21:28 (6)	21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:01	06:45	05:40		05:03		21:09 (5)	05:16	21:16 (5)	06:04	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21		22:04	19	21:28 (6)	22:02	11	21:27 (6)	21:14	20:02	18:48	16:43	16:13
12	08:47	08:01	06:58	06:43	05:39		05:03		21:09 (5)	05:17	21:17 (5)	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23		22:04	20	21:29 (6)	22:01	10	21:27 (6)	21:12	20:00	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	05:37		05:03		21:10 (6)	05:18	21:17 (5)	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25		22:05	19	21:29 (6)	22:00	9	21:26 (6)	21:09	19:57	18:44	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35		05:02		21:10 (6)	05:19	21:18 (5)	06:09	07:04	07:58	07:57	08:44
	16:41	17:40	18:35	20:32	21:27		22:06	20	21:30 (6)	21:59	7	21:25 (6)	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	05:33		05:02		21:11 (6)	05:21	21:18 (5)	06:11	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28		22:06	20	21:31 (6)	21:58	6	21:24 (5)	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32		05:02		21:11 (6)	05:22	21:18 (5)	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30		22:07	20	21:31 (6)	21:57	4	21:22 (5)	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30		05:02		21:11 (6)	05:23	21:20 (5)	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32		22:07	21	21:32 (6)	21:56	2	21:22 (5)	21:01	19:47	18:34	16:34	16:12
18	08:42	07:49	06:43	06:28	05:28		05:02		21:11 (6)	05:25	21:20 (5)	06:16	07:11	08:05	08:05	08:48
	16:47	17:48	18:42	20:40	21:33		22:08	21	21:32 (6)	21:54	1	21:21 (5)	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27		05:02		21:11 (6)	05:26		06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35		22:08	22	21:33 (6)	21:53		20:56	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25		05:02		21:11 (6)	05:28		06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36		22:09	22	21:33 (6)	21:52		20:54	19:40	18:28	16:29	16:13
21	08:38	07:42	06:36	06:22	05:24		05:02		21:11 (6)	05:29		06:21	07:16	08:11	08:10	08:50
	16:53	17:54	18:48	20:45	21:38		22:09	22	21:33 (6)	21:50		20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22		05:02		21:11 (6)	05:30		06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40		22:09	22	21:33 (6)	21:49		20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21		05:03		21:12 (6)	05:32		06:25	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41		22:09	22	21:34 (6)	21:48		20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20		05:03		21:12 (6)	05:34		06:27	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43		22:09	21	21:33 (6)	21:46		20:45	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18		05:03		21:12 (6)	05:35		06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	21:44		22:09	21	21:33 (6)	21:45		20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	21:10 (5)	05:04		21:13 (6)	05:37		06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	2 21:12 (5)	22:09	21	21:34 (6)	21:43		20:40	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	21:10 (5)	05:04		21:13 (6)	05:38		06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	3 21:13 (5)	22:09	20	21:33 (6)	21:41		20:38	19:22	17:12	16:21	16:17
28	08:28	07:27	06:19	06:06	05:15	21:10 (5)	05:05		21:13 (5)	05:40		06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	5 21:15 (5)	22:09	20	21:33 (6)	21:40		20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	21:09 (5)	05:05		21:13 (6)	05:41		06:35	07:30	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	7 21:16 (5)	22:09	20	21:33 (6)	21:38		20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	21:09 (5)	05:06		21:14 (6)	05:43		06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	8 21:17 (6)	22:09	19	21:33 (6)	21:36		20:31	19:15	17:06	16:18	16:20
31	08:23		07:12		05:11	21:09 (5)				05:45		06:39		07:30		08:52
	17:12		20:06		21:52	9 21:18 (6)				21:35		20:29		17:04		16:21
Potential sun hours	250	273	367	420	494		510			512	460	382	328	259	233	
Total, worst case						34		560		209						
Sun reduction						0.31		0.26		0.22						
Oper. time red.						1.00		1.00		1.00						
Wind dir. red.						0.60		0.60		0.60						
Total reduction						0.19		0.16		0.13						
Total, real						6		87		28						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** Z - H028

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February	March	April	May	June	July	August	September	October	November			December		
1	08:52		09:26 (10)	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32			08:27		09:10 (10)
	16:22	18	09:44 (10)	17:14	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02			16:17	18	09:28 (10)
2	08:52		09:26 (10)	08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34			08:29		09:11 (10)
	16:23	19	09:45 (10)	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00			16:17	18	09:29 (10)
3	08:52		09:26 (10)	08:18	07:19	07:04	05:56	05:08	05:08	05:49	06:44	07:38	07:36			08:30		09:10 (10)
	16:24	20	09:46 (10)	17:18	18:13	20:12	21:07	21:56	22:08	21:29	20:21	19:07	16:58			16:16	20	09:30 (10)
4	08:52		09:25 (10)	08:17	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38			08:32		09:10 (10)
	16:26	20	09:45 (10)	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56			16:15	21	09:31 (10)
5	08:51		09:25 (10)	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40			08:33		09:11 (10)
	16:27	21	09:46 (10)	17:22	18:17	20:15	21:11	21:58	22:07	21:26	20:17	19:03	16:54			16:15	21	09:32 (10)
6	08:51		09:25 (10)	08:13	07:12	06:57	05:50	05:06	05:10	05:55	06:49	07:43	07:42			08:35		09:11 (10)
	16:28	21	09:46 (10)	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52			16:14	21	09:32 (10)
7	08:50		09:25 (10)	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44			08:36		09:11 (10)
	16:30	21	09:46 (10)	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50			16:14	21	09:32 (10)
8	08:50		09:26 (10)	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46			08:37		09:13 (10)
	16:31	21	09:47 (10)	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:55	16:48			16:13	20	09:33 (10)
9	08:49		09:27 (10)	08:07	07:05	06:50	05:44	05:04	05:13	06:00	06:55	07:49	07:48			08:39		09:14 (10)
	16:32	19	09:46 (10)	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47			16:13	20	09:34 (10)
10	08:49		09:28 (10)	08:05	07:03	06:47	05:42	05:04	05:14	06:02	06:56	07:50	07:50			08:40		09:15 (10)
	16:34	18	09:46 (10)	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45			16:12	19	09:34 (10)
11	08:48		09:28 (10)	08:03	07:00	06:45	05:40	05:03	05:16	06:03	06:58	07:52	07:52			08:41		09:17 (10)
	16:35	18	09:46 (10)	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43			16:12	18	09:35 (10)
12	08:47		09:29 (10)	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54			08:42		09:18 (10)
	16:37	17	09:46 (10)	17:36	18:31	20:28	21:23	22:05	22:01	21:12	19:59	18:46	16:41			16:12	18	09:36 (10)
13	08:46		09:31 (10)	07:59	06:56	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:56			08:43		09:19 (10)
	16:39	14	09:45 (10)	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40			16:12	17	09:36 (10)
14	08:46		09:32 (10)	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57			08:44		09:20 (10)
	16:40	13	09:45 (10)	17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38			16:12	17	09:37 (10)
15	08:45		09:34 (10)	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59			08:45		09:21 (10)
	16:42	10	09:44 (10)	17:42	18:36	20:34	21:28	22:07	21:58	21:05	19:52	18:39	16:37			16:12	16	09:37 (10)
16	08:44		09:37 (10)	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01			08:46		09:22 (10)
	16:44	5	09:42 (10)	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:36	16:35			16:12	16	09:38 (10)
17	08:43			07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03			08:47		09:23 (10)
	16:45			17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:33			16:12	15	09:38 (10)
18	08:42			07:49	06:43	06:28	05:28	05:02	05:24	06:16	07:11	08:05	08:05			08:48		09:23 (10)
	16:47			17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32			16:12	15	09:38 (10)
19	08:40			07:47	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07			08:48		09:24 (10)
	16:49			17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31			16:13	15	09:39 (10)
20	08:39			07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09			08:49		09:25 (10)
	16:51			17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29			16:13	15	09:40 (10)
21	08:38			07:42	06:36	06:21	05:24	05:02	05:29	06:21	07:16	08:11	08:10			08:50		09:25 (10)
	16:52			17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28			16:13	15	09:40 (10)
22	08:37			07:40	06:34	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12			08:50		09:26 (10)
	16:54			17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27			16:14	15	09:41 (10)
23	08:35			07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15	08:14			08:51		09:26 (10)
	16:56			17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25			16:14	15	09:41 (10)
24	08:34			07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16			08:51		09:26 (10)
	16:58			18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24			16:15	15	09:41 (10)
25	08:33			07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:18			08:51		09:27 (10)
	17:00			18:02	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23			16:16	15	09:42 (10)
26	08:31			07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19		09:15 (10)	08:52		09:27 (10)
	17:02			18:04	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22	5	09:20 (10)	16:16	15	09:42 (10)
27	08:30			07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21		09:13 (10)	08:52		09:27 (10)
	17:04			18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	10	09:23 (10)	16:17	15	09:42 (10)
28	08:28			07:26	06:19	06:06	05:14	05:04	05:40	06:33	07:29	07:25	08:23		09:12 (10)	08:52		09:27 (10)
	17:06			18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	13	09:25 (10)	16:18	16	09:43 (10)
29	08:27				07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24		09:12 (10)	08:52		09:27 (10)
	17:08				20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	14	09:26 (10)	16:19	16	09:43 (10)
30	08:25				07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26		09:10 (10)	08:52		09:27 (10)
	17:10				20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	17	09:27 (10)	16:20	17	09:44 (10)
31	08:23				07:11		05:11		05:44	06:39		07:30				08:52		09:27 (10)
	17:12				20:06		21:52		21:35	20:29		17:04				16:21	17	09:44 (10)
Potential sun hours	250			273	367	420	494	510	513	460	382	328	259			233		
Total, worst case		275												59			532	
Sun reduction		0.16												0.20			0.12	
Oper. time red.		1.00												1.00			1.00	
Wind dir. red.		0.61												0.61			0.61	
Total reduction		0.10												0.12			0.07	
Total, real		27												7			39	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** AA - H029

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March		April		May		June	
1	08:52	08:22	07:24		07:09	07:35 (6)	06:00		05:10	05:41 (4)
	16:23	17:14	18:10		20:08	24 07:59 (6)	21:04		21:54	9 05:50 (4)
2	08:52	08:20	07:22		07:07	07:35 (6)	05:58		05:10	05:40 (4)
	16:24	17:16	18:12		20:10	23 07:58 (6)	21:06		21:55	11 05:51 (4)
3	08:52	08:19	07:20		07:04	07:35 (6)	05:56		05:09	05:40 (4)
	16:25	17:18	18:14		20:12	21 07:56 (6)	21:07		21:56	12 05:52 (4)
4	08:52	08:17	07:17		07:02	07:37 (6)	05:54		05:08	05:39 (4)
	16:26	17:20	18:16		20:14	18 07:55 (6)	21:09		21:57	13 05:52 (4)
5	08:51	08:15	07:15		06:59	07:38 (6)	05:52		05:07	05:38 (4)
	16:27	17:22	18:17		20:16	14 07:52 (6)	21:11		21:58	14 05:52 (4)
6	08:51	08:13	07:13		06:57	07:41 (6)	05:50		05:06	05:38 (4)
	16:29	17:24	18:19		20:18	9 07:50 (6)	21:13		21:59	15 05:53 (4)
7	08:51	08:11	07:10		06:55		05:48		05:06	05:37 (4)
	16:30	17:26	18:21		20:19		21:15		22:00	16 05:53 (4)
8	08:50	08:09	07:08		06:52		05:46		05:05	05:37 (4)
	16:31	17:28	18:23		20:21		21:16		22:01	16 05:53 (4)
9	08:49	08:07	07:05		06:50		05:44		05:04	05:36 (4)
	16:33	17:30	18:25		20:23		21:18		22:02	17 05:53 (4)
10	08:49	08:05	07:03		06:47		05:42		05:04	05:36 (4)
	16:34	17:32	18:27		20:25		21:20		22:03	18 05:54 (4)
11	08:48	08:04	07:01		06:45		05:40		05:04	05:36 (4)
	16:36	17:34	18:29		20:27		21:22		22:04	19 05:55 (4)
12	08:47	08:02	06:58		06:43		05:39		05:03	05:35 (4)
	16:37	17:36	18:31		20:29		21:23		22:05	19 05:54 (4)
13	08:47	07:59	06:56		06:40		05:37		05:03	05:35 (4)
	16:39	17:38	18:33		20:30		21:25		22:05	20 05:55 (4)
14	08:46	07:57	06:53		06:38		05:35		05:03	05:35 (4)
	16:41	17:40	18:35		20:32		21:27		22:06	21 05:56 (4)
15	08:45	07:55	06:51		06:36		05:33		05:02	05:35 (4)
	16:42	17:42	18:37		20:34		21:28		22:07	21 05:56 (4)
16	08:44	07:53	06:49		06:33		05:32		05:02	05:35 (4)
	16:44	17:44	18:38		20:36		21:30		22:07	21 05:56 (4)
17	08:43	07:51	06:46		06:31		05:30		05:02	05:35 (4)
	16:46	17:46	18:40		20:38		21:32		22:08	22 05:57 (4)
18	08:42	07:49	06:44		06:29		05:29		05:02	05:35 (4)
	16:47	17:48	18:42		20:40		21:33		22:08	22 05:57 (4)
19	08:41	07:47	06:41		06:26		05:27		05:02	05:35 (4)
	16:49	17:50	18:44		20:42		21:35		22:08	22 05:57 (4)
20	08:39	07:45	06:39		06:24		05:25		05:02	05:35 (4)
	16:51	17:52	18:46		20:43		21:37		22:09	22 05:57 (4)
21	08:38	07:43	06:36		06:22		05:24		05:02	05:35 (4)
	16:53	17:54	18:48		20:45		21:38		22:09	22 05:57 (4)
22	08:37	07:40	06:34		06:20		05:22		05:02	05:35 (4)
	16:55	17:56	18:50		20:47		21:40		22:09	22 05:57 (4)
23	08:36	07:38	06:31	06:55 (6)	06:17		05:21		05:03	05:36 (4)
	16:57	17:58	18:52	3 06:58 (6)	20:49		21:41		22:09	22 05:58 (4)
24	08:34	07:36	06:29	06:53 (6)	06:15		05:20		05:03	05:36 (4)
	16:58	18:00	18:53	7 07:00 (6)	20:51		21:43		22:10	22 05:58 (4)
25	08:33	07:34	06:26	06:50 (6)	06:13		05:18	05:48 (4)	05:03	05:36 (4)
	17:00	18:02	18:55	10 07:00 (6)	20:53		21:44	1 05:49 (4)	22:10	22 05:58 (4)
26	08:31	07:31	06:24	06:48 (6)	06:11		05:17	05:47 (4)	05:04	05:37 (4)
	17:02	18:04	18:57	13 07:01 (6)	20:55		21:46	2 05:49 (4)	22:10	22 05:59 (4)
27	08:30	07:29	06:22	06:45 (6)	06:08		05:16	05:46 (4)	05:04	05:37 (4)
	17:04	18:06	18:59	16 07:01 (6)	20:56		21:47	3 05:49 (4)	22:09	21 05:58 (4)
28	08:28	07:27	06:19	06:43 (6)	06:06		05:15	05:45 (4)	05:05	05:38 (4)
	17:06	18:08	19:01	18 07:01 (6)	20:58		21:49	5 05:50 (4)	22:09	21 05:59 (4)
29	08:27		07:17	07:40 (6)	06:04		05:14	05:44 (4)	05:05	05:38 (4)
	17:08		20:03	20 08:00 (6)	21:00		21:50	6 05:50 (4)	22:09	20 05:58 (4)
30	08:25		07:14	07:38 (6)	06:02		05:13	05:43 (4)	05:06	05:39 (4)
	17:10		20:05	22 08:00 (6)	21:02		21:51	7 05:50 (4)	22:09	20 05:59 (4)
31	08:24		07:12	07:35 (6)			05:11	05:42 (4)		
	17:12		20:06	24 07:59 (6)			21:52	8 05:50 (4)		
Potential sun hours	250	273	367		420		494		510	
Total, worst case				133		109		32		564
Sun reduction				0.22		0.31		0.31		0.26
Oper. time red.				1.00		1.00		1.00		1.00
Wind dir. red.				0.65		0.65		0.64		0.64
Total reduction				0.14		0.20		0.20		0.17
Total, real				19		22		6		93

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** AA - H029

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August		September		October	November	December
1	05:07		05:40 (4)	05:47	06:41		07:34	07:33	08:28
	22:08	19	05:59 (4)	21:33	20:26		19:13	17:02	16:18
2	05:07		05:40 (4)	05:48	06:43		07:36	07:34	08:29
	22:08	18	05:58 (4)	21:31	20:24		19:10	17:00	16:17
3	05:08		05:41 (4)	05:50	06:44		07:38	07:36	08:31
	22:08	18	05:59 (4)	21:29	20:22		19:08	16:58	16:16
4	05:09		05:42 (4)	05:52	06:46		07:40	07:38	08:32
	22:07	17	05:59 (4)	21:28	20:19		19:05	16:56	16:16
5	05:10		05:43 (4)	05:53	06:48		07:41	07:40	08:33
	22:07	16	05:59 (4)	21:26	20:17		19:03	16:54	16:15
6	05:11		05:44 (4)	05:55	06:50		07:37 (6)	07:43	07:42	08:35
	22:06	15	05:59 (4)	21:24	20:14	9	07:46 (6)	19:00	16:52	16:14
7	05:12		05:45 (4)	05:57	06:51		07:33 (6)	07:45	07:44	08:36
	22:05	14	05:59 (4)	21:22	20:12	14	07:47 (6)	18:58	16:50	16:14
8	05:13		05:46 (4)	05:58	06:53		07:31 (6)	07:47	07:46	08:37
	22:05	12	05:58 (4)	21:20	20:09	18	07:49 (6)	18:56	16:49	16:14
9	05:14		05:46 (4)	06:00	06:55		07:30 (6)	07:49	07:48	08:39
	22:04	12	05:58 (4)	21:18	20:07	20	07:50 (6)	18:53	16:47	16:13
10	05:15		05:48 (4)	06:02	06:57		07:29 (6)	07:51	07:50	08:40
	22:03	11	05:59 (4)	21:16	20:05	22	07:51 (6)	18:51	16:45	16:13
11	05:16		05:49 (4)	06:04	06:59		07:27 (6)	07:53	07:52	08:41
	22:02	10	05:59 (4)	21:14	20:02	24	07:51 (6)	18:49	16:43	16:13
12	05:17		05:50 (4)	06:05	07:00		07:27 (6)	07:54	07:54	08:42
	22:01	9	05:59 (4)	21:12	20:00	24	07:51 (6)	18:46	16:42	16:12
13	05:18		05:51 (4)	06:07	07:02		07:29 (6)	07:56	07:56	08:43
	22:00	8	05:59 (4)	21:10	19:57	23	07:52 (6)	18:44	16:40	16:12
14	05:20		05:52 (4)	06:09	07:04		07:30 (6)	07:58	07:58	08:44
	21:59	6	05:58 (4)	21:07	19:55	21	07:51 (6)	18:41	16:38	16:12
15	05:21		05:53 (4)	06:11	07:06		07:32 (6)	08:00	08:00	08:45
	21:58	5	05:58 (4)	21:05	19:52	18	07:50 (6)	18:39	16:37	16:12
16	05:22		05:54 (4)	06:12	07:07		07:34 (6)	08:02	08:01	08:46
	21:57	4	05:58 (4)	21:03	19:50	16	07:50 (6)	18:37	16:35	16:12
17	05:23		05:56 (4)	06:14	07:09		07:36 (6)	08:04	08:03	08:47
	21:56	3	05:59 (4)	21:01	19:47	13	07:49 (6)	18:34	16:34	16:13
18	05:25		05:57 (4)	06:16	07:11		07:37 (6)	08:06	08:05	08:48
	21:55	2	05:59 (4)	20:59	19:45	11	07:48 (6)	18:32	16:32	16:13
19	05:26			06:18	07:13		07:39 (6)	08:07	08:07	08:48
	21:53			20:57	19:42	7	07:46 (6)	18:30	16:31	16:13
20	05:28			06:20	07:14		07:41 (6)	08:09	08:09	08:49
	21:52			20:54	19:40	4	07:45 (6)	18:28	16:30	16:13
21	05:29			06:21	07:16			08:11	08:11	08:50
	21:51			20:52	19:37			18:25	16:28	16:14
22	05:31			06:23	07:18			08:13	08:12	08:50
	21:49			20:50	19:35			18:23	16:27	16:14
23	05:32			06:25	07:20			08:15	08:14	08:51
	21:48			20:48	19:32			18:21	16:26	16:15
24	05:34			06:27	07:22			08:17	08:16	08:51
	21:46			20:45	19:30			18:19	16:25	16:15
25	05:35			06:28	07:23			07:19	08:18	08:52
	21:45			20:43	19:27			17:17	16:23	16:16
26	05:37			06:30	07:25			07:21	08:19	08:52
	21:43			20:41	19:25			17:14	16:22	16:17
27	05:38			06:32	07:27			07:23	08:21	08:52
	21:42			20:38	19:23			17:12	16:21	16:18
28	05:40			06:34	07:29			07:25	08:23	08:52
	21:40			20:36	19:20			17:10	16:20	16:18
29	05:42			06:36	07:31			07:27	08:24	08:52
	21:38			20:34	19:18			17:08	16:19	16:19
30	05:43			06:37	07:32			07:29	08:26	08:52
	21:37			20:31	19:15			17:06	16:19	16:20
31	05:45			06:39				07:31		08:52
	21:35			20:29				17:04		16:21
Potential sun hours	512			460	382			328	259	233
Total, worst case		199				244				
Sun reduction		0.22				0.25				
Oper. time red.		1.00				1.00				
Wind dir. red.		0.64				0.65				
Total reduction		0.14				0.16				
Total, real		29				40				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** AB - H030

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April		May		June	July	August		September	October	November	December
1	08:52	08:22	07:24	07:09		06:00	20:12 (5)	05:10	05:06	05:46		06:41	07:34	07:32	08:27
	16:22	17:14	18:10	20:08		21:04 13	20:25 (5)	21:54	22:08	21:33		20:26	19:12	17:02	16:18
2	08:52	08:20	07:22	07:07		05:58	20:14 (5)	05:09	05:07	05:48		06:42	07:36	07:34	08:29
	16:24	17:16	18:12	20:10		21:05 9	20:23 (5)	21:55	22:08	21:31		20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04		05:56		05:09	05:08	05:50		06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12		21:07		21:56	22:07	21:29		20:21	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02		05:54		05:08	05:09	05:51		06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14		21:09		21:57	22:07	21:27		20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59		05:52		05:07	05:10	05:53		06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15		21:11		21:58	22:06	21:26		20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57		05:50		05:06	05:11	05:55		06:50	07:43	07:42	08:35
	16:28	17:24	18:19	20:17		21:13		21:59	22:06	21:24		20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54		05:48		05:05	05:11	05:57		06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19		21:14		22:00	22:05	21:22		20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52		05:46		05:05	05:13	05:58		06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21		21:16		22:01	22:04	21:20		20:09	18:55	16:49	16:13
9	08:49	08:07	07:05	06:50		05:44		05:04	05:14	06:00		06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23		21:18		22:02	22:04	21:18		20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47		05:42		05:04	05:15	06:02	20:24 (5)	06:57	07:50	07:50	08:40
	16:34	17:32	18:27	20:25		21:20		22:03	22:03	21:16 5	20:29 (5)	20:04	18:51	16:45	16:13
11	08:48	08:03	07:00	06:45		05:40		05:03	05:16	06:04	20:21 (5)	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27		21:21		22:04	22:02	21:14 11	20:32 (5)	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:43		05:38		05:03	05:17	06:05	20:20 (5)	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28		21:23		22:04	22:01	21:12 14	20:34 (5)	19:59	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40		05:37		05:03	05:18	06:07	20:18 (5)	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30		21:25		22:05	22:00	21:09 16	20:34 (5)	19:57	18:44	16:40	16:12
14	08:45	07:57	06:53	06:38		05:35		05:02	05:19	06:09	20:17 (5)	07:04	07:58	07:57	08:44
	16:40	17:40	18:35	20:32		21:27		22:06	21:59	21:07 18	20:35 (5)	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35		05:33		05:02	05:21	06:11	20:15 (5)	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34		21:28		22:06	21:58	21:05 20	20:35 (5)	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33		05:32		05:02	05:22	06:12	20:15 (5)	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36		21:30		22:07	21:57	21:03 18	20:33 (5)	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31		05:30		05:02	05:23	06:14	20:15 (5)	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38		21:32		22:07	21:56	21:01 17	20:32 (5)	19:47	18:34	16:34	16:12
18	08:42	07:49	06:43	06:28		05:28		05:02	05:25	06:16	20:14 (5)	07:11	08:05	08:05	08:48
	16:47	17:48	18:42	20:40		21:33		22:08	21:54	20:59 15	20:29 (5)	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	20:12 (5)	05:27		05:02	05:26	06:18	20:14 (5)	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:41 1	20:13 (5)	21:35		22:08	21:53	20:56 13	20:27 (5)	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	20:10 (5)	05:25		05:02	05:28	06:19	20:14 (5)	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43 4	20:14 (5)	21:36		22:09	21:52	20:54 11	20:25 (5)	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:22	20:09 (5)	05:24		05:02	05:29	06:21	20:14 (5)	07:16	08:11	08:10	08:50
	16:53	17:54	18:48	20:45 7	20:16 (5)	21:38		22:09	21:50	20:52 8	20:22 (5)	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	20:09 (5)	05:22		05:02	05:30	06:23	20:14 (5)	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47 9	20:18 (5)	21:40		22:09	21:49	20:50 7	20:21 (5)	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	20:08 (5)	05:21		05:02	05:32	06:25	20:15 (5)	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49 12	20:20 (5)	21:41		22:09	21:48	20:47 4	20:19 (5)	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	20:08 (5)	05:20		05:03	05:33	06:26	20:16 (5)	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51 14	20:22 (5)	21:43		22:09	21:46	20:45 1	20:17 (5)	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	20:08 (5)	05:18		05:03	05:35	06:28		07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53 16	20:24 (5)	21:44		22:09	21:45	20:43		19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	20:08 (5)	05:17		05:04	05:37	06:30		07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54 17	20:25 (5)	21:46		22:09	21:43	20:40		19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	20:08 (5)	05:16		05:04	05:38	06:32		07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56 19	20:27 (5)	21:47		22:09	21:41	20:38		19:22	17:12	16:21	16:17
28	08:28	07:27	06:19	06:06	20:09 (5)	05:15		05:05	05:40	06:34		07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58 20	20:29 (5)	21:48		22:09	21:40	20:36		19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	20:10 (5)	05:13		05:05	05:41	06:35		07:30	07:27	08:24	08:52
	17:08		20:03	21:00 18	20:28 (5)	21:50		22:09	21:38	20:33		19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	20:10 (5)	05:12		05:06	05:43	06:37		07:32	07:28	08:26	08:52
	17:10		20:04	21:02 17	20:27 (5)	21:51		22:09	21:36	20:31		19:15	17:06	16:18	16:20
31	08:23		07:12			05:11			05:45	06:39			07:30		08:52
	17:12		20:06			21:52			21:35	20:29			17:04		16:21
Potential sun hours	250	273	367	420		494		510	512	460		382	328	259	233
Total, worst case					154		22				178				
Sun reduction					0.31		0.31				0.26				
Oper. time red.					1.00		1.00				1.00				
Wind dir. red.					0.63		0.63				0.63				
Total reduction					0.19		0.20				0.16				
Total, real					30		4				29				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** AC - H031

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April			May			June		
1	08:52	08:22	07:24	07:09			06:00			05:11		05:41 (1)
	16:23	17:14	18:10	20:08			21:04			21:54	22	06:03 (1)
2	08:52	08:20	07:22	07:07			05:58			05:10		05:40 (1)
	16:24	17:16	18:12	20:10			21:06			21:55	23	06:03 (1)
3	08:52	08:19	07:20	07:04			05:56			05:09		05:40 (1)
	16:25	17:18	18:14	20:12			21:07			21:56	23	06:03 (1)
4	08:52	08:17	07:17	07:02			05:54			05:08		05:39 (1)
	16:26	17:20	18:16	20:14			21:09			21:57	24	06:03 (1)
5	08:51	08:15	07:15	07:00			05:52			05:07		05:38 (1)
	16:27	17:22	18:18	20:16			21:11			21:58	25	06:03 (1)
6	08:51	08:13	07:13	06:57		07:21 (3)	05:50			05:06		05:39 (1)
	16:29	17:24	18:19	20:18	3	07:24 (3)	21:13			21:59	24	06:03 (1)
7	08:51	08:11	07:10	06:55		07:19 (3)	05:48			05:06		05:39 (1)
	16:30	17:26	18:21	20:19	6	07:25 (3)	21:15			22:00	24	06:03 (1)
8	08:50	08:09	07:08	06:52		07:16 (3)	05:46			05:05		05:40 (1)
	16:31	17:28	18:23	20:21	9	07:25 (3)	21:16			22:01	23	06:03 (1)
9	08:50	08:08	07:06	06:50		07:14 (3)	05:44			05:04		05:40 (1)
	16:33	17:30	18:25	20:23	11	07:25 (3)	21:18			22:02	22	06:02 (1)
10	08:49	08:06	07:03	06:47		07:11 (3)	05:42			05:04		05:41 (1)
	16:34	17:32	18:27	20:25	13	07:24 (3)	21:20			22:03	22	06:03 (1)
11	08:48	08:04	07:01	06:45		07:09 (3)	05:40			05:04		05:41 (1)
	16:36	17:34	18:29	20:27	15	07:24 (3)	21:22			22:04	22	06:03 (1)
12	08:47	08:02	06:58	06:43		07:07 (3)	05:39			05:03		05:41 (1)
	16:37	17:36	18:31	20:29	17	07:24 (3)	21:23			22:05	21	06:02 (1)
13	08:47	08:00	06:56	06:40		07:04 (3)	05:37			05:03		05:42 (1)
	16:39	17:38	18:33	20:31	18	07:22 (3)	21:25			22:05	20	06:02 (1)
14	08:46	07:58	06:53	06:38		07:02 (3)	05:35			05:03		05:42 (1)
	16:41	17:40	18:35	20:32	20	07:22 (3)	21:27			22:06	20	06:02 (1)
15	08:45	07:55	06:51	06:36		07:02 (3)	05:33			05:02		05:43 (1)
	16:42	17:42	18:37	20:34	19	07:21 (3)	21:29			22:07	20	06:03 (1)
16	08:44	07:53	06:49	06:33		07:03 (3)	05:32			05:02		05:43 (1)
	16:44	17:44	18:39	20:36	16	07:19 (3)	21:30			22:07	20	06:03 (1)
17	08:43	07:51	06:46	06:31		07:04 (3)	05:30		05:58 (1)	05:02		05:44 (1)
	16:46	17:46	18:40	20:38	12	07:16 (3)	21:32	2	06:00 (1)	22:08	19	06:03 (1)
18	08:42	07:49	06:44	06:29		07:07 (3)	05:29		05:57 (1)	05:02		05:44 (1)
	16:47	17:48	18:42	20:40	6	07:13 (3)	21:34	4	06:01 (1)	22:08	19	06:03 (1)
19	08:41	07:47	06:41	06:26			05:27		05:56 (1)	05:02		05:44 (1)
	16:49	17:50	18:44	20:42			21:35	6	06:02 (1)	22:09	19	06:03 (1)
20	08:39	07:45	06:39	06:24			05:25		05:54 (1)	05:02		05:44 (1)
	16:51	17:52	18:46	20:44			21:37	8	06:02 (1)	22:09	19	06:03 (1)
21	08:38	07:43	06:36	06:22			05:24		05:53 (1)	05:02		05:44 (1)
	16:53	17:54	18:48	20:45			21:38	9	06:02 (1)	22:09	19	06:03 (1)
22	08:37	07:40	06:34	06:20			05:23		05:52 (1)	05:02		05:44 (1)
	16:55	17:56	18:50	20:47			21:40	11	06:03 (1)	22:09	19	06:03 (1)
23	08:36	07:38	06:31	06:17			05:21		05:50 (1)	05:03		05:45 (1)
	16:57	17:58	18:52	20:49			21:41	12	06:02 (1)	22:10	19	06:04 (1)
24	08:34	07:36	06:29	06:15			05:20		05:49 (1)	05:03		05:45 (1)
	16:58	18:00	18:53	20:51			21:43	14	06:03 (1)	22:10	19	06:04 (1)
25	08:33	07:34	06:26	06:13			05:18		05:48 (1)	05:03		05:45 (1)
	17:00	18:02	18:55	20:53			21:44	15	06:03 (1)	22:10	19	06:04 (1)
26	08:31	07:31	06:24	06:11			05:17		05:47 (1)	05:04		05:46 (1)
	17:02	18:04	18:57	20:55			21:46	16	06:03 (1)	22:10	19	06:05 (1)
27	08:30	07:29	06:22	06:09			05:16		05:46 (1)	05:04		05:45 (1)
	17:04	18:06	18:59	20:56			21:47	17	06:03 (1)	22:10	20	06:05 (1)
28	08:28	07:27	06:19	06:06			05:15		05:45 (1)	05:05		05:46 (1)
	17:06	18:08	19:01	20:58			21:49	18	06:03 (1)	22:09	20	06:06 (1)
29	08:27		07:17	06:04			05:14		05:44 (1)	05:05		05:45 (1)
	17:08		20:03	21:00			21:50	19	06:03 (1)	22:09	20	06:05 (1)
30	08:25		07:14	06:02			05:13		05:43 (1)	05:06		05:45 (1)
	17:10		20:05	21:02			21:51	20	06:03 (1)	22:09	21	06:06 (1)
31	08:24		07:12				05:11		05:42 (1)			
	17:12		20:06				21:53	21	06:03 (1)			
Potential sun hours	250	273	367	420			494			510		
Total, worst case					165			192			626	
Sun reduction					0.31			0.31			0.26	
Oper. time red.					1.00			1.00			1.00	
Wind dir. red.					0.64			0.64			0.64	
Total reduction					0.20			0.20			0.16	
Total, real					33			38			103	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** AC - H031

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August		September		October	November	December
1	05:07		05:46 (1)	05:47	06:41		07:08 (3)	07:34	07:33	08:28
	22:09	21	06:07 (1)	21:33	20:27	15	07:23 (3)	19:13	17:02	16:18
2	05:07		05:45 (1)	05:48	06:43		07:10 (3)	07:36	07:35	08:29
	22:08	22	06:07 (1)	21:31	20:24	13	07:23 (3)	19:10	17:00	16:17
3	05:08		05:45 (1)	05:50	06:44		07:12 (3)	07:38	07:36	08:31
	22:08	22	06:07 (1)	21:30	20:22	11	07:23 (3)	19:08	16:58	16:16
4	05:09		05:45 (1)	05:52	06:46		07:13 (3)	07:40	07:38	08:32
	22:07	23	06:08 (1)	21:28	20:19	9	07:22 (3)	19:05	16:56	16:16
5	05:10		05:45 (1)	05:53	06:48		07:15 (3)	07:42	07:40	08:34
	22:07	24	06:09 (1)	21:26	20:17	6	07:21 (3)	19:03	16:54	16:15
6	05:11		05:45 (1)	05:55	06:50		07:17 (3)	07:43	07:42	08:35
	22:06	24	06:09 (1)	21:24	20:14	4	07:21 (3)	19:01	16:52	16:14
7	05:12		05:45 (1)	05:57	06:52			07:45	07:44	08:36
	22:05	25	06:10 (1)	21:22	20:12			18:58	16:51	16:14
8	05:13		05:46 (1)	05:58	06:53			07:47	07:46	08:38
	22:05	24	06:10 (1)	21:20	20:10			18:56	16:49	16:14
9	05:14		05:47 (1)	06:00	06:55			07:49	07:48	08:39
	22:04	24	06:11 (1)	21:18	20:07			18:53	16:47	16:13
10	05:15		05:48 (1)	06:02	06:57			07:51	07:50	08:40
	22:03	23	06:11 (1)	21:16	20:05			18:51	16:45	16:13
11	05:16		05:49 (1)	06:04	06:59			07:53	07:52	08:41
	22:02	22	06:11 (1)	21:14	20:02			18:49	16:43	16:13
12	05:17		05:50 (1)	06:05	07:00			07:54	07:54	08:42
	22:01	22	06:12 (1)	21:12	20:00			18:46	16:42	16:12
13	05:18		05:51 (1)	06:07	07:02			07:56	07:56	08:43
	22:00	21	06:12 (1)	21:10	19:57			18:44	16:40	16:12
14	05:20		05:52 (1)	06:09	07:04			07:58	07:58	08:44
	21:59	20	06:12 (1)	21:08	19:55			18:41	16:38	16:12
15	05:21		05:53 (1)	06:11	07:06			08:00	08:00	08:45
	21:58	19	06:12 (1)	21:05	19:52			18:39	16:37	16:12
16	05:22		05:54 (1)	06:13	07:07			08:02	08:02	08:46
	21:57	18	06:12 (1)	21:03	19:50			18:37	16:35	16:12
17	05:24		05:56 (1)	06:14	07:09			08:04	08:03	08:47
	21:56	17	06:13 (1)	21:01	19:47			18:35	16:34	16:13
18	05:25		05:57 (1)	06:16	07:11			08:06	08:05	08:48
	21:55	16	06:13 (1)	20:59	19:45			18:32	16:32	16:13
19	05:26		05:58 (1)	06:18	07:13			08:08	08:07	08:49
	21:53	14	06:12 (1)	20:57	19:42			18:30	16:31	16:13
20	05:28		06:00 (1)	06:20	07:15			08:09	08:09	08:49
	21:52	13	06:13 (1)	20:54	19:40			18:28	16:30	16:13
21	05:29		06:01 (1)	06:21	07:16			08:11	08:11	08:50
	21:51	12	06:13 (1)	20:52	19:37			18:25	16:28	16:14
22	05:31		06:02 (1)	06:23	07:18			08:13	08:13	08:50
	21:49	10	06:12 (1)	20:50	19:35			18:23	16:27	16:14
23	05:32		06:04 (1)	06:25	07:20			08:15	08:14	08:51
	21:48	9	06:13 (1)	20:48	19:32			18:21	16:26	16:15
24	05:34		06:05 (1)	06:27	07:22			08:17	08:16	08:51
	21:46	7	06:12 (1)	20:45	19:30			18:19	16:25	16:15
25	05:35		06:07 (1)	06:28	07:09 (3)	07:23		07:19	08:18	08:52
	21:45	5	06:12 (1)	20:43	7	07:16 (3)	19:28		17:17	16:23	16:16
26	05:37		06:08 (1)	06:30	07:06 (3)	07:25		07:21	08:20	08:52
	21:43	3	06:11 (1)	20:41	13	07:19 (3)	19:25		17:15	16:22	16:17
27	05:38		06:09 (1)	06:32	07:05 (3)	07:27		07:23	08:21	08:52
	21:42	1	06:10 (1)	20:38	16	07:21 (3)	19:23		17:12	16:21	16:18
28	05:40			06:34	07:02 (3)	07:29		07:25	08:23	08:52
	21:40			20:36	20	07:22 (3)	19:20		17:10	16:20	16:18
29	05:42			06:36	07:03 (3)	07:31		07:27	08:24	08:52
	21:38			20:34	20	07:23 (3)	19:18		17:08	16:19	16:19
30	05:43			06:37	07:05 (3)	07:32		07:29	08:26	08:53
	21:37			20:31	18	07:23 (3)	19:15		17:06	16:19	16:20
31	05:45			06:39	07:07 (3)			07:31		08:52
	21:35			20:29	17	07:24 (3)			17:04		16:21
Potential sun hours	512			460		382		328	259	233
Total, worst case		461			111		58			
Sun reduction		0.22			0.26		0.25			
Oper. time red.		1.00			1.00		1.00			
Wind dir. red.		0.64			0.64		0.64			
Total reduction		0.14			0.16		0.16			
Total, real		66			18		9			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** AD - H032

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March			April			May			June		
1	08:52		08:22		07:24			07:09		07:33 (6)	06:00			05:10		05:41 (4)
	16:23		17:14		18:10			20:08	23	07:56 (6)	21:04			21:54	9	05:50 (4)
2	08:52		08:20		07:22			07:07		07:34 (6)	05:58			05:10		05:40 (4)
	16:24		17:16		18:12			20:10	21	07:55 (6)	21:06			21:55	11	05:51 (4)
3	08:52		08:19		07:20			07:04		07:34 (6)	05:56			05:09		05:40 (4)
	16:25		17:18		18:14			20:12	20	07:54 (6)	21:07			21:56	12	05:52 (4)
4	08:52		08:17		07:17			07:02		07:35 (6)	05:54			05:08		05:39 (4)
	16:26		17:20		18:16			20:14	17	07:52 (6)	21:09			21:57	13	05:52 (4)
5	08:51		08:15		07:15			07:00		07:36 (6)	05:52			05:07		05:38 (4)
	16:27		17:22		18:17			20:16	13	07:49 (6)	21:11			21:58	14	05:52 (4)
6	08:51		08:13		07:13			06:57		07:40 (6)	05:50			05:06		05:38 (4)
	16:29		17:24		18:19			20:18	6	07:46 (6)	21:13			21:59	15	05:53 (4)
7	08:51		08:11		07:10			06:55			05:48			05:06		05:37 (4)
	16:30		17:26		18:21			20:19			21:15			22:00	16	05:53 (4)
8	08:50		08:09		07:08			06:52			05:46			05:05		05:37 (4)
	16:31		17:28		18:23			20:21			21:16			22:01	16	05:53 (4)
9	08:49		08:07		07:05			06:50			05:44			05:04		05:36 (4)
	16:33		17:30		18:25			20:23			21:18			22:02	17	05:53 (4)
10	08:49		08:05		07:03			06:47			05:42			05:04		05:36 (4)
	16:34		17:32		18:27			20:25			21:20			22:03	18	05:54 (4)
11	08:48		08:04		07:01			06:45			05:40			05:04		05:36 (4)
	16:36		17:34		18:29			20:27			21:22			22:04	19	05:55 (4)
12	08:47		08:02		06:58			06:43			05:39			05:03		05:35 (4)
	16:37		17:36		18:31			20:29			21:23			22:05	19	05:54 (4)
13	08:47		07:59		06:56			06:40			05:37			05:03		05:35 (4)
	16:39		17:38		18:33			20:31			21:25			22:05	20	05:55 (4)
14	08:46		07:57		06:53			06:38			05:35			05:03		05:35 (4)
	16:41		17:40		18:35			20:32			21:27			22:06	21	05:56 (4)
15	08:45		07:55		06:51			06:36			05:33			05:02		05:35 (4)
	16:42		17:42		18:37			20:34			21:28			22:07	21	05:56 (4)
16	08:44		07:53		06:49			06:33			05:32			05:02		05:35 (4)
	16:44		17:44		18:38			20:36			21:30			22:07	21	05:56 (4)
17	08:43		07:51		06:46			06:31			05:30			05:02		05:35 (4)
	16:46		17:46		18:40			20:38			21:32			22:08	22	05:57 (4)
18	08:42		07:49		06:44			06:29			05:29			05:02		05:35 (4)
	16:47		17:48		18:42			20:40			21:33			22:08	22	05:57 (4)
19	08:41		07:47		06:41			06:26			05:27			05:02		05:35 (4)
	16:49		17:50		18:44			20:42			21:35			22:08	22	05:57 (4)
20	08:39		07:45		06:39			06:24			05:25			05:02		05:35 (4)
	16:51		17:52		18:46			20:43			21:37			22:09	22	05:57 (4)
21	08:38		07:43		06:36			06:22			05:24			05:02		05:35 (4)
	16:53		17:54		18:48			20:45			21:38			22:09	22	05:57 (4)
22	08:37		07:40		06:34			06:20			05:22			05:02		05:35 (4)
	16:55		17:56		18:50			20:47			21:40			22:09	22	05:57 (4)
23	08:36		07:38		06:31			06:17			05:21			05:03		05:36 (4)
	16:57		17:58		18:52			20:49			21:41			22:09	22	05:58 (4)
24	08:34		07:36		06:29		06:53 (6)	06:15			05:20			05:03		05:36 (4)
	16:58		18:00		18:53	3	06:56 (6)	20:51			21:43			22:10	22	05:58 (4)
25	08:33		07:34		06:26		06:50 (6)	06:13			05:18		05:48 (4)	05:03		05:36 (4)
	17:00		18:02		18:55	7	06:57 (6)	20:53			21:44	1	05:49 (4)	22:10	22	05:58 (4)
26	08:31		07:31		06:24		06:48 (6)	06:11			05:17		05:47 (4)	05:04		05:37 (4)
	17:02		18:04		18:57	10	06:58 (6)	20:55			21:46	2	05:49 (4)	22:10	22	05:59 (4)
27	08:30		07:29		06:22		06:45 (6)	06:08			05:16		05:46 (4)	05:04		05:37 (4)
	17:04		18:06		18:59	13	06:58 (6)	20:56			21:47	3	05:49 (4)	22:09	21	05:58 (4)
28	08:28		07:27		06:19		06:43 (6)	06:06			05:15		05:45 (4)	05:05		05:38 (4)
	17:06		18:08		19:01	15	06:58 (6)	20:58			21:49	5	05:50 (4)	22:09	21	05:59 (4)
29	08:27				07:17		07:40 (6)	06:04			05:14		05:44 (4)	05:05		05:38 (4)
	17:08				20:03	17	07:57 (6)	21:00			21:50	6	05:50 (4)	22:09	20	05:58 (4)
30	08:25				07:14		07:38 (6)	06:02			05:13		05:43 (4)	05:06		05:39 (4)
	17:10				20:05	19	07:57 (6)	21:02			21:51	7	05:50 (4)	22:09	20	05:59 (4)
31	08:24				07:12		07:35 (6)				05:11		05:42 (4)			
	17:12				20:06	21	07:56 (6)				21:52	8	05:50 (4)			
Potential sun hours	250		273		367			420			494			510		
Total, worst case						105			100			32			564	
Sun reduction						0.22			0.31			0.31			0.26	
Oper. time red.						1.00			1.00			1.00			1.00	
Wind dir. red.						0.65			0.65			0.64			0.64	
Total reduction						0.14			0.20			0.20			0.16	
Total, real						15			20			6			93	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** AD - H032

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August		September		October	November	December
1	05:07		05:40 (4)	05:47	06:41		07:34	07:33	08:28
	22:09	19	05:59 (4)	21:33	20:26		19:13	17:02	16:18
2	05:07		05:40 (4)	05:48	06:43		07:36	07:34	08:29
	22:08	18	05:58 (4)	21:31	20:24		19:10	17:00	16:17
3	05:08		05:41 (4)	05:50	06:44		07:38	07:36	08:31
	22:08	18	05:59 (4)	21:29	20:22		19:08	16:58	16:16
4	05:09		05:42 (4)	05:52	06:46		07:40	07:38	08:32
	22:07	17	05:59 (4)	21:28	20:19		19:05	16:56	16:16
5	05:10		05:43 (4)	05:53	06:48		07:41	07:40	08:33
	22:07	16	05:59 (4)	21:26	20:17		19:03	16:54	16:15
6	05:11		05:44 (4)	05:55	06:50		07:36 (6)	07:43	07:42	08:35
	22:06	15	05:59 (4)	21:24	20:14	6	07:42 (6)	19:00	16:52	16:14
7	05:12		05:45 (4)	05:57	06:51		07:31 (6)	07:45	07:44	08:36
	22:05	14	05:59 (4)	21:22	20:12	13	07:44 (6)	18:58	16:51	16:14
8	05:13		05:46 (4)	05:58	06:53		07:29 (6)	07:47	07:46	08:37
	22:05	12	05:58 (4)	21:20	20:09	17	07:46 (6)	18:56	16:49	16:14
9	05:14		05:46 (4)	06:00	06:55		07:28 (6)	07:49	07:48	08:39
	22:04	12	05:58 (4)	21:18	20:07	20	07:48 (6)	18:53	16:47	16:13
10	05:15		05:48 (4)	06:02	06:57		07:27 (6)	07:51	07:50	08:40
	22:03	11	05:59 (4)	21:16	20:05	22	07:49 (6)	18:51	16:45	16:13
11	05:16		05:49 (4)	06:04	06:59		07:25 (6)	07:53	07:52	08:41
	22:02	10	05:59 (4)	21:14	20:02	23	07:48 (6)	18:49	16:43	16:13
12	05:17		05:50 (4)	06:05	07:00		07:27 (6)	07:54	07:54	08:42
	22:01	9	05:59 (4)	21:12	20:00	22	07:49 (6)	18:46	16:42	16:12
13	05:18		05:51 (4)	06:07	07:02		07:29 (6)	07:56	07:56	08:43
	22:00	8	05:59 (4)	21:10	19:57	20	07:49 (6)	18:44	16:40	16:12
14	05:20		05:52 (4)	06:09	07:04		07:30 (6)	07:58	07:58	08:44
	21:59	6	05:58 (4)	21:08	19:55	18	07:48 (6)	18:41	16:38	16:12
15	05:21		05:53 (4)	06:11	07:06		07:32 (6)	08:00	08:00	08:45
	21:58	5	05:58 (4)	21:05	19:52	16	07:48 (6)	18:39	16:37	16:12
16	05:22		05:54 (4)	06:12	07:07		07:34 (6)	08:02	08:01	08:46
	21:57	4	05:58 (4)	21:03	19:50	13	07:47 (6)	18:37	16:35	16:12
17	05:23		05:56 (4)	06:14	07:09		07:36 (6)	08:04	08:03	08:47
	21:56	3	05:59 (4)	21:01	19:47	10	07:46 (6)	18:34	16:34	16:13
18	05:25		05:57 (4)	06:16	07:11		07:37 (6)	08:06	08:05	08:48
	21:55	2	05:59 (4)	20:59	19:45	7	07:44 (6)	18:32	16:32	16:13
19	05:26			06:18	07:13		07:39 (6)	08:07	08:07	08:48
	21:53			20:57	19:42	4	07:43 (6)	18:30	16:31	16:13
20	05:28			06:20	07:14		07:41 (6)	08:09	08:09	08:49
	21:52			20:54	19:40	1	07:42 (6)	18:28	16:30	16:13
21	05:29			06:21	07:16			08:11	08:11	08:50
	21:51			20:52	19:37			18:25	16:28	16:14
22	05:31			06:23	07:18			08:13	08:12	08:50
	21:49			20:50	19:35			18:23	16:27	16:14
23	05:32			06:25	07:20			08:15	08:14	08:51
	21:48			20:48	19:32			18:21	16:26	16:15
24	05:34			06:27	07:22			08:17	08:16	08:51
	21:46			20:45	19:30			18:19	16:25	16:15
25	05:35			06:28	07:23			07:19	08:18	08:52
	21:45			20:43	19:27			17:17	16:23	16:16
26	05:37			06:30	07:25			07:21	08:19	08:52
	21:43			20:41	19:25			17:14	16:22	16:17
27	05:38			06:32	07:27			07:23	08:21	08:52
	21:42			20:38	19:23			17:12	16:21	16:18
28	05:40			06:34	07:29			07:25	08:23	08:52
	21:40			20:36	19:20			17:10	16:20	16:18
29	05:42			06:36	07:31			07:27	08:24	08:52
	21:38			20:34	19:18			17:08	16:19	16:19
30	05:43			06:37	07:32			07:29	08:26	08:52
	21:37			20:31	19:15			17:06	16:19	16:20
31	05:45			06:39				07:31		08:52
	21:35			20:29				17:04		16:21
Potential sun hours	512			460	382			328	259	233
Total, worst case		199				212				
Sun reduction		0.22				0.25				
Oper. time red.		1.00				1.00				
Wind dir. red.		0.64				0.65				
Total reduction		0.14				0.16				
Total, real		28				34				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** AE - H033

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March		April		May	June	July	August		September		October	November	December
1	08:52	08:22	07:24		07:09		07:37 (6)	06:00	05:10	05:07	05:47		06:41	07:25 (5)	07:34	07:33	08:28
	16:23	17:14	18:10		20:08	15	07:52 (6)	21:04	21:54	22:09	21:33		20:26	3 07:28 (5)	19:13	17:02	16:18
2	08:52	08:20	07:22		07:07		07:38 (6)	05:58	05:10	05:07	05:48		06:43	07:24 (5)	07:36	07:34	08:29
	16:24	17:16	18:12		20:10	13	07:51 (6)	21:06	21:55	22:08	21:31		20:24	3 07:27 (5)	19:10	17:00	16:17
3	08:52	08:19	07:20		07:04		07:40 (6)	05:56	05:09	05:08	05:50		06:44	07:23 (5)	07:38	07:36	08:31
	16:25	17:18	18:14		20:12	7	07:47 (6)	21:07	21:56	22:08	21:30		20:22	3 07:26 (5)	19:08	16:58	16:16
4	08:52	08:17	07:17		07:02		07:26 (5)	05:54	05:08	05:09	05:52		06:46	07:21 (5)	07:40	07:38	08:32
	16:26	17:20	18:16		20:14	1	07:27 (5)	21:09	21:57	22:07	21:28		20:19	3 07:24 (5)	19:05	16:56	16:16
5	08:51	08:15	07:15		07:00		07:23 (5)	05:52	05:07	05:10	05:53		06:48	07:19 (5)	07:41	07:40	08:33
	16:27	17:22	18:18		20:16	3	07:26 (5)	21:11	21:58	22:07	21:26		20:17	4 07:23 (5)	19:03	16:54	16:15
6	08:51	08:13	07:13		06:57		07:21 (5)	05:50	05:06	05:11	05:55		06:50	07:17 (5)	07:43	07:42	08:35
	16:29	17:24	18:19		20:18	6	07:27 (5)	21:13	21:59	22:06	21:24		20:14	6 07:23 (5)	19:01	16:52	16:14
7	08:51	08:11	07:10		06:55		07:23 (5)	05:48	05:06	05:12	05:57		06:52	07:18 (5)	07:45	07:44	08:36
	16:30	17:26	18:21		20:19	4	07:27 (5)	21:15	22:00	22:05	21:22		20:12	4 07:22 (5)	18:58	16:51	16:14
8	08:50	08:09	07:08		06:52		07:24 (5)	05:46	05:05	05:13	05:58		06:53	07:20 (5)	07:47	07:46	08:37
	16:31	17:28	18:23		20:21	3	07:27 (5)	21:16	22:01	22:05	21:20		20:10	1 07:21 (5)	18:56	16:49	16:14
9	08:49	08:07	07:06		06:50		07:25 (5)	05:44	05:04	05:14	06:00		06:55	07:35 (6)	07:49	07:48	08:39
	16:33	17:30	18:25		20:23	3	07:28 (5)	21:18	22:02	22:04	21:18		20:07	6 07:41 (6)	18:53	16:47	16:13
10	08:49	08:06	07:03		06:47		07:25 (5)	05:42	05:04	05:15	06:02		06:57	07:32 (6)	07:51	07:50	08:40
	16:34	17:32	18:27		20:25	3	07:28 (5)	21:20	22:03	22:03	21:16		20:05	12 07:44 (6)	18:51	16:45	16:13
11	08:48	08:04	07:01		06:45		07:26 (5)	05:40	05:04	05:16	06:04		06:59	07:29 (6)	07:53	07:52	08:41
	16:36	17:34	18:29		20:27	3	07:29 (5)	21:22	22:04	22:02	21:14		20:02	16 07:45 (6)	18:49	16:43	16:13
12	08:47	08:02	06:58		06:43		07:27 (5)	05:39	05:03	05:17	06:05		07:00	07:28 (6)	07:54	07:54	08:42
	16:37	17:36	18:31		20:29	2	07:29 (5)	21:23	22:05	22:01	21:12		20:00	18 07:46 (6)	18:46	16:42	16:12
13	08:47	08:00	06:56		06:40			05:37	05:03	05:18	06:07		07:02	07:29 (6)	07:56	07:56	08:43
	16:39	17:38	18:33		20:31			21:25	22:05	22:00	21:10		19:57	17 07:46 (6)	18:44	16:40	16:12
14	08:46	07:57	06:53		06:38			05:35	05:03	05:20	06:09		07:04	07:30 (6)	07:58	07:58	08:44
	16:41	17:40	18:35		20:32			21:27	22:06	21:59	21:08		19:55	16 07:46 (6)	18:41	16:38	16:12
15	08:45	07:55	06:51		06:36			05:33	05:02	05:21	06:11		07:06	07:32 (6)	08:00	08:00	08:45
	16:42	17:42	18:37		20:34			21:28	22:07	21:58	21:05		19:52	14 07:46 (6)	18:39	16:37	16:12
16	08:44	07:53	06:49		06:33			05:32	05:02	05:22	06:12		07:07	07:34 (6)	08:02	08:01	08:46
	16:44	17:44	18:38		20:36			21:30	22:07	21:57	21:03		19:50	12 07:46 (6)	18:37	16:35	16:12
17	08:43	07:51	06:46		06:31			05:30	05:02	05:23	06:14		07:09	07:36 (6)	08:04	08:03	08:47
	16:46	17:46	18:40		20:38			21:32	22:08	21:56	21:01		19:47	10 07:46 (6)	18:34	16:34	16:13
18	08:42	07:49	06:44		06:29			05:29	05:02	05:25	06:16		07:11	07:37 (6)	08:06	08:05	08:48
	16:47	17:48	18:42		20:40			21:33	22:08	21:55	20:59		19:45	7 07:44 (6)	18:32	16:32	16:13
19	08:41	07:47	06:41		06:26			05:27	05:02	05:26	06:18		07:13	07:39 (6)	08:08	08:07	08:48
	16:49	17:50	18:44		20:42			21:35	22:09	21:53	20:57		19:42	5 07:44 (6)	18:30	16:31	16:13
20	08:39	07:45	06:39		06:24			05:25	05:02	05:28	06:20		07:15	07:41 (6)	08:09	08:09	08:49
	16:51	17:52	18:46		20:43			21:37	22:09	21:52	20:54		19:40	1 07:42 (6)	18:28	16:30	16:13
21	08:38	07:43	06:36		06:22			05:24	05:02	05:29	06:21		07:16		08:11	08:11	08:50
	16:53	17:54	18:48		20:45			21:38	22:09	21:51	20:52		19:37		18:25	16:28	16:14
22	08:37	07:40	06:34		06:20			05:23	05:02	05:31	06:23		07:18		08:13	08:12	08:50
	16:55	17:56	18:50		20:47			21:40	22:09	21:49	20:50		19:35		18:23	16:27	16:14
23	08:36	07:38	06:31		06:55 (6)		06:17	05:21	05:03	05:32	06:25		07:20		08:15	08:14	08:51
	16:57	17:58	18:52	1	06:56 (6)		20:49	21:41	22:09	21:48	20:48		19:32		18:21	16:26	16:15
24	08:34	07:36	06:29		06:53 (6)		06:15	05:20	05:03	05:34	06:27		07:22		08:17	08:16	08:51
	16:58	18:00	18:53	4	06:57 (6)		20:51	21:43	22:10	21:46	20:45		19:30		18:19	16:25	16:15
25	08:33	07:34	06:26		06:50 (6)		06:13	05:18	05:03	05:35	06:28		07:23		07:19	08:18	08:52
	17:00	18:02	18:55	7	06:57 (6)		20:53	21:44	22:10	21:45	20:43		19:27		17:17	16:23	16:16
26	08:31	07:31	06:24		06:48 (6)		06:11	05:17	05:04	05:37	06:30		07:25		07:21	08:19	08:52
	17:02	18:04	18:57	9	06:57 (6)		20:55	21:46	22:10	21:43	20:41		19:25		17:14	16:22	16:17
27	08:30	07:29	06:22		06:45 (6)		06:08	05:16	05:04	05:38	06:32		07:27		07:23	08:21	08:52
	17:04	18:06	18:59	12	06:57 (6)		20:56	21:47	22:09	21:42	20:38		19:23		17:12	16:21	16:18
28	08:28	07:27	06:19		06:43 (6)		06:06	05:15	05:05	05:40	06:34		07:29		07:25	08:23	08:52
	17:06	18:08	19:01	14	06:57 (6)		20:58	21:49	22:09	21:40	20:36		19:20		17:10	16:20	16:18
29	08:27		07:17		07:40 (6)		06:04	05:14	05:05	05:42	06:36		07:31		07:27	08:24	08:52
	17:08		20:03	16	07:56 (6)		21:00	21:50	22:09	21:38	20:34		19:18		17:08	16:19	16:19
30	08:25		07:14		07:38 (6)		06:02	05:13	05:06	05:43	06:37		07:32		07:29	08:26	08:52
	17:10		20:05	17	07:55 (6)		21:02	21:51	22:09	21:37	20:31		19:15		17:06	16:19	16:20
31	08:24		07:12		07:35 (6)			05:11		05:45	06:39	07:27 (5)			07:31		08:52
	17:12		20:06	19	07:54 (6)			21:52		21:35	20:29	2 07:29 (5)			17:04		16:21
Potential sun hours	250	273	367		420			494	510	512	460		382		328	259	233
Total, worst case				99		63						2		161			
Sun reduction				0.22		0.31						0.26		0.25			
Oper. time red.				1.00		1.00						1.00		1.00			
Wind dir. red.				0.65		0.64						0.64		0.65			
Total reduction				0.14		0.20						0.16		0.16			
Total, real				14		12						0		26			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** AF - H034

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:10	20:08	21:04	21:54	22:08	21:33	20:26	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:09	05:07	05:48	06:43	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:14	20:12	21:07	21:56	22:08	21:29	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:51	06:46	07:40	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52	05:07	05:10	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	21:58	22:06	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:55	05:48	05:06	05:12	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:56	16:49	16:13
9	08:49	08:07	07:05	06:50	05:44	05:04	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:01	06:45	05:40	05:03	05:16	06:04	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:13
12	08:47	08:01	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:04	22:01	21:12	20:00	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	22:00	21:09	19:57	18:44	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:07	21:56	21:01	19:47	18:34	16:34	16:13
18	08:42	07:49	06:44	06:29	05:28	05:02	05:25	06:16	07:11	08:05	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:28	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:28	16:30	16:13
21	08:38	07:42	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:10	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	05:02	05:31	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34	06:27	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	21:44	22:09	21:45	20:43	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:41	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:27	06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:14	05:05	05:41	06:35	07:30	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:12		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** AG - H035

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February			March			April	May	June
1	08:52		14:06 (10)	08:22			07:24		17:18 (8)	07:09	06:00	05:10
	16:22	13	14:19 (10)	17:13			18:09	18	17:36 (8)	20:08	21:03	21:53
2	08:52		14:09 (10)	08:20			07:22		17:19 (8)	07:06	05:57	05:09
	16:23	10	14:19 (10)	17:15			18:11	15	17:34 (8)	20:10	21:05	21:55
3	08:52		14:12 (10)	08:18			07:19		17:22 (8)	07:04	05:55	05:08
	16:24	5	14:17 (10)	17:17			18:13	9	17:31 (8)	20:12	21:07	21:56
4	08:51			08:16			07:17			07:02	05:53	05:07
	16:26			17:19			18:15			20:13	21:09	21:57
5	08:51			08:15			07:15			06:59	05:51	05:07
	16:27			17:21			18:17			20:15	21:11	21:58
6	08:51			08:13			07:12			06:57	05:49	05:06
	16:28			17:23			18:19			20:17	21:12	21:59
7	08:50			08:11			07:10			06:54	05:47	05:05
	16:30			17:25			18:21			20:19	21:14	22:00
8	08:50			08:09			07:08			06:52	05:46	05:05
	16:31			17:27			18:23			20:21	21:16	22:01
9	08:49			08:07			07:05			06:49	05:44	05:04
	16:32			17:30			18:25			20:23	21:18	22:02
10	08:49			08:05			07:03			06:47	05:42	05:03
	16:34			17:32			18:27			20:25	21:20	22:03
11	08:48			08:03			07:00			06:45	05:40	05:03
	16:35			17:34			18:29			20:26	21:21	22:04
12	08:47			08:01			06:58			06:42	05:38	05:03
	16:37			17:36			18:31			20:28	21:23	22:04
13	08:46			07:59			06:55			06:40	05:36	05:02
	16:39			17:38			18:32			20:30	21:25	22:05
14	08:45			07:57			06:53			06:38	05:35	05:02
	16:40			17:40			18:34			20:32	21:26	22:06
15	08:44			07:55			06:51			06:35	05:33	05:02
	16:42			17:42			18:36			20:34	21:28	22:06
16	08:44			07:53			06:48			06:33	05:31	05:02
	16:44			17:44			18:38			20:36	21:30	22:07
17	08:42			07:51			06:46			06:31	05:30	05:02
	16:45			17:46			18:40			20:38	21:32	22:07
18	08:41			07:49			06:43			06:28	05:28	05:01
	16:47			17:48			18:42			20:39	21:33	22:08
19	08:40			07:47		17:18 (8)	06:41			06:26	05:26	05:01
	16:49			17:50	3	17:21 (8)	18:44			20:41	21:35	22:08
20	08:39			07:44		17:17 (8)	06:38			06:24	05:25	05:02
	16:51			17:52	6	17:23 (8)	18:46			20:43	21:36	22:09
21	08:38			07:42		17:17 (8)	06:36			06:21	05:23	05:02
	16:52			17:54	9	17:26 (8)	18:47			20:45	21:38	22:09
22	08:37			07:40		17:16 (8)	06:33			06:19	05:22	05:02
	16:54			17:56	11	17:27 (8)	18:49			20:47	21:39	22:09
23	08:35			07:38		17:16 (8)	06:31			06:17	05:21	05:02
	16:56			17:58	13	17:29 (8)	18:51			20:49	21:41	22:09
24	08:34			07:35		17:16 (8)	06:29			06:15	05:19	05:02
	16:58			18:00	16	17:32 (8)	18:53			20:51	21:43	22:09
25	08:33			07:33		17:15 (8)	06:26			06:12	05:18	05:03
	17:00			18:01	18	17:33 (8)	18:55			20:52	21:44	22:09
26	08:31			07:31		17:16 (8)	06:24			06:10	05:17	05:03
	17:02			18:03	20	17:36 (8)	18:57			20:54	21:45	22:09
27	08:30			07:29		17:17 (8)	06:21			06:08	05:15	05:04
	17:04			18:05	21	17:38 (8)	18:59			20:56	21:47	22:09
28	08:28			07:26		17:17 (8)	06:19			06:06	05:14	05:04
	17:06			18:07	20	17:37 (8)	19:00			20:58	21:48	22:09
29	08:27						07:16			06:04	05:13	05:05
	17:08						20:02			21:00	21:50	22:09
30	08:25						07:14			06:02	05:12	05:05
	17:10						20:04			21:02	21:51	22:09
31	08:23						07:11				05:11	
	17:11						20:06				21:52	
Potential sun hours	250			273			367			420	494	510
Total, worst case		28			137			42				
Sun reduction		0.16			0.19			0.22				
Oper. time red.		1.00			1.00			1.00				
Wind dir. red.		0.66			0.65			0.65				
Total reduction		0.11			0.13			0.14				
Total, real		3			17			6				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** AG - H035

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July	August	September	October			November	December		
1	05:06	05:46	06:40	07:34			07:32	08:27		
	22:08	21:33	20:26	19:12			17:02	16:17		
2	05:07	05:48	06:42	07:36			07:34	08:29		
	22:08	21:31	20:24	19:10			17:00	16:16		
3	05:08	05:49	06:44	07:37			07:36	08:30		
	22:07	21:29	20:21	19:07			16:58	16:16		
4	05:08	05:51	06:46	07:39			07:38	08:32		
	22:07	21:27	20:19	19:05			16:56	16:15		
5	05:09	05:53	06:48	07:41			07:40	08:33		
	22:06	21:25	20:16	19:03			16:54	16:14		
6	05:10	05:55	06:49	07:43			07:42	08:35		
	22:06	21:24	20:14	19:00			16:52	16:14		
7	05:11	05:56	06:51	07:45			07:44	08:36		
	22:05	21:22	20:12	18:58			16:50	16:13		
8	05:12	05:58	06:53	07:47			07:46	08:37		
	22:04	21:20	20:09	18:55			16:48	16:13		
9	05:13	06:00	06:55	07:48			07:48	08:38		14:00 (10)
	22:04	21:18	20:07	18:53			16:46	16:13	5	14:05 (10)
10	05:14	06:01	06:56	07:50			07:50	08:40		13:58 (10)
	22:03	21:16	20:04	18:50			16:45	16:12	10	14:08 (10)
11	05:15	06:03	06:58	07:52		17:55 (8)	07:52	08:41		13:58 (10)
	22:02	21:13	20:02	18:48	12	18:07 (8)	16:43	16:12	12	14:10 (10)
12	05:17	06:05	07:00	07:54		17:53 (8)	07:54	08:42		13:57 (10)
	22:01	21:11	19:59	18:46	15	18:08 (8)	16:41	16:12	15	14:12 (10)
13	05:18	06:07	07:02	07:56		17:51 (8)	07:55	08:43		13:56 (10)
	22:00	21:09	19:57	18:43	19	18:10 (8)	16:40	16:12	17	14:13 (10)
14	05:19	06:09	07:03	07:58		17:50 (8)	07:57	08:44		13:56 (10)
	21:59	21:07	19:54	18:41	21	18:11 (8)	16:38	16:12	18	14:14 (10)
15	05:20	06:10	07:05	08:00		17:49 (8)	07:59	08:45		13:56 (10)
	21:58	21:05	19:52	18:39	20	18:09 (8)	16:36	16:12	19	14:15 (10)
16	05:22	06:12	07:07	08:01		17:48 (8)	08:01	08:46		13:56 (10)
	21:57	21:03	19:49	18:36	19	18:07 (8)	16:35	16:12	20	14:16 (10)
17	05:23	06:14	07:09	08:03		17:47 (8)	08:03	08:47		13:55 (10)
	21:56	21:01	19:47	18:34	18	18:05 (8)	16:33	16:12	21	14:16 (10)
18	05:24	06:16	07:11	08:05		17:47 (8)	08:05	08:47		13:56 (10)
	21:54	20:59	19:44	18:32	15	18:02 (8)	16:32	16:12	21	14:17 (10)
19	05:26	06:17	07:12	08:07		17:47 (8)	08:07	08:48		13:56 (10)
	21:53	20:56	19:42	18:30	13	18:00 (8)	16:31	16:13	22	14:18 (10)
20	05:27	06:19	07:14	08:09		17:47 (8)	08:09	08:49		13:57 (10)
	21:52	20:54	19:39	18:27	11	17:58 (8)	16:29	16:13	22	14:19 (10)
21	05:29	06:21	07:16	08:11		17:47 (8)	08:10	08:49		13:57 (10)
	21:50	20:52	19:37	18:25	8	17:55 (8)	16:28	16:13	22	14:19 (10)
22	05:30	06:23	07:18	08:13		17:48 (8)	08:12	08:50		13:58 (10)
	21:49	20:50	19:35	18:23	5	17:53 (8)	16:27	16:14	22	14:20 (10)
23	05:32	06:24	07:19	08:15		17:49 (8)	08:14	08:50		13:58 (10)
	21:48	20:47	19:32	18:21	2	17:51 (8)	16:25	16:14	22	14:20 (10)
24	05:33	06:26	07:21	08:17			08:16	08:51		13:58 (10)
	21:46	20:45	19:30	18:18			16:24	16:15	22	14:20 (10)
25	05:35	06:28	07:23	07:19			08:17	08:51		13:59 (10)
	21:45	20:43	19:27	17:16			16:23	16:16	22	14:21 (10)
26	05:36	06:30	07:25	07:21			08:19	08:52		14:00 (10)
	21:43	20:40	19:25	17:14			16:22	16:16	21	14:21 (10)
27	05:38	06:32	07:27	07:23			08:21	08:52		14:01 (10)
	21:41	20:38	19:22	17:12			16:21	16:17	20	14:21 (10)
28	05:39	06:33	07:28	07:24			08:22	08:52		14:01 (10)
	21:40	20:36	19:20	17:10			16:20	16:18	20	14:21 (10)
29	05:41	06:35	07:30	07:26			08:24	08:52		14:02 (10)
	21:38	20:33	19:17	17:08			16:19	16:19	19	14:21 (10)
30	05:43	06:37	07:32	07:28			08:26	08:52		14:04 (10)
	21:36	20:31	19:15	17:06			16:18	16:20	17	14:21 (10)
31	05:44	06:39		07:30				08:52		14:05 (10)
	21:35	20:29		17:04				16:21	16	14:21 (10)
Potential sun hours	513	460	382	328			259	233		
Total, worst case					178				425	
Sun reduction					0.23				0.12	
Oper. time red.					1.00				1.00	
Wind dir. red.					0.65				0.66	
Total reduction					0.15				0.08	
Total, real					26				33	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** AH - H036

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:07	05:47	06:41	07:34	07:33	08:28
	16:23	17:14	18:10	20:08	21:04	21:54	22:09	21:33	20:26 3 07:28 (5)	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:10	05:07	05:48	06:43	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:06	21:55	22:08	21:31	20:24 3 07:27 (5)	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38	07:36	08:31
	16:25	17:18	18:14	20:12	21:07	21:56	22:08	21:30	20:22 3 07:26 (5)	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02 07:26 (5)	05:54	05:08	05:09	05:52	06:46	07:40	07:38	08:32
	16:26	17:20	18:16	20:14 1 07:27 (5)	21:09	21:57	22:07	21:28	20:19 3 07:24 (5)	19:05	16:56	16:16
5	08:51	08:15	07:15	07:00 07:23 (5)	05:52	05:07	05:10	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:18	20:16 3 07:26 (5)	21:11	21:58	22:07	21:26	20:17 4 07:23 (5)	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57 07:21 (5)	05:50	05:06	05:11	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:18 6 07:27 (5)	21:13	21:59	22:06	21:24	20:14 6 07:23 (5)	19:01	16:52	16:14
7	08:51	08:11	07:10	06:55 07:23 (5)	05:48	05:06	05:12	05:57	06:52	07:45	07:44	08:36
	16:30	17:26	18:21	20:19 4 07:27 (5)	21:15	22:00	22:05	21:22	20:12 4 07:22 (5)	18:58	16:51	16:14
8	08:50	08:09	07:08	06:52 07:24 (5)	05:46	05:05	05:13	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21 3 07:27 (5)	21:16	22:01	22:05	21:20	20:10 1 07:21 (5)	18:56	16:49	16:14
9	08:49	08:07	07:06	06:50 07:25 (5)	05:44	05:04	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23 3 07:28 (5)	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:06	07:03	06:47 07:25 (5)	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25 3 07:28 (5)	21:20	22:03	22:03	21:16	20:05	18:51	16:45	16:13
11	08:48	08:04	07:01	06:45 07:26 (5)	05:40	05:04	05:16	06:04	06:59	07:53	07:52	08:41
	16:36	17:34	18:29	20:27 3 07:29 (5)	21:22	22:04	22:02	21:14	20:02	18:49	16:43	16:13
12	08:47	08:02	06:58	06:43 07:27 (5)	05:39	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29 2 07:29 (5)	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:12
13	08:47	08:00	06:56	06:40 07:27 (5)	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:31 1 07:28 (5)	21:25	22:05	22:00	21:10	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:03	05:20	06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	21:59	21:08	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00	08:00	08:45
	16:42	17:42	18:37	20:34	21:28	22:07	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:49	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:35	16:34	16:13
18	08:42	07:49	06:44	06:29	05:29	05:02	05:25	06:16	07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:55	20:59	19:45	18:32	16:32	16:13
19	08:41	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:08	08:07	08:48
	16:49	17:50	18:44	20:42	21:35	22:09	21:53	20:57	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:28	06:20	07:15	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:37	22:09	21:52	20:54	19:40	18:28	16:30	16:13
21	08:38	07:43	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:20	05:23	05:02	05:31	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:36	07:38	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:14	08:51
	16:57	17:58	18:52	20:49	21:41	22:09	21:48	20:48	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:10	21:46	20:45	19:30	18:19	16:25	16:15
25	08:33	07:34	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:52
	17:00	18:02	18:55	20:53	21:44	22:10	21:45	20:43	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:55	21:46	22:10	21:43	20:41	19:25	17:14	16:22	16:17
27	08:30	07:29	06:22	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:23	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:49	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	05:14	05:05	05:42	06:36	07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:34	19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	05:13	05:06	05:43	06:37	07:32	07:29	08:26	08:52
	17:10		20:05	21:02	21:51	22:09	21:37	20:31	19:15	17:06	16:19	16:20
31	08:24		07:12		05:11		05:45	06:39 07:27 (5)		07:31		08:52
	17:12		20:06		21:53		21:35	20:29 2 07:29 (5)		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case				29				2	27			
Sun reduction				0.31				0.26	0.25			
Oper. time red.				1.00				1.00	1.00			
Wind dir. red.				0.64				0.64	0.64			
Total reduction				0.20				0.16	0.16			
Total, real				6				0	4			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** AI - H037

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April		May	June	July	August		September	October	November	December
1	08:52	08:22	07:24	07:09		06:00	05:10	05:06	05:46		06:41	07:34	07:32	08:27
	16:22	17:14	18:10	20:08		21:04	21:54	22:08	21:33		20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:07		05:58	05:09	05:07	05:48		06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10		21:05	21:55	22:08	21:31		20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04		05:56	05:08	05:08	05:50		06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12		21:07	21:56	22:08	21:29		20:21	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02		05:54	05:08	05:09	05:51		06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14		21:09	21:57	22:07	21:27		20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59		05:52	05:07	05:09	05:53		06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15		21:11	21:58	22:07	21:26		20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57		05:50	05:06	05:10	05:55		06:50	07:43	07:42	08:35
	16:28	17:24	18:19	20:17		21:13	21:59	22:06	21:24		20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54		05:48	05:05	05:11	05:56		06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19		21:14	22:00	22:05	21:22		20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52		05:46	05:05	05:12	05:58		06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21		21:16	22:01	22:05	21:20		20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:50		05:44	05:04	05:13	06:00		06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23		21:18	22:02	22:04	21:18		20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47		05:42	05:04	05:15	06:02		06:57	07:50	07:50	08:40
	16:34	17:32	18:27	20:25		21:20	22:03	22:03	21:16		20:04	18:51	16:45	16:13
11	08:48	08:03	07:00	06:45		05:40	05:03	05:16	06:03		06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27		21:21	22:04	22:02	21:14		20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42		05:38	05:03	05:17	06:05		07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28		21:23	22:05	22:01	21:12		19:59	18:46	16:41	16:12
13	08:46	07:59	06:56	06:40		05:37	05:03	05:18	06:07		07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30		21:25	22:05	22:00	21:09		19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38		05:35	05:02	05:19	06:09		07:04	07:58	07:58	08:44
	16:40	17:40	18:34	20:32		21:27	22:06	21:59	21:07		19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35		07:00 (8)	05:33	05:02	05:21	06:10	07:08 (8)	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	1	07:01 (8)	21:28	22:07	21:58	21:05	1	07:09 (8)	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33		06:57 (8)	05:31	05:02	05:22	06:12		07:08 (8)	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	5	07:02 (8)	21:30	22:07	21:57	21:03	1	07:09 (8)	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31		06:55 (8)	05:30	05:02	05:23	06:14		07:08 (8)	07:09	08:04	08:03	08:47
	16:45	17:46	18:40	20:38	8	07:03 (8)	21:32	22:08	21:56	21:01	2	07:10 (8)	19:47	18:34	16:34	16:12
18	08:42	07:49	06:43	06:28		06:54 (8)	05:28	05:02	05:25	06:16		07:07 (8)	07:11	08:05	08:05	08:48
	16:47	17:48	18:42	20:40	10	07:04 (8)	21:33	22:08	21:54	20:59	3	07:10 (8)	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26		06:56 (8)	05:27	05:02	05:26	06:18		07:06 (8)	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	9	07:05 (8)	21:35	22:08	21:53	20:56	4	07:10 (8)	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24		06:57 (8)	05:25	05:02	05:27	06:19		07:06 (8)	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	7	07:04 (8)	21:36	22:09	21:52	20:54	4	07:10 (8)	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:22		06:58 (8)	05:24	05:02	05:29	06:21		07:04 (8)	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	6	07:04 (8)	21:38	22:09	21:51	20:52	5	07:09 (8)	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19		06:59 (8)	05:22	05:02	05:30	06:23		07:03 (8)	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	5	07:04 (8)	21:40	22:09	21:49	20:50	6	07:09 (8)	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17		07:00 (8)	05:21	05:02	05:32	06:25		07:01 (8)	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	4	07:04 (8)	21:41	22:09	21:48	20:47	8	07:09 (8)	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15		07:01 (8)	05:19	05:03	05:33	06:26		06:59 (8)	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	3	07:04 (8)	21:43	22:09	21:46	20:45	8	07:07 (8)	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13		07:01 (8)	05:18	05:03	05:35	06:28		06:56 (8)	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	3	07:04 (8)	21:44	22:09	21:45	20:43	11	07:07 (8)	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10		07:01 (8)	05:17	05:03	05:36	06:30		06:58 (8)	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	2	07:03 (8)	21:46	22:09	21:43	20:40	8	07:06 (8)	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08		07:02 (8)	05:16	05:04	05:38	06:32		07:00 (8)	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	1	07:03 (8)	21:47	22:09	21:42	20:38	5	07:05 (8)	19:22	17:12	16:21	16:17
28	08:28	07:27	06:19	06:06		07:01 (8)	05:14	05:04	05:40	06:34		07:01 (8)	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	1	07:02 (8)	21:48	22:09	21:40	20:36	1	07:02 (8)	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04			05:13	05:05	05:41	06:35			07:30	07:27	08:24	08:52
	17:08		20:03	21:00			21:50	22:09	21:38	20:33			19:17	17:08	16:19	16:19
30	08:25		07:14	06:02			05:12	05:06	05:43	06:37			07:32	07:28	08:26	08:52
	17:10		20:04	21:02			21:51	22:09	21:36	20:31			19:15	17:06	16:18	16:20
31	08:23		07:11				05:11		05:45	06:39				07:30		08:52
	17:12		20:06				21:52		21:35	20:29				17:04		16:21
Potential sun hours	250	273	367	420			494	510	512	460		382	328	259	233	
Total, worst case					65						67					
Sun reduction					0.31						0.26					
Oper. time red.					1.00						1.00					
Wind dir. red.					0.65						0.65					
Total reduction					0.20						0.17					
Total, real					13						11					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** AJ - H038

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April		May	June	July	August		September	October	November	December
1	08:52	08:22	07:24	07:09		06:00	05:10	05:06	05:46		06:41	07:34	07:32	08:27
	16:22	17:14	18:10	20:08		21:04	21:54	22:08	21:33		20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:07		05:58	05:09	05:07	05:48		06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10		21:05	21:55	22:08	21:31		20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04		05:56	05:08	05:08	05:50		06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12		21:07	21:56	22:08	21:29		20:21	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02		05:54	05:08	05:09	05:51		06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14		21:09	21:57	22:07	21:27		20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59		05:52	05:07	05:09	05:53		06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15		21:11	21:58	22:07	21:26		20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57		05:50	05:06	05:10	05:55		06:50	07:43	07:42	08:35
	16:28	17:24	18:19	20:17		21:13	21:59	22:06	21:24		20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54		05:48	05:05	05:11	05:56		06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19		21:14	22:00	22:05	21:22		20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52		05:46	05:05	05:12	05:58		06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21		21:16	22:01	22:05	21:20		20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:50		05:44	05:04	05:13	06:00		06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23		21:18	22:02	22:04	21:18		20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47		05:42	05:04	05:15	06:02		06:57	07:50	07:50	08:40
	16:34	17:32	18:27	20:25		21:20	22:03	22:03	21:16		20:04	18:51	16:45	16:13
11	08:48	08:03	07:00	06:45		05:40	05:03	05:16	06:03		06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27		21:21	22:04	22:02	21:14		20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42		05:38	05:03	05:17	06:05		07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28		21:23	22:05	22:01	21:12		19:59	18:46	16:41	16:12
13	08:46	07:59	06:56	06:40	07:04 (8)	05:37	05:03	05:18	06:07		07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	1 07:05 (8)	21:25	22:05	22:00	21:09		19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	07:02 (8)	05:35	05:02	05:19	06:09		07:04	07:58	07:58	08:44
	16:40	17:40	18:34	20:32	4 07:06 (8)	21:27	22:06	21:59	21:07		19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	07:00 (8)	05:33	05:02	05:21	06:10	07:08 (8)	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	8 07:08 (8)	21:28	22:07	21:58	21:05	2 07:10 (8)	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	06:57 (8)	05:31	05:02	05:22	06:12	07:08 (8)	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	11 07:08 (8)	21:30	22:07	21:57	21:03	3 07:11 (8)	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	06:55 (8)	05:30	05:02	05:23	06:14	07:08 (8)	07:09	08:04	08:03	08:47
	16:45	17:46	18:40	20:38	13 07:08 (8)	21:32	22:08	21:56	21:01	4 07:12 (8)	19:47	18:34	16:34	16:12
18	08:42	07:49	06:43	06:28	06:54 (8)	05:28	05:02	05:25	06:16	07:07 (8)	07:11	08:05	08:05	08:48
	16:47	17:48	18:42	20:40	15 07:09 (8)	21:33	22:08	21:54	20:59	5 07:12 (8)	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	06:56 (8)	05:27	05:02	05:26	06:18	07:06 (8)	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	13 07:09 (8)	21:35	22:08	21:53	20:56	7 07:13 (8)	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	06:57 (8)	05:25	05:02	05:27	06:19	07:06 (8)	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	11 07:08 (8)	21:36	22:09	21:52	20:54	7 07:13 (8)	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:22	06:58 (8)	05:24	05:02	05:29	06:21	07:04 (8)	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	10 07:08 (8)	21:38	22:09	21:51	20:52	9 07:13 (8)	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	06:59 (8)	05:22	05:02	05:30	06:23	07:03 (8)	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	9 07:08 (8)	21:40	22:09	21:49	20:50	10 07:13 (8)	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	07:00 (8)	05:21	05:02	05:32	06:25	07:01 (8)	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	7 07:07 (8)	21:41	22:09	21:48	20:47	12 07:13 (8)	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	07:01 (8)	05:19	05:03	05:33	06:26	06:59 (8)	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	6 07:07 (8)	21:43	22:09	21:46	20:45	13 07:12 (8)	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	07:01 (8)	05:18	05:03	05:35	06:28	06:56 (8)	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	5 07:06 (8)	21:44	22:09	21:45	20:43	15 07:11 (8)	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	07:01 (8)	05:17	05:03	05:36	06:30	06:58 (8)	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	4 07:05 (8)	21:46	22:09	21:43	20:40	13 07:11 (8)	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	07:02 (8)	05:16	05:04	05:38	06:32	07:00 (8)	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	2 07:04 (8)	21:47	22:09	21:42	20:38	10 07:10 (8)	19:22	17:12	16:21	16:17
28	08:28	07:27	06:19	06:06	07:01 (8)	05:14	05:04	05:40	06:34	07:01 (8)	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	2 07:03 (8)	21:48	22:09	21:40	20:36	7 07:08 (8)	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04		05:13	05:05	05:41	06:35	07:03 (8)	07:30	07:27	08:24	08:52
	17:08		20:03	21:00		21:50	22:09	21:38	20:33	4 07:07 (8)	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02		05:12	05:06	05:43	06:37	07:05 (8)	07:32	07:28	08:26	08:52
	17:10		20:04	21:02		21:51	22:09	21:36	20:31	1 07:06 (8)	19:15	17:06	16:18	16:20
31	08:23		07:11			05:11		05:45	06:39			07:30		08:52
	17:12		20:06			21:52		21:35	20:29			17:04		16:21
Potential sun hours	250	273	367	420		494	510	512	460		382	328	259	233
Total, worst case					121					122				
Sun reduction					0.31					0.26				
Oper. time red.					1.00					1.00				
Wind dir. red.					0.65					0.65				
Total reduction					0.20					0.17				
Total, real					24					20				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** AK - H039

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March			April			May			June		
1	08:52	08:22	07:24			07:09		07:33 (6)	06:00			05:10		05:41 (4)
	16:23	17:14	18:10			20:08	18	07:51 (6)	21:04			21:54	9	05:50 (4)
2	08:52	08:20	07:22			07:07		07:31 (6)	05:58			05:10		05:40 (4)
	16:24	17:16	18:12			20:10	20	07:51 (6)	21:06			21:55	11	05:51 (4)
3	08:52	08:19	07:20			07:04		07:28 (6)	05:56			05:09		05:40 (4)
	16:25	17:18	18:14			20:12	22	07:50 (6)	21:07			21:56	12	05:52 (4)
4	08:52	08:17	07:17			07:02		07:26 (6)	05:54			05:08		05:39 (4)
	16:26	17:20	18:16			20:14	23	07:49 (6)	21:09			21:57	13	05:52 (4)
5	08:51	08:15	07:15			07:00		07:26 (6)	05:52			05:07		05:38 (4)
	16:27	17:22	18:17			20:16	21	07:47 (6)	21:11			21:58	14	05:52 (4)
6	08:51	08:13	07:13			06:57		07:27 (6)	05:50			05:06		05:38 (4)
	16:29	17:24	18:19			20:18	19	07:46 (6)	21:13			21:59	15	05:53 (4)
7	08:51	08:11	07:10			06:55		07:29 (6)	05:48			05:06		05:37 (4)
	16:30	17:26	18:21			20:19	16	07:45 (6)	21:15			22:00	16	05:53 (4)
8	08:50	08:09	07:08			06:52		07:30 (6)	05:46			05:05		05:37 (4)
	16:31	17:28	18:23			20:21	12	07:42 (6)	21:16			22:01	16	05:53 (4)
9	08:49	08:07	07:05			06:50		07:35 (6)	05:44			05:04		05:36 (4)
	16:33	17:30	18:25			20:23	2	07:37 (6)	21:18			22:02	17	05:53 (4)
10	08:49	08:05	07:03			06:47			05:42			05:04		05:36 (4)
	16:34	17:32	18:27			20:25			21:20			22:03	18	05:54 (4)
11	08:48	08:04	07:01			06:45			05:40			05:04		05:36 (4)
	16:36	17:34	18:29			20:27			21:22			22:04	19	05:55 (4)
12	08:47	08:02	06:58			06:43			05:39			05:03		05:35 (4)
	16:37	17:36	18:31			20:29			21:23			22:05	19	05:54 (4)
13	08:47	07:59	06:56			06:40			05:37			05:03		05:35 (4)
	16:39	17:38	18:33			20:30			21:25			22:05	20	05:55 (4)
14	08:46	07:57	06:53			06:38			05:35			05:03		05:35 (4)
	16:41	17:40	18:35			20:32			21:27			22:06	21	05:56 (4)
15	08:45	07:55	06:51			06:36			05:33			05:02		05:35 (4)
	16:42	17:42	18:37			20:34			21:28			22:07	21	05:56 (4)
16	08:44	07:53	06:49			06:33			05:32			05:02		05:35 (4)
	16:44	17:44	18:38			20:36			21:30			22:07	21	05:56 (4)
17	08:43	07:51	06:46			06:31			05:30			05:02		05:35 (4)
	16:46	17:46	18:40			20:38			21:32			22:08	22	05:57 (4)
18	08:42	07:49	06:44			06:29			05:29			05:02		05:35 (4)
	16:47	17:48	18:42			20:40			21:33			22:08	22	05:57 (4)
19	08:41	07:47	06:41			06:26			05:27			05:02		05:35 (4)
	16:49	17:50	18:44			20:42			21:35			22:08	22	05:57 (4)
20	08:39	07:45	06:39			06:24			05:25			05:02		05:35 (4)
	16:51	17:52	18:46			20:43			21:37			22:09	22	05:57 (4)
21	08:38	07:43	06:36			06:22			05:24			05:02		05:35 (4)
	16:53	17:54	18:48			20:45			21:38			22:09	22	05:57 (4)
22	08:37	07:40	06:34			06:20			05:22			05:02		05:35 (4)
	16:55	17:56	18:50			20:47			21:40			22:09	22	05:57 (4)
23	08:36	07:38	06:31			06:17			05:21			05:03		05:36 (4)
	16:57	17:58	18:52			20:49			21:41			22:09	22	05:58 (4)
24	08:34	07:36	06:29			06:15			05:20			05:03		05:36 (4)
	16:58	18:00	18:53			20:51			21:43			22:10	22	05:58 (4)
25	08:33	07:34	06:26			06:13			05:18			05:03		05:36 (4)
	17:00	18:02	18:55			20:53			21:44			22:10	22	05:58 (4)
26	08:31	07:31	06:24		06:48 (6)	06:11			05:17		05:47 (4)	05:04		05:37 (4)
	17:02	18:04	18:57	1	06:49 (6)	20:55			21:46	2	05:49 (4)	22:10	22	05:59 (4)
27	08:30	07:29	06:22		06:45 (6)	06:08			05:16		05:46 (4)	05:04		05:37 (4)
	17:04	18:06	18:59	4	06:49 (6)	20:56			21:47	3	05:49 (4)	22:09	21	05:58 (4)
28	08:28	07:27	06:19		06:43 (6)	06:06			05:15		05:45 (4)	05:05		05:38 (4)
	17:06	18:08	19:01	8	06:51 (6)	20:58			21:49	5	05:50 (4)	22:09	21	05:59 (4)
29	08:27		07:17		07:40 (6)	06:04		07:03 (5)	05:14		05:44 (4)	05:05		05:38 (4)
	17:08		20:03	10	07:50 (6)	21:00	4	07:07 (5)	21:50	6	05:50 (4)	22:09	20	05:58 (4)
30	08:25		07:14		07:38 (6)	06:02		07:03 (5)	05:13		05:43 (4)	05:06		05:39 (4)
	17:10		20:05	13	07:51 (6)	21:02	2	07:05 (5)	21:51	7	05:50 (4)	22:09	20	05:59 (4)
31	08:24		07:12		07:35 (6)				05:11		05:42 (4)			
	17:12		20:06	16	07:51 (6)				21:52	8	05:50 (4)			
Potential sun hours	250	273	367			420			494			510		
Total, worst case				52			159			31			564	
Sun reduction				0.22			0.31			0.31			0.26	
Oper. time red.				1.00			1.00			1.00			1.00	
Wind dir. red.				0.65			0.65			0.64			0.64	
Total reduction				0.14			0.20			0.20			0.17	
Total, real				7			32			6			94	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** AK - H039

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August		September		October	November	December
1	05:07		05:40 (4)	05:47		06:41		07:34	07:33	08:28
	22:09	19	05:59 (4)	21:33		20:26		19:13	17:02	16:18
2	05:07		05:40 (4)	05:48		06:43		07:36	07:34	08:29
	22:08	18	05:58 (4)	21:31		20:24		19:10	17:00	16:17
3	05:08		05:41 (4)	05:50		06:44	07:33 (6)	07:38	07:36	08:31
	22:08	18	05:59 (4)	21:29		20:22	2 07:35 (6)	19:08	16:58	08:16
4	05:09		05:42 (4)	05:52		06:46	07:27 (6)	07:40	07:38	08:32
	22:07	17	05:59 (4)	21:28		20:19	12 07:39 (6)	19:05	16:56	08:16
5	05:10		05:43 (4)	05:53		06:48	07:25 (6)	07:41	07:40	08:33
	22:07	16	05:59 (4)	21:26		20:17	16 07:41 (6)	19:03	16:54	08:15
6	05:11		05:44 (4)	05:55		06:50	07:24 (6)	07:43	07:42	08:35
	22:06	15	05:59 (4)	21:24		20:14	18 07:42 (6)	19:00	16:52	08:14
7	05:12		05:45 (4)	05:57		06:51	07:21 (6)	07:45	07:44	08:36
	22:05	14	05:59 (4)	21:22		20:12	22 07:43 (6)	18:58	16:51	08:14
8	05:13		05:46 (4)	05:58		06:53	07:21 (6)	07:47	07:46	08:37
	22:05	12	05:58 (4)	21:20		20:09	22 07:43 (6)	18:56	16:49	08:14
9	05:14		05:46 (4)	06:00		06:55	07:22 (6)	07:49	07:48	08:39
	22:04	12	05:58 (4)	21:18		20:07	22 07:44 (6)	18:53	16:47	16:13
10	05:15		05:48 (4)	06:02		06:57	07:24 (6)	07:51	07:50	08:40
	22:03	11	05:59 (4)	21:16		20:05	20 07:44 (6)	18:51	16:45	16:13
11	05:16		05:49 (4)	06:04		06:59	07:25 (6)	07:53	07:52	08:41
	22:02	10	05:59 (4)	21:14		20:02	18 07:43 (6)	18:49	16:43	16:13
12	05:17		05:50 (4)	06:05		07:00	07:27 (6)	07:54	07:54	08:42
	22:01	9	05:59 (4)	21:12		20:00	16 07:43 (6)	18:46	16:42	16:12
13	05:18		05:51 (4)	06:07	07:10 (5)	07:02	07:29 (6)	07:56	07:56	08:43
	22:00	8	05:59 (4)	21:10	3 07:13 (5)	19:57	14 07:43 (6)	18:44	16:40	16:12
14	05:20		05:52 (4)	06:09	07:10 (5)	07:04	07:30 (6)	07:58	07:58	08:44
	21:59	6	05:58 (4)	21:08	2 07:12 (5)	19:55	11 07:41 (6)	18:41	16:38	16:12
15	05:21		05:53 (4)	06:11		07:06	07:32 (6)	08:00	08:00	08:45
	21:58	5	05:58 (4)	21:05		19:52	8 07:40 (6)	18:39	16:37	16:12
16	05:22		05:54 (4)	06:12		07:07	07:34 (6)	08:02	08:01	08:46
	21:57	4	05:58 (4)	21:03		19:50	5 07:39 (6)	18:37	16:35	16:12
17	05:23		05:56 (4)	06:14		07:09	07:36 (6)	08:04	08:03	08:47
	21:56	3	05:59 (4)	21:01		19:47	2 07:38 (6)	18:34	16:34	16:13
18	05:25		05:57 (4)	06:16		07:11		08:06	08:05	08:48
	21:55	1	05:58 (4)	20:59		19:45		18:32	16:32	16:13
19	05:26			06:18		07:13		08:07	08:07	08:48
	21:53			20:57		19:42		18:30	16:31	16:13
20	05:28			06:20		07:14		08:09	08:09	08:49
	21:52			20:54		19:40		18:28	16:30	16:13
21	05:29			06:21		07:16		08:11	08:11	08:50
	21:51			20:52		19:37		18:25	16:28	16:14
22	05:31			06:23		07:18		08:13	08:12	08:50
	21:49			20:50		19:35		18:23	16:27	16:14
23	05:32			06:25		07:20		08:15	08:14	08:51
	21:48			20:48		19:32		18:21	16:26	16:15
24	05:34			06:27		07:22		08:17	08:16	08:51
	21:46			20:45		19:30		18:19	16:25	16:15
25	05:35			06:28		07:23		07:19	08:18	08:52
	21:45			20:43		19:27		17:17	16:23	16:16
26	05:37			06:30		07:25		07:21	08:19	08:52
	21:43			20:41		19:25		17:14	16:22	16:17
27	05:38			06:32		07:27		07:23	08:21	08:52
	21:42			20:38		19:23		17:12	16:21	16:18
28	05:40			06:34		07:29		07:25	08:23	08:52
	21:40			20:36		19:20		17:10	16:20	16:18
29	05:42			06:36		07:31		07:27	08:24	08:52
	21:38			20:34		19:18		17:08	16:19	16:19
30	05:43			06:37		07:32		07:29	08:26	08:52
	21:37			20:31		19:15		17:06	16:19	16:20
31	05:45			06:39				07:31		08:52
	21:35			20:29				17:04		16:21
Potential sun hours	512			460		382		328	259	233
Total, worst case		198			5		208			
Sun reduction		0.22			0.26		0.25			
Oper. time red.		1.00			1.00		1.00			
Wind dir. red.		0.64			0.64		0.65			
Total reduction		0.14			0.16		0.16			
Total, real		28			1		34			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** AL - H040

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April		May		June	July	August		September		October	November	December
1	08:52	08:22	07:24	07:09		06:00		05:11	05:07	05:47		06:41	07:25 (5)	07:34	07:33	08:28
	16:23	17:14	18:10	20:08		21:04		21:54	22:09	21:33		20:26	2 07:27 (5)	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07		05:58		05:10	05:07	05:48		06:43	07:24 (5)	07:36	07:34	08:29
	16:24	17:16	18:12	20:10		21:06		21:55	22:08	21:31		20:24	3 07:27 (5)	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04		05:56		05:09	05:08	05:50		06:44	07:23 (5)	07:38	07:36	08:31
	16:25	17:18	18:14	20:12		21:07		21:56	22:08	21:30		20:22	3 07:26 (5)	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	07:26 (5)	05:54		05:08	05:09	05:52		06:46	07:21 (5)	07:40	07:38	08:32
	16:26	17:20	18:16	20:14	1 07:27 (5)	21:09		21:57	22:07	21:28		20:19	3 07:24 (5)	19:05	16:56	16:16
5	08:51	08:15	07:15	07:00	07:23 (5)	05:52		05:07	05:10	05:53	06:28 (4)	06:48	07:19 (5)	07:41	07:40	08:33
	16:27	17:22	18:18	20:16	3 07:26 (5)	21:11		21:58	22:07	21:26	1 06:29 (4)	20:17	4 07:23 (5)	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	07:21 (5)	05:50	06:16 (4)	05:06	05:11	05:55	06:27 (4)	06:50	07:17 (5)	07:43	07:42	08:35
	16:29	17:24	18:19	20:18	6 07:27 (5)	21:13	2 06:18 (4)	21:59	22:06	21:24	2 06:29 (4)	20:14	6 07:23 (5)	19:01	16:52	16:14
7	08:51	08:11	07:10	06:55	07:23 (5)	05:48	06:18 (4)	05:06	05:12	05:57	06:27 (4)	06:52	07:18 (5)	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	4 07:27 (5)	21:15	1 06:19 (4)	22:00	22:05	21:22	1 06:28 (4)	20:12	4 07:22 (5)	18:58	16:51	16:14
8	08:50	08:09	07:08	06:52	07:24 (5)	05:46	06:19 (4)	05:05	05:13	05:58		06:53	07:20 (5)	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	3 07:27 (5)	21:16	1 06:20 (4)	22:01	22:05	21:20		20:10	1 07:21 (5)	18:56	16:49	16:14
9	08:49	08:07	07:06	06:50	07:25 (5)	05:44		05:04	05:14	06:00		06:55		07:49	07:48	08:39
	16:33	17:30	18:25	20:23	3 07:28 (5)	21:18		22:02	22:04	21:18		20:07		18:53	16:47	16:13
10	08:49	08:06	07:03	06:47	07:25 (5)	05:42		05:04	05:15	06:02		06:57		07:51	07:50	08:40
	16:34	17:32	18:27	20:25	3 07:28 (5)	21:20		22:03	22:03	21:16		20:05		18:51	16:45	16:13
11	08:48	08:04	07:01	06:45	07:26 (5)	05:40		05:04	05:16	06:04		06:59		07:53	07:52	08:41
	16:36	17:34	18:29	20:27	2 07:28 (5)	21:22		22:04	22:02	21:14		20:02		18:49	16:43	16:13
12	08:47	08:02	06:58	06:43	07:27 (5)	05:39		05:03	05:17	06:05		07:00		07:54	07:54	08:42
	16:37	17:36	18:31	20:29	1 07:28 (5)	21:23		22:05	22:01	21:12		20:00		18:46	16:42	16:12
13	08:47	08:00	06:56	06:40		05:37		05:03	05:18	06:07		07:02		07:56	07:56	08:43
	16:39	17:38	18:33	20:31		21:25		22:05	22:00	21:10		19:57		18:44	16:40	16:12
14	08:46	07:57	06:53	06:38		05:35		05:03	05:20	06:09		07:04		07:58	07:58	08:44
	16:41	17:40	18:35	20:32		21:27		22:06	21:59	21:08		19:55		18:41	16:38	16:12
15	08:45	07:55	06:51	06:36		05:33		05:02	05:21	06:11		07:06		08:00	08:00	08:45
	16:42	17:42	18:37	20:34		21:28		22:07	21:58	21:05		19:52		18:39	16:37	16:12
16	08:44	07:53	06:49	06:33		05:32		05:02	05:22	06:12		07:07		08:02	08:01	08:46
	16:44	17:44	18:38	20:36		21:30		22:07	21:57	21:03		19:50		18:37	16:35	16:12
17	08:43	07:51	06:46	06:31		05:30		05:02	05:24	06:14		07:09		08:04	08:03	08:47
	16:46	17:46	18:40	20:38		21:32		22:08	21:56	21:01		19:47		18:35	16:34	16:13
18	08:42	07:49	06:44	06:29		05:29		05:02	05:25	06:16		07:11		08:06	08:05	08:48
	16:47	17:48	18:42	20:40		21:33		22:08	21:55	20:59		19:45		18:32	16:32	16:13
19	08:41	07:47	06:41	06:26		05:27		05:02	05:26	06:18		07:13		08:08	08:07	08:48
	16:49	17:50	18:44	20:42		21:35		22:09	21:53	20:57		19:42		18:30	16:31	16:13
20	08:39	07:45	06:39	06:24		05:25		05:02	05:28	06:20		07:15		08:09	08:09	08:49
	16:51	17:52	18:46	20:43		21:37		22:09	21:52	20:54		19:40		18:28	16:30	16:13
21	08:38	07:43	06:36	06:22		05:24		05:02	05:29	06:21		07:16		08:11	08:11	08:50
	16:53	17:54	18:48	20:45		21:38		22:09	21:51	20:52		19:37		18:25	16:28	16:14
22	08:37	07:40	06:34	06:20		05:23		05:02	05:31	06:23		07:18		08:13	08:12	08:50
	16:55	17:56	18:50	20:47		21:40		22:09	21:49	20:50		19:35		18:23	16:27	16:14
23	08:36	07:38	06:31	06:17		05:21		05:03	05:32	06:25		07:20		08:15	08:14	08:51
	16:57	17:58	18:52	20:49		21:41		22:09	21:48	20:48		19:32		18:21	16:26	16:15
24	08:34	07:36	06:29	06:15		05:20		05:03	05:34	06:27		07:22		08:17	08:16	08:51
	16:58	18:00	18:53	20:51		21:43		22:10	21:46	20:45		19:30		18:19	16:25	16:15
25	08:33	07:34	06:26	06:13		05:18		05:03	05:35	06:28		07:23		07:19	08:18	08:52
	17:00	18:02	18:55	20:53		21:44		22:10	21:45	20:43		19:27		17:17	16:23	16:16
26	08:31	07:31	06:24	06:11		05:17		05:04	05:37	06:30		07:25		07:21	08:19	08:52
	17:02	18:04	18:57	20:55		21:46		22:10	21:43	20:41		19:25		17:14	16:22	16:17
27	08:30	07:29	06:22	06:08		05:16		05:04	05:38	06:32		07:27		07:23	08:21	08:52
	17:04	18:06	18:59	20:56		21:47		22:09	21:42	20:38		19:23		17:12	16:21	16:18
28	08:28	07:27	06:19	06:06		05:15		05:05	05:40	06:34		07:29		07:25	08:23	08:52
	17:06	18:08	19:01	20:58		21:49		22:09	21:40	20:36		19:20		17:10	16:20	16:18
29	08:27		07:17	06:04		05:14		05:05	05:42	06:36		07:31		07:27	08:24	08:52
	17:08		20:03	21:00		21:50		22:09	21:38	20:34		19:18		17:08	16:19	16:19
30	08:25		07:14	06:02		05:13		05:06	05:43	06:37		07:32		07:29	08:26	08:52
	17:10		20:05	21:02		21:51		22:09	21:37	20:31		19:15		17:06	16:19	16:20
31	08:24		07:12			05:11			05:45	06:39	07:27 (5)			07:31		08:52
	17:12		20:06			21:53			21:35	20:29	1 07:28 (5)			17:04		16:21
Potential sun hours	250	273	367	420		494		510	512	460		382		328	259	233
Total, worst case					26		4				5		26			
Sun reduction					0.31		0.31				0.26		0.25			
Oper. time red.					1.00		1.00				1.00		1.00			
Wind dir. red.					0.64		0.65				0.65		0.64			
Total reduction					0.20		0.20				0.17		0.16			
Total, real					5		1				1		4			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** AM - H041

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March		April		May	June	July	August	September		October	November	December
1	08:52	08:22	07:24		07:09	19:18 (3)	06:00	05:10	05:06	05:46	06:41		07:34	07:32	08:27
	16:22	17:14	18:10		20:08	10 19:28 (3)	21:04	21:54	22:08	21:33	20:26		19:13	17:02	16:18
2	08:52	08:20	07:22		07:07		05:58	05:09	05:07	05:48	06:42		07:36	07:34	08:29
	16:23	17:16	18:12		20:10		21:05	21:55	22:08	21:31	20:24		19:10	17:00	16:17
3	08:52	08:18	07:20		07:04		05:56	05:08	05:08	05:50	06:44		07:38	07:36	08:30
	16:25	17:18	18:13		20:12		21:07	21:56	22:08	21:29	20:22		19:08	16:58	16:16
4	08:52	08:17	07:17		07:02		05:54	05:08	05:09	05:51	06:46		07:40	07:38	08:32
	16:26	17:20	18:15		20:14		21:09	21:57	22:07	21:28	20:19		19:05	16:56	16:15
5	08:51	08:15	07:15		06:59		05:52	05:07	05:10	05:53	06:48		07:41	07:40	08:33
	16:27	17:22	18:17		20:16		21:11	21:58	22:07	21:26	20:17		19:03	16:54	16:15
6	08:51	08:13	07:13		06:57		05:50	05:06	05:10	05:55	06:50		07:43	07:42	08:35
	16:28	17:24	18:19		20:17		21:13	21:59	22:06	21:24	20:14		19:00	16:52	16:14
7	08:50	08:11	07:10		06:55		05:48	05:05	05:11	05:57	06:51		07:45	07:44	08:36
	16:30	17:26	18:21		20:19		21:14	22:00	22:05	21:22	20:12		18:58	16:50	16:14
8	08:50	08:09	07:08		06:52		05:46	05:05	05:12	05:58	06:53		07:47	07:46	08:37
	16:31	17:28	18:23		20:21		21:16	22:01	22:05	21:20	20:09		18:56	16:49	16:13
9	08:49	08:07	07:05		06:50		05:44	05:04	05:14	06:00	06:55		07:49	07:48	08:39
	16:33	17:30	18:25		20:23		21:18	22:02	22:04	21:18	20:07		18:53	16:47	16:13
10	08:49	08:05	07:03		06:47		05:42	05:04	05:15	06:02	06:57		07:51	07:50	08:40
	16:34	17:32	18:27		20:25		21:20	22:03	22:03	21:16	20:04		18:51	16:45	16:13
11	08:48	08:03	07:01		06:45		05:40	05:03	05:16	06:04	06:58	19:10 (3)	07:52	07:52	08:41
	16:36	17:34	18:29		20:27		21:21	22:04	22:02	21:14	20:02	10 19:20 (3)	18:48	16:43	16:12
12	08:47	08:01	06:58		06:43		05:38	05:03	05:17	06:05	07:00	19:08 (3)	07:54	07:54	08:42
	16:37	17:36	18:31		20:29		21:23	22:05	22:01	21:12	20:00	15 19:23 (3)	18:46	16:42	16:12
13	08:46	07:59	06:56		06:40		05:37	05:03	05:18	06:07	07:02	19:06 (3)	07:56	07:56	08:43
	16:39	17:38	18:33		20:30		21:25	22:05	22:00	21:10	19:57	18 19:24 (3)	18:44	16:40	16:12
14	08:46	07:57	06:53		06:38		05:35	05:02	05:19	06:09	07:04	19:04 (3)	07:58	07:58	08:44
	16:40	17:40	18:35		20:32		21:27	22:06	21:59	21:07	19:55	20 19:24 (3)	18:41	16:38	16:12
15	08:45	07:55	06:51		06:35		05:33	05:02	05:21	06:11	07:05	19:03 (3)	08:00	07:59	08:45
	16:42	17:42	18:36		20:34		21:28	22:07	21:58	21:05	19:52	21 19:24 (3)	18:39	16:37	16:12
16	08:44	07:53	06:48		06:33		05:32	05:02	05:22	06:12	07:07	19:02 (3)	08:02	08:01	08:46
	16:44	17:44	18:38		20:36		21:30	22:07	21:57	21:03	19:50	20 19:22 (3)	18:37	16:35	16:12
17	08:43	07:51	06:46		06:31		05:30	05:02	05:23	06:14	07:09	19:01 (3)	08:04	08:03	08:47
	16:46	17:46	18:40		20:38		21:32	22:08	21:56	21:01	19:47	18 19:19 (3)	18:34	16:34	16:12
18	08:42	07:49	06:43		06:28		05:28	05:02	05:25	06:16	07:11	19:00 (3)	08:05	08:05	08:48
	16:47	17:48	18:42		20:40		21:33	22:08	21:55	20:59	19:45	16 19:16 (3)	18:32	16:32	16:13
19	08:40	07:47	06:41		06:26		05:27	05:02	05:26	06:18	07:13	19:00 (3)	08:07	08:07	08:48
	16:49	17:50	18:44		20:41		21:35	22:08	21:53	20:56	19:42	14 19:14 (3)	18:30	16:31	16:13
20	08:39	07:45	06:39	18:18 (3)	06:24		05:25	05:02	05:27	06:19	07:14	19:01 (3)	08:09	08:09	08:49
	16:51	17:52	18:46	1 18:19 (3)	20:43		21:37	22:09	21:52	20:54	19:40	11 19:12 (3)	18:28	16:29	16:13
21	08:38	07:42	06:36	18:16 (3)	06:22		05:24	05:02	05:29	06:21	07:16	19:00 (3)	08:11	08:11	08:50
	16:53	17:54	18:48	5 18:21 (3)	20:45		21:38	22:09	21:51	20:52	19:37	9 19:09 (3)	18:25	16:28	16:14
22	08:37	07:40	06:34	18:15 (3)	06:19		05:22	05:02	05:30	06:23	07:18	19:01 (3)	08:13	08:12	08:50
	16:54	17:56	18:50	8 18:23 (3)	20:47		21:40	22:09	21:49	20:50	19:35	5 19:06 (3)	18:23	16:27	16:14
23	08:36	07:38	06:31	18:14 (3)	06:17		05:21	05:02	05:32	06:25	07:20	19:02 (3)	08:15	08:14	08:51
	16:56	17:58	18:51	11 18:25 (3)	20:49		21:41	22:09	21:48	20:47	19:32	2 19:04 (3)	18:21	16:26	16:15
24	08:34	07:36	06:29	18:13 (3)	06:15		05:20	05:03	05:33	06:26	07:21		08:17	08:16	08:51
	16:58	18:00	18:53	13 18:26 (3)	20:51		21:43	22:09	21:46	20:45	19:30		18:19	16:24	16:15
25	08:33	07:33	06:26	18:13 (3)	06:13		05:18	05:03	05:35	06:28	07:23		07:19	08:18	08:51
	17:00	18:02	18:55	16 18:29 (3)	20:53		21:44	22:09	21:45	20:43	19:27		17:16	16:23	16:16
26	08:31	07:31	06:24	18:13 (3)	06:10		05:17	05:03	05:37	06:30	07:25		07:21	08:19	08:52
	17:02	18:04	18:57	18 18:31 (3)	20:54		21:46	22:09	21:43	20:41	19:25		17:14	16:22	16:17
27	08:30	07:29	06:21	18:13 (3)	06:08		05:16	05:04	05:38	06:32	07:27		07:23	08:21	08:52
	17:04	18:06	18:59	19 18:32 (3)	20:56		21:47	22:09	21:42	20:38	19:22		17:12	16:21	16:17
28	08:28	07:27	06:19	18:13 (3)	06:06		05:15	05:04	05:40	06:34	07:29		07:25	08:23	08:52
	17:06	18:08	19:01	21 18:34 (3)	20:58		21:48	22:09	21:40	20:36	19:20		17:10	16:20	16:18
29	08:27		07:16	19:13 (3)	06:04		05:13	05:05	05:41	06:35	07:30		07:27	08:24	08:52
	17:08		20:03	21 19:34 (3)	21:00		21:50	22:09	21:38	20:33	19:17		17:08	16:19	16:19
30	08:25		07:14	19:14 (3)	06:02		05:12	05:06	05:43	06:37	07:32		07:29	08:26	08:52
	17:10		20:04	19 19:33 (3)	21:02		21:51	22:09	21:37	20:31	19:15		17:06	16:18	16:20
31	08:24		07:12	19:15 (3)			05:11		05:45	06:39			07:30		08:52
	17:12		20:06	16 19:31 (3)			21:52		21:35	20:29			17:04		16:21
Potential sun hours	250	273	367		420		494	510	512	460	382		328	259	233
Total, worst case				168		10						179			
Sun reduction				0.22		0.31						0.25			
Oper. time red.				1.00		1.00						1.00			
Wind dir. red.				0.65		0.65						0.65			
Total reduction				0.14		0.20						0.16			
Total, real				24		2						29			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** AN - H042

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:09	20:08	21:03	21:53	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:19	07:04	05:56	05:08	05:08	05:50	06:44	07:37	07:36	08:30
	16:24	17:18	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58	16:16
4	08:51	08:16	07:17	07:02	05:54	05:07	05:09	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:13	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52	05:07	05:09	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11	21:58	22:06	21:25	20:16	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50	05:06	05:10	05:55	06:49	07:43	07:42	08:35
	16:28	17:24	18:19	20:17	21:12	21:59	22:06	21:23	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:50	05:44	05:04	05:13	06:00	06:55	07:48	07:48	08:38
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:48	08:05	07:03	06:47	05:42	05:04	05:14	06:02	06:56	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:00	06:45	05:40	05:03	05:16	06:03	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:26	21:21	22:04	22:02	21:13	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:55	06:40	05:37	05:02	05:18	06:07	07:02	07:56	07:55	08:43
	16:39	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:26	22:06	21:59	21:07	19:54	18:41	16:38	16:12
15	08:44	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:43	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:01	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16:12
17	08:42	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:31	22:07	21:56	21:01	19:47	18:34	16:34	16:12
18	08:41	07:49	06:43	06:28	05:28	05:02	05:24	06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:39	21:33	22:08	21:54	20:58	19:44	18:32	16:32	16:12
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:08	21:52	20:54	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:24	05:02	05:29	06:21	07:16	08:11	08:10	08:49
	16:52	17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:13
22	08:37	07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:39	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:19	08:15	08:14	08:50
	16:56	17:58	18:51	20:49	21:41	22:09	21:47	20:47	19:32	18:21	16:25	16:14
24	08:34	07:35	06:29	06:15	05:19	05:03	05:33	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:42	22:09	21:46	20:45	19:30	18:18	16:24	16:15
25	08:33	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17	08:51
	17:00	18:02	18:55	20:52	21:44	22:09	21:44	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:22	08:21	08:52
	17:04	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	05:04	05:40	06:33	07:28	07:24	08:22	08:52
	17:06	18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	22:08	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11		05:44	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** AO - H043

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February			March			April	May	June
1	08:52		15:33 (11)	08:22			07:24		17:24 (8)	07:09	06:00	05:10
	16:22	11	15:44 (11)	17:13			18:09	18	17:42 (8)	20:08	21:03	21:53
2	08:52		15:34 (11)	08:20			07:22		17:24 (8)	07:06	05:57	05:09
	16:23	12	15:46 (11)	17:15			18:11	18	17:42 (8)	20:10	21:05	21:55
3	08:52		15:34 (11)	08:18			07:19		17:26 (8)	07:04	05:55	05:08
	16:24	13	15:47 (11)	17:17			18:13	14	17:40 (8)	20:12	21:07	21:56
4	08:51		15:34 (11)	08:16			07:17		17:28 (8)	07:02	05:53	05:07
	16:26	14	15:48 (11)	17:19			18:15	10	17:38 (8)	20:13	21:09	21:57
5	08:51		15:35 (11)	08:15			07:15			06:59	05:51	05:07
	16:27	15	15:50 (11)	17:21			18:17			20:15	21:11	21:58
6	08:51		15:34 (11)	08:13			07:12			06:57	05:49	05:06
	16:28	17	15:51 (11)	17:23			18:19			20:17	21:12	21:59
7	08:50		15:34 (11)	08:11			07:10			06:54	05:47	05:05
	16:30	17	15:51 (11)	17:25			18:21			20:19	21:14	22:00
8	08:50		15:35 (11)	08:09			07:08			06:52	05:46	05:05
	16:31	17	15:52 (11)	17:27			18:23			20:21	21:16	22:01
9	08:49		15:35 (11)	08:07			07:05			06:49	05:44	05:04
	16:32	17	15:52 (11)	17:30			18:25			20:23	21:18	22:02
10	08:49		15:35 (11)	08:05			07:03			06:47	05:42	05:03
	16:34	17	15:52 (11)	17:32			18:27			20:25	21:20	22:03
11	08:48		15:34 (11)	08:03			07:00			06:45	05:40	05:03
	16:35	18	15:52 (11)	17:34			18:29			20:26	21:21	22:04
12	08:47		15:34 (11)	08:01			06:58			06:42	05:38	05:03
	16:37	18	15:52 (11)	17:36			18:30			20:28	21:23	22:04
13	08:46		15:34 (11)	07:59		17:04 (9)	06:55			06:40	05:36	05:02
	16:39	19	15:53 (11)	17:38	3	17:07 (9)	18:32			20:30	21:25	22:05
14	08:45		15:33 (11)	07:57		17:04 (9)	06:53			06:38	05:35	05:02
	16:40	20	15:53 (11)	17:40	6	17:10 (9)	18:34			20:32	21:26	22:06
15	08:44		15:33 (11)	07:55		17:04 (9)	06:51			06:35	05:33	05:02
	16:42	20	15:53 (11)	17:42	8	17:12 (9)	18:36			20:34	21:28	22:06
16	08:44		15:32 (11)	07:53		17:03 (9)	06:48			06:33	05:31	05:02
	16:44	21	15:53 (11)	17:44	12	17:15 (9)	18:38			20:36	21:30	22:07
17	08:42		15:30 (11)	07:51		17:02 (9)	06:46			06:31	05:30	05:02
	16:45	22	15:52 (11)	17:46	13	17:15 (9)	18:40			20:38	21:31	22:07
18	08:41		15:32 (11)	07:49		17:00 (9)	06:43			06:28	05:28	05:01
	16:47	20	15:52 (11)	17:48	14	17:14 (9)	18:42			20:39	21:33	22:08
19	08:40		15:33 (11)	07:47		16:59 (9)	06:41			06:26	05:26	05:01
	16:49	18	15:51 (11)	17:50	14	17:13 (9)	18:44			20:41	21:35	22:08
20	08:39		15:34 (11)	07:44		16:57 (9)	06:38			06:24	05:25	05:02
	16:51	16	15:50 (11)	17:52	16	17:13 (9)	18:46			20:43	21:36	22:09
21	08:38		15:37 (11)	07:42		16:54 (9)	06:36			06:21	05:23	05:02
	16:52	12	15:49 (11)	17:54	19	17:26 (8)	18:47			20:45	21:38	22:09
22	08:37		15:40 (11)	07:40		16:51 (9)	06:33			06:19	05:22	05:02
	16:54	7	15:47 (11)	17:56	21	17:27 (8)	18:49			20:47	21:39	22:09
23	08:35			07:38		16:53 (9)	06:31			06:17	05:21	05:02
	16:56			17:58	20	17:29 (8)	18:51			20:49	21:41	22:09
24	08:34			07:35		16:58 (9)	06:29			06:15	05:19	05:02
	16:58			18:00	14	17:32 (8)	18:53			20:51	21:43	22:09
25	08:33			07:33		17:22 (8)	06:26			06:12	05:18	05:03
	17:00			18:01	11	17:33 (8)	18:55			20:52	21:44	22:09
26	08:31			07:31		17:22 (8)	06:24			06:10	05:17	05:03
	17:02			18:03	14	17:36 (8)	18:57			20:54	21:45	22:09
27	08:30			07:29		17:23 (8)	06:21			06:08	05:15	05:04
	17:04			18:05	15	17:38 (8)	18:59			20:56	21:47	22:09
28	08:28			07:26		17:23 (8)	06:19			06:06	05:14	05:04
	17:06			18:07	17	17:40 (8)	19:00			20:58	21:48	22:09
29	08:27						07:16			06:04	05:13	05:05
	17:08						20:02			21:00	21:50	22:09
30	08:25						07:14			06:02	05:12	05:05
	17:10						20:04			21:02	21:51	22:09
31	08:23						07:11				05:11	
	17:11						20:06				21:52	
Potential sun hours	250			273			367			420	494	510
Total, worst case		361			217			60				
Sun reduction		0.16			0.19			0.22				
Oper. time red.		1.00			1.00			1.00				
Wind dir. red.		0.65			0.65			0.65				
Total reduction		0.11			0.13			0.14				
Total, real		38			27			9				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** AO - H043

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August		September		October			November			December		
1	05:06		05:46		06:40		07:34			07:32			08:27		15:16 (11)
	22:08		21:33		20:26		19:12			17:02			16:17	18	15:34 (11)
2	05:07		05:48		06:42		07:36			07:34			08:29		15:18 (11)
	22:08		21:31		20:24		19:10			17:00			16:16	17	15:35 (11)
3	05:08		05:49		06:44		07:37			07:36			08:30		15:18 (11)
	22:07		21:29		20:21		19:07			16:58			16:16	17	15:35 (11)
4	05:08		05:51		06:46		07:39			07:38			08:32		15:19 (11)
	22:07		21:27		20:19		19:05			16:56			16:15	17	15:36 (11)
5	05:09		05:53		06:48		07:41			07:40			08:33		15:19 (11)
	22:06		21:25		20:16		19:03			16:54			16:14	17	15:36 (11)
6	05:10		05:55		06:49		07:43			07:42			08:35		15:21 (11)
	22:06		21:24		20:14		19:00			16:52			16:14	16	15:37 (11)
7	05:11		05:56		06:51		07:45			07:44			08:36		15:21 (11)
	22:05		21:22		20:12		18:58			16:50			16:13	15	15:36 (11)
8	05:12		05:58		06:53		07:47			07:46			08:37		15:22 (11)
	22:04		21:20		20:09		18:55			16:48			16:13	14	15:36 (11)
9	05:13		06:00		06:55		07:48		18:04 (8)	07:48			08:38		15:22 (11)
	22:04		21:18		20:07		18:53	6	18:10 (8)	16:46			16:13	13	15:35 (11)
10	05:14		06:01		06:56		07:50		18:01 (8)	07:50			08:40		15:23 (11)
	22:03		21:16		20:04		18:50	12	18:13 (8)	16:45			16:12	12	15:35 (11)
11	05:15		06:03		06:58		07:52		17:59 (8)	07:52			08:41		15:24 (11)
	22:02		21:13		20:02		18:48	16	18:15 (8)	16:43			16:12	11	15:35 (11)
12	05:17		06:05		07:00		07:54		17:57 (8)	07:54			08:42		15:24 (11)
	22:01		21:11		19:59		18:46	19	18:16 (8)	16:41			16:12	11	15:35 (11)
13	05:18		06:07		07:02		07:56		17:56 (8)	07:55			08:43		15:25 (11)
	22:00		21:09		19:57		18:43	18	18:14 (8)	16:40			16:12	9	15:34 (11)
14	05:19		06:08		07:03		07:58		17:56 (8)	07:57			08:44		15:25 (11)
	21:59		21:07		19:54		18:41	16	18:12 (8)	16:38			16:12	9	15:34 (11)
15	05:20		06:10		07:05		08:00		17:55 (8)	07:59			08:45		15:26 (11)
	21:58		21:05		19:52		18:39	14	18:09 (8)	16:36			16:12	8	15:34 (11)
16	05:22		06:12		07:07		08:01		17:55 (8)	08:01			08:46		15:26 (11)
	21:57		21:03		19:49		18:36	12	18:07 (8)	16:35			16:12	8	15:34 (11)
17	05:23		06:14		07:09		08:03		17:54 (8)	08:03			08:47		15:26 (11)
	21:56		21:01		19:47		18:34	11	18:05 (8)	16:33			16:12	8	15:34 (11)
18	05:24		06:16		07:11		08:05		17:27 (9)	08:05			08:47		15:27 (11)
	21:54		20:59		19:44		18:32	16	18:02 (8)	16:32			16:12	7	15:34 (11)
19	05:26		06:17		07:12		08:07		17:24 (9)	08:07			08:48		15:28 (11)
	21:53		20:56		19:42		18:30	20	18:00 (8)	16:31			16:13	7	15:35 (11)
20	05:27		06:19		07:14		08:09		17:21 (9)	08:09		15:14 (11)	08:49		15:28 (11)
	21:52		20:54		19:39		18:27	23	17:58 (8)	16:29	7	15:21 (11)	16:13	7	15:35 (11)
21	05:29		06:21		07:16		08:11		17:26 (9)	08:10		15:12 (11)	08:49		15:28 (11)
	21:50		20:52		19:37		18:25	16	17:42 (9)	16:28	12	15:24 (11)	16:13	7	15:35 (11)
22	05:30		06:23		07:18		08:13		17:28 (9)	08:12		15:10 (11)	08:50		15:29 (11)
	21:49		20:50		19:35		18:23	15	17:43 (9)	16:27	16	15:26 (11)	16:14	7	15:36 (11)
23	05:32		06:24		07:19		08:15		17:30 (9)	08:14		15:10 (11)	08:50		15:29 (11)
	21:48		20:47		19:32		18:21	14	17:44 (9)	16:25	17	15:27 (11)	16:14	7	15:36 (11)
24	05:33		06:26		07:21		08:17		17:31 (9)	08:16		15:09 (11)	08:51		15:30 (11)
	21:46		20:45		19:30		18:18	14	17:45 (9)	16:24	20	15:29 (11)	16:15	6	15:36 (11)
25	05:35		06:28		07:23		07:19		16:32 (9)	08:17		15:09 (11)	08:51		15:31 (11)
	21:45		20:43		19:27		17:16	13	16:45 (9)	16:23	21	15:30 (11)	16:16	7	15:38 (11)
26	05:36		06:30		07:25		07:21		16:33 (9)	08:19		15:09 (11)	08:52		15:31 (11)
	21:43		20:40		19:25		17:14	10	16:43 (9)	16:22	22	15:31 (11)	16:16	7	15:38 (11)
27	05:38		06:32		07:27		07:22		16:33 (9)	08:21		15:12 (11)	08:52		15:31 (11)
	21:41		20:38		19:22		17:12	8	16:41 (9)	16:21	20	15:32 (11)	16:17	8	15:39 (11)
28	05:39		06:33		07:28		07:24		16:34 (9)	08:22		15:13 (11)	08:52		15:32 (11)
	21:40		20:36		19:20		17:10	5	16:39 (9)	16:20	20	15:33 (11)	16:18	8	15:40 (11)
29	05:41		06:35		07:30		07:26		16:34 (9)	08:24		15:15 (11)	08:52		15:32 (11)
	21:38		20:33		19:17		17:08	3	16:37 (9)	16:19	19	15:34 (11)	16:19	9	15:41 (11)
30	05:43		06:37		07:32		07:28			08:26		15:15 (11)	08:52		15:33 (11)
	21:36		20:31		19:15		17:06			16:18	19	15:34 (11)	16:20	9	15:42 (11)
31	05:44		06:39				07:30						08:52		15:33 (11)
	21:35		20:29				17:04						16:21	10	15:43 (11)
Potential sun hours	513		460		382		328			259			233		
Total, worst case								281			193			326	
Sun reduction								0.23			0.20			0.12	
Oper. time red.								1.00			1.00			1.00	
Wind dir. red.								0.65			0.65			0.65	
Total reduction								0.15			0.13			0.08	
Total, real								41			25			25	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** AP - H044

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:11	05:07	05:47	06:41	07:34	07:33	08:28
	16:23	17:14	18:10	20:08	21:04	21:54	22:09	21:33	20:26 1 07:26 (5)	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:10	05:07	05:48	06:43	07:36	07:35	08:29
	16:24	17:16	18:12	20:10	21:06	21:55	22:08	21:31	20:24 2 07:26 (5)	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38	07:36	08:31
	16:25	17:18	18:14	20:12	21:07	21:56	22:08	21:30	20:22 3 07:26 (5)	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02 07:26 (5)	05:54	05:08	05:09	05:52 06:30 (4)	06:46	07:40	07:38	08:32
	16:26	17:20	18:16	20:14 1 07:27 (5)	21:09	21:57	22:07	21:28 1 06:31 (4)	20:19 3 07:24 (5)	19:05	16:56	16:16
5	08:51	08:15	07:15	07:00 07:23 (5)	05:52	05:07	05:10	05:53 06:28 (4)	06:48	07:41	07:40	08:33
	16:27	17:22	18:18	20:16 3 07:26 (5)	21:11	21:58	22:07	21:26 2 06:30 (4)	20:17 4 07:23 (5)	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57 07:21 (5)	05:50 06:16 (4)	05:06	05:11	05:55 06:27 (4)	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:18 6 07:27 (5)	21:13 3 06:19 (4)	21:59	22:06	21:24 3 06:30 (4)	20:14 6 07:23 (5)	19:01	16:52	16:14
7	08:51	08:11	07:10	06:55 07:23 (5)	05:48 06:18 (4)	05:06	05:12	05:57 06:27 (4)	06:52	07:45	07:44	08:36
	16:30	17:26	18:21	20:19 4 07:27 (5)	21:15 2 06:20 (4)	22:00	22:05	21:22 2 06:29 (4)	20:12 4 07:22 (5)	18:58	16:51	16:14
8	08:50	08:09	07:08	06:52 07:24 (5)	05:46 06:19 (4)	05:05	05:13	05:58	06:53	07:47	07:46	08:38
	16:31	17:28	18:23	20:21 3 07:27 (5)	21:16 2 06:21 (4)	22:01	22:05	21:20	20:10 1 07:21 (5)	18:56	16:49	16:14
9	08:49	08:07	07:06	06:50 07:25 (5)	05:44 06:20 (4)	05:04	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23 3 07:28 (5)	21:18 1 06:21 (4)	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:06	07:03	06:47 07:25 (5)	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25 3 07:28 (5)	21:20	22:03	22:03	21:16	20:05	18:51	16:45	16:13
11	08:48	08:04	07:01	06:45 07:26 (5)	05:40	05:04	05:16	06:04	06:59	07:53	07:52	08:41
	16:36	17:34	18:29	20:27 1 07:27 (5)	21:22	22:04	22:02	21:14	20:02	18:49	16:43	16:13
12	08:47	08:02	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:12
13	08:47	08:00	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:31	21:25	22:05	22:00	21:10	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:03	05:20	06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	21:59	21:08	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00	08:00	08:45
	16:42	17:42	18:37	20:34	21:28	22:07	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:49	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:24	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:35	16:34	16:13
18	08:42	07:49	06:44	06:29	05:29	05:02	05:25	06:16	07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:55	20:59	19:45	18:32	16:32	16:13
19	08:41	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:08	08:07	08:48
	16:49	17:50	18:44	20:42	21:35	22:09	21:53	20:57	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:28	06:20	07:15	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:37	22:09	21:52	20:54	19:40	18:28	16:30	16:13
21	08:38	07:43	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:20	05:23	05:02	05:31	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:36	07:38	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:14	08:51
	16:57	17:58	18:52	20:49	21:41	22:09	21:48	20:48	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:10	21:46	20:45	19:30	18:19	16:25	16:15
25	08:33	07:34	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:52
	17:00	18:02	18:55	20:53	21:44	22:10	21:45	20:43	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:55	21:46	22:10	21:43	20:41	19:25	17:14	16:22	16:17
27	08:30	07:29	06:22	06:09	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:23	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:49	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	05:14	05:05	05:42	06:36	07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:34	19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	05:13	05:06	05:43	06:37	07:32	07:29	08:26	08:52
	17:10		20:05	21:02	21:51	22:09	21:37	20:31	19:15	17:06	16:19	16:20
31	08:24		07:12		05:11		05:45	06:39		07:31		08:52
	17:12		20:06		21:53		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case				24	8			8	24			
Sun reduction				0.31	0.31			0.26	0.25			
Oper. time red.				1.00	1.00			1.00	1.00			
Wind dir. red.				0.64	0.65			0.65	0.64			
Total reduction				0.20	0.20			0.17	0.16			
Total, real				5	2			1	4			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** AQ - H045

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February	March	April	May	June	July	August	September	October	November	December		
1	08:52		14:27 (8)	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27		
	16:22	20	14:47 (8)	17:14	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02	16:17		
2	08:52		14:28 (8)	08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34	08:29		
	16:23	19	14:47 (8)	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:16		
3	08:52		14:30 (8)	08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:38	07:36	08:30		
	16:24	17	14:47 (8)	17:18	18:13	20:12	21:07	21:56	22:08	21:29	20:21	19:07	16:58	16:16		
4	08:52		14:31 (8)	08:17	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38	08:32		
	16:26	15	14:46 (8)	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15		
5	08:51		14:33 (8)	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40	08:33		
	16:27	12	14:45 (8)	17:22	18:17	20:15	21:11	21:58	22:06	21:26	20:17	19:03	16:54	16:15		
6	08:51		14:35 (8)	08:13	07:12	06:57	05:49	05:06	05:10	05:55	06:49	07:43	07:42	08:35		14:21 (8)
	16:28	9	14:44 (8)	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14	9	14:30 (8)
7	08:50			08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44	08:36		14:19 (8)
	16:30			17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:13	12	14:31 (8)
8	08:50			08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37		14:19 (8)
	16:31			17:28	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48	16:13	15	14:34 (8)
9	08:49			08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:49	07:48	08:39		14:18 (8)
	16:32			17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46	16:13	17	14:35 (8)
10	08:49			08:05	07:03	06:47	05:42	05:04	05:14	06:02	06:56	07:50	07:50	08:40		14:17 (8)
	16:34			17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:12	19	14:36 (8)
11	08:48			08:03	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52	08:41		14:18 (8)
	16:35			17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:12	20	14:38 (8)
12	08:47			08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42		14:18 (8)
	16:37			17:36	18:31	20:28	21:23	22:05	22:01	21:11	19:59	18:46	16:41	16:12	21	14:39 (8)
13	08:46			07:59	06:56	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:56	08:43		14:17 (8)
	16:39			17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12	22	14:39 (8)
14	08:45			07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57	08:44		14:18 (8)
	16:40			17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38	16:12	22	14:40 (8)
15	08:45			07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59	08:45		14:18 (8)
	16:42			17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36	16:12	23	14:41 (8)
16	08:44			07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01	08:46		14:19 (8)
	16:44			17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16:12	23	14:42 (8)
17	08:43			07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03	08:47		14:20 (8)
	16:45			17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:33	16:12	23	14:43 (8)
18	08:41			07:49	06:43	06:28	05:28	05:02	05:24	06:16	07:11	08:05	08:05	08:48		14:20 (8)
	16:47			17:48	18:42	20:39	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:12	23	14:43 (8)
19	08:40			07:47	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07	08:48		14:21 (8)
	16:49			17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13	22	14:43 (8)
20	08:39			07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49		14:22 (8)
	16:51			17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29	16:13	22	14:44 (8)
21	08:38			07:42	06:36	06:21	05:24	05:02	05:29	06:21	07:16	08:11	08:10	08:50		14:22 (8)
	16:52			17:54	18:48	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:13	22	14:44 (8)
22	08:37			07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50		14:23 (8)
	16:54			17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14	22	14:45 (8)
23	08:35			07:38	06:31	06:17	05:21	05:02	05:32	06:24	07:20	08:15	08:14	08:51		14:23 (8)
	16:56			17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	16:14	22	14:45 (8)
24	08:34			07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16	08:51		14:23 (8)
	16:58			18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24	16:15	22	14:45 (8)
25	08:33			07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51		14:24 (8)
	17:00			18:02	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	16:16	23	14:47 (8)
26	08:31			07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:52		14:24 (8)
	17:02			18:04	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22	16:16	23	14:47 (8)
27	08:30			07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21	08:52		14:24 (8)
	17:04			18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17	23	14:47 (8)
28	08:28			07:26	06:19	06:06	05:14	05:04	05:40	06:33	07:28	07:25	08:23	08:52		14:24 (8)
	17:06			18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18	23	14:47 (8)
29	08:27				07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52		14:25 (8)
	17:08				20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19	22	14:47 (8)
30	08:25				07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26	08:52		14:25 (8)
	17:10				20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20	22	14:47 (8)
31	08:23				07:11		05:11		05:44	06:39		07:30		08:52		14:26 (8)
	17:12				20:06		21:52		21:35	20:29		17:04		16:21	22	14:48 (8)
Potential sun hours	250			273	367	420	494	510	513	460	382	328	259	233		
Total, worst case		92													539	
Sun reduction		0.16													0.12	
Oper. time red.		1.00													1.00	
Wind dir. red.		0.66													0.66	
Total reduction		0.11													0.08	
Total, real		10													42	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** AR - H046

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March	April	May	June	July	August	September	October		November		December
1	08:52		08:22	08:50 (4)	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34		07:33	08:11 (4)	08:28
	16:23		17:14 9	08:59 (4)	18:10	20:08	21:04	21:54	22:09	21:33	20:27	19:13		17:02 16	08:27 (4)	16:18
2	08:52		08:20	08:48 (4)	07:22	07:07	05:58	05:09	05:07	05:48	06:43	07:36		07:35	08:10 (4)	08:29
	16:24		17:16 12	09:00 (4)	18:12	20:10	21:06	21:55	22:08	21:31	20:24	19:10		17:00 18	08:28 (4)	16:17
3	08:52		08:19	08:46 (4)	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38		07:36	08:09 (4)	08:31
	16:25		17:18 14	09:00 (4)	18:14	20:12	21:07	21:56	22:08	21:30	20:22	19:08		16:58 20	08:29 (4)	16:16
4	08:52		08:17	08:44 (4)	07:17	07:02	05:54	05:08	05:09	05:52	06:46	07:40		07:38	08:08 (4)	08:32
	16:26		17:20 16	09:00 (4)	18:16	20:14	21:09	21:57	22:07	21:28	20:19	19:05		16:56 21	08:29 (4)	16:16
5	08:51		08:15	08:42 (4)	07:15	07:00	05:52	05:07	05:10	05:53	06:48	07:42		07:40	08:10 (4)	08:34
	16:27		17:22 18	09:00 (4)	18:17	20:16	21:11	21:58	22:07	21:26	20:17	19:03		16:54 20	08:30 (4)	16:15
6	08:51		08:13	08:40 (4)	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43		07:42	08:13 (4)	08:35
	16:29		17:24 20	09:00 (4)	18:19	20:18	21:13	22:00	22:06	21:24	20:14	19:01		16:52 18	08:31 (4)	16:14
7	08:51		08:11	08:39 (4)	07:10	06:55	05:48	05:06	05:12	05:57	06:52	07:45		07:44	08:15 (4)	08:36
	16:30		17:26 20	08:59 (4)	18:21	20:19	21:15	22:01	22:05	21:22	20:12	18:58		16:50 16	08:31 (4)	16:14
8	08:50		08:09	08:39 (4)	07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47		07:46	08:17 (4)	08:38
	16:31		17:28 20	08:59 (4)	18:23	20:21	21:16	22:01	22:05	21:20	20:10	18:56		16:49 14	08:31 (4)	16:13
9	08:50		08:08	08:40 (4)	07:06	06:50	05:44	05:04	05:14	06:00	06:55	07:49		07:48	08:19 (4)	08:39
	16:33		17:30 18	08:58 (4)	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53		16:47 11	08:30 (4)	16:13
10	08:49		08:06	08:41 (4)	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51		07:50	08:21 (4)	08:40
	16:34		17:32 16	08:57 (4)	18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51		16:45 9	08:30 (4)	16:13
11	08:48		08:04	08:43 (4)	07:01	06:45	05:40	05:03	05:16	06:04	06:59	07:53		07:52	08:23 (4)	08:41
	16:36		17:34 13	08:56 (4)	18:29	20:27	21:22	22:04	22:02	21:14	20:02	18:49		16:43 6	08:29 (4)	16:13
12	08:47		08:02	08:46 (4)	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54		07:54	08:25 (4)	08:42
	16:37		17:36 7	08:53 (4)	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46		16:42 4	08:29 (4)	16:12
13	08:47		08:00		06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56		07:56	08:27 (4)	08:43
	16:39		17:38		18:33	20:31	21:25	22:06	22:00	21:10	19:57	18:44		16:40 1	08:28 (4)	16:12
14	08:46		07:58		06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58		07:58		08:44
	16:41		17:40		18:35	20:32	21:27	22:06	21:59	21:08	19:55	18:41		16:38		16:12
15	08:45		07:55		06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00		08:00		08:45
	16:42		17:42		18:37	20:34	21:29	22:07	21:58	21:05	19:52	18:39		16:37		16:12
16	08:44		07:53		06:49	06:33	05:32	05:02	05:22	06:12	07:07	08:02		08:02		08:46
	16:44		17:44		18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37		16:35		16:12
17	08:43		07:51		06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04		08:03		08:47
	16:46		17:46		18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34		16:34		16:13
18	08:42		07:49		06:44	06:29	05:28	05:02	05:25	06:16	07:11	08:06		08:05		08:48
	16:47		17:48		18:42	20:40	21:34	22:08	21:55	20:59	19:45	18:32		16:32		16:13
19	08:41		07:47		06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:08		08:07		08:49
	16:49		17:50		18:44	20:42	21:35	22:09	21:53	20:57	19:42	18:30		16:31		16:13
20	08:39		07:45		06:39	06:24	05:25	05:02	05:28	06:20	07:15	08:09		08:09		08:49
	16:51		17:52		18:46	20:44	21:37	22:09	21:52	20:54	19:40	18:28		16:30		16:13
21	08:38		07:43		06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11		08:11		08:50
	16:53		17:54		18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25		16:28		16:14
22	08:37		07:40		06:34	06:20	05:22	05:02	05:31	06:23	07:18	08:13		08:13		08:50
	16:55		17:56		18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23		16:27		16:14
23	08:36		07:38		06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15		08:14		08:51
	16:56		17:58		18:52	20:49	21:41	22:10	21:48	20:48	19:32	18:21		16:26		16:15
24	08:34		07:36		06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17		08:16		08:51
	16:58		18:00		18:53	20:51	21:43	22:10	21:46	20:45	19:30	18:19		16:25		16:15
25	08:33		07:34		06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19		08:18		08:52
	17:00		18:02		18:55	20:53	21:44	22:10	21:45	20:43	19:27	17:17		16:23		16:16
26	08:32		07:31		06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21		08:20		08:52
	17:02		18:04		18:57	20:55	21:46	22:10	21:43	20:41	19:25	17:14		16:22		16:17
27	08:30		07:29		06:22	06:08	05:16	05:04	05:38	06:32	07:27	07:23		08:21		08:52
	17:04		18:06		18:59	20:56	21:47	22:10	21:42	20:38	19:23	17:12		16:21		16:17
28	08:29		07:27		06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25		08:23		08:52
	17:06		18:08		19:01	20:58	21:49	22:09	21:40	20:36	19:20	17:10		16:20		16:18
29	08:27	08:55 (4)			07:17	06:04	05:14	05:05	05:42	06:36	07:31	07:27		08:25		08:52
	17:08 1	08:56 (4)			20:03	21:00	21:50	22:09	21:38	20:34	19:18	17:08		16:19		16:19
30	08:25	08:54 (4)			07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:29	08:15 (4)	08:26		08:53
	17:10 4	08:58 (4)			20:05	21:02	21:51	22:09	21:37	20:31	19:15	17:06 8	08:23 (4)	16:18		16:20
31	08:24	08:52 (4)			07:12		05:11		05:45	06:39		07:31	08:12 (4)			08:53
	17:12 7	08:59 (4)			20:06		21:53		21:35	20:29		17:04 14	08:26 (4)			16:21
Potential sun hours	250		273		367	420	494	510	512	460	382	328		259		233
Total, worst case	12		183									22		174		
Sun reduction	0.16		0.19									0.23		0.20		
Oper. time red.	1.00		1.00									1.00		1.00		
Wind dir. red.	0.60		0.60									0.60		0.60		
Total reduction	0.10		0.12									0.14		0.12		
Total, real	1		21									3		20		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** AS - H047

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52 16:23	08:22 17:14	07:24 18:10	07:09 20:08	06:00 21:04 13	06:26 (3) 06:39 (3) 21:54	05:11 22:09 1	05:40 (2) 05:41 (2) 21:33	05:47	06:41 20:27	07:34 19:13	07:33 17:02	08:28 16:18
2	08:52 16:24	08:20 17:16	07:22 18:12	07:07 20:10	05:58 21:06 15	06:24 (3) 06:39 (3) 21:55	05:10 22:08 1	05:07 05:41 (2)	05:48 21:31 9	06:32 (3) 06:41 (3) 20:24	06:43 19:10	07:35 17:00	08:29 16:17
3	08:52 16:25	08:19 17:18	07:20 18:14	07:04 20:12	05:56 21:07 17	06:22 (3) 06:39 (3) 21:56	05:09 22:08	05:08 22:08	05:50 21:30 13	06:30 (3) 06:43 (3) 20:22	06:44 19:08	07:36 16:58	08:31 16:16
4	08:52 16:26	08:17 17:20	07:17 18:16	07:02 20:14	05:54 21:09 18	06:20 (3) 06:38 (3) 21:57	05:08 22:07	05:09 22:07	05:52 21:28 16	06:28 (3) 06:44 (3) 20:19	06:46 19:05	07:40 16:56	08:32 16:16
5	08:51 16:27	08:15 17:22	07:15 18:18	07:00 20:16	05:52 21:11 19	06:18 (3) 06:37 (3) 21:58	05:07 22:07	05:10 22:07	05:53 21:26 18	06:27 (3) 06:45 (3) 20:17	06:48 19:03	07:42 16:54	07:40 16:15	08:34 16:15
6	08:51 16:29	08:13 17:24	07:13 18:19	06:57 20:18	05:50 21:13 21	06:16 (3) 06:37 (3) 21:59	05:06 22:06	05:11 22:06	05:55 21:24 20	06:26 (3) 06:46 (3) 20:14	06:50 19:01	07:43 16:52	07:42 16:14	08:35 16:14
7	08:51 16:30	08:11 17:26	07:10 18:21	06:55 20:19	05:48 21:15 19	06:17 (3) 06:36 (3) 22:00	05:06 22:05	05:12 22:05	05:57 21:22 20	06:27 (3) 06:47 (3) 20:12	06:52 18:58	07:45 16:51	07:44 16:14	08:36 16:14
8	08:50 16:31	08:09 17:28	07:08 18:23	06:52 20:21	05:46 21:16 17	06:18 (3) 06:35 (3) 22:01	05:05 22:05	05:13 22:05	05:58 21:20 19	06:28 (3) 06:47 (3) 20:10	06:53 18:56	07:47 16:49	07:46 16:14	08:38 16:14
9	08:49 16:33	08:08 17:30	07:06 18:25	06:50 20:23	05:44 21:18 14	06:19 (3) 06:33 (3) 22:02	05:05 22:04	05:14 22:04	06:00 21:18 18	06:30 (3) 06:48 (3) 20:07	06:55 18:53	07:49 16:47	07:48 16:13	08:39 16:13
10	08:49 16:34	08:06 17:32	07:03 18:27	06:47 20:25	05:42 21:20 11	06:20 (3) 06:31 (3) 22:03	05:04 22:03	05:15 22:03	06:02 21:16 16	06:31 (3) 06:47 (3) 20:05	06:57 18:51	07:51 16:45	07:50 16:13	08:40 16:13
11	08:48 16:36	08:04 17:34	07:01 18:29	06:45 20:27	05:40 21:22 6	06:23 (3) 06:29 (3) 22:04 1	05:04 05:36 (2)	05:16 22:02	06:04 21:14 15	06:33 (3) 06:48 (3) 20:02	06:59 18:49	07:53 16:43	07:52 16:13	08:41 16:13
12	08:47 16:37	08:02 17:36	06:58 18:31	06:43 20:29	05:39 21:23	05:03 22:05 1	05:35 (2) 05:36 (2)	05:17 22:01	06:05 21:12 13	06:35 (3) 06:48 (3) 20:00	07:00 18:46	07:54 16:42	07:54 16:13	08:42 16:13
13	08:47 16:39	08:00 17:38	06:56 18:33	06:40 20:31	05:37 21:25	05:03 22:05 2	05:35 (2) 05:37 (2)	05:18 22:00	06:07 21:10 11	06:36 (3) 06:47 (3) 19:57	07:02 18:44	07:56 16:40	07:56 16:12	08:43 16:12
14	08:46 16:41	07:58 17:40	06:53 18:35	06:38 20:32	05:35 21:27	05:03 22:06 2	05:35 (2) 05:37 (2)	05:20 21:59	06:09 21:08 9	06:38 (3) 06:47 (3) 19:55	07:04 18:41	07:58 16:38	07:58 16:12	08:44 16:12
15	08:45 16:42	07:55 17:42	06:51 18:37	06:36 20:34	05:33 21:29	05:02 22:07 3	05:35 (2) 05:38 (2)	05:21 21:58	06:11 21:05 7	06:40 (3) 06:47 (3) 19:52	07:06 18:39	08:00 16:37	08:00 16:12	08:45 16:12
16	08:44 16:44	07:53 17:44	06:49 18:39	06:33 20:36	05:32 21:30	05:02 22:07 3	05:35 (2) 05:38 (2)	05:22 21:57	06:13 21:03 5	06:41 (3) 06:46 (3) 19:50	07:07 18:37	08:02 16:35	08:01 16:12	08:46 16:12
17	08:43 16:46	07:51 17:46	06:46 18:40	06:31 20:38	05:30 21:32	05:02 22:08 3	05:35 (2) 05:38 (2)	05:24 21:56	06:14 21:01 2	06:43 (3) 06:45 (3) 19:47	07:09 18:35	08:04 16:34	08:03 16:13	08:47 16:13
18	08:42 16:47	07:49 17:48	06:44 18:42	06:29 20:40	05:29 21:33	05:02 22:08 3	05:35 (2) 05:38 (2)	05:25 21:55	06:16 20:59	07:11 19:45	08:06 18:32	08:05 16:32	08:05 16:13	08:48 16:13
19	08:41 16:49	07:47 17:50	06:41 18:44	06:26 20:42	05:27 21:35	05:02 22:09 3	05:35 (2) 05:38 (2)	05:26 21:53	06:18 20:57	07:13 19:42	08:08 18:30	08:07 16:31	08:07 16:13	08:48 16:13
20	08:39 16:51	07:45 17:52	06:39 18:46	06:24 20:44	05:25 21:37	05:02 22:09 4	05:35 (2) 05:39 (2)	05:28 21:52	06:20 20:54	07:15 19:40	08:09 18:28	08:09 16:30	08:09 16:13	08:49 16:13
21	08:38 16:53	07:43 17:54	06:36 18:48	06:22 20:45	05:24 21:38	05:02 22:09 4	05:35 (2) 05:39 (2)	05:29 21:51	06:21 20:52	07:16 19:37	08:11 18:25	08:11 16:28	08:11 16:14	08:50 16:14
22	08:37 16:55	07:40 17:56	06:34 18:50	06:20 20:47	05:23 21:40	05:02 22:09 4	05:35 (2) 05:39 (2)	05:31 21:49	06:23 20:50	07:18 19:35	08:13 18:23	08:13 16:27	08:13 16:14	08:50 16:14
23	08:36 16:57	07:38 17:58	06:31 18:52	06:17 20:49	05:21 21:41	05:03 22:09 4	05:36 (2) 05:40 (2)	05:32 21:48	06:25 20:48	07:20 19:32	08:15 18:21	08:14 16:26	08:14 16:15	08:51 16:15
24	08:34 16:58	07:36 18:00	06:29 18:53	06:15 20:51	05:20 21:43	05:03 22:10 3	05:36 (2) 05:39 (2)	05:34 21:46	06:27 20:45	07:22 19:30	08:17 18:19	08:16 16:25	08:16 16:15	08:51 16:15
25	08:33 17:00	07:34 18:02	06:26 18:55	06:13 20:53	05:18 21:44	05:03 22:10 3	05:36 (2) 05:39 (2)	05:35 21:45	06:28 20:43	07:23 19:28	07:19 17:17	08:18 16:23	08:18 16:16	08:52 16:16
26	08:31 17:02	07:31 18:04	06:24 18:57	06:11 20:55 3	06:36 (3) 05:17 06:39 (3) 21:46	05:04 22:10 3	05:37 (2) 05:40 (2)	05:37 21:43	06:30 20:41	07:25 19:25	07:21 17:15	08:19 16:22	08:19 16:17	08:52 16:17
27	08:30 17:04	07:29 18:06	06:22 18:59	06:09 20:56 5	06:34 (3) 05:16 06:39 (3) 21:47	05:04 22:10 3	05:37 (2) 05:40 (2)	05:38 21:42	06:32 20:38	07:27 19:23	07:23 17:12	08:21 16:21	08:21 16:18	08:52 16:18
28	08:28 17:06	07:27 18:08	06:19 19:01	06:06 20:58 7	06:32 (3) 05:15 06:39 (3) 21:49	05:05 22:09 2	05:38 (2) 05:40 (2)	05:40 21:40	06:34 20:36	07:29 19:20	07:25 17:10	08:23 16:20	08:23 16:18	08:52 16:18
29	08:27 17:08		07:17 20:03	06:04 21:00 10	06:30 (3) 05:14 06:40 (3) 21:50	05:05 22:09 2	05:38 (2) 05:40 (2)	05:42 21:38	06:36 20:34	07:31 19:18	07:27 17:08	08:24 16:19	08:24 16:19	08:52 16:19
30	08:25 17:10		07:14 20:05	06:02 21:02 12	06:28 (3) 05:13 06:40 (3) 21:51	05:06 22:09 2	05:39 (2) 05:41 (2)	05:43 21:37	06:37 20:31	07:32 19:15	07:29 17:06	08:26 16:19	08:26 16:20	08:52 16:20
31	08:24 17:12		07:12 20:06		05:12 21:53			05:45 21:35	06:39 20:29		07:31 17:04			08:52 16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233		
Total, worst case				37	170	55	2	211						
Sun reduction				0.31	0.31	0.26	0.22	0.26						
Oper. time red.				1.00	1.00	1.00	1.00	1.00						
Wind dir. red.				0.65	0.65	0.65	0.65	0.65						
Total reduction				0.20	0.20	0.17	0.15	0.17						
Total, real				7	35	9	0	35						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** AT - H048

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52 16:23	08:22 17:14	07:24 18:10	07:09 20:08	06:00 21:04	06:42 (3) 3 06:45 (3) 21:54	05:11 05:10	05:07 22:09	05:40 (1) 4 05:44 (1) 21:33	05:47 21:33	06:41 20:27	07:34 19:13	07:33 17:02	08:28 16:18
2	08:52 16:24	08:20 17:16	07:22 18:12	07:07 20:10	05:58 21:06	05:10 21:55	05:07 22:08	05:40 (1) 4 05:44 (1) 21:31	05:48 21:31	06:43 20:24	07:36 19:10	07:35 17:00	08:29 16:17
3	08:52 16:25	08:19 17:18	07:20 18:14	07:04 20:12	05:56 21:07	05:09 21:56	05:08 22:08	05:41 (1) 3 05:44 (1) 21:30	05:50 21:30	06:44 20:22	07:38 19:08	07:36 16:58	08:31 16:16
4	08:52 16:26	08:17 17:20	07:17 18:16	07:02 20:14	05:54 21:09	05:08 21:57	05:09 22:07	05:42 (1) 2 05:44 (1) 21:28	05:52 21:28	06:46 20:19	07:40 19:05	07:38 16:56	08:32 16:16
5	08:51 16:27	08:15 17:22	07:15 18:18	07:00 20:16	05:52 21:11	05:07 21:58	05:10 22:07	05:43 (1) 1 05:44 (1) 21:26	05:53 21:26	06:48 20:17	07:42 19:03	07:40 16:54	08:34 16:15
6	08:51 16:29	08:13 17:24	07:13 18:19	06:57 20:18	05:50 21:13	05:06 21:59	05:11 22:06	05:44 (1) 1 05:45 (1) 21:24	05:55 21:24	06:50 20:14	07:43 19:01	07:42 16:52	08:35 16:14
7	08:51 16:30	08:11 17:26	07:10 18:21	06:55 20:19	05:48 21:15	05:06 22:00 1 05:38 (1)	05:37 (1) 05:12 22:05	05:57 21:22	06:52 20:12	07:45 18:58	07:44 16:51	08:36 16:14
8	08:50 16:31	08:09 17:28	07:08 18:23	06:52 20:21	05:46 21:16	05:05 22:01 2 05:39 (1)	05:37 (1) 05:13 22:05	05:58 21:20	06:53 20:10	07:47 18:56	07:46 16:49	08:38 16:14
9	08:49 16:33	08:08 17:30	07:06 18:25	06:50 20:23	05:44 21:18	05:05 22:02 3 05:39 (1)	05:36 (1) 05:14 22:04	06:00 21:18	06:55 20:07	07:49 18:53	07:48 16:47	08:39 16:13
10	08:49 16:34	08:06 17:32	07:03 18:27	06:47 20:25	05:42 21:20	05:04 22:03 4 05:40 (1)	05:36 (1) 05:15 22:03	06:02 21:16	06:57 20:05	07:51 18:51	07:50 16:45	08:40 16:13
11	08:48 16:36	08:04 17:34	07:01 18:29	06:45 20:27	05:40 21:22	05:04 22:04 4 05:40 (1)	05:36 (1) 05:16 22:02	06:04 21:14	06:59 20:02	07:53 18:49	07:52 16:43	08:41 16:13
12	08:47 16:37	08:02 17:36	06:58 18:31	06:43 20:29	05:39 21:23	05:03 22:05 5 05:40 (1)	05:35 (1) 05:17 22:01	06:05 21:12 6	06:49 (3) 06:55 (3) 20:00	07:00 18:46	07:54 16:42	08:42 16:13
13	08:47 16:39	08:00 17:38	06:56 18:33	06:40 20:31	05:37 21:25	05:03 22:05 5 05:40 (1)	05:35 (1) 05:18 22:00	06:07 21:10 12	06:45 (3) 06:57 (3) 19:57	07:02 18:44	07:56 16:40	08:43 16:12
14	08:46 16:41	07:58 17:40	06:53 18:35	06:38 20:32	05:35 21:27	05:03 22:06 6 05:41 (1)	05:35 (1) 05:20 21:59	06:09 21:08 16	06:43 (3) 06:59 (3) 19:55	07:04 18:41	07:58 16:38	08:44 16:12
15	08:45 16:42	07:55 17:42	06:51 18:37	06:36 20:34	05:33 21:29	05:02 22:07 6 05:41 (1)	05:35 (1) 05:21 21:58	06:11 21:05 18	06:42 (3) 07:00 (3) 19:52	07:06 18:39	08:00 16:37	08:45 16:12
16	08:44 16:44	07:53 17:44	06:49 18:39	06:33 20:36	05:32 21:30	05:02 22:07 7 05:42 (1)	05:35 (1) 05:22 21:57	06:13 21:03 20	06:41 (3) 07:01 (3) 19:50	07:07 18:37	08:02 16:35	08:46 16:12
17	08:43 16:46	07:51 17:46	06:46 18:40	06:31 20:38	05:30 21:32	05:02 22:08 7 05:42 (1)	05:35 (1) 05:24 21:56	06:14 21:01 18	06:43 (3) 07:01 (3) 19:47	07:09 18:35	08:03 16:34	08:47 16:13
18	08:42 16:47	07:49 17:48	06:44 18:42	06:29 06:53 (3) 20:40 3 06:56 (3)	05:29 21:33	05:02 22:08 7 05:42 (1)	05:35 (1) 05:25 21:55	06:16 20:59 17	06:45 (3) 07:02 (3) 19:45	07:11 18:32	08:05 16:32	08:48 16:13
19	08:41 16:49	07:47 17:50	06:41 18:44	06:26 06:51 (3) 20:42 6 06:57 (3)	05:27 21:35	05:02 22:09 7 05:42 (1)	05:35 (1) 05:26 21:53	06:18 20:57 16	06:46 (3) 07:02 (3) 19:42	07:13 18:30	08:07 16:31	08:49 16:13
20	08:39 16:51	07:45 17:52	06:39 18:46	06:24 06:49 (3) 20:44 8 06:57 (3)	05:25 21:37	05:02 22:09 7 05:42 (1)	05:35 (1) 05:28 21:52	06:20 20:54 14	06:48 (3) 07:02 (3) 19:40	07:15 18:28	08:09 16:30	08:49 16:13
21	08:38 16:53	07:43 17:54	06:36 18:48	06:22 06:47 (3) 20:45 10 06:57 (3)	05:24 21:38	05:02 22:09 7 05:42 (1)	05:35 (1) 05:29 21:51	06:21 20:52 12	06:50 (3) 07:02 (3) 19:37	07:16 18:25	08:11 16:28	08:50 16:14
22	08:37 16:55	07:40 17:56	06:34 18:50	06:20 06:44 (3) 20:47 12 06:56 (3)	05:23 21:40	05:02 22:09 7 05:42 (1)	05:35 (1) 05:31 21:49	06:23 20:50 10	06:51 (3) 07:01 (3) 19:35	07:18 18:23	08:13 16:27	08:50 16:14
23	08:36 16:57	07:38 17:58	06:31 18:52	06:17 06:42 (3) 20:49 14 06:56 (3)	05:21 21:41	05:03 22:10 7 05:43 (1)	05:36 (1) 05:32 21:48	06:25 20:48 8	06:53 (3) 07:01 (3) 19:32	07:20 18:21	08:14 16:26	08:51 16:15
24	08:34 16:58	07:36 18:00	06:29 18:53	06:15 06:40 (3) 20:51 16 06:56 (3)	05:20 21:43	05:03 22:10 7 05:43 (1)	05:36 (1) 05:34 21:46	06:27 20:45 5	06:55 (3) 07:00 (3) 19:30	07:22 18:19	08:16 16:25	08:51 16:15
25	08:33 17:00	07:34 18:02	06:26 18:55	06:13 06:38 (3) 20:53 17 06:55 (3)	05:18 21:44	05:03 22:10 7 05:43 (1)	05:36 (1) 05:35 21:45	06:28 20:43 3	06:56 (3) 06:59 (3) 19:28	07:23 17:17	08:18 16:23	08:52 16:16
26	08:31 17:02	07:31 18:04	06:24 18:57	06:11 06:36 (3) 20:55 19 06:55 (3)	05:17 21:46	05:04 22:10 7 05:44 (1)	05:37 (1) 05:37 21:43	06:30 20:41	07:25 19:25	07:21 17:15	08:20 16:22	08:52 16:17
27	08:30 17:04	07:29 18:06	06:22 18:59	06:09 06:34 (3) 20:56 20 06:54 (3)	05:16 21:47	05:04 22:10 6 05:43 (1)	05:37 (1) 05:38 21:42	06:32 20:38	07:27 19:23	07:23 17:12	08:21 16:21	08:52 16:18
28	08:28 17:06	07:27 18:08	06:19 19:01	06:06 06:35 (3) 20:58 18 06:53 (3)	05:15 21:49	05:05 22:09 6 05:44 (1)	05:38 (1) 05:40 21:40	06:34 20:36	07:29 19:20	07:25 17:10	08:23 16:20	08:52 16:18
29	08:27 17:08		07:17 20:03	06:04 06:36 (3) 21:00 15 06:51 (3)	05:14 21:50	05:05 22:09 6 05:44 (1)	05:38 (1) 05:42 21:38	06:36 20:34	07:31 19:18	07:27 17:08	08:24 16:19	08:52 16:19
30	08:25 17:10		07:14 20:05	06:02 06:38 (3) 21:02 11 06:49 (3)	05:13 21:51	05:06 22:09 5 05:44 (1)	05:39 (1) 05:43 21:37	06:37 20:31	07:32 19:15	07:29 17:06	08:26 16:19	08:52 16:20
31	08:24 17:12		07:12 20:06		05:12 21:53		05:45 21:35	06:39 20:29		07:31 17:04		08:52 16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case				169	3	136	15	175				
Sun reduction				0.31	0.31	0.26	0.22	0.26				
Oper. time red.				1.00	1.00	1.00	1.00	1.00				
Wind dir. red.				0.65	0.65	0.65	0.65	0.65				
Total reduction				0.20	0.20	0.17	0.14	0.17				
Total, real				34	1	23	2	29				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** AU - H049

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:40	07:34	07:32	08:27
	16:22	17:13	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:15	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:16
3	08:52	08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:38	07:36	08:30
	16:24	17:17	18:13	20:12	21:07	21:56	22:08	21:29	20:21	19:07	16:58	16:16
4	08:52	08:16	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38	08:32
	16:26	17:19	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40	08:33
	16:27	17:21	18:17	20:15	21:11	21:58	22:06	21:25	20:17	19:03	16:54	16:14
6	08:51	08:13	07:12	06:57	05:49	05:06	05:10	05:55	06:49	07:43	07:42	08:35
	16:28	17:23	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:13
8	08:50	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48	08:39
	16:32	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46	16:13
10	08:49	08:05	07:03	06:47	05:42	05:03	05:14	06:02	06:56	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:12
11	08:48	08:03	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52	08:41
	16:35	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:56	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36	16:12
16	08:44	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:32	22:07	21:56	21:01	19:47	18:34	16:33	16:12
18	08:41	07:49	06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05	08:05	08:48
	16:47	17:48	18:42	20:39	21:33	22:08	21:54	20:59	19:44	18:32	16:32	16:12
19	08:40	07:47	06:41	06:26	05:26	05:02	05:26	06:17	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11	08:10	08:50
	16:52	17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:13
22	08:37	07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	16:14
24	08:34	07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24	16:15
25	08:33	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17	08:51
	17:00	18:02	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:52
	17:02	18:03	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24	08:23	08:52
	17:06	18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11		05:44	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	513	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** AV - H050

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May			June	July			August			September	October	November	December
1	08:52	08:22	07:24	07:09	06:00			05:10	05:06			05:46		06:17 (10)	06:41	07:34	07:32	08:27
	16:22	17:14	18:09	20:08	21:03			21:54	22:08			21:33	21	06:38 (10)	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:07	05:58		06:24 (10)	05:09	05:07			05:48		06:18 (10)	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05	3	06:27 (10)	21:55	22:08			21:31	20	06:38 (10)	20:24	19:10	17:00	16:17
3	08:52	08:18	07:19	07:04	05:56		06:22 (10)	05:08	05:08			05:50		06:20 (10)	06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12	21:07	6	06:28 (10)	21:56	22:07			21:29	19	06:39 (10)	20:21	19:08	16:58	16:16
4	08:51	08:17	07:17	07:02	05:54		06:20 (10)	05:08	05:09			05:51		06:21 (10)	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	8	06:28 (10)	21:57	22:07			21:27	17	06:38 (10)	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52		06:18 (10)	05:07	05:09			05:53		06:23 (10)	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11	10	06:28 (10)	21:58	22:06			21:25	15	06:38 (10)	20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50		06:16 (10)	05:06	05:10			05:55		06:25 (10)	06:49	07:43	07:42	08:35
	16:28	17:24	18:19	20:17	21:13	12	06:28 (10)	21:59	22:06			21:24	14	06:39 (10)	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48		06:14 (10)	05:05	05:11			05:56		06:26 (10)	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	14	06:28 (10)	22:00	22:05			21:22	12	06:38 (10)	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46		06:12 (10)	05:05	05:12			05:58		06:28 (10)	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	16	06:28 (10)	22:01	22:04			21:20	10	06:38 (10)	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:50	05:44		06:11 (10)	05:04	05:13			06:00		06:30 (10)	06:55	07:49	07:48	08:38
	16:33	17:30	18:25	20:23	21:18	18	06:29 (10)	22:02	22:04			21:18	7	06:37 (10)	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42		06:09 (10)	05:04	05:15			06:02		06:31 (10)	06:57	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	19	06:28 (10)	22:03	22:03			21:16	5	06:36 (10)	20:04	18:51	16:45	16:13
11	08:48	08:03	07:00	06:45	05:40		06:07 (10)	05:03	05:16			06:03		06:33 (10)	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21	21	06:28 (10)	22:04	22:02			21:14	2	06:35 (10)	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38		06:06 (10)	05:03	05:17			06:05			07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23	22	06:28 (10)	22:04	22:01			21:11			19:59	18:46	16:41	16:12
13	08:46	07:59	06:56	06:40	05:37		06:06 (10)	05:02	05:18			06:07			07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	21	06:27 (10)	22:05	22:00			21:09			19:57	18:44	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35		06:07 (10)	05:02	05:19			06:09			07:04	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:27	20	06:27 (10)	22:06	21:59			21:07			19:54	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	05:33		06:07 (10)	05:02	05:21			06:10			07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	19	06:26 (10)	22:06	21:58			21:05			19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:31		06:07 (10)	05:02	05:22			06:12			07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	18	06:25 (10)	22:07	21:57			21:03			19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30		06:09 (10)	05:02	05:23			06:14			07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:32	15	06:24 (10)	22:07	21:56			21:01			19:47	18:34	16:34	16:12
18	08:41	07:49	06:43	06:28	05:28		06:10 (10)	05:02	05:25			06:16			07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:40	21:33	13	06:23 (10)	22:08	21:54			20:59			19:45	18:32	16:32	16:12
19	08:40	07:47	06:41	06:26	05:27		06:12 (10)	05:02	05:26			06:18			07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	9	06:21 (10)	22:08	21:53			20:56			19:42	18:30	16:31	16:13
20	08:39	07:44	06:38	06:24	05:25		06:16 (10)	05:02	05:27			06:19			07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	2	06:18 (10)	22:09	21:52			20:54			19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:24			05:02	05:29			06:21			07:16	08:11	08:10	08:49
	16:53	17:54	18:48	20:45	21:38			22:09	21:50			20:52			19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22			05:02	05:30			06:23			07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:40			22:09	21:49			20:50			19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21			05:02	05:32			06:25			07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41			22:09	21:48			20:47			19:32	18:21	16:25	16:15
24	08:34	07:36	06:29	06:15	05:19			05:03	05:33		06:24 (10)	06:26			07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43			22:09	21:46	6	06:30 (10)	20:45			19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18			05:03	05:35		06:21 (10)	06:28			07:23	07:19	08:17	08:51
	17:00	18:02	18:55	20:52	21:44			22:09	21:45	11	06:32 (10)	20:43			19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17			05:03	05:36		06:20 (10)	06:30			07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:45			22:09	21:43	14	06:34 (10)	20:40			19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:16			05:04	05:38		06:19 (10)	06:32			07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47			22:09	21:41	16	06:35 (10)	20:38			19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14			05:04	05:40		06:18 (10)	06:33			07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48			22:09	21:40	18	06:36 (10)	20:36			19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13			05:05	05:41		06:17 (10)	06:35			07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:50			22:09	21:38	20	06:37 (10)	20:33			19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12			05:06	05:43		06:17 (10)	06:37			07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51			22:09	21:36	21	06:38 (10)	20:31			19:15	17:06	16:18	16:20
31	08:23		07:11		05:11				05:45		06:16 (10)	06:39				07:30		08:52
	17:12		20:06		21:52				21:35	22	06:38 (10)	20:29				17:04		16:21
Potential sun hours	250	273	367	420	494			510	512			460			382	328	259	233
Total, worst case						266				128			142					
Sun reduction						0.31				0.22			0.26					
Oper. time red.						1.00				1.00			1.00					
Wind dir. red.						0.65				0.65			0.65					
Total reduction						0.20				0.15			0.17					
Total, real						54				19			24					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** AW - H052

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April		May	June	July	August		September		October	November	December
1	08:52	08:22	07:24	07:09		06:00	05:10	05:06	05:46		06:41		19:38 (6)	07:34	07:32	08:27
	16:22	17:14	18:10	20:08		21:04	21:54	22:08	21:33		20:26	20	19:58 (6)	19:12	17:02	16:18
2	08:52	08:20	07:22	07:07		05:58	05:09	05:07	05:48		06:42		19:39 (6)	07:36	07:34	08:29
	16:24	17:16	18:11	20:10		21:05	21:55	22:08	21:31		20:24	17	19:56 (6)	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04		05:56	05:08	05:08	05:50		06:44		19:38 (6)	07:38	07:36	08:30
	16:25	17:18	18:13	20:12		21:07	21:56	22:07	21:29		20:21	15	19:53 (6)	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02		05:54	05:08	05:09	05:51		06:46		19:39 (6)	07:39	07:38	08:32
	16:26	17:20	18:15	20:14		21:09	21:57	22:07	21:27		20:19	12	19:51 (6)	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59		05:52	05:07	05:10	05:53		06:48		19:40 (6)	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	1	19:48 (6)	21:11	21:58	22:06		21:26		20:17	9	19:49 (6)	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57		19:45 (6)	05:50	05:06	05:11		05:55		06:50		19:41 (6)	07:43	07:42	08:35
	16:28	17:24	18:19	20:17	5	19:50 (6)	21:13	21:59	22:06		21:24		20:14	6	19:47 (6)	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54		19:43 (6)	05:48	05:05	05:11		05:57		06:51		19:42 (6)	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	9	19:52 (6)	21:14	22:00	22:05		21:22		20:12	1	19:43 (6)	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52		19:42 (6)	05:46	05:05	05:12		05:58		06:53			07:47	07:46	08:37
	16:31	17:28	18:23	20:21	12	19:54 (6)	21:16	22:01	22:04		21:20		20:09			18:55	16:49	16:13
9	08:49	08:07	07:05	06:50		19:41 (6)	05:44	05:04	05:14		06:00		06:55			07:49	07:48	08:39
	16:33	17:30	18:25	20:23	15	19:56 (6)	21:18	22:02	22:04		21:18		20:07			18:53	16:47	16:13
10	08:49	08:05	07:03	06:47		19:40 (6)	05:42	05:04	05:15		06:02		06:57			07:50	07:50	08:40
	16:34	17:32	18:27	20:25	17	19:57 (6)	21:20	22:03	22:03		21:16		20:04			18:51	16:45	16:13
11	08:48	08:03	07:00	06:45		19:39 (6)	05:40	05:03	05:16		06:04		06:58			07:52	07:52	08:41
	16:36	17:34	18:29	20:27	20	19:59 (6)	21:21	22:04	22:02		21:14		20:02			18:48	16:43	16:12
12	08:47	08:01	06:58	06:43		19:39 (6)	05:38	05:03	05:17		06:05		07:00			07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21	20:00 (6)	21:23	22:04	22:01		21:12		19:59			18:46	16:42	16:12
13	08:46	07:59	06:56	06:40		19:38 (6)	05:37	05:03	05:18		06:07		07:02			07:56	07:56	08:43
	16:39	17:38	18:33	20:30	19	19:57 (6)	21:25	22:05	22:00		21:09		19:57			18:44	16:40	16:12
14	08:45	07:57	06:53	06:38		19:39 (6)	05:35	05:02	05:19		06:09		07:04			07:58	07:57	08:44
	16:40	17:40	18:34	20:32	16	19:55 (6)	21:27	22:06	21:59		21:07		19:55			18:41	16:38	16:12
15	08:45	07:55	06:51	06:35		19:39 (6)	05:33	05:02	05:21		06:11		07:05			08:00	07:59	08:45
	16:42	17:42	18:36	20:34	15	19:54 (6)	21:28	22:06	21:58		21:05		19:52			18:39	16:37	16:12
16	08:44	07:53	06:48	06:33		19:38 (6)	05:32	05:02	05:22		06:12		07:07			08:02	08:01	08:46
	16:44	17:44	18:38	20:36	14	19:52 (6)	21:30	22:07	21:57		21:03		19:50			18:37	16:35	16:12
17	08:43	07:51	06:46	06:31		19:39 (6)	05:30	05:02	05:23		06:14		07:09			08:04	08:03	08:47
	16:46	17:46	18:40	20:38	12	19:51 (6)	21:32	22:07	21:56		21:01		19:47			18:34	16:34	16:12
18	08:42	07:49	06:43	06:28		19:40 (6)	05:28	05:02	05:25		06:16		07:11			08:05	08:05	08:48
	16:47	17:48	18:42	20:40	11	19:51 (6)	21:33	22:08	21:54		20:59		19:45			18:32	16:32	16:13
19	08:40	07:47	06:41	06:26		19:42 (6)	05:27	05:02	05:26		06:18		07:13			08:07	08:07	08:48
	16:49	17:50	18:44	20:41	9	19:51 (6)	21:35	22:08	21:53		20:56		19:42			18:30	16:31	16:13
20	08:39	07:45	06:39	06:24		19:42 (6)	05:25	05:02	05:28		06:19		07:14			08:09	08:09	08:49
	16:51	17:52	18:46	20:43	7	19:49 (6)	21:36	22:09	21:52		20:54		19:40			18:27	16:29	16:13
21	08:38	07:42	06:36	06:22		19:45 (6)	05:24	05:02	05:29		06:21		07:16			08:11	08:10	08:50
	16:53	17:54	18:48	20:45	4	19:49 (6)	21:38	22:09	21:50		20:52		19:37			18:25	16:28	16:14
22	08:37	07:40	06:34	06:19			05:22	05:02	05:30		06:23		19:49 (6)	07:18		08:13	08:12	08:50
	16:54	17:56	18:50	20:47			21:40	22:09	21:49		20:50	5	19:54 (6)	19:35		18:23	16:27	16:14
23	08:35	07:38	06:31	06:17			05:21	05:02	05:32		06:25		19:47 (6)	07:20		08:15	08:14	08:51
	16:56	17:58	18:51	20:49			21:41	22:09	21:48		20:47	7	19:54 (6)	19:32		18:21	16:26	16:15
24	08:34	07:36	06:29	06:15			05:20	05:03	05:33		06:26		19:45 (6)	07:21		08:17	08:16	08:51
	16:58	18:00	18:53	20:51			21:43	22:09	21:46		20:45	9	19:54 (6)	19:30		18:19	16:24	16:15
25	08:33	07:33	06:26	06:13			05:18	05:03	05:35		06:28		19:43 (6)	07:23		07:19	08:18	08:51
	17:00	18:02	18:55	20:52			21:44	22:09	21:45		20:43	11	19:54 (6)	19:27		17:16	16:23	16:16
26	08:31	07:31	06:24	06:10			05:17	05:04	05:37		06:30		19:42 (6)	07:25		07:21	08:19	08:52
	17:02	18:04	18:57	20:54			21:46	22:09	21:43		20:40	12	19:54 (6)	19:25		17:14	16:22	16:17
27	08:30	07:29	06:21	06:08			05:16	05:04	05:38		06:32		19:41 (6)	07:27		07:23	08:21	08:52
	17:04	18:06	18:59	20:56			21:47	22:09	21:41		20:38	14	19:55 (6)	19:22		17:12	16:21	16:17
28	08:28	07:27	06:19	06:06			05:15	05:05	05:40		06:34		19:40 (6)	07:29		07:25	08:23	08:52
	17:06	18:08	19:01	20:58			21:48	22:09	21:40		20:36	15	19:55 (6)	19:20		17:10	16:20	16:18
29	08:27		07:16	06:04			05:13	05:05	05:41		06:35		19:39 (6)	07:30		07:27	08:24	08:52
	17:08		20:03	21:00			21:50	22:09	21:38		20:33	17	19:56 (6)	19:17		17:08	16:19	16:19
30	08:25		07:14	06:02			05:12	05:06	05:43		06:37		19:39 (6)	07:32		07:28	08:26	08:52
	17:10		20:04	21:02			21:51	22:09	21:36		20:31	19	19:58 (6)	19:15		17:06	16:18	16:20
31	08:23		07:12				05:11		05:45		06:39		19:38 (6)			07:30		08:52
	17:12		20:06				21:52		21:35		20:29	21	19:59 (6)			17:04		16:21
Potential sun hours	250	273	367	420		494	510	512	460			382		328	259	233
Total, worst case					207					130			80			
Sun reduction					0.31					0.26			0.25			
Oper. time red.					1.00					1.00			1.00			
Wind dir. red.					0.63					0.63			0.63			
Total reduction					0.19					0.16			0.16			
Total, real					40					21			13			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** AX - H053

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February			March	April	May	June
1	08:52		15:01 (11)	08:22		16:20 (9)	07:24	07:09	06:00	05:10
	16:22	4	15:05 (11)	17:13	16	16:36 (9)	18:09	20:08	21:03	21:53
2	08:52		15:02 (11)	08:20		16:20 (9)	07:22	07:06	05:57	05:09
	16:23	4	15:06 (11)	17:15	15	16:35 (9)	18:11	20:10	21:05	21:55
3	08:52		15:04 (11)	08:18		16:20 (9)	07:19	07:04	05:55	05:08
	16:24	3	15:07 (11)	17:17	14	16:34 (9)	18:13	20:12	21:07	21:56
4	08:51		15:04 (11)	08:16		16:20 (9)	07:17	07:02	05:53	05:07
	16:26	3	15:07 (11)	17:19	13	16:33 (9)	18:15	20:13	21:09	21:57
5	08:51		15:05 (11)	08:15		16:21 (9)	07:15	06:59	05:51	05:07
	16:27	3	15:08 (11)	17:21	12	16:33 (9)	18:17	20:15	21:11	21:58
6	08:51		15:06 (11)	08:13		16:21 (9)	07:12	06:57	05:49	05:06
	16:28	3	15:09 (11)	17:23	11	16:32 (9)	18:19	20:17	21:12	21:59
7	08:50		15:07 (11)	08:11		16:21 (9)	07:10	06:54	05:47	05:05
	16:30	2	15:09 (11)	17:25	11	16:32 (9)	18:21	20:19	21:14	22:00
8	08:50		15:09 (11)	08:09		16:22 (9)	07:08	06:52	05:46	05:05
	16:31	1	15:10 (11)	17:27	10	16:32 (9)	18:23	20:21	21:16	22:01
9	08:49			08:07		16:23 (9)	07:05	06:49	05:44	05:04
	16:32			17:30	9	16:32 (9)	18:25	20:23	21:18	22:02
10	08:49			08:05		16:24 (9)	07:03	06:47	05:42	05:03
	16:34			17:32	8	16:32 (9)	18:27	20:25	21:20	22:03
11	08:48			08:03		16:25 (9)	07:00	06:45	05:40	05:03
	16:35			17:34	7	16:32 (9)	18:29	20:26	21:21	22:04
12	08:47			08:01		16:26 (9)	06:58	06:42	05:38	05:03
	16:37			17:36	7	16:33 (9)	18:31	20:28	21:23	22:04
13	08:46			07:59		16:27 (9)	06:55	06:40	05:36	05:02
	16:39			17:38	5	16:32 (9)	18:32	20:30	21:25	22:05
14	08:45			07:57		16:29 (9)	06:53	06:38	05:35	05:02
	16:40			17:40	5	17:10 (8)	18:34	20:32	21:26	22:06
15	08:44			07:55		16:33 (9)	06:51	06:35	05:33	05:02
	16:42			17:42	5	17:12 (8)	18:36	20:34	21:28	22:06
16	08:44			07:53		17:08 (8)	06:48	06:33	05:31	05:02
	16:44			17:44	7	17:15 (8)	18:38	20:36	21:30	22:07
17	08:42			07:51		17:07 (8)	06:46	06:31	05:30	05:02
	16:45			17:46	10	17:17 (8)	18:40	20:38	21:32	22:07
18	08:41			07:49		17:06 (8)	06:43	06:28	05:28	05:01
	16:47			17:48	12	17:18 (8)	18:42	20:39	21:33	22:08
19	08:40			07:47		17:07 (8)	06:41	06:26	05:26	05:01
	16:49			17:50	14	17:21 (8)	18:44	20:41	21:35	22:08
20	08:39			07:44		17:07 (8)	06:38	06:24	05:25	05:02
	16:51			17:52	16	17:23 (8)	18:46	20:43	21:36	22:09
21	08:38			07:42		17:07 (8)	06:36	06:21	05:23	05:02
	16:52			17:54	19	17:26 (8)	18:47	20:45	21:38	22:09
22	08:37			07:40		17:07 (8)	06:33	06:19	05:22	05:02
	16:54			17:56	20	17:27 (8)	18:49	20:47	21:39	22:09
23	08:35			07:38		17:08 (8)	06:31	06:17	05:21	05:02
	16:56			17:58	20	17:28 (8)	18:51	20:49	21:41	22:09
24	08:34		16:23 (9)	07:35		17:10 (8)	06:29	06:15	05:19	05:02
	16:58	1	16:24 (9)	18:00	17	17:27 (8)	18:53	20:51	21:43	22:09
25	08:33		16:23 (9)	07:33		17:10 (8)	06:26	06:12	05:18	05:03
	17:00	3	16:26 (9)	18:01	15	17:25 (8)	18:55	20:52	21:44	22:09
26	08:31		16:22 (9)	07:31		17:13 (8)	06:24	06:10	05:17	05:03
	17:02	6	16:28 (9)	18:03	10	17:23 (8)	18:57	20:54	21:45	22:09
27	08:30		16:22 (9)	07:29			06:21	06:08	05:15	05:04
	17:04	9	16:31 (9)	18:05			18:59	20:56	21:47	22:09
28	08:28		16:21 (9)	07:26			06:19	06:06	05:14	05:04
	17:06	12	16:33 (9)	18:07			19:00	20:58	21:48	22:09
29	08:27		16:21 (9)				07:16	06:04	05:13	05:05
	17:08	14	16:35 (9)				20:02	21:00	21:50	22:09
30	08:25		16:20 (9)				07:14	06:02	05:12	05:05
	17:10	17	16:37 (9)				20:04	21:02	21:51	22:09
31	08:23		16:21 (9)				07:11		05:11	
	17:11	16	16:37 (9)				20:06		21:52	
Potential sun hours	250			273			367	420	494	510
Total, worst case		101			308					
Sun reduction		0.16			0.19					
Oper. time red.		1.00			1.00					
Wind dir. red.		0.64			0.64					
Total reduction		0.10			0.13					
Total, real		10			39					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** AX - H053

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July	August	September	October			November			December		
1	05:06	05:46	06:40	07:34			07:32		15:53 (9)	08:27		
	22:08	21:33	20:26	19:12			17:02	9	16:02 (9)	16:17		
2	05:07	05:48	06:42	07:36			07:34		15:52 (9)	08:29		
	22:08	21:31	20:24	19:10			17:00	10	16:02 (9)	16:16		
3	05:08	05:49	06:44	07:37			07:36		15:52 (9)	08:30		
	22:07	21:29	20:21	19:07			16:58	10	16:02 (9)	16:16		
4	05:08	05:51	06:46	07:39			07:38		15:51 (9)	08:32		14:53 (11)
	22:07	21:27	20:19	19:05			16:56	11	16:02 (9)	16:15	2	14:55 (11)
5	05:09	05:53	06:48	07:41			07:40		15:51 (9)	08:33		14:52 (11)
	22:06	21:25	20:16	19:03			16:54	11	16:02 (9)	16:14	2	14:54 (11)
6	05:10	05:55	06:49	07:43			07:42		15:50 (9)	08:35		14:52 (11)
	22:06	21:24	20:14	19:00			16:52	13	16:03 (9)	16:14	3	14:55 (11)
7	05:11	05:56	06:51	07:45			07:44		15:50 (9)	08:36		14:52 (11)
	22:05	21:22	20:12	18:58			16:50	13	16:03 (9)	16:13	2	14:54 (11)
8	05:12	05:58	06:53	07:47			07:46		15:50 (9)	08:37		14:52 (11)
	22:04	21:20	20:09	18:55			16:48	14	16:04 (9)	16:13	3	14:55 (11)
9	05:13	06:00	06:55	07:48			07:48		15:51 (9)	08:38		14:52 (11)
	22:04	21:18	20:07	18:53			16:46	15	16:06 (9)	16:13	3	14:55 (11)
10	05:14	06:01	06:56	07:50			07:50		15:51 (9)	08:40		14:51 (11)
	22:03	21:16	20:04	18:50			16:45	16	16:07 (9)	16:12	4	14:55 (11)
11	05:15	06:03	06:58	07:52			07:52		15:52 (9)	08:41		14:52 (11)
	22:02	21:13	20:02	18:48			16:43	16	16:08 (9)	16:12	4	14:56 (11)
12	05:17	06:05	07:00	07:54			07:54		15:52 (9)	08:42		14:52 (11)
	22:01	21:11	19:59	18:46			16:41	17	16:09 (9)	16:12	4	14:56 (11)
13	05:18	06:07	07:02	07:56			07:55		15:52 (9)	08:43		14:52 (11)
	22:00	21:09	19:57	18:43			16:40	15	16:07 (9)	16:12	5	14:57 (11)
14	05:19	06:08	07:03	07:58			07:57		15:53 (9)	08:44		14:53 (11)
	21:59	21:07	19:54	18:41			16:38	12	16:05 (9)	16:12	4	14:57 (11)
15	05:20	06:10	07:05	08:00		17:49 (8)	07:59		15:54 (9)	08:45		14:53 (11)
	21:58	21:05	19:52	18:39	3	17:52 (8)	16:36	9	16:03 (9)	16:12	4	14:57 (11)
16	05:22	06:12	07:07	08:01		17:44 (8)	08:01		15:55 (9)	08:46		14:53 (11)
	21:57	21:03	19:49	18:36	12	17:56 (8)	16:35	6	16:01 (9)	16:12	5	14:58 (11)
17	05:23	06:14	07:09	08:03		17:42 (8)	08:03		15:56 (9)	08:47		14:53 (11)
	21:56	21:01	19:47	18:34	16	17:58 (8)	16:33	3	15:59 (9)	16:12	5	14:58 (11)
18	05:24	06:16	07:11	08:05		17:40 (8)	08:05		15:57 (9)	08:47		14:54 (11)
	21:54	20:59	19:44	18:32	19	17:59 (8)	16:32	1	15:58 (9)	16:12	4	14:58 (11)
19	05:26	06:17	07:12	08:07		17:39 (8)	08:07			08:48		14:54 (11)
	21:53	20:56	19:42	18:30	21	18:00 (8)	16:31			16:13	5	14:59 (11)
20	05:27	06:19	07:14	08:09		17:38 (8)	08:09			08:49		14:55 (11)
	21:52	20:54	19:39	18:27	20	17:58 (8)	16:29			16:13	5	15:00 (11)
21	05:29	06:21	07:16	08:11		17:38 (8)	08:10			08:49		14:55 (11)
	21:50	20:52	19:37	18:25	17	17:55 (8)	16:28			16:13	5	15:00 (11)
22	05:30	06:23	07:18	08:13		17:37 (8)	08:12			08:50		14:56 (11)
	21:49	20:50	19:35	18:23	16	17:53 (8)	16:27			16:14	5	15:01 (11)
23	05:32	06:24	07:19	08:15		17:37 (8)	08:14			08:50		14:56 (11)
	21:48	20:47	19:32	18:21	14	17:51 (8)	16:25			16:14	5	15:01 (11)
24	05:33	06:26	07:21	08:17		17:37 (8)	08:16			08:51		14:56 (11)
	21:46	20:45	19:30	18:18	11	17:48 (8)	16:24			16:15	5	15:01 (11)
25	05:35	06:28	07:23	07:19		16:37 (8)	08:17			08:51		14:57 (11)
	21:45	20:43	19:27	17:16	9	16:46 (8)	16:23			16:16	5	15:02 (11)
26	05:36	06:30	07:25	07:21		16:37 (8)	08:19			08:52		14:58 (11)
	21:43	20:40	19:25	17:14	6	16:43 (8)	16:22			16:16	4	15:02 (11)
27	05:38	06:32	07:27	07:23		16:01 (9)	08:21			08:52		14:58 (11)
	21:41	20:38	19:22	17:12	5	16:41 (8)	16:21			16:17	5	15:03 (11)
28	05:39	06:33	07:28	07:24		15:58 (9)	08:22			08:52		14:59 (11)
	21:40	20:36	19:20	17:10	5	16:39 (8)	16:20			16:18	4	15:03 (11)
29	05:41	06:35	07:30	07:26		15:56 (9)	08:24			08:52		14:59 (11)
	21:38	20:33	19:17	17:08	6	16:02 (9)	16:19			16:19	5	15:04 (11)
30	05:43	06:37	07:32	07:28		15:54 (9)	08:26			08:52		15:00 (11)
	21:36	20:31	19:15	17:06	7	16:01 (9)	16:18			16:20	4	15:04 (11)
31	05:44	06:39		07:30		15:54 (9)				08:52		15:01 (11)
	21:35	20:29		17:04	8	16:02 (9)				16:21	4	15:05 (11)
Potential sun hours	513	460	382	328			259			233		
Total, worst case					195			201			115	
Sun reduction					0.23			0.20			0.12	
Oper. time red.					1.00			1.00			1.00	
Wind dir. red.					0.65			0.64			0.65	
Total reduction					0.15			0.13			0.08	
Total, real					29			25			9	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** AY - H054

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April			May			June		
1	08:52	08:22	07:24	07:09			06:00		06:36 (11)	05:10		
	16:22	17:14	18:09	20:08			21:03	20	06:56 (11)	21:54		
2	08:52	08:20	07:22	07:07			05:58		06:38 (11)	05:09		
	16:23	17:16	18:11	20:10			21:05	17	06:55 (11)	21:55		
3	08:52	08:18	07:19	07:04			05:56		06:40 (11)	05:08		
	16:25	17:18	18:13	20:12			21:07	15	06:55 (11)	21:56		
4	08:51	08:17	07:17	07:02			05:54		06:41 (11)	05:08		
	16:26	17:20	18:15	20:14			21:09	13	06:54 (11)	21:57		
5	08:51	08:15	07:15	06:59			05:52		06:41 (11)	05:07		
	16:27	17:22	18:17	20:15			21:11	13	06:54 (11)	21:58		
6	08:51	08:13	07:12	06:57			05:50		06:42 (11)	05:06		
	16:28	17:24	18:19	20:17			21:13	11	06:53 (11)	21:59		
7	08:50	08:11	07:10	06:54			05:48		06:42 (11)	05:05		
	16:30	17:26	18:21	20:19			21:14	10	06:52 (11)	22:00		
8	08:50	08:09	07:08	06:52			05:46		06:42 (11)	05:05		05:36 (9)
	16:31	17:28	18:23	20:21			21:16	9	06:51 (11)	22:01	1	05:37 (9)
9	08:49	08:07	07:05	06:50			05:44		06:44 (11)	05:04		05:36 (9)
	16:33	17:30	18:25	20:23			21:18	6	06:50 (11)	22:02	2	05:38 (9)
10	08:49	08:05	07:03	06:47			05:42		06:44 (11)	05:04		05:36 (9)
	16:34	17:32	18:27	20:25			21:20	4	06:48 (11)	22:03	3	05:39 (9)
11	08:48	08:03	07:00	06:45			05:40		06:44 (11)	05:03		05:35 (9)
	16:36	17:34	18:29	20:27			21:21	2	06:46 (11)	22:04	3	05:38 (9)
12	08:47	08:01	06:58	06:42			05:38			05:03		05:35 (9)
	16:37	17:36	18:31	20:28			21:23			22:04	4	05:39 (9)
13	08:46	07:59	06:56	06:40			05:37			05:03		05:35 (9)
	16:39	17:38	18:33	20:30			21:25			22:05	5	05:40 (9)
14	08:45	07:57	06:53	06:38			05:35			05:02		05:35 (9)
	16:40	17:40	18:34	20:32			21:27			22:06	5	05:40 (9)
15	08:45	07:55	06:51	06:35			05:33			05:02		05:35 (9)
	16:42	17:42	18:36	20:34			21:28			22:06	6	05:41 (9)
16	08:44	07:53	06:48	06:33			05:31			05:02		05:34 (9)
	16:44	17:44	18:38	20:36			21:30			22:07	6	05:40 (9)
17	08:43	07:51	06:46	06:31			05:30			05:02		05:34 (9)
	16:45	17:46	18:40	20:38			21:32			22:07	6	05:40 (9)
18	08:41	07:49	06:43	06:28			05:28			05:02		05:34 (9)
	16:47	17:48	18:42	20:40			21:33			22:08	7	05:41 (9)
19	08:40	07:47	06:41	06:26			05:27			05:02		05:35 (9)
	16:49	17:50	18:44	20:41			21:35			22:08	7	05:42 (9)
20	08:39	07:44	06:38	06:24			05:25			05:02		05:35 (9)
	16:51	17:52	18:46	20:43			21:36			22:09	7	05:42 (9)
21	08:38	07:42	06:36	06:22		06:46 (11)	05:24			05:02		05:35 (9)
	16:53	17:54	18:48	20:45	4	06:50 (11)	21:38			22:09	7	05:42 (9)
22	08:37	07:40	06:34	06:19		06:44 (11)	05:22			05:02		05:35 (9)
	16:54	17:56	18:49	20:47	8	06:52 (11)	21:40			22:09	7	05:42 (9)
23	08:35	07:38	06:31	06:17		06:42 (11)	05:21			05:02		05:35 (9)
	16:56	17:58	18:51	20:49	11	06:53 (11)	21:41			22:09	7	05:42 (9)
24	08:34	07:36	06:29	06:15		06:40 (11)	05:19			05:03		05:36 (9)
	16:58	18:00	18:53	20:51	14	06:54 (11)	21:43			22:09	7	05:43 (9)
25	08:33	07:33	06:26	06:13		06:38 (11)	05:18			05:03		05:36 (9)
	17:00	18:02	18:55	20:52	17	06:55 (11)	21:44			22:09	7	05:43 (9)
26	08:31	07:31	06:24	06:10		06:36 (11)	05:17			05:03		05:37 (9)
	17:02	18:04	18:57	20:54	19	06:55 (11)	21:46			22:09	6	05:43 (9)
27	08:30	07:29	06:21	06:08		06:34 (11)	05:16			05:04		05:37 (9)
	17:04	18:06	18:59	20:56	22	06:56 (11)	21:47			22:09	6	05:43 (9)
28	08:28	07:26	06:19	06:06		06:31 (11)	05:14			05:04		05:38 (9)
	17:06	18:08	19:01	20:58	24	06:55 (11)	21:48			22:09	5	05:43 (9)
29	08:27		07:16	06:04		06:29 (11)	05:13			05:05		05:38 (9)
	17:08		20:02	21:00	26	06:55 (11)	21:50			22:09	5	05:43 (9)
30	08:25		07:14	06:02		06:33 (11)	05:12			05:06		05:39 (9)
	17:10		20:04	21:02	22	06:55 (11)	21:51			22:09	4	05:43 (9)
31	08:23		07:11				05:11					
	17:12		20:06				21:52					
Potential sun hours	250	273	367	420			494			510		
Total, worst case					167			120			123	
Sun reduction					0.31			0.31			0.26	
Oper. time red.					1.00			1.00			1.00	
Wind dir. red.					0.65			0.65			0.65	
Total reduction					0.20			0.20			0.17	
Total, real					33			24			21	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** AY - H054

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July			August			September	October	November	December
1	05:06		05:39 (9)	05:46			06:41	07:34	07:32	08:27
	22:08	4	05:43 (9)	21:33			20:26	19:12	17:02	16:17
2	05:07		05:40 (9)	05:48		06:54 (11)	06:42	07:36	07:34	08:29
	22:08	3	05:43 (9)	21:31	3	06:57 (11)	20:24	19:10	17:00	16:17
3	05:08		05:41 (9)	05:50		06:54 (11)	06:44	07:38	07:36	08:30
	22:07	2	05:43 (9)	21:29	5	06:59 (11)	20:21	19:08	16:58	16:16
4	05:09		05:42 (9)	05:51		06:53 (11)	06:46	07:39	07:38	08:32
	22:07	1	05:43 (9)	21:27	7	07:00 (11)	20:19	19:05	16:56	16:15
5	05:09			05:53		06:53 (11)	06:48	07:41	07:40	08:33
	22:06			21:26	8	07:01 (11)	20:17	19:03	16:54	16:15
6	05:10			05:55		06:52 (11)	06:49	07:43	07:42	08:35
	22:06			21:24	10	07:02 (11)	20:14	19:00	16:52	16:14
7	05:11			05:56		06:51 (11)	06:51	07:45	07:44	08:36
	22:05			21:22	11	07:02 (11)	20:12	18:58	16:50	16:14
8	05:12			05:58		06:50 (11)	06:53	07:47	07:46	08:37
	22:04			21:20	13	07:03 (11)	20:09	18:55	16:48	16:13
9	05:13			06:00		06:50 (11)	06:55	07:49	07:48	08:39
	22:04			21:18	14	07:04 (11)	20:07	18:53	16:47	16:13
10	05:15			06:02		06:48 (11)	06:57	07:50	07:50	08:40
	22:03			21:16	16	07:04 (11)	20:04	18:51	16:45	16:13
11	05:16			06:03		06:46 (11)	06:58	07:52	07:52	08:41
	22:02			21:14	18	07:04 (11)	20:02	18:48	16:43	16:12
12	05:17			06:05		06:44 (11)	07:00	07:54	07:54	08:42
	22:01			21:11	19	07:03 (11)	19:59	18:46	16:41	16:12
13	05:18			06:07		06:41 (11)	07:02	07:56	07:56	08:43
	22:00			21:09	23	07:04 (11)	19:57	18:44	16:40	16:12
14	05:19			06:09		06:38 (11)	07:04	07:58	07:57	08:44
	21:59			21:07	26	07:04 (11)	19:54	18:41	16:38	16:12
15	05:21			06:10		06:39 (11)	07:05	08:00	07:59	08:45
	21:58			21:05	24	07:03 (11)	19:52	18:39	16:37	16:12
16	05:22			06:12		06:41 (11)	07:07	08:02	08:01	08:46
	21:57			21:03	21	07:02 (11)	19:50	18:37	16:35	16:12
17	05:23			06:14		06:43 (11)	07:09	08:03	08:03	08:47
	21:56			21:01	19	07:02 (11)	19:47	18:34	16:34	16:12
18	05:25			06:16		06:44 (11)	07:11	08:05	08:05	08:47
	21:54			20:59	16	07:00 (11)	19:45	18:32	16:32	16:13
19	05:26			06:18		06:46 (11)	07:12	08:07	08:07	08:48
	21:53			20:56	14	07:00 (11)	19:42	18:30	16:31	16:13
20	05:27			06:19		06:48 (11)	07:14	08:09	08:09	08:49
	21:52			20:54	11	06:59 (11)	19:40	18:27	16:29	16:13
21	05:29			06:21		06:49 (11)	07:16	08:11	08:10	08:49
	21:50			20:52	7	06:56 (11)	19:37	18:25	16:28	16:14
22	05:30			06:23		06:51 (11)	07:18	08:13	08:12	08:50
	21:49			20:50	3	06:54 (11)	19:35	18:23	16:27	16:14
23	05:32			06:25			07:20	08:15	08:14	08:51
	21:48			20:47			19:32	18:21	16:25	16:15
24	05:33			06:26			07:21	08:17	08:16	08:51
	21:46			20:45			19:30	18:19	16:24	16:15
25	05:35			06:28			07:23	07:19	08:18	08:51
	21:45			20:43			19:27	17:16	16:23	16:16
26	05:36			06:30			07:25	07:21	08:19	08:52
	21:43			20:40			19:25	17:14	16:22	16:16
27	05:38			06:32			07:27	07:23	08:21	08:52
	21:41			20:38			19:22	17:12	16:21	16:17
28	05:40			06:34			07:29	07:25	08:23	08:52
	21:40			20:36			19:20	17:10	16:20	16:18
29	05:41			06:35			07:30	07:26	08:24	08:52
	21:38			20:33			19:17	17:08	16:19	16:19
30	05:43			06:37			07:32	07:28	08:26	08:52
	21:36			20:31			19:15	17:06	16:18	16:20
31	05:45			06:39				07:30		08:52
	21:35			20:29				17:04		16:21
Potential sun hours	512			460			382	328	259	233
Total, worst case		10			288					
Sun reduction		0.22			0.26					
Oper. time red.		1.00			1.00					
Wind dir. red.		0.65			0.65					
Total reduction		0.14			0.17					
Total, real		1			48					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** AZ - H055

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March		April		May	June	July	August		September		October	November	December
1	08:52	08:22	07:24		07:09		07:33 (6)	06:00	05:10	05:07	05:46		07:15 (6)	07:34	07:33	08:28
	16:23	17:14	18:10		20:08	9	07:42 (6)	21:04	21:54	22:08	21:33	20:26	25 07:40 (6)	19:13	17:02	16:18
2	08:52	08:20	07:22		07:07		07:31 (6)	05:58	05:10	05:07	05:48	06:43	07:14 (6)	07:36	07:34	08:29
	16:24	17:16	18:12		20:10	13	07:44 (6)	21:06	21:55	22:08	21:31	20:24	27 07:41 (6)	19:10	17:00	16:17
3	08:52	08:19	07:20		07:04		07:28 (6)	05:56	05:09	05:08	05:50	06:44	07:14 (6)	07:38	07:36	08:31
	16:25	17:18	18:14		20:12	16	07:44 (6)	21:07	21:56	22:08	21:29	20:22	27 07:41 (6)	19:08	16:58	16:16
4	08:52	08:17	07:17		07:02		07:26 (6)	05:54	05:08	05:09	05:52	06:46	07:13 (6)	07:40	07:38	08:32
	16:26	17:20	18:16		20:14	18	07:44 (6)	21:09	21:57	22:07	21:28	20:19	27 07:40 (6)	19:05	16:56	16:16
5	08:51	08:15	07:15		06:59		07:23 (6)	05:52	05:07	05:10	05:53	06:48	07:15 (6)	07:41	07:40	08:33
	16:27	17:22	18:17		20:16	21	07:44 (6)	21:11	21:58	22:07	21:26	20:17	25 07:40 (6)	19:03	16:54	16:15
6	08:51	08:13	07:13		06:57		07:21 (6)	05:50	05:06	05:11	05:55	06:50	07:17 (6)	07:43	07:42	08:35
	16:29	17:24	18:19		20:18	23	07:44 (6)	21:13	21:59	22:06	21:24	20:14	23 07:40 (6)	19:00	16:52	16:14
7	08:50	08:11	07:10		06:55		07:18 (6)	05:48	05:06	05:12	05:57	06:51	07:18 (6)	07:45	07:44	08:36
	16:30	17:26	18:21		20:19	25	07:43 (6)	21:15	22:00	22:05	21:22	20:12	21 07:39 (6)	18:58	16:50	16:14
8	08:50	08:09	07:08		06:52		07:16 (6)	05:46	05:05	05:13	05:58	06:53	07:20 (6)	07:47	07:46	08:37
	16:31	17:28	18:23		20:21	27	07:43 (6)	21:16	22:01	22:05	21:20	20:09	18 07:38 (6)	18:56	16:49	16:14
9	08:49	08:07	07:05		06:50		07:16 (6)	05:44	05:04	05:14	06:00	06:55	07:22 (6)	07:49	07:48	08:39
	16:33	17:30	18:25		20:23	27	07:43 (6)	21:18	22:02	22:04	21:18	20:07	16 07:38 (6)	18:53	16:47	16:13
10	08:49	08:05	07:03		06:47		07:15 (6)	05:42	05:04	05:15	06:02	06:57	07:24 (6)	07:51	07:50	08:40
	16:34	17:32	18:27		20:25	27	07:42 (6)	21:20	22:03	22:03	21:16	20:05	13 07:37 (6)	18:51	16:45	16:13
11	08:48	08:04	07:01		06:45		07:16 (6)	05:40	05:04	05:16	06:04	06:59	07:25 (6)	07:52	07:52	08:41
	16:36	17:34	18:29		20:27	25	07:41 (6)	21:22	22:04	22:02	21:14	20:02	10 07:35 (6)	18:48	16:43	16:13
12	08:47	08:02	06:58		06:43		07:17 (6)	05:39	05:03	05:17	06:05	07:00	07:27 (6)	07:54	07:54	08:42
	16:37	17:36	18:31		20:29	23	07:40 (6)	21:23	22:05	22:01	21:12	20:00	6 07:33 (6)	18:46	16:42	16:12
13	08:47	07:59	06:56		06:40		07:17 (6)	05:37	05:03	05:18	06:07	07:02	07:29 (6)	07:56	07:56	08:43
	16:39	17:38	18:33		20:30	21	07:38 (6)	21:25	22:05	22:00	21:10	19:57	2 07:31 (6)	18:44	16:40	16:12
14	08:46	07:57	06:53		06:38		07:19 (6)	05:35	05:03	05:20	06:09	07:04		07:58	07:58	08:44
	16:41	17:40	18:35		20:32	17	07:36 (6)	21:27	22:06	21:59	21:07	19:55		18:41	16:38	16:12
15	08:45	07:55	06:51		06:36		07:21 (6)	05:33	05:02	05:21	06:11	07:06		08:00	08:00	08:45
	16:42	17:42	18:37		20:34	13	07:34 (6)	21:28	22:07	21:58	21:05	19:52		18:39	16:37	16:12
16	08:44	07:53	06:49		06:33		07:24 (6)	05:32	05:02	05:22	06:12	07:07		08:02	08:01	08:46
	16:44	17:44	18:38		20:36	7	07:31 (6)	21:30	22:07	21:57	21:03	19:50		18:37	16:35	16:12
17	08:43	07:51	06:46		06:31			05:30	05:02	05:23	06:14	07:09		08:04	08:03	08:47
	16:46	17:46	18:40		20:38			21:32	22:08	21:56	21:01	19:47		18:34	16:34	16:13
18	08:42	07:49	06:44		06:29			05:29	05:02	05:25	06:16	07:11		08:06	08:05	08:48
	16:47	17:48	18:42		20:40			21:33	22:08	21:55	20:59	19:45		18:32	16:32	16:13
19	08:41	07:47	06:41		06:26			05:27	05:02	05:26	06:18	07:13		08:07	08:07	08:48
	16:49	17:50	18:44		20:42			21:35	22:08	21:53	20:57	19:42		18:30	16:31	16:13
20	08:39	07:45	06:39		06:24			05:25	05:02	05:28	06:20	07:14		08:09	08:09	08:49
	16:51	17:52	18:46		20:43			21:37	22:09	21:52	20:54	19:40		18:28	16:30	16:13
21	08:38	07:42	06:36		06:22			05:24	05:02	05:29	06:21	07:16		08:11	08:11	08:50
	16:53	17:54	18:48		20:45			21:38	22:09	21:51	20:52	19:37		18:25	16:28	16:14
22	08:37	07:40	06:34		06:20			05:22	05:02	05:31	06:23	07:18		08:13	08:12	08:50
	16:55	17:56	18:50		20:47			21:40	22:09	21:49	20:50	19:35		18:23	16:27	16:14
23	08:36	07:38	06:31		06:17			05:21	05:03	05:32	06:25	07:20		08:15	08:14	08:51
	16:57	17:58	18:52		20:49			21:41	22:09	21:48	20:48	19:32		18:21	16:26	16:15
24	08:34	07:36	06:29		06:15			05:20	05:03	05:34	06:27	07:22		08:17	08:16	08:51
	16:58	18:00	18:53		20:51			21:43	22:09	21:46	20:45	19:30		18:19	16:25	16:15
25	08:33	07:34	06:26		06:13			05:18	05:03	05:35	06:28	07:23		07:19	08:18	08:52
	17:00	18:02	18:55		20:53			21:44	22:10	21:45	20:43	19:27		17:17	16:23	16:16
26	08:31	07:31	06:24		06:11			05:17	05:04	05:37	06:30	07:25		07:21	08:19	08:52
	17:02	18:04	18:57		20:55			21:46	22:10	21:43	20:41	19:25		17:14	16:22	16:17
27	08:30	07:29	06:22		06:08			05:16	05:04	05:38	06:32	07:26 (6)	07:27		07:23	08:21	08:52
	17:04	18:06	18:59		20:56			21:47	22:09	21:42	20:38	7 07:33 (6)	19:22		17:12	16:21	16:18
28	08:28	07:27	06:19		06:06			05:15	05:05	05:40	06:34	07:21 (6)	07:29		07:25	08:23	08:52
	17:06	18:08	19:01		20:58			21:49	22:09	21:40	20:36	14 07:35 (6)	19:20		17:10	16:20	16:18
29	08:27		07:17		06:04			05:14	05:05	05:42	06:36	07:19 (6)	07:31		07:27	08:24	08:52
	17:08		20:03		21:00			21:50	22:09	21:38	20:34	18 07:37 (6)	19:18		17:08	16:19	16:19
30	08:25		07:14	07:38 (6)	06:02			05:13	05:06	05:43	06:37	07:18 (6)	07:32		07:29	08:26	08:52
	17:10		20:05	2 07:40 (6)	21:02			21:51	22:09	21:37	20:31	21 07:39 (6)	19:15		17:06	16:19	16:20
31	08:24		07:12	07:35 (6)				05:11		05:45	06:39	07:16 (6)			07:31		08:52
	17:12		20:06	6 07:41 (6)				21:52		21:35	20:29	23 07:39 (6)			17:04		16:21
Potential sun hours	250	273	367		420			494	510	512	460		382		328	259	233
Total, worst case				8		312						83		240			
Sun reduction				0.22		0.31						0.26		0.25			
Oper. time red.				1.00		1.00						1.00		1.00			
Wind dir. red.				0.65		0.65						0.65		0.65			
Total reduction				0.14		0.20						0.17		0.16			
Total, real				1		62						14		39			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** BA - H056

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March		April		May			June		July			August			September	October	November	December
1	08:52		08:22		07:24		07:09		06:00			05:11		05:07			05:47			06:17 (3)	06:41	07:34	07:33	08:28
	16:23		17:14		18:10		20:08		21:04			21:54		22:09			21:33		16	06:33 (3)	20:27	19:13	17:02	16:18
2	08:52		08:20		07:22		07:07		05:58			05:10		05:07			05:48			06:19 (3)	06:43	07:36	07:35	08:29
	16:24		17:16		18:12		20:10		21:06			21:55		22:08			21:31		15	06:34 (3)	20:24	19:10	17:00	16:17
3	08:52		08:19		07:20		07:04		05:56			05:09		05:08			05:50			06:20 (3)	06:44	07:38	07:36	08:31
	16:25		17:18		18:14		20:12		21:07			21:56		22:08			21:30		13	06:33 (3)	20:22	19:08	16:58	16:16
4	08:52		08:17		07:17		07:02		05:54		06:20 (3)	05:08		05:09			05:52			06:22 (3)	06:46	07:40	07:38	08:32
	16:26		17:20		18:16		20:14		21:09	2	06:22 (3)	21:57		22:07			21:28		11	06:33 (3)	20:19	19:05	16:56	16:16
5	08:51		08:15		07:15		07:00		05:52		06:18 (3)	05:07		05:10			05:53			06:23 (3)	06:48	07:42	07:40	08:34
	16:27		17:22		18:18		20:16		21:11	4	06:22 (3)	21:58		22:07			21:26		10	06:33 (3)	20:17	19:03	16:54	16:15
6	08:51		08:13		07:13		06:57		05:50		06:16 (3)	05:06		05:11			05:55			06:25 (3)	06:50	07:43	07:42	08:35
	16:29		17:24		18:19		20:18		21:13	6	06:22 (3)	21:59		22:06			21:24		8	06:33 (3)	20:14	19:01	16:52	16:14
7	08:51		08:11		07:10		06:55		05:48		06:15 (3)	05:06		05:12			05:57			06:27 (3)	06:52	07:45	07:44	08:36
	16:30		17:26		18:21		20:19		21:15	8	06:23 (3)	22:00		22:05			21:22		6	06:33 (3)	20:12	18:58	16:51	16:14
8	08:50		08:09		07:08		06:52		05:46		06:13 (3)	05:05		05:13			05:58			06:28 (3)	06:53	07:47	07:46	08:38
	16:31		17:28		18:23		20:21		21:16	10	06:23 (3)	22:01		22:05			21:20		4	06:32 (3)	20:10	18:56	16:49	16:14
9	08:49		08:07		07:06		06:50		05:44		06:11 (3)	05:05		05:14			06:00			06:30 (3)	06:55	07:49	07:48	08:39
	16:33		17:30		18:25		20:23		21:18	12	06:23 (3)	22:02		22:04			21:18		1	06:31 (3)	20:07	18:53	16:47	16:13
10	08:49		08:06		07:03		06:47		05:42		06:09 (3)	05:04		05:15			06:02				06:57	07:51	07:50	08:40
	16:34		17:32		18:27		20:25		21:20	14	06:23 (3)	22:03		22:03			21:16				20:05	18:51	16:45	16:13
11	08:48		08:04		07:01		06:45		05:40		06:08 (3)	05:04		05:16			06:04				06:59	07:53	07:52	08:41
	16:36		17:34		18:29		20:27		21:22	15	06:23 (3)	22:04		22:02			21:14				20:02	18:49	16:43	16:13
12	08:47		08:02		06:58		06:43		05:39		06:06 (3)	05:03		05:17			06:05				07:00	07:54	07:54	08:42
	16:37		17:36		18:31		20:29		21:23	17	06:23 (3)	22:05		22:01			21:12				20:00	18:46	16:42	16:13
13	08:47		08:00		06:56		06:40		05:37		06:04 (3)	05:03		05:18			06:07				07:02	07:56	07:56	08:43
	16:39		17:38		18:33		20:31		21:25	18	06:22 (3)	22:05		22:00			21:10				19:57	18:44	16:40	16:12
14	08:46		07:58		06:53		06:38		05:35		06:03 (3)	05:03		05:20			06:09				07:04	07:58	07:58	08:44
	16:41		17:40		18:35		20:32		21:27	19	06:22 (3)	22:06		21:59			21:08				19:55	18:41	16:39	16:12
15	08:45		07:55		06:51		06:36		05:33		06:01 (3)	05:02		05:21			06:11				07:06	08:00	08:00	08:45
	16:42		17:42		18:37		20:34		21:29	20	06:21 (3)	22:07		21:58			21:05				19:52	18:39	16:37	16:12
16	08:44		07:53		06:49		06:33		05:32		06:00 (3)	05:02		05:22			06:13				07:07	08:02	08:01	08:46
	16:44		17:44		18:39		20:36		21:30	21	06:21 (3)	22:07		21:57			21:03				19:50	18:37	16:35	16:12
17	08:43		07:51		06:46		06:31		05:30		06:01 (3)	05:02		05:24			06:14				07:09	08:04	08:03	08:47
	16:46		17:46		18:40		20:38		21:32	19	06:20 (3)	22:08		21:56			21:01				19:47	18:35	16:34	16:13
18	08:42		07:49		06:44		06:29		05:29		06:02 (3)	05:02		05:25			06:16				07:11	08:06	08:05	08:48
	16:47		17:48		18:42		20:40		21:33	17	06:19 (3)	22:08		21:55			20:59				19:45	18:32	16:32	16:13
19	08:41		07:47		06:41		06:26		05:27		06:04 (3)	05:02		05:26			06:18				07:13	08:08	08:07	08:48
	16:49		17:50		18:44		20:42		21:35	14	06:18 (3)	22:09		21:53			20:57				19:42	18:30	16:31	16:13
20	08:39		07:45		06:39		06:24		05:25		06:04 (3)	05:02		05:28			06:20				07:15	08:09	08:09	08:49
	16:51		17:52		18:46		20:44		21:37	12	06:16 (3)	22:09		21:52			20:54				19:40	18:28	16:30	16:13
21	08:38		07:43		06:36		06:22		05:24		06:06 (3)	05:02		05:29			06:21				07:16	08:11	08:11	08:50
	16:53		17:54		18:48		20:45		21:38	9	06:15 (3)	22:09		21:51			20:52				19:37	18:25	16:28	16:14
22	08:37		07:40		06:34		06:20		05:23			05:02		05:31		06:18 (3)	06:23				07:18	08:13	08:13	08:50
	16:55		17:56		18:50		20:47		21:40			22:09		21:49	5	06:23 (3)	20:50				19:35	18:23	16:27	16:14
23	08:36		07:38		06:31		06:17		05:21			05:03		05:32		06:16 (3)	06:25				07:20	08:15	08:14	08:51
	16:57		17:58		18:52		20:49		21:41			22:09		21:48	10	06:26 (3)	20:48				19:32	18:21	16:26	16:15
24	08:34		07:36		06:29		06:15		05:20			05:03		05:34		06:14 (3)	06:27				07:22	08:17	08:16	08:51
	16:58		18:00		18:53		20:51		21:43			22:10		21:46	13	06:27 (3)	20:45				19:30	18:19	16:25	16:15
25	08:33		07:34		06:26		06:13		05:18			05:03		05:35		06:13 (3)	06:28				07:23	07:19	08:18	08:52
	17:00		18:02		18:55		20:53		21:44			22:10		21:45	16	06:29 (3)	20:43				19:27	17:17	16:23	16:16
26	08:31		07:31		06:24		06:11		05:17			05:04		05:37		06:12 (3)	06:30				07:25	07:21	08:19	08:52
	17:02		18:04		18:57		20:55		21:46			22:10		21:43	18	06:30 (3)	20:41				19:25	17:15	16:22	16:17
27	08:30		07:29		06:22		06:09		05:16			05:04		05:38		06:11 (3)	06:32				07:27	07:23	08:21	08:52
	17:04		18:06		18:59		20:56		21:47			22:09		21:42	19	06:30 (3)	20:38				19:23	17:12	16:21	16:18
28	08:28		07:27		06:19		06:06		05:15			05:05		05:40		06:11 (3)	06:34				07:29	07:25	08:23	08:52
	17:06		18:08		19:01		20:58		21:49			22:09		21:40	21	06:32 (3)	20:36				19:20	17:10	16:20	16:18
29	08:27				07:17		06:04		05:14			05:05		05:42		06:12 (3)	06:36				07:31	07:27	08:24	08:52
	17:08				20:03		21:00		21:50			22:09		21:38	20	06:32 (3)	20:34				19:18	17:08	16:19	16:19
30	08:25				07:14		06:02		05:13			05:06		05:43		06:14 (3)	06:37				07:32	07:29	08:26	08:52
	17:10				20:05		21:02		21:51			22:09		21:37	19	06:33 (3)	20:31				19:15	17:06	16:19	16:20
31	08:24				07:12				05:12					05:45		06:16 (3)	06:39					07:31		08:52
	17:12				20:06				21:53					21:35	17	06:33 (3)	20:29					17:04		16:21
Potential sun hours	250		273		367		420		494			510		512			460				382	328	259	233
Total, worst case										237					158				84					
Sun reduction										0.31					0.22				0.26					
Oper. time red.										1.00					1.00				1.00					
Wind dir. red.										0.65					0.65				0.65					
Total reduction										0.20					0.14				0.17					
Total, real										48					23				14					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** BB - H058

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:16
3	08:52	08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:38	07:36	08:30
	16:24	17:18	18:13	20:12	21:07	21:56	22:08	21:29	20:21	19:07	16:58	16:16
4	08:52	08:17	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11	21:58	22:06	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:49	05:06	05:10	05:55	06:49	07:43	07:42	08:35
	16:28	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:49	07:48	08:39
	16:32	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:14	06:02	06:56	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:12
11	08:48	08:03	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52	08:41
	16:35	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23	22:05	22:01	21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:56	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36	16:12
16	08:44	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:33	16:12
18	08:42	07:49	06:43	06:28	05:28	05:02	05:24	06:16	07:11	08:05	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:12
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:24	05:02	05:29	06:21	07:16	08:11	08:10	08:50
	16:52	17:54	18:48	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:13
22	08:37	07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	16:14
24	08:34	07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24	16:15
25	08:33	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	05:04	05:40	06:33	07:28	07:25	08:23	08:52
	17:06	18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11		05:44	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	513	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** BC - H059

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March		April	May	June	July	August	September		October	November	December
1	08:52	08:22	07:24		07:09	06:00	05:10	05:06	05:46	06:41		07:34	07:32	08:27
	16:22	17:14	18:10		20:08	21:04	21:54	22:08	21:33	20:26		19:12	17:02	16:18
2	08:52	08:20	07:22		07:07	05:58	05:09	05:07	05:48	06:42		07:36	07:34	08:29
	16:23	17:16	18:11		20:10	21:05	21:55	22:08	21:31	20:24		19:10	17:00	16:17
3	08:52	08:18	07:20		07:04	05:56	05:08	05:08	05:50	06:44		07:38	07:36	08:30
	16:25	17:18	18:13		20:12	21:07	21:56	22:08	21:29	20:21		19:08	16:58	16:16
4	08:52	08:17	07:17		07:02	05:54	05:08	05:09	05:51	06:46		07:39	07:38	08:32
	16:26	17:20	18:15		20:14	21:09	21:57	22:07	21:27	20:19		19:05	16:56	16:15
5	08:51	08:15	07:15		06:59	05:52	05:07	05:10	05:53	06:48		07:41	07:40	08:33
	16:27	17:22	18:17		20:15	21:11	21:58	22:06	21:26	20:17		19:03	16:54	16:15
6	08:51	08:13	07:12		06:57	05:50	05:06	05:10	05:55	06:50		07:43	07:42	08:35
	16:28	17:24	18:19		20:17	21:13	21:59	22:06	21:24	20:14		19:00	16:52	16:14
7	08:50	08:11	07:10		06:54	05:48	05:05	05:11	05:57	06:51		07:45	07:44	08:36
	16:30	17:26	18:21		20:19	21:14	22:00	22:05	21:22	20:12		18:58	16:50	16:14
8	08:50	08:09	07:08		06:52	05:46	05:05	05:12	05:58	06:53		07:47	07:46	08:37
	16:31	17:28	18:23		20:21	21:16	22:01	22:04	21:20	20:09		18:55	16:48	16:13
9	08:49	08:07	07:05		06:50	05:44	05:04	05:14	06:00	06:55		07:49	07:48	08:39
	16:33	17:30	18:25		20:23	21:18	22:02	22:04	21:18	20:07		18:53	16:47	16:13
10	08:49	08:05	07:03		06:47	05:42	05:04	05:15	06:02	06:57		07:50	07:50	08:40
	16:34	17:32	18:27		20:25	21:20	22:03	22:03	21:16	20:04		18:51	16:45	16:13
11	08:48	08:03	07:00		06:45	05:40	05:03	05:16	06:03	06:58		07:52	07:52	08:41
	16:36	17:34	18:29		20:27	21:21	22:04	22:02	21:14	20:02		18:48	16:43	16:12
12	08:47	08:01	06:58		06:42	05:38	05:03	05:17	06:05	07:00		19:04 (6)	07:54	07:54	08:42
	16:37	17:36	18:31		20:28	21:23	22:05	22:01	21:12	19:59	7	19:11 (6)	18:46	16:42	16:12
13	08:46	07:59	06:56		06:40	05:37	05:03	05:18	06:07	07:02		19:00 (6)	07:56	07:56	08:43
	16:39	17:38	18:33		20:30	21:25	22:05	22:00	21:09	19:57	13	19:13 (6)	18:44	16:40	16:12
14	08:45	07:57	06:53		06:38	05:35	05:02	05:19	06:09	07:04		18:58 (6)	07:58	07:57	08:44
	16:40	17:40	18:34		20:32	21:27	22:06	21:59	21:07	19:55	17	19:15 (6)	18:41	16:38	16:12
15	08:45	07:55	06:51		06:35	05:33	05:02	05:21	06:11	07:05		18:56 (6)	08:00	07:59	08:45
	16:42	17:42	18:36		20:34	21:28	22:06	21:58	21:05	19:52	20	19:16 (6)	18:39	16:37	16:12
16	08:44	07:53	06:48		06:33	05:32	05:02	05:22	06:12	07:07		18:55 (6)	08:02	08:01	08:46
	16:44	17:44	18:38		20:36	21:30	22:07	21:57	21:03	19:50	22	19:17 (6)	18:37	16:35	16:12
17	08:43	07:51	06:46		18:13 (6)	06:31	05:30	05:02	05:23	06:14	07:09		18:53 (6)	08:04	08:03	08:47
	16:46	17:46	18:40	1	18:14 (6)	20:38	21:32	22:07	21:56	21:01	19:47	24	19:17 (6)	18:34	16:34	16:12
18	08:42	07:49	06:43		18:10 (6)	06:28	05:28	05:02	05:25	06:16	07:11		18:53 (6)	08:05	08:05	08:48
	16:47	17:48	18:42	5	18:15 (6)	20:40	21:33	22:08	21:54	20:59	19:45	23	19:16 (6)	18:32	16:32	16:13
19	08:40	07:47	06:41		18:09 (6)	06:26	05:27	05:02	05:26	06:18	07:13		18:52 (6)	08:07	08:07	08:48
	16:49	17:50	18:44	9	18:18 (6)	20:41	21:35	22:08	21:53	20:56	19:42	22	19:14 (6)	18:30	16:31	16:13
20	08:39	07:45	06:39		18:07 (6)	06:24	05:25	05:02	05:27	06:19	07:14		18:52 (6)	08:09	08:09	08:49
	16:51	17:52	18:46	12	18:19 (6)	20:43	21:36	22:09	21:52	20:54	19:40	20	19:12 (6)	18:27	16:29	16:13
21	08:38	07:42	06:36		18:07 (6)	06:22	05:24	05:02	05:29	06:21	07:16		18:51 (6)	08:11	08:10	08:50
	16:53	17:54	18:48	14	18:21 (6)	20:45	21:38	22:09	21:50	20:52	19:37	18	19:09 (6)	18:25	16:28	16:14
22	08:37	07:40	06:34		18:06 (6)	06:19	05:22	05:02	05:30	06:23	07:18		18:51 (6)	08:13	08:12	08:50
	16:54	17:56	18:50	17	18:23 (6)	20:47	21:40	22:09	21:49	20:50	19:35	15	19:06 (6)	18:23	16:27	16:14
23	08:35	07:38	06:31		18:06 (6)	06:17	05:21	05:02	05:32	06:25	07:20		18:52 (6)	08:15	08:14	08:51
	16:56	17:58	18:51	19	18:25 (6)	20:49	21:41	22:09	21:48	20:47	19:32	12	19:04 (6)	18:21	16:26	16:15
24	08:34	07:36	06:29		18:05 (6)	06:15	05:20	05:03	05:33	06:26	07:21		18:53 (6)	08:17	08:16	08:51
	16:58	18:00	18:53	21	18:26 (6)	20:51	21:43	22:09	21:46	20:45	19:30	9	19:02 (6)	18:19	16:24	16:15
25	08:33	07:33	06:26		18:05 (6)	06:13	05:18	05:03	05:35	06:28	07:23		18:53 (6)	07:19	08:18	08:51
	17:00	18:02	18:55	24	18:29 (6)	20:52	21:44	22:09	21:45	20:43	19:27	6	18:59 (6)	17:16	16:23	16:16
26	08:31	07:31	06:24		18:05 (6)	06:10	05:17	05:03	05:37	06:30	07:25		18:54 (6)	07:21	08:19	08:52
	17:02	18:04	18:57	23	18:28 (6)	20:54	21:46	22:09	21:43	20:40	19:25	2	18:56 (6)	17:14	16:22	16:17
27	08:30	07:29	06:21		18:06 (6)	06:08	05:16	05:04	05:38	06:32	07:27			07:23	08:21	08:52
	17:04	18:06	18:59	22	18:28 (6)	20:56	21:47	22:09	21:41	20:38	19:22			17:12	16:21	16:17
28	08:28	07:27	06:19		18:07 (6)	06:06	05:15	05:04	05:40	06:34	07:29			07:25	08:23	08:52
	17:06	18:08	19:01	20	18:27 (6)	20:58	21:48	22:09	21:40	20:36	19:20			17:10	16:20	16:18
29	08:27		07:16		19:07 (6)	06:04	05:13	05:05	05:41	06:35	07:30			07:27	08:24	08:52
	17:08		20:03	18	19:25 (6)	21:00	21:50	22:09	21:38	20:33	19:17			17:08	16:19	16:19
30	08:25		07:14		19:09 (6)	06:02	05:12	05:06	05:43	06:37	07:32			07:28	08:26	08:52
	17:10		20:04	14	19:23 (6)	21:02	21:51	22:09	21:36	20:31	19:15			17:06	16:18	16:20
31	08:23		07:12		19:11 (6)		05:11		05:45	06:39				07:30		08:52
	17:12		20:06	8	19:19 (6)		21:52		21:35	20:29				17:04		16:21
Potential sun hours	250	273	367			420	494	510	512	460	382			328	259	233
Total, worst case				227								230				
Sun reduction				0.22								0.25				
Oper. time red.				1.00								1.00				
Wind dir. red.				0.65								0.65				
Total reduction				0.14								0.16				
Total, real				32								37				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** BD - H060

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April		May		June		July		August		September	October	November	December
1	08:52	08:22	07:24	07:09		06:00		06:26 (3)		05:11		05:07		05:40 (2)	05:47		06:41	07:34	07:33	08:28
	16:23	17:14	18:10	20:08		21:04	13	06:39 (3)		21:54		22:09	1	05:41 (2)	21:33		20:27	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07		05:58		06:24 (3)		05:10		05:07		05:40 (2)	05:48		06:43	07:36	07:35	08:29
	16:24	17:16	18:12	20:10		21:06	15	06:39 (3)		21:55		22:08	1	05:41 (2)	21:31		20:24	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04		05:56		06:22 (3)		05:09		05:08			05:50	06:32 (3)	06:44	07:38	07:36	08:31
	16:25	17:18	18:14	20:12		21:07	16	06:38 (3)		21:56		22:08			21:30	8 06:40 (3)	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02		05:54		06:20 (3)		05:08		05:09			05:52	06:30 (3)	06:46	07:40	07:38	08:32
	16:26	17:20	18:16	20:14		21:09	17	06:37 (3)		21:57		22:07			21:28	13 06:43 (3)	20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	07:00		05:52		06:18 (3)		05:07		05:10			05:53	06:28 (3)	06:48	07:42	07:40	08:34
	16:27	17:22	18:18	20:16		21:11	18	06:36 (3)		21:58		22:07			21:26	16 06:44 (3)	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57		05:50		06:16 (3)		05:06		05:11			05:55	06:27 (3)	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:18		21:13	19	06:35 (3)		21:59		22:06			21:24	18 06:45 (3)	20:14	19:01	16:52	16:14
7	08:51	08:11	07:10	06:55		05:48		06:18 (3)		05:06		05:12			05:57	06:27 (3)	06:52	07:45	07:44	08:36
	16:30	17:26	18:21	20:19		21:15	17	06:35 (3)		22:00		22:05			21:22	19 06:46 (3)	20:12	18:58	16:51	16:14
8	08:50	08:09	07:08	06:52		05:46		06:19 (3)		05:05		05:13			05:58	06:28 (3)	06:53	07:47	07:46	08:38
	16:31	17:28	18:23	20:21		21:16	15	06:34 (3)		22:01		22:05			21:20	18 06:46 (3)	20:10	18:56	16:49	16:14
9	08:49	08:08	07:06	06:50		05:44		06:20 (3)		05:05		05:14			06:00	06:30 (3)	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23		21:18	12	06:32 (3)		22:02		22:04			21:18	17 06:47 (3)	20:07	18:53	16:47	16:13
10	08:49	08:06	07:03	06:47		05:42		06:22 (3)		05:04		05:15			06:02	06:31 (3)	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25		21:20	7	06:29 (3)		22:03		22:03			21:16	16 06:47 (3)	20:05	18:51	16:45	16:13
11	08:48	08:04	07:01	06:45		05:40				05:04		05:16			06:04	06:33 (3)	06:59	07:53	07:52	08:41
	16:36	17:34	18:29	20:27		21:22				22:04	1	05:37 (2)	22:02		21:14	14 06:47 (3)	20:02	18:49	16:43	16:13
12	08:47	08:02	06:58	06:43		05:39				05:03		05:35 (2)	05:17		06:05	06:35 (3)	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29		21:23				22:05	1	05:36 (2)	22:01		21:12	12 06:47 (3)	20:00	18:46	16:42	16:13
13	08:47	08:00	06:56	06:40		05:37				05:03		05:35 (2)	05:18		06:07	06:36 (3)	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:31		21:25				22:05	2	05:37 (2)	22:00		21:10	11 06:47 (3)	19:57	18:44	16:40	16:12
14	08:46	07:58	06:53	06:38		05:35				05:03		05:35 (2)	05:20		06:09	06:38 (3)	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32		21:27				22:06	2	05:37 (2)	21:59		21:08	9 06:47 (3)	19:55	18:41	16:39	16:12
15	08:45	07:55	06:51	06:36		05:33				05:02		05:35 (2)	05:21		06:11	06:40 (3)	07:06	08:00	08:00	08:45
	16:42	17:42	18:37	20:34		21:29				22:07	3	05:38 (2)	21:58		21:05	6 06:46 (3)	19:52	18:39	16:37	16:12
16	08:44	07:53	06:49	06:33		05:32				05:02		05:35 (2)	05:22		06:13	06:41 (3)	07:07	08:02	08:01	08:46
	16:44	17:44	18:39	20:36		21:30				22:07	3	05:38 (2)	21:57		21:03	4 06:45 (3)	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31		05:30				05:02		05:35 (2)	05:24		06:14	06:43 (3)	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38		21:32				22:08	3	05:38 (2)	21:56		21:01	2 06:45 (3)	19:47	18:35	16:34	16:13
18	08:42	07:49	06:44	06:29		05:29				05:02		05:35 (2)	05:25		06:16		07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40		21:33				22:08	3	05:38 (2)	21:55		20:59		19:45	18:32	16:32	16:13
19	08:41	07:47	06:41	06:26		05:27				05:02		05:35 (2)	05:26		06:18		07:13	08:08	08:07	08:48
	16:49	17:50	18:44	20:42		21:35				22:09	3	05:38 (2)	21:53		20:57		19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24		05:25				05:02		05:35 (2)	05:28		06:20		07:15	08:09	08:09	08:49
	16:51	17:52	18:46	20:44		21:37				22:09	4	05:39 (2)	21:52		20:54		19:40	18:28	16:30	16:13
21	08:38	07:43	06:36	06:22		05:24				05:02		05:35 (2)	05:29		06:21		07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45		21:38				22:09	4	05:39 (2)	21:51		20:52		19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:20		05:23				05:02		05:35 (2)	05:31		06:23		07:18	08:13	08:13	08:50
	16:55	17:56	18:50	20:47		21:40				22:09	4	05:39 (2)	21:49		20:50		19:35	18:23	16:27	16:14
23	08:36	07:38	06:31	06:17		05:21				05:03		05:36 (2)	05:32		06:25		07:20	08:15	08:14	08:51
	16:57	17:58	18:52	20:49		21:41				22:09	4	05:40 (2)	21:48		20:48		19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15		05:20				05:03		05:36 (2)	05:34		06:27		07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51		21:43				22:10	3	05:39 (2)	21:46		20:45		19:30	18:19	16:25	16:15
25	08:33	07:34	06:26	06:13		05:18				05:03		05:36 (2)	05:35		06:28		07:23	07:19	08:18	08:52
	17:00	18:02	18:55	20:53		21:44				22:10	3	05:39 (2)	21:45		20:43		19:28	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	06:36 (3)	05:17				05:04		05:37 (2)	05:37		06:30		07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:55	2 06:38 (3)	21:46				22:10	3	05:40 (2)	21:43		20:41		19:25	17:15	16:22	16:17
27	08:30	07:29	06:22	06:09	06:34 (3)	05:16				05:04		05:37 (2)	05:38		06:32		07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	5 06:39 (3)	21:47				22:10	3	05:40 (2)	21:42		20:38		19:23	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	06:32 (3)	05:15				05:05		05:38 (2)	05:40		06:34		07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	7 06:39 (3)	21:49				22:09	2	05:40 (2)	21:40		20:36		19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	06:30 (3)	05:14				05:05		05:38 (2)	05:42		06:36		07:31	07:27	08:24	08:52
	17:08		20:03	21:00	9 06:39 (3)	21:50				22:09	2	05:40 (2)	21:38		20:34		19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	06:28 (3)	05:13				05:06		05:39 (2)	05:43		06:37		07:32	07:29	08:26	08:52
	17:10		20:05	21:02	11 06:39 (3)	21:51				22:09	2	05:41 (2)	21:37		20:31		19:15	17:06	16:19	16:20
31	08:24		07:12			05:12							05:45		06:39			07:31		08:52
	17:12		20:06			21:53							21:35		20:29			17:04		16:21
Potential sun hours	250	273	367	420		494		510		512		460			382	328	259	233
Total, worst case				34		149		55		2		183						
Sun reduction				0.31		0.31		0.26		0.22		0.26						
Oper. time red.				1.00		1.00		1.00		1.00		1.00						
Wind dir. red.				0.65		0.65		0.65		0.65		0.65						
Total reduction				0.20		0.20		0.17		0.14		0.17						
Total, real				7		30		9		0		30						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** BE - H061

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February	March	April	May	June	July	August	September	October	November		December		
1	08:52		08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:40	07:34	07:32		08:27		15:40 (8)
	16:22		17:13	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02		16:17	1	15:41 (8)
2	08:52		08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34		08:29		
	16:23		17:15	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00		16:16		
3	08:52		08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:38	07:36		08:30		
	16:24		17:17	18:13	20:12	21:07	21:56	22:08	21:29	20:21	19:07	16:58		16:16		
4	08:52		08:16	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38		08:32		
	16:26		17:19	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56		16:15		
5	08:51		08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40		08:33		
	16:27		17:21	18:17	20:15	21:11	21:58	22:06	21:25	20:17	19:03	16:54		16:14		
6	08:51		08:13	07:12	06:57	05:49	05:06	05:10	05:55	06:49	07:43	07:42		08:35		
	16:28		17:23	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52		16:14		
7	08:50		08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44		08:36		
	16:30		17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50		16:13		
8	08:50		08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46		08:37		
	16:31		17:28	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48		16:13		
9	08:49		08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48		08:39		
	16:32		17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46		16:13		
10	08:49		08:05	07:03	06:47	05:42	05:03	05:14	06:02	06:56	07:50	07:50		08:40		
	16:34		17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45		16:12		
11	08:48	15:58 (8)	08:03	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52		08:41		
	16:35	1 15:59 (8)	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43		16:12		
12	08:47	15:58 (8)	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54		08:42		
	16:37	3 16:01 (8)	17:36	18:31	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41		16:12		
13	08:46	15:59 (8)	07:59	06:56	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:56		08:43		
	16:39	3 16:02 (8)	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40		16:12		
14	08:45	15:59 (8)	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57	15:22 (8)	08:44		
	16:40	5 16:04 (8)	17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38	5 15:27 (8)	16:12		
15	08:45	15:59 (8)	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59	15:24 (8)	08:45		
	16:42	5 16:04 (8)	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36	7 15:31 (8)	16:12		
16	08:44	16:00 (8)	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01	15:27 (8)	08:46		
	16:44	5 16:05 (8)	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	6 15:33 (8)	16:12		
17	08:43	15:59 (8)	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03	15:29 (8)	08:47		
	16:45	5 16:04 (8)	17:46	18:40	20:38	21:32	22:07	21:56	21:01	19:47	18:34	16:33	6 15:35 (8)	16:12		
18	08:41	15:59 (8)	07:49	06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05	08:05	15:30 (8)	08:48		
	16:47	5 16:04 (8)	17:48	18:42	20:39	21:33	22:08	21:54	20:59	19:44	18:32	16:32	6 15:36 (8)	16:12		
19	08:40	15:59 (8)	07:47	06:41	06:26	05:26	05:01	05:26	06:17	07:12	08:07	08:07	15:33 (8)	08:48		
	16:49	6 16:05 (8)	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	5 15:38 (8)	16:13		
20	08:39	15:58 (8)	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	15:34 (8)	08:49		
	16:51	6 16:04 (8)	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29	5 15:39 (8)	16:13		
21	08:38	15:59 (8)	07:42	06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11	08:10	15:35 (8)	08:50		
	16:52	5 16:04 (8)	17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	5 15:40 (8)	16:13		
22	08:37	15:59 (8)	07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	15:35 (8)	08:50		
	16:54	5 16:04 (8)	17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	6 15:41 (8)	16:14		
23	08:35	15:58 (8)	07:38	06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15	08:14	15:35 (8)	08:51		
	16:56	5 16:03 (8)	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	6 15:41 (8)	16:14		
24	08:34	15:57 (8)	07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16	15:36 (8)	08:51		
	16:58	6 16:03 (8)	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24	5 15:41 (8)	16:15		
25	08:33	15:56 (8)	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17	15:37 (8)	08:51		
	17:00	6 16:02 (8)	18:02	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	5 15:42 (8)	16:16		
26	08:31	15:54 (8)	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	15:38 (8)	08:52		
	17:02	6 16:00 (8)	18:03	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22	5 15:43 (8)	16:16		
27	08:30	15:52 (8)	07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21	15:38 (8)	08:52		
	17:04	7 15:59 (8)	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	5 15:43 (8)	16:17		
28	08:28	15:50 (8)	07:26	06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24	08:23	15:39 (8)	08:52		
	17:06	5 15:55 (8)	18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	5 15:44 (8)	16:18		
29	08:27			07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	15:40 (8)	08:52		
	17:08			20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	4 15:44 (8)	16:19		
30	08:25			07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26	15:39 (8)	08:52		
	17:10			20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	3 15:42 (8)	16:20		
31	08:23			07:11		05:11		05:44	06:39		07:30			08:52		
	17:12			20:06		21:52		21:35	20:29		17:04			16:21		
Potential sun hours	250		273	367	420	494	510	513	460	382	328	259		233		
Total, worst case		89											89			1
Sun reduction		0.16											0.20			0.12
Oper. time red.		1.00											1.00			1.00
Wind dir. red.		0.65											0.65			0.65
Total reduction		0.11											0.13			0.08
Total, real		9											11			0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** BF - H062

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April		May		June	July		August		September	October	November	December
1	08:52	08:22	07:24	07:09		06:00		06:26 (3)	05:11	05:07		05:47		06:25 (3)	06:41	07:34	07:33	08:28
	16:23	17:14	18:10	20:08		21:04	8	06:34 (3)	21:54	22:09		21:33	13	06:38 (3)	20:27	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07		05:58		06:24 (3)	05:10	05:07		05:48		06:24 (3)	06:43	07:36	07:35	08:29
	16:24	17:16	18:12	20:10		21:06	10	06:34 (3)	21:55	22:08		21:31	16	06:40 (3)	20:24	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04		05:56		06:22 (3)	05:09	05:08		05:50		06:22 (3)	06:44	07:38	07:36	08:31
	16:25	17:18	18:14	20:12		21:07	12	06:34 (3)	21:56	22:08		21:30	18	06:40 (3)	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02		05:54		06:20 (3)	05:08	05:09		05:52		06:22 (3)	06:46	07:40	07:38	08:32
	16:26	17:20	18:16	20:14		21:09	14	06:34 (3)	21:57	22:07		21:28	19	06:41 (3)	20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	07:00		05:52		06:18 (3)	05:07	05:10		05:53		06:23 (3)	06:48	07:42	07:40	08:34
	16:27	17:22	18:18	20:16		21:11	15	06:33 (3)	21:58	22:07		21:26	19	06:42 (3)	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57		05:50		06:16 (3)	05:06	05:11		05:55		06:25 (3)	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:18		21:13	17	06:33 (3)	21:59	22:06		21:24	17	06:42 (3)	20:14	19:01	16:52	16:14
7	08:51	08:11	07:10	06:55		05:48		06:15 (3)	05:06	05:12		05:57		06:27 (3)	06:52	07:45	07:44	08:36
	16:30	17:26	18:21	20:19		21:15	18	06:33 (3)	22:00	22:05		21:22	16	06:43 (3)	20:12	18:58	16:51	16:14
8	08:50	08:09	07:08	06:52		05:46		06:13 (3)	05:05	05:13		05:58		06:28 (3)	06:53	07:47	07:46	08:38
	16:31	17:28	18:23	20:21		21:16	19	06:32 (3)	22:01	22:05		21:20	15	06:43 (3)	20:10	18:56	16:49	16:14
9	08:49	08:08	07:06	06:50		05:44		06:11 (3)	05:05	05:14		06:00		06:30 (3)	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23		21:18	20	06:31 (3)	22:02	22:04		21:18	13	06:43 (3)	20:07	18:53	16:47	16:13
10	08:49	08:06	07:03	06:47		05:42		06:12 (3)	05:04	05:15		06:02		06:31 (3)	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25		21:20	18	06:30 (3)	22:03	22:03		21:16	11	06:42 (3)	20:05	18:51	16:45	16:13
11	08:48	08:04	07:01	06:45		05:40		06:14 (3)	05:04	05:16		06:04		06:33 (3)	06:59	07:53	07:52	08:41
	16:36	17:34	18:29	20:27		21:22	15	06:29 (3)	22:04	22:02		21:14	9	06:42 (3)	20:02	18:49	16:43	16:13
12	08:47	08:02	06:58	06:43		05:39		06:15 (3)	05:03	05:17		06:05		06:35 (3)	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29		21:23	12	06:27 (3)	22:05	22:01		21:12	7	06:42 (3)	20:00	18:46	16:42	16:13
13	08:47	08:00	06:56	06:40		05:37		06:17 (3)	05:03	05:18		06:07		06:36 (3)	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:31		21:25	7	06:24 (3)	22:05	22:00		21:10	5	06:41 (3)	19:57	18:44	16:40	16:12
14	08:46	07:58	06:53	06:38		05:35			05:03	05:20		06:09		06:38 (3)	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32		21:27			22:06	21:59		21:08	3	06:41 (3)	19:55	18:41	16:39	16:12
15	08:45	07:55	06:51	06:36		05:33			05:02	05:21		06:11			07:06	08:00	08:00	08:45
	16:42	17:42	18:37	20:34		21:29			22:07	21:58		21:05			19:52	18:39	16:37	16:12
16	08:44	07:53	06:49	06:33		05:32			05:02	05:22		06:13			07:07	08:02	08:01	08:46
	16:44	17:44	18:39	20:36		21:30			22:07	21:57		21:03			19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31		05:30			05:02	05:24		06:14			07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38		21:32			22:08	21:56		21:01			19:47	18:35	16:34	16:13
18	08:42	07:49	06:44	06:29		05:29			05:02	05:25		06:16			07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40		21:33			22:08	21:55		20:59			19:45	18:32	16:32	16:13
19	08:41	07:47	06:41	06:26		05:27			05:02	05:26		06:18			07:13	08:08	08:07	08:48
	16:49	17:50	18:44	20:42		21:35			22:09	21:53		20:57			19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24		05:25			05:02	05:28		06:20			07:15	08:09	08:09	08:49
	16:51	17:52	18:46	20:44		21:37			22:09	21:52		20:54			19:40	18:28	16:30	16:13
21	08:38	07:43	06:36	06:22		05:24			05:02	05:29		06:21			07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45		21:38			22:09	21:51		20:52			19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:20		05:23			05:02	05:31		06:23			07:18	08:13	08:13	08:50
	16:55	17:56	18:50	20:47		21:40			22:09	21:49		20:50			19:35	18:23	16:27	16:14
23	08:36	07:38	06:31	06:17		05:21			05:03	05:32		06:25			07:20	08:15	08:14	08:51
	16:57	17:58	18:52	20:49		21:41			22:09	21:48		20:48			19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15		05:20			05:03	05:34		06:27			07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51		21:43			22:10	21:46		20:45			19:30	18:19	16:25	16:15
25	08:33	07:34	06:26	06:13		05:18			05:03	05:35		06:28			07:23	07:19	08:18	08:52
	17:00	18:02	18:55	20:53		21:44			22:10	21:45		20:43			19:28	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11		05:17			05:04	05:37		06:30			07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:55		21:46			22:10	21:43		20:41			19:25	17:15	16:22	16:17
27	08:30	07:29	06:22	06:09		05:16			05:04	05:38		06:32			07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56		21:47			22:09	21:42		20:38			19:23	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	06:32 (3)	05:15			05:05	05:40		06:34			07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	1 06:33 (3)	21:49			22:09	21:40		20:36			19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	06:30 (3)	05:14			05:05	05:42		06:36			07:31	07:27	08:24	08:52
	17:08		20:03	21:00	3 06:33 (3)	21:50			22:09	21:38		20:34			19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	06:28 (3)	05:13			05:06	05:43	06:31 (3)	06:37			07:32	07:29	08:26	08:52
	17:10		20:05	21:02	6 06:34 (3)	21:51			22:09	21:37	1 06:32 (3)	20:31			19:15	17:06	16:19	16:20
31	08:24		07:12			05:12				05:45	06:27 (3)	06:39				07:31		08:52
	17:12		20:06			21:53				21:35	10 06:37 (3)	20:29				17:04		16:21
Potential sun hours	250	273	367	420		494		510	512		460		382	328	259	233
Total, worst case				10		185			11		181					
Sun reduction				0.31		0.31			0.22		0.26					
Oper. time red.				1.00		1.00			1.00		1.00					
Wind dir. red.				0.65		0.65			0.65		0.65					
Total reduction				0.20		0.20			0.15		0.17					
Total, real				2		38			2		30					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** BG - H063

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:10	20:08	21:04	21:54	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:07	05:58	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	05:08	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12	21:07	21:56	22:08	21:29	20:21	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52	05:07	05:09	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	21:58	22:07	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50	05:06	05:10	05:55	06:50	07:43	07:42	08:35
	16:28	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:50	05:44	05:04	05:13	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:00	06:45	05:40	05:03	05:16	06:03	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23	22:05	22:01	21:12	19:59	18:46	16:41	16:12
13	08:46	07:59	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	22:00	21:09	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:58	08:44
	16:40	17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	05:33	05:02	05:21	06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:07	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	08:47
	16:45	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:34	16:12
18	08:42	07:49	06:43	06:28	05:28	05:02	05:25	06:16	07:11	08:05	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:37	22:09	21:52	20:54	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:19	05:03	05:33	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	21:44	22:09	21:45	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:22	17:12	16:21	16:17
28	08:28	07:27	06:19	06:06	05:14	05:04	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:37	20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** BH - H064

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:40	07:34	07:32	08:27
	16:22	17:14	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:15	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:16
3	08:52	08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:38	07:36	08:30
	16:24	17:17	18:13	20:12	21:07	21:56	22:08	21:29	20:21	19:07	16:58	16:16
4	08:52	08:17	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38	08:32
	16:26	17:19	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40	08:33
	16:27	17:21	18:17	20:15	21:11	21:58	22:06	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:49	05:06	05:10	05:55	06:49	07:43	07:42	08:35
	16:28	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:13
8	08:50	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:49	07:48	08:39
	16:32	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46	16:13
10	08:49	08:05	07:03	06:47	05:42	05:03	05:14	06:02	06:56	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:12
11	08:48	08:03	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52	08:41
	16:35	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23	22:05	22:01	21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:56	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36	16:12
16	08:44	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:33	16:12
18	08:41	07:49	06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05	08:05	08:48
	16:47	17:48	18:42	20:39	21:33	22:08	21:54	20:59	19:44	18:32	16:32	16:12
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11	08:10	08:50
	16:52	17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:13
22	08:37	07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	05:32	06:24	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	16:14
24	08:34	07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24	16:15
25	08:33	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:52
	17:02	18:03	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24	08:23	08:52
	17:06	18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11		05:44	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	513	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** BI - H065

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April		May		June		
1	08:52	08:22	07:24	07:09		06:00		05:11		05:41 (1)
	16:23	17:14	18:10	20:08		21:04		21:54	19	06:00 (1)
2	08:52	08:20	07:22	07:07		05:58		05:10		05:40 (1)
	16:24	17:16	18:12	20:10		21:06		21:55	20	06:00 (1)
3	08:52	08:19	07:20	07:04		05:56		05:09		05:40 (1)
	16:25	17:18	18:14	20:12		21:07		21:56	20	06:00 (1)
4	08:52	08:17	07:17	07:02		05:54		05:08		05:39 (1)
	16:26	17:20	18:16	20:14		21:09		21:57	21	06:00 (1)
5	08:51	08:15	07:15	07:00		05:52	06:18 (2)	05:07		05:39 (1)
	16:27	17:22	18:18	20:16		21:11	1 06:19 (2)	21:58	20	05:59 (1)
6	08:51	08:13	07:13	06:57		05:50	06:16 (2)	05:06		05:41 (1)
	16:29	17:24	18:19	20:18		21:13	3 06:19 (2)	21:59	18	05:59 (1)
7	08:51	08:11	07:10	06:55		05:48	06:15 (2)	05:06		05:41 (1)
	16:30	17:26	18:21	20:19		21:15	5 06:20 (2)	22:00	18	05:59 (1)
8	08:50	08:09	07:08	06:52		05:46	06:13 (2)	05:05		05:42 (1)
	16:31	17:28	18:23	20:21		21:16	7 06:20 (2)	22:01	17	05:59 (1)
9	08:50	08:08	07:06	06:50	07:14 (3)	05:44	06:13 (2)	05:05		05:42 (1)
	16:33	17:30	18:25	20:23	2 07:16 (3)	21:18	7 06:20 (2)	22:02	16	05:58 (1)
10	08:49	08:06	07:03	06:48	07:11 (3)	05:42	06:13 (2)	05:04		05:43 (1)
	16:34	17:32	18:27	20:25	4 07:15 (3)	21:20	7 06:20 (2)	22:03	15	05:58 (1)
11	08:48	08:04	07:01	06:45	07:09 (3)	05:40	06:14 (2)	05:04		05:44 (1)
	16:36	17:34	18:29	20:27	7 07:16 (3)	21:22	7 06:21 (2)	22:04	14	05:58 (1)
12	08:47	08:02	06:58	06:43	07:07 (3)	05:39	06:14 (2)	05:03		05:44 (1)
	16:37	17:36	18:31	20:29	9 07:16 (3)	21:23	7 06:21 (2)	22:05	13	05:57 (1)
13	08:47	08:00	06:56	06:40	07:04 (3)	05:37	06:14 (2)	05:03		05:44 (1)
	16:39	17:38	18:33	20:31	11 07:15 (3)	21:25	7 06:21 (2)	22:05	13	05:57 (1)
14	08:46	07:58	06:53	06:38	07:02 (3)	05:35	06:15 (2)	05:03		05:45 (1)
	16:41	17:40	18:35	20:32	13 07:15 (3)	21:27	7 06:22 (2)	22:06	12	05:57 (1)
15	08:45	07:55	06:51	06:36	07:00 (3)	05:33	06:16 (2)	05:02		05:46 (1)
	16:42	17:42	18:37	20:34	14 07:14 (3)	21:29	6 06:22 (2)	22:07	11	05:57 (1)
16	08:44	07:53	06:49	06:33	06:58 (3)	05:32	06:17 (2)	05:02		05:47 (1)
	16:44	17:44	18:39	20:36	16 07:14 (3)	21:30	6 06:23 (2)	22:07	10	05:57 (1)
17	08:43	07:51	06:46	06:31	06:55 (3)	05:30	06:17 (2)	05:02		05:47 (1)
	16:46	17:46	18:40	20:38	17 07:12 (3)	21:32	7 06:24 (2)	22:08	10	05:57 (1)
18	08:42	07:49	06:44	06:29	06:55 (3)	05:29	05:57 (1)	05:02		05:48 (1)
	16:47	17:48	18:42	20:40	15 07:10 (3)	21:34	9 06:25 (2)	22:08	9	05:57 (1)
19	08:41	07:47	06:41	06:26	06:57 (3)	05:27	05:56 (1)	05:02		05:48 (1)
	16:49	17:50	18:44	20:42	11 07:08 (3)	21:35	10 06:26 (2)	22:09	9	05:57 (1)
20	08:39	07:45	06:39	06:24	07:01 (3)	05:25	05:54 (1)	05:02		05:48 (1)
	16:51	17:52	18:46	20:44	3 07:04 (3)	21:37	12 06:26 (2)	22:09	9	05:57 (1)
21	08:38	07:43	06:36	06:22		05:24	05:53 (1)	05:02		05:48 (1)
	16:53	17:54	18:48	20:45		21:38	12 06:27 (2)	22:09	9	05:57 (1)
22	08:37	07:40	06:34	06:20		05:23	05:52 (1)	05:02		05:48 (1)
	16:55	17:56	18:50	20:47		21:40	15 06:29 (2)	22:09	9	05:57 (1)
23	08:36	07:38	06:31	06:17		05:21	05:50 (1)	05:03		05:49 (1)
	16:57	17:58	18:52	20:49		21:41	15 06:29 (2)	22:10	9	05:58 (1)
24	08:34	07:36	06:29	06:15		05:20	05:49 (1)	05:03		05:49 (1)
	16:58	18:00	18:53	20:51		21:43	16 06:31 (2)	22:10	9	05:58 (1)
25	08:33	07:34	06:26	06:13		05:18	05:48 (1)	05:03		05:48 (1)
	17:00	18:02	18:55	20:53		21:44	16 06:32 (2)	22:10	10	05:58 (1)
26	08:32	07:31	06:24	06:11		05:17	05:47 (1)	05:04		05:49 (1)
	17:02	18:04	18:57	20:55		21:46	14 06:01 (1)	22:10	10	05:59 (1)
27	08:30	07:29	06:22	06:09		05:16	05:46 (1)	05:04		05:48 (1)
	17:04	18:06	18:59	20:56		21:47	15 06:01 (1)	22:10	11	05:59 (1)
28	08:29	07:27	06:19	06:06		05:15	05:45 (1)	05:05		05:49 (1)
	17:06	18:08	19:01	20:58		21:49	16 06:01 (1)	22:09	11	06:00 (1)
29	08:27		07:17	06:04		05:14	05:44 (1)	05:05		05:48 (1)
	17:08		20:03	21:00		21:50	17 06:01 (1)	22:09	12	06:00 (1)
30	08:25		07:14	06:02		05:13	05:43 (1)	05:06		05:48 (1)
	17:10		20:05	21:02		21:51	18 06:01 (1)	22:09	13	06:01 (1)
31	08:24		07:12			05:12	05:42 (1)			
	17:12		20:06			21:53	18 06:00 (1)			
Potential sun hours	250	273	367	420		494		510		
Total, worst case					122		280		397	
Sun reduction					0.31		0.31		0.26	
Oper. time red.					1.00		1.00		1.00	
Wind dir. red.					0.64		0.64		0.64	
Total reduction					0.20		0.20		0.16	
Total, real					24		56		65	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** BI - H065

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August		September		October	November	December
1	05:07		05:48 (1)	05:47	06:24 (2)	06:41	07:08 (3)	07:34	07:33	08:28
	22:09	14	06:02 (1)	21:33	7	06:31 (2)	20:27	7	07:15 (3)	19:13	17:02	16:18
2	05:07		05:47 (1)	05:48		06:24 (2)	06:43		07:10 (3)	07:36	07:35	08:29
	22:08	15	06:02 (1)	21:31	7	06:31 (2)	20:24	4	07:14 (3)	19:10	17:00	16:17
3	05:08		05:47 (1)	05:50		06:23 (2)	06:44		07:12 (3)	07:38	07:37	08:31
	22:08	16	06:03 (1)	21:30	7	06:30 (2)	20:22	2	07:14 (3)	19:08	16:58	16:16
4	05:09		05:47 (1)	05:52		06:23 (2)	06:46			07:40	07:38	08:32
	22:07	17	06:04 (1)	21:28	7	06:30 (2)	20:19			19:05	16:56	16:16
5	05:10		05:47 (1)	05:53		06:23 (2)	06:48			07:42	07:40	08:34
	22:07	18	06:05 (1)	21:26	6	06:29 (2)	20:17			19:03	16:54	16:15
6	05:11		05:47 (1)	05:55		06:25 (2)	06:50			07:43	07:42	08:35
	22:06	19	06:06 (1)	21:24	4	06:29 (2)	20:14			19:01	16:52	16:14
7	05:12		05:47 (1)	05:57		06:27 (2)	06:52			07:45	07:44	08:36
	22:05	19	06:06 (1)	21:22	2	06:29 (2)	20:12			18:58	16:51	16:14
8	05:13		05:47 (1)	05:58			06:53			07:47	07:46	08:38
	22:05	20	06:07 (1)	21:20			20:10			18:56	16:49	16:14
9	05:14		05:47 (1)	06:00			06:55			07:49	07:48	08:39
	22:04	20	06:07 (1)	21:18			20:07			18:53	16:47	16:13
10	05:15		05:48 (1)	06:02			06:57			07:51	07:50	08:40
	22:03	20	06:08 (1)	21:16			20:05			18:51	16:45	16:13
11	05:16		05:49 (1)	06:04			06:59			07:53	07:52	08:41
	22:02	19	06:08 (1)	21:14			20:02			18:49	16:43	16:13
12	05:17		05:50 (1)	06:05			07:00			07:54	07:54	08:42
	22:01	19	06:09 (1)	21:12			20:00			18:46	16:42	16:13
13	05:18		05:51 (1)	06:07			07:02			07:56	07:56	08:43
	22:00	18	06:09 (1)	21:10			19:57			18:44	16:40	16:12
14	05:20		05:52 (1)	06:09			07:04			07:58	07:58	08:44
	21:59	17	06:09 (1)	21:08			19:55			18:41	16:39	16:12
15	05:21		05:53 (1)	06:11			07:06			08:00	08:00	08:45
	21:58	16	06:09 (1)	21:05			19:52			18:39	16:37	16:12
16	05:22		05:54 (1)	06:13			07:07			08:02	08:02	08:46
	21:57	15	06:09 (1)	21:03			19:50			18:37	16:35	16:12
17	05:24		05:56 (1)	06:14			07:09			08:04	08:03	08:47
	21:56	14	06:10 (1)	21:01			19:47			18:35	16:34	16:13
18	05:25		05:57 (1)	06:16			07:11			08:06	08:05	08:48
	21:55	15	06:43 (2)	20:59			19:45			18:32	16:32	16:13
19	05:26		05:58 (1)	06:18			07:13			08:08	08:07	08:49
	21:53	16	06:41 (2)	20:57			19:42			18:30	16:31	16:13
20	05:28		06:00 (1)	06:20			07:15			08:09	08:09	08:49
	21:52	15	06:40 (2)	20:54			19:40			18:28	16:30	16:13
21	05:29		06:01 (1)	06:21			07:16			08:11	08:11	08:50
	21:51	15	06:39 (2)	20:52			19:37			18:25	16:28	16:14
22	05:31		06:02 (1)	06:23			07:18			08:13	08:13	08:50
	21:49	14	06:38 (2)	20:50			19:35			18:23	16:27	16:14
23	05:32		06:04 (1)	06:25		07:04 (3)	07:20			08:15	08:14	08:51
	21:48	13	06:37 (2)	20:48	5	07:09 (3)	19:32			18:21	16:26	16:15
24	05:34		06:05 (1)	06:27		07:01 (3)	07:22			08:17	08:16	08:51
	21:46	11	06:36 (2)	20:45	11	07:12 (3)	19:30			18:19	16:25	16:15
25	05:35		06:07 (1)	06:28		06:58 (3)	07:23			07:19	08:18	08:52
	21:45	9	06:36 (2)	20:43	15	07:13 (3)	19:28			17:17	16:23	16:16
26	05:37		06:08 (1)	06:30		06:58 (3)	07:25			07:21	08:20	08:52
	21:43	8	06:35 (2)	20:41	17	07:15 (3)	19:25			17:15	16:22	16:17
27	05:38		06:27 (2)	06:32		07:00 (3)	07:27			07:23	08:21	08:52
	21:42	7	06:34 (2)	20:38	16	07:16 (3)	19:23			17:12	16:21	16:18
28	05:40		06:27 (2)	06:34		07:01 (3)	07:29			07:25	08:23	08:52
	21:40	6	06:33 (2)	20:36	14	07:15 (3)	19:20			17:10	16:20	16:18
29	05:42		06:26 (2)	06:36		07:03 (3)	07:31			07:27	08:24	08:52
	21:38	6	06:32 (2)	20:34	13	07:16 (3)	19:18			17:08	16:19	16:19
30	05:43		06:25 (2)	06:37		07:05 (3)	07:32			07:29	08:26	08:53
	21:37	7	06:32 (2)	20:31	11	07:16 (3)	19:15			17:06	16:19	16:20
31	05:45		06:25 (2)	06:39		07:07 (3)				07:31		08:53
	21:35	7	06:32 (2)	20:29	9	07:16 (3)				17:04		16:21
Potential sun hours	512			460		382		328	259	233		
Total, worst case		445			151		13					
Sun reduction		0.22			0.26		0.25					
Oper. time red.		1.00			1.00		1.00					
Wind dir. red.		0.64			0.64		0.64					
Total reduction		0.14			0.16		0.16					
Total, real		64			25		2					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** BJ - H066

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:10	20:08	21:04	21:54	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:07	05:58	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	05:08	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12	21:07	21:56	22:08	21:29	20:21	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52	05:07	05:09	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	21:58	22:07	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50	05:06	05:10	05:55	06:50	07:43	07:42	08:35
	16:28	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:50	05:44	05:04	05:13	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:00	06:45	05:40	05:03	05:16	06:03	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23	22:05	22:01	21:12	19:59	18:46	16:41	16:12
13	08:46	07:59	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	22:00	21:09	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:58	08:44
	16:40	17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	05:33	05:02	05:21	06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:07	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	08:47
	16:45	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:34	16:12
18	08:42	07:49	06:43	06:28	05:28	05:02	05:25	06:16	07:11	08:05	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:37	22:09	21:52	20:54	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:19	05:03	05:33	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	21:44	22:09	21:45	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:22	17:12	16:21	16:17
28	08:28	07:27	06:19	06:06	05:14	05:04	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:37	20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** BK - H067

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April		May	June		July		August		September		October	November	December
1	08:52	08:22	07:24	07:09		06:00	05:10		05:07		05:47		06:41		07:34	07:33	08:28
	16:23	17:14	18:10	20:08		21:04	21:54		22:08	4	05:44 (4)	21:33	20:26	21	07:31 (6)	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	07:31 (6)	05:58	05:10		05:07		05:40 (4)	05:48	06:43		07:10 (6)	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	3 07:34 (6)	21:06	21:55		22:08	3	05:43 (4)	21:31	20:24	22	07:32 (6)	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04	07:28 (6)	05:56	05:09		05:08		05:41 (4)	05:50	06:44		07:12 (6)	07:38	07:36	08:31
	16:25	17:18	18:14	20:12	6 07:34 (6)	21:07	21:56		22:08	3	05:44 (4)	21:29	20:22	20	07:32 (6)	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	07:26 (6)	05:54	05:08		05:09		05:42 (4)	05:52	06:46		07:13 (6)	07:40	07:38	08:32
	16:26	17:20	18:16	20:14	9 07:35 (6)	21:09	21:57		22:07	2	05:44 (4)	21:28	20:19	18	07:31 (6)	19:05	16:56	16:16
5	08:51	08:15	07:15	07:00	07:23 (6)	05:52	05:07		05:10		05:43 (4)	05:53	06:48		07:15 (6)	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	12 07:35 (6)	21:11	21:58		22:07	1	05:44 (4)	21:26	20:17	16	07:31 (6)	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	07:21 (6)	05:50	05:06		05:11			05:55	06:50		07:17 (6)	07:43	07:42	08:35
	16:29	17:24	18:19	20:18	14 07:35 (6)	21:13	21:59		22:06			21:24	20:14	14	07:31 (6)	19:00	16:52	16:14
7	08:51	08:11	07:10	06:55	07:19 (6)	05:48	05:06		05:12			05:57	06:52		07:18 (6)	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	16 07:35 (6)	21:15	22:00		22:05			21:22	20:12	12	07:30 (6)	18:58	16:51	16:14
8	08:50	08:09	07:08	06:52	07:16 (6)	05:46	05:05	05:37 (4)	05:13			05:58	06:53		07:20 (6)	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	18 07:34 (6)	21:16	22:01	1 05:38 (4)	22:05			21:20	20:09	9	07:29 (6)	18:56	16:49	16:14
9	08:49	08:07	07:05	06:50	07:14 (6)	05:44	05:04	05:36 (4)	05:14			06:00	06:55		07:22 (6)	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	20 07:34 (6)	21:18	22:02	2 05:38 (4)	22:04			21:18	20:07	7	07:29 (6)	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	07:11 (6)	05:42	05:04	05:36 (4)	05:15			06:02	06:57		07:24 (6)	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	22 07:33 (6)	21:20	22:03	3 05:39 (4)	22:03			21:16	20:05	3	07:27 (6)	18:51	16:45	16:13
11	08:48	08:04	07:01	06:45	07:11 (6)	05:40	05:04	05:36 (4)	05:16			06:04	06:59			07:53	07:52	08:41
	16:36	17:34	18:29	20:27	21 07:32 (6)	21:22	22:04	4 05:40 (4)	22:02			21:14	20:02			18:49	16:43	16:13
12	08:47	08:02	06:58	06:43	07:12 (6)	05:39	05:03	05:35 (4)	05:17			06:05	07:00			07:54	07:54	08:42
	16:37	17:36	18:31	20:29	19 07:31 (6)	21:23	22:05	4 05:39 (4)	22:01			21:12	20:00			18:46	16:42	16:12
13	08:47	07:59	06:56	06:40	07:12 (6)	05:37	05:03	05:35 (4)	05:18			06:07	07:02			07:56	07:56	08:43
	16:39	17:38	18:33	20:30	17 07:29 (6)	21:25	22:05	5 05:40 (4)	22:00			21:10	19:57			18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	07:14 (6)	05:35	05:03	05:35 (4)	05:20			06:09	07:04			07:58	07:58	08:44
	16:41	17:40	18:35	20:32	13 07:27 (6)	21:27	22:06	6 05:41 (4)	21:59			21:07	19:55			18:41	16:38	16:12
15	08:45	07:55	06:51	06:36	07:18 (6)	05:33	05:02	05:35 (4)	05:21			06:11	07:06			08:00	08:00	08:45
	16:42	17:42	18:37	20:34	5 07:23 (6)	21:28	22:07	6 05:41 (4)	21:58			21:05	19:52			18:39	16:37	16:12
16	08:44	07:53	06:49	06:33		05:32	05:02	05:35 (4)	05:22			06:12	07:07			08:02	08:01	08:46
	16:44	17:44	18:38	20:36		21:30	22:07	6 05:41 (4)	21:57			21:03	19:50			18:37	16:35	16:12
17	08:43	07:51	06:46	06:31		05:30	05:02	05:35 (4)	05:23			06:14	07:09			08:04	08:03	08:47
	16:46	17:46	18:40	20:38		21:32	22:08	7 05:42 (4)	21:56			21:01	19:47			18:34	16:34	16:13
18	08:42	07:49	06:44	06:29		05:29	05:02	05:35 (4)	05:25			06:16	07:11			08:06	08:05	08:48
	16:47	17:48	18:42	20:40		21:33	22:08	7 05:42 (4)	21:55			20:59	19:45			18:32	16:32	16:13
19	08:41	07:47	06:41	06:26		05:27	05:02	05:35 (4)	05:26			06:18	07:13			08:07	08:07	08:48
	16:49	17:50	18:44	20:42		21:35	22:08	7 05:42 (4)	21:53			20:57	19:42			18:30	16:31	16:13
20	08:39	07:45	06:39	06:24		05:25	05:02	05:35 (4)	05:28			06:20	07:14			08:09	08:09	08:49
	16:51	17:52	18:46	20:43		21:37	22:09	7 05:42 (4)	21:52			20:54	19:40			18:28	16:30	16:13
21	08:38	07:43	06:36	06:22		05:24	05:02	05:35 (4)	05:29			06:21	07:16			08:11	08:11	08:50
	16:53	17:54	18:48	20:45		21:38	22:09	7 05:42 (4)	21:51			20:52	19:37			18:25	16:28	16:14
22	08:37	07:40	06:34	06:20		05:23	05:02	05:35 (4)	05:31			06:23	07:18			08:13	08:12	08:50
	16:55	17:56	18:50	20:47		21:40	22:09	7 05:42 (4)	21:49			20:50	19:35			18:23	16:27	16:14
23	08:36	07:38	06:31	06:17		05:21	05:03	05:36 (4)	05:32			06:25	07:20			08:15	08:14	08:51
	16:57	17:58	18:52	20:49		21:41	22:09	7 05:43 (4)	21:48			20:48	19:32			18:21	16:26	16:15
24	08:34	07:36	06:29	06:15		05:20	05:03	05:36 (4)	05:34			06:27	07:22			08:17	08:16	08:51
	16:58	18:00	18:53	20:51		21:43	22:10	7 05:43 (4)	21:46			20:45	19:30			18:19	16:25	16:15
25	08:33	07:34	06:26	06:13		05:18	05:03	05:36 (4)	05:35			06:28	07:23			07:19	08:18	08:52
	17:00	18:02	18:55	20:53		21:44	22:10	7 05:43 (4)	21:45			20:43	19:27			17:17	16:23	16:16
26	08:31	07:31	06:24	06:11		05:17	05:04	05:37 (4)	05:37			06:30	07:25			07:21	08:19	08:52
	17:02	18:04	18:57	20:55		21:46	22:10	7 05:44 (4)	21:43			20:41	19:25			17:14	16:22	16:17
27	08:30	07:29	06:22	06:08		05:16	05:04	05:37 (4)	05:38			06:32	07:27			07:23	08:21	08:52
	17:04	18:06	18:59	20:56		21:47	22:09	6 05:43 (4)	21:42			20:38	19:23			17:12	16:21	16:18
28	08:28	07:27	06:19	06:06		05:15	05:05	05:38 (4)	05:40			06:34	07:29			07:25	08:23	08:52
	17:06	18:08	19:01	20:58		21:49	22:09	6 05:44 (4)	21:40			20:36	5 07:24 (6)	19:20		17:10	16:20	16:18
29	08:27		07:17	06:04		05:14	05:05	05:38 (4)	05:42			06:36	07:15 (6)	07:31		07:27	08:24	08:52
	17:08		20:03	21:00		21:50	22:09	5 05:43 (4)	21:38			20:34	13 07:28 (6)	19:18		17:08	16:19	16:19
30	08:25		07:14	06:02		05:13	05:06	05:39 (4)	05:43			06:37	07:13 (6)	07:32		07:29	08:26	08:52
	17:10		20:05	21:02		21:51	22:09	5 05:44 (4)	21:37			20:31	17 07:30 (6)	19:15		17:06	16:19	16:20
31	08:24		07:12			05:11			05:45			06:39	07:12 (6)			07:31		08:52
	17:12		20:06			21:52			21:35			20:29	19 07:31 (6)			17:04		16:21
Potential sun hours	250	273	367	420		494	510		512			460		382		328	259	233
Total, worst case					195			129		13		54			142			
Sun reduction					0.31			0.26		0.22		0.26			0.25			
Oper. time red.					1.00			1.00		1.00		1.00			1.00			
Wind dir. red.					0.64			0.65		0.65		0.64			0.64			
Total reduction					0.20			0.17		0.14		0.17			0.16			
Total, real					39			22		2		9			23			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** BL - H068

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May		June		July		August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00		05:10		20:57 (6)	05:06	21:04 (6)	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:10	20:08	21:03		21:54	22	21:19 (6)	22:08	26	21:30 (6)	21:33	20:26	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58		05:09		20:57 (6)	05:07	21:03 (6)	05:48	06:42	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:05		21:55	23	21:20 (6)	22:08	27	21:30 (6)	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56		05:09		20:58 (6)	05:08	21:03 (6)	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12	21:07		21:56	24	21:22 (6)	22:07	27	21:30 (6)	21:29	20:21	19:08	16:58	16:16
4	08:51	08:17	07:17	07:02	05:54		05:08		20:57 (6)	05:09	21:04 (6)	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14	21:09		21:57	25	21:22 (6)	22:07	27	21:31 (6)	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52		05:07		20:57 (6)	05:10	21:04 (6)	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11		21:58	26	21:23 (6)	22:06	27	21:31 (6)	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50		05:06		20:58 (6)	05:11	21:04 (6)	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:17	21:13		21:59	26	21:24 (6)	22:06	27	21:31 (6)	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:55	05:48		05:06		20:58 (6)	05:12	21:04 (6)	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14		22:00	27	21:25 (6)	22:05	25	21:29 (6)	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46		05:05		20:59 (6)	05:13	21:04 (6)	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16		22:01	27	21:26 (6)	22:04	25	21:29 (6)	21:20	20:09	18:56	16:49	16:13
9	08:49	08:07	07:05	06:50	05:44		05:04		20:58 (6)	05:14	21:04 (6)	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18		22:02	27	21:25 (6)	22:04	24	21:28 (6)	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42		05:04		20:59 (6)	05:15	21:04 (6)	06:02	06:57	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20		22:03	27	21:26 (6)	22:03	24	21:28 (6)	21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:01	06:45	05:40		05:03		20:58 (6)	05:16	21:04 (6)	06:04	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21		22:04	27	21:25 (6)	22:02	23	21:27 (6)	21:14	20:02	18:48	16:43	16:13
12	08:47	08:01	06:58	06:43	05:38		05:03		20:59 (6)	05:17	21:05 (6)	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23		22:04	27	21:26 (6)	22:01	22	21:27 (6)	21:12	19:59	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	05:37		05:03		21:00 (6)	05:18	21:05 (6)	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25		22:05	26	21:26 (6)	22:00	21	21:26 (6)	21:09	19:57	18:44	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35		05:02		21:00 (6)	05:19	21:06 (6)	06:09	07:04	07:58	07:57	08:44
	16:41	17:40	18:35	20:32	21:27		22:06	26	21:26 (6)	21:59	19	21:25 (6)	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	05:33		05:02		21:00 (6)	05:21	21:06 (6)	06:11	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28		22:06	27	21:27 (6)	21:58	18	21:24 (6)	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32		05:02		21:01 (6)	05:22	21:06 (6)	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30		22:07	26	21:27 (6)	21:57	16	21:22 (6)	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30		05:02		21:01 (6)	05:23	21:06 (6)	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32		22:07	26	21:27 (6)	21:56	15	21:21 (6)	21:01	19:47	18:34	16:34	16:12
18	08:41	07:49	06:43	06:28	05:28		05:02		21:01 (6)	05:25	21:07 (6)	06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:40	21:33		22:08	26	21:27 (6)	21:54	14	21:21 (6)	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	21:01 (6)	05:02		21:01 (6)	05:26	21:07 (6)	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	1 21:02 (6)	22:08	26	21:27 (6)	21:53	12	21:19 (6)	20:56	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	21:00 (6)	05:02		21:01 (6)	05:28	21:07 (6)	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	4 21:04 (6)	22:09	26	21:27 (6)	21:52	11	21:18 (6)	20:54	19:40	18:28	16:29	16:13
21	08:38	07:42	06:36	06:22	05:24	21:00 (6)	05:02		21:02 (6)	05:29	21:09 (6)	06:21	07:16	08:11	08:10	08:49
	16:53	17:54	18:48	20:45	21:38	5 21:05 (6)	22:09	25	21:27 (6)	21:50	8	21:17 (6)	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	20:58 (6)	05:02		21:02 (6)	05:30	21:09 (6)	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	8 21:06 (6)	22:09	25	21:27 (6)	21:49	7	21:16 (6)	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	20:58 (6)	05:02		21:02 (6)	05:32	21:10 (6)	06:25	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41	10 21:08 (6)	22:09	26	21:28 (6)	21:48	5	21:15 (6)	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	20:58 (6)	05:03		21:02 (6)	05:33	21:11 (6)	06:27	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	11 21:09 (6)	22:09	26	21:28 (6)	21:46	2	21:13 (6)	20:45	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18	20:58 (6)	05:03		21:02 (6)	05:35			06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:52	21:44	13 21:11 (6)	22:09	26	21:28 (6)	21:45			20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	20:57 (6)	05:04		21:03 (6)	05:37			06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	15 21:12 (6)	22:09	26	21:29 (6)	21:43			20:40	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	20:57 (6)	05:04		21:03 (6)	05:38			06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	16 21:13 (6)	22:09	26	21:29 (6)	21:41			20:38	19:22	17:12	16:21	16:17
28	08:28	07:27	06:19	06:06	05:15	20:57 (6)	05:05		21:03 (6)	05:40			06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	18 21:15 (6)	22:09	26	21:29 (6)	21:40			20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	20:57 (6)	05:05		21:03 (6)	05:41			06:35	07:30	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	19 21:16 (6)	22:09	26	21:29 (6)	21:38			20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	20:57 (6)	05:06		21:03 (6)	05:43			06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	20 21:17 (6)	22:09	27	21:30 (6)	21:36			20:31	19:15	17:06	16:18	16:20
31	08:23		07:12		05:11	20:57 (6)				05:45			06:39		07:30		08:52
	17:12		20:06		21:52	21 21:18 (6)				21:35			20:29		17:04		16:21
Potential sun hours	250	273	367	420	494		510			512	460	382	328	259	233	
Total, worst case						161		776		452						
Sun reduction						0.31		0.26		0.22						
Oper. time red.						1.00		1.00		1.00						
Wind dir. red.						0.60		0.60		0.60						
Total reduction						0.19		0.16		0.13						
Total, real						30		121		61						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** BM - H070

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March	April	May	June	July	August	September	October	November		December
1	08:52		08:22	09:08 (3)	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:33		08:28
	16:22		17:14	8 09:16 (3)	18:10	20:08	21:04	21:54	22:09	21:33	20:27	19:13	17:02		16:18
2	08:52		08:20	09:09 (3)	07:22	07:07	05:58	05:09	05:07	05:48	06:43	07:36	07:35		08:29
	16:24		17:16	6 09:15 (3)	18:12	20:10	21:06	21:55	22:08	21:31	20:24	19:10	17:00		16:17
3	08:52		08:19	09:09 (3)	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38	07:37		08:31
	16:25		17:18	4 09:13 (3)	18:14	20:12	21:07	21:56	22:08	21:30	20:22	19:08	16:58		16:16
4	08:52		08:17	09:09 (3)	07:17	07:02	05:54	05:08	05:09	05:52	06:46	07:40	07:38		08:32
	16:26		17:20	2 09:11 (3)	18:16	20:14	21:09	21:57	22:07	21:28	20:19	19:05	16:56		16:16
5	08:52		08:15		07:15	07:00	05:52	05:07	05:10	05:53	06:48	07:42	07:40		08:34
	16:27		17:22		18:18	20:16	21:11	21:58	22:07	21:26	20:17	19:03	16:54		16:15
6	08:51		08:13		07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43	07:42		08:35
	16:29		17:24		18:19	20:18	21:13	22:00	22:06	21:24	20:14	19:01	16:52		16:14
7	08:51		08:11		07:10	06:55	05:48	05:06	05:12	05:57	06:52	07:45	07:44	08:40 (3)	08:36
	16:30		17:26		18:21	20:19	21:15	22:01	22:06	21:22	20:12	18:58	16:50	2 08:42 (3)	16:14
8	08:50		08:09		07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47	07:46	08:40 (3)	08:38
	16:31		17:28		18:23	20:21	21:16	22:01	22:05	21:20	20:10	18:56	16:49	4 08:44 (3)	16:13
9	08:50		08:08		07:06	06:50	05:44	05:04	05:14	06:00	06:55	07:49	07:48	08:39 (3)	08:39
	16:33		17:30		18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	7 08:46 (3)	16:13
10	08:49		08:06		07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:39 (3)	08:40
	16:34		17:32		18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51	16:45	8 08:47 (3)	16:13
11	08:48		08:04		07:01	06:45	05:40	05:03	05:16	06:04	06:59	07:53	07:52	08:39 (3)	08:41
	16:36		17:34		18:29	20:27	21:22	22:04	22:02	21:14	20:02	18:49	16:43	9 08:48 (3)	16:13
12	08:47		08:02		06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54	07:54	08:38 (3)	08:42
	16:37		17:36		18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	10 08:48 (3)	16:12
13	08:47		08:00		06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:38 (3)	08:43
	16:39		17:38		18:33	20:31	21:25	22:06	22:00	21:10	19:57	18:44	16:40	11 08:49 (3)	16:12
14	08:46		07:58		06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:58	08:38 (3)	08:44
	16:41		17:40		18:35	20:32	21:27	22:06	21:59	21:08	19:55	18:41	16:38	12 08:50 (3)	16:12
15	08:45		07:55		06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00	08:00	08:37 (3)	08:45
	16:42		17:42		18:37	20:34	21:29	22:07	21:58	21:05	19:52	18:39	16:37	14 08:51 (3)	16:12
16	08:44		07:53		06:49	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:02	08:36 (3)	08:46
	16:44		17:44		18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	15 08:51 (3)	16:12
17	08:43		07:51		06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	08:36 (3)	08:47
	16:46		17:46		18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:34	15 08:51 (3)	16:13
18	08:42	09:13 (3)	07:49		06:44	06:29	05:28	05:02	05:25	06:16	07:11	08:06	08:05	08:38 (3)	08:48
	16:47	1 09:14 (3)	17:48		18:42	20:40	21:34	22:08	21:55	20:59	19:45	18:32	16:32	13 08:51 (3)	16:13
19	08:41	09:11 (3)	07:47		06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:08	08:07	08:40 (3)	08:49
	16:49	3 09:14 (3)	17:50		18:44	20:42	21:35	22:09	21:53	20:57	19:42	18:30	16:31	11 08:51 (3)	16:13
20	08:40	09:10 (3)	07:45		06:39	06:24	05:25	05:02	05:28	06:20	07:15	08:09	08:09	08:42 (3)	08:49
	16:51	5 09:15 (3)	17:52		18:46	20:44	21:37	22:09	21:52	20:54	19:40	18:28	16:30	9 08:51 (3)	16:13
21	08:38	09:08 (3)	07:43		06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	08:44 (3)	08:50
	16:53	7 09:15 (3)	17:54		18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	7 08:51 (3)	16:14
22	08:37	09:07 (3)	07:40		06:34	06:20	05:22	05:02	05:31	06:23	07:18	08:13	08:13	08:46 (3)	08:50
	16:55	9 09:16 (3)	17:56		18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	5 08:51 (3)	16:14
23	08:36	09:05 (3)	07:38		06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:14	08:48 (3)	08:51
	16:56	11 09:16 (3)	17:58		18:52	20:49	21:41	22:10	21:48	20:48	19:32	18:21	16:26	3 08:51 (3)	16:15
24	08:34	09:04 (3)	07:36		06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:16	08:50 (3)	08:51
	16:58	13 09:17 (3)	18:00		18:53	20:51	21:43	22:10	21:46	20:45	19:30	18:19	16:25	1 08:51 (3)	16:15
25	08:33	09:02 (3)	07:34		06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18		08:52
	17:00	15 09:17 (3)	18:02		18:55	20:53	21:44	22:10	21:45	20:43	19:27	17:17	16:23		16:16
26	08:32	09:03 (3)	07:31		06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	08:20		08:52
	17:02	15 09:18 (3)	18:04		18:57	20:55	21:46	22:10	21:43	20:41	19:25	17:14	16:22		16:17
27	08:30	09:04 (3)	07:29		06:22	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21		08:52
	17:04	14 09:18 (3)	18:06		18:59	20:56	21:47	22:10	21:42	20:38	19:23	17:12	16:21		16:17
28	08:29	09:05 (3)	07:27		06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	08:23		08:52
	17:06	13 09:18 (3)	18:08		19:01	20:58	21:49	22:09	21:40	20:36	19:20	17:10	16:20		16:18
29	08:27	09:06 (3)			07:17	06:04	05:14	05:05	05:42	06:36	07:31	07:27	08:25		08:53
	17:08	11 09:17 (3)			20:03	21:00	21:50	22:09	21:38	20:34	19:18	17:08	16:19		16:19
30	08:25	09:07 (3)			07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:29	08:26		08:53
	17:10	11 09:18 (3)			20:05	21:02	21:51	22:09	21:37	20:31	19:15	17:06	16:18		16:20
31	08:24	09:08 (3)			07:12		05:11		05:45	06:39		07:31			08:53
	17:12	9 09:17 (3)			20:06		21:53		21:35	20:29		17:04			16:21
Potential sun hours	250		273		367	420	494	510	512	460	382	328	259		233
Total, worst case		137		20										156	
Sun reduction		0.16		0.19										0.20	
Oper. time red.		1.00		1.00										1.00	
Wind dir. red.		0.61		0.61										0.61	
Total reduction		0.10		0.12										0.12	
Total, real		13		2										19	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** BN - H071

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52 16:23	08:22 17:14	07:24 18:10	07:09 20:08	06:00 21:04	06:38 (3) 06:41 (3) 21:54	05:11 22:09	05:40 (1) 05:46 (1) 21:33	06:41 20:27	07:34 19:13	07:33 17:02	08:28 16:18
2	08:52 16:24	08:20 17:16	07:22 18:12	07:07 20:10	05:58 21:06	05:10 21:55	05:07 22:08	05:40 (1) 05:46 (1) 21:31	06:43 20:24	07:36 19:10	07:35 17:00	08:29 16:17
3	08:52 16:25	08:19 17:18	07:20 18:14	07:04 20:12	05:56 21:07	05:09 21:56	05:08 22:08	05:41 (1) 05:46 (1) 21:30	06:44 20:22	07:38 19:08	07:36 16:58	08:31 16:16
4	08:52 16:26	08:17 17:20	07:17 18:16	07:02 20:14	05:54 21:09	05:08 05:39 (1) 21:57	05:09 05:42 (1) 22:07	05:42 (1) 05:47 (1) 21:28	06:46 20:19	07:40 19:05	07:38 16:56	08:32 16:16
5	08:51 16:27	08:15 17:22	07:15 18:18	07:00 20:16	05:52 21:11	05:07 05:38 (1) 21:58	05:10 05:43 (1) 22:07	05:43 (1) 05:47 (1) 21:26	06:48 20:17	07:42 19:03	07:40 16:54	08:34 16:15
6	08:51 16:29	08:13 17:24	07:13 18:19	06:57 20:18	05:50 21:13	05:06 05:38 (1) 21:59	05:11 05:44 (1) 22:06	05:44 (1) 05:47 (1) 21:24	06:50 20:14	07:43 19:01	07:42 16:52	08:35 16:14
7	08:51 16:30	08:11 17:26	07:10 18:21	06:55 20:19	05:48 21:15	05:06 05:37 (1) 22:00	05:12 05:45 (1) 22:05	05:45 (1) 05:47 (1) 21:22	06:52 20:12	07:45 18:58	07:44 16:51	08:36 16:14
8	08:50 16:31	08:09 17:28	07:08 18:23	06:52 20:21	05:46 21:16	05:05 05:37 (1) 22:01	05:13 05:46 (1) 22:05	05:46 (1) 05:47 (1) 21:20	06:53 20:10	07:47 18:56	07:46 16:49	08:38 16:14
9	08:49 16:33	08:08 17:30	07:06 18:25	06:50 20:23	05:44 21:18	05:05 05:36 (1) 22:02	05:14 05:41 (1) 22:04	06:00 21:18	06:55 20:07	07:49 18:53	07:48 16:47	08:39 16:13
10	08:49 16:34	08:06 17:32	07:03 18:27	06:48 20:25	05:42 21:20	05:04 05:36 (1) 22:03	05:15 05:42 (1) 22:03	06:02 21:16	06:57 20:05	07:51 18:51	07:50 16:45	08:40 16:13
11	08:48 16:36	08:04 17:34	07:01 18:29	06:45 20:27	05:40 06:08 (2) 21:22	05:04 05:36 (1) 22:04	05:16 05:42 (1) 22:02	06:04 21:14	06:59 20:02	07:53 18:49	07:52 16:43	08:41 16:13
12	08:47 16:37	08:02 17:36	06:58 18:31	06:43 20:29	1 06:09 (2) 05:39 06:09 (2) 21:23	05:03 05:35 (1) 22:05	05:17 05:42 (1) 22:01	06:05 21:12	06:45 (3) 06:51 (3)	07:00 20:00	07:54 18:46	08:42 16:42
13	08:47 16:39	08:00 17:38	06:56 18:33	06:40 20:31	1 06:10 (2) 05:37 21:25	05:03 05:35 (1) 22:05	05:18 05:42 (1) 22:00	06:07 21:10	6 06:42 (3) 06:53 (3)	07:02 19:57	07:56 18:44	08:43 16:40
14	08:46 16:41	07:58 17:40	06:53 18:35	06:38 20:32	05:35 21:27	05:03 05:35 (1) 22:06	05:20 05:43 (1) 21:59	06:09 21:08	11 06:40 (3) 06:55 (3)	07:04 19:55	07:58 18:41	08:44 16:39
15	08:45 16:42	07:55 17:42	06:51 18:37	06:36 20:34	05:33 21:29	05:02 05:35 (1) 22:07	05:21 05:43 (1) 21:58	06:11 21:05	15 06:40 (3) 06:57 (3)	07:06 19:52	08:00 18:39	08:45 16:37
16	08:44 16:44	07:53 17:44	06:49 18:39	06:33 20:36	05:32 21:30	05:02 05:35 (1) 22:07	05:22 05:43 (1) 21:57	06:13 21:03	17 06:41 (3) 06:57 (3)	07:07 19:50	08:02 18:37	08:46 16:35
17	08:43 16:46	07:51 17:46	06:46 18:40	06:31 20:38	05:30 21:32	05:02 05:35 (1) 22:08	05:24 05:43 (1) 21:56	06:14 21:01	16 06:43 (3) 06:57 (3)	07:09 19:47	08:03 18:35	08:47 16:34
18	08:42 16:47	07:49 17:48	06:44 18:42	06:29 20:40	05:29 21:33	05:02 05:35 (1) 22:08	05:25 05:44 (1) 21:55	06:16 20:59	14 06:45 (3) 06:58 (3)	07:11 19:45	08:06 18:32	08:48 16:32
19	08:41 16:49	07:47 17:50	06:41 18:44	06:26 20:42 1	06:51 (3) 06:52 (3) 21:35	05:02 05:35 (1) 22:09	05:26 05:44 (1) 21:53	06:18 20:57	13 06:46 (3) 06:57 (3)	07:13 19:42	08:08 18:30	08:07 16:31	08:49 16:13
20	08:39 16:51	07:45 17:52	06:39 18:46	06:24 20:44 4	06:49 (3) 06:53 (3) 21:37	05:02 05:35 (1) 22:09	05:28 05:44 (1) 21:52	06:20 20:54	11 06:48 (3) 06:58 (3)	07:15 19:40	08:09 18:28	08:09 16:30	08:49 16:13
21	08:38 16:53	07:43 17:54	06:36 18:48	06:22 20:45 6	06:47 (3) 06:53 (3) 21:38	05:02 05:35 (1) 22:09	05:29 05:44 (1) 21:51	06:21 20:52	10 06:50 (3) 06:58 (3)	07:16 19:37	08:11 18:25	08:11 16:28	08:50 16:14
22	08:37 16:55	07:40 17:56	06:34 18:50	06:20 20:47 8	06:44 (3) 06:52 (3) 21:40	05:02 05:35 (1) 22:09	05:31 05:44 (1) 21:49	06:23 20:50	8 06:51 (3) 06:57 (3)	07:18 19:35	08:13 18:23	08:13 16:27	08:50 16:14
23	08:36 16:57	07:38 17:58	06:31 18:52	06:17 20:49 10	06:42 (3) 06:52 (3) 21:41	05:03 05:36 (1) 22:10	05:32 05:45 (1) 21:48	06:25 20:48	6 06:53 (3) 06:56 (3)	07:20 19:32	08:15 18:21	08:14 16:26	08:51 16:15
24	08:34 16:58	07:36 18:00	06:29 18:53	06:15 20:51 12	06:40 (3) 06:52 (3) 21:43	05:03 05:36 (1) 22:10	05:34 05:45 (1) 21:46	06:27 20:45	3 06:55 (3) 06:56 (3)	07:22 19:30	08:17 18:19	08:16 16:25	08:51 16:15
25	08:33 17:00	07:34 18:02	06:26 18:55	06:13 20:53 13	06:38 (3) 06:51 (3) 21:44	05:03 05:36 (1) 22:10	05:35 05:45 (1) 21:45	06:28 20:43	1	07:23 19:28	07:19 17:17	08:18 16:23	08:52 16:16
26	08:31 17:02	07:31 18:04	06:24 18:57	06:11 20:55 15	06:36 (3) 06:51 (3) 21:46	05:04 05:37 (1) 22:10	05:37 05:45 (1) 21:43	06:30 20:41		07:25 19:25	07:21 17:15	08:20 16:22	08:52 16:17
27	08:30 17:04	07:29 18:06	06:22 18:59	06:09 20:56 16	06:34 (3) 06:50 (3) 21:47	05:04 05:37 (1) 22:10	05:38 05:45 (1) 21:42	06:32 20:38		07:27 19:23	07:23 17:12	08:21 16:21	08:52 16:18
28	08:28 17:06	07:27 18:08	06:19 19:01	06:06 20:58 17	06:32 (3) 06:49 (3) 21:49	05:05 05:38 (1) 22:09	05:40 05:46 (1) 21:40	06:34 20:36		07:29 19:20	07:25 17:10	08:23 16:20	08:52 16:18
29	08:27 17:08		07:17 20:03	06:04 21:00 14	06:33 (3) 06:47 (3) 21:50	05:05 05:38 (1) 22:09	05:42 05:45 (1) 21:38	06:36 20:34		07:31 19:18	07:27 17:08	08:24 16:19	08:52 16:19
30	08:25 17:10		07:14 20:05	06:02 21:02 10	06:35 (3) 06:45 (3) 21:51	05:06 05:39 (1) 22:09	05:43 05:46 (1) 21:37	06:37 20:31		07:32 19:15	07:29 17:06	08:26 16:19	08:53 16:20
31	08:24 17:12		07:12 20:06		05:12 21:53		05:45 21:35	06:39 20:29			07:31 17:04		08:52 16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233	
Total, worst case				126	5	186	32	131					
Sun reduction				0.31	0.31	0.26	0.22	0.26					
Oper. time red.				1.00	1.00	1.00	1.00	1.00					
Wind dir. red.				0.65	0.64	0.64	0.64	0.65					
Total reduction				0.20	0.20	0.17	0.14	0.17					
Total, real				25	1	31	5	22					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** BO - H072

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:11	05:07	05:47	06:41	07:34	07:33	08:28
	16:23	17:14	18:10	20:08	21:04	21:54	22:09	21:33	20:27	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	06:24 (1)	05:10	05:07	05:48	06:43	07:36	07:35	08:29
	16:24	17:16	18:12	20:10	21:06	3	06:27 (1)	21:55	22:08	21:31	18	06:37 (1)	20:24	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04	05:56	06:22 (1)	05:09	05:08	05:50	06:20 (1)	06:44	07:38	07:37	08:31
	16:25	17:18	18:14	20:12	21:07	5	06:27 (1)	21:56	22:08	21:30	17	06:37 (1)	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	06:20 (1)	05:08	05:09	05:52	06:22 (1)	06:46	07:40	07:38	08:32
	16:26	17:20	18:16	20:14	21:09	7	06:27 (1)	21:57	22:07	21:28	16	06:38 (1)	20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	07:00	05:52	06:18 (1)	05:07	05:10	05:53	06:23 (1)	06:48	07:42	07:40	08:34
	16:27	17:22	18:18	20:16	21:11	10	06:28 (1)	21:58	22:07	21:26	14	06:37 (1)	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	06:16 (1)	05:06	05:11	05:55	06:25 (1)	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:18	21:13	11	06:27 (1)	22:00	22:06	21:24	13	06:38 (1)	20:14	19:01	16:52	16:14
7	08:51	08:11	07:10	06:55	05:48	06:15 (1)	05:06	05:12	05:57	06:27 (1)	06:52	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:15	13	06:28 (1)	22:01	22:05	21:22	11	06:38 (1)	20:12	18:58	16:51	16:14
8	08:50	08:09	07:08	06:52	05:46	06:13 (1)	05:05	05:13	05:58	06:28 (1)	06:53	07:47	07:46	08:38
	16:31	17:28	18:23	20:21	21:16	15	06:28 (1)	22:01	22:05	21:20	9	06:37 (1)	20:10	18:56	16:49	16:14
9	08:50	08:08	07:06	06:50	05:44	06:11 (1)	05:04	05:14	06:00	06:30 (1)	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	16	06:27 (1)	22:02	22:04	21:18	7	06:37 (1)	20:07	18:53	16:47	16:13
10	08:49	08:06	07:03	06:48	05:42	06:09 (1)	05:04	05:15	06:02	06:31 (1)	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	18	06:27 (1)	22:03	22:03	21:16	5	06:36 (1)	20:05	18:51	16:45	16:13
11	08:48	08:04	07:01	06:45	05:40	06:08 (1)	05:04	05:16	06:04	06:33 (1)	06:59	07:53	07:52	08:41
	16:36	17:34	18:29	20:27	21:22	19	06:27 (1)	22:04	22:02	21:14	2	06:35 (1)	20:02	18:49	16:43	16:13
12	08:47	08:02	06:58	06:43	05:39	06:06 (1)	05:03	05:17	06:05		07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	20	06:26 (1)	22:05	22:01	21:12			20:00	18:46	16:42	16:13
13	08:47	08:00	06:56	06:40	05:37	06:05 (1)	05:03	05:18	06:07		07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:31	21:25	20	06:25 (1)	22:05	22:00	21:10			19:57	18:44	16:40	16:12
14	08:46	07:58	06:53	06:38	05:35	06:06 (1)	05:03	05:20	06:09		07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	19	06:25 (1)	22:06	21:59	21:08			19:55	18:41	16:39	16:12
15	08:45	07:55	06:51	06:36	05:33	06:07 (1)	05:02	05:21	06:11		07:06	08:00	08:00	08:45
	16:42	17:42	18:37	20:34	21:29	16	06:23 (1)	22:07	21:58	21:05			19:52	18:39	16:37	16:12
16	08:44	07:53	06:49	06:33	05:32	06:09 (1)	05:02	05:22	06:13		07:07	08:02	08:02	08:46
	16:44	17:44	18:39	20:36	21:30	13	06:22 (1)	22:07	21:57	21:03			19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	06:10 (1)	05:02	05:24	06:14		07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	10	06:20 (1)	22:08	21:56	21:01			19:47	18:35	16:34	16:13
18	08:42	07:49	06:44	06:29	05:29	06:13 (1)	05:02	05:25	06:16		07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40	21:34	5	06:18 (1)	22:08	21:55	20:59			19:45	18:32	16:32	16:13
19	08:41	07:47	06:41	06:26	05:27	05:02	05:26	06:18			07:13	08:08	08:07	08:49
	16:49	17:50	18:44	20:42	21:35	22:09	21:53	20:57			19:42	18:30	16:31	16:13
20	08:40	07:45	06:39	06:24	05:25	05:02	05:28	06:20			07:15	08:09	08:09	08:49
	16:51	17:52	18:46	20:44	21:37	22:09	21:52	20:54			19:40	18:28	16:30	16:13
21	08:38	07:43	06:36	06:22	05:24	05:02	05:29	06:21			07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:51	20:52			19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:20	05:23	05:02	05:31	06:23			07:18	08:13	08:13	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	21:49	20:50			19:35	18:23	16:27	16:14
23	08:36	07:38	06:31	06:17	05:21	05:03	05:32	06:25			07:20	08:15	08:14	08:51
	16:57	17:58	18:52	20:49	21:41	22:10	21:48	20:48			19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34	06:27			07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:10	21:46	20:45			19:30	18:19	16:25	16:15
25	08:33	07:34	06:26	06:13	05:18	05:03	05:35	06:28			07:23	07:19	08:18	08:52
	17:00	18:02	18:55	20:53	21:44	22:10	21:45	20:43			19:28	17:17	16:23	16:16
26	08:32	07:31	06:24	06:11	05:17	05:04	05:37	06:22 (1)	06:30		07:25	07:21	08:20	08:52
	17:02	18:04	18:57	20:55	21:46	22:10	21:43	8	06:30 (1)	20:41			19:25	17:15	16:22	16:17
27	08:30	07:29	06:22	06:09	05:16	05:04	05:38	06:19 (1)	06:32		07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:10	21:42	12	06:31 (1)	20:38			19:23	17:12	16:21	16:18
28	08:29	07:27	06:19	06:06	05:15	05:05	05:40	06:19 (1)	06:34		07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:49	22:09	21:40	14	06:33 (1)	20:36			19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	05:14	05:05	05:42	06:17 (1)	06:36		07:31	07:27	08:25	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	17	06:34 (1)	20:34			19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	05:13	05:06	05:43	06:16 (1)	06:37		07:32	07:29	08:26	08:53
	17:10		20:05	21:02	21:51	22:09	21:37	19	06:35 (1)	20:31			19:15	17:06	16:19	16:20
31	08:24		07:12		05:12		05:45	06:16 (1)	06:39			07:31		08:53
	17:12		20:06		21:53		21:35	20	06:36 (1)	20:29				17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case					220			90		131						
Sun reduction					0.31			0.22		0.26						
Oper. time red.					1.00			1.00		1.00						
Wind dir. red.					0.65			0.65		0.65						
Total reduction					0.20			0.15		0.17						
Total, real					45			13		22						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** BP - H073

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April		May		June	July	August		September	October	November	December
1	08:52	08:22	07:24	07:09		06:00	07:10 (2)	05:11	05:07	05:47		06:41	07:34	07:33	08:28
	16:23	17:14	18:10	20:08		21:04	1 07:11 (2)	21:54	22:09	21:33		20:27	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07		05:58		05:10	05:07	05:48		06:43	07:36	07:35	08:29
	16:24	17:16	18:12	20:10		21:06		21:55	22:08	21:31		20:24	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04		05:56		05:09	05:08	05:50		06:44	07:38	07:37	08:31
	16:25	17:18	18:14	20:12		21:07		21:56	22:08	21:30		20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02		05:54		05:08	05:09	05:52		06:46	07:40	07:38	08:32
	16:26	17:20	18:16	20:14		21:09		21:57	22:07	21:28		20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	07:00		05:52		05:07	05:10	05:53		06:48	07:42	07:40	08:34
	16:27	17:22	18:18	20:16		21:11		21:58	22:07	21:26		20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57		05:50		05:06	05:11	05:55		06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:18		21:13		21:59	22:06	21:24		20:14	19:01	16:52	16:14
7	08:51	08:11	07:10	06:55		05:48		05:06	05:12	05:57		06:52	07:45	07:44	08:36
	16:30	17:26	18:21	20:19		21:15		22:00	22:05	21:22		20:12	18:58	16:51	16:14
8	08:50	08:09	07:08	06:52		05:46		05:05	05:13	05:58		06:53	07:47	07:46	08:38
	16:31	17:28	18:23	20:21		21:16		22:01	22:05	21:20		20:10	18:56	16:49	16:14
9	08:50	08:08	07:06	06:50		05:44		05:05	05:14	06:00		06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23		21:18		22:02	22:04	21:18		20:07	18:53	16:47	16:13
10	08:49	08:06	07:03	06:48		05:42		05:04	05:15	06:02		06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25		21:20		22:03	22:03	21:16		20:05	18:51	16:45	16:13
11	08:48	08:04	07:01	06:45		05:40		05:04	05:16	06:04		06:59	07:53	07:52	08:41
	16:36	17:34	18:29	20:27		21:22		22:04	22:02	21:14		20:02	18:49	16:43	16:13
12	08:47	08:02	06:58	06:43		05:39		05:03	05:17	06:05	07:18 (2)	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29		21:23		22:05	22:01	21:12	2 07:20 (2)	20:00	18:46	16:42	16:13
13	08:47	08:00	06:56	06:40		05:37		05:03	05:18	06:07	07:17 (2)	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:31		21:25		22:05	22:00	21:10	3 07:20 (2)	19:57	18:44	16:40	16:12
14	08:46	07:58	06:53	06:38		05:35		05:03	05:20	06:09	07:17 (2)	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32		21:27		22:06	21:59	21:08	5 07:22 (2)	19:55	18:41	16:39	16:12
15	08:45	07:55	06:51	06:36		05:33		05:02	05:21	06:11	07:17 (2)	07:06	08:00	08:00	08:45
	16:42	17:42	18:37	20:34		21:29		22:07	21:58	21:05	6 07:23 (2)	19:52	18:39	16:37	16:12
16	08:44	07:53	06:49	06:33	06:58 (2)	05:32		05:02	05:22	06:13	07:16 (2)	07:07	08:02	08:02	08:46
	16:44	17:44	18:39	20:36	2 07:00 (2)	21:30		22:07	21:57	21:03	7 07:23 (2)	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31		05:30		05:02	05:24	06:14	07:15 (2)	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38		21:32		22:08	21:56	21:01	1 07:16 (2)	19:47	18:35	16:34	16:13
18	08:42	07:49	06:44	06:29		05:29		05:02	05:25	06:16		07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40		21:34		22:08	21:55	20:59		19:45	18:32	16:32	16:13
19	08:41	07:47	06:41	06:26		05:27		05:02	05:26	06:18		07:13	08:08	08:07	08:49
	16:49	17:50	18:44	20:42		21:35		22:09	21:53	20:57		19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24		05:25		05:02	05:28	06:20		07:15	08:09	08:09	08:49
	16:51	17:52	18:46	20:44		21:37		22:09	21:52	20:54		19:40	18:28	16:30	16:13
21	08:38	07:43	06:36	06:22		05:24		05:02	05:29	06:21		07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45		21:38		22:09	21:51	20:52		19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:20		05:23		05:02	05:31	06:23		07:18	08:13	08:13	08:50
	16:55	17:56	18:50	20:47		21:40		22:09	21:49	20:50		19:35	18:23	16:27	16:14
23	08:36	07:38	06:31	06:17		05:21		05:03	05:32	06:25		07:20	08:15	08:14	08:51
	16:57	17:58	18:52	20:49		21:41		22:10	21:48	20:48		19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15		05:20		05:03	05:34	06:27		07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51		21:43		22:10	21:46	20:45		19:30	18:19	16:25	16:15
25	08:33	07:34	06:26	06:13		05:18		05:03	05:35	06:28		07:23	07:19	08:18	08:52
	17:00	18:02	18:55	20:53		21:44		22:10	21:45	20:43		19:28	17:17	16:23	16:16
26	08:32	07:31	06:24	06:11	07:09 (2)	05:17		05:04	05:37	06:30		07:25	07:21	08:20	08:52
	17:02	18:04	18:57	20:55	1 07:10 (2)	21:46		22:10	21:43	20:41		19:25	17:15	16:22	16:17
27	08:30	07:29	06:22	06:09	07:09 (2)	05:16		05:04	05:38	06:32	07:00 (2)	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	7 07:16 (2)	21:47		22:10	21:42	20:38	2 07:02 (2)	19:23	17:12	16:21	16:18
28	08:29	07:27	06:19	06:06	07:09 (2)	05:15		05:05	05:40	06:34		07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	6 07:15 (2)	21:49		22:09	21:40	20:36		19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	07:10 (2)	05:14		05:05	05:42	06:36		07:31	07:27	08:24	08:52
	17:08		20:03	21:00	4 07:14 (2)	21:50		22:09	21:38	20:34		19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	07:10 (2)	05:13		05:06	05:43	06:37		07:32	07:29	08:26	08:53
	17:10		20:05	21:02	2 07:12 (2)	21:51		22:09	21:37	20:31		19:15	17:06	16:19	16:20
31	08:24		07:12			05:12			05:45	06:39			07:31		08:53
	17:12		20:06			21:53			21:35	20:29			17:04		16:21
Potential sun hours	250	273	367	420		494		510	512	460		382	328	259	233
Total, worst case					22		1				26				
Sun reduction					0.31		0.31				0.26				
Oper. time red.					1.00		1.00				1.00				
Wind dir. red.					0.64		0.64				0.64				
Total reduction					0.20		0.20				0.16				
Total, real					4		0				4				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** BQ - H074

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June		July		August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10		05:06		05:39 (10)	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:09	20:08	21:03	21:53		22:08	7	05:46 (10)	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:07	05:58	05:09		05:07		05:40 (10)	05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05	21:55		22:08	6	05:46 (10)	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:19	07:04	05:56	05:08		05:08		05:41 (10)	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12	21:07	21:56		22:07	5	05:46 (10)	21:29	20:21	19:08	16:58	16:16
4	08:51	08:16	07:17	07:02	05:54	05:08		05:09		05:42 (10)	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57		22:07	5	05:47 (10)	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52	05:07	05:38 (10)	05:09		05:42 (10)	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11	21:58	1 05:39 (10)	22:06	4	05:46 (10)	21:25	20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50	05:06	05:38 (10)	05:10		05:43 (10)	05:55	06:49	07:43	07:42	08:35
	16:28	17:24	18:19	20:17	21:12	21:59	2 05:40 (10)	22:06	3	05:46 (10)	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48	05:05	05:37 (10)	05:11		05:44 (10)	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	3 05:40 (10)	22:05	2	05:46 (10)	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:36 (10)	05:12		05:45 (10)	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	4 05:40 (10)	22:04	1	05:46 (10)	21:20	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:50	05:44	05:04	05:36 (10)	05:13			06:00	06:55	07:49	07:48	08:38
	16:33	17:30	18:25	20:23	21:18	22:02	5 05:41 (10)	22:04			21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:36 (10)	05:15			06:02	06:57	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	6 05:42 (10)	22:03			21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:00	06:45	05:40	05:03	05:35 (10)	05:16			06:03	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21	22:04	6 05:41 (10)	22:02			21:14	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	05:35 (10)	05:17			06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23	22:04	7 05:42 (10)	22:01			21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:56	06:40	05:37	05:02	05:35 (10)	05:18			06:07	07:02	07:56	07:55	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	8 05:43 (10)	22:00			21:09	19:57	18:44	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	05:02	05:35 (10)	05:19			06:09	07:04	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:27	22:06	8 05:43 (10)	21:59			21:07	19:54	18:41	16:38	16:12
15	08:44	07:55	06:51	06:35	05:33	05:02	05:35 (10)	05:21			06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	8 05:43 (10)	21:58			21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:31	05:02	05:34 (10)	05:22			06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	9 05:43 (10)	21:57			21:03	19:49	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:34 (10)	05:23			06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:32	22:07	9 05:43 (10)	21:56			21:01	19:47	18:34	16:34	16:12
18	08:41	07:49	06:43	06:28	05:28	05:02	05:34 (10)	05:25			06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:39	21:33	22:08	9 05:43 (10)	21:54			20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	05:02	05:35 (10)	05:26			06:18	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	9 05:44 (10)	21:53			20:56	19:42	18:30	16:31	16:13
20	08:39	07:44	06:38	06:24	05:25	05:02	05:35 (10)	05:27			06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:09	9 05:44 (10)	21:52			20:54	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:24	05:02	05:35 (10)	05:29			06:21	07:16	08:11	08:10	08:49
	16:53	17:54	18:48	20:45	21:38	22:09	10 05:45 (10)	21:50			20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	05:02	05:35 (10)	05:30			06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:40	22:09	10 05:45 (10)	21:49			20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	05:35 (10)	05:32			06:25	07:20	08:15	08:14	08:50
	16:56	17:58	18:51	20:49	21:41	22:09	9 05:44 (10)	21:48			20:47	19:32	18:21	16:25	16:15
24	08:34	07:36	06:29	06:15	05:19	05:03	05:36 (10)	05:33			06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	9 05:45 (10)	21:46			20:45	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:36 (10)	05:35			06:28	07:23	07:19	08:17	08:51
	17:00	18:02	18:55	20:52	21:44	22:09	9 05:45 (10)	21:45			20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	05:37 (10)	05:36			06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:45	22:09	9 05:46 (10)	21:43			20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:16	05:04	05:37 (10)	05:38			06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	9 05:46 (10)	21:41			20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	05:04	05:38 (10)	05:40			06:33	07:29	07:24	08:23	08:52
	17:06	18:07	19:01	20:58	21:48	22:09	8 05:46 (10)	21:40			20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	05:05	05:38 (10)	05:41			06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:50	22:09	8 05:46 (10)	21:38			20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:06	05:39 (10)	05:43			06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	7 05:46 (10)	21:36			20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11			05:45			06:39		07:30		08:52
	17:12		20:06		21:52			21:35			20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510		512		460	382	328	259	233
Total, worst case						191		33						
Sun reduction						0.26		0.22						
Oper. time red.						1.00		1.00						
Wind dir. red.						0.65		0.65						
Total reduction						0.17		0.14						
Total, real						32		5						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** BR - H075

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June		July		August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10		05:06		05:39 (10)	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:09	20:08	21:03	21:53		22:08	8	05:47 (10)	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:07	05:58	05:09		05:07		05:40 (10)	05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05	21:55		22:08	7	05:47 (10)	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:19	07:04	05:56	05:08		05:08		05:41 (10)	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12	21:07	21:56	1	05:39 (10)	7	05:48 (10)	21:29	20:21	19:08	16:58	16:16
4	08:51	08:16	07:17	07:02	05:54	05:08		05:40 (10)		05:42 (10)	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	2	05:39 (10)	7	05:48 (10)	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52	05:07		05:41 (10)		05:42 (10)	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11	21:58	3	05:38 (10)	6	05:47 (10)	21:25	20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50	05:06		05:41 (10)		05:43 (10)	05:55	06:49	07:43	07:42	08:35
	16:28	17:24	18:19	20:17	21:12	21:59	4	05:38 (10)	5	05:47 (10)	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48	05:05		05:42 (10)		05:44 (10)	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	5	05:37 (10)	4	05:47 (10)	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05		05:42 (10)		05:45 (10)	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	6	05:36 (10)	3	05:47 (10)	21:20	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:50	05:44	05:04		05:42 (10)		05:46 (10)	06:00	06:55	07:49	07:48	08:38
	16:33	17:30	18:25	20:23	21:18	22:02	6	05:36 (10)	2	05:47 (10)	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04		05:42 (10)		05:47 (10)	06:02	06:57	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	7	05:36 (10)	1		21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:00	06:45	05:40	05:03		05:43 (10)			06:03	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21	22:04	8	05:35 (10)			21:14	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03		05:43 (10)			06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23	22:04	8	05:35 (10)			21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:56	06:40	05:37	05:03		05:44 (10)			06:07	07:02	07:56	07:55	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	9	05:35 (10)			21:09	19:57	18:44	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	05:02		05:44 (10)			06:09	07:04	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:27	22:06	9	05:35 (10)			21:07	19:54	18:41	16:38	16:12
15	08:44	07:55	06:51	06:35	05:33	05:02		05:45 (10)			06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	10	05:34 (10)			21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:31	05:02		05:44 (10)			06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	10	05:34 (10)			21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02		05:44 (10)			06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:32	22:07	10	05:34 (10)			21:01	19:47	18:34	16:34	16:12
18	08:41	07:49	06:43	06:28	05:28	05:02		05:45 (10)			06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:39	21:33	22:08	11	05:35 (10)			20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	05:02		05:46 (10)			06:18	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	11	05:35 (10)			20:56	19:42	18:30	16:31	16:13
20	08:39	07:44	06:38	06:24	05:25	05:02		05:46 (10)			06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:09	11	05:35 (10)			20:54	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:24	05:02		05:46 (10)			06:21	07:16	08:11	08:10	08:49
	16:53	17:54	18:48	20:45	21:38	22:09	11	05:35 (10)			20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	05:02		05:46 (10)			06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:40	22:09	11	05:35 (10)			20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02		05:46 (10)			06:25	07:20	08:15	08:14	08:50
	16:56	17:58	18:51	20:49	21:41	22:09	11	05:35 (10)			20:47	19:32	18:21	16:25	16:15
24	08:34	07:36	06:29	06:15	05:19	05:03		05:46 (10)			06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	11	05:36 (10)			20:45	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03		05:47 (10)			06:28	07:23	07:19	08:17	08:51
	17:00	18:02	18:55	20:52	21:44	22:09	10	05:36 (10)			20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03		05:46 (10)			06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:45	22:09	10	05:37 (10)			20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:16	05:04		05:37 (10)			06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	10	05:37 (10)			20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	05:04		05:38 (10)			06:33	07:29	07:24	08:23	08:52
	17:06	18:07	19:01	20:58	21:48	22:09	9	05:37 (10)			20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	05:05		05:38 (10)			06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:50	22:09	9	05:37 (10)			20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:06		05:39 (10)			06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	9	05:38 (10)			20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11			05:45			06:39		07:30		08:52
	17:12		20:06		21:52			21:35			20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510		512		460	382	328	259	233	
Total, worst case						232			43						
Sun reduction						0.26			0.22						
Oper. time red.						1.00			1.00						
Wind dir. red.						0.64			0.64						
Total reduction						0.17			0.14						
Total, real						39			6						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** BS - H076

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:07	05:47	06:41	07:34	07:33	08:28
	16:23	17:14	18:10	20:08	21:04	21:54	22:08	21:33	20:26 14 07:22 (6)	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:10	05:07	05:48	06:43 07:10 (6)	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:06	21:55	22:08	21:31	20:24 12 07:22 (6)	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04	05:56	05:09	05:08	05:50	06:44 07:12 (6)	07:38	07:36	08:31
	16:25	17:18	18:14	20:12	21:07	21:56	22:08	21:29	20:22 9 07:21 (6)	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:52	06:46 07:13 (6)	07:40	07:38	08:32
	16:26	17:20	18:16	20:14	21:09	21:57	22:07	21:28	20:19 6 07:19 (6)	19:05	16:56	16:16
5	08:51	08:15	07:15	07:00	05:52	05:07	05:10	05:53	06:48 07:15 (6)	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	21:58	22:07	21:26	20:17 3 07:18 (6)	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:18	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:51	08:11	07:10	06:55 07:19 (6)	05:48	05:06	05:12	05:57	06:52	07:45	07:44	08:36
	16:30	17:26	18:21	20:19 3 07:22 (6)	21:15	22:00	22:05	21:22	20:12	18:58	16:51	16:14
8	08:50	08:09	07:08	06:52 07:16 (6)	05:46	05:05	05:13	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21 6 07:22 (6)	21:16	22:01	22:05	21:20	20:09	18:56	16:49	16:14
9	08:49	08:07	07:05	06:50 07:14 (6)	05:44	05:04	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23 9 07:23 (6)	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47 07:11 (6)	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25 12 07:23 (6)	21:20	22:03	22:03	21:16	20:05	18:51	16:45	16:13
11	08:48	08:04	07:01	06:45 07:09 (6)	05:40	05:04	05:16	06:04	06:59	07:53	07:52	08:41
	16:36	17:34	18:29	20:27 14 07:23 (6)	21:22	22:04	22:02	21:14	20:02	18:49	16:43	16:13
12	08:47	08:02	06:58	06:43 07:07 (6)	05:39	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29 16 07:23 (6)	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:12
13	08:47	07:59	06:56	06:40 07:04 (6)	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30 18 07:22 (6)	21:25	22:05	22:00	21:10	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38 07:02 (6)	05:35	05:03	05:20	06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32 20 07:22 (6)	21:27	22:06	21:59	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:36 07:00 (6)	05:33 06:32 (5)	05:02	05:21	06:11	07:06	08:00	08:00	08:45
	16:42	17:42	18:37	20:34 22 07:22 (6)	21:28 1 06:33 (5)	22:07	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:49	06:33 06:59 (6)	05:32 06:32 (5)	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36 22 07:21 (6)	21:30 3 06:35 (5)	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31 06:59 (6)	05:30 06:31 (5)	05:02	05:23	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38 20 07:19 (6)	21:32 3 06:34 (5)	22:08	21:56	21:01	19:47	18:34	16:34	16:13
18	08:42	07:49	06:44	06:29 07:00 (6)	05:29 06:31 (5)	05:02	05:25	06:16	07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40 18 07:18 (6)	21:33 2 06:33 (5)	22:08	21:55	20:59	19:45	18:32	16:32	16:13
19	08:41	07:47	06:41	06:26 07:01 (6)	05:27	05:02	05:26	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:42 16 07:17 (6)	21:35	22:08	21:53	20:57	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24 07:03 (6)	05:25	05:02	05:28	06:20	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43 11 07:14 (6)	21:37	22:09	21:52	20:54	19:40	18:28	16:30	16:13
21	08:38	07:43	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:20	05:23	05:02	05:31	06:23 07:11 (6)	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	21:49	20:50 3 07:14 (6)	19:35	18:23	16:27	16:14
23	08:36	07:38	06:31	06:17	05:21	05:03	05:32	06:25 07:07 (6)	07:20	08:15	08:14	08:51
	16:57	17:58	18:52	20:49	21:41	22:09	21:48	20:48 12 07:19 (6)	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34	06:27 07:05 (6)	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45 16 07:21 (6)	19:30	18:19	16:25	16:15
25	08:33	07:34	06:26	06:13	05:18	05:03	05:35	06:28 07:03 (6)	07:23	07:19	08:18	08:52
	17:00	18:02	18:55	20:53	21:44	22:10	21:45	20:43 18 07:21 (6)	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04	05:37 06:42 (5)	06:30 07:02 (6)	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:55	21:46	22:10	21:43 2 06:44 (5)	20:41 20 07:22 (6)	19:25	17:14	16:22	16:17
27	08:30	07:29	06:22	06:08	05:16	05:04	05:38 06:42 (5)	06:32 07:01 (6)	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:42 4 06:46 (5)	20:38 22 07:23 (6)	19:23	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	05:15	05:05	05:40 06:42 (5)	06:34 07:01 (6)	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:49	22:09	21:40 2 06:44 (5)	20:36 22 07:23 (6)	19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	05:14	05:05	05:42	06:36 07:03 (6)	07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:34 20 07:23 (6)	19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	05:13	05:06	05:43	06:37 07:05 (6)	07:32	07:29	08:26	08:52
	17:10		20:05	21:02	21:51	22:09	21:37	20:31 18 07:23 (6)	19:15	17:06	16:19	16:20
31	08:24		07:12		05:11		05:45	06:39 07:07 (6)		07:31		08:52
	17:12		20:06		21:52		21:35	20:29 16 07:23 (6)		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case				207	9		8	167	44			
Sun reduction				0.31	0.31		0.22	0.26	0.25			
Oper. time red.				1.00	1.00		1.00	1.00	1.00			
Wind dir. red.				0.64	0.65		0.65	0.64	0.64			
Total reduction				0.20	0.20		0.15	0.16	0.16			
Total, real				41	2		1	27	7			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** BT - H077

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:07	05:47	06:41	07:34	07:33	08:28
	16:23	17:14	18:10	20:08	21:04	21:54	22:08	21:33	20:26 14 07:22 (6)	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:10	05:07	05:48	06:43 07:10 (6)	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:06	21:55	22:08	21:31	20:24 11 07:21 (6)	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04	05:56	05:09	05:08	05:50	06:44 07:12 (6)	07:38	07:36	08:31
	16:25	17:18	18:14	20:12	21:07	21:56	22:08	21:29	20:22 8 07:20 (6)	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:52	06:46 07:13 (6)	07:40	07:38	08:32
	16:26	17:20	18:16	20:14	21:09	21:57	22:07	21:28	20:19 5 07:18 (6)	19:05	16:56	16:16
5	08:51	08:15	07:15	07:00	05:52	05:07	05:10	05:53	06:48 07:15 (6)	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	21:58	22:07	21:26	20:17 2 07:17 (6)	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:18	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:55 07:19 (6)	05:48	05:06	05:12	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19 2 07:21 (6)	21:15	22:00	22:05	21:22	20:12	18:58	16:51	16:14
8	08:50	08:09	07:08	06:52 07:16 (6)	05:46	05:05	05:13	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21 5 07:21 (6)	21:16	22:01	22:05	21:20	20:09	18:56	16:49	16:14
9	08:49	08:07	07:05	06:50 07:14 (6)	05:44	05:04	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23 8 07:22 (6)	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47 07:11 (6)	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25 11 07:22 (6)	21:20	22:03	22:03	21:16	20:05	18:51	16:45	16:13
11	08:48	08:04	07:01	06:45 07:09 (6)	05:40	05:04	05:16	06:04	06:59	07:53	07:52	08:41
	16:36	17:34	18:29	20:27 14 07:23 (6)	21:22	22:04	22:02	21:14	20:02	18:49	16:43	16:13
12	08:47	08:02	06:58	06:43 07:07 (6)	05:39	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29 16 07:23 (6)	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:12
13	08:47	07:59	06:56	06:40 07:04 (6)	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30 18 07:22 (6)	21:25	22:05	22:00	21:10	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38 07:02 (6)	05:35	05:03	05:20	06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32 20 07:22 (6)	21:27	22:06	21:59	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:36 07:00 (6)	05:33 06:32 (5)	05:02	05:21	06:11	07:06	08:00	08:00	08:45
	16:42	17:42	18:37	20:34 22 07:22 (6)	21:28 1 06:33 (5)	22:07	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:49	06:33 06:58 (6)	05:32 06:32 (5)	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36 23 07:21 (6)	21:30 3 06:35 (5)	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31 06:58 (6)	05:30 06:31 (5)	05:02	05:23	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38 22 07:20 (6)	21:32 5 06:36 (5)	22:08	21:56	21:01	19:47	18:34	16:34	16:13
18	08:42	07:49	06:44	06:29 06:58 (6)	05:29 06:31 (5)	05:02	05:25	06:16	07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40 21 07:19 (6)	21:33 4 06:35 (5)	22:08	21:55	20:59	19:45	18:32	16:32	16:13
19	08:41	07:47	06:41	06:26 07:00 (6)	05:27 06:30 (5)	05:02	05:26	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:42 18 07:18 (6)	21:35 3 06:33 (5)	22:08	21:53	20:57	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24 07:01 (6)	05:25 06:30 (5)	05:02	05:28	06:20	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43 15 07:16 (6)	21:37 2 06:32 (5)	22:09	21:52	20:54	19:40	18:28	16:30	16:13
21	08:38	07:43	06:36	06:22 07:02 (6)	05:24	05:02	05:29	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45 10 07:12 (6)	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:20	05:23	05:02	05:31	06:23 07:07 (6)	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	21:49	20:50 11 07:18 (6)	19:35	18:23	16:27	16:14
23	08:36	07:38	06:31	06:17	05:21	05:03	05:32 06:41 (5)	06:25 07:05 (6)	07:20	08:15	08:14	08:51
	16:57	17:58	18:52	20:49	21:41	22:09	21:48 1 06:42 (5)	20:48 15 07:20 (6)	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34 06:41 (5)	06:27 07:03 (6)	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46 2 06:43 (5)	20:45 18 07:21 (6)	19:30	18:19	16:25	16:15
25	08:33	07:34	06:26	06:13	05:18	05:03	05:35 06:42 (5)	06:28 07:01 (6)	07:23	07:19	08:18	08:52
	17:00	18:02	18:55	20:53	21:44	22:10	21:45 3 06:45 (5)	20:43 21 07:22 (6)	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04	05:37 06:42 (5)	06:30 07:00 (6)	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:55	21:46	22:10	21:43 4 06:46 (5)	20:41 23 07:23 (6)	19:25	17:14	16:22	16:17
27	08:30	07:29	06:22	06:08	05:16	05:04	05:38 06:42 (5)	06:32 07:00 (6)	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:42 4 06:46 (5)	20:38 23 07:23 (6)	19:23	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	05:15	05:05	05:40 06:42 (5)	06:34 07:01 (6)	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:49	22:09	21:40 2 06:44 (5)	20:36 22 07:23 (6)	19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	05:14	05:05	05:42	06:36 07:03 (6)	07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:34 20 07:23 (6)	19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	05:13	05:06	05:43	06:37 07:05 (6)	07:32	07:29	08:26	08:52
	17:10		20:05	21:02	21:51	22:09	21:37	20:31 18 07:23 (6)	19:15	17:06	16:19	16:20
31	08:24		07:12		05:11		05:45	06:39 07:07 (6)		07:31		08:52
	17:12		20:06		21:52		21:35	20:29 16 07:23 (6)		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case				225	18		16	187	40			
Sun reduction				0.31	0.31		0.22	0.26	0.25			
Oper. time red.				1.00	1.00		1.00	1.00	1.00			
Wind dir. red.				0.64	0.65		0.65	0.64	0.64			
Total reduction				0.20	0.20		0.15	0.16	0.16			
Total, real				44	4		2	31	6			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** BU - H078

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February			March	April	May			June		
1	08:52		08:22		16:36 (7)	07:24	07:09	06:00			05:10		05:47 (8)
	16:22		17:14	6	16:42 (7)	18:10	20:08	21:04			21:54	23	06:10 (8)
2	08:52		08:20		16:35 (7)	07:22	07:07	05:58			05:09		05:47 (8)
	16:23		17:16	9	16:44 (7)	18:11	20:10	21:05			21:55	22	06:09 (8)
3	08:52		08:18		16:34 (7)	07:20	07:04	05:56			05:08		05:48 (8)
	16:25		17:18	12	16:46 (7)	18:13	20:12	21:07			21:56	21	06:09 (8)
4	08:52		08:17		16:34 (7)	07:17	07:02	05:54			05:08		05:49 (8)
	16:26		17:20	14	16:48 (7)	18:15	20:14	21:09			21:57	20	06:09 (8)
5	08:51		08:15		16:34 (7)	07:15	06:59	05:52			05:07		05:49 (8)
	16:27		17:22	16	16:50 (7)	18:17	20:15	21:11			21:58	20	06:09 (8)
6	08:51		08:13		16:34 (7)	07:12	06:57	05:50			05:06		05:50 (8)
	16:28		17:24	19	16:53 (7)	18:19	20:17	21:13			21:59	19	06:09 (8)
7	08:50		08:11		16:34 (7)	07:10	06:54	05:48			05:05		05:50 (8)
	16:30		17:26	21	16:55 (7)	18:21	20:19	21:14			22:00	18	06:08 (8)
8	08:50		08:09		16:34 (7)	07:08	06:52	05:46			05:05		05:51 (8)
	16:31		17:28	23	16:57 (7)	18:23	20:21	21:16			22:01	17	06:08 (8)
9	08:49		08:07		16:35 (7)	07:05	06:50	05:44			05:04		05:51 (8)
	16:33		17:30	23	16:58 (7)	18:25	20:23	21:18			22:02	17	06:08 (8)
10	08:49		08:05		16:36 (7)	07:03	06:47	05:42			05:04		05:52 (8)
	16:34		17:32	22	16:58 (7)	18:27	20:25	21:20			22:03	16	06:08 (8)
11	08:48		08:03		16:36 (7)	07:00	06:45	05:40			05:03		05:52 (8)
	16:36		17:34	21	16:57 (7)	18:29	20:27	21:21			22:04	15	06:07 (8)
12	08:47		08:01		16:38 (7)	06:58	06:42	05:38			05:03		05:53 (8)
	16:37		17:36	18	16:56 (7)	18:31	20:28	21:23			22:05	14	06:07 (8)
13	08:46		07:59		16:39 (7)	06:56	06:40	05:37		06:04 (8)	05:03		05:54 (8)
	16:39		17:38	16	16:55 (7)	18:33	20:30	21:25	2	06:06 (8)	22:05	13	06:07 (8)
14	08:46		07:57		16:40 (7)	06:53	06:38	05:35		06:03 (8)	05:02		05:55 (8)
	16:40		17:40	12	16:52 (7)	18:34	20:32	21:27	4	06:07 (8)	22:06	12	06:07 (8)
15	08:45		07:55		16:44 (7)	06:51	06:35	05:33		06:01 (8)	05:02		05:56 (8)
	16:42		17:42	5	16:49 (7)	18:36	20:34	21:28	6	06:07 (8)	22:06	11	06:07 (8)
16	08:44		07:53			06:48	06:33	05:32		06:00 (8)	05:02		05:55 (8)
	16:44		17:44			18:38	20:36	21:30	9	06:09 (8)	22:07	11	06:06 (8)
17	08:43		07:51			06:46	06:31	05:30		05:58 (8)	05:02		05:56 (8)
	16:45		17:46			18:40	20:38	21:32	11	06:09 (8)	22:08	9	06:05 (8)
18	08:42		07:49			06:43	06:28	05:28		05:57 (8)	05:02		05:57 (8)
	16:47		17:48			18:42	20:40	21:33	12	06:09 (8)	22:08	9	06:06 (8)
19	08:40		07:47			06:41	06:26	05:27		05:55 (8)	05:02		05:58 (8)
	16:49		17:50			18:44	20:41	21:35	14	06:09 (8)	22:08	8	06:06 (8)
20	08:39		07:45			06:39	06:24	05:25		05:54 (8)	05:02		05:58 (8)
	16:51		17:52			18:46	20:43	21:36	16	06:10 (8)	22:09	8	06:06 (8)
21	08:38		07:42			06:36	06:22	05:24		05:53 (8)	05:02		05:58 (8)
	16:53		17:54			18:48	20:45	21:38	17	06:10 (8)	22:09	8	06:06 (8)
22	08:37		07:40			06:34	06:19	05:22		05:51 (8)	05:02		05:58 (8)
	16:54		17:56			18:49	20:47	21:40	19	06:10 (8)	22:09	8	06:06 (8)
23	08:35		07:38			06:31	06:17	05:21		05:50 (8)	05:02		05:58 (8)
	16:56		17:58			18:51	20:49	21:41	20	06:10 (8)	22:09	8	06:06 (8)
24	08:34		07:36			06:29	06:15	05:19		05:49 (8)	05:03		05:59 (8)
	16:58		18:00			18:53	20:51	21:43	21	06:10 (8)	22:09	8	06:07 (8)
25	08:33		07:33			06:26	06:13	05:18		05:48 (8)	05:03		05:58 (8)
	17:00		18:02			18:55	20:53	21:44	22	06:10 (8)	22:09	9	06:07 (8)
26	08:31		07:31			06:24	06:10	05:17		05:47 (8)	05:03		05:59 (8)
	17:02		18:04			18:57	20:54	21:46	24	06:11 (8)	22:09	9	06:08 (8)
27	08:30		07:29			06:21	06:08	05:16		05:46 (8)	05:04		05:58 (8)
	17:04		18:06			18:59	20:56	21:47	25	06:11 (8)	22:09	11	06:09 (8)
28	08:28		07:27			06:19	06:06	05:14		05:46 (8)	05:04		05:58 (8)
	17:06		18:08			19:01	20:58	21:48	25	06:11 (8)	22:09	12	06:10 (8)
29	08:27					07:16	06:04	05:13		05:46 (8)	05:05		05:57 (8)
	17:08					20:03	21:00	21:50	24	06:10 (8)	22:09	13	06:10 (8)
30	08:25					07:14	06:02	05:12		05:46 (8)	05:06		05:58 (8)
	17:10					20:04	21:02	21:51	24	06:10 (8)	22:09	13	06:11 (8)
31	08:23				16:36 (7)	07:11		05:11		05:47 (8)			
	17:12	4			16:40 (7)	20:06		21:52	23	06:10 (8)			
Potential sun hours	250		273			367	420	494			510		
Total, worst case		4			237					318			402
Sun reduction		0.16			0.19					0.31			0.26
Oper. time red.		1.00			1.00					1.00			1.00
Wind dir. red.		0.64			0.64					0.64			0.64
Total reduction		0.10			0.12					0.20			0.17
Total, real		0			29					64			67

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** BU - H078

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July			August			September			October			November			December		
1	05:06		05:57 (8)	05:46		06:41	07:34					07:32		16:05 (7)	08:27		
	22:08	14	06:11 (8)	21:33		20:26	19:12					17:02	22	16:27 (7)	16:17		
2	05:07		05:57 (8)	05:48		06:42	07:36					07:34		16:04 (7)	08:29		
	22:08	15	06:12 (8)	21:31		20:24	19:10					17:00	24	16:28 (7)	16:17		
3	05:08		05:57 (8)	05:50		06:44	07:38					07:36		16:04 (7)	08:30		
	22:08	16	06:13 (8)	21:29		20:21	19:08					16:58	22	16:26 (7)	16:16		
4	05:09		05:57 (8)	05:51		06:46	07:39					07:38		16:04 (7)	08:32		
	22:07	16	06:13 (8)	21:27		20:19	19:05					16:56	20	16:24 (7)	16:15		
5	05:10		05:57 (8)	05:53		06:48	07:41					07:40		16:04 (7)	08:33		
	22:06	17	06:14 (8)	21:26		20:17	19:03					16:54	18	16:22 (7)	16:15		
6	05:10		05:56 (8)	05:55		06:50	07:43					07:42		16:04 (7)	08:35		
	22:06	18	06:14 (8)	21:24		20:14	19:00					16:52	16	16:20 (7)	16:14		
7	05:11		05:55 (8)	05:56		06:51	07:45					07:44		16:04 (7)	08:36		
	22:05	20	06:15 (8)	21:22		20:12	18:58					16:50	14	16:18 (7)	16:14		
8	05:12		05:55 (8)	05:58		06:53	07:47					07:46		16:05 (7)	08:37		
	22:05	20	06:15 (8)	21:20		20:09	18:55					16:48	12	16:17 (7)	16:13		
9	05:13		05:55 (8)	06:00		06:55	07:49					07:48		16:06 (7)	08:39		
	22:04	21	06:16 (8)	21:18		20:07	18:53					16:47	9	16:15 (7)	16:13		
10	05:15		05:55 (8)	06:02		06:57	07:50					07:50		16:06 (7)	08:40		
	22:03	21	06:16 (8)	21:16		20:04	18:51					16:45	7	16:13 (7)	16:13		
11	05:16		05:55 (8)	06:03		06:58	07:52					07:52		16:07 (7)	08:41		
	22:02	22	06:17 (8)	21:14		20:02	18:48					16:43	4	16:11 (7)	16:12		
12	05:17		05:54 (8)	06:05		07:00	07:54					07:54		16:08 (7)	08:42		
	22:01	23	06:17 (8)	21:12		19:59	18:46					16:41	1	16:09 (7)	16:12		
13	05:18		05:55 (8)	06:07		07:02	07:56					07:56			08:43		
	22:00	24	06:19 (8)	21:09		19:57	18:44					16:40			16:12		
14	05:19		05:55 (8)	06:09		07:04	07:58					07:57			08:44		
	21:59	24	06:19 (8)	21:07		19:55	18:41					16:38			16:12		
15	05:21		05:54 (8)	06:10		07:05	08:00					07:59			08:45		
	21:58	25	06:19 (8)	21:05		19:52	18:39					16:37			16:12		
16	05:22		05:54 (8)	06:12		07:07	08:02					08:01			08:46		
	21:57	25	06:19 (8)	21:03		19:50	18:37					16:35			16:12		
17	05:23		05:55 (8)	06:14		07:09	08:04					08:03			08:47		
	21:56	24	06:19 (8)	21:01		19:47	18:34					16:34			16:12		
18	05:25		05:57 (8)	06:16		07:11	08:05					08:05			08:48		
	21:54	23	06:20 (8)	20:59		19:45	18:32					16:32			16:13		
19	05:26		05:58 (8)	06:18		07:13	08:07					08:07			08:48		
	21:53	22	06:20 (8)	20:56		19:42	18:30					16:31			16:13		
20	05:27		05:59 (8)	06:19		07:14	08:09					08:09			08:49		
	21:52	21	06:20 (8)	20:54		19:40	18:27					16:29			16:13		
21	05:29		06:01 (8)	06:21		07:16	08:11					08:10			08:50		
	21:51	19	06:20 (8)	20:52		19:37	18:25					16:28			16:14		
22	05:30		06:02 (8)	06:23		07:18	08:13					08:12			08:50		
	21:49	18	06:20 (8)	20:50		19:35	18:23					16:27			16:14		
23	05:32		06:03 (8)	06:25		07:20	08:15					08:14			08:51		
	21:48	17	06:20 (8)	20:47		19:32	18:21					16:26			16:15		
24	05:33		06:05 (8)	06:26		07:21	08:17					08:16			08:51		
	21:46	15	06:20 (8)	20:45		19:30	18:19					16:24			16:15		
25	05:35		06:06 (8)	06:28		07:23	07:19					08:18			08:51		
	21:45	13	06:19 (8)	20:43		19:27	17:16					16:23			16:16		
26	05:37		06:08 (8)	06:30		07:25	07:21					08:19			08:52		
	21:43	12	06:20 (8)	20:40		19:25	17:14					16:22			16:17		
27	05:38		06:09 (8)	06:32		07:27	07:23					16:12 (7)	08:21			08:52		
	21:41	10	06:19 (8)	20:38		19:22	17:12	8				16:20 (7)	16:21			16:17		
28	05:40		06:11 (8)	06:34		07:29	07:25					16:09 (7)	08:23			08:52		
	21:40	8	06:19 (8)	20:36		19:20	17:10	13				16:22 (7)	16:20			16:18		
29	05:41		06:12 (8)	06:35		07:30	07:27					16:07 (7)	08:24			08:52		
	21:38	5	06:17 (8)	20:33		19:17	17:08	17				16:24 (7)	16:19			16:19		
30	05:43		06:14 (8)	06:37		07:32	07:28					16:07 (7)	08:26			08:52		
	21:36	3	06:17 (8)	20:31		19:15	17:06	19				16:26 (7)	16:18			16:20		
31	05:45			06:39			07:30					16:06 (7)				08:52		
	21:35			20:29			17:04	21				16:27 (7)				16:21		
Potential sun hours	512			460		382	328						259			233		
Total, worst case		531						78						169				
Sun reduction		0.22						0.23						0.20				
Oper. time red.		1.00						1.00						1.00				
Wind dir. red.		0.64						0.64						0.64				
Total reduction		0.14						0.14						0.13				
Total, real		76						11						21				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** BV - H079

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March		April		May		June
1	08:52	08:22	07:24		07:09		07:33 (2)	06:00	06:26 (1)	05:11
	16:23	17:14	18:10		20:08	5	07:38 (2)	21:04	5	06:31 (1)	21:54
2	08:52	08:20	07:22		07:07		07:32 (2)	05:58	06:24 (1)	05:10
	16:24	17:16	18:12		20:10	8	07:40 (2)	21:06	8	06:32 (1)	21:55
3	08:52	08:19	07:20		07:04		07:33 (2)	05:56	06:22 (1)	05:09
	16:25	17:18	18:14		20:12	7	07:40 (2)	21:07	10	06:32 (1)	21:56
4	08:52	08:17	07:17		07:02		07:35 (2)	05:54	06:20 (1)	05:08
	16:26	17:20	18:16		20:14	7	07:42 (2)	21:09	12	06:32 (1)	21:57
5	08:51	08:15	07:15		07:00		07:35 (2)	05:52	06:18 (1)	05:07
	16:27	17:22	18:18		20:16	6	07:41 (2)	21:11	13	06:31 (1)	21:58
6	08:51	08:13	07:13		06:57		07:37 (2)	05:50	06:16 (1)	05:06
	16:29	17:24	18:19		20:18	5	07:42 (2)	21:13	15	06:31 (1)	22:00
7	08:51	08:11	07:10		06:55		07:38 (2)	05:48	06:15 (1)	05:06
	16:30	17:26	18:21		20:19	5	07:43 (2)	21:15	16	06:31 (1)	22:01
8	08:50	08:09	07:08		06:52		07:37 (2)	05:46	06:13 (1)	05:05
	16:31	17:28	18:23		20:21	5	07:42 (2)	21:16	18	06:31 (1)	22:01
9	08:50	08:08	07:06		06:50		07:38 (2)	05:44	06:11 (1)	05:04
	16:33	17:30	18:25		20:23	5	07:43 (2)	21:18	19	06:30 (1)	22:02
10	08:49	08:06	07:03		06:48		07:38 (2)	05:42	06:09 (1)	05:04
	16:34	17:32	18:27		20:25	4	07:42 (2)	21:20	20	06:29 (1)	22:03
11	08:48	08:04	07:01		06:45		07:38 (2)	05:40	06:11 (1)	05:04
	16:36	17:34	18:29		20:27	4	07:42 (2)	21:22	18	06:29 (1)	22:04
12	08:47	08:02	06:58		06:43		07:38 (2)	05:39	06:11 (1)	05:03
	16:37	17:36	18:31		20:29	4	07:42 (2)	21:23	16	06:27 (1)	22:05
13	08:47	08:00	06:56		06:40		07:37 (2)	05:37	06:12 (1)	05:03
	16:39	17:38	18:33		20:31	3	07:40 (2)	21:25	14	06:26 (1)	22:06
14	08:46	07:58	06:53		06:38		07:37 (2)	05:35	06:14 (1)	05:03
	16:41	17:40	18:35		20:32	3	07:40 (2)	21:27	10	06:24 (1)	22:06
15	08:45	07:55	06:51		06:36		07:37 (2)	05:33	06:17 (1)	05:02
	16:42	17:42	18:37		20:34	3	07:40 (2)	21:29	4	06:21 (1)	22:07
16	08:44	07:53	06:49		06:33		07:37 (2)	05:32		05:02
	16:44	17:44	18:39		20:36	2	07:39 (2)	21:30		22:07
17	08:43	07:51	06:46		06:31		07:35 (2)	05:30		05:02
	16:46	17:46	18:40		20:38	2	07:37 (2)	21:32		22:08
18	08:42	07:49	06:44		06:29		07:35 (2)	05:29		05:02
	16:47	17:48	18:42		20:40	1	07:36 (2)	21:34		22:08
19	08:41	07:47	06:41		06:26		07:34 (2)	05:27		05:02
	16:49	17:50	18:44		20:42	1	07:35 (2)	21:35		22:09
20	08:40	07:45	06:39		06:24			05:25		05:02
	16:51	17:52	18:46		20:44			21:37		22:09
21	08:38	07:43	06:36		06:22			05:24		05:02
	16:53	17:54	18:48		20:45			21:38		22:09
22	08:37	07:40	06:34		06:20			05:23		05:02
	16:55	17:56	18:50		20:47			21:40		22:09
23	08:36	07:38	06:31		06:17			05:21		05:03
	16:57	17:58	18:52		20:49			21:41		22:10
24	08:34	07:36	06:29		06:15			05:20		05:03
	16:58	18:00	18:53		20:51			21:43		22:10
25	08:33	07:34	06:26		06:13			05:18		05:03
	17:00	18:02	18:55		20:53			21:44		22:10
26	08:32	07:31	06:24		06:11			05:17		05:04
	17:02	18:04	18:57		20:55			21:46		22:10
27	08:30	07:29	06:22		06:09			05:16		05:04
	17:04	18:06	18:59		20:56			21:47		22:10
28	08:29	07:27	06:19		06:06			05:15		05:05
	17:06	18:08	19:01		20:58			21:49		22:09
29	08:27		07:17		06:04			05:14		05:05
	17:08		20:03		21:00			21:50		22:09
30	08:25		07:14		06:02		06:28 (1)	05:13		05:06
	17:10		20:05		21:02	3	06:31 (1)	21:51		22:09
31	08:24		07:12	07:35 (2)				05:12		
	17:12		20:06	1 07:36 (2)				21:53		
Potential sun hours	250	273	367		420			494		510
Total, worst case				1		83		198		
Sun reduction				0.22		0.31		0.31		
Oper. time red.				1.00		1.00		1.00		
Wind dir. red.				0.64		0.64		0.65		
Total reduction				0.14		0.20		0.20		
Total, real				0		16		40		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** BV - H079

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August		September		October	November	December
1	05:07		05:47		06:21 (1)	06:41	07:37 (2)	07:34	07:33	08:28
	22:09		21:33	17	06:38 (1)	20:27	4	07:41 (2)	19:13	17:02	16:18
2	05:07		05:48		06:21 (1)	06:43		07:37 (2)	07:36	07:35	08:29
	22:08		21:31	18	06:39 (1)	20:24	4	07:41 (2)	19:10	17:00	16:17
3	05:08		05:50		06:20 (1)	06:44		07:36 (2)	07:38	07:37	08:31
	22:08		21:30	20	06:40 (1)	20:22	5	07:41 (2)	19:08	16:58	16:16
4	05:09		05:52		06:22 (1)	06:46		07:35 (2)	07:40	07:38	08:32
	22:07		21:28	19	06:41 (1)	20:19	4	07:39 (2)	19:05	16:56	16:16
5	05:10		05:53		06:23 (1)	06:48		07:34 (2)	07:42	07:40	08:34
	22:07		21:26	17	06:40 (1)	20:17	5	07:39 (2)	19:03	16:54	16:15
6	05:11		05:55		06:25 (1)	06:50		07:33 (2)	07:43	07:42	08:35
	22:06		21:24	16	06:41 (1)	20:14	5	07:38 (2)	19:01	16:52	16:14
7	05:12		05:57		06:27 (1)	06:52		07:31 (2)	07:45	07:44	08:36
	22:05		21:22	14	06:41 (1)	20:12	6	07:37 (2)	18:58	16:51	16:14
8	05:13		05:58		06:28 (1)	06:53		07:29 (2)	07:47	07:46	08:38
	22:05		21:20	13	06:41 (1)	20:10	7	07:36 (2)	18:56	16:49	16:14
9	05:14		06:00		06:30 (1)	06:55		07:28 (2)	07:49	07:48	08:39
	22:04		21:18	11	06:41 (1)	20:07	7	07:35 (2)	18:53	16:47	16:13
10	05:15		06:02		06:31 (1)	06:57		07:25 (2)	07:51	07:50	08:40
	22:03		21:16	9	06:40 (1)	20:05	8	07:33 (2)	18:51	16:45	16:13
11	05:16		06:04		06:33 (1)	06:59		07:25 (2)	07:53	07:52	08:41
	22:02		21:14	7	06:40 (1)	20:02	6	07:31 (2)	18:49	16:43	16:13
12	05:17		06:05		06:35 (1)	07:00		07:27 (2)	07:54	07:54	08:42
	22:01		21:12	5	06:40 (1)	20:00	1	07:28 (2)	18:46	16:42	16:13
13	05:18		06:07		06:36 (1)	07:02			07:56	07:56	08:43
	22:00		21:10	2	06:38 (1)	19:57			18:44	16:40	16:12
14	05:20		06:09			07:04			07:58	07:58	08:44
	21:59		21:08			19:55			18:42	16:39	16:12
15	05:21		06:11			07:06			08:00	08:00	08:45
	21:58		21:05			19:52			18:39	16:37	16:12
16	05:22		06:13			07:07			08:02	08:02	08:46
	21:57		21:03			19:50			18:37	16:35	16:12
17	05:24		06:14			07:09			08:04	08:03	08:47
	21:56		21:01			19:47			18:35	16:34	16:13
18	05:25		06:16			07:11			08:06	08:05	08:48
	21:55		20:59			19:45			18:32	16:32	16:13
19	05:26		06:18			07:13			08:08	08:07	08:49
	21:53		20:57			19:42			18:30	16:31	16:13
20	05:28		06:20			07:15			08:09	08:09	08:49
	21:52		20:54			19:40			18:28	16:30	16:13
21	05:29		06:21			07:16			08:11	08:11	08:50
	21:51		20:52			19:37			18:25	16:28	16:14
22	05:31		06:23			07:18			08:13	08:13	08:50
	21:49		20:50			19:35			18:23	16:27	16:14
23	05:32		06:25			07:20			08:15	08:14	08:51
	21:48		20:48			19:32			18:21	16:26	16:15
24	05:34		06:27		07:38 (2)	07:22			08:17	08:16	08:51
	21:46		20:45	1	07:39 (2)	19:30			18:19	16:25	16:15
25	05:35		06:28		07:38 (2)	07:23			07:19	08:18	08:52
	21:45		20:43	1	07:39 (2)	19:28			17:17	16:23	16:16
26	05:37		06:30		07:38 (2)	07:25			07:21	08:20	08:52
	21:43		20:41	2	07:40 (2)	19:25			17:15	16:22	16:17
27	05:38		06:32		07:39 (2)	07:27			07:23	08:21	08:52
	21:42		20:38	2	07:41 (2)	19:23			17:12	16:21	16:18
28	05:40		06:34		07:38 (2)	07:29			07:25	08:23	08:52
	21:40		20:36	4	07:42 (2)	19:20			17:10	16:20	16:18
29	05:42	06:26 (1)	06:36		07:38 (2)	07:31			07:27	08:25	08:52
	21:38	7 06:33 (1)	20:34	3	07:41 (2)	19:18			17:08	16:19	16:19
30	05:43	06:24 (1)	06:37		07:38 (2)	07:32			07:29	08:26	08:53
	21:37	12 06:36 (1)	20:31	3	07:41 (2)	19:15			17:06	16:19	16:20
31	05:45	06:23 (1)	06:39		07:38 (2)				07:31		08:53
	21:35	14 06:37 (1)	20:29	4	07:42 (2)				17:04		16:21
Potential sun hours	512		460		382		328	259	233	
Total, worst case	33		188		62					
Sun reduction	0.22		0.26		0.25					
Oper. time red.	1.00		1.00		1.00					
Wind dir. red.	0.65		0.65		0.64					
Total reduction	0.15		0.17		0.16					
Total, real	5		31		10					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** BW - H081

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February	March	April	May	June	July	August	September	October	November			December	
1	08:52		08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:40	07:34	07:32			08:27	15:40 (8)
	16:22		17:13	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02			16:17	1 15:41 (8)
2	08:52		08:20	07:22	07:06	05:57	05:09	05:07	05:48	06:42	07:36	07:34			08:29	
	16:23		17:15	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00			16:16	
3	08:52		08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:37	07:36			08:30	
	16:24		17:17	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58			16:16	
4	08:51		08:16	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38			08:32	
	16:26		17:19	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56			16:15	
5	08:51		08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40			08:33	
	16:27		17:21	18:17	20:15	21:11	21:58	22:06	21:25	20:17	19:03	16:54			16:14	
6	08:51		08:13	07:12	06:57	05:49	05:06	05:10	05:55	06:49	07:43	07:42			08:35	
	16:28		17:23	18:19	20:17	21:12	21:59	22:06	21:24	20:14	19:00	16:52			16:14	
7	08:50		08:11	07:10	06:54	05:47	05:05	05:11	05:56	06:51	07:45	07:44			08:36	
	16:30		17:25	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50			16:13	
8	08:50		08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46			08:37	
	16:31		17:28	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48			16:13	
9	08:49		08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48			08:39	
	16:32		17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46			16:13	
10	08:49		08:05	07:03	06:47	05:42	05:03	05:14	06:01	06:56	07:50	07:50			08:40	
	16:34		17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45			16:12	
11	08:48	15:58 (8)	08:03	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52			08:41	
	16:35	1 15:59 (8)	17:34	18:29	20:26	21:21	22:04	22:02	21:14	20:02	18:48	16:43			16:12	
12	08:47	15:58 (8)	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54			08:42	
	16:37	3 16:01 (8)	17:36	18:31	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41			16:12	
13	08:46	15:59 (8)	07:59	06:55	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:56			08:43	
	16:39	3 16:02 (8)	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40			16:12	
14	08:45	15:59 (8)	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57			08:44	
	16:40	5 16:04 (8)	17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38			16:12	
15	08:45	15:59 (8)	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59		15:28 (8)	08:45	
	16:42	7 16:06 (8)	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36	6	15:34 (8)	16:12	
16	08:44	16:00 (8)	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01		15:27 (8)	08:46	
	16:44	8 16:08 (8)	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	10	15:37 (8)	16:12	
17	08:43	15:59 (8)	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03		15:29 (8)	08:47	
	16:45	10 16:09 (8)	17:46	18:40	20:38	21:32	22:07	21:56	21:01	19:47	18:34	16:33	10	15:39 (8)	16:12	
18	08:41	15:59 (8)	07:49	06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05	08:05		15:30 (8)	08:48	
	16:47	10 16:09 (8)	17:48	18:42	20:39	21:33	22:08	21:54	20:59	19:44	18:32	16:32	11	15:41 (8)	16:12	
19	08:40	15:59 (8)	07:47	06:41	06:26	05:26	05:01	05:26	06:17	07:12	08:07	08:07		15:33 (8)	08:48	
	16:49	10 16:09 (8)	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	10	15:43 (8)	16:13	
20	08:39	15:58 (8)	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09		15:34 (8)	08:49	
	16:51	11 16:09 (8)	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29	10	15:44 (8)	16:13	
21	08:38	15:59 (8)	07:42	06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11	08:10		15:35 (8)	08:50	
	16:52	10 16:09 (8)	17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	10	15:45 (8)	16:13	
22	08:37	15:59 (8)	07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12		15:35 (8)	08:50	
	16:54	10 16:09 (8)	17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	11	15:46 (8)	16:14	
23	08:35	15:58 (8)	07:38	06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15	08:14		15:35 (8)	08:51	
	16:56	10 16:08 (8)	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	10	15:45 (8)	16:14	
24	08:34	15:57 (8)	07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16		15:36 (8)	08:51	
	16:58	11 16:08 (8)	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24	10	15:46 (8)	16:15	
25	08:33	15:56 (8)	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17		15:37 (8)	08:51	
	17:00	10 16:06 (8)	18:02	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	10	15:47 (8)	16:16	
26	08:31	15:54 (8)	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19		15:38 (8)	08:52	
	17:02	10 16:04 (8)	18:03	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22	8	15:46 (8)	16:16	
27	08:30	15:57 (8)	07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21		15:38 (8)	08:52	
	17:04	5 16:02 (8)	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	7	15:45 (8)	16:17	
28	08:28		07:26	06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24	08:23		15:39 (8)	08:52	
	17:06		18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	5	15:44 (8)	16:18	
29	08:27			07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24		15:40 (8)	08:52	
	17:08			20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	4	15:44 (8)	16:19	
30	08:25			07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26		15:39 (8)	08:52	
	17:10			20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	3	15:42 (8)	16:20	
31	08:23			07:11		05:11		05:44	06:39		07:30				08:52	
	17:12			20:06		21:52		21:35	20:29		17:04				16:21	
Potential sun hours	250		273	367	420	494	510	513	460	382	328	259			233	
Total, worst case		134											135			1
Sun reduction		0.16											0.20			0.12
Oper. time red.		1.00											1.00			1.00
Wind dir. red.		0.65											0.65			0.65
Total reduction		0.11											0.13			0.08
Total, real		14											17			0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** BX - H083

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May		June		July		August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00		05:10		20:54 (6)	05:06	21:03 (6)	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:10	20:08	21:03		21:54	24	21:18 (6)	22:08	19	21:22 (6)	21:33	20:26	19:12	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58		05:09		20:54 (6)	05:07	21:02 (6)	05:48	06:42	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:05		21:55	24	21:18 (6)	22:08	20	21:22 (6)	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56		05:09		20:55 (6)	05:08	21:02 (6)	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12	21:07		21:56	23	21:18 (6)	22:07	20	21:22 (6)	21:29	20:21	19:08	16:58	16:16
4	08:51	08:17	07:17	07:02	05:54		05:08		20:55 (6)	05:09	21:02 (6)	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14	21:09		21:57	23	21:18 (6)	22:07	21	21:23 (6)	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52		05:07		20:55 (6)	05:10	21:02 (6)	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11		21:58	23	21:18 (6)	22:06	22	21:24 (6)	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50		05:06		20:56 (6)	05:11	21:01 (6)	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:17	21:13		21:59	22	21:18 (6)	22:06	22	21:23 (6)	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48		05:06		20:56 (6)	05:12	21:01 (6)	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14		22:00	22	21:18 (6)	22:05	23	21:24 (6)	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46		05:05		20:57 (6)	05:13	21:01 (6)	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16		22:01	21	21:18 (6)	22:04	23	21:24 (6)	21:20	20:09	18:55	16:49	16:13
9	08:49	08:07	07:05	06:50	05:44		05:04		20:57 (6)	05:14	21:01 (6)	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18		22:02	20	21:17 (6)	22:04	24	21:25 (6)	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42		05:04		20:58 (6)	05:15	21:01 (6)	06:02	06:57	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20		22:03	20	21:18 (6)	22:03	24	21:25 (6)	21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:00	06:45	05:40		05:03		20:57 (6)	05:16	21:01 (6)	06:04	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21		22:04	20	21:17 (6)	22:02	24	21:25 (6)	21:14	20:02	18:48	16:43	16:13
12	08:47	08:01	06:58	06:43	05:38		05:03		20:58 (6)	05:17	21:02 (6)	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23		22:04	19	21:17 (6)	22:01	25	21:27 (6)	21:12	19:59	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	05:37		05:03		20:59 (6)	05:18	21:02 (6)	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25		22:05	18	21:17 (6)	22:00	24	21:26 (6)	21:09	19:57	18:44	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35		05:02		20:59 (6)	05:19	21:02 (6)	06:09	07:04	07:58	07:57	08:44
	16:40	17:40	18:35	20:32	21:27		22:06	19	21:18 (6)	21:59	23	21:25 (6)	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	05:33		05:02		21:00 (6)	05:21	21:02 (6)	06:11	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28		22:06	18	21:18 (6)	21:58	22	21:24 (6)	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32	20:56 (6)	05:02		21:00 (6)	05:22	21:01 (6)	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	2 20:58 (6)	22:07	18	21:18 (6)	21:57	21	21:22 (6)	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	20:55 (6)	05:02		21:01 (6)	05:23	21:01 (6)	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	4 20:59 (6)	22:07	17	21:18 (6)	21:56	20	21:21 (6)	21:01	19:47	18:34	16:34	16:12
18	08:41	07:49	06:43	06:28	05:28	20:54 (6)	05:02		21:01 (6)	05:25	21:02 (6)	06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:40	21:33	7 21:01 (6)	22:08	17	21:18 (6)	21:54	19	21:21 (6)	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	20:53 (6)	05:02		21:01 (6)	05:26	21:02 (6)	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	9 21:02 (6)	22:08	17	21:18 (6)	21:53	17	21:19 (6)	20:56	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	20:53 (6)	05:02		21:02 (6)	05:28	21:02 (6)	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	11 21:04 (6)	22:09	16	21:18 (6)	21:52	16	21:18 (6)	20:54	19:40	18:28	16:29	16:13
21	08:38	07:42	06:36	06:22	05:24	20:53 (6)	05:02		21:02 (6)	05:29	21:03 (6)	06:21	07:16	08:11	08:10	08:49
	16:53	17:54	18:48	20:45	21:38	12 21:05 (6)	22:09	16	21:18 (6)	21:50	14	21:17 (6)	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	20:52 (6)	05:02		21:02 (6)	05:30	21:03 (6)	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	14 21:06 (6)	22:09	16	21:18 (6)	21:49	13	21:16 (6)	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	20:52 (6)	05:02		21:02 (6)	05:32	21:04 (6)	06:25	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41	16 21:08 (6)	22:09	17	21:19 (6)	21:48	11	21:15 (6)	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	20:52 (6)	05:03		21:02 (6)	05:33	21:04 (6)	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	17 21:09 (6)	22:09	17	21:19 (6)	21:46	9	21:13 (6)	20:45	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18	20:53 (6)	05:03		21:02 (6)	05:35	21:04 (6)	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:52	21:44	18 21:11 (6)	22:09	17	21:19 (6)	21:45	8	21:12 (6)	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	20:53 (6)	05:04		21:03 (6)	05:37	21:05 (6)	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:45	19 21:12 (6)	22:09	17	21:20 (6)	21:43	6	21:11 (6)	20:40	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	20:53 (6)	05:04		21:02 (6)	05:38	21:05 (6)	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	20 21:13 (6)	22:09	18	21:20 (6)	21:41	4	21:09 (6)	20:38	19:22	17:12	16:21	16:17
28	08:28	07:27	06:19	06:06	05:15	20:53 (6)	05:05		21:03 (6)	05:40	21:07 (6)	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	22 21:15 (6)	22:09	18	21:21 (6)	21:40	1	21:08 (6)	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	20:53 (6)	05:05		21:02 (6)	05:41		06:35	07:30	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	23 21:16 (6)	22:09	18	21:20 (6)	21:38		20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	20:53 (6)	05:06		21:02 (6)	05:43		06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	24 21:17 (6)	22:09	19	21:21 (6)	21:36		20:31	19:15	17:06	16:18	16:20
31	08:23		07:12		05:11	20:53 (6)				05:45		06:39		07:30		08:52
	17:12		20:06		21:52	25 21:18 (6)				21:35		20:29		17:04		16:21
Potential sun hours	250	273	367	420	494		510			512		460	382	328	259	233
Total, worst case						243		574		495						
Sun reduction						0.31		0.26		0.22						
Oper. time red.						1.00		1.00		1.00						
Wind dir. red.						0.61		0.61		0.61						
Total reduction						0.19		0.16		0.14						
Total, real						46		90		67						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** BY - H084

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March	April	May	June	July	August	September	October	November	December
1	08:52		08:22	16:17 (11)	07:24	07:09	06:00	05:10	05:06	05:46	06:40	07:34	07:32	08:27
	16:22		17:13 8	16:25 (11)	18:09	20:08	21:03	21:53	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52		08:20		07:22	07:06	05:57	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23		17:15		18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:16
3	08:52		08:18		07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:37	07:36	08:30
	16:24		17:17		18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58	16:16
4	08:51		08:16		07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38	08:32
	16:26		17:19		18:15	20:13	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51		08:15		07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40	08:33
	16:27		17:21		18:17	20:15	21:11	21:58	22:06	21:25	20:16	19:02	16:54	16:14
6	08:51		08:13		07:12	06:57	05:49	05:06	05:10	05:55	06:49	07:43	07:42	08:35
	16:28		17:23		18:19	20:17	21:12	21:59	22:06	21:23	20:14	19:00	16:52	16:14
7	08:50		08:11		07:10	06:54	05:47	05:05	05:11	05:56	06:51	07:45	07:44	08:36
	16:29		17:25		18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:13
8	08:50		08:09		07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37
	16:31		17:27		18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48	16:13
9	08:49		08:07		07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48	08:38
	16:32		17:29		18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46	16:13
10	08:48		08:05		07:03	06:47	05:42	05:03	05:14	06:01	06:56	07:50	07:50 15:48 (11)	08:40
	16:34		17:31		18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:50	16:45 8	15:56 (11) 16:12
11	08:48		08:03		07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52	15:46 (11) 08:41
	16:35		17:34		18:29	20:26	21:21	22:04	22:02	21:13	20:02	18:48	16:43 12	15:58 (11) 16:12
12	08:47		08:01		06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54	15:44 (11) 08:42
	16:37		17:36		18:30	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41 16	16:00 (11) 16:12
13	08:46		07:59		06:55	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:55	15:43 (11) 08:43
	16:39		17:38		18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40 18	16:01 (11) 16:12
14	08:45		07:57		06:53	06:38	05:35	05:02	05:19	06:08	07:03	07:58 17:52 (9)	07:57	15:42 (11) 08:44
	16:40		17:40		18:34	20:32	21:26	22:06	21:59	21:07	19:54	18:41 8 18:00 (9)	16:38 20	16:02 (11) 16:12
15	08:44		07:55		06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00 17:49 (9)	07:59	15:42 (11) 08:45
	16:42		17:42		18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39 13 18:02 (9)	16:36 21	16:03 (11) 16:12
16	08:43	16:07 (11)	07:53	17:13 (9)	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:01 17:47 (9)	08:01	15:42 (11) 08:46
	16:43 1	16:08 (11)	17:44 2	17:15 (9)	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36 17 18:04 (9)	16:35 19	16:01 (11) 16:12
17	08:42	16:06 (11)	07:51	17:13 (9)	06:46	06:30	05:30	05:01	05:23	06:14	07:09	08:03 17:45 (9)	08:03	15:41 (11) 08:47
	16:45 4	16:10 (11)	17:46 4	17:17 (9)	18:40	20:38	21:31	22:07	21:56	21:01	19:47	18:34 20 18:05 (9)	16:33 18	15:59 (11) 16:12
18	08:41	16:06 (11)	07:49	17:12 (9)	06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05 17:44 (9)	08:05	15:41 (11) 08:47
	16:47 6	16:12 (11)	17:48 6	17:18 (9)	18:42	20:39	21:33	22:08	21:54	20:58	19:44	18:32 18 18:02 (9)	16:32 17	15:58 (11) 16:12
19	08:40	16:07 (11)	07:47	17:12 (9)	06:41	06:26	05:26	05:01	05:26	06:17	07:12	08:07 17:43 (9)	08:07	15:41 (11) 08:48
	16:49 7	16:14 (11)	17:50 9	17:21 (9)	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:29 17 18:00 (9)	16:30 15	15:56 (11) 16:13
20	08:39	16:06 (11)	07:44	17:12 (9)	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09 17:43 (9)	08:09	15:42 (11) 08:49
	16:51 10	16:16 (11)	17:52 11	17:23 (9)	18:46	20:43	21:36	22:09	21:52	20:54	19:39	18:27 15 17:58 (9)	16:29 13	15:55 (11) 16:13
21	08:38	16:07 (11)	07:42	17:12 (9)	06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11 17:42 (9)	08:10	15:42 (11) 08:49
	16:52 11	16:18 (11)	17:54 14	17:26 (9)	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25 13 17:55 (9)	16:28 11	15:53 (11) 16:13
22	08:37	16:07 (11)	07:40	17:11 (9)	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13 17:42 (9)	08:12	15:42 (11) 08:50
	16:54 12	16:19 (11)	17:56 16	17:27 (9)	18:49	20:47	21:39	22:09	21:49	20:50	19:34	18:23 11 17:53 (9)	16:27 10	15:52 (11) 16:14
23	08:35	16:07 (11)	07:38	17:12 (9)	06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15 17:42 (9)	08:14	15:43 (11) 08:50
	16:56 15	16:22 (11)	17:58 17	17:29 (9)	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21 9 17:51 (9)	16:25 7	15:50 (11) 16:14
24	08:34	16:07 (11)	07:35	17:13 (9)	06:28	06:15	05:19	05:02	05:33	06:26	07:21	08:17 17:42 (9)	08:16	15:43 (11) 08:51
	16:58 17	16:24 (11)	17:59 19	17:32 (9)	18:53	20:50	21:42	22:09	21:46	20:45	19:30	18:18 6 17:48 (9)	16:24 6	15:49 (11) 16:15
25	08:33	16:08 (11)	07:33	17:13 (9)	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19 16:42 (9)	08:17	15:44 (11) 08:51
	17:00 18	16:26 (11)	18:01 19	17:32 (9)	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16 4 16:46 (9)	16:23 4	15:48 (11) 16:16
26	08:31	16:09 (11)	07:31	17:15 (9)	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	15:45 (11) 08:52
	17:02 19	16:28 (11)	18:03 16	17:31 (9)	18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	16:22 2	15:47 (11) 16:16
27	08:30	16:10 (11)	07:29	17:16 (9)	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:22	08:21	08:52
	17:04 21	16:31 (11)	18:05 12	17:28 (9)	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	16:11 (11)	07:26	17:22 (9)	06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24	08:22	08:52
	17:06 19	16:30 (11)	18:07 2	17:24 (9)	19:00	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27	16:11 (11)			07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52
	17:08 18	16:29 (11)			20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25	16:12 (11)			07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26	08:52
	17:09 16	16:28 (11)			20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23	16:14 (11)			07:11		05:11		05:44	06:39		07:30		08:52
	17:11 12	16:26 (11)			20:06		21:52		21:35	20:28		17:04		16:21
Potential sun hours	250		273		367	420	494	510	513	460	382	328	259	233
Total, worst case	206		155									151	217	
Sun reduction	0.16		0.19									0.23	0.20	
Oper. time red.	1.00		1.00									1.00	1.00	
Wind dir. red.	0.65		0.65									0.65	0.65	
Total reduction	0.10		0.13									0.15	0.13	
Total, real	22		20									22	28	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** BZ - H085

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:33	08:28
	16:22	17:14	18:10	20:08	21:04	21:54	22:09	21:33	20:26	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:09	05:07	05:48	06:43	07:36	07:34	08:29
	16:23	17:16	18:12	20:10	21:06	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04	05:56	05:08	05:08	05:50	06:44	07:38	07:36	08:31
	16:25	17:18	18:14	20:12	21:07	21:56	22:08	21:29	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:51	06:46	07:40	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:28	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52	05:07	05:10	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	21:58	22:07	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:10	05:55	06:50	07:43	07:42	08:35
	16:28	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:51	08:11	07:10	06:55	05:48	05:05	05:11	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:15	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:38
	16:31	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:56	16:49	16:13
9	08:49	08:07	07:05	06:50	05:44	05:04	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51	16:45	16:13
11	08:48	08:04	07:01	06:45	05:40	05:03	05:16	06:04	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:22	22:04	22:02	21:14	20:02	18:48	16:43	16:12
12	08:47	08:02	06:58	06:43	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:12
13	08:47	07:59	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	22:00	21:10	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:58	08:44
	16:40	17:40	18:35	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	05:33	05:02	05:21	06:11	07:06	08:00	08:00	08:45
	16:42	17:42	18:36	20:34	21:28	22:07	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:34	16:12
18	08:42	07:49	06:44	06:29	05:28	05:02	05:25	06:16	07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:55	20:59	19:45	18:32	16:32	16:13
19	08:41	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:42	21:35	22:09	21:53	20:57	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:37	22:09	21:52	20:54	19:40	18:28	16:29	16:13
21	08:38	07:42	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:36	07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:48	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:33	06:27	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:10	21:46	20:45	19:30	18:19	16:24	16:15
25	08:33	07:34	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:52
	17:00	18:02	18:55	20:53	21:44	22:10	21:45	20:43	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	05:03	05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:55	21:46	22:10	21:43	20:41	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:22	17:12	16:21	16:17
28	08:28	07:27	06:19	06:06	05:15	05:04	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:49	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	05:13	05:05	05:41	06:35	07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:34	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:29	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:37	20:31	19:15	17:06	16:18	16:20
31	08:24		07:12		05:11		05:45	06:39		07:31		08:52
	17:12		20:06		21:53		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	513	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** CA - H086

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March			April			May	June	July	August			September			October	November	December
1	08:52	08:22	07:24			07:09		19:19 (11)	06:00	05:10	05:06	05:46			06:40		19:46 (10)	07:34	07:32	08:27
	16:22	17:13	18:09			20:08	18	19:37 (11)	21:03	21:53	22:08	21:33			20:26	12	19:58 (10)	19:12	17:02	16:17
2	08:52	08:20	07:22			07:06		19:19 (11)	05:57	05:09	05:07	05:48			06:42		19:46 (10)	07:36	07:34	08:29
	16:23	17:15	18:11			20:10	16	19:35 (11)	21:05	21:55	22:08	21:31			20:24	9	19:55 (10)	19:10	17:00	16:16
3	08:52	08:18	07:19			07:04		19:21 (11)	05:55	05:08	05:08	05:49			06:44		19:48 (10)	07:37	07:36	08:30
	16:24	17:17	18:13			20:12	12	19:33 (11)	21:07	21:56	22:07	21:29			20:21	5	19:53 (10)	19:07	16:58	16:16
4	08:51	08:16	07:17			07:01		19:25 (11)	05:53	05:07	05:08	05:51			06:46		19:49 (10)	07:39	07:38	08:32
	16:26	17:19	18:15			20:13	2	19:27 (11)	21:09	21:57	22:07	21:27			20:19	2	19:51 (10)	19:05	16:56	16:15
5	08:51	08:15	07:15			06:59			05:51	05:07	05:09	05:53			06:48			07:41	07:40	08:33
	16:27	17:21	18:17			20:15			21:11	21:58	22:06	21:25			20:16			19:02	16:54	16:14
6	08:51	08:13	07:12			06:57			05:49	05:06	05:10	05:55			06:49			07:43	07:42	08:34
	16:28	17:23	18:19			20:17			21:12	21:59	22:06	21:23			20:14			19:00	16:52	16:14
7	08:50	08:11	07:10			06:54			05:47	05:05	05:11	05:56			06:51			07:45	07:44	08:36
	16:30	17:25	18:21			20:19			21:14	22:00	22:05	21:21			20:12			18:58	16:50	16:13
8	08:50	08:09	07:07			06:52		19:52 (10)	05:46	05:05	05:12	05:58			06:53			07:47	07:46	08:37
	16:31	17:27	18:23			20:21	2	19:54 (10)	21:16	22:01	22:04	21:19			20:09			18:55	16:48	16:13
9	08:49	08:07	07:05			06:49		19:50 (10)	05:44	05:04	05:13	06:00			06:55		19:15 (11)	07:48	07:48	08:38
	16:32	17:29	18:25			20:23	5	19:55 (10)	21:18	22:02	22:04	21:17			20:07	11	19:26 (11)	18:53	16:46	16:13
10	08:48	08:05	07:03			06:47		19:48 (10)	05:42	05:03	05:14	06:01			06:56		19:13 (11)	07:50	07:50	08:40
	16:34	17:32	18:27			20:25	9	19:57 (10)	21:19	22:03	22:03	21:15			20:04	15	19:28 (11)	18:50	16:45	16:12
11	08:48	08:03	07:00			06:45		19:47 (10)	05:40	05:03	05:15	06:03			06:58		19:11 (11)	07:52	07:52	08:41
	16:35	17:34	18:29			20:26	12	19:59 (10)	21:21	22:04	22:02	21:13			20:02	18	19:29 (11)	18:48	16:43	16:12
12	08:47	08:01	06:58			06:42		19:46 (10)	05:38	05:03	05:17	06:05			07:00		19:10 (11)	07:54	07:53	08:42
	16:37	17:36	18:30			20:28	14	20:00 (10)	21:23	22:04	22:01	21:11			19:59	20	19:30 (11)	18:46	16:41	16:12
13	08:46	07:59	06:55			06:40		19:45 (10)	05:36	05:02	05:18	06:07			07:02		19:08 (11)	07:56	07:55	08:43
	16:39	17:38	18:32			20:30	17	20:02 (10)	21:25	22:05	22:00	21:09			19:57	21	19:29 (11)	18:43	16:40	16:12
14	08:45	07:57	06:53			06:38		19:44 (10)	05:35	05:02	05:19	06:08			07:03		19:08 (11)	07:58	07:57	08:44
	16:40	17:40	18:34			20:32	20	20:04 (10)	21:26	22:06	21:59	21:07			19:54	18	19:26 (11)	18:41	16:38	16:12
15	08:44	07:55	06:51			06:35		19:43 (10)	05:33	05:02	05:20	06:10		20:00 (10)	07:05		19:08 (11)	08:00	07:59	08:45
	16:42	17:42	18:36			20:34	22	20:05 (10)	21:28	22:06	21:58	21:05	7	20:07 (10)	19:52	16	19:24 (11)	18:39	16:36	16:12
16	08:43	07:53	06:48			06:33		19:43 (10)	05:31	05:02	05:22	06:12		19:57 (10)	07:07		19:07 (11)	08:01	08:01	08:46
	16:44	17:44	18:38			20:36	24	20:07 (10)	21:30	22:07	21:57	21:03	14	20:11 (10)	19:49	14	19:21 (11)	18:36	16:35	16:12
17	08:42	07:51	06:46			06:30		19:43 (10)	05:30	05:02	05:23	06:14		19:55 (10)	07:09		19:07 (11)	08:03	08:03	08:47
	16:45	17:46	18:40			20:38	26	20:09 (10)	21:31	22:07	21:55	21:01	18	20:13 (10)	19:47	12	19:19 (11)	18:34	16:33	16:12
18	08:41	07:49	06:43			06:28		19:43 (10)	05:28	05:01	05:24	06:16		19:52 (10)	07:11		19:07 (11)	08:05	08:05	08:47
	16:47	17:48	18:42			20:39	28	20:11 (10)	21:33	22:08	21:54	20:58	22	20:14 (10)	19:44	9	19:16 (11)	18:32	16:32	16:12
19	08:40	07:46	06:41			06:26		19:42 (10)	05:26	05:01	05:26	06:17		19:51 (10)	07:12		19:08 (11)	08:07	08:07	08:48
	16:49	17:50	18:44			20:41	30	20:12 (10)	21:35	22:08	21:53	20:56	24	20:15 (10)	19:42	6	19:14 (11)	18:29	16:31	16:13
20	08:39	07:44	06:38			06:24		19:43 (10)	05:25	05:02	05:27	06:19		19:50 (10)	07:14		19:08 (11)	08:09	08:08	08:49
	16:51	17:52	18:46			20:43	29	20:12 (10)	21:36	22:08	21:52	20:54	26	20:16 (10)	19:39	3	19:11 (11)	18:27	16:29	16:13
21	08:38	07:42	06:36			06:21		19:43 (10)	05:23	05:02	05:29	06:21		19:48 (10)	07:16			08:11	08:10	08:49
	16:52	17:54	18:47			20:45	29	20:12 (10)	21:38	22:09	21:50	20:52	28	20:16 (10)	19:37			18:25	16:28	16:13
22	08:37	07:40	06:33			06:19		19:44 (10)	05:22	05:02	05:30	06:23		19:48 (10)	07:18			08:13	08:12	08:50
	16:54	17:56	18:49			20:47	27	20:11 (10)	21:39	22:09	21:49	20:49	29	20:17 (10)	19:34			18:23	16:27	16:14
23	08:35	07:38	06:31		18:23 (11)	06:17		19:45 (10)	05:21	05:02	05:32	06:24		19:47 (10)	07:19			08:15	08:14	08:50
	16:56	17:57	18:51	2	18:25 (11)	20:49	25	20:10 (10)	21:41	22:09	21:47	20:47	30	20:17 (10)	19:32			18:21	16:25	16:14
24	08:34	07:35	06:28		18:21 (11)	06:15		19:46 (10)	05:19	05:02	05:33	06:26		19:46 (10)	07:21			08:17	08:16	08:51
	16:58	17:59	18:53	5	18:26 (11)	20:50	23	20:09 (10)	21:42	22:09	21:46	20:45	30	20:16 (10)	19:30			18:18	16:24	16:15
25	08:32	07:33	06:26		18:20 (11)	06:12		19:46 (10)	05:18	05:03	05:35	06:28		19:46 (10)	07:23			07:19	08:17	08:51
	17:00	18:01	18:55	9	18:29 (11)	20:52	21	20:07 (10)	21:44	22:09	21:44	20:43	28	20:14 (10)	19:27			17:16	16:23	16:16
26	08:31	07:31	06:24		18:18 (11)	06:10		19:48 (10)	05:17	05:03	05:36	06:30		19:46 (10)	07:25			07:20	08:19	08:51
	17:02	18:03	18:57	12	18:30 (11)	20:54	17	20:05 (10)	21:45	22:09	21:43	20:40	26	20:12 (10)	19:25			17:14	16:22	16:16
27	08:30	07:29	06:21		18:18 (11)	06:08		19:50 (10)	05:15	05:04	05:38	06:32		19:45 (10)	07:27			07:22	08:21	08:52
	17:04	18:05	18:59	14	18:32 (11)	20:56	12	20:02 (10)	21:47	22:09	21:41	20:38	24	20:09 (10)	19:22			17:12	16:21	16:17
28	08:28	07:26	06:19		18:17 (11)	06:06		19:55 (10)	05:14	05:04	05:39	06:33		19:45 (10)	07:28			07:24	08:22	08:52
	17:06	18:07	19:00	16	18:33 (11)	20:58	2	19:57 (10)	21:48	22:09	21:40	20:36	22	20:07 (10)	19:20			17:10	16:20	16:18
29	08:26		07:16		19:17 (11)	06:04			05:13	05:05	05:41	06:35		19:45 (10)	07:30			07:26	08:24	08:52
	17:08		20:02	19	19:36 (11)	21:00			21:50	22:09	21:38	20:33	20	20:05 (10)	19:17			17:08	16:19	16:19
30	08:25		07:14		19:17 (11)	06:02			05:12	05:05	05:43	06:37		19:45 (10)	07:32			07:28	08:26	08:52
	17:10		20:04	20	19:37 (11)	21:01			21:51	22:08	21:36	20:31	17	20:02 (10)	19:15			17:06	16:18	16:20
31	08:23		07:11		19:18 (11)				05:11		05:44	06:39		19:45 (10)				07:30		08:52
	17:11		20:06	20	19:38 (11)				21:52		21:35	20:28	15	20:00 (10)				17:04		16:21
Potential sun hours	250	273	367			420			494	510	512	460			382			328	259	233
Total, worst case				117			442						380			191				
Sun reduction				0.22			0.31						0.26			0.25				
Oper. time red.				1.00			1.00						1.00			1.00				
Wind dir. red.				0.65			0.63						0.63			0.64				
Total reduction				0.14			0.19						0.16			0.16				
Total, real				17			85						61			31				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** CB - H087

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April		May	June	July	August		September		October	November	December
1	08:52	08:22	07:24	07:09		06:00	05:10	05:07	05:47		06:41		07:34	07:33	08:28
	16:23	17:14	18:10	20:08		21:04	21:54	22:08	21:33		20:26	4	07:12 (6)	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07		05:58	05:10	05:07	05:48		06:43		07:36	07:34	08:29
	16:24	17:16	18:12	20:10		21:06	21:55	22:08	21:31		20:24		19:10	17:00	16:17
3	08:52	08:19	07:20	07:04		05:56	05:09	05:08	05:50		06:44		07:38	07:36	08:31
	16:25	17:18	18:14	20:12		21:07	21:56	22:08	21:29		20:22		19:08	16:58	16:16
4	08:52	08:17	07:17	07:02		05:54	05:08	05:09	05:52		06:46		07:40	07:38	08:32
	16:26	17:20	18:16	20:14		21:09	21:57	22:07	21:28		20:19		19:05	16:56	16:16
5	08:51	08:15	07:15	07:00		05:52	05:07	05:10	05:53		06:48		07:41	07:40	08:33
	16:27	17:22	18:17	20:16		21:11	21:58	22:07	21:26		20:17		19:03	16:54	16:15
6	08:51	08:13	07:13	06:57		05:50	05:06	05:11	05:55		06:50		07:43	07:42	08:35
	16:29	17:24	18:19	20:18		21:13	21:59	22:06	21:24		20:14		19:00	16:52	16:14
7	08:50	08:11	07:10	06:55		05:48	05:06	05:12	05:57		06:51		07:45	07:44	08:36
	16:30	17:26	18:21	20:19		21:15	22:00	22:05	21:22		20:12		18:58	16:51	16:14
8	08:50	08:09	07:08	06:52		05:46	05:05	05:13	05:58		06:53		07:47	07:46	08:37
	16:31	17:28	18:23	20:21		21:16	22:01	22:05	21:20		20:09		18:56	16:49	16:14
9	08:49	08:07	07:05	06:50		05:44	05:04	05:14	06:00		06:55		07:49	07:48	08:39
	16:33	17:30	18:25	20:23		21:18	22:02	22:04	21:18		20:07		18:53	16:47	16:13
10	08:49	08:05	07:03	06:47		05:42	05:04	05:15	06:02		06:57		07:51	07:50	08:40
	16:34	17:32	18:27	20:25		21:20	22:03	22:03	21:16		20:05		18:51	16:45	16:13
11	08:48	08:04	07:01	06:45	07:09 (6)	05:40	05:04	05:16	06:04		06:59		07:52	07:52	08:41
	16:36	17:34	18:29	20:27	4 07:13 (6)	21:22	22:04	22:02	21:14		20:02		18:49	16:43	16:13
12	08:47	08:02	06:58	06:43	07:07 (6)	05:39	05:03	05:17	06:05		07:00		07:54	07:54	08:42
	16:37	17:36	18:31	20:29	7 07:14 (6)	21:23	22:05	22:01	21:12		20:00		18:46	16:42	16:12
13	08:47	07:59	06:56	06:40	07:04 (6)	05:37	05:03	05:18	06:07		07:02		07:56	07:56	08:43
	16:39	17:38	18:33	20:30	10 07:14 (6)	21:25	22:05	22:00	21:10		19:57		18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	07:02 (6)	05:35	05:03	05:20	06:09		07:04		07:58	07:58	08:44
	16:41	17:40	18:35	20:32	12 07:14 (6)	21:27	22:06	21:59	21:07		19:55		18:41	16:38	16:12
15	08:45	07:55	06:51	06:36	07:00 (6)	05:33	05:02	05:21	06:11		07:06		08:00	08:00	08:45
	16:42	17:42	18:37	20:34	15 07:15 (6)	21:28	22:07	21:58	21:05		19:52		18:39	16:37	16:12
16	08:44	07:53	06:49	06:33	06:58 (6)	05:32	05:02	05:22	06:12		07:07		08:02	08:01	08:46
	16:44	17:44	18:38	20:36	17 07:15 (6)	21:30	22:07	21:57	21:03		19:50		18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	06:55 (6)	05:30	05:02	05:23	06:14	07:04 (6)	07:09		08:04	08:03	08:47
	16:46	17:46	18:40	20:38	19 07:14 (6)	21:32	22:08	21:56	21:01	5 07:09 (6)	19:47		18:34	16:34	16:13
18	08:42	07:49	06:44	06:29	06:53 (6)	05:29	05:02	05:25	06:16	07:00 (6)	07:11		08:06	08:05	08:48
	16:47	17:48	18:42	20:40	21 07:14 (6)	21:33	22:08	21:55	20:59	13 07:13 (6)	19:45		18:32	16:32	16:13
19	08:41	07:47	06:41	06:26	06:51 (6)	05:27	05:02	05:26	06:18	06:58 (6)	07:13		08:07	08:07	08:48
	16:49	17:50	18:44	20:42	23 07:14 (6)	21:35	22:08	21:53	20:57	16 07:14 (6)	19:42		18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	06:49 (6)	05:25	05:02	05:28	06:20	06:56 (6)	07:14		08:09	08:09	08:49
	16:51	17:52	18:46	20:43	24 07:13 (6)	21:37	22:09	21:52	20:54	19 07:15 (6)	19:40		18:28	16:30	16:13
21	08:38	07:43	06:36	06:22	06:49 (6)	05:24	05:02	05:29	06:21	06:55 (6)	07:16		08:11	08:11	08:50
	16:53	17:54	18:48	20:45	23 07:12 (6)	21:38	22:09	21:51	20:52	21 07:16 (6)	19:37		18:25	16:28	16:14
22	08:37	07:40	06:34	06:20	06:50 (6)	05:23	05:02	05:31	06:23	06:54 (6)	07:18		08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21 07:11 (6)	21:40	22:09	21:49	20:50	22 07:16 (6)	19:35		18:23	16:27	16:14
23	08:36	07:38	06:31	06:17	06:51 (6)	05:21	05:03	05:32	06:25	06:53 (6)	07:20		08:15	08:14	08:51
	16:57	17:58	18:52	20:49	18 07:09 (6)	21:41	22:09	21:48	20:48	24 07:17 (6)	19:32		18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	06:52 (6)	05:20	05:03	05:34	06:27	06:55 (6)	07:22		08:17	08:16	08:51
	16:58	18:00	18:53	20:51	16 07:08 (6)	21:43	22:09	21:46	20:45	23 07:18 (6)	19:30		18:19	16:25	16:15
25	08:33	07:34	06:26	06:13	06:54 (6)	05:18	05:03	05:35	06:28	06:56 (6)	07:23		07:19	08:18	08:52
	17:00	18:02	18:55	20:53	12 07:06 (6)	21:44	22:10	21:45	20:43	21 07:17 (6)	19:27		17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	06:59 (6)	05:17	05:04	05:37	06:30	06:58 (6)	07:25		07:21	08:19	08:52
	17:02	18:04	18:57	20:55	2 07:01 (6)	21:46	22:09	21:43	20:41	19 07:17 (6)	19:25		17:14	16:22	16:17
27	08:30	07:29	06:22	06:08		05:16	05:04	05:38	06:32	07:00 (6)	07:27		07:23	08:21	08:52
	17:04	18:06	18:59	20:56		21:47	22:09	21:42	20:38	17 07:17 (6)	19:23		17:12	16:21	16:18
28	08:28	07:27	06:19	06:06		05:15	05:05	05:40	06:34	07:01 (6)	07:29		07:25	08:23	08:52
	17:06	18:08	19:01	20:58		21:49	22:09	21:40	20:36	15 07:16 (6)	19:20		17:10	16:20	16:18
29	08:27		07:17	06:04		05:14	05:05	05:42	06:36	07:03 (6)	07:31		07:27	08:24	08:52
	17:08		20:03	21:00		21:50	22:09	21:38	20:34	12 07:15 (6)	19:18		17:08	16:19	16:19
30	08:25		07:14	06:02		05:13	05:06	05:43	06:37	07:05 (6)	07:32		07:29	08:26	08:52
	17:10		20:05	21:02		21:51	22:09	21:37	20:31	10 07:15 (6)	19:15		17:06	16:19	16:20
31	08:24		07:12			05:11		05:45	06:39	07:07 (6)			07:31		08:52
	17:12		20:06			21:52		21:35	20:29	7 07:14 (6)			17:04		16:21
Potential sun hours	250	273	367	420		494	510	512	460		382		328	259	233
Total, worst case					244					244		4			
Sun reduction					0.31					0.26		0.25			
Oper. time red.					1.00					1.00		1.00			
Wind dir. red.					0.64					0.64		0.64			
Total reduction					0.20					0.16		0.16			
Total, real					48					40		1			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** CC - H089

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:07	05:46	06:41	07:34	07:32	08:27
	16:23	17:14	18:10	20:08	21:04	21:54	22:08	21:33	20:26	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:10	05:07	05:48	06:43	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:14	20:12	21:07	21:56	22:08	21:29	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:52	06:46	07:40	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:28	20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	06:59	05:52	05:07	05:10	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	21:58	22:07	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:55	05:48	05:06	05:12	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:56	16:49	16:14
9	08:49	08:07	07:05	06:50	05:44	05:04	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51	16:45	16:13
11	08:48	08:03	07:01	06:45	05:40	05:04	05:16	06:04	06:59	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:13
12	08:47	08:01	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	22:00	21:10	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:03	05:20	06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00	07:59	08:45
	16:42	17:42	18:37	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:34	16:13
18	08:42	07:49	06:44	06:29	05:28	05:02	05:25	06:16	07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:42	21:35	22:08	21:53	20:57	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:28	06:20	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:37	22:09	21:52	20:54	19:40	18:28	16:30	16:13
21	08:38	07:42	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	05:02	05:31	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:14	08:51
	16:57	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:19	16:25	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	21:44	22:09	21:45	20:43	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:41	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:22	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	05:14	05:05	05:42	06:35	07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:34	19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	05:13	05:06	05:43	06:37	07:32	07:29	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:37	20:31	19:15	17:06	16:19	16:20
31	08:24		07:12		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** CD - H090

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May		June		July		August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00		05:10		05:06		05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:10	20:08	21:03		21:54	23	21:19 (6)	22:08	20 21:33	20:26	19:12	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58		05:09		20:57 (6)	05:07	21:05 (6)	05:48	06:42	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:05		21:55	23	21:20 (6)	22:08	19 21:24 (6)	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56		05:09		20:58 (6)	05:08	21:05 (6)	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12	21:07		21:56	23	21:21 (6)	22:07	20 21:25 (6)	21:29	20:21	19:08	16:58	16:16
4	08:51	08:17	07:17	07:02	05:54		05:08		20:58 (6)	05:09	21:05 (6)	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14	21:09		21:57	22	21:20 (6)	22:07	21 21:26 (6)	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52		05:07		20:58 (6)	05:10	21:05 (6)	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11		21:58	22	21:20 (6)	22:06	21 21:26 (6)	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50		05:06		20:59 (6)	05:11	21:04 (6)	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:17	21:13		21:59	22	21:21 (6)	22:06	22 21:26 (6)	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48		05:06		20:59 (6)	05:12	21:04 (6)	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14		22:00	21	21:20 (6)	22:05	22 21:26 (6)	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46		05:05		20:59 (6)	05:13	21:04 (6)	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16		22:01	21	21:20 (6)	22:04	23 21:27 (6)	21:20	20:09	18:55	16:49	16:13
9	08:49	08:07	07:05	06:50	05:44		05:04		20:59 (6)	05:14	21:04 (6)	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18		22:02	21	21:20 (6)	22:04	23 21:27 (6)	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42		05:04		21:00 (6)	05:15	21:04 (6)	06:02	06:57	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20		22:03	20	21:20 (6)	22:03	23 21:27 (6)	21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:00	06:45	05:40		05:03		21:00 (6)	05:16	21:04 (6)	06:04	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21		22:04	19	21:19 (6)	22:02	23 21:27 (6)	21:14	20:02	18:48	16:43	16:13
12	08:47	08:01	06:58	06:43	05:38		05:03		21:01 (6)	05:17	21:05 (6)	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23		22:04	19	21:20 (6)	22:01	22 21:27 (6)	21:12	19:59	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	05:37		05:03		21:01 (6)	05:18	21:05 (6)	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25		22:05	19	21:20 (6)	22:00	21 21:26 (6)	21:09	19:57	18:44	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35		05:02		21:02 (6)	05:19	21:05 (6)	06:09	07:04	07:58	07:57	08:44
	16:40	17:40	18:35	20:32	21:27		22:06	18	21:20 (6)	21:59	20 21:25 (6)	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	05:33		05:02		21:02 (6)	05:21	21:05 (6)	06:11	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28		22:06	18	21:20 (6)	21:58	19 21:24 (6)	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32		05:02		21:03 (6)	05:22	21:04 (6)	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30		22:07	17	21:20 (6)	21:57	18 21:22 (6)	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	20:58 (6)	05:02		21:03 (6)	05:23	21:04 (6)	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	1 20:59 (6)	22:07	18	21:21 (6)	21:56	17 21:21 (6)	21:01	19:47	18:34	16:34	16:12
18	08:41	07:49	06:43	06:28	05:28	20:58 (6)	05:02		21:04 (6)	05:25	21:05 (6)	06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:40	21:33	3 21:01 (6)	22:08	17	21:21 (6)	21:54	16 21:21 (6)	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	20:57 (6)	05:02		21:04 (6)	05:26	21:05 (6)	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	5 21:02 (6)	22:08	17	21:21 (6)	21:53	14 21:19 (6)	20:56	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	20:57 (6)	05:02		21:04 (6)	05:28	21:05 (6)	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	7 21:04 (6)	22:09	17	21:21 (6)	21:52	13 21:18 (6)	20:54	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:22	05:24	20:56 (6)	05:02		21:04 (6)	05:29	21:06 (6)	06:21	07:16	08:11	08:10	08:49
	16:53	17:54	18:48	20:45	21:38	9 21:05 (6)	22:09	17	21:21 (6)	21:50	11 21:17 (6)	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	20:55 (6)	05:02		21:04 (6)	05:30	21:06 (6)	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	11 21:06 (6)	22:09	17	21:21 (6)	21:49	10 21:16 (6)	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	20:55 (6)	05:02		21:05 (6)	05:32	21:07 (6)	06:25	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41	13 21:08 (6)	22:09	17	21:22 (6)	21:48	8 21:15 (6)	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	20:56 (6)	05:03		21:05 (6)	05:33	21:07 (6)	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	13 21:09 (6)	22:09	17	21:22 (6)	21:46	6 21:13 (6)	20:45	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18	20:56 (6)	05:03		21:04 (6)	05:35	21:07 (6)	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:52	21:44	15 21:11 (6)	22:09	18	21:22 (6)	21:45	5 21:12 (6)	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	20:56 (6)	05:04		21:05 (6)	05:37	21:09 (6)	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:45	16 21:12 (6)	22:09	17	21:22 (6)	21:43	2 21:11 (6)	20:40	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	20:56 (6)	05:04		21:05 (6)	05:38		06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	17 21:13 (6)	22:09	17	21:22 (6)	21:41		20:38	19:22	17:12	16:21	16:17
28	08:28	07:27	06:19	06:06	05:15	20:56 (6)	05:05		21:05 (6)	05:40		06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	19 21:15 (6)	22:09	18	21:23 (6)	21:40		20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	20:56 (6)	05:05		21:05 (6)	05:41		06:35	07:30	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	20 21:16 (6)	22:09	18	21:23 (6)	21:38		20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	20:56 (6)	05:06		21:05 (6)	05:43		06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	21 21:17 (6)	22:09	19	21:24 (6)	21:36		20:31	19:15	17:06	16:18	16:20
31	08:23		07:12		05:11	20:56 (6)				05:45		06:39		07:30		08:52
	17:12		20:06		21:52	22 21:18 (6)				21:35		20:29		17:04		16:21
Potential sun hours	250	273	367	420	494		510			512		460	382	328	259	233
Total, worst case						192		572		439						
Sun reduction						0.31		0.26		0.22						
Oper. time red.						1.00		1.00		1.00						
Wind dir. red.						0.60		0.60		0.60						
Total reduction						0.19		0.16		0.14						
Total, real						36		89		59						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** CE - H091

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:07	05:46	06:41	07:34	07:32	08:27
	16:23	17:14	18:10	20:08	21:04	21:54	22:08	21:33	20:26	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:10	05:07	05:48	06:43	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:14	20:12	21:07	21:56	22:08	21:29	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:52	06:46	07:40	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:28	20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	06:59	05:52	05:07	05:10	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	21:58	22:06	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:55	05:48	05:06	05:12	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:56	16:49	16:14
9	08:49	08:07	07:05	06:50	05:44	05:04	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51	16:45	16:13
11	08:48	08:03	07:01	06:45	05:40	05:04	05:16	06:04	06:59	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:13
12	08:47	08:01	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	22:00	21:10	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:03	05:20	06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:34	16:13
18	08:42	07:49	06:44	06:29	05:28	05:02	05:25	06:16	07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:42	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:28	06:20	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:37	22:09	21:52	20:54	19:40	18:28	16:30	16:13
21	08:38	07:42	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	05:02	05:31	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:14	08:51
	16:57	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:19	16:25	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	21:44	22:09	21:45	20:43	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:41	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:22	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	05:14	05:05	05:42	06:35	07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:34	19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:29	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:37	20:31	19:15	17:06	16:19	16:20
31	08:24		07:12		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** CF - H093

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52 16:23	08:22 17:14	07:24 18:10	07:09 20:08	06:00 21:04	06:42 (6) 12 06:54 (6) 21:54	05:11 27 06:17 (5) 22:08	05:50 (5) 18 06:19 (5) 21:33	05:07 06:01 (5) 20:26	05:47 19:13	06:41 17:02	07:34 16:18	07:33 16:18	08:28
2	08:52 16:24	08:20 17:16	07:22 18:12	07:07 20:10	05:58 21:06	06:46 (6) 4 06:50 (6) 21:55	05:10 26 06:17 (5) 22:08	05:51 (5) 19 06:19 (5) 21:31	05:07 06:00 (5) 20:24	05:48 19:10	06:43 17:00	07:36 16:17	07:34 16:17	08:29
3	08:52 16:25	08:19 17:18	07:20 18:14	07:04 20:12	05:56 21:07	05:09 21:56	05:52 (5) 25 06:17 (5) 22:08	05:08 20 06:20 (5) 21:29	06:00 (5) 20:22	05:50 19:08	06:44 16:58	07:38 16:16	07:36 16:16	08:31
4	08:52 16:26	08:17 17:20	07:17 18:16	07:02 20:14	05:54 21:09	05:08 21:57	05:52 (5) 25 06:17 (5) 22:07	05:09 21 06:21 (5) 21:28	06:00 (5) 20:19	05:52 19:05	06:46 16:56	07:40 16:16	07:38 16:16	08:32
5	08:51 16:27	08:15 17:22	07:15 18:17	07:00 20:16	05:52 21:11	05:07 21:58	05:52 (5) 24 06:16 (5) 22:07	05:10 22 06:22 (5) 21:26	06:00 (5) 20:17	05:53 19:03	06:48 16:54	07:41 16:15	07:40 16:15	08:33
6	08:51 16:29	08:13 17:24	07:13 18:19	06:57 20:18	05:50 21:13	05:06 21:59	05:54 (5) 22 06:16 (5) 22:06	05:11 23 06:23 (5) 21:24	06:00 (5) 20:14	05:55 19:00	06:50 16:52	07:43 16:14	07:42 16:14	08:35
7	08:50 16:30	08:11 17:26	07:10 18:21	06:55 20:19	05:48 21:15	05:06 22:00	05:54 (5) 22 06:16 (5) 22:05	05:12 23 06:23 (5) 21:22	06:00 (5) 20:12	05:57 18:58	06:51 16:51	07:45 16:14	07:44 16:14	08:36
8	08:50 16:31	08:09 17:28	07:08 18:23	06:52 20:21	05:46 21:16	05:05 22:01	05:55 (5) 21 06:16 (5) 22:05	05:13 24 06:24 (5) 21:20	06:00 (5) 20:09	05:58 18:56	06:53 16:49	07:47 16:14	07:46 16:14	08:37
9	08:49 16:33	08:07 17:30	07:05 18:25	06:50 20:23	05:44 21:18	05:04 22:02	05:55 (5) 20 06:15 (5) 22:04	05:14 25 06:24 (5) 21:18	05:59 (5) 20:07	06:00 18:53	06:55 16:47	07:49 16:13	07:48 16:13	08:39
10	08:49 16:34	08:05 17:32	07:03 18:27	06:47 20:25	05:42 21:20	05:04 22:03	05:56 (5) 19 06:15 (5) 22:03	05:15 26 06:25 (5) 21:16	05:59 (5) 20:05	06:02 18:51	06:57 16:45	07:51 16:13	07:50 16:13	08:40
11	08:48 16:36	08:04 17:34	07:01 18:29	06:45 20:27	05:40 21:22	05:04 22:04	05:57 (5) 18 06:15 (5) 22:02	05:16 26 06:25 (5) 21:14	05:59 (5) 7 07:00 (6) 20:02	06:04 18:49	06:59 16:43	07:52 16:13	07:52 16:13	08:41
12	08:47 16:37	08:02 17:36	06:58 18:31	06:43 20:29	05:39 21:23	05:03 22:05	05:57 (5) 17 06:14 (5) 22:01	05:17 27 06:26 (5) 21:12	05:59 (5) 13 07:03 (6) 20:00	06:05 18:46	07:00 16:42	07:54 16:12	07:54 16:12	08:42
13	08:47 16:39	07:59 17:38	06:56 18:33	06:40 20:30	05:37 21:25	05:03 22:05	05:57 (5) 17 06:14 (5) 22:00	05:18 23 06:21 (5) 21:10	05:58 (5) 17 07:04 (6) 19:57	06:07 18:44	06:47 (6) 07:02 16:40	07:56 16:12	07:56 16:12	08:43
14	08:46 16:41	07:57 17:40	06:53 18:35	06:38 20:32	05:35 21:27	05:03 22:06	05:58 (5) 17 06:15 (5) 21:59	05:20 21 06:19 (5) 21:07	05:58 (5) 19 07:05 (6) 19:55	06:09 18:41	06:46 (6) 07:04 16:38	07:58 16:12	07:58 16:12	08:44
15	08:45 16:42	07:55 17:42	06:51 18:37	06:36 20:34	05:33 21:28	05:02 22:07	05:59 (5) 16 06:15 (5) 21:58	05:21 20 06:18 (5) 21:05	05:58 (5) 20 07:06 (6) 19:52	06:11 18:39	06:46 (6) 07:06 16:37	08:00 16:12	08:00 16:12	08:45
16	08:44 16:44	07:53 17:44	06:49 18:38	06:33 20:36 2	06:58 (6) 07:00 (6) 21:30	05:32 06:00 (5) 1 06:01 (5) 22:07	05:59 (5) 16 06:15 (5) 21:57	05:22 20 06:17 (5) 21:03	05:57 (5) 22 07:06 (6) 19:50	06:12 18:37	06:44 (6) 07:07 16:35	08:02 16:12	08:01 16:12	08:46
17	08:43 16:46	07:51 17:46	06:46 18:40	06:31 20:38 5	06:55 (6) 07:00 (6) 21:32	05:30 05:58 (5) 2 06:00 (5) 22:08	05:02 14 06:14 (5) 21:56	06:00 (5) 19 06:17 (5) 21:01	05:23 24 07:07 (6) 19:47	05:58 (5) 06:14 18:34	06:43 (6) 07:09 16:34	08:04 16:13	08:03 16:13	08:47
18	08:42 16:47	07:49 17:48	06:44 18:42	06:29 20:40 8	06:53 (6) 07:01 (6) 21:33	05:29 05:57 (5) 4 06:01 (5) 22:08	05:02 14 06:14 (5) 21:55	06:00 (5) 18 06:16 (5) 20:59	05:25 23 07:08 (6) 19:45	05:58 (5) 06:16 18:32	06:45 (6) 07:11 16:32	08:06 16:13	08:05 16:13	08:48
19	08:41 16:49	07:47 17:50	06:41 18:44	06:26 20:42 11	06:51 (6) 07:02 (6) 21:35	05:27 05:55 (5) 6 06:01 (5) 22:08	05:02 14 06:14 (5) 21:53	06:00 (5) 17 06:15 (5) 20:57	05:26 21 07:07 (6) 19:42	05:58 (5) 06:18 18:30	06:46 (6) 07:13 16:31	08:07 16:13	08:07 16:13	08:48
20	08:39 16:51	07:45 17:52	06:39 18:46	06:24 20:43 13	06:49 (6) 07:02 (6) 21:37	05:25 05:54 (5) 8 06:02 (5) 22:09	05:02 13 06:14 (5) 21:52	06:01 (5) 15 06:15 (5) 20:54	05:28 19 07:07 (6) 19:40	06:00 (5) 06:20 18:28	06:48 (6) 07:14 16:30	08:09 16:13	08:09 16:13	08:49
21	08:38 16:53	07:42 17:54	06:36 18:48	06:22 20:45 15	06:46 (6) 07:01 (6) 21:38	05:24 05:53 (5) 10 06:03 (5) 22:09	05:02 13 06:14 (5) 21:51	06:01 (5) 13 06:14 (5) 20:52	05:29 17 07:07 (6) 19:37	06:01 (5) 06:21 18:25	06:50 (6) 07:16 16:28	08:11 16:14	08:11 16:14	08:50
22	08:37 16:55	07:40 17:56	06:34 18:50	06:20 20:47 18	06:44 (6) 07:02 (6) 21:40	05:23 05:52 (5) 12 06:04 (5) 22:09	05:02 13 06:14 (5) 21:49	06:01 (5) 11 06:13 (5) 20:50	05:31 15 07:06 (6) 19:35	06:02 (5) 06:23 18:23	06:51 (6) 07:18 16:27	08:13 16:14	08:12 16:14	08:50
23	08:36 16:57	07:38 17:58	06:31 18:52	06:17 20:49 20	06:42 (6) 07:02 (6) 21:41	05:21 05:50 (5) 14 06:04 (5) 22:09	05:03 13 06:15 (5) 21:48	06:02 (5) 9 06:13 (5) 20:48	05:32 13 07:06 (6) 19:32	06:04 (5) 06:25 18:21	06:53 (6) 07:20 16:26	08:15 16:15	08:14 16:15	08:51
24	08:34 16:58	07:36 18:00	06:29 18:53	06:15 20:51 21	06:40 (6) 07:01 (6) 21:43	05:20 05:49 (5) 16 06:05 (5) 22:09	05:03 14 06:15 (5) 21:46	06:01 (5) 7 06:12 (5) 20:45	05:34 10 07:05 (6) 19:30	06:05 (5) 06:27 18:19	06:55 (6) 07:22 16:25	08:17 16:15	08:16 16:15	08:51
25	08:33 17:00	07:34 18:02	06:26 18:55	06:13 20:53 23	06:38 (6) 07:01 (6) 21:44	05:18 05:48 (5) 18 06:06 (5) 22:10	05:03 14 06:15 (5) 21:45	06:01 (5) 5 06:12 (5) 20:43	05:35 8 07:04 (6) 19:27	06:07 (5) 06:28 18:17	06:56 (6) 07:23 16:23	07:19 17:17	08:18 16:23	08:52
26	08:31 17:02	07:31 18:04	06:24 18:57	06:11 20:55 23	06:37 (6) 07:00 (6) 21:46	05:17 05:48 (5) 19 06:07 (5) 22:09	05:04 16 06:17 (5) 21:43	06:01 (5) 3 06:11 (5) 20:41	05:37 5 07:03 (6) 19:25	06:08 (5) 06:30 17:14	06:58 (6) 07:25 16:22	07:21 08:19	08:19 16:17	08:52
27	08:30 17:04	07:29 18:06	06:22 18:59	06:08 20:56 23	06:37 (6) 07:00 (6) 21:47	05:16 05:49 (5) 19 06:08 (5) 22:09	05:04 16 06:17 (5) 21:42	06:01 (5) 2 06:11 (5) 20:38	05:38 2 07:02 (6) 19:23	06:09 (5) 06:32 17:12	07:00 (6) 07:27 16:21	07:23 08:21	08:21 16:18	08:52
28	08:28 17:06	07:27 18:08	06:19 19:01	06:06 20:58 21	06:38 (6) 06:59 (6) 21:48	05:15 05:49 (5) 20 06:09 (5) 22:09	05:05 17 06:18 (5) 21:40	06:01 (5) 06:34 20:36	05:40	07:29 19:20	07:25 17:10	08:23 16:20	08:52 16:18	
29	08:27 17:08		07:17 20:03	06:04 21:00 18	06:39 (6) 06:57 (6) 21:50	05:14 05:49 (5) 21 06:10 (5) 22:09	05:05 16 06:17 (5) 21:38	06:01 (5) 06:36 20:34	05:42	07:31 19:18	07:27 17:08	08:24 16:19	08:52 16:19	
30	08:25 17:10		07:14 20:05	06:02 21:02 16	06:40 (6) 06:56 (6) 21:51	05:13 05:50 (5) 22 06:12 (5) 22:09	05:06 17 06:18 (5) 21:37	06:01 (5) 06:37 20:31	05:43	07:32 19:15	07:29 17:06	08:26 16:19	08:52 16:20	
31	08:24 17:12		07:12 20:06		05:11 21:52 24	05:50 (5) 06:14 (5)		06:39 20:29	05:45 21:35		07:31 17:04		08:52 16:21	
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233		
Total, worst case				237	232	536	477	255						
Sun reduction				0.31	0.31	0.26	0.22	0.26						
Oper. time red.				1.00	1.00	1.00	1.00	1.00						
Wind dir. red.				0.65	0.64	0.64	0.64	0.65						
Total reduction				0.20	0.20	0.17	0.14	0.17						
Total, real				47	47	89	69	42						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** CG - H094

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	21:16 (11)	05:06	21:18 (11)	05:46	06:40	07:34	07:32	08:27
	16:22	17:14	18:09	20:08	21:03	21:53	3 21:19 (11)	22:08	14 21:32 (11)	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:06	05:58	05:09	21:15 (11)	05:07	21:18 (11)	05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05	21:55	5 21:20 (11)	22:08	14 21:32 (11)	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:19	07:04	05:55	05:08	21:15 (11)	05:08	21:19 (11)	05:49	06:44	07:37	07:36	08:30
	16:24	17:18	18:13	20:12	21:07	21:56	6 21:21 (11)	22:07	13 21:32 (11)	21:29	20:21	19:07	16:58	16:16
4	08:51	08:16	07:17	07:02	05:53	05:07	21:15 (11)	05:08	21:20 (11)	05:51	06:46	07:39	07:38	08:32
	16:26	17:19	18:15	20:13	21:09	21:57	7 21:22 (11)	22:07	12 21:32 (11)	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:51	05:07	21:14 (11)	05:09	21:19 (11)	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11	21:58	9 21:23 (11)	22:06	11 21:30 (11)	21:25	20:16	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:49	05:06	21:14 (11)	05:10	21:20 (11)	05:55	06:49	07:43	07:42	08:34
	16:28	17:24	18:19	20:17	21:12	21:59	9 21:23 (11)	22:06	10 21:30 (11)	21:23	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48	05:05	21:14 (11)	05:11	21:20 (11)	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	11 21:25 (11)	22:05	10 21:30 (11)	21:21	20:12	18:58	16:50	16:14
8	08:50	08:09	07:07	06:52	05:46	05:05	21:13 (11)	05:12	21:21 (11)	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	12 21:25 (11)	22:04	8 21:29 (11)	21:19	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:49	05:44	05:04	21:14 (11)	05:13	21:22 (11)	06:00	06:55	07:48	07:48	08:38
	16:32	17:30	18:25	20:23	21:18	22:02	12 21:26 (11)	22:04	6 21:28 (11)	21:17	20:07	18:53	16:46	16:13
10	08:48	08:05	07:03	06:47	05:42	05:04	21:14 (11)	05:14	21:22 (11)	06:02	06:56	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:19	22:03	14 21:28 (11)	22:03	6 21:28 (11)	21:15	20:04	18:50	16:45	16:12
11	08:48	08:03	07:00	06:45	05:40	05:03	21:14 (11)	05:16	21:23 (11)	06:03	06:58	07:52	07:52	08:41
	16:35	17:34	18:29	20:26	21:21	22:04	14 21:28 (11)	22:02	4 21:27 (11)	21:13	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	21:14 (11)	05:17	21:24 (11)	06:05	07:00	07:54	07:53	08:42
	16:37	17:36	18:30	20:28	21:23	22:04	15 21:29 (11)	22:01	2 21:26 (11)	21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:55	06:40	05:36	05:02	21:14 (11)	05:18		06:07	07:02	07:56	07:55	08:43
	16:39	17:38	18:32	20:30	21:25	22:05	15 21:29 (11)	22:00		21:09	19:57	18:43	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	05:02	21:14 (11)	05:19		06:09	07:03	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:26	22:06	16 21:30 (11)	21:59		21:07	19:54	18:41	16:38	16:12
15	08:44	07:55	06:51	06:35	05:33	05:02	21:14 (11)	05:20		06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	16 21:30 (11)	21:58		21:05	19:52	18:39	16:36	16:12
16	08:43	07:53	06:48	06:33	05:31	05:02	21:14 (11)	05:22		06:12	07:07	08:01	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	16 21:30 (11)	21:57		21:03	19:49	18:36	16:35	16:12
17	08:42	07:51	06:46	06:31	05:30	05:02	21:14 (11)	05:23		06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:31	22:07	17 21:31 (11)	21:55		21:01	19:47	18:34	16:33	16:12
18	08:41	07:49	06:43	06:28	05:28	05:02	21:14 (11)	05:24		06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:39	21:33	22:08	17 21:31 (11)	21:54		20:58	19:44	18:32	16:32	16:12
19	08:40	07:46	06:41	06:26	05:27	05:02	21:14 (11)	05:26		06:17	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	18 21:32 (11)	21:53		20:56	19:42	18:30	16:31	16:13
20	08:39	07:44	06:38	06:24	05:25	05:02	21:15 (11)	05:27		06:19	07:14	08:09	08:08	08:49
	16:51	17:52	18:46	20:43	21:36	22:08	18 21:33 (11)	21:52		20:54	19:39	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:24	05:02	21:15 (11)	05:29		06:21	07:16	08:11	08:10	08:49
	16:52	17:54	18:47	20:45	21:38	22:09	18 21:33 (11)	21:50		20:52	19:37	18:25	16:28	16:13
22	08:37	07:40	06:33	06:19	05:22	05:02	21:15 (11)	05:30		06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:39	22:09	18 21:33 (11)	21:49		20:49	19:34	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	21:15 (11)	05:32		06:24	07:19	08:15	08:14	08:50
	16:56	17:58	18:51	20:49	21:41	22:09	18 21:33 (11)	21:47		20:47	19:32	18:21	16:25	16:14
24	08:34	07:35	06:28	06:15	05:19	05:03	21:16 (11)	05:33		06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:50	21:42	22:09	17 21:33 (11)	21:46		20:45	19:30	18:18	16:24	16:15
25	08:32	07:33	06:26	06:12	05:18	05:03	21:16 (11)	05:35		06:28	07:23	07:19	08:17	08:51
	17:00	18:01	18:55	20:52	21:44	22:09	17 21:33 (11)	21:44		20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	21:16 (11)	05:36		06:30	07:25	07:21	08:19	08:51
	17:02	18:03	18:57	20:54	21:45	22:09	17 21:33 (11)	21:43		20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:16	05:04	21:17 (11)	05:38		06:32	07:27	07:22	08:21	08:52
	17:04	18:05	18:59	20:56	21:47	22:09	16 21:33 (11)	21:41		20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	05:04	21:17 (11)	05:40		06:33	07:28	07:24	08:22	08:52
	17:06	18:07	19:00	20:58	21:48	22:09	16 21:33 (11)	21:40		20:36	19:20	17:10	16:20	16:18
29	08:26		07:16	06:04	05:13	05:05	21:17 (11)	05:41		06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:49	22:09	16 21:33 (11)	21:38		20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:05	21:18 (11)	05:43		06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:01	21:51	22:08	15 21:33 (11)	21:36		20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11	21:17 (11)		05:44		06:39		07:30		08:52
	17:12		20:06		21:52	1 21:18 (11)		21:35		20:28		17:04		16:21
Potential sun hours	250	273	367	420	494	510		512		460	382	328	259	233
Total, worst case					1	418		110						
Sun reduction					0.31	0.26		0.22						
Oper. time red.					1.00	1.00		1.00						
Wind dir. red.					0.60	0.60		0.60						
Total reduction					0.19	0.16		0.13						
Total, real					0	65		15						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** CH - H095

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February		March		April	May	June	July	August	September	October		November	December
1	08:53	08:22		07:24	08:16 (1)	07:09	06:00	05:10	05:06	05:46	06:41	07:34		07:33	08:28
	16:23	17:14		18:10	1 08:17 (1)	20:08	21:04	21:54	22:09	21:33	20:27	19:13		17:02	16:18
2	08:52	08:20		07:22		07:07	05:58	05:09	05:07	05:48	06:43	07:36		07:35	08:29
	16:24	17:16		18:12		20:10	21:06	21:55	22:08	21:31	20:24	19:10		17:00	16:17
3	08:52	08:19		07:20		07:04	05:56	05:09	05:08	05:50	06:44	07:38		07:37	08:31
	16:25	17:18		18:14		20:12	21:07	21:56	22:08	21:30	20:22	19:08		16:58	16:16
4	08:52	08:17		07:17		07:02	05:54	05:08	05:09	05:52	06:46	07:40		07:38	08:32
	16:26	17:20		18:16		20:14	21:09	21:57	22:07	21:28	20:19	19:05		16:56	16:16
5	08:52	08:15		07:15		07:00	05:52	05:07	05:10	05:53	06:48	07:42		07:40	08:34
	16:27	17:22		18:18		20:16	21:11	21:58	22:07	21:26	20:17	19:03		16:54	16:15
6	08:51	08:13		07:13		06:57	05:50	05:06	05:11	05:55	06:50	07:43		07:42	08:35
	16:29	17:24		18:19		20:18	21:13	22:00	22:06	21:24	20:14	19:01		16:52	16:14
7	08:51	08:11		07:10		06:55	05:48	05:06	05:12	05:57	06:52	07:45		07:44	08:36
	16:30	17:26		18:21		20:19	21:15	22:01	22:06	21:22	20:12	18:58		16:50	16:14
8	08:50	08:09		07:08		06:52	05:46	05:05	05:13	05:58	06:53	07:47		07:46	08:38
	16:31	17:28		18:23		20:21	21:16	22:02	22:05	21:20	20:10	18:56		16:49	16:13
9	08:50	08:08		07:06		06:50	05:44	05:04	05:14	06:00	06:55	07:49		07:48	08:39
	16:33	17:30		18:25		20:23	21:18	22:02	22:04	21:18	20:07	18:53		16:47	16:13
10	08:49	08:06		07:03		06:47	05:42	05:04	05:15	06:02	06:57	07:51		07:50	08:40
	16:34	17:32		18:27		20:25	21:20	22:03	22:03	21:16	20:05	18:51		16:45	16:13
11	08:48	08:04		07:01		06:45	05:40	05:03	05:16	06:04	06:59	07:53		07:52	08:41
	16:36	17:34		18:29		20:27	21:22	22:04	22:02	21:14	20:02	18:49		16:43	16:13
12	08:47	08:02		06:58		06:43	05:39	05:03	05:17	06:05	07:00	07:54		07:54	08:42
	16:37	17:36		18:31		20:29	21:23	22:05	22:01	21:12	20:00	18:46		16:42	16:12
13	08:47	08:00		06:56		06:40	05:37	05:03	05:18	06:07	07:02	07:56	08:48 (1)	07:56	08:43
	16:39	17:38		18:33		20:31	21:25	22:06	22:00	21:10	19:57	18:44	2 08:50 (1)	16:40	16:12
14	08:46	07:58		06:53		06:38	05:35	05:02	05:20	06:09	07:04	07:58	08:47 (1)	07:58	08:44
	16:41	17:40		18:35		20:32	21:27	22:06	21:59	21:08	19:55	18:41	3 08:50 (1)	16:38	16:12
15	08:45	07:55		06:51		06:36	05:33	05:02	05:21	06:11	07:06	08:00	08:45 (1)	08:00	08:45
	16:42	17:42		18:37		20:34	21:29	22:07	21:58	21:05	19:52	18:39	5 08:50 (1)	16:37	16:12
16	08:44	07:53		06:49		06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:43 (1)	08:02	08:46
	16:44	17:44		18:39		20:36	21:30	22:07	21:57	21:03	19:50	18:37	6 08:49 (1)	16:35	16:12
17	08:43	07:51		06:46		06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:41 (1)	08:03	08:47
	16:46	17:46		18:40		20:38	21:32	22:08	21:56	21:01	19:47	18:35	8 08:49 (1)	16:34	16:13
18	08:42	07:49		06:44		06:29	05:28	05:02	05:25	06:16	07:11	08:06	08:38 (1)	08:05	08:48
	16:47	17:48		18:42		20:40	21:34	22:08	21:55	20:59	19:45	18:32	9 08:47 (1)	16:32	16:13
19	08:41	07:47		06:41		06:26	05:27	05:02	05:26	06:18	07:13	08:08	08:35 (1)	08:07	08:49
	16:49	17:50		18:44		20:42	21:35	22:09	21:53	20:57	19:42	18:30	11 08:46 (1)	16:31	16:13
20	08:40	07:45	08:10 (1)	06:39		06:24	05:25	05:02	05:28	06:20	07:15	08:09	08:37 (1)	08:09	08:49
	16:51	17:52	4 08:14 (1)	18:46		20:44	21:37	22:09	21:52	20:54	19:40	18:28	9 08:46 (1)	16:30	16:13
21	08:38	07:43	08:08 (1)	06:36		06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:39 (1)	08:11	08:50
	16:53	17:54	7 08:15 (1)	18:48		20:45	21:38	22:09	21:51	20:52	19:37	18:25	6 08:45 (1)	16:28	16:14
22	08:37	07:40	08:06 (1)	06:34		06:20	05:22	05:02	05:31	06:23	07:18	08:13	08:41 (1)	08:13	08:50
	16:55	17:56	9 08:15 (1)	18:50		20:47	21:40	22:09	21:49	20:50	19:35	18:23	3 08:44 (1)	16:27	16:14
23	08:36	07:38	08:04 (1)	06:31		06:17	05:21	05:03	05:32	06:25	07:20	08:15		08:14	08:51
	16:57	17:58	11 08:15 (1)	18:52		20:49	21:41	22:10	21:48	20:48	19:32	18:21		16:26	16:15
24	08:34	07:36	08:08 (1)	06:29		06:15	05:20	05:03	05:34	06:27	07:22	08:17		08:16	08:51
	16:58	18:00	9 08:17 (1)	18:53		20:51	21:43	22:10	21:46	20:45	19:30	18:19		16:25	16:15
25	08:33	07:34	08:11 (1)	06:26		06:13	05:18	05:03	05:35	06:28	07:23	07:19		08:18	08:52
	17:00	18:02	7 08:18 (1)	18:55		20:53	21:44	22:10	21:45	20:43	19:28	17:17		16:23	16:16
26	08:32	07:31	08:12 (1)	06:24		06:11	05:17	05:04	05:37	06:30	07:25	07:21		08:20	08:52
	17:02	18:04	5 08:17 (1)	18:57		20:55	21:46	22:10	21:43	20:41	19:25	17:14		16:22	16:17
27	08:30	07:29	08:14 (1)	06:22		06:08	05:16	05:04	05:38	06:32	07:27	07:23		08:21	08:52
	17:04	18:06	4 08:18 (1)	18:59		20:56	21:47	22:10	21:42	20:38	19:23	17:12		16:21	16:17
28	08:29	07:27	08:15 (1)	06:19		06:06	05:15	05:05	05:40	06:34	07:29	07:25		08:23	08:52
	17:06	18:08	3 08:18 (1)	19:01		20:58	21:49	22:09	21:40	20:36	19:20	17:10		16:20	16:18
29	08:27			07:17		06:04	05:14	05:05	05:42	06:36	07:31	07:27		08:25	08:53
	17:08			20:03		21:00	21:50	22:09	21:38	20:34	19:18	17:08		16:19	16:19
30	08:25			07:14		06:02	05:12	05:06	05:43	06:37	07:32	07:29		08:26	08:53
	17:10			20:05		21:02	21:51	22:09	21:37	20:31	19:15	17:06		16:18	16:20
31	08:24			07:12			05:11		05:45	06:39		07:31			08:53
	17:12			20:06			21:53		21:35	20:29		17:04			16:21
Potential sun hours	250	273		367		420	494	510	512	460	382	328		259	233
Total, worst case			59		1								62		
Sun reduction			0.19		0.22								0.23		
Oper. time red.			1.00		1.00								1.00		
Wind dir. red.			0.63		0.63								0.63		
Total reduction			0.12		0.14								0.14		
Total, real			7		0								9		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** CI - H096

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March	April	May	June	July	August	September	October	November	December
1	08:52		08:22	16:31 (1)	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:33 15:54 (1)	08:28
	16:22		17:14 11	16:42 (1)	18:10	20:08	21:04	21:54	22:09	21:33	20:26	19:13	17:02 23	16:17 (1) 16:18
2	08:52		08:20	16:31 (1)	07:22	07:07	05:58	05:09	05:07	05:48	06:43	07:36	07:34	15:52 (1) 08:29
	16:23		17:16 13	16:44 (1)	18:12	20:10	21:06	21:55	22:08	21:31	20:24	19:10	17:00 26	16:18 (1) 16:17
3	08:52		08:19	16:30 (1)	07:20	07:04	05:56	05:08	05:08	05:50	06:44	07:38	07:36	15:52 (1) 08:31
	16:25		17:18 16	16:46 (1)	18:14	20:12	21:07	21:56	22:08	21:29	20:22	19:08	16:58 26	16:18 (1) 16:16
4	08:52		08:17	16:29 (1)	07:17	07:02	05:54	05:08	05:09	05:51	06:46	07:40	07:38	15:54 (1) 08:32
	16:26		17:20 19	16:48 (1)	18:15	20:14	21:09	21:57	22:07	21:28	20:19	19:05	16:56 25	16:19 (1) 16:15
5	08:51		08:15	16:28 (1)	07:15	06:59	05:52	05:07	05:10	05:53	06:48	07:41	07:40	15:56 (1) 08:33
	16:27		17:22 22	16:50 (1)	18:17	20:16	21:11	21:58	22:07	21:26	20:17	19:03	16:54 23	16:19 (1) 16:15
6	08:51		08:13	16:26 (1)	07:13	06:57	05:50	05:06	05:10	05:55	06:50	07:43	07:42	15:58 (1) 08:35
	16:28		17:24 23	16:49 (1)	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52 22	16:20 (1) 16:14
7	08:51		08:11	16:24 (1)	07:10	06:55	05:48	05:05	05:11	05:57	06:51	07:45	07:44	16:00 (1) 08:36
	16:30		17:26 25	16:49 (1)	18:21	20:19	21:15	22:00	22:05	21:22	20:12	18:58	16:50 19	16:19 (1) 16:14
8	08:50		08:09	16:22 (1)	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	16:01 (1) 08:38
	16:31		17:28 26	16:48 (1)	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:56	16:49 16	16:17 (1) 16:13
9	08:49		08:07	16:23 (1)	07:05	06:50	05:44	05:04	05:14	06:00	06:55	07:49	07:48	16:01 (1) 08:39
	16:33		17:30 25	16:48 (1)	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47 13	16:14 (1) 16:13
10	08:49		08:05	16:24 (1)	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51	07:50	16:02 (1) 08:40
	16:34		17:32 23	16:47 (1)	18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51	16:45 10	16:12 (1) 16:13
11	08:48		08:03	16:26 (1)	07:01	06:45	05:40	05:03	05:16	06:04	06:58	07:52	07:52	16:03 (1) 08:41
	16:36		17:34 20	16:46 (1)	18:29	20:27	21:22	22:04	22:02	21:14	20:02	18:48	16:43 7	16:10 (1) 16:12
12	08:47		08:01	16:28 (1)	06:58	06:43	05:38	05:03	05:17	06:05	07:00	07:54	07:54	16:03 (1) 08:42
	16:37		17:36 16	16:44 (1)	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42 6	16:09 (1) 16:12
13	08:47		07:59	16:31 (1)	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	16:03 (1) 08:43
	16:39		17:38 11	16:42 (1)	18:33	20:30	21:25	22:05	22:00	21:10	19:57	18:44	16:40 4	16:07 (1) 16:12
14	08:46		07:57		06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:58	16:04 (1) 08:44
	16:40		17:40		18:35	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38 1	16:05 (1) 16:12
15	08:45		07:55		06:51	06:35	05:33	05:02	05:21	06:11	07:06	08:00	08:00	08:45
	16:42		17:42		18:36	20:34	21:28	22:07	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44		07:53		06:48	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44		17:44		18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43		07:51		06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	08:47
	16:46		17:46		18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:34	16:12
18	08:42		07:49		06:44	06:29	05:28	05:02	05:25	06:16	07:11	08:06	08:05	08:48
	16:47		17:48		18:42	20:40	21:33	22:08	21:55	20:59	19:45	18:32	16:32	16:13
19	08:41		07:47		06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07	08:48
	16:49		17:50		18:44	20:42	21:35	22:09	21:53	20:57	19:42	18:30	16:31	16:13
20	08:39		07:45		06:39	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49
	16:51		17:52		18:46	20:43	21:37	22:09	21:52	20:54	19:40	18:28	16:29	16:13
21	08:38		07:42		06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	08:50
	16:53		17:54		18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:14
22	08:37		07:40		06:34	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50
	16:54		17:56		18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:36		07:38		06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15	08:14	08:51
	16:56		17:58		18:51	20:49	21:41	22:09	21:48	20:48	19:32	18:21	16:26	16:15
24	08:34		07:36		06:29	06:15	05:20	05:03	05:33	06:27	07:22	08:17	08:16	08:51
	16:58		18:00		18:53	20:51	21:43	22:10	21:46	20:45	19:30	18:19	16:24	16:15
25	08:33		07:34		06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:52
	17:00		18:02		18:55	20:53	21:44	22:10	21:45	20:43	19:27	17:16	16:23	16:16
26	08:31		07:31		06:24	06:11	05:17	05:03	05:37	06:30	07:25	07:21	08:19	08:52
	17:02		18:04		18:57	20:55	21:46	22:10	21:43	20:41	19:25	17:14	16:22	16:17
27	08:30		07:29		06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04		18:06		18:59	20:56	21:47	22:09	21:42	20:38	19:22	17:12	16:21	16:17
28	08:28	16:32 (1)	07:27		06:19	06:06	05:15	05:04	05:40	06:34	07:29	07:25	08:23	08:52
	17:06 1	16:33 (1)	18:08		19:01	20:58	21:49	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27	16:32 (1)			07:16	06:04	05:13	05:05	05:41	06:35	07:31	07:27 16:00 (1)	08:24	08:52
	17:08 3	16:35 (1)			20:03	21:00	21:50	22:09	21:38	20:34	19:17	17:08 12 16:12 (1)	16:19	16:19
30	08:25	16:32 (1)			07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:29 15:57 (1)	08:26	08:52
	17:10 6	16:38 (1)			20:04	21:02	21:51	22:09	21:37	20:31	19:15	17:06 17 16:14 (1)	16:18	16:20
31	08:24	16:32 (1)			07:12		05:11		05:45	06:39		07:31 15:55 (1)		08:52
	17:12 8	16:40 (1)			20:06		21:53		21:35	20:29		17:04 21 16:16 (1)		16:21
Potential sun hours	250		273		367	420	494	510	513	460	382	328	259	233
Total, worst case	18		250									50	221	
Sun reduction	0.16		0.19									0.23	0.20	
Oper. time red.	1.00		1.00									1.00	1.00	
Wind dir. red.	0.64		0.64									0.64	0.64	
Total reduction	0.10		0.13									0.15	0.13	
Total, real	2		31									7	28	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** CJ - H097

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June		July		August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:11		05:07		05:47	06:41	07:34	07:33	08:28
	16:23	17:14	18:10	20:08	21:04	21:54		22:09	4	05:44 (3)	21:33	20:27	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:10		05:07		05:40 (3)	05:48	06:43	07:36	07:35	08:29
	16:24	17:16	18:12	20:10	21:06	21:55		22:08	3	05:43 (3)	21:31	20:24	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04	05:56	05:09		05:08		05:41 (3)	05:50	06:44	07:38	07:36	08:31
	16:25	17:18	18:14	20:12	21:07	21:56		22:08	2	05:43 (3)	21:30	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08		05:09		05:42 (3)	05:52	06:46	07:40	07:38	08:32
	16:26	17:20	18:16	20:14	21:09	21:57		22:07	2	05:44 (3)	21:28	20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	07:00	05:52	05:07		05:10		05:43 (3)	05:53	06:48	07:42	07:40	08:34
	16:27	17:22	18:18	20:16	21:11	21:58		22:07	1	05:44 (3)	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06		05:11			05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:18	21:13	21:59		22:06			21:24	20:14	19:01	16:52	16:14
7	08:51	08:11	07:10	06:55	05:48	05:06		05:12			05:57	06:52	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:15	22:00	1	05:38 (3)			21:22	20:12	18:58	16:51	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05		05:37 (3)			05:58	06:53	07:47	07:46	08:38
	16:31	17:28	18:23	20:21	21:16	22:01	1	05:38 (3)			21:20	20:10	18:56	16:49	16:14
9	08:49	08:07	07:06	06:50	05:44	05:05		05:36 (3)			06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	2	05:38 (3)			21:18	20:07	18:53	16:47	16:13
10	08:49	08:06	07:03	06:47	05:42	05:04		05:36 (3)			06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	3	05:39 (3)			21:16	20:05	18:51	16:45	16:13
11	08:48	08:04	07:01	06:45	05:40	05:04		05:36 (3)			06:04	06:59	07:53	07:52	08:41
	16:36	17:34	18:29	20:27	21:22	22:04	3	05:39 (3)			21:14	20:02	18:49	16:43	16:13
12	08:47	08:02	06:58	06:43	05:39	05:03		05:35 (3)			06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	4	05:39 (3)			21:12	20:00	18:46	16:42	16:13
13	08:47	08:00	06:56	06:40	05:37	05:03		05:35 (3)			06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:31	21:25	22:05	5	05:40 (3)			21:10	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:03		05:35 (3)			06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	5	05:40 (3)			21:08	19:55	18:41	16:39	16:12
15	08:45	07:55	06:51	06:36	05:33	05:02		05:35 (3)			06:11	07:06	08:00	08:00	08:45
	16:42	17:42	18:37	20:34	21:28	22:07	5	05:40 (3)			21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:49	06:33	05:32	05:02		05:35 (3)			06:13	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	6	05:41 (3)			21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02		05:35 (3)			06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	6	05:41 (3)			21:01	19:47	18:35	16:34	16:13
18	08:42	07:49	06:44	06:29	05:29	05:02		05:35 (3)			06:16	07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	6	05:41 (3)			20:59	19:45	18:32	16:32	16:13
19	08:41	07:47	06:41	06:26	05:27	05:02		05:35 (3)			06:18	07:13	08:08	08:07	08:48
	16:49	17:50	18:44	20:42	21:35	22:09	6	05:41 (3)			20:57	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02		05:35 (3)			06:20	07:15	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:37	22:09	6	05:41 (3)			20:54	19:40	18:28	16:30	16:13
21	08:38	07:43	06:36	06:22	05:24	05:02		05:35 (3)			06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	6	05:41 (3)			20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:20	05:23	05:02		05:35 (3)			06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	6	05:41 (3)			20:50	19:35	18:23	16:27	16:14
23	08:36	07:38	06:31	06:17	05:21	05:03		05:36 (3)			06:25	07:20	08:15	08:14	08:51
	16:57	17:58	18:52	20:49	21:41	22:09	6	05:42 (3)			20:48	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03		05:36 (3)			06:27	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:10	6	05:42 (3)			20:45	19:30	18:19	16:25	16:15
25	08:33	07:34	06:26	06:13	05:18	05:03		05:36 (3)			06:28	07:23	07:19	08:18	08:52
	17:00	18:02	18:55	20:53	21:44	22:10	6	05:42 (3)			20:43	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04		05:37 (3)			06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:55	21:46	22:10	6	05:43 (3)			20:41	19:25	17:15	16:22	16:17
27	08:30	07:29	06:22	06:09	05:16	05:04		05:37 (3)			06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	5	05:42 (3)			20:38	19:23	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	05:15	05:05		05:38 (3)			06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:49	22:09	5	05:43 (3)			20:36	19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	05:14	05:05		05:38 (3)			06:36	07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	5	05:43 (3)			20:34	19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	05:13	05:06		05:39 (3)			06:37	07:32	07:29	08:26	08:52
	17:10		20:05	21:02	21:51	22:09	4	05:43 (3)			20:31	19:15	17:06	16:19	16:20
31	08:24		07:12		05:12						06:39		07:31		08:52
	17:12		20:06		21:53						20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510		512		460	382	328	259	233
Total, worst case							114		12					
Sun reduction							0.26		0.22					
Oper. time red.							1.00		1.00					
Wind dir. red.							0.65		0.65					
Total reduction							0.17		0.14					
Total, real							19		2					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** CK - H098

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March		April	May	June	July	August	September		October	November	December
1	08:53	08:22	07:24		07:09	06:00	05:10	05:07	05:47	06:41		07:34	07:33	08:28
	16:23	17:14	18:10		20:08	21:04	21:54	22:09	21:33	20:27		19:13	17:02	16:18
2	08:52	08:20	07:22		07:07	05:58	05:10	05:07	05:48	06:43		07:36	07:35	08:29
	16:24	17:16	18:12		20:10	21:06	21:55	22:08	21:31	20:24		19:10	17:00	16:17
3	08:52	08:19	07:20		07:04	05:56	05:09	05:08	05:50	06:44		07:38	07:37	08:31
	16:25	17:18	18:14		20:12	21:07	21:56	22:08	21:30	20:22		19:08	16:58	16:16
4	08:52	08:17	07:17		07:02	05:54	05:08	05:09	05:52	06:46		07:40	07:38	08:32
	16:26	17:20	18:16		20:14	21:09	21:57	22:07	21:28	20:19		19:05	16:56	16:16
5	08:52	08:15	07:15		07:00	05:52	05:07	05:10	05:53	06:48		07:42	07:40	08:34
	16:27	17:22	18:18		20:16	21:11	21:58	22:07	21:26	20:17		19:03	16:54	16:15
6	08:51	08:13	07:13		06:57	05:50	05:06	05:11	05:55	06:50		07:43	07:42	08:35
	16:29	17:24	18:19		20:18	21:13	22:00	22:06	21:24	20:14		19:01	16:52	16:14
7	08:51	08:11	07:10		06:55	05:48	05:06	05:12	05:57	06:52		07:45	07:44	08:36
	16:30	17:26	18:21		20:19	21:15	22:01	22:06	21:22	20:12		18:58	16:51	16:14
8	08:50	08:09	07:08		06:52	05:46	05:05	05:13	05:58	06:53		07:47	07:46	08:38
	16:31	17:28	18:23		20:21	21:16	22:02	22:05	21:20	20:10		18:56	16:49	16:14
9	08:50	08:08	07:06		06:50	05:44	05:04	05:14	06:00	06:55		07:49	07:48	08:39
	16:33	17:30	18:25		20:23	21:18	22:02	22:04	21:18	20:07		18:53	16:47	16:13
10	08:49	08:06	07:03		06:47	05:42	05:04	05:15	06:02	06:57		07:51	07:50	08:40
	16:34	17:32	18:27		20:25	21:20	22:03	22:03	21:16	20:05		18:51	16:45	16:13
11	08:48	08:04	07:01		06:45	05:40	05:03	05:16	06:04	06:59		07:53	07:52	08:41
	16:36	17:34	18:29		20:27	21:22	22:04	22:02	21:14	20:02		18:49	16:43	16:13
12	08:47	08:02	06:58		06:43	05:39	05:03	05:17	06:05	07:00		07:54	07:54	08:42
	16:37	17:36	18:31		20:29	21:23	22:05	22:01	21:12	20:00		18:46	16:42	16:12
13	08:47	08:00	06:56		06:40	05:37	05:03	05:18	06:07	07:02		07:56	07:56	08:43
	16:39	17:38	18:33		20:31	21:25	22:06	22:00	21:10	19:57		18:44	16:40	16:12
14	08:46	07:58	06:53		06:38	05:35	05:02	05:20	06:09	07:04		07:47 (1)	07:58	07:58	08:44
	16:41	17:40	18:35		20:32	21:27	22:06	21:59	21:08	19:55	7	07:54 (1)	18:41	16:38	16:12
15	08:45	07:55	06:51		06:36	05:33	05:02	05:21	06:11	07:06		07:43 (1)	08:00	08:00	08:45
	16:42	17:42	18:37		20:34	21:29	22:07	21:58	21:05	19:52	14	07:57 (1)	18:39	16:37	16:12
16	08:44	07:53	06:49	07:12 (1)	06:33	05:32	05:02	05:22	06:12	07:07		07:42 (1)	08:02	08:02	08:46
	16:44	17:44	18:39	1 07:13 (1)	20:36	21:30	22:07	21:57	21:03	19:50	17	07:59 (1)	18:37	16:35	16:12
17	08:43	07:51	06:46	07:10 (1)	06:31	05:30	05:02	05:23	06:14	07:09		07:40 (1)	08:04	08:03	08:47
	16:46	17:46	18:40	4 07:14 (1)	20:38	21:32	22:08	21:56	21:01	19:47	20	08:00 (1)	18:35	16:34	16:13
18	08:42	07:49	06:44	07:08 (1)	06:29	05:29	05:02	05:25	06:16	07:11		07:38 (1)	08:06	08:05	08:48
	16:47	17:48	18:42	8 07:16 (1)	20:40	21:34	22:08	21:55	20:59	19:45	22	08:00 (1)	18:32	16:32	16:13
19	08:41	07:47	06:41	07:05 (1)	06:26	05:27	05:02	05:26	06:18	07:13		07:39 (1)	08:08	08:07	08:49
	16:49	17:50	18:44	10 07:15 (1)	20:42	21:35	22:09	21:53	20:57	19:42	22	08:01 (1)	18:30	16:31	16:13
20	08:40	07:45	06:39	07:03 (1)	06:24	05:25	05:02	05:28	06:20	07:15		07:41 (1)	08:09	08:09	08:49
	16:51	17:52	18:46	13 07:16 (1)	20:44	21:37	22:09	21:52	20:54	19:40	20	08:01 (1)	18:28	16:30	16:13
21	08:38	07:43	06:36	07:00 (1)	06:22	05:24	05:02	05:29	06:21	07:16		07:43 (1)	08:11	08:11	08:50
	16:53	17:54	18:48	15 07:15 (1)	20:45	21:38	22:09	21:51	20:52	19:37	18	08:01 (1)	18:25	16:28	16:14
22	08:37	07:40	06:34	06:58 (1)	06:20	05:22	05:02	05:31	06:23	07:18		07:44 (1)	08:13	08:13	08:50
	16:55	17:56	18:50	18 07:16 (1)	20:47	21:40	22:09	21:49	20:50	19:35	16	08:00 (1)	18:23	16:27	16:14
23	08:36	07:38	06:31	06:55 (1)	06:17	05:21	05:03	05:32	06:25	07:20		07:46 (1)	08:15	08:14	08:51
	16:57	17:58	18:52	20 07:15 (1)	20:49	21:41	22:10	21:48	20:48	19:32	14	08:00 (1)	18:21	16:26	16:15
24	08:34	07:36	06:29	06:53 (1)	06:15	05:20	05:03	05:34	06:27	07:22		07:48 (1)	08:17	08:16	08:51
	16:58	18:00	18:53	21 07:14 (1)	20:51	21:43	22:10	21:46	20:45	19:30	11	07:59 (1)	18:19	16:25	16:15
25	08:33	07:34	06:26	06:50 (1)	06:13	05:18	05:03	05:35	06:28	07:23		07:50 (1)	07:19	08:18	08:52
	17:00	18:02	18:55	23 07:13 (1)	20:53	21:44	22:10	21:45	20:43	19:28	8	07:58 (1)	17:17	16:23	16:16
26	08:32	07:31	06:24	06:51 (1)	06:11	05:17	05:04	05:37	06:30	07:25		07:52 (1)	07:21	08:20	08:52
	17:02	18:04	18:57	21 07:12 (1)	20:55	21:46	22:10	21:43	20:41	19:25	5	07:57 (1)	17:15	16:22	16:17
27	08:30	07:29	06:22	06:52 (1)	06:09	05:16	05:04	05:38	06:32	07:27		07:53 (1)	07:23	08:21	08:52
	17:04	18:06	18:59	18 07:10 (1)	20:56	21:47	22:10	21:42	20:38	19:23	2	07:55 (1)	17:12	16:21	16:18
28	08:29	07:27	06:19	06:54 (1)	06:06	05:15	05:05	05:40	06:34	07:29			07:25	08:23	08:52
	17:06	18:08	19:01	14 07:08 (1)	20:58	21:49	22:09	21:40	20:36	19:20			17:10	16:20	16:18
29	08:27		07:17	07:56 (1)	06:04	05:14	05:05	05:42	06:36	07:31			07:27	08:25	08:53
	17:08		20:03	9 08:05 (1)	21:00	21:50	22:09	21:38	20:34	19:18			17:08	16:19	16:19
30	08:25		07:14		06:02	05:12	05:06	05:43	06:37	07:32			07:29	08:26	08:53
	17:10		20:05		21:02	21:51	22:09	21:37	20:31	19:15			17:06	16:19	16:20
31	08:24		07:12			05:11		05:45	06:39				07:31		08:53
	17:12		20:06			21:53		21:35	20:29				17:04		16:21
Potential sun hours	250	273	367		420	494	510	512	460	382		328	259	233
Total, worst case				195							196			
Sun reduction				0.22							0.25			
Oper. time red.				1.00							1.00			
Wind dir. red.				0.64							0.64			
Total reduction				0.14							0.16			
Total, real				27							32			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** CL - H099

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March		April	May	June	July	August	September		October		November	December
1	08:53	08:22	07:24		07:09	06:00	05:10	05:07	05:47	06:41		07:34		07:33	08:28
	16:23	17:14	18:10		20:08	21:04	21:54	22:09	21:33	20:27		19:13	11	17:02	16:18
2	08:52	08:20	07:22		07:07	05:58	05:10	05:07	05:48	06:43		07:36		07:35	08:29
	16:24	17:16	18:12		20:10	21:06	21:55	22:08	21:31	20:24		19:10	9	17:00	16:17
3	08:52	08:19	07:20		07:04	05:56	05:09	05:08	05:50	06:44		07:38		07:37	08:31
	16:25	17:18	18:14		20:12	21:07	21:56	22:08	21:30	20:22		19:08	6	16:58	16:16
4	08:52	08:17	07:17		07:02	05:54	05:08	05:09	05:52	06:46		07:40		07:38	08:32
	16:26	17:20	18:16		20:14	21:09	21:57	22:07	21:28	20:19		19:05	4	16:56	16:16
5	08:52	08:15	07:15		07:00	05:52	05:07	05:10	05:53	06:48		07:42		07:40	08:34
	16:27	17:22	18:18		20:16	21:11	21:59	22:07	21:26	20:17		19:03	2	16:54	16:15
6	08:51	08:13	07:13		06:57	05:50	05:06	05:11	05:55	06:50		07:43		07:42	08:35
	16:29	17:24	18:19		20:18	21:13	22:00	22:06	21:24	20:14		19:01		16:52	16:14
7	08:51	08:11	07:10		06:55	05:48	05:06	05:12	05:57	06:52		07:45		07:44	08:36
	16:30	17:26	18:21		20:19	21:15	22:01	22:06	21:22	20:12		18:58		16:51	16:14
8	08:50	08:09	07:08		07:32 (1)	06:52	05:46	05:05	05:13	05:58	06:53		07:47		07:46	08:38
	16:31	17:28	18:23	1	07:33 (1)	20:21	21:16	22:02	22:05	21:20	20:10		18:56		16:49	16:14
9	08:50	08:08	07:06		07:30 (1)	06:50	05:44	05:04	05:14	06:00	06:55		07:49		07:48	08:39
	16:33	17:30	18:25	3	07:33 (1)	20:23	21:18	22:02	22:04	21:18	20:07		18:53		16:47	16:13
10	08:49	08:06	07:03		07:27 (1)	06:47	05:42	05:04	05:15	06:02	06:57		07:51		07:50	08:40
	16:34	17:32	18:27	5	07:32 (1)	20:25	21:20	22:03	22:03	21:16	20:05		18:51		16:45	16:13
11	08:48	08:04	07:01		07:25 (1)	06:45	05:40	05:03	05:16	06:04	06:59		07:53		07:52	08:41
	16:36	17:34	18:29	8	07:33 (1)	20:27	21:22	22:04	22:02	21:14	20:02		18:49		16:43	16:13
12	08:47	08:02	06:58		07:22 (1)	06:43	05:39	05:03	05:17	06:05	07:00		07:54		07:54	08:42
	16:37	17:36	18:31	10	07:32 (1)	20:29	21:23	22:05	22:01	21:12	20:00		18:46		16:42	16:12
13	08:47	08:00	06:56		07:20 (1)	06:40	05:37	05:03	05:18	06:07	07:02		07:56		07:56	08:43
	16:39	17:38	18:33	13	07:33 (1)	20:31	21:25	22:06	22:00	21:10	19:57		18:44		16:40	16:12
14	08:46	07:58	06:53		07:17 (1)	06:38	05:35	05:02	05:20	06:09	07:04		07:58		07:58	08:44
	16:41	17:40	18:35	15	07:32 (1)	20:32	21:27	22:06	21:59	21:08	19:55		18:41		16:38	16:12
15	08:45	07:55	06:51		07:18 (1)	06:36	05:33	05:02	05:21	06:11	07:06		08:00		08:00	08:45
	16:42	17:42	18:37	15	07:33 (1)	20:34	21:29	22:07	21:58	21:05	19:52		18:39		16:37	16:12
16	08:44	07:53	06:49		07:19 (1)	06:33	05:32	05:02	05:22	06:12	07:07		08:02		08:02	08:46
	16:44	17:44	18:39	14	07:33 (1)	20:36	21:30	22:07	21:57	21:03	19:50		18:37		16:35	16:12
17	08:43	07:51	06:46		07:20 (1)	06:31	05:30	05:02	05:23	06:14	07:09		08:04		08:03	08:47
	16:46	17:46	18:40	14	07:34 (1)	20:38	21:32	22:08	21:56	21:01	19:47		18:35		16:34	16:13
18	08:42	07:49	06:44		07:22 (1)	06:29	05:28	05:02	05:25	06:16	07:11		08:06		08:05	08:48
	16:47	17:48	18:42	12	07:34 (1)	20:40	21:34	22:08	21:55	20:59	19:45		18:32		16:32	16:13
19	08:41	07:47	06:41		07:25 (1)	06:26	05:27	05:02	05:26	06:18	07:13		08:08		08:07	08:49
	16:49	17:50	18:44	7	07:32 (1)	20:42	21:35	22:09	21:53	20:57	19:42		18:30		16:31	16:13
20	08:40	07:45	06:39			06:24	05:25	05:02	05:28	06:20	07:15		08:09		08:09	08:49
	16:51	17:52	18:46			20:44	21:37	22:09	21:52	20:54	19:40		18:28		16:30	16:13
21	08:38	07:43	06:36			06:22	05:24	05:02	05:29	06:21	07:16		08:11		08:11	08:50
	16:53	17:54	18:48			20:45	21:38	22:09	21:51	20:52	19:37		18:25		16:28	16:14
22	08:37	07:40	06:34			06:20	05:22	05:02	05:31	06:23	07:18		08:13		08:13	08:50
	16:55	17:56	18:50			20:47	21:40	22:09	21:49	20:50	19:35		18:23		16:27	16:14
23	08:36	07:38	06:31			06:17	05:21	05:03	05:32	06:25	07:20		08:15		08:14	08:51
	16:57	17:58	18:52			20:49	21:41	22:10	21:48	20:48	19:32		18:21		16:26	16:15
24	08:34	07:36	06:29			06:15	05:20	05:03	05:34	06:27	07:22		08:17		08:16	08:51
	16:58	18:00	18:53			20:51	21:43	22:10	21:46	20:45	19:30		18:19		16:25	16:15
25	08:33	07:34	06:26			06:13	05:18	05:03	05:35	06:28	07:23	08:06 (1)	07:19		08:18	08:52
	17:00	18:02	18:55			20:53	21:44	22:10	21:45	20:43	19:28	12 08:18 (1)	17:17		16:23	16:16
26	08:32	07:31	06:24			06:11	05:17	05:04	05:37	06:30	07:25	08:03 (1)	07:21		08:20	08:52
	17:02	18:04	18:57			20:55	21:46	22:10	21:43	20:41	19:25	13 08:16 (1)	17:15		16:22	16:17
27	08:30	07:29	06:22			06:08	05:16	05:04	05:38	06:32	07:27	08:01 (1)	07:23		08:21	08:52
	17:04	18:06	18:59			20:56	21:47	22:10	21:42	20:38	19:23	14 08:15 (1)	17:12		16:21	16:18
28	08:29	07:27	06:19			06:06	05:15	05:05	05:40	06:34	07:29	07:59 (1)	07:25		08:23	08:52
	17:06	18:08	19:01			20:58	21:49	22:09	21:40	20:36	19:20	15 08:14 (1)	17:10		16:20	16:18
29	08:27		07:17			06:04	05:14	05:05	05:42	06:36	07:31	07:58 (1)	07:27		08:25	08:53
	17:08		20:03			21:00	21:50	22:09	21:38	20:34	19:18	15 08:13 (1)	17:08		16:19	16:19
30	08:25		07:14			06:02	05:12	05:06	05:43	06:37	07:32	07:59 (1)	07:29		08:26	08:53
	17:10		20:05			21:02	21:51	22:09	21:37	20:31	19:15	14 08:13 (1)	17:06		16:19	16:20
31	08:24		07:12				05:11		05:45	06:39			07:31			08:53
	17:12		20:06				21:53		21:35	20:29			17:04			16:21
Potential sun hours	250	273	367		420	494	510	512	460	382		328		259	233
Total, worst case				117							83		32		
Sun reduction				0.22							0.25		0.23		
Oper. time red.				1.00							1.00		1.00		
Wind dir. red.				0.63							0.63		0.63		
Total reduction				0.14							0.16		0.14		
Total, real				16							13		5		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** CM - H100

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February			March	April	May	June	July	August	September	October	November			December
1	08:52	08:22		16:40 (10)	07:24	07:09	06:00	05:10	05:06	05:46	06:40	07:34	07:32			08:27
	16:22	17:13	2	16:42 (10)	18:09	20:08	21:03	21:53	22:08	21:33	20:26	19:12	17:02			16:17
2	08:52	08:20		16:40 (10)	07:22	07:06	05:57	05:09	05:07	05:48	06:42	07:36	07:34			08:29
	16:23	17:15	4	16:44 (10)	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00			16:16
3	08:52	08:18		16:39 (10)	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:37	07:36		16:09 (10)	08:30
	16:24	17:17	7	16:46 (10)	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58	4	16:13 (10)	16:16
4	08:51	08:16		16:39 (10)	07:17	07:01	05:53	05:07	05:08	05:51	06:46	07:39	07:38		16:09 (10)	08:32
	16:26	17:19	9	16:48 (10)	18:15	20:13	21:09	21:57	22:07	21:27	20:19	19:05	16:56	15	16:24 (10)	16:15
5	08:51	08:15		16:39 (10)	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40		16:09 (10)	08:33
	16:27	17:21	11	16:50 (10)	18:17	20:15	21:11	21:58	22:06	21:25	20:16	19:02	16:54	13	16:22 (10)	16:14
6	08:51	08:13		16:39 (10)	07:12	06:57	05:49	05:06	05:10	05:54	06:49	07:43	07:42		16:09 (10)	08:35
	16:28	17:23	14	16:53 (10)	18:19	20:17	21:12	21:59	22:06	21:23	20:14	19:00	16:52	11	16:20 (10)	16:14
7	08:50	08:11		16:39 (10)	07:10	06:54	05:47	05:05	05:11	05:56	06:51	07:45	07:44		16:09 (10)	08:36
	16:29	17:25	16	16:55 (10)	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	9	16:18 (10)	16:13
8	08:50	08:09		16:39 (10)	07:07	06:52	05:46	05:04	05:12	05:58	06:53	07:47	07:46		16:09 (10)	08:37
	16:31	17:27	4	16:43 (10)	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48	7	16:16 (10)	16:13
9	08:49	08:07			07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48		16:11 (10)	08:38
	16:32	17:29			18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46	4	16:15 (10)	16:13
10	08:48	08:05			07:03	06:47	05:42	05:03	05:14	06:01	06:56	07:50	07:50		16:11 (10)	08:40
	16:34	17:31			18:27	20:25	21:20	22:03	22:03	21:15	20:04	18:50	16:45	1	16:12 (10)	16:12
11	08:48	08:03			07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52			08:41
	16:35	17:33			18:29	20:26	21:21	22:04	22:02	21:13	20:02	18:48	16:43			16:12
12	08:47	08:01			06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:53			08:42
	16:37	17:36			18:30	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41			16:12
13	08:46	07:59			06:55	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:55			08:43
	16:38	17:38			18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40			16:12
14	08:45	07:57			06:53	06:37	05:35	05:02	05:19	06:08	07:03	07:58	07:57			08:44
	16:40	17:40			18:34	20:32	21:26	22:06	21:59	21:07	19:54	18:41	16:38			16:12
15	08:44	07:55			06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59			08:45
	16:42	17:42			18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36			16:12
16	08:43	07:53			06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:01	08:01			08:46
	16:43	17:44			18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35			16:12
17	08:42	07:51			06:46	06:30	05:30	05:01	05:23	06:14	07:09	08:03	08:03			08:47
	16:45	17:46			18:40	20:38	21:31	22:07	21:56	21:01	19:47	18:34	16:33			16:12
18	08:41	07:49			06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05	08:05			08:47
	16:47	17:48			18:42	20:39	21:33	22:08	21:54	20:58	19:44	18:32	16:32			16:12
19	08:40	07:46			06:41	06:26	05:26	05:01	05:26	06:17	07:12	08:07	08:07			08:48
	16:49	17:50			18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:29	16:30			16:13
20	08:39	07:44			06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:08			08:49
	16:51	17:52			18:46	20:43	21:36	22:09	21:52	20:54	19:39	18:27	16:29			16:13
21	08:38	07:42			06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11	08:10			08:49
	16:52	17:54			18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28			16:13
22	08:37	07:40			06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12			08:50
	16:54	17:56			18:49	20:47	21:39	22:09	21:49	20:49	19:34	18:23	16:26			16:14
23	08:35	07:38			06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15	08:14			08:50
	16:56	17:57			18:51	20:49	21:41	22:09	21:47	20:47	19:32	18:21	16:25			16:14
24	08:34	07:35			06:28	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16			08:51
	16:58	17:59			18:53	20:50	21:42	22:09	21:46	20:45	19:30	18:18	16:24			16:15
25	08:33	07:33			06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17			08:51
	17:00	18:01			18:55	20:52	21:44	22:09	21:44	20:43	19:27	17:16	16:23			16:16
26	08:31	07:31			06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19			08:52
	17:02	18:03			18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	16:22			16:16
27	08:30	07:29			06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:22	08:21			08:52
	17:04	18:05			18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21			16:17
28	08:28	07:26			06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24	08:22			08:52
	17:06	18:07			19:00	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20			16:18
29	08:27				07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24			08:52
	17:08				20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19			16:19
30	08:25				07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26			08:52
	17:09				20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18			16:20
31	08:23				07:11		05:11		05:44	06:39		07:30				08:52
	17:11				20:06		21:52		21:35	20:28		17:04				16:21
Potential sun hours	250	273			367	420	494	510	512	460	382	328	259			233
Total, worst case			67											64		
Sun reduction			0.19											0.20		
Oper. time red.			1.00											1.00		
Wind dir. red.			0.64											0.64		
Total reduction			0.12											0.13		
Total, real			8											8		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** CN - H101

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	21:13 (11) 05:06	21:16 (11) 05:46	06:40	07:34	07:32	08:27
	16:22	17:14	18:09	20:08	21:03	21:53 6	21:19 (11) 22:08 16	21:32 (11) 21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:06	05:58	05:09	21:13 (11) 05:07	21:17 (11) 05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05	21:55 7	21:20 (11) 22:08 15	21:32 (11) 21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:19	07:04	05:55	05:08	21:12 (11) 05:08	21:17 (11) 05:49	06:44	07:37	07:36	08:30
	16:24	17:17	18:13	20:12	21:07	21:56 9	21:21 (11) 22:07 15	21:32 (11) 21:29	20:21	19:07	16:58	16:16
4	08:51	08:16	07:17	07:02	05:53	05:07	21:13 (11) 05:08	21:18 (11) 05:51	06:46	07:39	07:38	08:32
	16:26	17:19	18:15	20:13	21:09	21:57 9	21:22 (11) 22:07 14	21:32 (11) 21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:51	05:07	21:12 (11) 05:09	21:17 (11) 05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11	21:58 11	21:23 (11) 22:06 13	21:30 (11) 21:25	20:16	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:49	05:06	21:12 (11) 05:10	21:18 (11) 05:55	06:49	07:43	07:42	08:34
	16:28	17:24	18:19	20:17	21:12	21:59 11	21:23 (11) 22:06 12	21:30 (11) 21:23	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48	05:05	21:12 (11) 05:11	21:18 (11) 05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00 13	21:25 (11) 22:05 12	21:30 (11) 21:21	20:12	18:58	16:50	16:14
8	08:50	08:09	07:07	06:52	05:46	05:05	21:12 (11) 05:12	21:19 (11) 05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01 13	21:25 (11) 22:04 10	21:29 (11) 21:19	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:49	05:44	05:04	21:12 (11) 05:13	21:19 (11) 06:00	06:55	07:48	07:48	08:38
	16:32	17:30	18:25	20:23	21:18	22:02 14	21:26 (11) 22:04 9	21:28 (11) 21:17	20:07	18:53	16:46	16:13
10	08:48	08:05	07:03	06:47	05:42	05:04	21:13 (11) 05:14	21:20 (11) 06:02	06:56	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:19	22:03 15	21:28 (11) 22:03 8	21:28 (11) 21:15	20:04	18:50	16:45	16:12
11	08:48	08:03	07:00	06:45	05:40	05:03	21:12 (11) 05:16	21:21 (11) 06:03	06:58	07:52	07:52	08:41
	16:35	17:34	18:29	20:26	21:21	22:04 16	21:28 (11) 22:02 6	21:27 (11) 21:13	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	21:12 (11) 05:17	21:21 (11) 06:05	07:00	07:54	07:53	08:42
	16:37	17:36	18:30	20:28	21:23	22:04 17	21:29 (11) 22:01 5	21:26 (11) 21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:55	06:40	05:36	05:02	21:13 (11) 05:18	21:22 (11) 06:07	07:02	07:56	07:55	08:43
	16:39	17:38	18:32	20:30	21:25	22:05 16	21:29 (11) 22:00 3	21:25 (11) 21:09	19:57	18:43	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	05:02	21:13 (11) 05:19	21:24 (11) 06:09	07:03	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:26	22:06 17	21:30 (11) 21:59 1	21:25 (11) 21:07	19:54	18:41	16:38	16:12
15	08:44	07:55	06:51	06:35	05:33	05:02	21:12 (11) 05:20	06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06 18	21:30 (11) 21:58	21:05	19:52	18:39	16:36	16:12
16	08:43	07:53	06:48	06:33	05:31	05:02	21:12 (11) 05:22	06:12	07:07	08:01	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07 18	21:30 (11) 21:57	21:03	19:49	18:36	16:35	16:12
17	08:42	07:51	06:46	06:31	05:30	05:02	21:13 (11) 05:23	06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:31	22:07 18	21:31 (11) 21:55	21:01	19:47	18:34	16:33	16:12
18	08:41	07:49	06:43	06:28	05:28	05:02	21:13 (11) 05:24	06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:39	21:33	22:08 18	21:31 (11) 21:54	20:58	19:44	18:32	16:32	16:12
19	08:40	07:46	06:41	06:26	05:27	05:02	21:13 (11) 05:26	06:17	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08 19	21:32 (11) 21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:44	06:38	06:24	05:25	05:02	21:14 (11) 05:27	06:19	07:14	08:09	08:08	08:49
	16:51	17:52	18:46	20:43	21:36	22:08 19	21:33 (11) 21:52	20:54	19:39	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:24	05:02	21:14 (11) 05:29	06:21	07:16	08:11	08:10	08:49
	16:52	17:54	18:47	20:45	21:38	22:09 19	21:33 (11) 21:50	20:52	19:37	18:25	16:28	16:13
22	08:37	07:40	06:33	06:19	05:22	05:02	21:14 (11) 05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:39	22:09 19	21:33 (11) 21:49	20:49	19:34	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	21:14 (11) 05:32	06:24	07:19	08:15	08:14	08:50
	16:56	17:58	18:51	20:49	21:41	22:09 19	21:33 (11) 21:47	20:47	19:32	18:21	16:25	16:14
24	08:34	07:35	06:28	06:15	05:19	05:03	21:15 (11) 05:33	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:50	21:42	22:09 18	21:33 (11) 21:46	20:45	19:30	18:18	16:24	16:15
25	08:32	07:33	06:26	06:12	05:18	05:03	21:15 (11) 05:35	06:28	07:23	07:19	08:17	08:51
	17:00	18:01	18:55	20:52	21:44	22:09 18	21:33 (11) 21:44	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	21:15 (11) 05:36	06:30	07:25	07:21	08:19	08:51
	17:02	18:03	18:57	20:54	21:45	22:09 18	21:33 (11) 21:43	20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:16	05:04	21:15 (11) 05:38	06:32	07:27	07:22	08:21	08:52
	17:04	18:05	18:59	20:56	21:47	22:09 18	21:33 (11) 21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	05:04	21:15 (11) 05:40	06:33	07:28	07:24	08:22	08:52
	17:06	18:07	19:00	20:58	21:48	22:09 18	21:33 (11) 21:40	20:36	19:20	17:10	16:20	16:18
29	08:26		07:16	06:04	05:13 21:14 (11)	05:05	21:16 (11) 05:41	06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:49 1 21:15 (11)	22:09 17	21:33 (11) 21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12 21:15 (11)	05:05	21:16 (11) 05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:01	21:51 2 21:17 (11)	22:08 17	21:33 (11) 21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11 21:14 (11)		05:44	06:39		07:30		08:52
	17:12		20:06		21:52 4 21:18 (11)		21:35	20:28		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case					7	465	139					
Sun reduction					0.31	0.26	0.22					
Oper. time red.					1.00	1.00	1.00					
Wind dir. red.					0.60	0.60	0.60					
Total reduction					0.19	0.16	0.13					
Total, real					1	72	19					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** CO - H102

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:07	05:46	06:41	07:34	07:32	08:27
	16:23	17:14	18:10	20:08	21:04	21:54	22:08	21:33	20:26	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:10	05:07	05:48	06:43	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:14	20:12	21:07	21:56	22:08	21:29	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:52	06:46	07:40	07:38	08:32
	16:26	17:20	18:16	20:14	21:09	21:57	22:07	21:28	20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	06:59	05:52	05:07	05:10	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	21:58	22:07	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:55	05:48	05:06	05:12	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:56	16:49	16:14
9	08:49	08:07	07:05	06:50	05:44	05:04	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51	16:45	16:13
11	08:48	08:03	07:01	06:45	05:40	05:04	05:16	06:04	06:59	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:13
12	08:47	08:01	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	22:00	21:10	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:03	05:20	06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00	07:59	08:45
	16:42	17:42	18:37	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:34	16:13
18	08:42	07:49	06:44	06:29	05:28	05:02	05:25	06:16	07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:42	21:35	22:08	21:53	20:57	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:28	06:20	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:37	22:09	21:52	20:54	19:40	18:28	16:30	16:13
21	08:38	07:42	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	05:02	05:31	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:14	08:51
	16:57	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:19	16:25	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	21:44	22:09	21:45	20:43	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:41	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:22	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	05:14	05:05	05:42	06:35	07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:34	19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	05:13	05:06	05:43	06:37	07:32	07:29	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:37	20:31	19:15	17:06	16:19	16:20
31	08:24		07:12		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** CP - H103

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February	March	April	May	June	July	August	September	October	November			December		
1	08:52		15:25 (1)	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:33			08:28		15:11 (1)
	16:22	20	15:45 (1)	17:14	18:10	20:08	21:04	21:54	22:09	21:33	20:26	19:13	17:02			16:18	30	15:41 (1)
2	08:52		15:25 (1)	08:20	07:22	07:07	05:58	05:09	05:07	05:48	06:43	07:36	07:34			08:29		15:12 (1)
	16:23	20	15:45 (1)	17:16	18:12	20:10	21:06	21:55	22:08	21:31	20:24	19:10	17:00			16:17	29	15:41 (1)
3	08:52		15:26 (1)	08:19	07:20	07:04	05:56	05:08	05:08	05:50	06:44	07:38	07:36			08:31		15:12 (1)
	16:25	21	15:47 (1)	17:18	18:14	20:12	21:07	21:56	22:08	21:30	20:22	19:08	16:58			16:16	28	15:40 (1)
4	08:52		15:26 (1)	08:17	07:17	07:02	05:54	05:08	05:09	05:51	06:46	07:40	07:38			08:32		15:12 (1)
	16:26	22	15:48 (1)	17:20	18:15	20:14	21:09	21:57	22:07	21:28	20:19	19:05	16:56			16:15	27	15:39 (1)
5	08:51		15:27 (1)	08:15	07:15	06:59	05:52	05:07	05:10	05:53	06:48	07:41	07:40			08:34		15:13 (1)
	16:27	23	15:50 (1)	17:22	18:17	20:16	21:11	21:58	22:07	21:26	20:17	19:03	16:54			16:15	25	15:38 (1)
6	08:51		15:27 (1)	08:13	07:13	06:57	05:50	05:06	05:10	05:55	06:50	07:43	07:42			08:35		15:13 (1)
	16:28	24	15:51 (1)	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52			16:14	24	15:37 (1)
7	08:51		15:28 (1)	08:11	07:10	06:55	05:48	05:05	05:11	05:57	06:51	07:45	07:44			08:36		15:14 (1)
	16:30	25	15:53 (1)	17:26	18:21	20:19	21:15	22:00	22:05	21:22	20:12	18:58	16:50			16:14	23	15:37 (1)
8	08:50		15:28 (1)	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46			08:38		15:14 (1)
	16:31	26	15:54 (1)	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:56	16:49			16:13	22	15:36 (1)
9	08:49		15:28 (1)	08:07	07:05	06:50	05:44	05:04	05:14	06:00	06:55	07:49	07:48			08:39		15:14 (1)
	16:33	28	15:56 (1)	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47			16:13	21	15:35 (1)
10	08:49		15:29 (1)	08:05	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51	07:50			08:40		15:15 (1)
	16:34	28	15:57 (1)	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51	16:45			16:13	21	15:36 (1)
11	08:48		15:29 (1)	08:04	07:01	06:45	05:40	05:03	05:16	06:04	06:58	07:52	07:52			08:41		15:16 (1)
	16:36	30	15:59 (1)	17:34	18:29	20:27	21:22	22:04	22:02	21:14	20:02	18:48	16:43			16:12	19	15:35 (1)
12	08:47		15:30 (1)	08:02	06:58	06:43	05:38	05:03	05:17	06:05	07:00	07:54	07:54			08:42		15:16 (1)
	16:37	29	15:59 (1)	17:36	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42			16:12	19	15:35 (1)
13	08:47		15:30 (1)	07:59	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56			08:43		15:16 (1)
	16:39	29	15:59 (1)	17:38	18:33	20:30	21:25	22:05	22:00	21:10	19:57	18:44	16:40			16:12	18	15:34 (1)
14	08:46		15:31 (1)	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:58			08:44		15:17 (1)
	16:40	28	15:59 (1)	17:40	18:35	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38			16:12	17	15:34 (1)
15	08:45		15:32 (1)	07:55	06:51	06:35	05:33	05:02	05:21	06:11	07:06	08:00	08:00			08:45		15:17 (1)
	16:42	27	15:59 (1)	17:42	18:36	20:34	21:28	22:07	21:58	21:05	19:52	18:39	16:37			16:12	17	15:34 (1)
16	08:44		15:33 (1)	07:53	06:48	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:01			08:46		15:18 (1)
	16:44	26	15:59 (1)	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35			16:12	16	15:34 (1)
17	08:43		15:34 (1)	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03		15:21 (1)	08:47		15:19 (1)
	16:46	25	15:59 (1)	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:34	4	15:25 (1)	16:12	16	15:35 (1)
18	08:42		15:34 (1)	07:49	06:44	06:29	05:28	05:02	05:25	06:16	07:11	08:06	08:05		15:17 (1)	08:48		15:19 (1)
	16:47	24	15:58 (1)	17:48	18:42	20:40	21:33	22:08	21:55	20:59	19:45	18:32	16:32	12	15:29 (1)	16:13	16	15:35 (1)
19	08:41		15:35 (1)	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07		15:15 (1)	08:48		15:19 (1)
	16:49	23	15:58 (1)	17:50	18:44	20:42	21:35	22:09	21:53	20:57	19:42	18:30	16:31	16	15:31 (1)	16:13	16	15:35 (1)
20	08:39		15:37 (1)	07:45	06:39	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09		15:14 (1)	08:49		15:20 (1)
	16:51	22	15:59 (1)	17:52	18:46	20:43	21:37	22:09	21:52	20:54	19:40	18:28	16:29	19	15:33 (1)	16:13	15	15:35 (1)
21	08:38		15:37 (1)	07:42	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11		15:13 (1)	08:50		15:20 (1)
	16:53	21	15:58 (1)	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	21	15:34 (1)	16:14	15	15:35 (1)
22	08:37		15:39 (1)	07:40	06:34	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12		15:13 (1)	08:50		15:21 (1)
	16:54	19	15:58 (1)	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	22	15:35 (1)	16:14	15	15:36 (1)
23	08:36		15:40 (1)	07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15	08:14		15:12 (1)	08:51		15:21 (1)
	16:56	16	15:56 (1)	17:58	18:51	20:49	21:41	22:09	21:48	20:48	19:32	18:21	16:26	23	15:35 (1)	16:15	15	15:36 (1)
24	08:34		15:43 (1)	07:36	06:29	06:15	05:20	05:03	05:33	06:27	07:22	08:17	08:16		15:12 (1)	08:51		15:22 (1)
	16:58	12	15:55 (1)	18:00	18:53	20:51	21:43	22:10	21:46	20:45	19:30	18:19	16:24	24	15:36 (1)	16:15	15	15:37 (1)
25	08:33		15:47 (1)	07:34	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18		15:12 (1)	08:52		15:22 (1)
	17:00	4	15:51 (1)	18:02	18:55	20:53	21:44	22:10	21:45	20:43	19:27	17:16	16:23	25	15:37 (1)	16:16	16	15:38 (1)
26	08:31			07:31	06:24	06:11	05:17	05:03	05:37	06:30	07:25	07:21	08:19		15:11 (1)	08:52		15:22 (1)
	17:02			18:04	18:57	20:55	21:46	22:10	21:43	20:41	19:25	17:14	16:22	26	15:37 (1)	16:17	16	15:38 (1)
27	08:30			07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21		15:11 (1)	08:52		15:23 (1)
	17:04			18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:22	17:12	16:21	27	15:38 (1)	16:17	16	15:39 (1)
28	08:28			07:27	06:19	06:06	05:15	05:04	05:40	06:34	07:29	07:25	08:23		15:11 (1)	08:52		15:23 (1)
	17:06			18:08	19:01	20:58	21:49	22:09	21:40	20:36	19:20	17:10	16:20	28	15:39 (1)	16:18	17	15:40 (1)
29	08:27				07:17	06:04	05:13	05:05	05:41	06:35	07:31	07:27	08:24		15:11 (1)	08:52		15:24 (1)
	17:08				20:03	21:00	21:50	22:09	21:38	20:34	19:17	17:08	16:19	29	15:40 (1)	16:19	17	15:41 (1)
30	08:25				07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:29	08:26		15:12 (1)	08:52		15:24 (1)
	17:10				20:04	21:02	21:51	22:09	21:37	20:31	19:15	17:06	16:18	29	15:41 (1)	16:20	18	15:42 (1)
31	08:24				07:12		05:11		05:45	06:39		07:31				08:52		15:25 (1)
	17:12				20:06		21:53		21:35	20:29		17:04				16:21	18	15:43 (1)
Potential sun hours	250			273	367	420	494	510	513	460	382	328	259			233		
Total, worst case		572												305			597	
Sun reduction		0.16												0.20			0.12	
Oper. time red.		1.00												1.00			1.00	
Wind dir. red.		0.65												0.65			0.65	
Total reduction		0.11												0.13			0.08	
Total, real		60												39			47	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** CQ - H104

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52 16:23	08:22 17:14	07:24 18:10	07:09 20:08 29	07:36 (2) 08:05 (2)	06:00 21:04	05:11 21:54	05:07 22:09	05:47 21:33	06:41 20:27	07:34 19:13	07:33 17:02	08:28 16:18
2	08:52 16:24	08:20 17:16	07:22 18:12	07:07 20:10 27	07:37 (2) 08:04 (2)	05:58 21:06	05:10 21:55	05:07 22:08	05:48 21:31	06:43 20:24	07:36 19:10	07:35 17:00	08:29 16:17
3	08:52 16:25	08:19 17:18	07:20 18:14	07:04 20:12 25	07:37 (2) 08:02 (2)	05:56 21:07	05:09 21:56	05:08 22:08	05:50 21:30	06:44 20:22	07:38 19:08	07:37 16:58	08:31 16:16
4	08:52 16:26	08:17 17:20	07:17 18:16	07:02 20:14 22	07:39 (2) 08:01 (2)	05:54 21:09	05:08 21:57	05:09 22:07	05:52 21:28	06:46 20:19	07:40 19:05	07:38 16:56	08:32 16:16
5	08:51 16:27	08:15 17:22	07:15 18:18	07:00 20:16 19	07:39 (2) 07:58 (2)	05:52 21:11	05:07 21:58	05:10 22:07	05:53 21:26	06:48 20:17 4	07:43 (2) 07:47 (2)	07:42 19:03	08:34 16:54	16:15
6	08:51 16:29	08:13 17:24	07:13 18:19	06:57 20:18 14	07:42 (2) 07:56 (2)	05:50 21:13	05:06 22:00	05:11 22:06	05:55 21:24	06:50 20:14 14	07:38 (2) 07:52 (2)	07:43 19:01	07:42 16:52	08:35 16:14
7	08:51 16:30	08:11 17:26	07:10 18:21	06:55 20:19 6	07:46 (2) 07:52 (2)	05:48 21:15	05:06 22:01	05:12 22:06	05:57 21:22	06:52 20:12 18	07:35 (2) 07:53 (2)	07:45 18:58	07:44 16:51	08:36 16:14
8	08:50 16:31	08:09 17:28	07:08 18:23	06:52 20:21		05:46 21:16	05:05 22:01	05:13 22:05	05:58 21:20	06:53 20:10 22	07:33 (2) 07:55 (2)	07:47 18:56	07:46 16:49	08:38 16:14
9	08:50 16:33	08:08 17:30	07:06 18:25	06:50 20:23		05:44 21:18	05:05 22:02	05:14 22:04	06:00 21:18	06:55 20:07 25	07:31 (2) 07:56 (2)	07:49 18:53	07:48 16:47	08:39 16:13
10	08:49 16:34	08:06 17:32	07:03 18:27	06:48 20:25		05:42 21:20	05:04 22:03	05:15 22:03	06:02 21:16	06:57 20:05 27	07:30 (2) 07:57 (2)	07:51 18:51	07:50 16:45	08:40 16:13
11	08:48 16:36	08:04 17:34	07:01 18:29	06:45 20:27		05:40 21:22	05:04 22:04	05:16 22:02	06:04 21:14	06:59 20:02 29	07:28 (2) 07:57 (2)	07:53 18:49	07:52 16:43	08:41 16:13
12	08:47 16:37	08:02 17:36	06:58 18:31	06:43 20:29		05:39 21:23	05:03 22:05	05:17 22:01	06:05 21:12	07:00 20:00 30	07:28 (2) 07:58 (2)	07:54 18:46	07:54 16:42	08:42 16:13
13	08:47 16:39	08:00 17:38	06:56 18:33	06:40 20:31		05:37 21:25	05:03 22:06	05:18 22:00	06:07 21:10 9	06:45 (1) 06:54 (1)	07:02 19:57 29	07:29 (2) 07:58 (2)	07:56 18:44	07:56 16:40	08:43 16:12
14	08:46 16:41	07:58 17:40	06:53 18:35	06:38 20:32		05:35 21:27	05:03 22:06	05:20 21:59	06:09 21:08 13	06:43 (1) 06:56 (1)	07:04 19:55 27	07:30 (2) 07:57 (2)	07:58 18:42	07:58 16:39	08:44 16:12
15	08:45 16:42	07:55 17:42	06:51 18:37	06:36 20:34		05:33 21:29	05:02 22:07	05:21 21:58	06:11 21:05 16	06:42 (1) 06:58 (1)	07:06 19:52 25	07:32 (2) 07:57 (2)	08:00 18:39	08:00 16:37	08:45 16:12
16	08:44 16:44	07:53 17:44	06:49 18:39	06:33 20:36		05:32 21:30	05:02 22:07	05:22 21:57	06:13 21:03 17	06:41 (1) 06:58 (1)	07:07 19:50 23	07:34 (2) 07:57 (2)	08:02 18:37	08:02 16:35	08:46 16:12
17	08:43 16:46	07:51 17:46	06:46 18:40	06:31 20:38		05:30 21:32	05:02 22:08	05:24 21:56	06:14 21:01 16	06:43 (1) 06:59 (1)	07:09 19:47 21	07:36 (2) 07:57 (2)	08:04 18:35	08:03 16:34	08:47 16:13
18	08:42 16:47	07:49 17:48	06:44 18:42	06:29 20:40		05:29 21:34	05:02 22:08	05:25 21:55	06:16 20:59 15	06:45 (1) 07:00 (1)	07:11 19:45 18	07:37 (2) 07:55 (2)	08:06 18:32	08:05 16:32	08:48 16:13
19	08:41 16:49	07:47 17:50	06:41 18:44	06:26 20:42 3	06:51 (1) 06:54 (1)	05:27 21:35	05:02 22:09	05:26 21:53	06:18 20:57 13	06:46 (1) 06:59 (1)	07:13 19:42 16	07:39 (2) 07:55 (2)	08:08 18:30	08:07 16:31	08:49 16:13
20	08:40 16:51	07:45 17:52	06:39 18:46 2	07:03 (2) 07:05 (2) 20:44 5	06:24 06:49 (1) 06:54 (1)	05:25 21:37	05:02 22:09	05:28 21:52	06:20 20:54 11	06:48 (1) 06:59 (1)	07:15 19:40 13	07:41 (2) 07:54 (2)	08:09 18:28	08:09 16:30	08:49 16:13
21	08:38 16:53	07:43 17:54	06:36 18:48 5	07:00 (2) 07:05 (2) 20:45 8	06:22 06:47 (1) 06:55 (1)	05:24 21:38	05:02 22:09	05:29 21:51	06:21 20:52 10	06:50 (1) 07:00 (1)	07:16 19:37 10	07:43 (2) 07:53 (2)	08:11 18:25	08:11 16:28	08:50 16:14
22	08:37 16:55	07:40 17:56	06:34 18:50 9	06:58 (2) 07:07 (2) 20:47 10	06:20 06:44 (1) 06:54 (1)	05:23 21:40	05:02 22:09	05:31 21:49	06:23 20:50 7	06:51 (1) 06:58 (1)	07:18 19:35 6	07:44 (2) 07:50 (2)	08:13 18:23	08:13 16:27	08:50 16:14
23	08:36 16:57	07:38 17:58	06:31 18:52 12	06:55 (2) 07:07 (2) 20:49 12	06:17 06:42 (1) 06:54 (1)	05:21 21:41	05:03 22:10	05:32 21:48	06:25 20:48 5	06:53 (1) 06:58 (1)	07:20 19:32 3	07:46 (2) 07:49 (2)	08:15 18:21	08:14 16:26	08:51 16:15
24	08:34 16:58	07:36 18:00	06:29 18:53 15	06:53 (2) 07:08 (2) 20:51 13	06:15 06:40 (1) 06:53 (1)	05:20 21:43	05:03 22:10	05:34 21:46	06:27 20:45 3	06:55 (1) 06:58 (1)	07:22 19:30		08:17 18:19	08:16 16:25	08:51 16:15
25	08:33 17:00	07:34 18:02	06:27 18:55 18	06:50 (2) 07:08 (2) 20:53 15	06:13 06:38 (1) 06:53 (1)	05:18 21:44	05:03 22:10	05:35 21:45	06:28 20:43		07:23 19:28		07:19 17:17	08:18 16:23	08:52 16:16
26	08:32 17:02	07:31 18:04	06:24 18:57 20	06:48 (2) 07:08 (2) 20:55 16	06:11 06:36 (1) 06:52 (1)	05:17 21:46	05:04 22:10	05:37 21:43	06:30 20:41		07:25 19:25		07:21 17:15	08:20 16:22	08:52 16:17
27	08:30 17:04	07:29 18:06	06:22 18:59 23	06:45 (2) 07:08 (2) 20:56 17	06:09 06:34 (1) 06:51 (1)	05:16 21:47	05:04 22:10	05:38 21:42	06:32 20:38		07:27 19:23		07:23 17:12	08:21 16:21	08:52 16:18
28	08:29 17:06	07:27 18:08	06:19 19:01 25	06:43 (2) 07:08 (2) 20:58 15	06:06 06:35 (1) 06:50 (1)	05:15 21:49	05:05 22:09	05:40 21:40	06:34 20:36		07:29 19:20		07:25 17:10	08:23 16:20	08:52 16:18
29	08:27 17:08		07:17 20:03 27	07:40 (2) 08:07 (2) 21:00 12	06:04 06:36 (1) 06:48 (1)	05:14 21:50	05:05 22:09	05:42 21:38	06:36 20:34		07:31 19:18		07:27 17:08	08:25 16:19	08:53 16:19
30	08:25 17:10		07:14 20:05 29	07:38 (2) 08:07 (2) 21:02 8	06:02 06:38 (1) 06:46 (1)	05:13 21:51	05:06 22:09	05:43 21:37	06:37 20:31		07:32 19:15		07:29 17:06	08:26 16:19	08:53 16:20
31	08:24 17:12		07:12 20:06 30	07:35 (2) 08:05 (2)		05:12 21:53		05:45 21:35	06:39 20:29				07:31 17:04		08:53 16:21
Potential sun hours	250	273	367	420		494	510	512	460	382		328	259	233	
Total, worst case			215	276					135	360					
Sun reduction			0.22	0.31					0.26	0.25					
Oper. time red.			1.00	1.00					1.00	1.00					
Wind dir. red.			0.65	0.65					0.65	0.65					
Total reduction			0.14	0.20					0.17	0.16					
Total, real			30	55					22	58					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:

Carrigeen Renewable Energy Development

Licensed user:

Jennings O'Donovan

Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** CR - H105

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:16
3	08:52	08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:38	07:36	08:30
	16:24	17:18	18:13	20:12	21:07	21:56	22:08	21:29	20:21	19:07	16:58	16:16
4	08:52	08:17	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11	21:58	22:07	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:49	05:06	05:10	05:55	06:49	07:43	07:42	08:35
	16:28	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:13
8	08:50	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:49	07:48	08:39
	16:32	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46	16:13
10	08:49	08:05	07:03	06:47	05:42	05:03	05:14	06:02	06:56	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:12
11	08:48	08:03	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52	08:41
	16:35	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23	22:05	22:01	21:12	19:59	18:46	16:41	16:12
13	08:46	07:59	06:56	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:07	21:58	21:05	19:52	18:39	16:36	16:12
16	08:44	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:33	16:12
18	08:42	07:49	06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:12
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11	08:10	08:50
	16:52	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:13
22	08:37	07:40	06:34	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	16:14
24	08:34	07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24	16:15
25	08:33	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:25	08:23	08:52
	17:06	18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11		05:44	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	513	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** CS - H106

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June		July		August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:11		05:07		05:47	06:41	07:34	07:33	08:28
	16:23	17:14	18:10	20:08	21:04	21:54		22:09	4	05:44 (3)	21:33	20:27	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:10		05:07		05:40 (3)	05:48	06:43	07:36	07:35	08:29
	16:24	17:16	18:12	20:10	21:06	21:55		22:08	4	05:44 (3)	21:31	20:24	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04	05:56	05:09		05:08		05:41 (3)	05:50	06:44	07:38	07:36	08:31
	16:25	17:18	18:14	20:12	21:07	21:56		22:08	3	05:44 (3)	21:30	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08		05:09		05:42 (3)	05:52	06:46	07:40	07:38	08:32
	16:26	17:20	18:16	20:14	21:09	21:57		22:07	2	05:44 (3)	21:28	20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	07:00	05:52	05:07		05:10		05:43 (3)	05:53	06:48	07:42	07:40	08:34
	16:27	17:22	18:18	20:16	21:11	21:58		22:07	1	05:44 (3)	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06		05:11		05:44 (3)	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:18	21:13	21:59		22:06	1	05:45 (3)	21:24	20:14	19:01	16:52	16:14
7	08:51	08:11	07:10	06:55	05:48	05:06	05:37 (3)	05:12			05:57	06:52	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:15	22:00	1	05:38 (3)	22:05		21:22	20:12	18:58	16:51	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05		05:37 (3)	05:13		05:59	06:53	07:47	07:46	08:38
	16:31	17:28	18:23	20:21	21:16	22:01	2	05:39 (3)	22:05		21:20	20:10	18:56	16:49	16:14
9	08:49	08:07	07:06	06:50	05:44	05:05		05:36 (3)	05:14		06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	3	05:39 (3)	22:04		21:18	20:07	18:53	16:47	16:13
10	08:49	08:06	07:03	06:47	05:42	05:04		05:36 (3)	05:15		06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	3	05:39 (3)	22:03		21:16	20:05	18:51	16:45	16:13
11	08:48	08:04	07:01	06:45	05:40	05:04		05:36 (3)	05:16		06:04	06:59	07:53	07:52	08:41
	16:36	17:34	18:29	20:27	21:22	22:04	4	05:40 (3)	22:02		21:14	20:02	18:49	16:43	16:13
12	08:47	08:02	06:58	06:43	05:39	05:03		05:35 (3)	05:17		06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	4	05:39 (3)	22:01		21:12	20:00	18:46	16:42	16:13
13	08:47	08:00	06:56	06:40	05:37	05:03		05:35 (3)	05:18		06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:31	21:25	22:05	5	05:40 (3)	22:00		21:10	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:03		05:35 (3)	05:20		06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	5	05:40 (3)	21:59		21:08	19:55	18:41	16:39	16:12
15	08:45	07:55	06:51	06:36	05:33	05:02		05:35 (3)	05:21		06:11	07:06	08:00	08:00	08:45
	16:42	17:42	18:37	20:34	21:28	22:07	6	05:41 (3)	21:58		21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:49	06:33	05:32	05:02		05:35 (3)	05:22		06:13	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	6	05:41 (3)	21:57		21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02		05:35 (3)	05:24		06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	6	05:41 (3)	21:56		21:01	19:47	18:35	16:34	16:13
18	08:42	07:49	06:44	06:29	05:29	05:02		05:35 (3)	05:25		06:16	07:11	08:06	08:05	08:48
	16:48	17:48	18:42	20:40	21:33	22:08	6	05:41 (3)	21:55		20:59	19:45	18:32	16:32	16:13
19	08:41	07:47	06:41	06:26	05:27	05:02		05:35 (3)	05:26		06:18	07:13	08:08	08:07	08:48
	16:49	17:50	18:44	20:42	21:35	22:09	7	05:42 (3)	21:53		20:57	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02		05:35 (3)	05:28		06:20	07:15	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:37	22:09	7	05:42 (3)	21:52		20:54	19:40	18:28	16:30	16:13
21	08:38	07:43	06:36	06:22	05:24	05:02		05:35 (3)	05:29		06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	7	05:42 (3)	21:51		20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:20	05:23	05:02		05:35 (3)	05:31		06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	7	05:42 (3)	21:49		20:50	19:35	18:23	16:27	16:14
23	08:36	07:38	06:31	06:17	05:21	05:03		05:36 (3)	05:32		06:25	07:20	08:15	08:14	08:51
	16:57	17:58	18:52	20:49	21:41	22:09	7	05:43 (3)	21:48		20:48	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03		05:36 (3)	05:34		06:27	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:10	6	05:42 (3)	21:46		20:45	19:30	18:19	16:25	16:15
25	08:33	07:34	06:26	06:13	05:18	05:03		05:36 (3)	05:35		06:28	07:23	07:19	08:18	08:52
	17:00	18:02	18:55	20:53	21:44	22:10	6	05:42 (3)	21:45		20:43	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04		05:37 (3)	05:37		06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:55	21:46	22:10	6	05:43 (3)	21:43		20:41	19:25	17:15	16:22	16:17
27	08:30	07:29	06:22	06:09	05:16	05:04		05:37 (3)	05:38		06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	6	05:43 (3)	21:42		20:38	19:23	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	05:15	05:05		05:38 (3)	05:40		06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:49	22:09	5	05:43 (3)	21:40		20:36	19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	05:14	05:05		05:38 (3)	05:42		06:36	07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	5	05:43 (3)	21:38		20:34	19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	05:13	05:06		05:39 (3)	05:43		06:37	07:32	07:29	08:26	08:52
	17:10		20:05	21:02	21:51	22:09	5	05:44 (3)	21:37		20:31	19:15	17:06	16:19	16:20
31	08:24		07:12		05:12				05:45		06:39		07:31		08:52
	17:12		20:06		21:53				21:35		20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510			512		460	382	328	259	233
Total, worst case						125			15						
Sun reduction						0.26			0.22						
Oper. time red.						1.00			1.00						
Wind dir. red.						0.65			0.65						
Total reduction						0.17			0.14						
Total, real						21			2						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** CT - H107

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52 16:23	08:22 17:14	07:24 18:10	07:09 20:08	06:00 21:04	05:11 21:54	05:07 22:09	05:47 21:33	06:41 20:27	07:34 19:13	08:01 (2) 4 08:05 (2)	07:33 17:02	08:28 16:18
2	08:52 16:24	08:20 17:16	07:22 18:12	07:07 20:10	05:58 21:06	05:10 21:55	05:07 22:08	05:48 21:31	06:43 20:24	07:36 19:10		07:35 17:00	08:29 16:17
3	08:52 16:25	08:19 17:18	07:20 18:14	07:04 20:12	05:56 21:07	05:09 21:56	05:08 22:08	05:50 21:30	06:44 20:22	07:38 19:08		07:37 16:58	08:31 16:16
4	08:52 16:26	08:17 17:20	07:17 18:16	07:02 20:14	05:54 21:09	05:08 21:57	05:09 22:07	05:52 21:28	06:46 20:19	07:40 19:05		07:38 16:56	08:32 16:16
5	08:52 16:27	08:15 17:22	07:15 18:18	07:00 20:16	05:52 21:11	05:07 21:58	05:10 22:07	05:53 21:26	06:48 20:17	07:42 19:03		07:40 16:54	08:34 16:15
6	08:51 16:29	08:13 17:24	07:13 18:19	06:57 20:18	05:50 21:13	05:06 22:00	05:11 22:06	05:55 21:24	06:50 20:14	07:43 19:01		07:42 16:52	08:35 16:14
7	08:51 16:30	08:11 17:26	07:10 18:21	06:55 20:19	05:48 21:15	05:06 22:01	05:12 22:06	05:57 21:22	06:52 20:12	07:45 18:58		07:44 16:51	08:36 16:14
8	08:50 16:31	08:09 17:28	07:08 18:23	06:52 20:21	05:46 21:16	05:05 22:01	05:13 22:05	05:58 21:20	06:53 20:10	07:47 18:56		07:46 16:49	08:38 16:14
9	08:50 16:33	08:08 17:30	07:06 18:25	06:50 20:23	05:44 21:18	05:04 22:02	05:14 22:04	06:00 21:18	06:55 20:07	07:49 18:53		07:48 16:47	08:39 16:13
10	08:49 16:34	08:06 17:32	07:03 18:27	06:48 20:25	05:42 21:20	05:04 22:03	05:15 22:03	06:02 21:16	06:57 20:05	07:51 18:51		07:50 16:45	08:40 16:13
11	08:48 16:36	08:04 17:34	07:01 18:29	06:45 20:27	05:40 21:22	05:04 22:04	05:16 22:02	06:04 21:14	06:59 20:02	07:53 18:49		07:52 16:43	08:41 16:13
12	08:47 16:37	08:02 17:36	06:58 18:31 3	07:22 (2) 07:25 (2) 20:29 1	06:43 07:08 (1) 21:23	07:07 (1) 05:39 22:05	05:03 22:01	05:17 21:12	06:05 07:00 20:00	07:54 18:46		07:54 16:42	08:42 16:13
13	08:47 16:39	08:00 17:38	06:56 18:33 7	07:20 (2) 07:27 (2) 20:31 4	06:40 07:04 (1) 21:25 07:08 (1)	05:37 22:06	05:03 22:00	05:18 21:10	07:02 19:57	07:56 18:44		07:56 16:40	08:43 16:12
14	08:46 16:41	07:58 17:40	06:53 18:35 10	07:17 (2) 07:27 (2) 20:32 7	06:38 07:02 (1) 21:27 07:09 (1)	05:35 22:06	05:03 21:59	05:20 21:08	06:09 07:04 19:55 8	07:56 (2) 08:04 (2) 18:42		07:58 16:39	08:44 16:12
15	08:45 16:42	07:55 17:42	06:51 18:37 13	07:15 (2) 07:28 (2) 20:34 9	06:36 07:00 (1) 21:29 07:09 (1)	05:33 22:07	05:02 21:58	05:21 21:05	06:11 07:06 19:52 15	07:52 (2) 08:07 (2) 18:39		08:00 16:37	08:45 16:12
16	08:44 16:44	07:53 17:44	06:49 18:39 16	07:13 (2) 07:29 (2) 20:36 11	06:33 06:58 (1) 21:30 07:09 (1)	05:32 22:07	05:02 21:57	05:22 21:03	06:13 07:07 19:50 20	07:50 (2) 08:10 (2) 18:37		08:02 16:35	08:46 16:12
17	08:43 16:46	07:51 17:46	06:46 18:40 19	07:10 (2) 07:29 (2) 20:38 13	06:31 06:55 (1) 21:32 07:08 (1)	05:30 22:08	05:02 21:56	05:24 21:01	06:14 07:09 19:47 23	07:48 (2) 08:11 (2) 18:35		08:03 16:34	08:47 16:13
18	08:42 16:47	07:49 17:48	06:44 18:42 21	07:08 (2) 07:29 (2) 20:40 15	06:29 06:53 (1) 21:34 07:08 (1)	05:29 22:08	05:02 21:55	05:25 20:59	06:16 07:11 19:45 25	07:46 (2) 08:11 (2) 18:32		08:05 16:32	08:48 16:13
19	08:41 16:49	07:47 17:50	06:41 18:44 24	07:05 (2) 07:29 (2) 20:42 16	06:26 06:51 (1) 21:35 07:07 (1)	05:27 22:09	05:02 21:53	05:26 20:57 4	06:18 06:59 (1) 07:13 07:03 (1) 19:42 27	07:45 (2) 08:12 (2) 18:30		08:07 16:31	08:49 16:13
20	08:40 16:51	07:45 17:52	06:39 18:46 26	07:03 (2) 07:29 (2) 20:44 17	06:24 06:49 (1) 21:37 07:06 (1)	05:25 22:09	05:02 21:52	05:28 20:54 11	06:20 06:56 (1) 07:15 07:07 (1) 19:40 29	07:44 (2) 08:13 (2) 18:28		08:09 16:30	08:49 16:13
21	08:38 16:53	07:43 17:54	06:36 18:48 28	07:00 (2) 07:28 (2) 20:45 17	06:22 06:48 (1) 21:38 07:05 (1)	05:24 22:09	05:02 21:51	05:29 20:52 15	06:21 06:54 (1) 07:16 07:09 (1) 19:37 30	07:43 (2) 08:13 (2) 18:25		08:11 16:28	08:50 16:14
22	08:37 16:55	07:40 17:56	06:34 18:50 30	06:58 (2) 07:28 (2) 20:47 14	06:20 06:49 (1) 21:40 07:03 (1)	05:23 22:09	05:02 21:49	05:31 20:50 17	06:23 06:52 (1) 07:18 07:09 (1) 19:35 29	07:44 (2) 08:13 (2) 18:23		08:13 16:27	08:50 16:14
23	08:36 16:57	07:38 17:58	06:31 18:52 29	06:57 (2) 07:26 (2) 20:49 11	06:17 06:50 (1) 21:41 07:01 (1)	05:21 22:10	05:03 21:48	05:32 20:48 17	06:25 06:53 (1) 07:20 07:10 (1) 19:32 27	07:46 (2) 08:13 (2) 18:21		08:14 16:26	08:51 16:15
24	08:34 16:58	07:36 18:00	06:29 18:53 28	06:58 (2) 07:26 (2) 20:51	06:15 21:43	05:20 22:10	05:03 21:46	05:34 20:45 16	06:27 06:55 (1) 07:22 07:11 (1) 19:30 24	07:48 (2) 08:12 (2) 18:19		08:16 16:25	08:51 16:15
25	08:33 17:00	07:34 18:02	06:27 18:55 26	06:58 (2) 07:24 (2) 20:53	06:13 21:44	05:18 22:10	05:03 21:45	05:35 20:43 14	06:28 06:56 (1) 07:23 07:10 (1) 19:28 22	07:50 (2) 08:12 (2) 17:17		08:18 16:23	08:52 16:16
26	08:32 17:02	07:31 18:04	06:24 18:57 24	06:59 (2) 07:23 (2) 20:55	06:11 21:46	05:17 22:10	05:04 21:43	05:37 20:41 13	06:30 06:58 (1) 07:25 07:11 (1) 19:25 20	07:52 (2) 08:12 (2) 17:15		08:20 16:22	08:52 16:17
27	08:30 17:04	07:29 18:06	06:22 18:59 21	07:00 (2) 07:21 (2) 20:56	06:09 21:47	05:16 22:10	05:04 21:42	05:38 20:38 11	06:32 07:00 (1) 07:27 07:11 (1) 19:23 17	07:53 (2) 08:10 (2) 17:12		08:21 16:21	08:52 16:18
28	08:29 17:06	07:27 18:08	06:19 19:01 17	07:02 (2) 07:19 (2) 20:58	06:06 21:49	05:15 22:09	05:05 21:40	05:40 20:36 9	06:34 07:02 (1) 07:29 07:11 (1) 19:20 14	07:55 (2) 08:09 (2) 17:10		08:23 16:20	08:52 16:18
29	08:27 17:08		07:17 20:03 9	08:05 (2) 08:14 (2) 21:00	06:04 21:50	05:14 22:09	05:05 21:38	05:42 20:34 6	06:36 07:03 (1) 07:31 07:09 (1) 19:18 11	07:57 (2) 08:08 (2) 17:08		08:25 16:19	08:53 16:19
30	08:25 17:10		07:14 20:05	06:02 21:02	05:13 21:51	05:06 22:09	05:43 21:37	06:37 20:31 4	07:05 (1) 07:32 07:09 (1) 19:15 8	07:59 (2) 08:07 (2) 17:06		08:26 16:19	08:53 16:20
31	08:24 17:12		07:12 20:06		05:11 21:53		05:45 21:35	06:39 20:29 1	07:07 (1) 07:08 (1)	07:31 17:04			08:53 16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328		259	233
Total, worst case			351	135				138	349	4			
Sun reduction			0.22	0.31				0.26	0.25	0.23			
Oper. time red.			1.00	1.00				1.00	1.00	1.00			
Wind dir. red.			0.64	0.64				0.64	0.64	0.64			
Total reduction			0.14	0.20				0.16	0.16	0.14			
Total, real			49	27				23	56	1			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** CU - H108

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March		April		May			June		July			August			September	October	November	December
1	08:52		08:22		07:24		07:09		06:00			05:11		05:07			05:47		06:19 (2)	06:41	07:34	07:33	08:28
	16:23		17:14		18:10		20:08		21:04			21:54		22:09			21:33	12	06:31 (2)	20:27	19:13	17:02	16:18
2	08:52		08:20		07:22		07:07		05:58			05:10		05:07			05:48		06:19 (2)	06:43	07:36	07:35	08:29
	16:24		17:16		18:12		20:10		21:06			21:55		22:08			21:31	12	06:31 (2)	20:24	19:10	17:00	16:17
3	08:52		08:19		07:20		07:04		05:56			05:09		05:08			05:50		06:20 (2)	06:44	07:38	07:37	08:31
	16:25		17:18		18:14		20:12		21:07			21:56		22:08			21:30	10	06:30 (2)	20:22	19:08	16:58	16:16
4	08:52		08:17		07:17		07:02		05:54			05:08		05:09			05:52		06:22 (2)	06:46	07:40	07:38	08:32
	16:26		17:20		18:16		20:14		21:09			21:57		22:07			21:28	8	06:30 (2)	20:19	19:05	16:56	16:16
5	08:51		08:15		07:15		07:00		05:52		06:18 (2)	05:07		05:10			05:53		06:23 (2)	06:48	07:42	07:40	08:34
	16:27		17:22		18:18		20:16		21:11	1	06:19 (2)	21:58		22:07			21:26	6	06:29 (2)	20:17	19:03	16:54	16:15
6	08:51		08:13		07:13		06:57		05:50		06:16 (2)	05:06		05:11			05:55		06:25 (2)	06:50	07:43	07:42	08:35
	16:29		17:24		18:19		20:18		21:13	3	06:19 (2)	21:59		22:06			21:24	4	06:29 (2)	20:14	19:01	16:52	16:14
7	08:51		08:11		07:10		06:55		05:48		06:15 (2)	05:06		05:12			05:57		06:27 (2)	06:52	07:45	07:44	08:36
	16:30		17:26		18:21		20:19		21:15	5	06:20 (2)	22:00		22:05			21:22	2	06:29 (2)	20:12	18:58	16:51	16:14
8	08:50		08:09		07:08		06:52		05:46		06:13 (2)	05:05		05:13			05:59			06:53	07:47	07:46	08:38
	16:31		17:28		18:23		20:21		21:16	7	06:20 (2)	22:01		22:05			21:20			20:10	18:56	16:49	16:14
9	08:50		08:08		07:06		06:50		05:44		06:11 (2)	05:05		05:14			06:00			06:55	07:49	07:48	08:39
	16:33		17:30		18:25		20:23		21:18	9	06:20 (2)	22:02		22:04			21:18			20:07	18:53	16:47	16:13
10	08:49		08:06		07:03		06:48		05:42		06:09 (2)	05:04		05:15			06:02			06:57	07:51	07:50	08:40
	16:34		17:32		18:27		20:25		21:20	11	06:20 (2)	22:03		22:03			21:16			20:05	18:51	16:45	16:13
11	08:48		08:04		07:01		06:45		05:40		06:08 (2)	05:04		05:16			06:04			06:59	07:53	07:52	08:41
	16:36		17:34		18:29		20:27		21:22	13	06:21 (2)	22:04		22:02			21:14			20:02	18:49	16:43	16:13
12	08:47		08:02		06:58		06:43		05:39		06:09 (2)	05:03		05:17			06:05			07:00	07:54	07:54	08:42
	16:37		17:36		18:31		20:29		21:23	12	06:21 (2)	22:05		22:01			21:12			20:00	18:46	16:42	16:13
13	08:47		08:00		06:56		06:40		05:37		06:10 (2)	05:03		05:18			06:07			07:02	07:56	07:56	08:43
	16:39		17:38		18:33		20:31		21:25	11	06:21 (2)	22:05		22:00			21:10			19:57	18:44	16:40	16:12
14	08:46		07:58		06:53		06:38		05:35		06:12 (2)	05:03		05:20			06:09			07:04	07:58	07:58	08:44
	16:41		17:40		18:35		20:32		21:27	10	06:22 (2)	22:06		21:59			21:08			19:55	18:42	16:39	16:12
15	08:45		07:55		06:51		06:36		05:33		06:13 (2)	05:02		05:21			06:11			07:06	08:00	08:00	08:45
	16:42		17:42		18:37		20:34		21:29	9	06:22 (2)	22:07		21:58			21:05			19:52	18:39	16:37	16:12
16	08:44		07:53		06:49		06:33		05:32		06:14 (2)	05:02		05:22		06:28 (2)	06:13			07:07	08:02	08:02	08:46
	16:44		17:44		18:39		20:36		21:30	9	06:23 (2)	22:07		21:57	1	06:29 (2)	21:03			19:50	18:37	16:35	16:12
17	08:43		07:51		06:46		06:31		05:30		06:14 (2)	05:02		05:24		06:29 (2)	06:14			07:09	08:04	08:03	08:47
	16:46		17:46		18:40		20:38		21:32	10	06:24 (2)	22:08		21:56	2	06:31 (2)	21:01			19:47	18:35	16:34	16:13
18	08:42		07:49		06:44		06:29		05:29		06:16 (2)	05:02		05:25		06:29 (2)	06:16			07:11	08:06	08:05	08:48
	16:48		17:48		18:42		20:40		21:34	9	06:25 (2)	22:08		21:55	2	06:31 (2)	20:59			19:45	18:32	16:32	16:13
19	08:41		07:47		06:41		06:26		05:27		06:17 (2)	05:02		05:26		06:28 (2)	06:18			07:13	08:08	08:07	08:49
	16:49		17:50		18:44		20:42		21:35	9	06:26 (2)	22:09		21:53	4	06:32 (2)	20:57			19:42	18:30	16:31	16:13
20	08:39		07:45		06:39		06:24		05:25		06:17 (2)	05:02		05:28		06:29 (2)	06:20			07:15	08:09	08:09	08:49
	16:51		17:52		18:46		20:44		21:37	8	06:25 (2)	22:09		21:52	4	06:33 (2)	20:54			19:40	18:28	16:30	16:13
21	08:38		07:43		06:36		06:22		05:24		06:17 (2)	05:02		05:29		06:28 (2)	06:21			07:16	08:11	08:11	08:50
	16:53		17:54		18:48		20:45		21:38	8	06:25 (2)	22:09		21:51	6	06:34 (2)	20:52			19:37	18:25	16:28	16:14
22	08:37		07:40		06:34		06:20		05:23		06:18 (2)	05:02		05:31		06:27 (2)	06:23			07:18	08:13	08:13	08:50
	16:55		17:56		18:50		20:47		21:40	6	06:24 (2)	22:09		21:49	7	06:34 (2)	20:50			19:35	18:23	16:27	16:14
23	08:36		07:38		06:31		06:17		05:21		06:18 (2)	05:03		05:32		06:28 (2)	06:25			07:20	08:15	08:14	08:51
	16:57		17:58		18:52		20:49		21:41	5	06:23 (2)	22:10		21:48	7	06:35 (2)	20:48			19:32	18:21	16:26	16:15
24	08:34		07:36		06:29		06:15		05:20		06:19 (2)	05:03		05:34		06:27 (2)	06:27			07:22	08:17	08:16	08:51
	16:58		18:00		18:53		20:51		21:43	4	06:23 (2)	22:10		21:46	8	06:35 (2)	20:45			19:30	18:19	16:25	16:15
25	08:33		07:34		06:27		06:13		05:18		06:19 (2)	05:03		05:35		06:27 (2)	06:28			07:23	07:19	08:18	08:52
	17:00		18:02		18:55		20:53		21:44	3	06:22 (2)	22:10		21:45	9	06:36 (2)	20:43			19:28	17:17	16:24	16:16
26	08:32		07:31		06:24		06:11		05:17		06:19 (2)	05:04		05:37		06:26 (2)	06:30			07:25	07:21	08:20	08:52
	17:02		18:04		18:57		20:55		21:46	2	06:21 (2)	22:10		21:43	9	06:35 (2)	20:41			19:25	17:15	16:22	16:17
27	08:30		07:29		06:22		06:09		05:16		06:20 (2)	05:04		05:38		06:25 (2)	06:32			07:27	07:23	08:21	08:52
	17:04		18:06		18:59		20:56		21:47	1	06:21 (2)	22:10		21:42	9	06:34 (2)	20:38			19:23	17:12	16:21	16:18
28	08:29		07:27		06:19		06:06		05:15			05:05		05:40		06:24 (2)	06:34			07:29	07:25	08:23	08:52
	17:06		18:08		19:01		20:58		21:49			22:09		21:40	9	06:33 (2)	20:36			19:20	17:10	16:20	16:18
29	08:27				07:17		06:04		05:14			05:05		05:42		06:23 (2)	06:36			07:31	07:27	08:24	08:52
	17:08				20:03		21:00		21:50			22:09		21:38	9	06:32 (2)	20:34			19:18	17:08	16:19	16:19
30	08:25				07:14		06:02		05:13			05:06		05:43		06:22 (2)	06:37			07:32	07:29	08:26	08:53
	17:10				20:05		21:02		21:51			22:09		21:37	10	06:32 (2)	20:31			19:15	17:06	16:19	16:20
31	08:24				07:12				05:12					05:45		06:21 (2)	06:39				07:31		08:53
	17:12				20:06				21:53					21:35	11	06:32 (2)	20:29				17:04		16:21
Potential sun hours	250		273		367		420		494			510		512			460			382	328	259	233
Total, worst case										165					107			54					
Sun reduction										0.31					0.22			0.26					
Oper. time red.										1.00					1.00			1.00					
Wind dir. red.										0.65					0.65			0.65					
Total reduction										0.20					0.14			0.17					
Total, real										33					15			9					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** CV - H110

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May		June		July		August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00		05:10		20:49 (11)	05:06	21:00 (11)	05:46	06:40	07:34	07:32	08:27
	16:22	17:14	18:09	20:08	21:03		21:53	22	21:11 (11)	22:08	21:12 (11)	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:06	05:58		05:09		20:49 (11)	05:07	20:59 (11)	05:48	06:42	07:36	07:34	08:29
	16:23	17:15	18:11	20:10	21:05		21:55	21	21:10 (11)	22:08	21:13 (11)	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:19	07:04	05:55		05:08		20:50 (11)	05:08	20:59 (11)	05:49	06:44	07:37	07:36	08:30
	16:24	17:17	18:13	20:12	21:07		21:56	20	21:10 (11)	22:07	21:14 (11)	21:29	20:21	19:07	16:58	16:16
4	08:51	08:16	07:17	07:02	05:53		05:07		20:51 (11)	05:08	20:59 (11)	05:51	06:46	07:39	07:38	08:32
	16:26	17:19	18:15	20:13	21:09		21:57	19	21:10 (11)	22:07	21:14 (11)	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:51		05:07		20:51 (11)	05:09	20:58 (11)	05:53	06:48	07:41	07:40	08:33
	16:27	17:21	18:17	20:15	21:11		21:58	19	21:10 (11)	22:06	21:14 (11)	21:25	20:16	19:02	16:54	16:15
6	08:51	08:13	07:12	06:57	05:49		05:06		20:51 (11)	05:10	20:58 (11)	05:55	06:49	07:43	07:42	08:34
	16:28	17:23	18:19	20:17	21:12		21:59	18	21:09 (11)	22:06	21:15 (11)	21:23	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48		05:05		20:53 (11)	05:11	20:58 (11)	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14		22:00	16	21:09 (11)	22:05	21:16 (11)	21:21	20:12	18:58	16:50	16:14
8	08:50	08:09	07:07	06:52	05:46		05:05		20:53 (11)	05:12	20:58 (11)	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16		22:01	15	21:08 (11)	22:04	21:16 (11)	21:19	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:49	05:44		05:04		20:54 (11)	05:13	20:57 (11)	06:00	06:55	07:48	07:48	08:38
	16:32	17:30	18:25	20:23	21:18		22:02	14	21:08 (11)	22:03	21:17 (11)	21:17	20:07	18:53	16:46	16:13
10	08:48	08:05	07:03	06:47	05:42		05:04		20:55 (11)	05:14	20:57 (11)	06:02	06:56	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:19		22:03	14	21:09 (11)	22:03	21:17 (11)	21:15	20:04	18:50	16:45	16:12
11	08:48	08:03	07:00	06:45	05:40		05:03		20:55 (11)	05:16	20:57 (11)	06:03	06:58	07:52	07:52	08:41
	16:35	17:34	18:29	20:26	21:21		22:04	13	21:08 (11)	22:02	21:18 (11)	21:13	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38		05:03		20:56 (11)	05:17	20:56 (11)	06:05	07:00	07:54	07:53	08:42
	16:37	17:36	18:30	20:28	21:23		22:04	12	21:08 (11)	22:01	21:18 (11)	21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:55	06:40	05:36	20:50 (11)	05:02		20:57 (11)	05:18	20:56 (11)	06:07	07:02	07:56	07:55	08:43
	16:39	17:38	18:32	20:30	21:25	3 20:53 (11)	22:05	10	21:07 (11)	22:00	21:19 (11)	21:09	19:57	18:43	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	20:49 (11)	05:02		20:58 (11)	05:19	20:57 (11)	06:09	07:03	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:26	5 20:54 (11)	22:06	9	21:07 (11)	21:59	21:20 (11)	21:07	19:54	18:41	16:38	16:12
15	08:44	07:55	06:51	06:35	05:33	20:48 (11)	05:02		20:58 (11)	05:20	20:56 (11)	06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	8 20:56 (11)	22:06	8	21:06 (11)	21:58	21:20 (11)	21:05	19:52	18:39	16:36	16:12
16	08:43	07:53	06:48	06:33	05:31	20:47 (11)	05:02		20:59 (11)	05:22	20:56 (11)	06:12	07:07	08:01	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	10 20:57 (11)	22:07	7	21:06 (11)	21:57	21:20 (11)	21:03	19:49	18:36	16:35	16:12
17	08:42	07:51	06:46	06:31	05:30	20:47 (11)	05:02		20:59 (11)	05:23	20:56 (11)	06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:31	12 20:59 (11)	22:07	7	21:06 (11)	21:55	21:20 (11)	21:01	19:47	18:34	16:33	16:12
18	08:41	07:49	06:43	06:28	05:28	20:46 (11)	05:02		21:00 (11)	05:24	20:56 (11)	06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:39	21:33	14 21:00 (11)	22:08	5	21:05 (11)	21:54	21:20 (11)	20:58	19:44	18:32	16:32	16:12
19	08:40	07:46	06:41	06:26	05:27	20:46 (11)	05:02		21:01 (11)	05:26	20:56 (11)	06:17	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	16 21:02 (11)	22:08	4	21:05 (11)	21:53	21:20 (11)	20:56	19:42	18:30	16:31	16:13
20	08:39	07:44	06:38	06:24	05:25	20:47 (11)	05:02		21:02 (11)	05:27	20:56 (11)	06:19	07:14	08:09	08:08	08:49
	16:51	17:52	18:46	20:43	21:36	17 21:04 (11)	22:08	4	21:06 (11)	21:52	21:18 (11)	20:54	19:39	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:24	20:46 (11)	05:02		21:02 (11)	05:29	20:56 (11)	06:21	07:16	08:11	08:10	08:49
	16:52	17:54	18:47	20:45	21:38	18 21:04 (11)	22:09	4	21:06 (11)	21:50	21:16 (11)	20:52	19:37	18:25	16:28	16:13
22	08:37	07:40	06:33	06:19	05:22	20:46 (11)	05:02		21:02 (11)	05:30	20:56 (11)	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:39	20 21:06 (11)	22:09	4	21:06 (11)	21:49	21:16 (11)	20:49	19:34	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	20:46 (11)	05:02		21:02 (11)	05:32	20:56 (11)	06:24	07:19	08:15	08:14	08:50
	16:56	17:58	18:51	20:49	21:41	22 21:08 (11)	22:09	4	21:06 (11)	21:47	21:14 (11)	20:47	19:32	18:21	16:25	16:14
24	08:34	07:35	06:28	06:15	05:19	20:47 (11)	05:02		21:02 (11)	05:33	20:57 (11)	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:50	21:42	22 21:09 (11)	22:09	5	21:07 (11)	21:46	21:13 (11)	20:45	19:30	18:18	16:24	16:15
25	08:32	07:33	06:26	06:12	05:18	20:47 (11)	05:03		21:02 (11)	05:35	20:57 (11)	06:28	07:23	08:19	08:17	08:51
	17:00	18:01	18:55	20:52	21:44	24 21:11 (11)	22:09	6	21:08 (11)	21:44	21:12 (11)	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	20:46 (11)	05:03		21:01 (11)	05:36	20:58 (11)	06:30	07:25	07:20	08:19	08:51
	17:02	18:03	18:57	20:54	21:45	25 21:11 (11)	22:09	7	21:08 (11)	21:43	21:11 (11)	20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:15	20:46 (11)	05:04		21:01 (11)	05:38	20:58 (11)	06:32	07:27	07:22	08:21	08:52
	17:04	18:05	18:59	20:56	21:47	25 21:11 (11)	22:09	8	21:09 (11)	21:41	21:09 (11)	20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	20:47 (11)	05:04		21:00 (11)	05:40	20:59 (11)	06:33	07:28	07:24	08:22	08:52
	17:06	18:07	19:00	20:58	21:48	24 21:11 (11)	22:09	9	21:09 (11)	21:40	21:08 (11)	20:36	19:20	17:10	16:20	16:18
29	08:26		07:16	06:04	05:13	20:47 (11)	05:05		21:00 (11)	05:41	20:59 (11)	06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:49	23 21:10 (11)	22:09	10	21:10 (11)	21:38	21:06 (11)	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	20:47 (11)	05:05		21:01 (11)	05:43	21:00 (11)	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:01	21:51	23 21:10 (11)	22:08	11	21:12 (11)	21:36	21:05 (11)	20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11	20:49 (11)				05:44	21:01 (11)	06:39		07:30		08:52
	17:12		20:06		21:52	22 21:11 (11)				21:35	21:03 (11)	20:28		17:04		16:21
Potential sun hours	250	273	367	420	494		510			512		460	382	328	259	233
Total, worst case						333		325		532						
Sun reduction						0.31		0.26		0.22						
Oper. time red.						1.00		1.00		1.00						
Wind dir. red.						0.61		0.61		0.61						
Total reduction						0.19		0.16		0.14						
Total, real						64		51		73						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** CW - H111

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:40	07:34	07:32	08:27
	16:22	17:14	18:09	20:08	21:03	21:53	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:19	07:04	05:56	05:08	05:08	05:49	06:44	07:37	07:36	08:30
	16:24	17:18	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58	16:16
4	08:51	08:16	07:17	07:02	05:53	05:07	05:09	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:13	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11	21:58	22:06	21:25	20:16	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50	05:06	05:10	05:55	06:49	07:43	07:42	08:34
	16:28	17:24	18:19	20:17	21:12	21:59	22:06	21:23	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:21	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48	08:38
	16:32	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:48	08:05	07:03	06:47	05:42	05:04	05:14	06:02	06:56	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:19	22:03	22:03	21:15	20:04	18:51	16:45	16:13
11	08:48	08:03	07:00	06:45	05:40	05:03	05:16	06:03	06:58	07:52	07:52	08:41
	16:35	17:34	18:29	20:26	21:21	22:04	22:02	21:13	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:53	08:42
	16:37	17:36	18:31	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:55	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:55	08:43
	16:39	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:03	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:26	22:06	21:59	21:07	19:54	18:41	16:38	16:12
15	08:44	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:43	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:01	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16:12
17	08:42	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:31	22:07	21:55	21:01	19:47	18:34	16:33	16:12
18	08:41	07:49	06:43	06:28	05:28	05:02	05:24	06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:39	21:33	22:08	21:54	20:58	19:44	18:32	16:32	16:12
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:08	08:49
	16:51	17:52	18:46	20:43	21:36	22:08	21:52	20:54	19:39	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:24	05:02	05:29	06:21	07:16	08:11	08:10	08:49
	16:52	17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:13
22	08:37	07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:39	22:09	21:49	20:49	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:19	08:15	08:14	08:50
	16:56	17:58	18:51	20:49	21:41	22:09	21:47	20:47	19:32	18:21	16:25	16:14
24	08:34	07:35	06:29	06:15	05:19	05:03	05:33	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:50	21:42	22:09	21:46	20:45	19:30	18:18	16:24	16:15
25	08:32	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17	08:51
	17:00	18:02	18:55	20:52	21:44	22:09	21:44	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:51
	17:02	18:03	18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:22	08:21	08:52
	17:04	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	05:04	05:40	06:33	07:28	07:24	08:22	08:52
	17:06	18:07	19:00	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:26		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:01	21:51	22:08	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11		05:44	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:28		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** CX - H112

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:07	05:46	06:41	07:34	07:32	08:27
	16:23	17:14	18:10	20:08	21:04	21:54	22:08	21:33	20:26	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:10	05:07	05:48	06:43	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:14	20:12	21:07	21:56	22:08	21:29	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:52	06:46	07:40	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:28	20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	06:59	05:52	05:07	05:10	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	21:58	22:06	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:55	05:48	05:06	05:12	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:56	16:49	16:14
9	08:49	08:07	07:05	06:50	05:44	05:04	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51	16:45	16:13
11	08:48	08:03	07:01	06:45	05:40	05:04	05:16	06:04	06:59	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:13
12	08:47	08:01	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	22:00	21:10	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:03	05:20	06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00	07:59	08:45
	16:42	17:42	18:37	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:34	16:13
18	08:42	07:49	06:44	06:29	05:29	05:02	05:25	06:16	07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:42	21:35	22:08	21:53	20:57	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:28	06:20	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:37	22:09	21:52	20:54	19:40	18:28	16:30	16:13
21	08:38	07:42	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	05:02	05:31	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:14	08:51
	16:57	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:19	16:25	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	21:44	22:09	21:45	20:43	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:41	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:22	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	05:14	05:05	05:42	06:35	07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:34	19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	05:13	05:06	05:43	06:37	07:32	07:29	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:37	20:31	19:15	17:06	16:19	16:20
31	08:24		07:12		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** CY - H113

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February		March	April	May	June	July	August	September	October	November		December		
1	08:53	08:22		07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:33		08:28		
	16:23	17:14		18:10	20:08	21:04	21:54	22:09	21:33	20:27	19:13	17:02		16:18		
2	08:52	08:20		07:22	07:07	05:58	05:09	05:07	05:48	06:43	07:36	07:35		08:29		
	16:24	17:16		18:12	20:10	21:06	21:55	22:08	21:31	20:24	19:10	17:00		16:17		
3	08:52	08:19		07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38	07:37	08:12 (1)	08:31		
	16:25	17:18		18:14	20:12	21:07	21:56	22:08	21:30	20:22	19:08	16:58	1 08:13 (1)	16:16		
4	08:52	08:17		07:17	07:02	05:54	05:08	05:09	05:52	06:46	07:40	07:38	08:10 (1)	08:32		
	16:26	17:20		18:16	20:14	21:09	21:57	22:07	21:28	20:19	19:05	16:56	1 08:11 (1)	16:16		
5	08:52	08:15		07:15	07:00	05:52	05:07	05:10	05:53	06:48	07:42	07:40		08:34		
	16:27	17:22		18:18	20:16	21:11	21:59	22:07	21:26	20:17	19:03	16:54		16:15		
6	08:51	08:13	08:40 (1)	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43	07:42		08:35		
	16:29	17:24	1 08:41 (1)	18:19	20:18	21:13	22:00	22:06	21:24	20:14	19:01	16:52		16:14		
7	08:51	08:11	08:40 (1)	07:10	06:55	05:48	05:06	05:12	05:57	06:52	07:45	07:44		08:36		
	16:30	17:26	2 08:42 (1)	18:21	20:19	21:15	22:01	22:06	21:22	20:12	18:58	16:50		16:14		
8	08:50	08:09	08:42 (1)	07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47	07:46		08:38		
	16:31	17:28	1 08:43 (1)	18:23	20:21	21:16	22:02	22:05	21:20	20:10	18:56	16:49		16:13		
9	08:50	08:08		07:06	06:50	05:44	05:04	05:14	06:00	06:55	07:49	07:48		08:39		
	16:33	17:30		18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47		16:13		
10	08:49	08:06		07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51	07:50		08:40		
	16:34	17:32		18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51	16:45		16:13		
11	08:48	08:04		07:01	06:45	05:40	05:03	05:16	06:04	06:59	07:53	07:52		08:41		
	16:36	17:34		18:29	20:27	21:22	22:04	22:02	21:14	20:02	18:49	16:43		16:13		
12	08:47	08:02		06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54	07:54		08:42		
	16:37	17:36		18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42		16:12		
13	08:47	08:00		06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56		08:43		
	16:39	17:38		18:33	20:31	21:25	22:06	22:00	21:10	19:57	18:44	16:40		16:12		
14	08:46	07:58		06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:58		08:44		
	16:41	17:40		18:35	20:32	21:27	22:06	21:59	21:08	19:55	18:41	16:38		16:12		
15	08:45	07:55		06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00	08:00		08:45		10:05 (2)
	16:42	17:42		18:37	20:34	21:29	22:07	21:58	21:05	19:52	18:39	16:37		16:12	4	10:09 (2)
16	08:44	07:53		06:49	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:02		08:46		10:04 (2)
	16:44	17:44		18:39	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35		16:12	7	10:11 (2)
17	08:43	07:51		06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03		08:47		10:05 (2)
	16:46	17:46		18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:35	16:34		16:13	7	10:12 (2)
18	08:42	07:49		06:44	06:29	05:28	05:02	05:25	06:16	07:11	08:06	08:05		08:48		10:05 (2)
	16:47	17:48		18:42	20:40	21:34	22:08	21:55	20:59	19:45	18:32	16:32		16:13	8	10:13 (2)
19	08:41	07:47		06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:08	08:07		08:49		10:05 (2)
	16:49	17:50		18:44	20:42	21:35	22:09	21:53	20:57	19:42	18:30	16:31		16:13	8	10:13 (2)
20	08:40	07:45		06:39	06:24	05:25	05:02	05:28	06:20	07:15	08:09	08:09		08:49		10:06 (2)
	16:51	17:52		18:46	20:44	21:37	22:09	21:52	20:54	19:40	18:28	16:30		16:13	9	10:15 (2)
21	08:38	07:43		06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11		08:50		10:06 (2)
	16:53	17:54		18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28		16:14	9	10:15 (2)
22	08:37	07:40		06:34	06:20	05:22	05:02	05:31	06:23	07:18	08:13	08:13		08:50		10:07 (2)
	16:55	17:56		18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27		16:14	9	10:16 (2)
23	08:36	07:38		06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:14		08:51		10:07 (2)
	16:56	17:58		18:52	20:49	21:41	22:10	21:48	20:48	19:32	18:21	16:26		16:15	9	10:16 (2)
24	08:34	07:36		06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:16		08:51		10:08 (2)
	16:58	18:00		18:53	20:51	21:43	22:10	21:46	20:45	19:30	18:19	16:25		16:15	9	10:17 (2)
25	08:33	07:34		06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18		08:52		10:08 (2)
	17:00	18:02		18:55	20:53	21:44	22:10	21:45	20:43	19:28	17:17	16:23		16:16	8	10:16 (2)
26	08:32	07:31		06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	08:20		08:52		10:09 (2)
	17:02	18:04		18:57	20:55	21:46	22:10	21:43	20:41	19:25	17:14	16:22		16:17	7	10:16 (2)
27	08:30	07:29		06:22	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21		08:52		10:09 (2)
	17:04	18:06		18:59	20:56	21:47	22:10	21:42	20:38	19:23	17:12	16:21		16:17	7	10:16 (2)
28	08:29	07:27		06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	08:23		08:52		10:10 (2)
	17:06	18:08		19:01	20:58	21:49	22:09	21:40	20:36	19:20	17:10	16:20		16:18	6	10:16 (2)
29	08:27			07:17	06:04	05:14	05:05	05:42	06:36	07:31	07:27	08:25		08:53		
	17:08			20:03	21:00	21:50	22:09	21:38	20:34	19:18	17:08	16:19		16:19		
30	08:25			07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:29	08:26		08:53		
	17:10			20:05	21:02	21:51	22:09	21:37	20:31	19:15	17:06	16:18		16:20		
31	08:24			07:12		05:11		05:45	06:39		07:31			08:53		
	17:12			20:06		21:53		21:35	20:29		17:04			16:21		
Potential sun hours	250	273		367	420	494	510	512	460	382	328	259		233		
Total, worst case			4										2		107	
Sun reduction			0.19										0.20		0.12	
Oper. time red.			1.00										1.00		1.00	
Wind dir. red.			0.61										0.61		0.61	
Total reduction			0.12										0.12		0.07	
Total, real			0										0		8	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** CZ - H114

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May		June		July		August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00		05:10		21:07 (7)	05:06	21:12 (7)	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:10	20:08	21:03		21:53	12	21:19 (7)	22:08	21	21:33 (7)	21:33	20:26	19:12	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58		05:09		21:07 (7)	05:07	21:12 (7)	05:48	06:42	07:36	07:34	08:29
	16:24	17:16	18:11	20:10	21:05		21:55	13	21:20 (7)	22:08	20	21:32 (7)	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56		05:09		21:07 (7)	05:08	21:12 (7)	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12	21:07		21:56	15	21:22 (7)	22:07	20	21:32 (7)	21:29	20:21	19:08	16:58	16:16
4	08:51	08:17	07:17	07:02	05:54		05:08		21:07 (7)	05:09	21:13 (7)	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14	21:09		21:57	15	21:22 (7)	22:07	19	21:32 (7)	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52		05:07		21:07 (7)	05:10	21:13 (7)	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11		21:58	16	21:23 (7)	22:06	18	21:31 (7)	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50		05:06		21:07 (7)	05:11	21:13 (7)	05:55	06:50	07:43	07:42	08:35
	16:28	17:24	18:19	20:17	21:13		21:59	17	21:24 (7)	22:06	17	21:30 (7)	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48		05:06		21:07 (7)	05:12	21:13 (7)	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14		22:00	18	21:25 (7)	22:05	16	21:29 (7)	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46		05:05		21:07 (7)	05:13	21:13 (7)	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16		22:01	19	21:26 (7)	22:04	16	21:29 (7)	21:20	20:09	18:55	16:49	16:13
9	08:49	08:07	07:05	06:50	05:44		05:04		21:07 (7)	05:14	21:14 (7)	06:00	06:55	07:49	07:48	08:38
	16:33	17:30	18:25	20:23	21:18		22:02	19	21:26 (7)	22:04	14	21:28 (7)	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42		05:04		21:08 (7)	05:15	21:14 (7)	06:02	06:57	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20		22:03	19	21:27 (7)	22:03	14	21:28 (7)	21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:00	06:45	05:40		05:03		21:07 (7)	05:16	21:14 (7)	06:04	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21		22:04	21	21:28 (7)	22:02	13	21:27 (7)	21:14	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:43	05:38		05:03		21:07 (7)	05:17	21:15 (7)	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23		22:04	22	21:29 (7)	22:01	12	21:27 (7)	21:12	19:59	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	05:37		05:03		21:08 (7)	05:18	21:16 (7)	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25		22:05	21	21:29 (7)	22:00	10	21:26 (7)	21:09	19:57	18:44	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35		05:02		21:08 (7)	05:19	21:16 (7)	06:09	07:04	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:27		22:06	22	21:30 (7)	21:59	9	21:25 (7)	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	05:33		05:02		21:09 (7)	05:21	21:17 (7)	06:11	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28		22:06	22	21:31 (7)	21:58	7	21:24 (7)	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32		05:02		21:09 (7)	05:22	21:17 (7)	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30		22:07	22	21:31 (7)	21:57	5	21:22 (7)	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30		05:02		21:09 (7)	05:23	21:17 (7)	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32		22:07	23	21:32 (7)	21:56	4	21:21 (7)	21:01	19:47	18:34	16:34	16:12
18	08:41	07:49	06:43	06:28	05:28		05:02		21:09 (7)	05:25	21:19 (7)	06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:40	21:33		22:08	23	21:32 (7)	21:54	2	21:21 (7)	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27		05:02		21:09 (7)	05:26		06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35		22:08	24	21:33 (7)	21:53		20:56	19:42	18:30	16:31	16:13
20	08:39	07:44	06:39	06:24	05:25		05:02		21:10 (7)	05:28		06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36		22:09	23	21:33 (7)	21:52		20:54	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:22	05:24		05:02		21:10 (7)	05:29		06:21	07:16	08:11	08:10	08:49
	16:53	17:54	18:48	20:45	21:38		22:09	23	21:33 (7)	21:50		20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22		05:02		21:10 (7)	05:30		06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:49	20:47	21:40		22:09	23	21:33 (7)	21:49		20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21		05:02		21:10 (7)	05:32		06:25	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41		22:09	24	21:34 (7)	21:48		20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20		05:03		21:10 (7)	05:33		06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43		22:09	23	21:33 (7)	21:46		20:45	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18	21:10 (7)	05:03		21:10 (7)	05:35		06:28	07:23	07:19	08:17	08:51
	17:00	18:02	18:55	20:52	21:44	1 21:11 (7)	22:09	23	21:33 (7)	21:45		20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	21:09 (7)	05:04		21:11 (7)	05:37		06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:45	3 21:12 (7)	22:09	23	21:34 (7)	21:43		20:40	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	21:09 (7)	05:04		21:11 (7)	05:38		06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	4 21:13 (7)	22:09	22	21:33 (7)	21:41		20:38	19:22	17:12	16:21	16:17
28	08:28	07:27	06:19	06:06	05:15	21:08 (7)	05:05		21:11 (7)	05:40		06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	7 21:15 (7)	22:09	22	21:33 (7)	21:40		20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	21:08 (7)	05:05		21:11 (7)	05:41		06:35	07:30	07:26	08:24	08:52
	17:08		20:03	21:00	21:50	8 21:16 (7)	22:09	22	21:33 (7)	21:38		20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	21:08 (7)	05:06		21:12 (7)	05:43		06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	9 21:17 (7)	22:09	21	21:33 (7)	21:36		20:31	19:15	17:06	16:18	16:20
31	08:23		07:12		05:11	21:07 (7)				05:45		06:39		07:30		08:52
	17:12		20:06		21:52	11 21:18 (7)				21:35		20:29		17:04		16:21
Potential sun hours	250	273	367	420	494		510			512		460	382	328	259	233
Total, worst case						43		612		237						
Sun reduction						0.31		0.26		0.22						
Oper. time red.						1.00		1.00		1.00						
Wind dir. red.						0.60		0.60		0.60						
Total reduction						0.19		0.16		0.13						
Total, real						8		95		32						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** DA - H115

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March		April	May	June	July	August	September		October		November	December
1	08:52	08:22	07:24		07:09	06:00	05:11	05:07	05:47	06:41		07:34	08:01 (2)	07:33	08:28
	16:23	17:14	18:10		20:08	21:04	21:54	22:09	21:33	20:27		19:13	8 08:09 (2)	17:02	16:18
2	08:52	08:20	07:22		07:07	05:58	05:10	05:07	05:48	06:43		07:36	08:02 (2)	07:35	08:29
	16:24	17:16	18:12		20:10	21:06	21:55	22:08	21:31	20:24		19:10	5 08:07 (2)	17:00	16:17
3	08:52	08:19	07:20		07:04	05:56	05:09	05:08	05:50	06:44		07:38	08:04 (2)	07:37	08:31
	16:25	17:18	18:14		20:12	21:07	21:56	22:08	21:30	20:22		19:08	1 08:05 (2)	16:58	16:16
4	08:52	08:17	07:17		07:02	05:54	05:08	05:09	05:52	06:46		07:40		07:38	08:32
	16:26	17:20	18:16		20:14	21:09	21:57	22:07	21:28	20:19		19:05		16:56	16:16
5	08:52	08:15	07:15		07:00	05:52	05:07	05:10	05:53	06:48		07:42		07:40	08:34
	16:27	17:22	18:18		20:16	21:11	21:58	22:07	21:26	20:17		19:03		16:54	16:15
6	08:51	08:13	07:13		06:57	05:50	05:06	05:11	05:55	06:50		07:43		07:42	08:35
	16:29	17:24	18:19		20:18	21:13	22:00	22:06	21:24	20:14		19:01		16:52	16:14
7	08:51	08:11	07:10		06:55	05:48	05:06	05:12	05:57	06:52		07:45		07:44	08:36
	16:30	17:26	18:21		20:19	21:15	22:01	22:06	21:22	20:12		18:58		16:51	16:14
8	08:50	08:09	07:08		06:52	05:46	05:05	05:13	05:58	06:53		07:47		07:46	08:38
	16:31	17:28	18:23		20:21	21:16	22:01	22:05	21:20	20:10		18:56		16:49	16:14
9	08:50	08:08	07:06		06:50	05:44	05:04	05:14	06:00	06:55		07:49		07:48	08:39
	16:33	17:30	18:25		20:23	21:18	22:02	22:04	21:18	20:07		18:53		16:47	16:13
10	08:49	08:06	07:03		06:48	05:42	05:04	05:15	06:02	06:57		07:51		07:50	08:40
	16:34	17:32	18:27		20:25	21:20	22:03	22:03	21:16	20:05		18:51		16:45	16:13
11	08:48	08:04	07:01	07:25 (2)	06:45	05:40	05:04	05:16	06:04	06:59		07:53		07:52	08:41
	16:36	17:34	18:29	3 07:28 (2)	20:27	21:22	22:04	22:02	21:14	20:02		18:49		16:43	16:13
12	08:47	08:02	06:58	07:22 (2)	06:43	05:39	05:03	05:17	06:05	07:00		07:54		07:54	08:42
	16:37	17:36	18:31	7 07:29 (2)	20:29	21:23	22:05	22:01	21:12	20:00		18:46		16:42	16:13
13	08:47	08:00	06:56	07:20 (2)	06:40	05:37	05:03	05:18	06:07	07:02		07:56		07:56	08:43
	16:39	17:38	18:33	10 07:30 (2)	20:31	21:25	22:06	22:00	21:10	19:57		18:44		16:40	16:12
14	08:46	07:58	06:53	07:17 (2)	06:38	05:35	05:03	05:20	06:09	07:04		07:58		07:58	08:44
	16:41	17:40	18:35	13 07:30 (2)	20:32	21:27	22:06	21:59	21:08	19:55		18:42		16:39	16:12
15	08:45	07:55	06:51	07:15 (2)	06:36	05:33	05:02	05:21	06:11	07:06		08:00		08:00	08:45
	16:42	17:42	18:37	16 07:31 (2)	20:34	21:29	22:07	21:58	21:05	19:52		18:39		16:37	16:12
16	08:44	07:53	06:49	07:13 (2)	06:33	05:32	05:02	05:22	06:13	07:07		08:02		08:02	08:46
	16:44	17:44	18:39	19 07:32 (2)	20:36	21:30	22:07	21:57	21:03	19:50		18:37		16:35	16:12
17	08:43	07:51	06:46	07:10 (2)	06:31	05:30	05:02	05:24	06:14	07:09	07:56 (2)	08:04		08:03	08:47
	16:46	17:46	18:40	21 07:31 (2)	20:38	21:32	22:08	21:56	21:01	19:47	12 08:08 (2)	18:35		16:34	16:13
18	08:42	07:49	06:44	07:08 (2)	06:29	05:29	05:02	05:25	06:16	07:11	07:52 (2)	08:06		08:05	08:48
	16:47	17:48	18:42	23 07:31 (2)	20:40	21:34	22:08	21:55	20:59	19:45	17 08:09 (2)	18:32		16:32	16:13
19	08:41	07:47	06:41	07:05 (2)	06:26	05:27	05:02	05:26	06:18	07:13	07:50 (2)	08:08		08:07	08:49
	16:49	17:50	18:44	25 07:30 (2)	20:42	21:35	22:09	21:53	20:57	19:42	21 08:11 (2)	18:30		16:31	16:13
20	08:40	07:45	06:39	07:03 (2)	06:24	05:25	05:02	05:28	06:20	07:15	07:49 (2)	08:09		08:09	08:49
	16:51	17:52	18:46	27 07:30 (2)	20:44	21:37	22:09	21:52	20:54	19:40	23 08:12 (2)	18:28		16:30	16:13
21	08:38	07:43	06:36	07:01 (2)	06:22	05:24	05:02	05:29	06:21	07:16	07:48 (2)	08:11		08:11	08:50
	16:53	17:54	18:48	28 07:29 (2)	20:45	21:38	22:09	21:51	20:52	19:37	25 08:13 (2)	18:25		16:28	16:14
22	08:37	07:40	06:34	07:02 (2)	06:20	05:23	05:02	05:31	06:23	07:18	07:46 (2)	08:13		08:13	08:50
	16:55	17:56	18:50	26 07:28 (2)	20:47	21:40	22:09	21:49	20:50	19:35	27 08:13 (2)	18:23		16:27	16:14
23	08:36	07:38	06:31	07:02 (2)	06:17	05:21	05:03	05:32	06:25	07:20	07:46 (2)	08:15		08:14	08:51
	16:57	17:58	18:52	24 07:26 (2)	20:49	21:41	22:10	21:48	20:48	19:32	27 08:13 (2)	18:21		16:26	16:15
24	08:34	07:36	06:29	07:04 (2)	06:15	05:20	05:03	05:34	06:27	07:22	07:48 (2)	08:17		08:16	08:51
	16:58	18:00	18:54	21 07:25 (2)	20:51	21:43	22:10	21:46	20:45	19:30	26 08:14 (2)	18:19		16:25	16:15
25	08:33	07:34	06:27	07:04 (2)	06:13	05:18	05:03	05:35	06:28	07:23	07:50 (2)	07:19		08:18	08:52
	17:00	18:02	18:55	18 07:22 (2)	20:53	21:44	22:10	21:45	20:43	19:28	24 08:14 (2)	17:17		16:23	16:16
26	08:32	07:31	06:24	07:07 (2)	06:11	05:17	05:04	05:37	06:30	07:25	07:52 (2)	07:21		08:20	08:52
	17:02	18:04	18:57	13 07:20 (2)	20:55	21:46	22:10	21:43	20:41	19:25	22 08:14 (2)	17:15		16:22	16:17
27	08:30	07:29	06:22		06:09	05:16	05:04	05:38	06:32	07:27	07:53 (2)	07:23		08:21	08:52
	17:04	18:06	18:59		20:56	21:47	22:10	21:42	20:38	19:23	19 08:12 (2)	17:12		16:21	16:18
28	08:29	07:27	06:19		06:06	05:15	05:05	05:40	06:34	07:29	07:55 (2)	07:25		08:23	08:52
	17:06	18:08	19:01		20:58	21:49	22:09	21:40	20:36	19:20	17 08:12 (2)	17:10		16:20	16:18
29	08:27		07:17		06:04	05:14	05:05	05:42	06:36	07:31	07:57 (2)	07:27		08:25	08:53
	17:08		20:03		21:00	21:50	22:09	21:38	20:34	19:18	14 08:11 (2)	17:08		16:19	16:19
30	08:25		07:14		06:02	05:13	05:06	05:43	06:37	07:32	07:59 (2)	07:29		08:26	08:53
	17:10		20:05		21:02	21:51	22:09	21:37	20:31	19:15	11 08:10 (2)	17:06		16:19	16:20
31	08:24		07:12			05:12		05:45	06:39			07:31			08:53
	17:12		20:07			21:53		21:35	20:29			17:04			16:21
Potential sun hours	250	273	367		420	494	510	512	460	382		328		259	233
Total, worst case				294							285		14		
Sun reduction				0.22							0.25		0.23		
Oper. time red.				1.00							1.00		1.00		
Wind dir. red.				0.64							0.64		0.64		
Total reduction				0.14							0.16		0.14		
Total, real				41							46		2		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** DB - H116

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March		April			May	June	July	August	September			October	November	December
1	08:52	08:22	07:24		07:09		07:33 (2)	06:00	05:11	05:07	05:47	06:41			07:34	07:33	08:28
	16:23	17:14	18:10		20:08	4	07:37 (2)	21:04	21:54	22:09	21:33	20:27			19:13	17:02	16:18
2	08:52	08:20	07:22		07:07		07:32 (2)	05:58	05:10	05:07	05:48	06:43			07:36	07:35	08:29
	16:24	17:16	18:12		20:10	6	07:38 (2)	21:06	21:55	22:08	21:31	20:24			19:10	17:00	16:17
3	08:52	08:19	07:20		07:04		07:33 (2)	05:56	05:09	05:08	05:50	06:44			07:38	07:37	08:31
	16:25	17:18	18:14		20:12	5	07:38 (2)	21:07	21:56	22:08	21:30	20:22			19:08	16:58	16:16
4	08:52	08:17	07:17		07:02		07:35 (2)	05:54	05:08	05:09	05:52	06:46			07:40	07:38	08:32
	16:26	17:20	18:16		20:14	4	07:39 (2)	21:09	21:57	22:07	21:28	20:19			19:05	16:56	16:16
5	08:51	08:15	07:15		07:00		07:35 (2)	05:52	05:07	05:10	05:53	06:48		07:34 (2)	07:42	07:40	08:34
	16:27	17:22	18:18		20:16	4	07:39 (2)	21:11	21:58	22:07	21:26	20:17	1	07:35 (2)	19:03	16:54	16:15
6	08:51	08:13	07:13		06:57		07:37 (2)	05:50	05:06	05:11	05:55	06:50		07:33 (2)	07:43	07:42	08:35
	16:29	17:24	18:19		20:18	2	07:39 (2)	21:13	22:00	22:06	21:24	20:14	2	07:35 (2)	19:01	16:52	16:14
7	08:51	08:11	07:10		06:55		07:38 (2)	05:48	05:06	05:12	05:57	06:52		07:31 (2)	07:45	07:44	08:36
	16:30	17:26	18:21		20:19	1	07:39 (2)	21:15	22:01	22:06	21:22	20:12	3	07:34 (2)	18:58	16:51	16:14
8	08:50	08:09	07:08		06:52		07:37 (2)	05:46	05:05	05:13	05:59	06:53		07:29 (2)	07:47	07:46	08:38
	16:31	17:28	18:23		20:21	1	07:38 (2)	21:16	22:01	22:05	21:20	20:10	4	07:33 (2)	18:56	16:49	16:14
9	08:50	08:08	07:06		06:50			05:44	05:05	05:14	06:00	06:55		07:28 (2)	07:49	07:48	08:39
	16:33	17:30	18:25		20:23			21:18	22:02	22:04	21:18	20:07	5	07:33 (2)	18:53	16:47	16:13
10	08:49	08:06	07:03		06:48			05:42	05:04	05:15	06:02	06:57		07:25 (2)	07:51	07:50	08:40
	16:34	17:32	18:27		20:25			21:20	22:03	22:03	21:16	20:05	7	07:32 (2)	18:51	16:45	16:13
11	08:48	08:04	07:01		06:45			05:40	05:04	05:16	06:04	06:59		07:25 (2)	07:53	07:52	08:41
	16:36	17:34	18:29		20:27			21:22	22:04	22:02	21:14	20:02	5	07:30 (2)	18:49	16:43	16:13
12	08:47	08:02	06:58		06:43			05:39	05:03	05:17	06:05	07:00		07:27 (2)	07:54	07:54	08:42
	16:37	17:36	18:31		20:29			21:23	22:05	22:01	21:12	20:00	1	07:28 (2)	18:46	16:42	16:13
13	08:47	08:00	06:56		06:40			05:37	05:03	05:18	06:07	07:02			07:56	07:56	08:43
	16:39	17:38	18:33		20:31			21:25	22:06	22:00	21:10	19:57			18:44	16:40	16:12
14	08:46	07:58	06:53		06:38			05:35	05:03	05:20	06:09	07:04			07:58	07:58	08:44
	16:41	17:40	18:35		20:32			21:27	22:06	21:59	21:08	19:55			18:42	16:39	16:12
15	08:45	07:55	06:51		06:36			05:33	05:02	05:21	06:11	07:06			08:00	08:00	08:45
	16:42	17:42	18:37		20:34			21:29	22:07	21:58	21:05	19:52			18:39	16:37	16:12
16	08:44	07:53	06:49		06:33			05:32	05:02	05:22	06:13	07:07			08:02	08:02	08:46
	16:44	17:44	18:39		20:36			21:30	22:07	21:57	21:03	19:50			18:37	16:35	16:12
17	08:43	07:51	06:46		06:31			05:30	05:02	05:24	06:14	07:09			08:04	08:03	08:47
	16:46	17:46	18:40		20:38			21:32	22:08	21:56	21:01	19:47			18:35	16:34	16:13
18	08:42	07:49	06:44		06:29			05:29	05:02	05:25	06:16	07:11			08:06	08:05	08:48
	16:48	17:48	18:42		20:40			21:34	22:08	21:55	20:59	19:45			18:32	16:32	16:13
19	08:41	07:47	06:41		06:26			05:27	05:02	05:26	06:18	07:13			08:08	08:07	08:49
	16:49	17:50	18:44		20:42			21:35	22:09	21:53	20:57	19:42			18:30	16:31	16:13
20	08:40	07:45	06:39		06:24			05:25	05:02	05:28	06:20	07:15			08:09	08:09	08:49
	16:51	17:52	18:46		20:44			21:37	22:09	21:52	20:54	19:40			18:28	16:30	16:13
21	08:38	07:43	06:36		06:22			05:24	05:02	05:29	06:21	07:16			08:11	08:11	08:50
	16:53	17:54	18:48		20:45			21:38	22:09	21:51	20:52	19:37			18:25	16:28	16:14
22	08:37	07:40	06:34		06:20			05:23	05:02	05:31	06:23	07:18			08:13	08:13	08:50
	16:55	17:56	18:50		20:47			21:40	22:09	21:49	20:50	19:35			18:23	16:27	16:14
23	08:36	07:38	06:31		06:17			05:21	05:03	05:32	06:25	07:20			08:15	08:14	08:51
	16:57	17:58	18:52		20:49			21:41	22:10	21:48	20:48	19:32			18:21	16:26	16:15
24	08:34	07:36	06:29		06:15			05:20	05:03	05:34	06:27	07:22			08:17	08:16	08:51
	16:58	18:00	18:54		20:51			21:43	22:10	21:46	20:45	19:30			18:19	16:25	16:15
25	08:33	07:34	06:27		06:13			05:18	05:03	05:35	06:29	07:23			07:19	08:18	08:52
	17:00	18:02	18:55		20:53			21:44	22:10	21:45	20:43	19:28			17:17	16:23	16:16
26	08:32	07:31	06:24		06:11			05:17	05:04	05:37	06:30	07:25			07:21	08:20	08:52
	17:02	18:04	18:57		20:55			21:46	22:10	21:43	20:41	19:25			17:15	16:22	16:17
27	08:30	07:29	06:22		06:09			05:16	05:04	05:38	06:32	07:27			07:23	08:21	08:52
	17:04	18:06	18:59		20:56			21:47	22:10	21:42	20:38	19:23			17:12	16:21	16:18
28	08:29	07:27	06:19		06:06			05:15	05:05	05:40	06:34	07:29			07:25	08:23	08:52
	17:06	18:08	19:01		20:58			21:49	22:09	21:40	20:36	19:20			17:10	16:20	16:18
29	08:27		07:17		06:04			05:14	05:05	05:42	06:36	07:31			07:27	08:25	08:52
	17:08		20:03		21:00			21:50	22:09	21:38	20:34	19:18			17:08	16:19	16:19
30	08:25		07:14		06:02			05:13	05:06	05:43	06:37	07:32			07:29	08:26	08:53
	17:10		20:05		21:02			21:51	22:09	21:37	20:31	19:15			17:06	16:19	16:20
31	08:24		07:12	07:35 (2)				05:12		05:45	06:39				07:31		08:53
	17:12		20:07	1 07:36 (2)				21:53		21:35	20:29				17:04		16:21
Potential sun hours	250	273	367		420			494	510	512	460	382			328	259	233
Total, worst case			1		27							28					
Sun reduction			0.22		0.31							0.25					
Oper. time red.			1.00		1.00							1.00					
Wind dir. red.			0.64		0.64							0.64					
Total reduction			0.14		0.20							0.16					
Total, real			0		5							5					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** DC - H117

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March	April	May	June	July	August	September	October	November	December
1	08:52		08:22		07:24	07:09	05:59	05:10	05:06	05:46	06:40	07:34	07:32	08:27
	16:22		17:13	10	16:42 (10)	18:09	20:08	21:03	21:53	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52		08:20		16:32 (10)	07:22	07:06	05:57	05:09	05:07	05:48	06:42	07:36	07:34	16:05 (10)	08:29
	16:23		17:15	12	16:44 (10)	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	4	16:09 (10)	16:16
3	08:52		08:18		16:32 (10)	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:37	07:36	16:04 (10)	08:30
	16:24		17:17	14	16:46 (10)	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58	9	16:13 (10)	16:16
4	08:51		08:16		16:32 (10)	07:17	07:01	05:53	05:07	05:08	05:51	06:46	07:39	07:38	16:03 (10)	08:32
	16:26		17:19	16	16:48 (10)	18:15	20:13	21:09	21:57	22:07	21:27	20:19	19:05	16:56	21	16:24 (10)	16:15
5	08:51		08:15		16:32 (10)	07:15	06:59	05:51	05:07	05:09	05:53	06:47	07:41	07:40	16:03 (10)	08:33
	16:27		17:21	18	16:50 (10)	18:17	20:15	21:11	21:58	22:06	21:25	20:16	19:02	16:54	19	16:22 (10)	16:14
6	08:51		08:13		16:33 (10)	07:12	06:57	05:49	05:06	05:10	05:54	06:49	07:43	07:42	16:02 (10)	08:35
	16:28		17:23	19	16:52 (10)	18:19	20:17	21:12	21:59	22:06	21:23	20:14	19:00	16:52	18	16:20 (10)	16:14
7	08:50		08:11		16:34 (10)	07:10	06:54	05:47	05:05	05:11	05:56	06:51	07:45	07:44	16:02 (10)	08:36
	16:29		17:25	21	16:55 (10)	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16	16:18 (10)	16:13
8	08:50		08:09		16:35 (10)	07:07	06:52	05:46	05:04	05:12	05:58	06:53	07:47	07:46	16:02 (10)	08:37
	16:31		17:27	8	16:43 (10)	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48	14	16:16 (10)	16:13
9	08:49		08:07		16:36 (10)	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48	16:02 (10)	08:38
	16:32		17:29	2	16:38 (10)	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46	12	16:14 (10)	16:13
10	08:48		08:05			07:03	06:47	05:42	05:03	05:14	06:01	06:56	07:50	07:50	16:02 (10)	08:40
	16:34		17:31			18:27	20:25	21:20	22:03	22:03	21:15	20:04	18:50	16:45	10	16:12 (10)	16:12
11	08:48		08:03			07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52	16:03 (10)	08:41
	16:35		17:33			18:29	20:26	21:21	22:04	22:02	21:13	20:02	18:48	16:43	7	16:10 (10)	16:12
12	08:47		08:01			06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:53	16:03 (10)	08:42
	16:37		17:36			18:30	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41	6	16:09 (10)	16:12
13	08:46		07:59			06:55	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:55	16:03 (10)	08:43
	16:38		17:38			18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	4	16:07 (10)	16:12
14	08:45		07:57			06:53	06:37	05:35	05:02	05:19	06:08	07:03	07:58	07:57	16:04 (10)	08:44
	16:40		17:40			18:34	20:32	21:26	22:06	21:59	21:07	19:54	18:41	16:38	1	16:05 (10)	16:12
15	08:44		07:55			06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59			08:45
	16:42		17:42			18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36			16:12
16	08:43		07:53			06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:01	08:01			08:46
	16:43		17:44			18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35			16:12
17	08:42		07:51			06:46	06:30	05:30	05:01	05:23	06:14	07:09	08:03	08:03			08:47
	16:45		17:46			18:40	20:38	21:31	22:07	21:56	21:01	19:47	18:34	16:33			16:12
18	08:41		07:49			06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05	08:05			08:47
	16:47		17:48			18:42	20:39	21:33	22:08	21:54	20:58	19:44	18:32	16:32			16:12
19	08:40		07:46			06:41	06:26	05:26	05:01	05:26	06:17	07:12	08:07	08:07			08:48
	16:49		17:50			18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:29	16:30			16:13
20	08:39		07:44			06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:08			08:49
	16:50		17:52			18:46	20:43	21:36	22:09	21:52	20:54	19:39	18:27	16:29			16:13
21	08:38		07:42			06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11	08:10			08:49
	16:52		17:54			18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28			16:13
22	08:37		07:40			06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12			08:50
	16:54		17:56			18:49	20:47	21:39	22:09	21:49	20:49	19:34	18:23	16:26			16:14
23	08:35		07:38			06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15	08:14			08:50
	16:56		17:57			18:51	20:49	21:41	22:09	21:47	20:47	19:32	18:21	16:25			16:14
24	08:34		07:35			06:28	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16			08:51
	16:58		17:59			18:53	20:50	21:42	22:09	21:46	20:45	19:30	18:18	16:24			16:15
25	08:33		07:33			06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17			08:51
	17:00		18:01			18:55	20:52	21:44	22:09	21:44	20:43	19:27	17:16	16:23			16:16
26	08:31		07:31			06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19			08:52
	17:02		18:03			18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	16:22			16:16
27	08:30		07:29			06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:22	08:21			08:52
	17:04		18:05			18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21			16:17
28	08:28	16:32 (10)	07:26			06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24	08:22			08:52
	17:06	1 16:33 (10)	18:07			19:00	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20			16:18
29	08:27	16:31 (10)				07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24			08:52
	17:08	4 16:35 (10)				20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19			16:19
30	08:25	16:31 (10)				07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26			08:52
	17:09	6 16:37 (10)				20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18			16:20
31	08:23	16:31 (10)				07:11		05:11		05:44	06:39		07:30				08:52
	17:11	8 16:39 (10)				20:06		21:52		21:35	20:28		17:04				16:21
Potential sun hours	250		273			367	420	494	510	513	460	382	328	259			233
Total, worst case		19		120											141		
Sun reduction		0.16		0.19											0.20		
Oper. time red.		1.00		1.00											1.00		
Wind dir. red.		0.64		0.64											0.64		
Total reduction		0.10		0.12											0.13		
Total, real		2		15											18		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** DD - H118

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February		March	April	May	June	July	August	September	October	November		December
1	08:52	08:22		16:40 (10)	07:24	07:09	05:59	05:10	05:06	05:46	06:40	07:34	07:32		08:27
	16:22	17:13	2	16:42 (10)	18:09	20:08	21:03	21:53	22:08	21:33	20:26	19:12	17:02		16:17
2	08:52	08:20		16:40 (10)	07:22	07:06	05:57	05:09	05:07	05:48	06:42	07:36	07:34		08:29
	16:23	17:15	4	16:44 (10)	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00		16:16
3	08:52	08:18		16:40 (10)	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:37	07:36	16:10 (10)	08:30
	16:24	17:17	6	16:46 (10)	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58	3 16:13 (10)	16:16
4	08:51	08:16		16:40 (10)	07:17	07:01	05:53	05:07	05:08	05:51	06:46	07:39	07:38	16:10 (10)	08:32
	16:26	17:19	8	16:48 (10)	18:15	20:13	21:09	21:57	22:07	21:27	20:19	19:05	16:56	14 16:24 (10)	16:15
5	08:51	08:15		16:40 (10)	07:15	06:59	05:51	05:07	05:09	05:53	06:47	07:41	07:40	16:09 (10)	08:33
	16:27	17:21	10	16:50 (10)	18:17	20:15	21:11	21:58	22:06	21:25	20:16	19:02	16:54	13 16:22 (10)	16:14
6	08:51	08:13		16:40 (10)	07:12	06:57	05:49	05:06	05:10	05:54	06:49	07:43	07:42	16:09 (10)	08:35
	16:28	17:23	12	16:52 (10)	18:19	20:17	21:12	21:59	22:06	21:23	20:14	19:00	16:52	11 16:20 (10)	16:14
7	08:50	08:11		16:40 (10)	07:10	06:54	05:47	05:05	05:11	05:56	06:51	07:45	07:44	16:09 (10)	08:36
	16:29	17:25	15	16:55 (10)	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	9 16:18 (10)	16:13
8	08:50	08:09		16:40 (10)	07:07	06:52	05:46	05:04	05:12	05:58	06:53	07:47	07:46	16:10 (10)	08:37
	16:31	17:27	3	16:43 (10)	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48	6 16:16 (10)	16:13
9	08:49	08:07			07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48	16:11 (10)	08:38
	16:32	17:29			18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46	3 16:14 (10)	16:13
10	08:48	08:05			07:03	06:47	05:42	05:03	05:14	06:01	06:56	07:50	07:50	16:11 (10)	08:40
	16:34	17:31			18:27	20:25	21:20	22:03	22:03	21:15	20:04	18:50	16:45	1 16:12 (10)	16:12
11	08:48	08:03			07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52		08:41
	16:35	17:33			18:29	20:26	21:21	22:04	22:02	21:13	20:02	18:48	16:43		16:12
12	08:47	08:01			06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:53		08:42
	16:37	17:36			18:30	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41		16:12
13	08:46	07:59			06:55	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:55		08:43
	16:38	17:38			18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40		16:12
14	08:45	07:57			06:53	06:37	05:35	05:02	05:19	06:08	07:03	07:58	07:57		08:44
	16:40	17:40			18:34	20:32	21:26	22:06	21:59	21:07	19:54	18:41	16:38		16:12
15	08:44	07:55			06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59		08:45
	16:42	17:42			18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36		16:12
16	08:43	07:53			06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:01	08:01		08:46
	16:43	17:44			18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35		16:12
17	08:42	07:51			06:46	06:30	05:30	05:01	05:23	06:14	07:09	08:03	08:03		08:47
	16:45	17:46			18:40	20:38	21:31	22:07	21:56	21:01	19:47	18:34	16:33		16:12
18	08:41	07:49			06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05	08:05		08:47
	16:47	17:48			18:42	20:39	21:33	22:08	21:54	20:58	19:44	18:32	16:32		16:12
19	08:40	07:46			06:41	06:26	05:26	05:01	05:26	06:17	07:12	08:07	08:07		08:48
	16:49	17:50			18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:29	16:30		16:13
20	08:39	07:44			06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:08		08:49
	16:50	17:52			18:46	20:43	21:36	22:09	21:52	20:54	19:39	18:27	16:29		16:13
21	08:38	07:42			06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11	08:10		08:49
	16:52	17:54			18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28		16:13
22	08:37	07:40			06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12		08:50
	16:54	17:56			18:49	20:47	21:39	22:09	21:49	20:49	19:34	18:23	16:26		16:14
23	08:35	07:38			06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15	08:14		08:50
	16:56	17:57			18:51	20:49	21:41	22:09	21:47	20:47	19:32	18:21	16:25		16:14
24	08:34	07:35			06:28	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16		08:51
	16:58	17:59			18:53	20:50	21:42	22:09	21:46	20:45	19:29	18:18	16:24		16:15
25	08:33	07:33			06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17		08:51
	17:00	18:01			18:55	20:52	21:44	22:09	21:44	20:43	19:27	17:16	16:23		16:16
26	08:31	07:31			06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19		08:52
	17:02	18:03			18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	16:22		16:16
27	08:30	07:29			06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:22	08:21		08:52
	17:04	18:05			18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21		16:17
28	08:28	07:26			06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24	08:22		08:52
	17:06	18:07			19:00	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20		16:18
29	08:27				07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24		08:52
	17:08				20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19		16:19
30	08:25				07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26		08:52
	17:09				20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18		16:20
31	08:23				07:11		05:11		05:44	06:39		07:30			08:52
	17:11				20:06		21:52		21:35	20:28		17:04			16:21
Potential sun hours	250	273			367	420	494	510	512	460	382	328	259		233
Total, worst case			60											60	
Sun reduction			0.19											0.20	
Oper. time red.			1.00											1.00	
Wind dir. red.			0.64											0.64	
Total reduction			0.12											0.13	
Total, real			7											8	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** DE - H119

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February	March	April	May	June	July	August	September	October	November			December		
1	08:52		15:04 (9)	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:40	07:34	07:32			08:27		15:40 (8)
	16:22	4	15:08 (9)	17:13	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02			16:17	1	15:41 (8)
2	08:52			08:20	07:22	07:06	05:57	05:09	05:07	05:48	06:42	07:36	07:34			08:29		
	16:23			17:15	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00			16:16		
3	08:52			08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:37	07:36			08:30		
	16:24			17:17	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58			16:16		
4	08:51			08:16	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38			08:32		
	16:26			17:19	18:15	20:13	21:09	21:57	22:07	21:27	20:19	19:05	16:56			16:15		
5	08:51			08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40			08:33		
	16:27			17:21	18:17	20:15	21:11	21:58	22:06	21:25	20:16	19:03	16:54			16:14		
6	08:51			08:13	07:12	06:57	05:49	05:06	05:10	05:55	06:49	07:43	07:42			08:35		
	16:28			17:23	18:19	20:17	21:12	21:59	22:06	21:24	20:14	19:00	16:52			16:14		
7	08:50			08:11	07:10	06:54	05:47	05:05	05:11	05:56	06:51	07:45	07:44			08:36		
	16:30			17:25	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50			16:13		
8	08:50			08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46			08:37		
	16:31			17:27	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48			16:13		
9	08:49			08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48			08:39		
	16:32			17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46			16:13		
10	08:49			08:05	07:03	06:47	05:42	05:03	05:14	06:01	06:56	07:50	07:50			08:40		
	16:34			17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:50	16:45			16:12		
11	08:48		15:58 (8)	08:03	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52			08:41		14:55 (9)
	16:35	1	15:59 (8)	17:34	18:29	20:26	21:21	22:04	22:02	21:14	20:02	18:48	16:43			16:12	3	14:58 (9)
12	08:47		15:58 (8)	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54			08:42		14:54 (9)
	16:37	3	16:01 (8)	17:36	18:31	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41			16:12	7	15:01 (9)
13	08:46		15:59 (8)	07:59	06:55	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:55			08:43		14:53 (9)
	16:39	3	16:02 (8)	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40			16:12	9	15:02 (9)
14	08:45		15:59 (8)	07:57	06:53	06:38	05:35	05:02	05:19	06:08	07:03	07:58	07:57		15:42 (8)	08:44		14:53 (9)
	16:40	5	16:04 (8)	17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38	6	15:48 (8)	16:12	10	15:03 (9)
15	08:45		15:59 (8)	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59		15:39 (8)	08:45		14:53 (9)
	16:42	7	16:06 (8)	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36	11	15:50 (8)	16:12	11	15:04 (9)
16	08:44		16:00 (8)	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01		15:38 (8)	08:46		14:53 (9)
	16:43	8	16:08 (8)	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	14	15:52 (8)	16:12	12	15:05 (9)
17	08:43		15:59 (8)	07:51	06:46	06:31	05:30	05:01	05:23	06:14	07:09	08:03	08:03		15:37 (8)	08:47		14:53 (9)
	16:45	10	16:09 (8)	17:46	18:40	20:38	21:32	22:07	21:56	21:01	19:47	18:34	16:33	16	15:53 (8)	16:12	13	15:06 (9)
18	08:41		15:59 (8)	07:49	06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05	08:05		15:36 (8)	08:47		14:52 (9)
	16:47	13	16:12 (8)	17:48	18:42	20:39	21:33	22:08	21:54	20:59	19:44	18:32	16:32	18	15:54 (8)	16:12	14	15:06 (9)
19	08:40		15:59 (8)	07:47	06:41	06:26	05:26	05:01	05:26	06:17	07:12	08:07	08:07		15:36 (8)	08:48		14:53 (9)
	16:49	15	16:14 (8)	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	20	15:56 (8)	16:13	14	15:07 (9)
20	08:39		15:59 (8)	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09		15:36 (8)	08:49		14:54 (9)
	16:51	16	16:15 (8)	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:39	18:27	16:29	19	15:55 (8)	16:13	14	15:08 (9)
21	08:38		16:00 (8)	07:42	06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11	08:10		15:36 (8)	08:49		14:53 (9)
	16:52	18	16:18 (8)	17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	18	15:54 (8)	16:13	15	15:08 (9)
22	08:37		16:01 (8)	07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12		15:36 (8)	08:50		14:54 (9)
	16:54	19	16:20 (8)	17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	17	15:53 (8)	16:14	15	15:09 (9)
23	08:35		16:01 (8)	07:38	06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15	08:14		15:35 (8)	08:51		14:54 (9)
	16:56	20	16:21 (8)	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	15	15:50 (8)	16:14	15	15:09 (9)
24	08:34		16:02 (8)	07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16		15:36 (8)	08:51		14:55 (9)
	16:58	18	16:20 (8)	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24	13	15:49 (8)	16:15	14	15:09 (9)
25	08:33		16:04 (8)	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17		15:37 (8)	08:51		14:56 (9)
	17:00	16	16:20 (8)	18:01	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	11	15:48 (8)	16:16	14	15:10 (9)
26	08:31		16:05 (8)	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19		15:38 (8)	08:52		14:57 (9)
	17:02	14	16:19 (8)	18:03	18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	16:22	8	15:46 (8)	16:16	13	15:10 (9)
27	08:30		16:08 (8)	07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21		15:38 (8)	08:52		14:57 (9)
	17:04	10	16:18 (8)	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	7	15:45 (8)	16:17	13	15:10 (9)
28	08:28		16:10 (8)	07:26	06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24	08:23		15:39 (8)	08:52		14:58 (9)
	17:06	5	16:15 (8)	18:07	19:00	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	5	15:44 (8)	16:18	12	15:10 (9)
29	08:27				07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24		15:40 (8)	08:52		14:59 (9)
	17:08				20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	4	15:44 (8)	16:19	11	15:10 (9)
30	08:25				07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26		15:39 (8)	08:52		15:00 (9)
	17:10				20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	3	15:42 (8)	16:20	10	15:10 (9)
31	08:23				07:11		05:11		05:44	06:39		07:30				08:52		15:02 (9)
	17:11				20:06		21:52		21:35	20:29		17:04				16:21	8	15:10 (9)
Potential sun hours	250			273	367	420	494	510	513	460	382	328	259			233		
Total, worst case		205												205			248	
Sun reduction		0.16												0.20			0.12	
Oper. time red.		1.00												1.00			1.00	
Wind dir. red.		0.65												0.65			0.65	
Total reduction		0.11												0.13			0.08	
Total, real		22												26			19	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** DF - H120

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March		April	May	June	July	August	September		October		November	December
1	08:52	08:22	07:24		07:09	06:00	05:11	05:07	05:47	06:41		07:34		08:01 (2)	07:33	08:28
	16:23	17:14	18:10		20:08	21:04	21:54	22:09	21:33	20:27		19:13	15	08:16 (2)	17:02	16:18
2	08:52	08:20	07:22		07:07	05:58	05:10	05:07	05:48	06:43		07:36		08:02 (2)	07:35	08:29
	16:24	17:16	18:12		20:10	21:06	21:55	22:08	21:31	20:24		19:10	12	08:14 (2)	17:00	16:17
3	08:52	08:19	07:20		07:04	05:56	05:09	05:08	05:50	06:44		07:38		08:04 (2)	07:37	08:31
	16:25	17:18	18:14		20:12	21:07	21:56	22:08	21:30	20:22		19:08	9	08:13 (2)	16:58	16:16
4	08:52	08:17	07:17		07:02	05:54	05:08	05:09	05:52	06:46		07:40		08:06 (2)	07:38	08:32
	16:26	17:20	18:16		20:14	21:09	21:57	22:07	21:28	20:19		19:05	6	08:12 (2)	16:56	16:16
5	08:52	08:15	07:15		07:00	05:52	05:07	05:10	05:53	06:48		07:42		08:08 (2)	07:40	08:34
	16:27	17:22	18:18		20:16	21:11	21:58	22:07	21:26	20:17		19:03	2	08:10 (2)	16:54	16:15
6	08:51	08:13	07:13		06:57	05:50	05:06	05:11	05:55	06:50		07:43			07:42	08:35
	16:29	17:24	18:19		20:18	21:13	22:00	22:06	21:24	20:14		19:01			16:52	16:14
7	08:51	08:11	07:10		06:55	05:48	05:06	05:12	05:57	06:52		07:45			07:44	08:36
	16:30	17:26	18:21		20:19	21:15	22:01	22:06	21:22	20:12		18:58			16:51	16:14
8	08:50	08:09	07:08		06:52	05:46	05:05	05:13	05:58	06:53		07:47			07:46	08:38
	16:31	17:28	18:23		20:21	21:16	22:01	22:05	21:20	20:10		18:56			16:49	16:14
9	08:50	08:08	07:06		07:30 (2)	06:50	05:44	05:04	05:14	06:00		07:49			07:48	08:39
	16:33	17:30	18:25	4	07:34 (2)	20:23	21:18	22:02	22:04	21:18		18:53			16:47	16:13
10	08:49	08:06	07:03		07:27 (2)	06:48	05:42	05:04	05:15	06:02		07:51			07:50	08:40
	16:34	17:32	18:27	8	07:35 (2)	20:25	21:20	22:03	22:03	21:16		18:51			16:45	16:13
11	08:48	08:04	07:01		07:25 (2)	06:45	05:40	05:04	05:16	06:04		07:53			07:52	08:41
	16:36	17:34	18:29	11	07:36 (2)	20:27	21:22	22:04	22:02	21:14		18:49			16:43	16:13
12	08:47	08:02	06:58		07:22 (2)	06:43	05:39	05:03	05:17	06:05		07:54			07:54	08:42
	16:37	17:36	18:31	14	07:36 (2)	20:29	21:23	22:05	22:01	21:12		18:46			16:42	16:13
13	08:47	08:00	06:56		07:20 (2)	06:40	05:37	05:03	05:18	06:07		07:56			07:56	08:43
	16:39	17:38	18:33	16	07:36 (2)	20:31	21:25	22:06	22:00	21:10		18:44			16:40	16:12
14	08:46	07:58	06:53		07:17 (2)	06:38	05:35	05:03	05:20	06:09		07:58			07:58	08:44
	16:41	17:40	18:35	19	07:36 (2)	20:32	21:27	22:06	21:59	21:08		18:42			16:39	16:12
15	08:45	07:55	06:51		07:15 (2)	06:36	05:33	05:02	05:21	06:11		08:00			08:00	08:45
	16:42	17:42	18:37	21	07:36 (2)	20:34	21:29	22:07	21:58	21:05		18:39			16:37	16:12
16	08:44	07:53	06:49		07:13 (2)	06:33	05:32	05:02	05:22	06:13		08:02			08:02	08:46
	16:44	17:44	18:39	23	07:36 (2)	20:36	21:30	22:07	21:57	21:03		18:37			16:35	16:12
17	08:43	07:51	06:46		07:10 (2)	06:31	05:30	05:02	05:24	06:14		08:04			08:03	08:47
	16:46	17:46	18:40	25	07:35 (2)	20:38	21:32	22:08	21:56	21:01		18:35			16:34	16:13
18	08:42	07:49	06:44		07:08 (2)	06:29	05:29	05:02	05:25	06:16		08:06			08:05	08:48
	16:47	17:48	18:42	27	07:35 (2)	20:40	21:34	22:08	21:55	20:59		18:32			16:32	16:13
19	08:41	07:47	06:41		07:08 (2)	06:26	05:27	05:02	05:26	06:18		08:08			08:07	08:49
	16:49	17:50	18:44	25	07:33 (2)	20:42	21:35	22:09	21:53	20:57		18:30			16:31	16:13
20	08:40	07:45	06:39		07:09 (2)	06:24	05:25	05:02	05:28	06:20		08:10			08:09	08:49
	16:51	17:52	18:46	23	07:32 (2)	20:44	21:37	22:09	21:52	20:54		18:28			16:30	16:13
21	08:38	07:43	06:36		07:09 (2)	06:22	05:24	05:02	05:29	06:21		08:11			08:11	08:50
	16:53	17:54	18:48	21	07:30 (2)	20:45	21:38	22:09	21:51	20:52		18:25			16:28	16:14
22	08:37	07:40	06:34		07:11 (2)	06:20	05:23	05:02	05:31	06:23		08:13			08:13	08:50
	16:55	17:56	18:50	18	07:29 (2)	20:47	21:40	22:09	21:49	20:50		18:23			16:27	16:14
23	08:36	07:38	06:31		07:13 (2)	06:17	05:21	05:03	05:32	06:25		08:15			08:14	08:51
	16:57	17:58	18:52	12	07:25 (2)	20:49	21:41	22:10	21:48	20:48		18:21			16:26	16:15
24	08:34	07:36	06:29			06:15	05:20	05:03	05:34	06:27		08:17			08:16	08:51
	16:58	18:00	18:54			20:51	21:43	22:10	21:46	20:45		18:19			16:25	16:15
25	08:33	07:34	06:27			06:13	05:18	05:03	05:35	06:28		07:19			08:18	08:52
	17:00	18:02	18:55			20:53	21:44	22:10	21:45	20:43		17:17			16:23	16:16
26	08:32	07:31	06:24			06:11	05:17	05:04	05:37	06:30		07:21			08:20	08:52
	17:02	18:04	18:57			20:55	21:46	22:10	21:43	20:41		17:15			16:22	16:17
27	08:30	07:29	06:22			06:09	05:16	05:04	05:38	06:32		07:23			08:21	08:52
	17:04	18:06	18:59			20:56	21:47	22:10	21:42	20:38		17:12			16:21	16:18
28	08:29	07:27	06:19			06:06	05:15	05:05	05:40	06:34		07:25			08:23	08:52
	17:06	18:08	19:01			20:58	21:49	22:09	21:40	20:36		17:10			16:20	16:18
29	08:27		07:17			06:04	05:14	05:05	05:42	06:36		07:27			08:25	08:53
	17:08		20:03			21:00	21:50	22:09	21:38	20:34		17:08			16:19	16:19
30	08:25		07:14			06:02	05:13	05:06	05:43	06:37		07:29			08:26	08:53
	17:10		20:05			21:02	21:51	22:09	21:37	20:31		17:06			16:19	16:20
31	08:24		07:12				05:12		05:45	06:39		07:31				08:53
	17:12		20:07				21:53		21:35	20:29		17:04				16:21
Potential sun hours	250	273	367		420	494	510	512	460	382		328		259	233	
Total, worst case				267							231		44			
Sun reduction				0.22							0.25		0.23			
Oper. time red.				1.00							1.00		1.00			
Wind dir. red.				0.63							0.63		0.63			
Total reduction				0.14							0.16		0.14			
Total, real				37							37		6			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** DG - H123

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February		March		April	May	June	July	August	September	October		November	December
1	08:52	08:22		07:24	17:31 (7)	07:09	06:00	05:10	05:06	05:46	06:41	07:34		07:32	08:27
	16:22	17:14		18:10	11 17:42 (7)	20:08	21:03	21:54	22:08	21:33	20:26	19:12		17:02	16:17
2	08:52	08:20		07:22	17:30 (7)	07:07	05:58	05:09	05:07	05:48	06:42	07:36	18:13 (7)	07:34	08:29
	16:23	17:16		18:11	14 17:44 (7)	20:10	21:05	21:55	22:08	21:31	20:24	19:10	11 18:24 (7)	17:00	16:17
3	08:52	08:18		07:20	17:29 (7)	07:04	05:56	05:08	05:08	05:50	06:44	07:38	18:10 (7)	07:36	08:30
	16:25	17:18		18:13	17 17:46 (7)	20:12	21:07	21:56	22:08	21:29	20:21	19:08	16 18:26 (7)	16:58	16:16
4	08:52	08:17		07:17	17:29 (7)	07:02	05:54	05:08	05:09	05:51	06:46	07:39	18:08 (7)	07:38	08:32
	16:26	17:20		18:15	19 17:48 (7)	20:14	21:09	21:57	22:07	21:27	20:19	19:05	19 18:27 (7)	16:56	16:15
5	08:51	08:15		07:15	17:29 (7)	06:59	05:52	05:07	05:10	05:53	06:48	07:41	18:07 (7)	07:40	08:33
	16:27	17:22		18:17	21 17:50 (7)	20:15	21:11	21:58	22:06	21:26	20:17	19:03	21 18:28 (7)	16:54	16:15
6	08:51	08:13		07:12	17:29 (7)	06:57	05:50	05:06	05:10	05:55	06:50	07:43	18:06 (7)	07:42	08:35
	16:28	17:24		18:19	23 17:52 (7)	20:17	21:13	21:59	22:06	21:24	20:14	19:00	23 18:29 (7)	16:52	16:14
7	08:50	08:11		07:10	17:29 (7)	06:54	05:48	05:05	05:11	05:56	06:51	07:45	18:04 (7)	07:44	08:36
	16:30	17:26		18:21	23 17:52 (7)	20:19	21:14	22:00	22:05	21:22	20:12	18:58	24 18:28 (7)	16:50	16:14
8	08:50	08:09		07:08	17:30 (7)	06:52	05:46	05:05	05:12	05:58	06:53	07:47	18:04 (7)	07:46	08:37
	16:31	17:28		18:23	22 17:52 (7)	20:21	21:16	22:01	22:04	21:20	20:09	18:55	22 18:26 (7)	16:48	16:13
9	08:49	08:07		07:05	17:30 (7)	06:50	05:44	05:04	05:13	06:00	06:55	07:49	18:04 (7)	07:48	08:39
	16:33	17:30		18:25	20 17:50 (7)	20:23	21:18	22:02	22:04	21:18	20:07	18:53	20 18:24 (7)	16:47	16:13
10	08:49	08:05		07:03	17:31 (7)	06:47	05:42	05:04	05:15	06:02	06:57	07:50	18:03 (7)	07:50	08:40
	16:34	17:32		18:27	18 17:49 (7)	20:25	21:20	22:03	22:03	21:16	20:04	18:51	18 18:21 (7)	16:45	16:13
11	08:48	08:03		07:00	17:34 (7)	06:45	05:40	05:03	05:16	06:03	06:58	07:52	18:04 (7)	07:52	08:41
	16:36	17:34		18:29	13 17:47 (7)	20:27	21:21	22:04	22:02	21:14	20:02	18:48	15 18:19 (7)	16:43	16:12
12	08:47	08:01		06:58	17:36 (7)	06:42	05:38	05:03	05:17	06:05	07:00	07:54	18:04 (7)	07:54	08:42
	16:37	17:36		18:31	7 17:43 (7)	20:28	21:23	22:04	22:01	21:12	19:59	18:46	13 18:17 (7)	16:42	16:12
13	08:46	07:59		06:56		06:40	05:37	05:03	05:18	06:07	07:02	07:56	18:04 (7)	07:56	08:43
	16:39	17:38		18:33		20:30	21:25	22:05	22:00	21:09	19:57	18:44	10 18:14 (7)	16:40	16:12
14	08:45	07:57		06:53		06:38	05:35	05:02	05:19	06:09	07:04	07:58	18:05 (7)	07:57	08:44
	16:40	17:40		18:34		20:32	21:27	22:06	21:59	21:07	19:55	18:41	7 18:12 (7)	16:38	16:12
15	08:45	07:55		06:51		06:35	05:33	05:02	05:21	06:10	07:05	08:00	18:06 (7)	07:59	08:45
	16:42	17:42		18:36		20:34	21:28	22:06	21:58	21:05	19:52	18:39	4 18:10 (7)	16:37	16:12
16	08:44	07:53		06:48		06:33	05:32	05:02	05:22	06:12	07:07	08:02		08:01	08:46
	16:44	17:44		18:38		20:36	21:30	22:07	21:57	21:03	19:50	18:37		16:35	16:12
17	08:43	07:51		06:46		06:31	05:30	05:02	05:23	06:14	07:09	08:04		08:03	08:47
	16:45	17:46		18:40		20:38	21:32	22:07	21:56	21:01	19:47	18:34		16:34	16:12
18	08:42	07:49		06:43		06:28	05:28	05:02	05:25	06:16	07:11	08:05		08:05	08:48
	16:47	17:48		18:42		20:40	21:33	22:08	21:54	20:59	19:45	18:32		16:32	16:13
19	08:40	07:47		06:41		06:26	05:27	05:02	05:26	06:18	07:13	08:07		08:07	08:48
	16:49	17:50		18:44		20:41	21:35	22:08	21:53	20:56	19:42	18:30		16:31	16:13
20	08:39	07:45		06:39		06:24	05:25	05:02	05:27	06:19	07:14	08:09		08:09	08:49
	16:51	17:52		18:46		20:43	21:36	22:09	21:52	20:54	19:40	18:27		16:29	16:13
21	08:38	07:42		06:36		06:22	05:24	05:02	05:29	06:21	07:16	08:11		08:10	08:50
	16:53	17:54		18:48		20:45	21:38	22:09	21:50	20:52	19:37	18:25		16:28	16:14
22	08:37	07:40		06:34		06:19	05:22	05:02	05:30	06:23	07:18	08:13		08:12	08:50
	16:54	17:56		18:49		20:47	21:40	22:09	21:49	20:50	19:35	18:23		16:27	16:14
23	08:35	07:38		06:31		06:17	05:21	05:02	05:32	06:25	07:20	08:15		08:14	08:51
	16:56	17:58		18:51		20:49	21:41	22:09	21:48	20:47	19:32	18:21		16:26	16:15
24	08:34	07:36		06:29		06:15	05:19	05:03	05:33	06:26	07:21	08:17		08:16	08:51
	16:58	18:00		18:53		20:51	21:43	22:09	21:46	20:45	19:30	18:19		16:24	16:15
25	08:33	07:33		06:26		06:13	05:18	05:03	05:35	06:28	07:23	07:19		08:18	08:51
	17:00	18:02		18:55		20:52	21:44	22:09	21:45	20:43	19:27	17:16		16:23	16:16
26	08:31	07:31	17:35 (7)	06:24		06:10	05:17	05:03	05:37	06:30	07:25	07:21		08:19	08:52
	17:02	18:04	1 17:36 (7)	18:57		20:54	21:46	22:09	21:43	20:40	19:25	17:14		16:22	16:17
27	08:30	07:29	17:34 (7)	06:21		06:08	05:16	05:04	05:38	06:32	07:27	07:23		08:21	08:52
	17:04	18:06	4 17:38 (7)	18:59		20:56	21:47	22:09	21:41	20:38	19:22	17:12		16:21	16:17
28	08:28	07:27	17:32 (7)	06:19		06:06	05:14	05:04	05:40	06:34	07:29	07:25		08:23	08:52
	17:06	18:08	8 17:40 (7)	19:01		20:58	21:48	22:09	21:40	20:36	19:20	17:10		16:20	16:18
29	08:27			07:16		06:04	05:13	05:05	05:41	06:35	07:30	07:27		08:24	08:52
	17:08			20:02		21:00	21:50	22:09	21:38	20:33	19:17	17:08		16:19	16:19
30	08:25			07:14		06:02	05:12	05:06	05:43	06:37	07:32	07:28		08:26	08:52
	17:10			20:04		21:02	21:51	22:09	21:36	20:31	19:15	17:06		16:18	16:20
31	08:23			07:11			05:11		05:45	06:39		07:30			08:52
	17:12			20:06			21:52		21:35	20:29		17:04			16:21
Potential sun hours	250	273		367		420	494	510	512	460	382	328		259	233
Total, worst case			13		208								223		
Sun reduction			0.19		0.22								0.23		
Oper. time red.			1.00		1.00								1.00		
Wind dir. red.			0.65		0.65								0.65		
Total reduction			0.13		0.14								0.15		
Total, real			2		30								33		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** DH - H124

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February	March	April	May	June	July	August	September	October	November			December		
1	08:52		15:04 (9)	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:40	07:34	07:32			08:27		
	16:22	11	15:15 (9)	17:13	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02			16:17		
2	08:52		15:06 (9)	08:20	07:22	07:06	05:57	05:09	05:07	05:48	06:42	07:36	07:34			08:29		
	16:23	8	15:14 (9)	17:15	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00			16:16		
3	08:52		15:09 (9)	08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:37	07:36			08:30		
	16:24	5	15:14 (9)	17:17	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58			16:16		
4	08:51			08:16	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38			08:32		
	16:26			17:19	18:15	20:13	21:09	21:57	22:07	21:27	20:19	19:05	16:56			16:15		
5	08:51			08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40			08:33		
	16:27			17:21	18:17	20:15	21:11	21:58	22:06	21:25	20:16	19:03	16:54			16:14		
6	08:51			08:13	07:12	06:57	05:49	05:06	05:10	05:55	06:49	07:43	07:42			08:35		
	16:28			17:23	18:19	20:17	21:12	21:59	22:06	21:24	20:14	19:00	16:52			16:14		
7	08:50			08:11	07:10	06:54	05:47	05:05	05:11	05:56	06:51	07:45	07:44			08:36		
	16:29			17:25	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50			16:13		
8	08:50			08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46			08:37		
	16:31			17:27	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48			16:13		
9	08:49			08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48			08:39		14:57 (9)
	16:32			17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46			16:13	4	15:01 (9)
10	08:49			08:05	07:03	06:47	05:42	05:03	05:14	06:01	06:56	07:50	07:50			08:40		14:55 (9)
	16:34			17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:50	16:45			16:12	8	15:03 (9)
11	08:48			08:03	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52			08:41		14:55 (9)
	16:35			17:34	18:29	20:26	21:21	22:04	22:02	21:14	20:02	18:48	16:43			16:12	11	15:06 (9)
12	08:47		15:59 (8)	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54			08:42		14:55 (9)
	16:37	2	16:01 (8)	17:36	18:31	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41			16:12	12	15:07 (9)
13	08:46		15:59 (8)	07:59	06:55	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:55			08:43		14:55 (9)
	16:39	3	16:02 (8)	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40			16:12	13	15:08 (9)
14	08:45		15:59 (8)	07:57	06:53	06:38	05:35	05:02	05:19	06:08	07:03	07:58	07:57		15:42 (8)	08:44		14:54 (9)
	16:40	5	16:04 (8)	17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38	10	15:52 (8)	16:12	15	15:09 (9)
15	08:45		16:00 (8)	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59		15:40 (8)	08:45		14:55 (9)
	16:42	6	16:06 (8)	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36	14	15:54 (8)	16:12	15	15:10 (9)
16	08:44		16:00 (8)	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01		15:39 (8)	08:46		14:55 (9)
	16:43	8	16:08 (8)	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16	15:55 (8)	16:12	15	15:10 (9)
17	08:43		16:00 (8)	07:51	06:46	06:31	05:30	05:01	05:23	06:14	07:09	08:03	08:03		15:38 (8)	08:47		14:55 (9)
	16:45	9	16:09 (8)	17:46	18:40	20:38	21:32	22:07	21:56	21:01	19:47	18:34	16:33	18	15:56 (8)	16:12	16	15:11 (9)
18	08:41		16:00 (8)	07:49	06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05	08:05		15:38 (8)	08:47		14:55 (9)
	16:47	12	16:12 (8)	17:48	18:42	20:39	21:33	22:08	21:54	20:59	19:44	18:32	16:32	19	15:57 (8)	16:12	16	15:11 (9)
19	08:40		16:01 (8)	07:47	06:41	06:26	05:26	05:01	05:26	06:17	07:12	08:07	08:07		15:38 (8)	08:48		14:55 (9)
	16:49	13	16:14 (8)	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:30	19	15:57 (8)	16:13	17	15:12 (9)
20	08:39		16:01 (8)	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09		15:38 (8)	08:49		14:56 (9)
	16:51	14	16:15 (8)	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:39	18:27	16:29	17	15:55 (8)	16:13	17	15:13 (9)
21	08:38		16:02 (8)	07:42	06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11	08:10		15:38 (8)	08:49		14:56 (9)
	16:52	16	16:18 (8)	17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16	15:54 (8)	16:13	17	15:13 (9)
22	08:37		16:03 (8)	07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12		15:38 (8)	08:50		14:57 (9)
	16:54	17	16:20 (8)	17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	15	15:53 (8)	16:14	17	15:14 (9)
23	08:35		16:03 (8)	07:38	06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15	08:14		15:37 (8)	08:51		14:57 (9)
	16:56	19	16:22 (8)	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	13	15:50 (8)	16:14	17	15:14 (9)
24	08:34		16:04 (8)	07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16		15:37 (8)	08:51		14:57 (9)
	16:58	19	16:23 (8)	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24	12	15:49 (8)	16:15	17	15:14 (9)
25	08:33		16:05 (8)	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17		15:38 (8)	08:51		14:58 (9)
	17:00	18	16:23 (8)	18:01	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	10	15:48 (8)	16:16	17	15:15 (9)
26	08:31		16:06 (8)	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19		15:38 (8)	08:52		14:59 (9)
	17:02	16	16:22 (8)	18:03	18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	16:22	8	15:46 (8)	16:16	16	15:15 (9)
27	08:30		16:09 (8)	07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21		15:39 (8)	08:52		14:59 (9)
	17:04	13	16:22 (8)	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	6	15:45 (8)	16:17	16	15:15 (9)
28	08:28		16:11 (8)	07:26	06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24	08:23		15:40 (8)	08:52		15:00 (9)
	17:06	9	16:20 (8)	18:07	19:00	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	4	15:44 (8)	16:18	16	15:16 (9)
29	08:27				07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24		15:40 (8)	08:52		15:01 (9)
	17:08				20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	4	15:44 (8)	16:19	15	15:16 (9)
30	08:25				07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26		15:40 (8)	08:52		15:02 (9)
	17:10				20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	2	15:42 (8)	16:20	14	15:16 (9)
31	08:23				07:11		05:11		05:44	06:39		07:30				08:52		15:03 (9)
	17:11				20:06		21:52		21:35	20:29		17:04				16:21	13	15:16 (9)
Potential sun hours	250			273	367	420	494	510	513	460	382	328	259			233		
Total, worst case		223												203			334	
Sun reduction		0.16												0.20			0.12	
Oper. time red.		1.00												1.00			1.00	
Wind dir. red.		0.65												0.65			0.65	
Total reduction		0.11												0.13			0.08	
Total, real		23												26			26	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** DI - H125

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March		April	May	June	July	August	September		October			November	December
1	08:52	08:22	07:24		07:09	06:00	05:10	05:06	05:46	06:41		07:34		18:20 (7)	07:32	08:27
	16:22	17:14	18:10		20:08	21:03	21:54	22:08	21:33	20:26		19:12	21	18:41 (7)	17:02	16:17
2	08:52	08:20	07:22		07:07	05:58	05:09	05:07	05:48	06:42		07:36		18:19 (7)	07:34	08:29
	16:23	17:16	18:11		20:10	21:05	21:55	22:08	21:31	20:24		19:10	22	18:41 (7)	17:00	16:17
3	08:52	08:18	07:20		07:04	05:56	05:08	05:08	05:50	06:44		07:38		18:19 (7)	07:36	08:30
	16:25	17:18	18:13		20:12	21:07	21:56	22:07	21:29	20:21		19:08	20	18:39 (7)	16:58	16:16
4	08:52	08:17	07:17		07:02	05:54	05:08	05:09	05:51	06:46		07:39		18:19 (7)	07:38	08:32
	16:26	17:20	18:15		20:14	21:09	21:57	22:07	21:27	20:19		19:05	18	18:37 (7)	16:56	16:15
5	08:51	08:15	07:15	17:46 (7)	06:59	05:52	05:07	05:10	05:53	06:48		07:41		18:19 (7)	07:40	08:33
	16:27	17:22	18:17	4 17:50 (7)	20:15	21:11	21:58	22:06	21:26	20:17		19:03	15	18:34 (7)	16:54	16:15
6	08:51	08:13	07:12	17:45 (7)	06:57	05:50	05:06	05:10	05:55	06:50		07:43		18:20 (7)	07:42	08:35
	16:28	17:24	18:19	7 17:52 (7)	20:17	21:13	21:59	22:06	21:24	20:14		19:00	12	18:32 (7)	16:52	16:14
7	08:50	08:11	07:10	17:43 (7)	06:54	05:48	05:05	05:11	05:56	06:51		07:45		18:19 (7)	07:44	08:36
	16:30	17:26	18:21	11 17:54 (7)	20:19	21:14	22:00	22:05	21:22	20:12		18:58	10	18:29 (7)	16:50	16:14
8	08:50	08:09	07:08	17:42 (7)	06:52	05:46	05:05	05:12	05:58	06:53		07:47		18:20 (7)	07:46	08:37
	16:31	17:28	18:23	14 17:56 (7)	20:21	21:16	22:01	22:04	21:20	20:09		18:55	6	18:26 (7)	16:48	16:13
9	08:49	08:07	07:05	17:41 (7)	06:50	05:44	05:04	05:13	06:00	06:55		07:49		18:21 (7)	07:48	08:39
	16:33	17:30	18:25	17 17:58 (7)	20:23	21:18	22:02	22:04	21:18	20:07		18:53	3	18:24 (7)	16:47	16:13
10	08:49	08:05	07:03	17:41 (7)	06:47	05:42	05:04	05:15	06:02	06:57		07:50			07:50	08:40
	16:34	17:32	18:27	19 18:00 (7)	20:25	21:20	22:03	22:03	21:16	20:04		18:51			16:45	16:13
11	08:48	08:03	07:00	17:41 (7)	06:45	05:40	05:03	05:16	06:03	06:58		07:52			07:52	08:41
	16:36	17:34	18:29	21 18:02 (7)	20:27	21:21	22:04	22:02	21:14	20:02		18:48			16:43	16:12
12	08:47	08:01	06:58	17:41 (7)	06:42	05:38	05:03	05:17	06:05	07:00		07:54			07:54	08:42
	16:37	17:36	18:31	23 18:04 (7)	20:28	21:23	22:04	22:01	21:12	19:59		18:46			16:42	16:12
13	08:46	07:59	06:56	17:41 (7)	06:40	05:37	05:03	05:18	06:07	07:02		07:56			07:56	08:43
	16:39	17:38	18:33	20 18:01 (7)	20:30	21:25	22:05	22:00	21:09	19:57		18:44			16:40	16:12
14	08:45	07:57	06:53	17:41 (7)	06:38	05:35	05:02	05:19	06:09	07:04		07:58			07:57	08:44
	16:40	17:40	18:34	17 17:58 (7)	20:32	21:27	22:06	21:59	21:07	19:55		18:41			16:38	16:12
15	08:45	07:55	06:51	17:42 (7)	06:35	05:33	05:02	05:21	06:10	07:05		08:00			07:59	08:45
	16:42	17:42	18:36	15 17:57 (7)	20:34	21:28	22:06	21:58	21:05	19:52		18:39			16:37	16:12
16	08:44	07:53	06:48	17:43 (7)	06:33	05:32	05:02	05:22	06:12	07:07		08:02			08:01	08:46
	16:44	17:44	18:38	12 17:55 (7)	20:36	21:30	22:07	21:57	21:03	19:50		18:37			16:35	16:12
17	08:43	07:51	06:46	17:45 (7)	06:31	05:30	05:02	05:23	06:14	07:09		08:04			08:03	08:47
	16:45	17:46	18:40	9 17:54 (7)	20:38	21:32	22:07	21:56	21:01	19:47		18:34			16:34	16:12
18	08:41	07:49	06:43	17:47 (7)	06:28	05:28	05:02	05:25	06:16	07:11		08:05			08:05	08:48
	16:47	17:48	18:42	5 17:52 (7)	20:40	21:33	22:08	21:54	20:59	19:45		18:32			16:32	16:13
19	08:40	07:47	06:41		06:26	05:27	05:02	05:26	06:18	07:13		08:07			08:07	08:48
	16:49	17:50	18:44		20:41	21:35	22:08	21:53	20:56	19:42		18:30			16:31	16:13
20	08:39	07:45	06:39		06:24	05:25	05:02	05:27	06:19	07:14		08:09			08:09	08:49
	16:51	17:52	18:46		20:43	21:36	22:09	21:52	20:54	19:40		18:27			16:29	16:13
21	08:38	07:42	06:36		06:22	05:24	05:02	05:29	06:21	07:16		08:11			08:10	08:50
	16:53	17:54	18:48		20:45	21:38	22:09	21:50	20:52	19:37		18:25			16:28	16:14
22	08:37	07:40	06:34		06:19	05:22	05:02	05:30	06:23	07:18		08:13			08:12	08:50
	16:54	17:56	18:49		20:47	21:40	22:09	21:49	20:50	19:35		18:23			16:27	16:14
23	08:35	07:38	06:31		06:17	05:21	05:02	05:32	06:25	07:20		08:15			08:14	08:51
	16:56	17:58	18:51		20:49	21:41	22:09	21:48	20:47	19:32		18:21			16:26	16:15
24	08:34	07:36	06:29		06:15	05:20	05:03	05:33	06:26	07:21		08:17			08:16	08:51
	16:58	18:00	18:53		20:51	21:43	22:09	21:46	20:45	19:30		18:19			16:24	16:15
25	08:33	07:33	06:26		06:13	05:18	05:03	05:35	06:28	07:23	18:31 (7)	07:19			08:18	08:51
	17:00	18:02	18:55		20:52	21:44	22:09	21:45	20:43	19:27	4 18:35 (7)	17:16			16:23	16:16
26	08:31	07:31	06:24		06:10	05:17	05:03	05:37	06:30	07:25	18:27 (7)	07:21			08:19	08:52
	17:02	18:04	18:57		20:54	21:46	22:09	21:43	20:40	19:25	8 18:35 (7)	17:14			16:22	16:17
27	08:30	07:29	06:21		06:08	05:16	05:04	05:38	06:32	07:27	18:25 (7)	07:23			08:21	08:52
	17:04	18:06	18:59		20:56	21:47	22:09	21:41	20:38	19:22	11 18:36 (7)	17:12			16:21	16:17
28	08:28	07:27	06:19		06:06	05:15	05:04	05:40	06:34	07:29	18:24 (7)	07:25			08:23	08:52
	17:06	18:08	19:01		20:58	21:48	22:09	21:40	20:36	19:20	13 18:37 (7)	17:10			16:20	16:18
29	08:27		07:16		06:04	05:13	05:05	05:41	06:35	07:30	18:22 (7)	07:26			08:24	08:52
	17:08		20:02		21:00	21:50	22:09	21:38	20:33	19:17	16 18:38 (7)	17:08			16:19	16:19
30	08:25		07:14		06:02	05:12	05:06	05:43	06:37	07:32	18:20 (7)	07:28			08:26	08:52
	17:10		20:04		21:02	21:51	22:09	21:36	20:31	19:15	20 18:40 (7)	17:06			16:18	16:20
31	08:23		07:11			05:11		05:45	06:39			07:30				08:52
	17:12		20:06			21:52		21:35	20:29			17:04				16:21
Potential sun hours	250	273	367		420	494	510	512	460	382		328			259	233
Total, worst case				194							72		127			
Sun reduction				0.22							0.25		0.23			
Oper. time red.				1.00							1.00		1.00			
Wind dir. red.				0.64							0.64		0.64			
Total reduction				0.14							0.16		0.15			
Total, real				27							12		19			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** DJ - H126

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:40	07:34	07:32	08:27
	16:22	17:14	18:09	20:08	21:03	21:53	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:37	07:36	08:30
	16:24	17:18	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58	16:16
4	08:51	08:16	07:17	07:02	05:53	05:07	05:09	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:13	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11	21:58	22:06	21:25	20:16	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50	05:06	05:10	05:55	06:49	07:43	07:42	08:34
	16:28	17:24	18:19	20:17	21:12	21:59	22:06	21:23	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:21	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:04	21:19	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48	08:38
	16:32	17:30	18:25	20:23	21:18	22:02	22:04	21:17	20:07	18:53	16:47	16:13
10	08:48	08:05	07:03	06:47	05:42	05:04	05:14	06:02	06:56	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:19	22:03	22:03	21:15	20:04	18:51	16:45	16:12
11	08:48	08:03	07:00	06:45	05:40	05:03	05:16	06:03	06:58	07:52	07:52	08:41
	16:35	17:34	18:29	20:26	21:21	22:04	22:02	21:13	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:53	08:42
	16:37	17:36	18:31	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:55	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:55	08:43
	16:39	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:03	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:26	22:06	21:59	21:07	19:54	18:41	16:38	16:12
15	08:44	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:43	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:01	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16:12
17	08:42	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:31	22:07	21:55	21:01	19:47	18:34	16:33	16:12
18	08:41	07:49	06:43	06:28	05:28	05:02	05:24	06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:39	21:33	22:08	21:54	20:58	19:44	18:32	16:32	16:12
19	08:40	07:46	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:08	08:49
	16:51	17:52	18:46	20:43	21:36	22:08	21:52	20:54	19:39	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:24	05:02	05:29	06:21	07:16	08:11	08:10	08:49
	16:52	17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:13
22	08:37	07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:39	22:09	21:49	20:49	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15	08:14	08:50
	16:56	17:58	18:51	20:49	21:41	22:09	21:47	20:47	19:32	18:21	16:25	16:14
24	08:34	07:35	06:29	06:15	05:19	05:03	05:33	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:50	21:42	22:09	21:46	20:45	19:30	18:18	16:24	16:15
25	08:32	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17	08:51
	17:00	18:02	18:55	20:52	21:44	22:09	21:44	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:51
	17:02	18:03	18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:22	08:21	08:52
	17:04	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	05:04	05:40	06:33	07:28	07:24	08:22	08:52
	17:06	18:07	19:00	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:26		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:49	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:01	21:51	22:08	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11		05:44	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:28		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** DK - H128

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:40	07:34	07:32	08:27
	16:22	17:14	18:09	20:08	21:03	21:53	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:37	07:36	08:30
	16:24	17:18	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58	16:16
4	08:51	08:16	07:17	07:02	05:53	05:07	05:09	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:13	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11	21:58	22:06	21:25	20:16	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50	05:06	05:10	05:55	06:49	07:43	07:42	08:34
	16:28	17:24	18:19	20:17	21:12	21:59	22:06	21:23	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:21	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:04	21:19	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48	08:38
	16:32	17:30	18:25	20:23	21:18	22:02	22:04	21:17	20:07	18:53	16:47	16:13
10	08:48	08:05	07:03	06:47	05:42	05:04	05:14	06:02	06:56	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:19	22:03	22:03	21:15	20:04	18:50	16:45	16:12
11	08:48	08:03	07:00	06:45	05:40	05:03	05:16	06:03	06:58	07:52	07:52	08:41
	16:35	17:34	18:29	20:26	21:21	22:04	22:02	21:13	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:53	08:42
	16:37	17:36	18:31	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:55	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:55	08:43
	16:39	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:03	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:26	22:06	21:59	21:07	19:54	18:41	16:38	16:12
15	08:44	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:43	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:01	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16:12
17	08:42	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:31	22:07	21:55	21:01	19:47	18:34	16:33	16:12
18	08:41	07:49	06:43	06:28	05:28	05:02	05:24	06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:39	21:33	22:08	21:54	20:58	19:44	18:32	16:32	16:12
19	08:40	07:46	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:08	08:49
	16:51	17:52	18:46	20:43	21:36	22:08	21:52	20:54	19:39	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:24	05:02	05:29	06:21	07:16	08:11	08:10	08:49
	16:52	17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:13
22	08:37	07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:39	22:09	21:49	20:49	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15	08:14	08:50
	16:56	17:58	18:51	20:49	21:41	22:09	21:47	20:47	19:32	18:21	16:25	16:14
24	08:34	07:35	06:29	06:15	05:19	05:03	05:33	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:50	21:42	22:09	21:46	20:45	19:30	18:18	16:24	16:15
25	08:32	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17	08:51
	17:00	18:02	18:55	20:52	21:44	22:09	21:44	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:51
	17:02	18:03	18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:22	08:21	08:52
	17:04	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	05:04	05:40	06:33	07:28	07:24	08:22	08:52
	17:06	18:07	19:00	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:26		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:49	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:01	21:51	22:08	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11		05:44	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:28		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** DL - H129

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February		March		April	May	June	July	August	September	October		November	December
1	08:52	08:22		07:24		17:27 (10)	07:09	05:59	05:10	05:06	05:06	05:46	06:40	07:34		07:32	08:27
	16:22	17:13		18:09	15	17:42 (10)	20:08	21:03	21:53	22:08	21:33	20:26	19:12			17:02	16:17
2	08:52	08:20		07:22		17:26 (10)	07:06	05:57	05:09	05:07	05:48	06:42	07:36			07:34	08:29
	16:23	17:15		18:11	18	17:44 (10)	20:10	21:05	21:55	22:08	21:31	20:24	19:10			17:00	16:16
3	08:52	08:18		07:19		17:27 (10)	07:04	05:55	05:08	05:08	05:49	06:44	07:37			07:36	08:30
	16:24	17:17		18:13	19	17:46 (10)	20:12	21:07	21:56	22:07	21:29	20:21	19:07			16:58	16:16
4	08:51	08:16		07:17		17:27 (10)	07:01	05:53	05:07	05:08	05:51	06:46	07:39			07:38	08:32
	16:26	17:19		18:15	19	17:46 (10)	20:13	21:09	21:57	22:07	21:27	20:19	19:05			16:56	16:15
5	08:51	08:15		07:15		17:26 (10)	06:59	05:51	05:07	05:09	05:53	06:47	07:41			07:40	08:33
	16:27	17:21		18:17	20	17:46 (10)	20:15	21:11	21:58	22:06	21:25	20:16	19:02			16:54	16:14
6	08:51	08:13		07:12		17:28 (10)	06:57	05:49	05:06	05:10	05:54	06:49	07:43		18:07 (10)	07:42	08:34
	16:28	17:23		18:19	16	17:44 (10)	20:17	21:12	21:59	22:06	21:23	20:14	19:00	8	18:15 (10)	16:52	16:14
7	08:50	08:11		07:10		17:30 (10)	06:54	05:47	05:05	05:11	05:56	06:51	07:45		18:04 (10)	07:44	08:36
	16:29	17:25		18:21	11	17:41 (10)	20:19	21:14	22:00	22:05	21:21	20:12	18:58	14	18:18 (10)	16:50	16:13
8	08:50	08:09		07:07			06:52	05:46	05:04	05:12	05:58	06:53	07:47		18:02 (10)	07:46	08:37
	16:31	17:27		18:23			20:21	21:16	22:01	22:04	21:20	20:09	18:55	18	18:20 (10)	16:48	16:13
9	08:49	08:07		07:05			06:49	05:44	05:04	05:13	06:00	06:55	07:48		18:01 (10)	07:48	08:38
	16:32	17:29		18:25			20:23	21:18	22:02	22:04	21:17	20:07	18:53	20	18:21 (10)	16:46	16:13
10	08:48	08:05		07:03			06:47	05:42	05:03	05:14	06:01	06:56	07:50		18:01 (10)	07:50	08:40
	16:34	17:31		18:27			20:25	21:19	22:03	22:03	21:15	20:04	18:50	20	18:21 (10)	16:45	16:12
11	08:48	08:03		07:00			06:45	05:40	05:03	05:15	06:03	06:58	07:52		18:00 (10)	07:52	08:41
	16:35	17:33		18:29			20:26	21:21	22:04	22:02	21:13	20:02	18:48	19	18:19 (10)	16:43	16:12
12	08:47	08:01		06:58			06:42	05:38	05:03	05:17	06:05	07:00	07:54		18:00 (10)	07:53	08:42
	16:37	17:35		18:30			20:28	21:23	22:04	22:01	21:11	19:59	18:46	17	18:17 (10)	16:41	16:12
13	08:46	07:59		06:55			06:40	05:36	05:02	05:18	06:07	07:02	07:56		18:00 (10)	07:55	08:43
	16:38	17:38		18:32			20:30	21:25	22:05	22:00	21:09	19:57	18:43	14	18:14 (10)	16:40	16:12
14	08:45	07:57		06:53			06:37	05:35	05:02	05:19	06:08	07:03	07:58		17:59 (10)	07:57	08:44
	16:40	17:40		18:34			20:32	21:26	22:06	21:59	21:07	19:54	18:41	13	18:12 (10)	16:38	16:12
15	08:44	07:55		06:51			06:35	05:33	05:02	05:20	06:10	07:05	08:00		17:59 (10)	07:59	08:45
	16:42	17:42		18:36			20:34	21:28	22:06	21:58	21:05	19:52	18:39	11	18:10 (10)	16:36	16:12
16	08:43	07:53		06:48			06:33	05:31	05:02	05:22	06:12	07:07	08:01		17:58 (10)	08:01	08:46
	16:43	17:44		18:38			20:36	21:30	22:07	21:57	21:03	19:49	18:36	9	18:07 (10)	16:35	16:12
17	08:42	07:51		06:46			06:30	05:30	05:01	05:23	06:14	07:09	08:03		17:57 (10)	08:03	08:47
	16:45	17:46		18:40			20:38	21:31	22:07	21:55	21:01	19:47	18:34	8	18:05 (10)	16:33	16:12
18	08:41	07:49		06:43			06:28	05:28	05:01	05:24	06:16	07:10	08:05		17:58 (10)	08:05	08:47
	16:47	17:48		18:42			20:39	21:33	22:08	21:54	20:58	19:44	18:32	4	18:02 (10)	16:32	16:12
19	08:40	07:46		06:41			06:26	05:26	05:01	05:26	06:17	07:12	08:07		17:59 (10)	08:07	08:48
	16:49	17:50		18:44			20:41	21:35	22:08	21:53	20:56	19:42	18:29	1	18:00 (10)	16:30	16:13
20	08:39	07:44		06:38			06:24	05:25	05:02	05:27	06:19	07:14	08:09			08:08	08:49
	16:50	17:52		18:46			20:43	21:36	22:08	21:52	20:54	19:39	18:27			16:29	16:13
21	08:38	07:42		06:36			06:21	05:23	05:02	05:29	06:21	07:16	08:11			08:10	08:49
	16:52	17:54		18:47			20:45	21:38	22:09	21:50	20:52	19:37	18:25			16:28	16:13
22	08:37	07:40		06:33			06:19	05:22	05:02	05:30	06:23	07:18	08:13			08:12	08:50
	16:54	17:55		18:49			20:47	21:39	22:09	21:49	20:49	19:34	18:23			16:26	16:14
23	08:35	07:38	17:27 (10)	06:31			06:17	05:21	05:02	05:32	06:24	07:19	08:15			08:14	08:50
	16:56	17:57	2 17:29 (10)	18:51			20:49	21:41	22:09	21:47	20:47	19:32	18:21			16:25	16:14
24	08:34	07:35	17:26 (10)	06:28			06:15	05:19	05:02	05:33	06:26	07:21	08:17			08:16	08:51
	16:58	17:59	6 17:32 (10)	18:53			20:50	21:42	22:09	21:46	20:45	19:29	18:18			16:24	16:15
25	08:32	07:33	17:25 (10)	06:26			06:12	05:18	05:03	05:35	06:28	07:23	07:19			08:17	08:51
	17:00	18:01	8 17:33 (10)	18:55			20:52	21:44	22:09	21:44	20:43	19:27	17:16			16:23	16:16
26	08:31	07:31	17:26 (10)	06:24			06:10	05:17	05:03	05:36	06:30	07:25	07:20			08:19	08:51
	17:02	18:03	10 17:36 (10)	18:57			20:54	21:45	22:09	21:43	20:40	19:25	17:14			16:22	16:16
27	08:30	07:29	17:26 (10)	06:21			06:08	05:15	05:04	05:38	06:32	07:27	07:22			08:21	08:52
	17:04	18:05	11 17:37 (10)	18:59			20:56	21:47	22:09	21:41	20:38	19:22	17:12			16:21	16:17
28	08:28	07:26	17:26 (10)	06:19			06:06	05:14	05:04	05:39	06:33	07:28	07:24			08:22	08:52
	17:06	18:07	14 17:40 (10)	19:00			20:58	21:48	22:09	21:40	20:36	19:20	17:10			16:20	16:18
29	08:26			07:16			06:04	05:13	05:05	05:41	06:35	07:30	07:26			08:24	08:52
	17:08			20:02			21:00	21:50	22:09	21:38	20:33	19:17	17:08			16:19	16:19
30	08:25			07:14			06:02	05:12	05:05	05:43	06:37	07:32	07:28			08:26	08:52
	17:09			20:04			21:01	21:51	22:08	21:36	20:31	19:15	17:06			16:18	16:20
31	08:23			07:11				05:11		05:44	06:39		07:30				08:52
	17:11			20:06				21:52		21:35	20:28		17:04				16:21
Potential sun hours	250	273		367			420	494	510	512	460	382	328			259	233
Total, worst case			51		118									176			
Sun reduction			0.19		0.22									0.23			
Oper. time red.			1.00		1.00									1.00			
Wind dir. red.			0.65		0.65									0.65			
Total reduction			0.13		0.14									0.15			
Total, real			6		17									26			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** DM - H130

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March		April	May	June	July	August	September		October	November	December
1	08:52	08:22	07:24		07:09	06:00	05:10	05:06	05:46	06:41		07:34	07:32	08:27
	16:22	17:14	18:10		20:08	21:03	21:54	22:08	21:33	20:26		19:12	17:02	16:17
2	08:52	08:20	07:22		07:07	05:58	05:09	05:07	05:48	06:42		07:36	07:34	08:29
	16:23	17:16	18:11		20:10	21:05	21:55	22:08	21:31	20:24		19:10	17:00	16:17
3	08:52	08:18	07:20		07:04	05:56	05:08	05:08	05:50	06:44		07:38	07:36	08:30
	16:25	17:18	18:13		20:12	21:07	21:56	22:07	21:29	20:21		19:08	16:58	16:16
4	08:52	08:17	07:17		07:02	05:54	05:08	05:09	05:51	06:46		07:39	07:38	08:32
	16:26	17:20	18:15		20:14	21:09	21:57	22:07	21:27	20:19		19:05	16:56	16:15
5	08:51	08:15	07:15		06:59	05:52	05:07	05:10	05:53	06:48		07:41	07:40	08:33
	16:27	17:22	18:17		20:15	21:11	21:58	22:06	21:26	20:17		19:03	16:54	16:15
6	08:51	08:13	07:12		06:57	05:50	05:06	05:10	05:55	06:50		07:43	07:42	08:35
	16:28	17:24	18:19		20:17	21:13	21:59	22:06	21:24	20:14		19:00	16:52	16:14
7	08:50	08:11	07:10		06:54	05:48	05:05	05:11	05:57	06:51		07:45	07:44	08:36
	16:30	17:26	18:21		20:19	21:14	22:00	22:05	21:22	20:12		18:58	16:50	16:14
8	08:50	08:09	07:08		06:52	05:46	05:05	05:12	05:58	06:53		07:47	07:46	08:37
	16:31	17:28	18:23		20:21	21:16	22:01	22:04	21:20	20:09		18:55	16:48	16:13
9	08:49	08:07	07:05		06:50	05:44	05:04	05:13	06:00	06:55		07:49	07:48	08:39
	16:33	17:30	18:25		20:23	21:18	22:02	22:04	21:18	20:07		18:53	16:47	16:13
10	08:49	08:05	07:03		06:47	05:42	05:04	05:15	06:02	06:57		07:50	07:50	08:40
	16:34	17:32	18:27		20:25	21:20	22:03	22:03	21:16	20:04		18:51	16:45	16:13
11	08:48	08:03	07:00		06:45	05:40	05:03	05:16	06:03	06:58		07:52	07:52	08:41
	16:36	17:34	18:29		20:27	21:21	22:04	22:02	21:14	20:02		18:48	16:43	16:12
12	08:47	08:01	06:58		06:42	05:38	05:03	05:17	06:05	07:00		07:54	07:54	08:42
	16:37	17:36	18:31		20:28	21:23	22:04	22:01	21:12	19:59		18:46	16:42	16:12
13	08:46	07:59	06:56		06:40	05:37	05:03	05:18	06:07	07:02		07:56	07:56	08:43
	16:39	17:38	18:33		20:30	21:25	22:05	22:00	21:09	19:57		18:44	16:40	16:12
14	08:45	07:57	06:53		06:38	05:35	05:02	05:19	06:09	07:04		07:58	07:57	08:44
	16:40	17:40	18:34		20:32	21:27	22:06	21:59	21:07	19:55		18:41	16:38	16:12
15	08:45	07:55	06:51		06:35	05:33	05:02	05:21	06:10	07:05		08:00	07:59	08:45
	16:42	17:42	18:36		20:34	21:28	22:06	21:58	21:05	19:52		18:39	16:37	16:12
16	08:44	07:53	06:48		06:33	05:32	05:02	05:22	06:12	07:07		08:02	08:01	08:46
	16:44	17:44	18:38		20:36	21:30	22:07	21:57	21:03	19:50		18:37	16:35	16:12
17	08:43	07:51	06:46		06:31	05:30	05:02	05:23	06:14	07:09		08:04	08:03	08:47
	16:45	17:46	18:40		20:38	21:32	22:07	21:56	21:01	19:47		18:34	16:34	16:12
18	08:41	07:49	06:43		06:28	05:28	05:02	05:25	06:16	07:11		08:05	08:05	08:47
	16:47	17:48	18:42		20:40	21:33	22:08	21:54	20:59	19:45		18:32	16:32	16:13
19	08:40	07:47	06:41		06:26	05:27	05:02	05:26	06:18	07:13	19:11 (7)	08:07	08:07	08:48
	16:49	17:50	18:44		20:41	21:35	22:08	21:53	20:56	19:42	1 19:12 (7)	18:30	16:31	16:13
20	08:39	07:44	06:39		06:24	05:25	05:02	05:27	06:19	07:14	19:11 (7)	08:09	08:09	08:49
	16:51	17:52	18:46		20:43	21:36	22:09	21:52	20:54	19:40	1 19:12 (7)	18:27	16:29	16:13
21	08:38	07:42	06:36		06:22	05:24	05:02	05:29	06:21	07:16		08:11	08:10	08:50
	16:53	17:54	18:48		20:45	21:38	22:09	21:50	20:52	19:37		18:25	16:28	16:14
22	08:37	07:40	06:34		06:19	05:22	05:02	05:30	06:23	07:18		08:13	08:12	08:50
	16:54	17:56	18:49		20:47	21:40	22:09	21:49	20:50	19:35		18:23	16:27	16:14
23	08:35	07:38	06:31		06:17	05:21	05:02	05:32	06:25	07:20		08:15	08:14	08:51
	16:56	17:58	18:51		20:49	21:41	22:09	21:48	20:47	19:32		18:21	16:26	16:15
24	08:34	07:36	06:29	18:24 (7)	06:15	05:20	05:03	05:33	06:26	07:21		08:17	08:16	08:51
	16:58	18:00	18:53	1 18:25 (7)	20:51	21:43	22:09	21:46	20:45	19:30		18:19	16:24	16:15
25	08:33	07:33	06:26	18:23 (7)	06:13	05:18	05:03	05:35	06:28	07:23		07:19	08:18	08:51
	17:00	18:02	18:55	1 18:24 (7)	20:52	21:44	22:09	21:45	20:43	19:27		17:16	16:23	16:16
26	08:31	07:31	06:24		06:10	05:17	05:03	05:37	06:30	07:25		07:21	08:19	08:52
	17:02	18:04	18:57		20:54	21:46	22:09	21:43	20:40	19:25		17:14	16:22	16:17
27	08:30	07:29	06:21		06:08	05:16	05:04	05:38	06:32	07:27		07:23	08:21	08:52
	17:04	18:06	18:59		20:56	21:47	22:09	21:41	20:38	19:22		17:12	16:21	16:17
28	08:28	07:26	06:19		06:06	05:15	05:04	05:40	06:34	07:29		07:25	08:23	08:52
	17:06	18:08	19:01		20:58	21:48	22:09	21:40	20:36	19:20		17:10	16:20	16:18
29	08:27		07:16		06:04	05:13	05:05	05:41	06:35	07:30		07:26	08:24	08:52
	17:08		20:02		21:00	21:50	22:09	21:38	20:33	19:17		17:08	16:19	16:19
30	08:25		07:14		06:02	05:12	05:06	05:43	06:37	07:32		07:28	08:26	08:52
	17:10		20:04		21:02	21:51	22:09	21:36	20:31	19:15		17:06	16:18	16:20
31	08:23		07:11			05:11		05:45	06:39			07:30		08:52
	17:12		20:06			21:52		21:35	20:29			17:04		16:21
Potential sun hours	250	273	367		420	494	510	512	460	382		328	259	233
Total, worst case				2							2			
Sun reduction				0.22							0.25			
Oper. time red.				1.00							1.00			
Wind dir. red.				0.65							0.65			
Total reduction				0.14							0.16			
Total, real				0							0			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** DN - H131

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February	March	April	May	June	July	August	September	October	November			December		
1	08:52		15:26 (9)	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:40	07:34	07:32			08:27		15:15 (9)
	16:22	18	15:44 (9)	17:13	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02			16:17	21	15:36 (9)
2	08:52		15:27 (9)	08:20	07:22	07:06	05:57	05:09	05:07	05:48	06:42	07:36	07:34			08:29		15:15 (9)
	16:23	18	15:45 (9)	17:15	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00			16:16	22	15:37 (9)
3	08:52		15:27 (9)	08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:37	07:36			08:30		15:14 (9)
	16:24	20	15:47 (9)	17:17	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58			16:16	23	15:37 (9)
4	08:51		15:27 (9)	08:16	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38			08:32		15:15 (9)
	16:26	21	15:48 (9)	17:19	18:15	20:13	21:09	21:57	22:07	21:27	20:19	19:05	16:56			16:15	23	15:38 (9)
5	08:51		15:29 (9)	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40			08:33		15:14 (9)
	16:27	21	15:50 (9)	17:21	18:17	20:15	21:11	21:58	22:06	21:25	20:16	19:03	16:54			16:14	23	15:37 (9)
6	08:51		15:29 (9)	08:13	07:12	06:57	05:49	05:06	05:10	05:55	06:49	07:43	07:42			08:35		15:15 (9)
	16:28	22	15:51 (9)	17:23	18:19	20:17	21:12	21:59	22:06	21:24	20:14	19:00	16:52			16:14	22	15:37 (9)
7	08:50		15:29 (9)	08:11	07:10	06:54	05:47	05:05	05:11	05:56	06:51	07:45	07:44			08:36		15:15 (9)
	16:29	23	15:52 (9)	17:25	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50			16:13	21	15:36 (9)
8	08:50		15:30 (9)	08:09	07:08	06:52	05:46	05:04	05:12	05:58	06:53	07:47	07:46			08:37		15:16 (9)
	16:31	24	15:54 (9)	17:27	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48			16:13	20	15:36 (9)
9	08:49		15:31 (9)	08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48			08:38		15:16 (9)
	16:32	23	15:54 (9)	17:29	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46			16:13	19	15:35 (9)
10	08:49		15:32 (9)	08:05	07:03	06:47	05:42	05:03	05:14	06:01	06:56	07:50	07:50			08:40		15:16 (9)
	16:34	22	15:54 (9)	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:50	16:45			16:12	19	15:35 (9)
11	08:48		15:32 (9)	08:03	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52			08:41		15:17 (9)
	16:35	22	15:54 (9)	17:34	18:29	20:26	21:21	22:04	22:02	21:14	20:02	18:48	16:43			16:12	18	15:35 (9)
12	08:47		15:33 (9)	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54			08:42		15:17 (9)
	16:37	20	15:53 (9)	17:36	18:31	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41			16:12	18	15:35 (9)
13	08:46		15:34 (9)	07:59	06:55	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:55			08:43		15:17 (9)
	16:39	19	15:53 (9)	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40			16:12	17	15:34 (9)
14	08:45		15:36 (9)	07:57	06:53	06:38	05:35	05:02	05:19	06:08	07:03	07:58	07:57			08:44		15:18 (9)
	16:40	17	15:53 (9)	17:40	18:34	20:32	21:26	22:06	21:59	21:07	19:54	18:41	16:38			16:12	16	15:34 (9)
15	08:45		15:37 (9)	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59			08:45		15:18 (9)
	16:42	15	15:52 (9)	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36			16:12	16	15:34 (9)
16	08:44		15:39 (9)	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:01	08:01			08:46		15:19 (9)
	16:43	13	15:52 (9)	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35			16:12	15	15:34 (9)
17	08:43		15:40 (9)	07:51	06:46	06:31	05:30	05:01	05:23	06:14	07:09	08:03	08:03			08:47		15:18 (9)
	16:45	10	15:50 (9)	17:46	18:40	20:38	21:32	22:07	21:56	21:01	19:47	18:34	16:33			16:12	16	15:34 (9)
18	08:41		15:45 (9)	07:49	06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05	08:05			08:47		15:19 (9)
	16:47	1	15:46 (9)	17:48	18:42	20:39	21:33	22:08	21:54	20:59	19:44	18:32	16:32			16:12	15	15:34 (9)
19	08:40			07:47	06:41	06:26	05:26	05:01	05:26	06:17	07:12	08:07	08:07			08:48		15:20 (9)
	16:49			17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:29	16:30			16:13	14	15:34 (9)
20	08:39			07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09			08:49		15:21 (9)
	16:51			17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:39	18:27	16:29			16:13	14	15:35 (9)
21	08:38			07:42	06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11	08:10			08:49		15:20 (9)
	16:52			17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28			16:13	15	15:35 (9)
22	08:37			07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12			08:50		15:21 (9)
	16:54			17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27			16:14	15	15:36 (9)
23	08:35			07:38	06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15	08:14			08:51		15:22 (9)
	16:56			17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25			16:14	14	15:36 (9)
24	08:34			07:35	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16			08:51		15:22 (9)
	16:58			17:59	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24			16:15	14	15:36 (9)
25	08:33			07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17		15:18 (9)	08:51		15:23 (9)
	17:00			18:01	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	10	15:28 (9)	16:16	15	15:38 (9)
26	08:31			07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19		15:17 (9)	08:52		15:23 (9)
	17:02			18:03	18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	16:22	13	15:30 (9)	16:16	15	15:38 (9)
27	08:30			07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21		15:16 (9)	08:52		15:24 (9)
	17:04			18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	15	15:31 (9)	16:17	15	15:39 (9)
28	08:28			07:26	06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24	08:23		15:16 (9)	08:52		15:24 (9)
	17:06			18:07	19:00	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	17	15:33 (9)	16:18	16	15:40 (9)
29	08:27				07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24		15:15 (9)	08:52		15:24 (9)
	17:08				20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	19	15:34 (9)	16:19	17	15:41 (9)
30	08:25				07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26		15:14 (9)	08:52		15:25 (9)
	17:09				20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	20	15:34 (9)	16:20	17	15:42 (9)
31	08:23				07:11		05:11		05:44	06:39		07:30				08:52		15:26 (9)
	17:11				20:06		21:52		21:35	20:29		17:04				16:21	17	15:43 (9)
Potential sun hours	250			273	367	420	494	510	513	460	382	328	259			233		
Total, worst case		329												94			542	
Sun reduction		0.16												0.20			0.12	
Oper. time red.		1.00												1.00			1.00	
Wind dir. red.		0.65												0.65			0.65	
Total reduction		0.11												0.13			0.08	
Total, real		35												12			42	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** DO - H132

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:07	05:47	06:41	07:34	07:32	08:27
	16:23	17:14	18:10	20:08	21:04	21:54	22:08	21:33	20:26	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:10	05:07	05:48	06:43	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:14	20:12	21:07	21:56	22:08	21:29	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:52	06:46	07:40	07:38	08:32
	16:26	17:20	18:16	20:14	21:09	21:57	22:07	21:28	20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	06:59	05:52	05:07	05:10	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	21:58	22:07	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:55	05:48	05:06	05:12	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:56	16:49	16:14
9	08:49	08:07	07:05	06:50	05:44	05:04	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51	16:45	16:13
11	08:48	08:03	07:01	06:45	05:40	05:04	05:16	06:04	06:59	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:13
12	08:47	08:01	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	22:00	21:10	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:03	05:20	06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00	07:59	08:45
	16:42	17:42	18:37	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:34	16:13
18	08:42	07:49	06:44	06:29	05:29	05:02	05:25	06:16	07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:42	21:35	22:08	21:53	20:57	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:28	06:20	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:37	22:09	21:52	20:54	19:40	18:28	16:30	16:13
21	08:38	07:42	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:23	05:02	05:31	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:14	08:51
	16:57	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:19	16:25	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	21:44	22:09	21:45	20:43	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:41	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:22	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	05:14	05:05	05:42	06:36	07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:34	19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	05:13	05:06	05:43	06:37	07:32	07:29	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:37	20:31	19:15	17:06	16:19	16:20
31	08:24		07:12		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** DP - H133

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:33	08:28
	16:22	17:14	18:10	20:08	21:04	21:54	22:09	21:33	20:26	19:13	17:02	16:17
2	08:52	08:20	07:22	07:07	05:58	05:09	05:07	05:48	06:43	07:36	07:34	08:29
	16:23	17:16	18:12	20:10	21:06	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04	05:56	05:08	05:08	05:50	06:44	07:38	07:36	08:31
	16:25	17:18	18:14	20:12	21:07	21:56	22:08	21:30	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:51	06:46	07:40	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:28	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52	05:07	05:10	05:53	06:48	07:41	07:40	08:34
	16:27	17:22	18:17	20:16	21:11	21:58	22:07	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:10	05:55	06:50	07:43	07:42	08:35
	16:28	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:51	08:11	07:10	06:55	05:48	05:05	05:11	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:15	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:38
	16:31	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:56	16:49	16:13
9	08:49	08:07	07:05	06:50	05:44	05:04	05:13	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51	16:45	16:13
11	08:48	08:04	07:01	06:45	05:40	05:03	05:16	06:04	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:22	22:04	22:02	21:14	20:02	18:48	16:43	16:12
12	08:47	08:02	06:58	06:43	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:12
13	08:47	07:59	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	22:00	21:10	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:58	08:44
	16:40	17:40	18:35	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	05:33	05:02	05:21	06:11	07:06	08:00	08:00	08:45
	16:42	17:42	18:36	20:34	21:28	22:07	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:34	16:12
18	08:42	07:49	06:44	06:28	05:28	05:02	05:25	06:16	07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:55	20:59	19:45	18:32	16:32	16:13
19	08:41	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:42	21:35	22:09	21:53	20:57	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:37	22:09	21:52	20:54	19:40	18:28	16:29	16:13
21	08:38	07:42	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:36	07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:48	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:33	06:27	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:10	21:46	20:45	19:30	18:19	16:24	16:15
25	08:33	07:34	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:52
	17:00	18:02	18:55	20:53	21:44	22:10	21:45	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:55	21:46	22:10	21:43	20:41	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:22	17:12	16:21	16:17
28	08:28	07:27	06:19	06:06	05:15	05:04	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:49	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	05:05	05:41	06:35	07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:34	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:29	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:37	20:31	19:15	17:06	16:18	16:20
31	08:24		07:12		05:11		05:45	06:39		07:31		08:52
	17:12		20:06		21:53		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	513	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** DQ - H135

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:40	07:34	07:32	08:27
	16:22	17:13	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:06	05:57	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:15	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:16
3	08:52	08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:37	07:36	08:30
	16:24	17:17	18:13	20:12	21:07	21:56	22:08	21:29	20:21	19:07	16:58	16:16
4	08:52	08:17	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38	08:32
	16:26	17:19	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40	08:33
	16:27	17:21	18:17	20:15	21:11	21:58	22:06	21:25	20:17	19:03	16:54	16:14
6	08:51	08:13	07:12	06:57	05:49	05:06	05:10	05:55	06:49	07:43	07:42	08:35
	16:28	17:23	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:47	05:05	05:11	05:56	06:51	07:45	07:44	08:36
	16:30	17:25	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:13
8	08:50	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37
	16:31	17:27	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48	08:39
	16:32	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46	16:13
10	08:49	08:05	07:03	06:47	05:42	05:03	05:14	06:01	06:56	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:12
11	08:48	08:03	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52	08:41
	16:35	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23	22:05	22:01	21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:56	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36	16:12
16	08:44	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:01	05:23	06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:33	16:12
18	08:41	07:49	06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05	08:05	08:48
	16:47	17:48	18:42	20:39	21:33	22:08	21:54	20:59	19:44	18:32	16:32	16:12
19	08:40	07:47	06:41	06:26	05:26	05:01	05:26	06:17	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11	08:10	08:50
	16:52	17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:13
22	08:37	07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	16:14
24	08:34	07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24	16:15
25	08:33	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:01	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:52
	17:02	18:03	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24	08:23	08:52
	17:06	18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11		05:44	06:39		07:30		08:52
	17:11		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	513	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** DR - H136

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:11	05:07	05:47	06:41	07:34	07:33	08:28
	16:23	17:14	18:10	20:08	21:04	21:54	22:09	21:33	20:27	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:10	05:07	05:48	06:43	07:36	07:35	08:29
	16:24	17:16	18:12	20:10	21:06	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38	07:36	08:31
	16:25	17:18	18:14	20:12	21:07	21:56	22:08	21:30	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:52	06:46	07:40	07:38	08:32
	16:26	17:20	18:16	20:14	21:09	21:57	22:07	21:28	20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	07:00	05:52	05:07	05:10	05:53	06:48	07:42	07:40	08:34
	16:27	17:22	18:18	20:16	21:11	21:58	22:07	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:18	21:13	21:59	22:06	21:24	20:14	19:01	16:52	16:14
7	08:51	08:11	07:10	06:55	05:48	05:06	05:12	05:57	06:52	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:15	22:00	22:05	21:22	20:12	18:58	16:51	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:13	05:59	06:53	07:47	07:46	08:38
	16:31	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:10	18:56	16:49	16:14
9	08:49	08:07	07:06	06:50	05:44	05:05	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:06	07:03	06:48	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51	16:45	16:13
11	08:48	08:04	07:01	06:45	05:41	05:04	05:16	06:04	06:59	07:53	07:52	08:41
	16:36	17:34	18:29	20:27	21:22	22:04	22:02	21:14	20:02	18:49	16:43	16:13
12	08:47	08:02	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:13
13	08:47	08:00	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:31	21:25	22:05	22:00	21:10	19:57	18:44	16:40	16:12
14	08:46	07:58	06:53	06:38	05:35	05:03	05:20	06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	21:59	21:08	19:55	18:42	16:39	16:12
15	08:45	07:55	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00	08:00	08:45
	16:42	17:42	18:37	20:34	21:28	22:07	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:49	06:33	05:32	05:02	05:22	06:13	07:07	08:02	08:01	08:46
	16:44	17:44	18:39	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:13
17	08:43	07:51	06:46	06:31	05:30	05:02	05:24	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:35	16:34	16:13
18	08:42	07:49	06:44	06:29	05:29	05:02	05:25	06:16	07:11	08:06	08:05	08:48
	16:48	17:48	18:42	20:40	21:33	22:08	21:55	20:59	19:45	18:32	16:32	16:13
19	08:41	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:08	08:07	08:48
	16:49	17:50	18:44	20:42	21:35	22:09	21:53	20:57	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:28	06:20	07:15	08:09	08:09	08:49
	16:51	17:52	18:46	20:44	21:37	22:09	21:52	20:54	19:40	18:28	16:30	16:13
21	08:38	07:43	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:20	05:23	05:02	05:31	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:36	07:38	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:14	08:51
	16:57	17:58	18:52	20:49	21:41	22:09	21:48	20:48	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:10	21:46	20:45	19:30	18:19	16:25	16:15
25	08:33	07:34	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:52
	17:00	18:02	18:55	20:53	21:44	22:10	21:45	20:43	19:28	17:17	16:24	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:55	21:46	22:10	21:43	20:41	19:25	17:15	16:22	16:17
27	08:30	07:29	06:22	06:09	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:23	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:49	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	05:14	05:05	05:42	06:36	07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:34	19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	05:13	05:06	05:43	06:37	07:32	07:29	08:26	08:52
	17:10		20:05	21:02	21:51	22:09	21:37	20:31	19:15	17:06	16:19	16:20
31	08:24		07:12		05:12		05:45	06:39		07:31		08:52
	17:12		20:06		21:53		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** DS - H137

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:11	05:07	05:47	06:41	07:34	07:32	08:27
	16:23	17:14	18:10	20:08	21:04	21:54	22:08	21:33	20:26	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:10	05:07	05:48	06:43	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:14	20:12	21:07	21:56	22:08	21:29	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:52	06:46	07:40	07:38	08:32
	16:26	17:20	18:16	20:14	21:09	21:57	22:07	21:28	20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	06:59	05:52	05:07	05:10	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	21:58	22:07	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:55	05:48	05:06	05:12	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:56	16:49	16:14
9	08:49	08:07	07:05	06:50	05:44	05:05	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51	16:45	16:13
11	08:48	08:03	07:01	06:45	05:40	05:04	05:16	06:04	06:59	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:13
12	08:47	08:01	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	22:00	21:10	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:03	05:20	06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00	07:59	08:45
	16:42	17:42	18:37	20:34	21:28	22:07	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:24	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:34	16:13
18	08:42	07:49	06:44	06:29	05:29	05:02	05:25	06:16	07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:42	21:35	22:08	21:53	20:57	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:28	06:20	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:37	22:09	21:52	20:54	19:40	18:28	16:30	16:13
21	08:38	07:42	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:23	05:02	05:31	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:14	08:51
	16:57	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:19	16:25	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	21:44	22:09	21:45	20:43	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:41	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:22	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	05:14	05:05	05:42	06:36	07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:34	19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	05:13	05:06	05:43	06:37	07:32	07:29	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:37	20:31	19:15	17:06	16:19	16:20
31	08:24		07:12		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** DT - H138

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June		July		August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:11		05:07		05:40 (6)	05:47	06:41	07:34	07:32	08:27
	16:23	17:14	18:10	20:08	21:04	21:54		22:08	4	05:44 (6)	21:33	20:26	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:10		05:07		05:40 (6)	05:48	06:43	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:05	21:55		22:08	3	05:43 (6)	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	05:09		05:08		05:41 (6)	05:50	06:44	07:38	07:36	08:31
	16:25	17:18	18:14	20:12	21:07	21:56		22:08	2	05:43 (6)	21:29	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08		05:09		05:42 (6)	05:52	06:46	07:40	07:38	08:32
	16:26	17:20	18:16	20:14	21:09	21:57		22:07	1	05:43 (6)	21:28	20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	06:59	05:52	05:07		05:10			05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	21:58		22:07			21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06		05:11			05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:18	21:13	21:59		22:06			21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:55	05:48	05:06		05:12			05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00		22:05			21:22	20:12	18:58	16:51	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05		05:13			05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01		22:05			21:20	20:09	18:56	16:49	16:14
9	08:49	08:07	07:05	06:50	05:44	05:05		05:14			06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	1	05:37 (6)	22:04		21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04		05:36 (6)	05:15		06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	2	05:38 (6)	22:03		21:16	20:05	18:51	16:45	16:13
11	08:48	08:03	07:01	06:45	05:40	05:04		05:36 (6)	05:16		06:04	06:59	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:22	22:04	3	05:39 (6)	22:02		21:14	20:02	18:49	16:43	16:13
12	08:47	08:01	06:58	06:43	05:39	05:03		05:35 (6)	05:17		06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	4	05:39 (6)	22:01		21:12	20:00	18:46	16:42	16:13
13	08:46	07:59	06:56	06:40	05:37	05:03		05:35 (6)	05:18		06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	5	05:40 (6)	22:00		21:10	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:03		05:35 (6)	05:20		06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	5	05:40 (6)	21:59		21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:36	05:33	05:02		05:35 (6)	05:21		06:11	07:06	08:00	08:00	08:45
	16:42	17:42	18:37	20:34	21:28	22:07	6	05:41 (6)	21:58		21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:49	06:33	05:32	05:02		05:35 (6)	05:22		06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	6	05:41 (6)	21:57		21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02		05:35 (6)	05:24		06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	7	05:42 (6)	21:56		21:01	19:47	18:34	16:34	16:13
18	08:42	07:49	06:44	06:29	05:29	05:02		05:35 (6)	05:25		06:16	07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	7	05:42 (6)	21:55		20:59	19:45	18:32	16:32	16:13
19	08:41	07:47	06:41	06:26	05:27	05:02		05:35 (6)	05:26		06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:42	21:35	22:08	7	05:42 (6)	21:53		20:57	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02		05:35 (6)	05:28		06:20	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:37	22:09	7	05:42 (6)	21:52		20:54	19:40	18:28	16:30	16:13
21	08:38	07:42	06:36	06:22	05:24	05:02		05:35 (6)	05:29		06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	7	05:42 (6)	21:51		20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:20	05:23	05:02		05:35 (6)	05:31		06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	7	05:42 (6)	21:49		20:50	19:35	18:23	16:27	16:14
23	08:36	07:38	06:31	06:17	05:21	05:03		05:36 (6)	05:32		06:25	07:20	08:15	08:14	08:51
	16:57	17:58	18:52	20:49	21:41	22:09	7	05:43 (6)	21:48		20:48	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03		05:36 (6)	05:34		06:27	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	7	05:43 (6)	21:46		20:45	19:30	18:19	16:25	16:15
25	08:33	07:34	06:26	06:13	05:18	05:03		05:36 (6)	05:35		06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	21:44	22:09	7	05:43 (6)	21:45		20:43	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04		05:37 (6)	05:37		06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	6	05:43 (6)	21:43		20:41	19:25	17:14	16:22	16:17
27	08:30	07:29	06:22	06:08	05:16	05:04		05:37 (6)	05:38		06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	6	05:43 (6)	21:42		20:38	19:22	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	05:15	05:05		05:38 (6)	05:40		06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	22:09	6	05:44 (6)	21:40		20:36	19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	05:14	05:05		05:38 (6)	05:42		06:36	07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	5	05:43 (6)	21:38		20:34	19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	05:13	05:06		05:39 (6)	05:43		06:37	07:32	07:29	08:26	08:52
	17:10		20:05	21:02	21:51	22:09	4	05:43 (6)	21:37		20:31	19:15	17:06	16:19	16:20
31	08:24		07:12		05:12				05:45		06:39		07:31		08:52
	17:12		20:06		21:52				21:35		20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510			512		460	382	328	259	233
Total, worst case						122			10						
Sun reduction						0.26			0.22						
Oper. time red.						1.00			1.00						
Wind dir. red.						0.65			0.65						
Total reduction						0.17			0.14						
Total, real						20			1						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** DU - H139

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March		April	May	June	July	August	September		October		November	December
1	08:53	08:22	07:25		07:09	06:00	05:11	05:07	05:47	06:41		07:34	08:01 (2)	07:33	08:28
	16:23	17:14	18:10		20:08	21:04	21:54	22:09	21:33	20:27		19:13	8 08:09 (2)	17:02	16:18
2	08:52	08:20	07:22		07:07	05:58	05:10	05:07	05:48	06:43		07:36	08:02 (2)	07:35	08:29
	16:24	17:16	18:12		20:10	21:06	21:55	22:08	21:31	20:24		19:10	4 08:06 (2)	17:00	16:17
3	08:52	08:19	07:20		07:04	05:56	05:09	05:08	05:50	06:44		07:38	08:04 (2)	07:37	08:31
	16:25	17:18	18:14		20:12	21:07	21:56	22:08	21:30	20:22		19:08	1 08:05 (2)	16:58	16:16
4	08:52	08:17	07:17		07:02	05:54	05:08	05:09	05:52	06:46		07:40		07:38	08:32
	16:26	17:20	18:16		20:14	21:09	21:57	22:07	21:28	20:19		19:05		16:56	16:16
5	08:52	08:15	07:15		07:00	05:52	05:07	05:10	05:53	06:48		07:42		07:40	08:34
	16:27	17:22	18:18		20:16	21:11	21:58	22:07	21:26	20:17		19:03		16:54	16:15
6	08:51	08:13	07:13		06:57	05:50	05:06	05:11	05:55	06:50		07:43		07:42	08:35
	16:29	17:24	18:20		20:18	21:13	22:00	22:06	21:24	20:14		19:01		16:52	16:14
7	08:51	08:11	07:10		06:55	05:48	05:06	05:12	05:57	06:52		07:45		07:44	08:36
	16:30	17:26	18:21		20:19	21:15	22:01	22:06	21:22	20:12		18:58		16:51	16:14
8	08:50	08:09	07:08		06:52	05:46	05:05	05:13	05:59	06:53		07:47		07:46	08:38
	16:31	17:28	18:23		20:21	21:16	22:02	22:05	21:20	20:10		18:56		16:49	16:14
9	08:50	08:08	07:06		06:50	05:44	05:05	05:14	06:00	06:55		07:49		07:48	08:39
	16:33	17:30	18:25		20:23	21:18	22:02	22:04	21:18	20:07		18:53		16:47	16:13
10	08:49	08:06	07:03		06:48	05:42	05:04	05:15	06:02	06:57		07:51		07:50	08:40
	16:34	17:32	18:27		20:25	21:20	22:03	22:03	21:16	20:05		18:51		16:45	16:13
11	08:48	08:04	07:01	07:25 (2)	06:45	05:40	05:04	05:16	06:04	06:59		07:53		07:52	08:41
	16:36	17:34	18:29	3 07:28 (2)	20:27	21:22	22:04	22:02	21:14	20:02		18:49		16:43	16:13
12	08:47	08:02	06:58	07:22 (2)	06:43	05:39	05:03	05:17	06:05	07:00		07:54		07:54	08:42
	16:37	17:36	18:31	6 07:28 (2)	20:29	21:23	22:05	22:01	21:12	20:00		18:46		16:42	16:13
13	08:47	08:00	06:56	07:20 (2)	06:40	05:37	05:03	05:18	06:07	07:02		07:56		07:56	08:43
	16:39	17:38	18:33	9 07:29 (2)	20:31	21:25	22:06	22:00	21:10	19:57		18:44		16:40	16:12
14	08:46	07:58	06:54	07:17 (2)	06:38	05:35	05:03	05:20	06:09	07:04		07:58		07:58	08:44
	16:41	17:40	18:35	12 07:29 (2)	20:32	21:27	22:06	21:59	21:08	19:55		18:42		16:39	16:12
15	08:45	07:55	06:51	07:15 (2)	06:36	05:33	05:02	05:21	06:11	07:06		08:00		08:00	08:45
	16:42	17:42	18:37	15 07:30 (2)	20:34	21:29	22:07	21:58	21:05	19:52		18:39		16:37	16:12
16	08:44	07:53	06:49	07:13 (2)	06:33	05:32	05:02	05:22	06:13	07:07		08:02		08:02	08:46
	16:44	17:44	18:39	17 07:30 (2)	20:36	21:30	22:07	21:57	21:03	19:50		18:37		16:35	16:12
17	08:43	07:51	06:46	07:10 (2)	06:31	05:30	05:02	05:24	06:14	07:09		08:04		08:03	08:47
	16:46	17:46	18:40	19 07:29 (2)	20:38	21:32	22:08	21:56	21:01	19:47		18:35		16:34	16:13
18	08:42	07:49	06:44	07:08 (2)	06:29	05:29	05:02	05:25	06:16	07:11		08:06		08:05	08:48
	16:47	17:48	18:42	21 07:29 (2)	20:40	21:34	22:08	21:55	20:59	19:45		18:32		16:32	16:13
19	08:41	07:47	06:41	07:05 (2)	06:26	05:27	05:02	05:26	06:18	07:13	07:56 (2)	08:08		08:07	08:49
	16:49	17:50	18:44	23 07:28 (2)	20:42	21:35	22:09	21:53	20:57	19:42	9 08:05 (2)	18:30		16:31	16:13
20	08:40	07:45	06:39	07:03 (2)	06:24	05:25	05:02	05:28	06:20	07:15	07:53 (2)	08:10		08:09	08:49
	16:51	17:52	18:46	24 07:27 (2)	20:44	21:37	22:09	21:52	20:54	19:40	15 08:08 (2)	18:28		16:30	16:13
21	08:38	07:43	06:36	07:04 (2)	06:22	05:24	05:02	05:29	06:21	07:16	07:51 (2)	08:11		08:11	08:50
	16:53	17:54	18:48	22 07:26 (2)	20:45	21:38	22:09	21:51	20:52	19:37	19 08:10 (2)	18:25		16:28	16:14
22	08:37	07:40	06:34	07:05 (2)	06:20	05:23	05:02	05:31	06:23	07:18	07:48 (2)	08:13		08:13	08:50
	16:55	17:56	18:50	19 07:24 (2)	20:47	21:40	22:09	21:49	20:50	19:35	22 08:10 (2)	18:23		16:27	16:14
23	08:36	07:38	06:31	07:06 (2)	06:17	05:21	05:03	05:32	06:25	07:20	07:47 (2)	08:15		08:14	08:51
	16:57	17:58	18:52	16 07:22 (2)	20:49	21:41	22:10	21:48	20:48	19:32	24 08:11 (2)	18:21		16:26	16:15
24	08:34	07:36	06:29	07:09 (2)	06:15	05:20	05:03	05:34	06:27	07:22	07:48 (2)	08:17		08:16	08:51
	16:58	18:00	18:54	10 07:19 (2)	20:51	21:43	22:10	21:46	20:45	19:30	23 08:11 (2)	18:19		16:25	16:15
25	08:33	07:34	06:27		06:13	05:18	05:03	05:35	06:29	07:24	07:50 (2)	07:19		08:18	08:52
	17:00	18:02	18:55		20:53	21:44	22:10	21:45	20:43	19:28	22 08:12 (2)	17:17		16:23	16:16
26	08:32	07:31	06:24		06:11	05:17	05:04	05:37	06:30	07:25	07:52 (2)	07:21		08:20	08:52
	17:02	18:04	18:57		20:55	21:46	22:10	21:43	20:41	19:25	20 08:12 (2)	17:15		16:22	16:17
27	08:30	07:29	06:22		06:09	05:16	05:04	05:38	06:32	07:27	07:53 (2)	07:23		08:21	08:52
	17:04	18:06	18:59		20:56	21:47	22:10	21:42	20:38	19:23	18 08:11 (2)	17:12		16:21	16:18
28	08:29	07:27	06:19		06:06	05:15	05:05	05:40	06:34	07:29	07:55 (2)	07:25		08:23	08:52
	17:06	18:08	19:01		20:58	21:49	22:09	21:40	20:36	19:20	16 08:11 (2)	17:10		16:20	16:18
29	08:27		07:17		06:04	05:14	05:05	05:42	06:36	07:31	07:57 (2)	07:27		08:25	08:53
	17:08		20:03		21:00	21:50	22:09	21:38	20:34	19:18	13 08:10 (2)	17:08		16:19	16:19
30	08:25		07:14		06:02	05:13	05:06	05:43	06:37	07:32	07:59 (2)	07:29		08:26	08:53
	17:10		20:05		21:02	21:51	22:09	21:37	20:31	19:15	10 08:09 (2)	17:06		16:19	16:20
31	08:24		07:12			05:12		05:45	06:39			07:31			08:53
	17:12		20:07			21:53		21:35	20:29			17:04			16:21
Potential sun hours	250	273	367		420	494	510	512	460	382		328		259	233
Total, worst case				216							211		13		
Sun reduction				0.22							0.25		0.23		
Oper. time red.				1.00							1.00		1.00		
Wind dir. red.				0.64							0.64		0.64		
Total reduction				0.14							0.16		0.14		
Total, real				30							34		2		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** DV - H140

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:53	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:33	08:28
	16:23	17:14	18:10	20:08	21:04	21:54	22:09	21:33	20:27	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:09	05:07	05:48	06:43	07:36	07:35	08:29
	16:24	17:16	18:12	20:10	21:06	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38	07:37	08:31
	16:25	17:18	18:14	20:12	21:07	21:56	22:08	21:30	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:52	06:46	07:40	07:38	08:32
	16:26	17:20	18:16	20:14	21:09	21:57	22:07	21:28	20:19	19:05	16:56	16:16
5	08:52	08:15	07:15	07:00	05:52	05:07	05:10	05:53	06:48	07:42	07:40	08:34
	16:27	17:22	18:18	20:16	21:11	21:59	22:07	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:18	21:13	22:00	22:06	21:24	20:14	19:01	16:52	16:14
7	08:51	08:11	07:10	06:55	05:48	05:06	05:12	05:57	06:52	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:15	22:01	22:06	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47	07:46	08:38
	16:31	17:28	18:23	20:21	21:16	22:02	22:05	21:20	20:10	18:56	16:49	16:13
9	08:50	08:08	07:06	06:50	05:44	05:04	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:06	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51	16:45	16:13
11	08:48	08:04	07:01	06:45	05:40	05:03	05:16	06:04	06:59	07:53	07:52	08:41
	16:36	17:34	18:29	20:27	21:22	22:04	22:02	21:14	20:02	18:49	16:43	16:13
12	08:47	08:02	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:12
13	08:47	08:00	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:31	21:25	22:06	22:00	21:10	19:57	18:44	16:40	16:12
14	08:46	07:58	06:53	06:38	05:35	05:02	05:20	06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	21:59	21:08	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00	08:00	08:45
	16:42	17:42	18:37	20:34	21:29	22:07	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:49	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:02	08:46
	16:44	17:44	18:39	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:35	16:34	16:13
18	08:42	07:49	06:44	06:29	05:28	05:02	05:25	06:16	07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40	21:34	22:08	21:55	20:59	19:45	18:32	16:32	16:13
19	08:41	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:08	08:07	08:49
	16:49	17:50	18:44	20:42	21:35	22:09	21:54	20:57	19:42	18:30	16:31	16:13
20	08:40	07:45	06:39	06:24	05:25	05:02	05:28	06:20	07:15	08:09	08:09	08:49
	16:51	17:52	18:46	20:44	21:37	22:09	21:52	20:54	19:40	18:28	16:30	16:13
21	08:38	07:43	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:20	05:22	05:02	05:31	06:23	07:18	08:13	08:13	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:36	07:38	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:14	08:51
	16:57	17:58	18:52	20:49	21:41	22:10	21:48	20:48	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:10	21:46	20:45	19:30	18:19	16:25	16:15
25	08:33	07:34	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:52
	17:00	18:02	18:55	20:53	21:44	22:10	21:45	20:43	19:28	17:17	16:23	16:16
26	08:32	07:31	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	08:20	08:52
	17:02	18:04	18:57	20:55	21:46	22:10	21:43	20:41	19:25	17:14	16:22	16:17
27	08:30	07:29	06:22	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:10	21:42	20:38	19:23	17:12	16:21	16:17
28	08:29	07:27	06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:49	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	05:14	05:05	05:42	06:36	07:31	07:27	08:25	08:53
	17:08		20:03	21:00	21:50	22:09	21:38	20:34	19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:29	08:26	08:53
	17:10		20:05	21:02	21:51	22:09	21:37	20:31	19:15	17:06	16:18	16:20
31	08:24		07:12		05:11		05:45	06:39		07:31		08:53
	17:12		20:06		21:53		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	513	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** DW - H141

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:11	05:07	05:47	06:41	07:34	07:32	08:27
	16:23	17:14	18:10	20:08	21:04	21:54	22:08	21:33	20:26	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:10	05:07	05:48	06:43	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:14	20:12	21:07	21:56	22:08	21:29	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:52	06:46	07:40	07:38	08:32
	16:26	17:20	18:16	20:14	21:09	21:57	22:07	21:28	20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	06:59	05:52	05:07	05:10	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	21:58	22:07	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:55	05:48	05:06	05:12	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:56	16:49	16:14
9	08:49	08:07	07:05	06:50	05:44	05:04	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51	16:45	16:13
11	08:48	08:03	07:01	06:45	05:40	05:04	05:16	06:04	06:59	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:13
12	08:47	08:01	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	22:00	21:10	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:03	05:20	06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00	07:59	08:45
	16:42	17:42	18:37	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:34	16:13
18	08:42	07:49	06:44	06:29	05:29	05:02	05:25	06:16	07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:42	21:35	22:08	21:53	20:57	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:28	06:20	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:37	22:09	21:52	20:54	19:40	18:28	16:30	16:13
21	08:38	07:42	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:23	05:02	05:31	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:14	08:51
	16:57	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:19	16:25	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	21:44	22:09	21:45	20:43	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:41	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:22	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	05:14	05:05	05:42	06:36	07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:34	19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	05:13	05:06	05:43	06:37	07:32	07:29	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:37	20:31	19:15	17:06	16:19	16:20
31	08:24		07:12		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** DX - H142

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February	March	April	May	June	July	August	September	October	November		December
1	08:52		08:22	07:24	07:09	05:59	05:10	05:06	05:46	06:40	07:34	07:32		08:27
	16:22		17:13	18:09	20:08	21:03	21:53	22:08	21:33	20:26	19:12	17:02		16:17
2	08:52		08:20	07:22	07:06	05:57	05:09	05:07	05:48	06:42	07:36	07:34		08:29
	16:23		17:15	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00		16:16
3	08:52		08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:37	07:36		08:30
	16:24		17:17	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58		16:16
4	08:51		08:16	07:17	07:01	05:53	05:07	05:08	05:51	06:46	07:39	07:38		08:32
	16:26		17:19	18:15	20:13	21:09	21:57	22:07	21:27	20:19	19:05	16:56		16:15
5	08:51		08:15	07:15	06:59	05:51	05:06	05:09	05:53	06:47	07:41	07:40		08:33
	16:27		17:21	18:17	20:15	21:11	21:58	22:06	21:25	20:16	19:02	16:54		16:14
6	08:51		08:13	07:12	06:57	05:49	05:06	05:10	05:54	06:49	07:43	07:42		08:35
	16:28		17:23	18:19	20:17	21:12	21:59	22:06	21:23	20:14	19:00	16:52		16:14
7	08:50		08:11	07:10	06:54	05:47	05:05	05:11	05:56	06:51	07:45	07:44		08:36
	16:29		17:25	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50		16:13
8	08:50		08:09	07:07	06:52	05:46	05:04	05:12	05:58	06:53	07:47	07:46		08:37
	16:31		17:27	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48		16:13
9	08:49		08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48		08:38
	16:32		17:29	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46		16:13
10	08:48		08:05	07:03	06:47	05:42	05:03	05:14	06:01	06:56	07:50	07:50		08:40
	16:34		17:31	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:50	16:45		16:12
11	08:48		08:03	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52		08:41
	16:35		17:33	18:29	20:26	21:21	22:04	22:02	21:13	20:02	18:48	16:43		16:12
12	08:47		08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54		08:42
	16:37		17:36	18:30	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41		16:12
13	08:46		07:59	06:55	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:55		08:43
	16:38		17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40		16:12
14	08:45		07:57	06:53	06:37	05:35	05:02	05:19	06:08	07:03	07:58	07:57	15:41 (10)	08:44
	16:40		17:40	18:34	20:32	21:26	22:06	21:59	21:07	19:54	18:41	16:38	9 15:50 (10)	16:12
15	08:44		07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59	15:39 (10)	08:45
	16:42		17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36	14 15:53 (10)	16:12
16	08:43	16:07 (10)	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:01	08:01	15:38 (10)	08:46
	16:43	1 16:08 (10)	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16 15:54 (10)	16:12
17	08:42	16:07 (10)	07:51	06:46	06:30	05:30	05:01	05:23	06:14	07:09	08:03	08:03	15:37 (10)	08:47
	16:45	3 16:10 (10)	17:46	18:40	20:38	21:31	22:07	21:56	21:01	19:47	18:34	16:33	18 15:55 (10)	16:12
18	08:41	16:07 (10)	07:49	06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05	08:05	15:39 (10)	08:47
	16:47	5 16:12 (10)	17:48	18:42	20:39	21:33	22:08	21:54	20:58	19:44	18:32	16:32	17 15:56 (10)	16:12
19	08:40	16:07 (10)	07:47	06:41	06:26	05:26	05:01	05:26	06:17	07:12	08:07	08:07	15:40 (10)	08:48
	16:49	7 16:14 (10)	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:29	16:30	16 15:56 (10)	16:13
20	08:39	16:06 (10)	07:44	06:38	06:24	05:25	05:01	05:27	06:19	07:14	08:09	08:09	15:41 (10)	08:49
	16:50	9 16:15 (10)	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:39	18:27	16:29	14 15:55 (10)	16:13
21	08:38	16:07 (10)	07:42	06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11	08:10	15:42 (10)	08:49
	16:52	11 16:18 (10)	17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	11 15:53 (10)	16:13
22	08:37	16:06 (10)	07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	15:42 (10)	08:50
	16:54	13 16:19 (10)	17:56	18:49	20:47	21:39	22:09	21:49	20:49	19:34	18:23	16:26	10 15:52 (10)	16:14
23	08:35	16:06 (10)	07:38	06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15	08:14	15:43 (10)	08:50
	16:56	16 16:22 (10)	17:57	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	7 15:50 (10)	16:14
24	08:34	16:05 (10)	07:35	06:28	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16	15:44 (10)	08:51
	16:58	17 16:22 (10)	17:59	18:53	20:50	21:42	22:09	21:46	20:45	19:30	18:18	16:24	5 15:49 (10)	16:15
25	08:33	16:04 (10)	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17	15:45 (10)	08:51
	17:00	18 16:22 (10)	18:01	18:55	20:52	21:44	22:09	21:44	20:43	19:27	17:16	16:23	3 15:48 (10)	16:15
26	08:31	16:05 (10)	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	15:45 (10)	08:52
	17:02	16 16:21 (10)	18:03	18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	16:22	2 15:47 (10)	16:16
27	08:30	16:07 (10)	07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:22	08:21		08:52
	17:04	14 16:21 (10)	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21		16:17
28	08:28	16:09 (10)	07:26	06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24	08:22		08:52
	17:06	9 16:18 (10)	18:07	19:00	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20		16:18
29	08:27			07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24		08:52
	17:08			20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19		16:19
30	08:25			07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26		08:52
	17:09			20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18		16:20
31	08:23			07:11		05:11		05:44	06:39		07:30			08:52
	17:11			20:06		21:52		21:35	20:28		17:04			16:21
Potential sun hours	250		273	367	420	494	510	513	460	382	328	259		233
Total, worst case		139											142	
Sun reduction		0.16											0.20	
Oper. time red.		1.00											1.00	
Wind dir. red.		0.65											0.65	
Total reduction		0.11											0.13	
Total, real		15											18	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** DY - H143

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February	March	April	May	June	July	August	September	October	November			December		
1	08:52		15:25 (9)	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:40	07:34	07:32			08:27		15:14 (9)
	16:22	19	15:44 (9)	17:13	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02			16:17	19	15:33 (9)
2	08:52		15:26 (9)	08:20	07:22	07:06	05:57	05:09	05:07	05:48	06:42	07:36	07:34			08:29		15:15 (9)
	16:23	19	15:45 (9)	17:15	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00			16:16	19	15:34 (9)
3	08:52		15:27 (9)	08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:37	07:36			08:30		15:14 (9)
	16:24	20	15:47 (9)	17:17	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58			16:16	20	15:34 (9)
4	08:51		15:27 (9)	08:16	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38			08:32		15:14 (9)
	16:26	21	15:48 (9)	17:19	18:15	20:13	21:09	21:57	22:07	21:27	20:19	19:05	16:56			16:15	21	15:35 (9)
5	08:51		15:28 (9)	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40			08:33		15:14 (9)
	16:27	22	15:50 (9)	17:21	18:17	20:15	21:11	21:58	22:06	21:25	20:16	19:03	16:54			16:14	22	15:36 (9)
6	08:51		15:28 (9)	08:13	07:12	06:57	05:49	05:06	05:10	05:55	06:49	07:43	07:42			08:35		15:14 (9)
	16:28	23	15:51 (9)	17:23	18:19	20:17	21:12	21:59	22:06	21:24	20:14	19:00	16:52			16:14	23	15:37 (9)
7	08:50		15:29 (9)	08:11	07:10	06:54	05:47	05:05	05:11	05:56	06:51	07:45	07:44			08:36		15:14 (9)
	16:29	21	15:50 (9)	17:25	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50			16:13	22	15:36 (9)
8	08:50		15:30 (9)	08:09	07:08	06:52	05:46	05:04	05:12	05:58	06:53	07:47	07:46			08:37		15:15 (9)
	16:31	21	15:51 (9)	17:27	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48			16:13	21	15:36 (9)
9	08:49		15:31 (9)	08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48			08:38		15:15 (9)
	16:32	20	15:51 (9)	17:29	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46			16:13	20	15:35 (9)
10	08:49		15:31 (9)	08:05	07:03	06:47	05:42	05:03	05:14	06:01	06:56	07:50	07:50			08:40		15:15 (9)
	16:34	20	15:51 (9)	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:50	16:45			16:12	20	15:35 (9)
11	08:48		15:32 (9)	08:03	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52			08:41		15:16 (9)
	16:35	19	15:51 (9)	17:34	18:29	20:26	21:21	22:04	22:02	21:14	20:02	18:48	16:43			16:12	19	15:35 (9)
12	08:47		15:33 (9)	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54			08:42		15:16 (9)
	16:37	17	15:50 (9)	17:36	18:30	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41			16:12	19	15:35 (9)
13	08:46		15:35 (9)	07:59	06:55	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:55			08:43		15:16 (9)
	16:38	15	15:50 (9)	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40			16:12	18	15:34 (9)
14	08:45		15:36 (9)	07:57	06:53	06:38	05:35	05:02	05:19	06:08	07:03	07:58	07:57			08:44		15:17 (9)
	16:40	13	15:49 (9)	17:40	18:34	20:32	21:26	22:06	21:59	21:07	19:54	18:41	16:38			16:12	17	15:34 (9)
15	08:45		15:38 (9)	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59			08:45		15:17 (9)
	16:42	10	15:48 (9)	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36			16:12	17	15:34 (9)
16	08:44		15:41 (9)	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:01	08:01			08:46		15:18 (9)
	16:43	5	15:46 (9)	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35			16:12	16	15:34 (9)
17	08:43			07:51	06:46	06:31	05:30	05:01	05:23	06:14	07:09	08:03	08:03			08:47		15:17 (9)
	16:45			17:46	18:40	20:38	21:32	22:07	21:56	21:01	19:47	18:34	16:33			16:12	17	15:34 (9)
18	08:41			07:49	06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05	08:05			08:47		15:18 (9)
	16:47			17:48	18:42	20:39	21:33	22:08	21:54	20:59	19:44	18:32	16:32			16:12	16	15:34 (9)
19	08:40			07:47	06:41	06:26	05:26	05:01	05:26	06:17	07:12	08:07	08:07			08:48		15:19 (9)
	16:49			17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:29	16:30			16:13	15	15:34 (9)
20	08:39			07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09			08:49		15:20 (9)
	16:51			17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:39	18:27	16:29			16:13	15	15:35 (9)
21	08:38			07:42	06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11	08:10			08:49		15:20 (9)
	16:52			17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28			16:13	15	15:35 (9)
22	08:37			07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12			08:50		15:21 (9)
	16:54			17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:26			16:14	15	15:36 (9)
23	08:35			07:38	06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15	08:14			08:51		15:21 (9)
	16:56			17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25			16:14	15	15:36 (9)
24	08:34			07:35	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16			08:51		15:21 (9)
	16:58			17:59	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24			16:15	15	15:36 (9)
25	08:33			07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17			08:51		15:22 (9)
	17:00			18:01	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23			16:16	16	15:38 (9)
26	08:31			07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19		15:20 (9)	08:52		15:22 (9)
	17:02			18:03	18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	16:22	4	15:24 (9)	16:16	16	15:38 (9)
27	08:30			07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21		15:17 (9)	08:52		15:23 (9)
	17:04			18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	10	15:27 (9)	16:17	16	15:39 (9)
28	08:28			07:26	06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24	08:23		15:16 (9)	08:52		15:23 (9)
	17:06			18:07	19:00	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	13	15:29 (9)	16:18	17	15:40 (9)
29	08:27				07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24		15:16 (9)	08:52		15:24 (9)
	17:08				20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	15	15:31 (9)	16:19	17	15:41 (9)
30	08:25				07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26		15:15 (9)	08:52		15:24 (9)
	17:09				20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16	15:31 (9)	16:20	18	15:42 (9)
31	08:23				07:11		05:11		05:44	06:39		07:30				08:52		15:25 (9)
	17:11				20:06		21:52		21:35	20:29		17:04				16:21	18	15:43 (9)
Potential sun hours	250			273	367	420	494	510	513	460	382	328	259			233		
Total, worst case		285												58			554	
Sun reduction		0.16												0.20			0.12	
Oper. time red.		1.00												1.00			1.00	
Wind dir. red.		0.65												0.65			0.65	
Total reduction		0.11												0.13			0.08	
Total, real		30												7			43	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** DZ - H144

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February		March		April	May	June	July	August	September	October		November	December
1	08:53	08:22		07:25	07:57 (2)	07:09	06:00	05:10	05:07	05:47	06:41	07:34		07:33	08:28
	16:23	17:14		18:10	19 08:16 (2)	20:08	21:04	21:54	22:09	21:33	20:27	19:13		17:02	16:18
2	08:52	08:20		07:22	07:59 (2)	07:07	05:58	05:10	05:07	05:48	06:43	07:36		07:35	08:29
	16:24	17:16		18:12	16 08:15 (2)	20:10	21:06	21:55	22:08	21:31	20:24	19:10		17:00	16:17
3	08:52	08:19		07:20	08:00 (2)	07:04	05:56	05:09	05:08	05:50	06:44	07:38		07:37	08:31
	16:25	17:18		18:14	12 08:12 (2)	20:12	21:07	21:56	22:08	21:30	20:22	19:08		16:58	16:16
4	08:52	08:17		07:17		07:02	05:54	05:08	05:09	05:52	06:46	07:40		07:39	08:32
	16:26	17:20		18:16		20:14	21:09	21:57	22:07	21:28	20:19	19:05		16:56	16:16
5	08:52	08:15		07:15		07:00	05:52	05:07	05:10	05:53	06:48	07:42		07:40	08:34
	16:27	17:22		18:18		20:16	21:11	21:59	22:07	21:26	20:17	19:03		16:54	16:15
6	08:51	08:13		07:13		06:57	05:50	05:06	05:11	05:55	06:50	07:43		07:42	08:35
	16:29	17:24		18:19		20:18	21:13	22:00	22:06	21:24	20:14	19:01		16:52	16:14
7	08:51	08:11		07:10		06:55	05:48	05:06	05:12	05:57	06:52	07:45		07:44	08:36
	16:30	17:26		18:21		20:19	21:15	22:01	22:06	21:22	20:12	18:58		16:51	16:14
8	08:50	08:09		07:08		06:52	05:46	05:05	05:13	05:58	06:53	07:47		07:46	08:38
	16:31	17:28		18:23		20:21	21:16	22:02	22:05	21:20	20:10	18:56		16:49	16:14
9	08:50	08:08		07:06		06:50	05:44	05:04	05:14	06:00	06:55	07:49		07:48	08:39
	16:33	17:30		18:25		20:23	21:18	22:02	22:04	21:18	20:07	18:53		16:47	16:13
10	08:49	08:06		07:03		06:48	05:42	05:04	05:15	06:02	06:57	07:51	08:38 (2)	07:50	08:40
	16:34	17:32		18:27		20:25	21:20	22:03	22:03	21:16	20:05	18:51	7 08:45 (2)	16:45	16:13
11	08:48	08:04		07:01		06:45	05:40	05:04	05:16	06:04	06:59	07:53	08:33 (2)	07:52	08:41
	16:36	17:34		18:29		20:27	21:22	22:04	22:02	21:14	20:02	18:49	14 08:47 (2)	16:43	16:13
12	08:47	08:02		06:58		06:43	05:39	05:03	05:17	06:05	07:00	07:54	08:31 (2)	07:54	08:42
	16:37	17:36		18:31		20:29	21:23	22:05	22:01	21:12	20:00	18:46	18 08:49 (2)	16:42	16:12
13	08:47	08:00		06:56		06:40	05:37	05:03	05:18	06:07	07:02	07:56	08:29 (2)	07:56	08:43
	16:39	17:38		18:33		20:31	21:25	22:06	22:00	21:10	19:57	18:44	21 08:50 (2)	16:40	16:12
14	08:46	07:58		06:53		06:38	05:35	05:03	05:20	06:09	07:04	07:58	08:28 (2)	07:58	08:44
	16:41	17:40		18:35		20:32	21:27	22:06	21:59	21:08	19:55	18:42	23 08:51 (2)	16:38	16:12
15	08:45	07:56		06:51		06:36	05:33	05:02	05:21	06:11	07:06	08:00	08:27 (2)	08:00	08:45
	16:42	17:42		18:37		20:34	21:29	22:07	21:58	21:05	19:52	18:39	24 08:51 (2)	16:37	16:12
16	08:44	07:53		06:49		06:33	05:32	05:02	05:22	06:13	07:07	08:02	08:29 (2)	08:02	08:46
	16:44	17:44		18:39		20:36	21:30	22:07	21:57	21:03	19:50	18:37	23 08:52 (2)	16:35	16:12
17	08:43	07:51	08:17 (2)	06:46		06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:31 (2)	08:03	08:47
	16:46	17:46	1 08:18 (2)	18:40		20:38	21:32	22:08	21:56	21:01	19:47	18:35	21 08:52 (2)	16:34	16:13
18	08:42	07:49	08:15 (2)	06:44		06:29	05:29	05:02	05:25	06:16	07:11	08:06	08:33 (2)	08:05	08:48
	16:47	17:48	4 08:19 (2)	18:42		20:40	21:34	22:08	21:55	20:59	19:45	18:32	19 08:52 (2)	16:32	16:13
19	08:41	07:47	08:13 (2)	06:41		06:26	05:27	05:02	05:26	06:18	07:13	08:08	08:35 (2)	08:07	08:49
	16:49	17:50	7 08:20 (2)	18:44		20:42	21:35	22:09	21:54	20:57	19:42	18:30	17 08:52 (2)	16:31	16:13
20	08:40	07:45	08:10 (2)	06:39		06:24	05:25	05:02	05:28	06:20	07:15	08:10	08:37 (2)	08:09	08:49
	16:51	17:52	10 08:20 (2)	18:46		20:44	21:37	22:09	21:52	20:54	19:40	18:28	14 08:51 (2)	16:30	16:13
21	08:38	07:43	08:08 (2)	06:36		06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:39 (2)	08:11	08:50
	16:53	17:54	13 08:21 (2)	18:48		20:45	21:38	22:09	21:51	20:52	19:37	18:25	12 08:51 (2)	16:28	16:14
22	08:37	07:40	08:06 (2)	06:34		06:20	05:23	05:02	05:31	06:23	07:18	08:13	08:41 (2)	08:13	08:50
	16:55	17:56	15 08:21 (2)	18:50		20:47	21:40	22:09	21:49	20:50	19:35	18:23	9 08:50 (2)	16:27	16:14
23	08:36	07:38	08:03 (2)	06:31		06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:43 (2)	08:14	08:51
	16:57	17:58	18 08:21 (2)	18:52		20:49	21:41	22:10	21:48	20:48	19:32	18:21	6 08:49 (2)	16:26	16:15
24	08:34	07:36	08:01 (2)	06:29		06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:45 (2)	08:16	08:51
	16:58	18:00	20 08:21 (2)	18:54		20:51	21:43	22:10	21:46	20:45	19:30	18:19	3 08:48 (2)	16:25	16:15
25	08:33	07:34	07:59 (2)	06:27		06:13	05:18	05:03	05:35	06:28	07:23	07:19		08:18	08:52
	17:00	18:02	22 08:21 (2)	18:55		20:53	21:44	22:10	21:45	20:43	19:28	17:17		16:23	16:16
26	08:32	07:31	07:56 (2)	06:24		06:11	05:17	05:04	05:37	06:30	07:25	07:21		08:20	08:52
	17:02	18:04	23 08:19 (2)	18:57		20:55	21:46	22:10	21:43	20:41	19:25	17:15		16:22	16:17
27	08:30	07:29	07:55 (2)	06:22		06:09	05:16	05:04	05:38	06:32	07:27	07:23		08:21	08:52
	17:04	18:06	24 08:19 (2)	18:59		20:56	21:47	22:10	21:42	20:38	19:23	17:12		16:21	16:18
28	08:29	07:27	07:56 (2)	06:19		06:06	05:15	05:05	05:40	06:34	07:29	07:25		08:23	08:52
	17:06	18:08	22 08:18 (2)	19:01		20:58	21:49	22:09	21:40	20:36	19:20	17:10		16:20	16:18
29	08:27			07:17		06:04	05:14	05:05	05:42	06:36	07:31	07:27		08:25	08:53
	17:08			20:03		21:00	21:50	22:09	21:38	20:34	19:18	17:08		16:19	16:19
30	08:25			07:14		06:02	05:13	05:06	05:43	06:37	07:32	07:29		08:26	08:53
	17:10			20:05		21:02	21:51	22:09	21:37	20:31	19:15	17:06		16:19	16:20
31	08:24			07:12			05:11		05:45	06:39		07:31			08:53
	17:12			20:07			21:53		21:35	20:29		17:04			16:21
Potential sun hours	250	273		367		420	494	510	512	460	382	328		259	233
Total, worst case			179		47								231		
Sun reduction			0.19		0.22								0.23		
Oper. time red.			1.00		1.00								1.00		
Wind dir. red.			0.62		0.62								0.62		
Total reduction			0.12		0.14								0.14		
Total, real			22		6								33		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** EA - H145

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:40	07:34	07:32	08:27
	16:22	17:13	18:09	20:08	21:03	21:53	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:06	05:57	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:15	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:16
3	08:52	08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:37	07:36	08:30
	16:24	17:17	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58	16:16
4	08:51	08:16	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38	08:32
	16:26	17:19	18:15	20:13	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40	08:33
	16:27	17:21	18:17	20:15	21:11	21:58	22:06	21:25	20:16	19:03	16:54	16:14
6	08:51	08:13	07:12	06:57	05:49	05:06	05:10	05:54	06:49	07:43	07:42	08:35
	16:28	17:23	18:19	20:17	21:12	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:47	05:05	05:11	05:56	06:51	07:45	07:44	08:36
	16:29	17:25	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:13
8	08:50	08:09	07:08	06:52	05:46	05:04	05:12	05:58	06:53	07:47	07:46	08:37
	16:31	17:27	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48	08:38
	16:32	17:29	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46	16:13
10	08:49	08:05	07:03	06:47	05:42	05:03	05:14	06:01	06:56	07:50	07:50	08:40
	16:34	17:31	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:50	16:45	16:12
11	08:48	08:03	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52	08:41
	16:35	17:34	18:29	20:26	21:21	22:04	22:02	21:13	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:30	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:55	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:55	08:43
	16:38	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	05:02	05:19	06:08	07:03	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:26	22:06	21:59	21:07	19:54	18:41	16:38	16:12
15	08:44	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36	16:12
16	08:44	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:01	08:01	08:46
	16:43	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16:12
17	08:43	07:51	06:46	06:30	05:30	05:01	05:23	06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:32	22:07	21:56	21:01	19:47	18:34	16:33	16:12
18	08:41	07:49	06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:39	21:33	22:08	21:54	20:59	19:44	18:32	16:32	16:12
19	08:40	07:47	06:41	06:26	05:26	05:01	05:26	06:17	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:29	16:30	16:13
20	08:39	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:39	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11	08:10	08:49
	16:52	17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:13
22	08:37	07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:26	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	16:14
24	08:34	07:35	06:28	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16	08:51
	16:58	17:59	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24	16:15
25	08:33	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17	08:51
	17:00	18:01	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:52
	17:02	18:03	18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24	08:23	08:52
	17:06	18:07	19:00	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26	08:52
	17:09		20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11		05:44	06:39		07:30		08:52
	17:11		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	513	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** EB - H146

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February		March		April	May	June	July	August	September	October		November	December
1	08:52	08:22		07:24	17:27 (10)	07:09	05:59	05:10	05:06	05:46	06:40	07:34		07:32	08:27
	16:22	17:13		18:09	15 17:42 (10)	20:08	21:03	21:53	22:08	21:33	20:26	19:12		17:02	16:17
2	08:52	08:20		07:22	17:27 (10)	07:06	05:57	05:09	05:07	05:48	06:42	07:36		07:34	08:29
	16:23	17:15		18:11	17 17:44 (10)	20:10	21:05	21:55	22:08	21:31	20:24	19:10		17:00	16:16
3	08:52	08:18		07:19	17:28 (10)	07:04	05:55	05:08	05:08	05:49	06:44	07:37		07:36	08:30
	16:24	17:17		18:13	18 17:46 (10)	20:12	21:07	21:56	22:07	21:29	20:21	19:07		16:58	16:16
4	08:51	08:16		07:17	17:28 (10)	07:01	05:53	05:07	05:08	05:51	06:46	07:39		07:38	08:32
	16:26	17:19		18:15	18 17:46 (10)	20:13	21:09	21:57	22:07	21:27	20:19	19:05		16:56	16:15
5	08:51	08:15		07:15	17:30 (10)	06:59	05:51	05:07	05:09	05:53	06:47	07:41		07:40	08:33
	16:27	17:21		18:17	15 17:45 (10)	20:15	21:11	21:58	22:06	21:25	20:16	19:02		16:54	16:14
6	08:51	08:13		07:12	17:33 (10)	06:57	05:49	05:06	05:10	05:54	06:49	07:43		07:42	08:34
	16:28	17:23		18:19	9 17:42 (10)	20:17	21:12	21:59	22:06	21:23	20:14	19:00		16:52	16:14
7	08:50	08:11		07:10		06:54	05:47	05:05	05:11	05:56	06:51	07:45	18:10 (10)	07:44	08:36
	16:29	17:25		18:21		20:19	21:14	22:00	22:05	21:21	20:12	18:58	5 18:15 (10)	16:50	16:13
8	08:50	08:09		07:07		06:52	05:46	05:04	05:12	05:58	06:53	07:47	18:06 (10)	07:46	08:37
	16:31	17:27		18:23		20:21	21:16	22:01	22:04	21:19	20:09	18:55	13 18:19 (10)	16:48	16:13
9	08:49	08:07		07:05		06:49	05:44	05:04	05:13	06:00	06:55	07:48	18:04 (10)	07:48	08:38
	16:32	17:29		18:25		20:23	21:18	22:02	22:04	21:17	20:07	18:53	16 18:20 (10)	16:46	16:13
10	08:48	08:05		07:03		06:47	05:42	05:03	05:14	06:01	06:56	07:50	18:02 (10)	07:50	08:40
	16:34	17:31		18:27		20:25	21:19	22:03	22:03	21:15	20:04	18:50	19 18:21 (10)	16:45	16:12
11	08:48	08:03		07:00		06:45	05:40	05:03	05:15	06:03	06:58	07:52	18:01 (10)	07:52	08:41
	16:35	17:33		18:29		20:26	21:21	22:04	22:02	21:13	20:02	18:48	18 18:19 (10)	16:43	16:12
12	08:47	08:01		06:58		06:42	05:38	05:03	05:17	06:05	07:00	07:54	18:00 (10)	07:53	08:42
	16:37	17:35		18:30		20:28	21:23	22:04	22:01	21:11	19:59	18:46	17 18:17 (10)	16:41	16:12
13	08:46	07:59		06:55		06:40	05:36	05:02	05:18	06:07	07:02	07:56	18:00 (10)	07:55	08:43
	16:38	17:38		18:32		20:30	21:25	22:05	22:00	21:09	19:57	18:43	14 18:14 (10)	16:40	16:12
14	08:45	07:57		06:53		06:37	05:35	05:02	05:19	06:08	07:03	07:58	17:59 (10)	07:57	08:44
	16:40	17:40		18:34		20:32	21:26	22:06	21:59	21:07	19:54	18:41	13 18:12 (10)	16:38	16:12
15	08:44	07:55		06:51		06:35	05:33	05:02	05:20	06:10	07:05	08:00	17:59 (10)	07:59	08:45
	16:42	17:42		18:36		20:34	21:28	22:06	21:58	21:05	19:52	18:39	11 18:10 (10)	16:36	16:12
16	08:43	07:53		06:48		06:33	05:31	05:02	05:22	06:12	07:07	08:01	17:59 (10)	08:01	08:46
	16:43	17:44		18:38		20:36	21:30	22:07	21:57	21:03	19:49	18:36	8 18:07 (10)	16:35	16:12
17	08:42	07:51		06:46		06:30	05:30	05:01	05:23	06:14	07:09	08:03	17:59 (10)	08:03	08:47
	16:45	17:46		18:40		20:37	21:31	22:07	21:55	21:01	19:47	18:34	6 18:05 (10)	16:33	16:12
18	08:41	07:49		06:43		06:28	05:28	05:01	05:24	06:16	07:10	08:05	18:00 (10)	08:05	08:47
	16:47	17:48		18:42		20:39	21:33	22:08	21:54	20:58	19:44	18:32	2 18:02 (10)	16:32	16:12
19	08:40	07:46		06:41		06:26	05:26	05:01	05:26	06:17	07:12	08:07		08:07	08:48
	16:49	17:50		18:44		20:41	21:35	22:08	21:53	20:56	19:42	18:29		16:30	16:13
20	08:39	07:44		06:38		06:24	05:25	05:02	05:27	06:19	07:14	08:09		08:08	08:49
	16:50	17:52		18:46		20:43	21:36	22:08	21:52	20:54	19:39	18:27		16:29	16:13
21	08:38	07:42		06:36		06:21	05:23	05:02	05:29	06:21	07:16	08:11		08:10	08:49
	16:52	17:54		18:47		20:45	21:38	22:09	21:50	20:52	19:37	18:25		16:28	16:13
22	08:37	07:40		06:33		06:19	05:22	05:02	05:30	06:23	07:18	08:13		08:12	08:50
	16:54	17:55		18:49		20:47	21:39	22:09	21:49	20:49	19:34	18:23		16:26	16:14
23	08:35	07:38		06:31		06:17	05:21	05:02	05:32	06:24	07:19	08:15		08:14	08:50
	16:56	17:57		18:51		20:49	21:41	22:09	21:47	20:47	19:32	18:21		16:25	16:14
24	08:34	07:35	17:28 (10)	06:28		06:15	05:19	05:02	05:33	06:26	07:21	08:17		08:16	08:51
	16:58	17:59	4 17:32 (10)	18:53		20:50	21:42	22:09	21:46	20:45	19:29	18:18		16:24	16:15
25	08:32	07:33	17:27 (10)	06:26		06:12	05:18	05:03	05:35	06:28	07:23	07:19		08:17	08:51
	17:00	18:01	6 17:33 (10)	18:55		20:52	21:44	22:09	21:44	20:43	19:27	17:16		16:23	16:16
26	08:31	07:31	17:27 (10)	06:24		06:10	05:17	05:03	05:36	06:30	07:25	07:20		08:19	08:51
	17:02	18:03	9 17:36 (10)	18:57		20:54	21:45	22:09	21:43	20:40	19:25	17:14		16:22	16:16
27	08:30	07:29	17:26 (10)	06:21		06:08	05:15	05:04	05:38	06:31	07:27	07:22		08:21	08:52
	17:04	18:05	11 17:37 (10)	18:59		20:56	21:47	22:09	21:41	20:38	19:22	17:12		16:21	16:17
28	08:28	07:26	17:26 (10)	06:19		06:06	05:14	05:04	05:39	06:33	07:28	07:24		08:22	08:52
	17:06	18:07	14 17:40 (10)	19:00		20:58	21:48	22:09	21:40	20:36	19:20	17:10		16:20	16:18
29	08:26			07:16		06:04	05:13	05:05	05:41	06:35	07:30	07:26		08:24	08:52
	17:08			20:02		21:00	21:50	22:09	21:38	20:33	19:17	17:08		16:19	16:19
30	08:25			07:14		06:02	05:12	05:05	05:43	06:37	07:32	07:28		08:26	08:52
	17:09			20:04		21:01	21:51	22:08	21:36	20:31	19:15	17:06		16:18	16:20
31	08:23			07:11			05:11		05:44	06:39		07:30			08:52
	17:11			20:06			21:52		21:35	20:28		17:04			16:21
Potential sun hours	250	273		367		420	494	510	512	460	382	328		259	233
Total, worst case			44		92								142		
Sun reduction			0.19		0.22								0.23		
Oper. time red.			1.00		1.00								1.00		
Wind dir. red.			0.65		0.65								0.65		
Total reduction			0.13		0.14								0.15		
Total, real			6		13								21		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** EC - H147

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March		April	May	June	July	August	September		October	November	December
1	08:53	08:22	07:25		07:09	06:00	05:11	05:07	05:47	06:41		07:34	07:33	08:28
	16:23	17:14	18:10		20:08	21:04	21:54	22:09	21:33	20:27		19:13	17:02	16:18
2	08:52	08:20	07:22		07:07	05:58	05:10	05:07	05:48	06:43		07:36	07:35	08:29
	16:24	17:16	18:12		20:10	21:06	21:55	22:08	21:31	20:24		19:10	17:00	16:17
3	08:52	08:19	07:20		07:04	05:56	05:09	05:08	05:50	06:44		07:38	07:37	08:31
	16:25	17:18	18:14		20:12	21:07	21:56	22:08	21:30	20:22		19:08	16:58	16:16
4	08:52	08:17	07:17		07:02	05:54	05:08	05:09	05:52	06:46		07:40	07:38	08:32
	16:26	17:20	18:16		20:14	21:09	21:57	22:07	21:28	20:19		19:05	16:56	16:16
5	08:52	08:15	07:15		07:00	05:52	05:07	05:10	05:53	06:48		07:42	07:40	08:34
	16:27	17:22	18:18		20:16	21:11	21:58	22:07	21:26	20:17		19:03	16:54	16:15
6	08:51	08:13	07:13		06:57	05:50	05:06	05:11	05:55	06:50		07:43	07:42	08:35
	16:29	17:24	18:20		20:18	21:13	22:00	22:06	21:24	20:14		19:01	16:52	16:14
7	08:51	08:11	07:10		06:55	05:48	05:06	05:12	05:57	06:52		07:45	07:44	08:36
	16:30	17:26	18:21		20:19	21:15	22:01	22:06	21:22	20:12		18:58	16:51	16:14
8	08:50	08:09	07:08		06:52	05:46	05:05	05:13	05:59	06:53		07:47	07:46	08:38
	16:31	17:28	18:23		20:21	21:16	22:02	22:05	21:20	20:10		18:56	16:49	16:14
9	08:50	08:08	07:06		06:50	05:44	05:05	05:14	06:00	06:55		07:49	07:48	08:39
	16:33	17:30	18:25		20:23	21:18	22:02	22:04	21:18	20:07		18:53	16:47	16:13
10	08:49	08:06	07:03		06:48	05:42	05:04	05:15	06:02	06:57		07:51	07:50	08:40
	16:34	17:32	18:27		20:25	21:20	22:03	22:03	21:16	20:05		18:51	16:45	16:13
11	08:48	08:04	07:01		06:45	05:40	05:04	05:16	06:04	06:59		07:53	07:52	08:41
	16:36	17:34	18:29		20:27	21:22	22:04	22:02	21:14	20:02		18:49	16:43	16:13
12	08:47	08:02	06:58		06:43	05:39	05:03	05:17	06:05	07:00		07:54	07:54	08:42
	16:37	17:36	18:31		20:29	21:23	22:05	22:01	21:12	20:00		18:46	16:42	16:13
13	08:47	08:00	06:56	07:20 (2)	06:40	05:37	05:03	05:18	06:07	07:02		07:56	07:56	08:43
	16:39	17:38	18:33	1 07:21 (2)	20:31	21:25	22:06	22:00	21:10	19:57		18:44	16:40	16:12
14	08:46	07:58	06:54	07:17 (2)	06:38	05:35	05:03	05:20	06:09	07:04		07:58	07:58	08:44
	16:41	17:40	18:35	4 07:21 (2)	20:32	21:27	22:06	21:59	21:08	19:55		18:42	16:39	16:12
15	08:45	07:55	06:51	07:15 (2)	06:36	05:33	05:02	05:21	06:11	07:06		08:00	08:00	08:45
	16:42	17:42	18:37	7 07:22 (2)	20:34	21:29	22:07	21:58	21:05	19:52		18:39	16:37	16:12
16	08:44	07:53	06:49	07:13 (2)	06:33	05:32	05:02	05:22	06:13	07:07		08:02	08:02	08:46
	16:44	17:44	18:39	10 07:23 (2)	20:36	21:30	22:07	21:57	21:03	19:50		18:37	16:35	16:12
17	08:43	07:51	06:46	07:10 (2)	06:31	05:30	05:02	05:24	06:14	07:09	07:51 (2)	08:04	08:03	08:47
	16:46	17:46	18:40	13 07:23 (2)	20:38	21:32	22:08	21:56	21:01	19:47	9 08:00 (2)	18:35	16:34	16:13
18	08:42	07:49	06:44	07:08 (2)	06:29	05:29	05:02	05:25	06:16	07:11	07:47 (2)	08:06	08:05	08:48
	16:48	17:48	18:42	15 07:23 (2)	20:40	21:34	22:08	21:55	20:59	19:45	15 08:02 (2)	18:32	16:32	16:13
19	08:41	07:47	06:41	07:05 (2)	06:26	05:27	05:02	05:26	06:18	07:13	07:45 (2)	08:08	08:07	08:49
	16:49	17:50	18:44	17 07:22 (2)	20:42	21:35	22:09	21:53	20:57	19:42	19 08:04 (2)	18:30	16:31	16:13
20	08:40	07:45	06:39	07:03 (2)	06:24	05:25	05:02	05:28	06:20	07:15	07:44 (2)	08:10	08:09	08:49
	16:51	17:52	18:46	19 07:22 (2)	20:44	21:37	22:09	21:52	20:54	19:40	21 08:05 (2)	18:28	16:30	16:13
21	08:38	07:43	06:36	07:00 (2)	06:22	05:24	05:02	05:29	06:21	07:16	07:43 (2)	08:11	08:11	08:50
	16:53	17:54	18:48	21 07:21 (2)	20:45	21:38	22:09	21:51	20:52	19:37	23 08:06 (2)	18:25	16:28	16:14
22	08:37	07:40	06:34	06:58 (2)	06:20	05:23	05:02	05:31	06:23	07:18	07:44 (2)	08:13	08:13	08:50
	16:55	17:56	18:50	23 07:21 (2)	20:47	21:40	22:09	21:49	20:50	19:35	22 08:06 (2)	18:23	16:27	16:14
23	08:36	07:38	06:31	06:57 (2)	06:17	05:21	05:03	05:32	06:25	07:20	07:46 (2)	08:15	08:14	08:51
	16:57	17:58	18:52	22 07:19 (2)	20:49	21:41	22:10	21:48	20:48	19:33	20 08:06 (2)	18:21	16:26	16:15
24	08:34	07:36	06:29	06:59 (2)	06:15	05:20	05:03	05:34	06:27	07:22	07:48 (2)	08:17	08:16	08:51
	16:58	18:00	18:54	19 07:18 (2)	20:51	21:43	22:10	21:46	20:45	19:30	18 08:06 (2)	18:19	16:25	16:15
25	08:33	07:34	06:27	06:59 (2)	06:13	05:18	05:03	05:35	06:29	07:24	07:50 (2)	07:19	08:18	08:52
	17:00	18:02	18:55	16 07:15 (2)	20:53	21:44	22:10	21:45	20:43	19:28	16 08:06 (2)	17:17	16:23	16:16
26	08:32	07:31	06:24	07:02 (2)	06:11	05:17	05:04	05:37	06:30	07:25	07:52 (2)	07:21	08:20	08:52
	17:02	18:04	18:57	11 07:13 (2)	20:55	21:46	22:10	21:43	20:41	19:25	14 08:06 (2)	17:15	16:22	16:17
27	08:30	07:29	06:22		06:09	05:16	05:04	05:38	06:32	07:27	07:53 (2)	07:23	08:21	08:52
	17:04	18:06	18:59		20:56	21:47	22:10	21:42	20:38	19:23	11 08:04 (2)	17:12	16:21	16:18
28	08:29	07:27	06:19		06:06	05:15	05:05	05:40	06:34	07:29	07:55 (2)	07:25	08:23	08:52
	17:06	18:08	19:01		20:58	21:49	22:09	21:40	20:36	19:20	9 08:04 (2)	17:10	16:20	16:18
29	08:27		07:17		06:04	05:14	05:05	05:42	06:36	07:31	07:57 (2)	07:27	08:25	08:53
	17:08		20:03		21:00	21:50	22:09	21:38	20:34	19:18	6 08:03 (2)	17:08	16:19	16:19
30	08:25		07:14		06:02	05:13	05:06	05:43	06:37	07:32	07:59 (2)	07:29	08:26	08:53
	17:10		20:05		21:02	21:51	22:09	21:37	20:31	19:15	2 08:01 (2)	17:06	16:19	16:20
31	08:24		07:12			05:12		05:45	06:39			07:31		08:53
	17:12		20:07			21:53		21:35	20:29			17:04		16:21
Potential sun hours	250	273	367		420	494	510	512	460	382		328	259	233
Total, worst case				198							205			
Sun reduction				0.22							0.25			
Oper. time red.				1.00							1.00			
Wind dir. red.				0.64							0.64			
Total reduction				0.14							0.16			
Total, real				28							33			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** ED - H148

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:40	07:34	07:32	08:27
	16:22	17:13	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:06	05:57	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:15	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:16
3	08:52	08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:37	07:36	08:30
	16:24	17:17	18:13	20:12	21:07	21:56	22:08	21:29	20:21	19:07	16:58	16:16
4	08:52	08:16	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38	08:32
	16:26	17:19	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40	08:33
	16:27	17:21	18:17	20:15	21:11	21:58	22:06	21:25	20:17	19:03	16:54	16:14
6	08:51	08:13	07:12	06:57	05:49	05:06	05:10	05:55	06:49	07:43	07:42	08:35
	16:28	17:23	18:19	20:17	21:12	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:47	05:05	05:11	05:56	06:51	07:45	07:44	08:36
	16:29	17:25	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:13
8	08:50	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37
	16:31	17:27	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48	08:39
	16:32	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46	16:13
10	08:49	08:05	07:03	06:47	05:42	05:03	05:14	06:01	06:56	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:50	16:45	16:12
11	08:48	08:03	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52	08:41
	16:35	17:34	18:29	20:26	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:55	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	05:02	05:19	06:08	07:03	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36	16:12
16	08:44	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:43	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:01	05:23	06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:32	22:07	21:56	21:01	19:47	18:34	16:33	16:12
18	08:41	07:49	06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05	08:05	08:48
	16:47	17:48	18:42	20:39	21:33	22:08	21:54	20:59	19:44	18:32	16:32	16:12
19	08:40	07:47	06:41	06:26	05:26	05:01	05:26	06:17	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:30	16:13
20	08:39	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:39	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11	08:10	08:50
	16:52	17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:13
22	08:37	07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	16:14
24	08:34	07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24	16:15
25	08:33	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17	08:51
	17:00	18:01	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:52
	17:02	18:03	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24	08:23	08:52
	17:06	18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11		05:44	06:39		07:30		08:52
	17:11		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	513	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** EE - H149

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March		April		May	June	July	August	September		October	November	December
1	08:52	08:22	07:24		07:09		19:26 (7)	06:00	05:10	05:06	05:46	06:41		07:34	07:32	08:27
	16:22	17:14	18:10		20:08	15	19:41 (7)	21:03	21:54	22:08	21:33	20:26		19:12	17:02	16:17
2	08:52	08:20	07:22		07:07		19:26 (7)	05:58	05:09	05:07	05:48	06:42		07:36	07:34	08:29
	16:23	17:16	18:11		20:10	17	19:43 (7)	21:05	21:55	22:08	21:31	20:24		19:10	17:00	16:17
3	08:52	08:18	07:20		07:04		19:26 (7)	05:56	05:08	05:08	05:50	06:44		07:38	07:36	08:30
	16:25	17:18	18:13		20:12	19	19:45 (7)	21:07	21:56	22:07	21:29	20:21		19:08	16:58	16:16
4	08:51	08:17	07:17		07:02		19:26 (7)	05:54	05:08	05:09	05:51	06:46	19:27 (7)	07:39	07:38	08:32
	16:26	17:20	18:15		20:14	20	19:46 (7)	21:09	21:57	22:07	21:27	20:19	11 19:38 (7)	19:05	16:56	16:15
5	08:51	08:15	07:15		06:59		19:26 (7)	05:52	05:07	05:10	05:53	06:48	19:25 (7)	07:41	07:40	08:33
	16:27	17:22	18:17		20:15	21	19:47 (7)	21:11	21:58	22:06	21:26	20:17	16 19:41 (7)	19:03	16:54	16:15
6	08:51	08:13	07:12		06:57		19:28 (7)	05:50	05:06	05:10	05:55	06:50	19:23 (7)	07:43	07:42	08:35
	16:28	17:24	18:19		20:17	18	19:46 (7)	21:13	21:59	22:06	21:24	20:14	18 19:41 (7)	19:00	16:52	16:14
7	08:50	08:11	07:10		06:54		19:28 (7)	05:48	05:05	05:11	05:57	06:51	19:22 (7)	07:45	07:44	08:36
	16:30	17:26	18:21		20:19	16	19:44 (7)	21:14	22:00	22:05	21:22	20:12	20 19:42 (7)	18:58	16:50	16:14
8	08:50	08:09	07:08		06:52		19:30 (7)	05:46	05:05	05:12	05:58	06:53	19:21 (7)	07:47	07:46	08:37
	16:31	17:28	18:23		20:21	11	19:41 (7)	21:16	22:01	22:04	21:20	20:09	20 19:41 (7)	18:55	16:48	16:13
9	08:49	08:07	07:05		06:50			05:44	05:04	05:14	06:00	06:55	19:20 (7)	07:49	07:48	08:39
	16:33	17:30	18:25		20:23			21:18	22:02	22:04	21:18	20:07	19 19:39 (7)	18:53	16:47	16:13
10	08:49	08:05	07:03		06:47			05:42	05:04	05:15	06:02	06:57	19:19 (7)	07:50	07:50	08:40
	16:34	17:32	18:27		20:25			21:20	22:03	22:03	21:16	20:04	17 19:36 (7)	18:51	16:45	16:13
11	08:48	08:03	07:00		06:45			05:40	05:03	05:16	06:03	06:58	19:19 (7)	07:52	07:52	08:41
	16:36	17:34	18:29		20:27			21:21	22:04	22:02	21:14	20:02	15 19:34 (7)	18:48	16:43	16:12
12	08:47	08:01	06:58		06:42			05:38	05:03	05:17	06:05	07:00	19:19 (7)	07:54	07:54	08:42
	16:37	17:36	18:31		20:28			21:23	22:04	22:01	21:11	19:59	13 19:32 (7)	18:46	16:42	16:12
13	08:46	07:59	06:56		06:40			05:37	05:03	05:18	06:07	07:02	19:18 (7)	07:56	07:56	08:43
	16:39	17:38	18:33		20:30			21:25	22:05	22:00	21:09	19:57	11 19:29 (7)	18:44	16:40	16:12
14	08:45	07:57	06:53		06:38			05:35	05:02	05:19	06:09	07:04	19:18 (7)	07:58	07:57	08:44
	16:40	17:40	18:34		20:32			21:27	22:06	21:59	21:07	19:55	8 19:26 (7)	18:41	16:38	16:12
15	08:45	07:55	06:51		06:35			05:33	05:02	05:21	06:10	07:05	19:19 (7)	08:00	07:59	08:45
	16:42	17:42	18:36		20:34			21:28	22:06	21:58	21:05	19:52	5 19:24 (7)	18:39	16:37	16:12
16	08:44	07:53	06:48		06:33			05:32	05:02	05:22	06:12	07:07	19:20 (7)	08:02	08:01	08:46
	16:44	17:44	18:38		20:36			21:30	22:07	21:57	21:03	19:50	2 19:22 (7)	18:37	16:35	16:12
17	08:43	07:51	06:46		06:31			05:30	05:02	05:23	06:14	07:09		08:03	08:03	08:47
	16:45	17:46	18:40		20:38			21:32	22:07	21:56	21:01	19:47		18:34	16:34	16:12
18	08:41	07:49	06:43		06:28			05:28	05:02	05:25	06:16	07:11		08:05	08:05	08:47
	16:47	17:48	18:42		20:40			21:33	22:08	21:54	20:59	19:45		18:32	16:32	16:13
19	08:40	07:47	06:41		06:26			05:27	05:02	05:26	06:18	07:13		08:07	08:07	08:48
	16:49	17:50	18:44		20:41			21:35	22:08	21:53	20:56	19:42		18:30	16:31	16:13
20	08:39	07:44	06:39		06:24			05:25	05:02	05:27	06:19	07:14		08:09	08:09	08:49
	16:51	17:52	18:46		20:43			21:36	22:09	21:52	20:54	19:40		18:27	16:29	16:13
21	08:38	07:42	06:36		06:22			05:24	05:02	05:29	06:21	07:16		08:11	08:10	08:49
	16:53	17:54	18:48		20:45			21:38	22:09	21:50	20:52	19:37		18:25	16:28	16:14
22	08:37	07:40	06:34		06:19			05:22	05:02	05:30	06:23	07:18		08:13	08:12	08:50
	16:54	17:56	18:49		20:47			21:40	22:09	21:49	20:50	19:35		18:23	16:27	16:14
23	08:35	07:38	06:31		06:17			05:21	05:02	05:32	06:25	07:20		08:15	08:14	08:51
	16:56	17:58	18:51		20:49			21:41	22:09	21:48	20:47	19:32		18:21	16:26	16:15
24	08:34	07:36	06:29		06:15			05:20	05:03	05:33	06:26	07:21		08:17	08:16	08:51
	16:58	18:00	18:53		20:51			21:43	22:09	21:46	20:45	19:30		18:19	16:24	16:15
25	08:33	07:33	06:26		06:13			05:18	05:03	05:35	06:28	07:23		07:19	08:17	08:51
	17:00	18:02	18:55		20:52			21:44	22:09	21:45	20:43	19:27		17:16	16:23	16:16
26	08:31	07:31	06:24		06:10			05:17	05:03	05:37	06:30	07:25		07:21	08:19	08:52
	17:02	18:04	18:57		20:54			21:45	22:09	21:43	20:40	19:25		17:14	16:22	16:17
27	08:30	07:29	06:21	18:31 (7)	06:08			05:16	05:04	05:38	06:32	07:27		07:23	08:21	08:52
	17:04	18:06	18:59	1 18:32 (7)	20:56			21:47	22:09	21:41	20:38	19:22		17:12	16:21	16:17
28	08:28	07:26	06:19	18:30 (7)	06:06			05:15	05:04	05:40	06:34	07:29		07:25	08:23	08:52
	17:06	18:08	19:01	4 18:34 (7)	20:58			21:48	22:09	21:40	20:36	19:20		17:10	16:20	16:18
29	08:27		07:16	19:28 (7)	06:04			05:13	05:05	05:41	06:35	07:30		07:26	08:24	08:52
	17:08		20:02	8 19:36 (7)	21:00			21:50	22:09	21:38	20:33	19:17		17:08	16:19	16:19
30	08:25		07:14	19:28 (7)	06:02			05:12	05:06	05:43	06:37	07:32		07:28	08:26	08:52
	17:10		20:04	10 19:38 (7)	21:02			21:51	22:09	21:36	20:31	19:15		17:06	16:18	16:20
31	08:23		07:11	19:26 (7)				05:11		05:45	06:39			07:30		08:52
	17:12		20:06	13 19:39 (7)				21:52		21:35	20:29			17:04		16:21
Potential sun hours	250	273	367		420			494	510	512	460	382		328	259	233
Total, worst case				36		137							175			
Sun reduction				0.22		0.31							0.25			
Oper. time red.				1.00		1.00							1.00			
Wind dir. red.				0.64		0.64							0.64			
Total reduction				0.14		0.20							0.16			
Total, real				5		27							28			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** EF - H151

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February		March	April	May	June	July	August	September	October	November		December
1	08:52	08:22		07:24	07:09	05:59	05:10	05:06	05:46	06:40	07:34	07:32		08:27
	16:22	17:13		18:09	20:08	21:03	21:53	22:08	21:33	20:26	19:12	17:02		16:17
2	08:52	08:20		07:22	07:06	05:57	05:09	05:07	05:48	06:42	07:36	07:34		08:29
	16:23	17:15		18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00		16:16
3	08:52	08:18		07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:37	07:36		08:30
	16:24	17:17		18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58		16:16
4	08:51	08:16		07:17	07:01	05:53	05:07	05:08	05:51	06:46	07:39	07:38	16:18 (10)	08:32
	16:26	17:19		18:15	20:13	21:09	21:57	22:07	21:27	20:19	19:05	16:56	6 16:24 (10)	16:15
5	08:51	08:15	16:49 (10)	07:15	06:59	05:51	05:06	05:09	05:53	06:47	07:41	07:40	16:18 (10)	08:33
	16:27	17:21	1 16:50 (10)	18:17	20:15	21:11	21:58	22:06	21:25	20:16	19:02	16:54	4 16:22 (10)	16:14
6	08:51	08:13	16:49 (10)	07:12	06:57	05:49	05:06	05:10	05:54	06:49	07:43	07:42	16:19 (10)	08:35
	16:28	17:23	3 16:52 (10)	18:19	20:17	21:12	21:59	22:06	21:23	20:14	19:00	16:52	1 16:20 (10)	16:14
7	08:50	08:11	16:49 (10)	07:10	06:54	05:47	05:05	05:11	05:56	06:51	07:45	07:44		08:36
	16:29	17:25	6 16:55 (10)	18:21	20:19	21:14	22:00	22:05	21:21	20:12	18:58	16:50		16:13
8	08:50	08:09		07:07	06:52	05:46	05:04	05:12	05:58	06:53	07:47	07:46		08:37
	16:31	17:27		18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48		16:13
9	08:49	08:07		07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48		08:38
	16:32	17:29		18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46		16:13
10	08:48	08:05		07:03	06:47	05:42	05:03	05:14	06:01	06:56	07:50	07:50		08:40
	16:34	17:31		18:27	20:25	21:19	22:03	22:03	21:15	20:04	18:50	16:45		16:12
11	08:48	08:03		07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52		08:41
	16:35	17:33		18:29	20:26	21:21	22:04	22:02	21:13	20:02	18:48	16:43		16:12
12	08:47	08:01		06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:53		08:42
	16:37	17:35		18:30	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41		16:12
13	08:46	07:59		06:55	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:55		08:43
	16:38	17:38		18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40		16:12
14	08:45	07:57		06:53	06:37	05:35	05:02	05:19	06:08	07:03	07:58	07:57		08:44
	16:40	17:40		18:34	20:32	21:26	22:06	21:59	21:07	19:54	18:41	16:38		16:12
15	08:44	07:55		06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59		08:45
	16:42	17:42		18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36		16:12
16	08:43	07:53		06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:01	08:01		08:46
	16:43	17:44		18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35		16:12
17	08:42	07:51		06:46	06:30	05:30	05:01	05:23	06:14	07:09	08:03	08:03		08:47
	16:45	17:46		18:40	20:38	21:31	22:07	21:56	21:01	19:47	18:34	16:33		16:12
18	08:41	07:49		06:43	06:28	05:28	05:01	05:24	06:16	07:10	08:05	08:05		08:47
	16:47	17:48		18:42	20:39	21:33	22:08	21:54	20:58	19:44	18:32	16:32		16:12
19	08:40	07:46		06:41	06:26	05:26	05:01	05:26	06:17	07:12	08:07	08:07		08:48
	16:49	17:50		18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:29	16:30		16:13
20	08:39	07:44		06:38	06:24	05:25	05:01	05:27	06:19	07:14	08:09	08:08		08:49
	16:50	17:52		18:46	20:43	21:36	22:08	21:52	20:54	19:39	18:27	16:29		16:13
21	08:38	07:42		06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11	08:10		08:49
	16:52	17:54		18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28		16:13
22	08:37	07:40		06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12		08:50
	16:54	17:55		18:49	20:47	21:39	22:09	21:49	20:49	19:34	18:23	16:26		16:14
23	08:35	07:38		06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15	08:14		08:50
	16:56	17:57		18:51	20:49	21:41	22:09	21:47	20:47	19:32	18:21	16:25		16:14
24	08:34	07:35		06:28	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16		08:51
	16:58	17:59		18:53	20:50	21:42	22:09	21:46	20:45	19:29	18:18	16:24		16:15
25	08:33	07:33		06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17		08:51
	17:00	18:01		18:55	20:52	21:44	22:09	21:44	20:43	19:27	17:16	16:23		16:15
26	08:31	07:31		06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19		08:52
	17:02	18:03		18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	16:22		16:16
27	08:30	07:29		06:21	06:08	05:15	05:04	05:38	06:31	07:27	07:22	08:21		08:52
	17:04	18:05		18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21		16:17
28	08:28	07:26		06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24	08:22		08:52
	17:06	18:07		19:00	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20		16:18
29	08:26			07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24		08:52
	17:07			20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19		16:19
30	08:25			07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26		08:52
	17:09			20:04	21:01	21:51	22:09	21:36	20:31	19:15	17:06	16:18		16:20
31	08:23			07:11		05:11		05:44	06:39		07:30			08:52
	17:11			20:06		21:52		21:35	20:28		17:04			16:21
Potential sun hours	250	273		367	420	494	510	513	460	382	328	259		233
Total, worst case			10										11	
Sun reduction			0.19										0.20	
Oper. time red.			1.00										1.00	
Wind dir. red.			0.64										0.64	
Total reduction			0.12										0.13	
Total, real			1										1	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** EG - H152

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February	March	April	May	June	July	August	September	October	November	December		
1	08:52		15:20 (10)	08:22	07:24	07:09	05:59	05:10	05:06	05:46	06:40	07:34	07:32	08:27		
	16:22	8	15:28 (10)	17:13	18:09	20:08	21:03	21:53	22:08	21:33	20:26	19:12	17:02	16:17		
2	08:52		15:21 (10)	08:20	07:22	07:06	05:57	05:09	05:07	05:48	06:42	07:36	07:34	08:29		15:14 (10)
	16:23	8	15:29 (10)	17:15	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:16	1	15:15 (10)
3	08:52		15:22 (10)	08:18	07:19	07:04	05:55	05:08	05:07	05:49	06:44	07:37	07:36	08:30		15:12 (10)
	16:24	8	15:30 (10)	17:17	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58	16:16	3	15:15 (10)
4	08:51		15:23 (10)	08:16	07:17	07:01	05:53	05:07	05:08	05:51	06:46	07:39	07:38	08:32		15:12 (10)
	16:26	7	15:30 (10)	17:19	18:15	20:13	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15	4	15:16 (10)
5	08:51		15:24 (10)	08:15	07:15	06:59	05:51	05:06	05:09	05:53	06:48	07:41	07:40	08:33		15:11 (10)
	16:27	6	15:30 (10)	17:21	18:17	20:15	21:11	21:58	22:06	21:25	20:16	19:02	16:54	16:14	4	15:15 (10)
6	08:51		15:25 (10)	08:13	07:12	06:57	05:49	05:06	05:10	05:54	06:49	07:43	07:42	08:35		15:11 (10)
	16:28	5	15:30 (10)	17:23	18:19	20:17	21:12	21:59	22:06	21:23	20:14	19:00	16:52	16:14	5	15:16 (10)
7	08:50		15:26 (10)	08:11	07:10	06:54	05:47	05:05	05:11	05:56	06:51	07:45	07:44	08:36		15:10 (10)
	16:29	4	15:30 (10)	17:25	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:13	6	15:16 (10)
8	08:50		15:28 (10)	08:09	07:07	06:52	05:46	05:04	05:12	05:58	06:53	07:47	07:46	08:37		15:11 (10)
	16:31	3	15:31 (10)	17:27	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48	16:13	7	15:18 (10)
9	08:49		15:29 (10)	08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48	08:38		15:11 (10)
	16:32	3	15:32 (10)	17:29	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46	16:13	7	15:18 (10)
10	08:48		15:31 (10)	08:05	07:03	06:47	05:42	05:03	05:14	06:01	06:56	07:50	07:50	08:40		15:10 (10)
	16:34	1	15:32 (10)	17:31	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:50	16:45	16:12	8	15:18 (10)
11	08:48			08:03	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52	08:41		15:10 (10)
	16:35			17:33	18:29	20:26	21:21	22:04	22:02	21:13	20:02	18:48	16:43	16:12	8	15:18 (10)
12	08:47			08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42		15:11 (10)
	16:37			17:36	18:30	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41	16:12	9	15:20 (10)
13	08:46			07:59	06:55	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:55	08:43		15:11 (10)
	16:38			17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12	9	15:20 (10)
14	08:45			07:57	06:53	06:37	05:35	05:02	05:19	06:08	07:03	07:58	07:57	08:44		15:12 (10)
	16:40			17:40	18:34	20:32	21:26	22:06	21:59	21:07	19:54	18:41	16:38	16:12	9	15:21 (10)
15	08:44			07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59	08:45		15:12 (10)
	16:42			17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36	16:12	9	15:21 (10)
16	08:43			07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:01	08:01	08:46		15:12 (10)
	16:43			17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16:12	10	15:22 (10)
17	08:42			07:51	06:46	06:30	05:30	05:01	05:23	06:14	07:09	08:03	08:03	08:47		15:12 (10)
	16:45			17:46	18:40	20:38	21:31	22:07	21:56	21:01	19:47	18:34	16:33	16:12	10	15:22 (10)
18	08:41			07:49	06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05	08:05	08:47		15:13 (10)
	16:47			17:48	18:42	20:39	21:33	22:08	21:54	20:58	19:44	18:32	16:32	16:12	9	15:22 (10)
19	08:40			07:47	06:41	06:26	05:26	05:01	05:26	06:17	07:12	08:07	08:07	08:48		15:13 (10)
	16:49			17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:29	16:30	16:13	10	15:23 (10)
20	08:39			07:44	06:38	06:24	05:25	05:01	05:27	06:19	07:14	08:09	08:09	08:49		15:14 (10)
	16:50			17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:39	18:27	16:29	16:13	10	15:24 (10)
21	08:38			07:42	06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11	08:10	08:49		15:14 (10)
	16:52			17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:13	10	15:24 (10)
22	08:37			07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50		15:15 (10)
	16:54			17:56	18:49	20:47	21:39	22:09	21:49	20:50	19:34	18:23	16:26	16:14	10	15:25 (10)
23	08:35			07:38	06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15	08:14	08:50		15:15 (10)
	16:56			17:57	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	16:14	10	15:25 (10)
24	08:34			07:35	06:28	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16	08:51		15:15 (10)
	16:58			17:59	18:53	20:50	21:43	22:09	21:46	20:45	19:30	18:18	16:24	16:15	10	15:25 (10)
25	08:33			07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17	08:51		15:16 (10)
	17:00			18:01	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	16:15	10	15:26 (10)
26	08:31			07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:52		15:17 (10)
	17:02			18:03	18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	16:22	16:16	10	15:27 (10)
27	08:30			07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:22	08:21	08:52		15:17 (10)
	17:04			18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17	10	15:27 (10)
28	08:28			07:26	06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24	08:22	08:52		15:18 (10)
	17:06			18:07	19:00	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18	9	15:27 (10)
29	08:27				07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52		15:18 (10)
	17:08				20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19	10	15:28 (10)
30	08:25				07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26	08:52		15:19 (10)
	17:09				20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20	9	15:28 (10)
31	08:23				07:11		05:11		05:44	06:39		07:30		08:52		15:20 (10)
	17:11				20:06		21:52		21:35	20:28		17:04		16:21	9	15:29 (10)
Potential sun hours	250			273	367	420	494	510	513	460	382	328	259	233		
Total, worst case		53													245	
Sun reduction		0.16													0.12	
Oper. time red.		1.00													1.00	
Wind dir. red.		0.65													0.65	
Total reduction		0.11													0.08	
Total, real		6													19	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** EH - H153

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February		March	April	May	June	July	August	September	October		November	December
1	08:53	08:22		07:25	07:09	06:00	05:10	05:07	05:47	06:41	07:34		07:33	08:28
	16:23	17:14		18:10	20:08	21:04	21:54	22:09	21:33	20:27	19:13		17:02	16:18
2	08:52	08:20		07:22	07:07	05:58	05:10	05:07	05:48	06:43	07:36		07:35	08:29
	16:24	17:16		18:12	20:10	21:06	21:55	22:08	21:31	20:24	19:10		17:00	16:17
3	08:52	08:19		07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38		07:37	08:31
	16:25	17:18		18:14	20:12	21:07	21:56	22:08	21:30	20:22	19:08		16:58	16:16
4	08:52	08:17		07:17	07:02	05:54	05:08	05:09	05:52	06:46	07:40		07:39	08:32
	16:26	17:20		18:16	20:14	21:09	21:57	22:07	21:28	20:19	19:05		16:56	16:16
5	08:52	08:15		07:15	07:00	05:52	05:07	05:10	05:53	06:48	07:42		07:40	08:34
	16:27	17:22		18:18	20:16	21:11	21:59	22:07	21:26	20:17	19:03		16:54	16:15
6	08:51	08:13		07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43		07:42	08:35
	16:29	17:24		18:19	20:18	21:13	22:00	22:06	21:24	20:14	19:01		16:52	16:14
7	08:51	08:11		07:10	06:55	05:48	05:06	05:12	05:57	06:52	07:45		07:44	08:36
	16:30	17:26		18:21	20:19	21:15	22:01	22:06	21:22	20:12	18:58		16:51	16:14
8	08:50	08:09		07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47		07:46	08:38
	16:31	17:28		18:23	20:21	21:16	22:02	22:05	21:20	20:10	18:56		16:49	16:14
9	08:50	08:08		07:06	06:50	05:44	05:04	05:14	06:00	06:55	07:49		07:48	08:39
	16:33	17:30		18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53		16:47	16:13
10	08:49	08:06		07:03	06:48	05:42	05:04	05:15	06:02	06:57	07:51		07:50	08:40
	16:34	17:32		18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51		16:45	16:13
11	08:48	08:04		07:01	06:45	05:40	05:04	05:16	06:04	06:59	07:53		07:52	08:41
	16:36	17:34		18:29	20:27	21:22	22:04	22:02	21:14	20:02	18:49		16:43	16:13
12	08:47	08:02		06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54		07:54	08:42
	16:37	17:36		18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46		16:42	16:12
13	08:47	08:00	08:26 (2)	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56		07:56	08:43
	16:39	17:38	2 08:28 (2)	18:33	20:31	21:25	22:06	22:00	21:10	19:57	18:44		16:40	16:12
14	08:46	07:58	08:24 (2)	06:53	06:38	05:35	05:03	05:20	06:09	07:04	07:58		07:58	08:44
	16:41	17:40	5 08:29 (2)	18:35	20:32	21:27	22:06	21:59	21:08	19:55	18:42		16:38	16:12
15	08:45	07:56	08:21 (2)	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00	08:44 (2)	08:00	08:45
	16:42	17:42	8 08:29 (2)	18:37	20:34	21:29	22:07	21:58	21:05	19:52	18:39	9 08:53 (2)	16:37	16:12
16	08:44	07:53	08:19 (2)	06:49	06:33	05:32	05:02	05:22	06:13	07:07	08:02	08:41 (2)	08:02	08:46
	16:44	17:44	10 08:29 (2)	18:39	20:36	21:30	22:07	21:57	21:03	19:50	18:37	14 08:55 (2)	16:35	16:12
17	08:43	07:51	08:17 (2)	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:39 (2)	08:03	08:47
	16:46	17:46	13 08:30 (2)	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:35	18 08:57 (2)	16:34	16:13
18	08:42	07:49	08:15 (2)	06:44	06:29	05:29	05:02	05:25	06:16	07:11	08:06	08:38 (2)	08:05	08:48
	16:47	17:48	15 08:30 (2)	18:42	20:40	21:34	22:08	21:55	20:59	19:45	18:32	20 08:58 (2)	16:32	16:13
19	08:41	07:47	08:13 (2)	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:08	08:36 (2)	08:07	08:49
	16:49	17:50	17 08:30 (2)	18:44	20:42	21:35	22:09	21:54	20:57	19:42	18:30	23 08:59 (2)	16:31	16:13
20	08:40	07:45	08:10 (2)	06:39	06:24	05:25	05:02	05:28	06:20	07:15	08:10	08:37 (2)	08:09	08:49
	16:51	17:52	19 08:29 (2)	18:46	20:44	21:37	22:09	21:52	20:55	19:40	18:28	22 08:59 (2)	16:30	16:13
21	08:38	07:43	08:08 (2)	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:39 (2)	08:11	08:50
	16:53	17:54	21 08:29 (2)	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	21 09:00 (2)	16:28	16:14
22	08:37	07:40	08:06 (2)	06:34	06:20	05:23	05:02	05:31	06:23	07:18	08:13	08:41 (2)	08:13	08:50
	16:55	17:56	23 08:29 (2)	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	19 09:00 (2)	16:27	16:14
23	08:36	07:38	08:05 (2)	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:43 (2)	08:14	08:51
	16:57	17:58	22 08:27 (2)	18:52	20:49	21:41	22:10	21:48	20:48	19:32	18:21	17 09:00 (2)	16:26	16:15
24	08:34	07:36	08:07 (2)	06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:45 (2)	08:16	08:51
	16:58	18:00	20 08:27 (2)	18:54	20:51	21:43	22:10	21:46	20:45	19:30	18:19	15 09:00 (2)	16:25	16:15
25	08:33	07:34	08:08 (2)	06:27	06:13	05:18	05:03	05:35	06:28	07:23	07:19	07:47 (2)	08:18	08:52
	17:00	18:02	17 08:25 (2)	18:55	20:53	21:44	22:10	21:45	20:43	19:28	17:17	12 07:59 (2)	16:23	16:16
26	08:32	07:31	08:10 (2)	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	07:49 (2)	08:20	08:52
	17:02	18:04	12 08:22 (2)	18:57	20:55	21:46	22:10	21:43	20:41	19:25	17:15	10 07:59 (2)	16:22	16:17
27	08:30	07:29	08:14 (2)	06:22	06:09	05:16	05:04	05:38	06:32	07:27	07:23	07:52 (2)	08:21	08:52
	17:04	18:06	4 08:18 (2)	18:59	20:56	21:47	22:10	21:42	20:38	19:23	17:12	7 07:59 (2)	16:21	16:18
28	08:29	07:27		06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	07:54 (2)	08:23	08:52
	17:06	18:08		19:01	20:58	21:49	22:09	21:40	20:36	19:20	17:10	4 07:58 (2)	16:20	16:18
29	08:27			07:17	06:04	05:14	05:05	05:42	06:36	07:31	07:27	07:56 (2)	08:25	08:53
	17:08			20:03	21:00	21:50	22:09	21:39	20:34	19:18	17:08	1 07:57 (2)	16:19	16:19
30	08:25			07:14	06:02	05:13	05:06	05:43	06:37	07:32	07:29		08:26	08:53
	17:10			20:05	21:02	21:51	22:09	21:37	20:31	19:15	17:06		16:19	16:20
31	08:24			07:12		05:11		05:45	06:39		07:31			08:53
	17:12			20:07		21:53		21:35	20:29		17:04			16:21
Potential sun hours	250	273		367	420	494	510	512	460	382	328		259	233
Total, worst case			208									212		
Sun reduction			0.19									0.23		
Oper. time red.			1.00									1.00		
Wind dir. red.			0.62									0.62		
Total reduction			0.12									0.14		
Total, real			25									30		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** EI - H156

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February		March	April	May	June	July	August	September	October			November	December
1	08:53	08:22		07:25	07:09	06:00	05:10	05:07	05:47	06:41	07:34			07:33	08:28
	16:23	17:14		18:10	20:08	21:04	21:54	22:09	21:33	20:27	19:13			17:02	16:18
2	08:52	08:20		07:22	07:07	05:58	05:10	05:07	05:48	06:43	07:36			07:35	08:29
	16:24	17:16		18:12	20:10	21:06	21:55	22:08	21:31	20:24	19:10			17:00	16:17
3	08:52	08:19		07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38			07:37	08:31
	16:25	17:18		18:14	20:12	21:07	21:56	22:08	21:30	20:22	19:08			16:58	16:16
4	08:52	08:17		07:17	07:02	05:54	05:08	05:09	05:52	06:46	07:40			07:39	08:32
	16:26	17:20		18:16	20:14	21:09	21:57	22:07	21:28	20:19	19:05			16:56	16:16
5	08:52	08:15		07:15	07:00	05:52	05:07	05:10	05:53	06:48	07:42			07:40	08:34
	16:27	17:22		18:18	20:16	21:11	21:59	22:07	21:26	20:17	19:03			16:54	16:15
6	08:51	08:13		07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43			07:42	08:35
	16:29	17:24		18:19	20:18	21:13	22:00	22:06	21:24	20:14	19:01			16:52	16:14
7	08:51	08:11		07:10	06:55	05:48	05:06	05:12	05:57	06:52	07:45			07:44	08:36
	16:30	17:26		18:21	20:19	21:15	22:01	22:06	21:22	20:12	18:58			16:51	16:14
8	08:50	08:10		07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47			07:46	08:38
	16:31	17:28		18:23	20:21	21:16	22:02	22:05	21:20	20:10	18:56			16:49	16:14
9	08:50	08:08		07:06	06:50	05:44	05:04	05:14	06:00	06:55	07:49			07:48	08:39
	16:33	17:30		18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53			16:47	16:13
10	08:49	08:06		07:03	06:48	05:42	05:04	05:15	06:02	06:57	07:51			07:50	08:40
	16:34	17:32		18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51			16:45	16:13
11	08:48	08:04		07:01	06:45	05:40	05:04	05:16	06:04	06:59	07:53			07:52	08:41
	16:36	17:34		18:29	20:27	21:22	22:04	22:02	21:14	20:02	18:49			16:43	16:13
12	08:48	08:02	08:28 (2)	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54			07:54	08:42
	16:37	17:36	2 08:30 (2)	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46			16:42	16:12
13	08:47	08:00	08:26 (2)	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56			07:56	08:43
	16:39	17:38	4 08:30 (2)	18:33	20:31	21:25	22:06	22:00	21:10	19:57	18:44			16:40	16:12
14	08:46	07:58	08:24 (2)	06:54	06:38	05:35	05:03	05:20	06:09	07:04	07:58			07:58	08:44
	16:41	17:40	7 08:31 (2)	18:35	20:32	21:27	22:06	21:59	21:08	19:55	18:42			16:38	16:12
15	08:45	07:56	08:21 (2)	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00			08:00	08:45
	16:42	17:42	10 08:31 (2)	18:37	20:34	21:29	22:07	21:58	21:06	19:52	18:39			16:37	16:12
16	08:44	07:53	08:19 (2)	06:49	06:33	05:32	05:02	05:22	06:13	07:07	08:02			08:02	08:46
	16:44	17:44	13 08:32 (2)	18:39	20:36	21:30	22:07	21:57	21:03	19:50	18:37			16:35	16:12
17	08:43	07:51	08:19 (2)	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04			08:03	08:47
	16:46	17:46	14 08:33 (2)	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:35			16:34	16:13
18	08:42	07:49	08:21 (2)	06:44	06:29	05:29	05:02	05:25	06:16	07:11	08:06			08:05	08:48
	16:47	17:48	14 08:35 (2)	18:42	20:40	21:34	22:08	21:55	20:59	19:45	18:32			16:32	16:13
19	08:41	07:47	08:22 (2)	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:08			08:07	08:49
	16:49	17:50	14 08:36 (2)	18:44	20:42	21:35	22:09	21:54	20:57	19:42	18:30			16:31	16:13
20	08:40	07:45	08:23 (2)	06:39	06:24	05:25	05:02	05:28	06:20	07:15	08:10			08:09	08:49
	16:51	17:52	13 08:36 (2)	18:46	20:44	21:37	22:09	21:52	20:55	19:40	18:28			16:30	16:13
21	08:38	07:43	08:28 (2)	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11		08:56 (2)	08:11	08:50
	16:53	17:54	3 08:31 (2)	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	8	09:04 (2)	16:28	16:14
22	08:37	07:40		06:34	06:20	05:23	05:02	05:31	06:23	07:18	08:13		08:53 (2)	08:13	08:50
	16:55	17:56		18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	14	09:07 (2)	16:27	16:14
23	08:36	07:38		06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15		08:51 (2)	08:14	08:51
	16:57	17:58		18:52	20:49	21:41	22:10	21:48	20:48	19:32	18:21	14	09:05 (2)	16:26	16:15
24	08:34	07:36		06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17		08:50 (2)	08:16	08:51
	16:58	18:00		18:54	20:51	21:43	22:10	21:47	20:45	19:30	18:19	14	09:04 (2)	16:25	16:15
25	08:33	07:34		06:27	06:13	05:18	05:03	05:35	06:28	07:23	07:19		07:49 (2)	08:18	08:52
	17:00	18:02		18:55	20:53	21:44	22:10	21:45	20:43	19:28	17:17	13	08:02 (2)	16:23	16:16
26	08:32	07:31		06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21		07:50 (2)	08:20	08:52
	17:02	18:04		18:57	20:55	21:46	22:10	21:43	20:41	19:25	17:15	11	08:01 (2)	16:22	16:17
27	08:30	07:29		06:22	06:09	05:16	05:04	05:38	06:32	07:27	07:23		07:52 (2)	08:21	08:52
	17:04	18:06		18:59	20:57	21:47	22:10	21:42	20:38	19:23	17:12	9	08:01 (2)	16:21	16:18
28	08:29	07:27		06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25		07:54 (2)	08:23	08:52
	17:06	18:08		19:01	20:58	21:49	22:09	21:40	20:36	19:20	17:10	6	08:00 (2)	16:20	16:18
29	08:27			07:17	06:04	05:14	05:05	05:42	06:36	07:31	07:27		07:56 (2)	08:25	08:53
	17:08			20:03	21:00	21:50	22:09	21:39	20:34	19:18	17:08	4	08:00 (2)	16:19	16:19
30	08:25			07:14	06:02	05:13	05:06	05:43	06:37	07:32	07:29		07:58 (2)	08:26	08:53
	17:10			20:05	21:02	21:51	22:09	21:37	20:31	19:15	17:06	1	07:59 (2)	16:19	16:20
31	08:24			07:12		05:11		05:45	06:39		07:31				08:53
	17:12			20:07		21:53		21:35	20:29		17:04				16:21
Potential sun hours	250	273		367	420	494	510	512	460	382	328			259	233
Total, worst case			94									94			
Sun reduction			0.19									0.23			
Oper. time red.			1.00									1.00			
Wind dir. red.			0.61									0.61			
Total reduction			0.12									0.14			
Total, real			11									13			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** EJ - H157

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March		April			May	June	July	August	September		October	November	December
1	08:52	08:22	07:25		07:09		07:33 (2)	06:00	05:11	05:07	05:47	06:41		07:34	07:33	08:28
	16:23	17:14	18:10		20:08	10	07:43 (2)	21:04	21:54	22:09	21:33	20:27		19:13	17:02	16:18
2	08:52	08:20	07:22		07:07		07:32 (2)	05:58	05:10	05:07	05:48	06:43		07:36	07:35	08:29
	16:24	17:16	18:12		20:10	11	07:43 (2)	21:06	21:55	22:08	21:31	20:24		19:10	17:00	16:17
3	08:52	08:19	07:20		07:04		07:33 (2)	05:56	05:09	05:08	05:50	06:45		07:38	07:37	08:31
	16:25	17:18	18:14		20:12	10	07:43 (2)	21:07	21:56	22:08	21:30	20:22		19:08	16:58	16:16
4	08:52	08:17	07:17		07:02		07:35 (2)	05:54	05:08	05:09	05:52	06:46		07:40	07:38	08:32
	16:26	17:20	18:16		20:14	7	07:42 (2)	21:09	21:57	22:07	21:28	20:19		19:05	16:56	16:16
5	08:52	08:15	07:15		07:00		07:35 (2)	05:52	05:07	05:10	05:53	06:48		07:42	07:40	08:34
	16:27	17:22	18:18		20:16	6	07:41 (2)	21:11	21:58	22:07	21:26	20:17	2	07:36 (2)	16:54	16:15
6	08:51	08:13	07:13		06:57		07:37 (2)	05:50	05:06	05:11	05:55	06:50		07:33 (2)	07:43	08:35
	16:29	17:24	18:20		20:18	4	07:41 (2)	21:13	22:00	22:06	21:24	20:14	4	07:37 (2)	16:52	16:14
7	08:51	08:11	07:10		06:55		07:38 (2)	05:48	05:06	05:12	05:57	06:52		07:31 (2)	07:44	08:36
	16:30	17:26	18:21		20:19	2	07:40 (2)	21:15	22:01	22:06	21:22	20:12	5	07:36 (2)	16:51	16:14
8	08:50	08:09	07:08		06:52		07:37 (2)	05:46	05:05	05:13	05:59	06:53		07:29 (2)	07:46	08:38
	16:31	17:28	18:23		20:21	1	07:38 (2)	21:16	22:01	22:05	21:20	20:10	8	07:37 (2)	16:49	16:14
9	08:50	08:08	07:06		06:50			05:44	05:05	05:14	06:00	06:55		07:28 (2)	07:48	08:39
	16:33	17:30	18:25		20:23			21:18	22:02	22:04	21:18	20:07	9	07:37 (2)	16:47	16:13
10	08:49	08:06	07:03		06:48			05:42	05:04	05:15	06:02	06:57		07:25 (2)	07:50	08:40
	16:34	17:32	18:27		20:25			21:20	22:03	22:03	21:16	20:05	12	07:37 (2)	16:45	16:13
11	08:48	08:04	07:01		06:45			05:41	05:04	05:16	06:04	06:59		07:25 (2)	07:53	08:41
	16:36	17:34	18:29		20:27			21:22	22:04	22:02	21:14	20:02	10	07:35 (2)	16:43	16:13
12	08:47	08:02	06:58		06:43			05:39	05:03	05:17	06:06	07:00		07:27 (2)	07:54	08:42
	16:37	17:36	18:31		20:29			21:23	22:05	22:01	21:12	20:00	8	07:35 (2)	16:42	16:13
13	08:47	08:00	06:56		06:40			05:37	05:03	05:18	06:07	07:02		07:29 (2)	07:56	08:43
	16:39	17:38	18:33		20:31			21:25	22:06	22:00	21:10	19:57	5	07:34 (2)	16:40	16:12
14	08:46	07:58	06:54		06:38			05:35	05:03	05:20	06:09	07:04		07:30 (2)	07:58	08:44
	16:41	17:40	18:35		20:32			21:27	22:06	21:59	21:08	19:55	2	07:32 (2)	16:39	16:12
15	08:45	07:55	06:51		06:36			05:33	05:02	05:21	06:11	07:06		08:00	08:00	08:45
	16:42	17:42	18:37		20:34			21:29	22:07	21:58	21:05	19:52		18:39	16:37	16:12
16	08:44	07:53	06:49		06:33			05:32	05:02	05:22	06:13	07:08		08:02	08:02	08:46
	16:44	17:44	18:39		20:36			21:30	22:07	21:57	21:03	19:50		18:37	16:35	16:12
17	08:43	07:51	06:46		06:31			05:30	05:02	05:24	06:14	07:09		08:04	08:03	08:47
	16:46	17:46	18:40		20:38			21:32	22:08	21:56	21:01	19:47		18:35	16:34	16:13
18	08:42	07:49	06:44		06:29			05:29	05:02	05:25	06:16	07:11		08:06	08:05	08:48
	16:48	17:48	18:42		20:40			21:34	22:08	21:55	20:59	19:45		18:32	16:32	16:13
19	08:41	07:47	06:41		06:26			05:27	05:02	05:26	06:18	07:13		08:08	08:07	08:49
	16:49	17:50	18:44		20:42			21:35	22:09	21:53	20:57	19:42		18:30	16:31	16:13
20	08:40	07:45	06:39		06:24			05:25	05:02	05:28	06:20	07:15		08:10	08:09	08:49
	16:51	17:52	18:46		20:44			21:37	22:09	21:52	20:54	19:40		18:28	16:30	16:13
21	08:38	07:43	06:36		06:22			05:24	05:02	05:29	06:21	07:16		08:11	08:11	08:50
	16:53	17:54	18:48		20:45			21:38	22:09	21:51	20:52	19:37		18:26	16:28	16:14
22	08:37	07:40	06:34		06:20			05:23	05:02	05:31	06:23	07:18		08:13	08:13	08:50
	16:55	17:56	18:50		20:47			21:40	22:09	21:49	20:50	19:35		18:23	16:27	16:14
23	08:36	07:38	06:31		06:17			05:21	05:03	05:32	06:25	07:20		08:15	08:14	08:51
	16:57	17:58	18:52		20:49			21:41	22:10	21:48	20:48	19:33		18:21	16:26	16:15
24	08:34	07:36	06:29		06:15			05:20	05:03	05:34	06:27	07:22		08:17	08:16	08:51
	16:58	18:00	18:54		20:51			21:43	22:10	21:46	20:45	19:30		18:19	16:25	16:15
25	08:33	07:34	06:27		06:13			05:18	05:03	05:35	06:29	07:24		07:19	08:18	08:52
	17:00	18:02	18:55		20:53			21:44	22:10	21:45	20:43	19:28		17:17	16:24	16:16
26	08:32	07:31	06:24		06:11			05:17	05:04	05:37	06:30	07:25		07:21	08:20	08:52
	17:02	18:04	18:57		20:55			21:46	22:10	21:43	20:41	19:25		17:15	16:22	16:17
27	08:30	07:29	06:22		06:09			05:16	05:04	05:38	06:32	07:27		07:23	08:21	08:52
	17:04	18:06	18:59		20:56			21:47	22:10	21:42	20:38	19:23		17:12	16:21	16:18
28	08:29	07:27	06:19		06:06			05:15	05:05	05:40	06:34	07:29		07:25	08:23	08:52
	17:06	18:08	19:01		20:58			21:49	22:09	21:40	20:36	19:20		17:10	16:20	16:18
29	08:27		07:17	07:40 (2)	06:04			05:14	05:05	05:42	06:36	07:31		07:27	08:25	08:53
	17:08		20:03	2 07:42 (2)	21:00			21:50	22:09	21:38	20:34	19:18		17:08	16:19	16:19
30	08:25		07:14	07:38 (2)	06:02			05:13	05:06	05:43	06:37	07:32		07:29	08:26	08:53
	17:10		20:05	5 07:43 (2)	21:02			21:51	22:09	21:37	20:31	19:15		17:06	16:19	16:20
31	08:24		07:12	07:35 (2)				05:12		05:45	06:39			07:31		08:53
	17:12		20:07	8 07:43 (2)				21:53		21:35	20:29			17:04		16:21
Potential sun hours	250	273	367		420			494	510	512	460	382		328	259	233
Total, worst case				15		51							65			
Sun reduction				0.22		0.31							0.25			
Oper. time red.				1.00		1.00							1.00			
Wind dir. red.				0.65		0.65							0.65			
Total reduction				0.14		0.20							0.16			
Total, real				2		10							11			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** EK - H158

Assumptions for shadow calculations

Flicker curtailment applied to this receptor

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February		March	April	May	June	July	August	September	October		November	December
1	08:53	08:22		07:25	07:09	06:00	05:10	05:07	05:47	06:41	07:34		07:33	08:28
	16:23	17:14		18:10	20:08	21:04	21:54	22:09	21:33	20:27	19:13		17:02	16:18
2	08:52	08:20		07:22	07:07	05:58	05:10	05:07	05:48	06:43	07:36		07:35	08:29
	16:24	17:16		18:12	20:10	21:06	21:55	22:08	21:31	20:24	19:10		17:00	16:17
3	08:52	08:19		07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38		07:37	08:31
	16:25	17:18		18:14	20:12	21:07	21:56	22:08	21:30	20:22	19:08		16:58	16:16
4	08:52	08:17		07:17	07:02	05:54	05:08	05:09	05:52	06:46	07:40		07:39	08:32
	16:26	17:20		18:16	20:14	21:09	21:57	22:07	21:28	20:19	19:05		16:56	16:16
5	08:52	08:15		07:15	07:00	05:52	05:07	05:10	05:53	06:48	07:42		07:40	08:34
	16:27	17:22		18:18	20:16	21:11	21:59	22:07	21:26	20:17	19:03		16:54	16:15
6	08:51	08:13		07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43		07:42	08:35
	16:29	17:24		18:19	20:18	21:13	22:00	22:06	21:24	20:14	19:01		16:52	16:14
7	08:51	08:11		07:10	06:55	05:48	05:06	05:12	05:57	06:52	07:45		07:44	08:36
	16:30	17:26		18:21	20:19	21:15	22:01	22:06	21:22	20:12	18:58		16:51	16:14
8	08:50	08:10		07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47		07:46	08:38
	16:31	17:28		18:23	20:21	21:16	22:02	22:05	21:20	20:10	18:56		16:49	16:14
9	08:50	08:08		07:06	06:50	05:44	05:04	05:14	06:00	06:55	07:49		07:48	08:39
	16:33	17:30		18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53		16:47	16:13
10	08:49	08:06		07:03	06:48	05:42	05:04	05:15	06:02	06:57	07:51		07:50	08:40
	16:34	17:32		18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51		16:45	16:13
11	08:48	08:04		07:01	06:45	05:40	05:04	05:16	06:04	06:59	07:53		07:52	08:41
	16:36	17:34		18:29	20:27	21:22	22:04	22:02	21:14	20:02	18:49		16:43	16:13
12	08:48	08:02	08:28 (2)	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54		07:54	08:42
	16:37	17:36	2 08:30 (2)	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46		16:42	16:12
13	08:47	08:00	08:26 (2)	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56		07:56	08:43
	16:39	17:38	4 08:30 (2)	18:33	20:31	21:25	22:06	22:00	21:10	19:57	18:44		16:40	16:12
14	08:46	07:58	08:24 (2)	06:54	06:38	05:35	05:03	05:20	06:09	07:04	07:58		07:58	08:44
	16:41	17:40	7 08:31 (2)	18:35	20:32	21:27	22:06	21:59	21:08	19:55	18:42		16:38	16:12
15	08:45	07:56	08:21 (2)	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00		08:00	08:45
	16:42	17:42	10 08:31 (2)	18:37	20:34	21:29	22:07	21:58	21:06	19:52	18:39		16:37	16:12
16	08:44	07:53	08:19 (2)	06:49	06:33	05:32	05:02	05:22	06:13	07:07	08:02		08:02	08:46
	16:44	17:44	13 08:32 (2)	18:39	20:36	21:30	22:07	21:57	21:03	19:50	18:37		16:35	16:12
17	08:43	07:51	08:17 (2)	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04		08:03	08:47
	16:46	17:46	16 08:33 (2)	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:35		16:34	16:13
18	08:42	07:49	08:15 (2)	06:44	06:29	05:29	05:02	05:25	06:16	07:11	08:06		08:05	08:48
	16:47	17:48	20 08:35 (2)	18:42	20:40	21:34	22:08	21:55	20:59	19:45	18:32		16:32	16:13
19	08:41	07:47	08:14 (2)	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:08	08:49 (2)	08:07	08:49
	16:49	17:50	21 08:35 (2)	18:44	20:42	21:35	22:09	21:54	20:57	19:42	18:30	11 09:00 (2)	16:31	16:13
20	08:40	07:45	08:14 (2)	06:39	06:24	05:25	05:02	05:28	06:20	07:15	08:10	08:47 (2)	08:09	08:49
	16:51	17:52	20 08:34 (2)	18:46	20:44	21:37	22:09	21:52	20:55	19:40	18:28	15 09:02 (2)	16:30	16:13
21	08:38	07:43	08:15 (2)	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:45 (2)	08:11	08:50
	16:53	17:54	18 08:33 (2)	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	18 09:03 (2)	16:28	16:14
22	08:37	07:40	08:17 (2)	06:34	06:20	05:23	05:02	05:31	06:23	07:18	08:13	08:44 (2)	08:13	08:50
	16:55	17:56	14 08:31 (2)	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	20 09:04 (2)	16:27	16:14
23	08:36	07:38	08:19 (2)	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:43 (2)	08:14	08:51
	16:57	17:58	8 08:27 (2)	18:52	20:49	21:41	22:10	21:48	20:48	19:32	18:21	22 09:05 (2)	16:26	16:15
24	08:34	07:36		06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:45 (2)	08:16	08:51
	16:58	18:00		18:54	20:51	21:43	22:10	21:47	20:45	19:30	18:19	19 09:04 (2)	16:25	16:15
25	08:33	07:34		06:27	06:13	05:18	05:03	05:35	06:28	07:24	07:19	07:47 (2)	08:18	08:52
	17:00	18:02		18:55	20:53	21:44	22:10	21:45	20:43	19:28	17:17	15 08:02 (2)	16:23	16:16
26	08:32	07:31		06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	07:50 (2)	08:20	08:52
	17:02	18:04		18:57	20:55	21:46	22:10	21:43	20:41	19:25	17:15	11 08:01 (2)	16:22	16:17
27	08:30	07:29		06:22	06:09	05:16	05:04	05:38	06:32	07:27	07:23	07:52 (2)	08:21	08:52
	17:04	18:06		18:59	20:57	21:47	22:10	21:42	20:38	19:23	17:12	9 08:01 (2)	16:21	16:18
28	08:29	07:27		06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	07:54 (2)	08:23	08:52
	17:06	18:08		19:01	20:58	21:49	22:09	21:40	20:36	19:20	17:10	6 08:00 (2)	16:20	16:18
29	08:27			07:17	06:04	05:14	05:05	05:42	06:36	07:31	07:27	07:56 (2)	08:25	08:53
	17:08			20:03	21:00	21:50	22:09	21:39	20:34	19:18	17:08	4 08:00 (2)	16:19	16:19
30	08:25			07:14	06:02	05:13	05:06	05:43	06:37	07:32	07:29	07:58 (2)	08:26	08:53
	17:10			20:05	21:02	21:51	22:09	21:37	20:31	19:15	17:06	1 07:59 (2)	16:19	16:20
31	08:24			07:12		05:11		05:45	06:39		07:31			08:53
	17:12			20:07		21:53		21:35	20:29		17:04			16:21
Potential sun hours	250	273		367	420	494	510	512	460	382	328		259	233
Total, worst case			153									151		
Sun reduction			0.19									0.23		
Oper. time red.			1.00									1.00		
Wind dir. red.			0.62									0.62		
Total reduction			0.12									0.14		
Total, real			18									21		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** EL - H159

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:11	05:07	05:47	06:41	07:34	07:33	08:28
	16:23	17:14	18:10	20:08	21:04	21:54	22:09	21:33	20:27	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:10	05:07	05:48	06:43	07:36	07:35	08:29
	16:24	17:16	18:12	20:10	21:06	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38	07:36	08:31
	16:25	17:18	18:14	20:12	21:07	21:56	22:08	21:30	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:52	06:46	07:40	07:38	08:32
	16:26	17:20	18:16	20:14	21:09	21:57	22:07	21:28	20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	07:00	05:52	05:07	05:10	05:53	06:48	07:42	07:40	08:33
	16:27	17:22	18:18	20:16	21:11	21:58	22:07	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:18	21:13	21:59	22:06	21:24	20:14	19:01	16:52	16:15
7	08:51	08:11	07:10	06:55	05:48	05:06	05:12	05:57	06:52	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:15	22:00	22:05	21:22	20:12	18:58	16:51	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:13	05:59	06:53	07:47	07:46	08:38
	16:31	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:10	18:56	16:49	16:14
9	08:49	08:07	07:06	06:50	05:44	05:05	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:06	07:03	06:48	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51	16:45	16:13
11	08:48	08:04	07:01	06:45	05:41	05:04	05:16	06:04	06:59	07:53	07:52	08:41
	16:36	17:34	18:29	20:27	21:22	22:04	22:02	21:14	20:02	18:49	16:43	16:13
12	08:47	08:02	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:13
13	08:47	08:00	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:31	21:25	22:05	22:00	21:10	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:03	05:20	06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	21:59	21:08	19:55	18:41	16:39	16:12
15	08:45	07:55	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00	08:00	08:45
	16:42	17:42	18:37	20:34	21:28	22:07	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:49	06:33	05:32	05:02	05:22	06:13	07:07	08:02	08:01	08:46
	16:44	17:44	18:39	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:13
17	08:43	07:51	06:46	06:31	05:30	05:02	05:24	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:35	16:34	16:13
18	08:42	07:49	06:44	06:29	05:29	05:02	05:25	06:16	07:11	08:06	08:05	08:48
	16:48	17:48	18:42	20:40	21:33	22:08	21:55	20:59	19:45	18:32	16:32	16:13
19	08:41	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:08	08:07	08:48
	16:49	17:50	18:44	20:42	21:35	22:09	21:53	20:57	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:28	06:20	07:15	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:37	22:09	21:52	20:54	19:40	18:28	16:30	16:13
21	08:38	07:43	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:20	05:23	05:02	05:31	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:36	07:38	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:14	08:51
	16:57	17:58	18:52	20:49	21:41	22:09	21:48	20:48	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:10	21:46	20:45	19:30	18:19	16:25	16:15
25	08:33	07:34	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:52
	17:00	18:02	18:55	20:53	21:44	22:10	21:45	20:43	19:28	17:17	16:24	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:55	21:46	22:10	21:43	20:41	19:25	17:15	16:22	16:17
27	08:30	07:29	06:22	06:09	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:23	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:49	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	05:14	05:05	05:42	06:36	07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:34	19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	05:13	05:06	05:43	06:37	07:32	07:29	08:26	08:52
	17:10		20:05	21:02	21:51	22:09	21:37	20:31	19:15	17:06	16:19	16:20
31	08:24		07:12		05:12		05:45	06:39		07:31		08:52
	17:12		20:06		21:53		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** EM - H161

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March		April	May	June	July	August	September		October		November	December
1	08:53	08:22	07:25		07:09	06:00	05:11	05:07	05:47	06:41		07:34	08:01 (2)	07:33	08:28
	16:23	17:14	18:10		20:08	21:04	21:54	22:09	21:33	20:27		19:13	3 08:04 (2)	17:02	16:18
2	08:52	08:20	07:22		07:07	05:58	05:10	05:07	05:48	06:43		07:36		07:35	08:29
	16:24	17:16	18:12		20:10	21:06	21:55	22:08	21:31	20:24		19:10		17:00	16:17
3	08:52	08:19	07:20		07:04	05:56	05:09	05:08	05:50	06:44		07:38		07:37	08:31
	16:25	17:18	18:14		20:12	21:07	21:56	22:08	21:30	20:22		19:08		16:58	16:16
4	08:52	08:17	07:17		07:02	05:54	05:08	05:09	05:52	06:46		07:40		07:39	08:32
	16:26	17:20	18:16		20:14	21:09	21:57	22:07	21:28	20:19		19:05		16:56	16:16
5	08:52	08:15	07:15		07:00	05:52	05:07	05:10	05:53	06:48		07:42		07:40	08:34
	16:27	17:22	18:18		20:16	21:11	21:59	22:07	21:26	20:17		19:03		16:54	16:15
6	08:51	08:13	07:13		06:57	05:50	05:06	05:11	05:55	06:50		07:43		07:42	08:35
	16:29	17:24	18:20		20:18	21:13	22:00	22:06	21:24	20:15		19:01		16:52	16:14
7	08:51	08:11	07:10		06:55	05:48	05:06	05:12	05:57	06:52		07:45		07:44	08:36
	16:30	17:26	18:21		20:20	21:15	22:01	22:06	21:22	20:12		18:58		16:51	16:14
8	08:50	08:09	07:08		06:52	05:46	05:05	05:13	05:59	06:53		07:47		07:46	08:38
	16:31	17:28	18:23		20:21	21:16	22:02	22:05	21:20	20:10		18:56		16:49	16:14
9	08:50	08:08	07:06		06:50	05:44	05:05	05:14	06:00	06:55		07:49		07:48	08:39
	16:33	17:30	18:25		20:23	21:18	22:02	22:04	21:18	20:07		18:53		16:47	16:13
10	08:49	08:06	07:03		06:48	05:42	05:04	05:15	06:02	06:57		07:51		07:50	08:40
	16:34	17:32	18:27		20:25	21:20	22:03	22:03	21:16	20:05		18:51		16:45	16:13
11	08:48	08:04	07:01		06:45	05:40	05:04	05:16	06:04	06:59		07:53		07:52	08:41
	16:36	17:34	18:29		20:27	21:22	22:04	22:02	21:14	20:02		18:49		16:43	16:13
12	08:47	08:02	06:58	07:22 (2)	06:43	05:39	05:03	05:17	06:05	07:00		07:54		07:54	08:42
	16:37	17:36	18:31	2 07:24 (2)	20:29	21:23	22:05	22:01	21:12	20:00		18:46		16:42	16:13
13	08:47	08:00	06:56	07:20 (2)	06:40	05:37	05:03	05:18	06:07	07:02		07:56		07:56	08:43
	16:39	17:38	18:33	5 07:25 (2)	20:31	21:25	22:06	22:00	21:10	19:57		18:44		16:40	16:12
14	08:46	07:58	06:54	07:17 (2)	06:38	05:35	05:03	05:20	06:09	07:04		07:58		07:58	08:44
	16:41	17:40	18:35	8 07:25 (2)	20:32	21:27	22:06	21:59	21:08	19:55		18:42		16:39	16:12
15	08:45	07:56	06:51	07:15 (2)	06:36	05:33	05:02	05:21	06:11	07:06		08:00		08:00	08:45
	16:42	17:42	18:37	11 07:26 (2)	20:34	21:29	22:07	21:58	21:05	19:52		18:39		16:37	16:12
16	08:44	07:53	06:49	07:13 (2)	06:33	05:32	05:02	05:22	06:13	07:08		08:02		08:02	08:46
	16:44	17:44	18:39	13 07:26 (2)	20:36	21:30	22:07	21:57	21:03	19:50		18:37		16:35	16:12
17	08:43	07:51	06:46	07:10 (2)	06:31	05:30	05:02	05:24	06:14	07:09		08:04		08:03	08:47
	16:46	17:46	18:40	15 07:25 (2)	20:38	21:32	22:08	21:56	21:01	19:47		18:35		16:34	16:13
18	08:42	07:49	06:44	07:08 (2)	06:29	05:29	05:02	05:25	06:16	07:11		08:06		08:05	08:48
	16:48	17:48	18:42	17 07:25 (2)	20:40	21:34	22:08	21:55	20:59	19:45		18:32		16:32	16:13
19	08:41	07:47	06:41	07:05 (2)	06:26	05:27	05:02	05:26	06:18	07:13	07:56 (2)	08:08		08:07	08:49
	16:49	17:50	18:44	19 07:24 (2)	20:42	21:35	22:09	21:53	20:57	19:42	3 07:59 (2)	18:30		16:31	16:13
20	08:40	07:45	06:39	07:03 (2)	06:24	05:25	05:02	05:28	06:20	07:15	07:51 (2)	08:10		08:09	08:49
	16:51	17:52	18:46	20 07:23 (2)	20:44	21:37	22:09	21:52	20:55	19:40	12 08:03 (2)	18:28		16:30	16:13
21	08:38	07:43	06:36	07:02 (2)	06:22	05:24	05:02	05:29	06:21	07:16	07:49 (2)	08:11		08:11	08:50
	16:53	17:54	18:48	20 07:22 (2)	20:45	21:38	22:09	21:51	20:52	19:37	16 08:05 (2)	18:26		16:28	16:14
22	08:37	07:40	06:34	07:03 (2)	06:20	05:23	05:02	05:31	06:23	07:18	07:47 (2)	08:13		08:13	08:50
	16:55	17:56	18:50	17 07:20 (2)	20:47	21:40	22:09	21:49	20:50	19:35	19 08:06 (2)	18:23		16:27	16:14
23	08:36	07:38	06:31	07:04 (2)	06:17	05:21	05:03	05:32	06:25	07:20	07:46 (2)	08:15		08:14	08:51
	16:57	17:58	18:52	14 07:18 (2)	20:49	21:41	22:10	21:48	20:48	19:33	21 08:07 (2)	18:21		16:26	16:15
24	08:34	07:36	06:29	07:08 (2)	06:15	05:20	05:03	05:34	06:27	07:22	07:48 (2)	08:17		08:16	08:51
	16:58	18:00	18:54	6 07:14 (2)	20:51	21:43	22:10	21:46	20:45	19:30	19 08:07 (2)	18:19		16:25	16:15
25	08:33	07:34	06:27		06:13	05:18	05:03	05:35	06:29	07:24	07:50 (2)	07:19		08:18	08:52
	17:00	18:02	18:55		20:53	21:44	22:10	21:45	20:43	19:28	18 08:08 (2)	17:17		16:23	16:16
26	08:32	07:31	06:24		06:11	05:17	05:04	05:37	06:30	07:25	07:52 (2)	07:21		08:20	08:52
	17:02	18:04	18:57		20:55	21:46	22:10	21:43	20:41	19:25	16 08:08 (2)	17:15		16:22	16:17
27	08:30	07:29	06:22		06:09	05:16	05:04	05:38	06:32	07:27	07:53 (2)	07:23		08:21	08:52
	17:04	18:06	18:59		20:56	21:47	22:10	21:42	20:38	19:23	14 08:07 (2)	17:12		16:21	16:18
28	08:29	07:27	06:19		06:06	05:15	05:05	05:40	06:34	07:29	07:55 (2)	07:25		08:23	08:52
	17:06	18:08	19:01		20:58	21:49	22:09	21:40	20:36	19:20	11 08:06 (2)	17:10		16:20	16:18
29	08:27		07:17		06:04	05:14	05:05	05:42	06:36	07:31	07:57 (2)	07:27		08:25	08:53
	17:08		20:03		21:00	21:50	22:09	21:38	20:34	19:18	9 08:06 (2)	17:08		16:19	16:19
30	08:25		07:14		06:02	05:13	05:06	05:43	06:37	07:32	07:59 (2)	07:29		08:26	08:53
	17:10		20:05		21:02	21:51	22:09	21:37	20:31	19:15	6 08:05 (2)	17:06		16:19	16:20
31	08:24		07:12			05:12		05:45	06:39			07:31			08:53
	17:12		20:07			21:53		21:35	20:29			17:04			16:21
Potential sun hours	250	273	367		420	494	510	512	460	382		328		259	233
Total, worst case				167							164		3		
Sun reduction				0.22							0.25		0.23		
Oper. time red.				1.00							1.00		1.00		
Wind dir. red.				0.64							0.64		0.64		
Total reduction				0.14							0.16		0.14		
Total, real				23							26		0		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** EN - H165

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March		April	May	June	July	August	September		October		November	December
1	08:53	08:22	07:25		07:09	06:00	05:11	05:07	05:47	06:41		07:34		08:01 (2)	07:33	08:28
	16:23	17:14	18:10		20:08	21:04	21:54	22:09	21:33	20:27		19:13	12	08:13 (2)	17:02	16:18
2	08:52	08:20	07:22		07:07	05:58	05:10	05:07	05:48	06:43		07:36		08:02 (2)	07:35	08:29
	16:24	17:16	18:12		20:10	21:06	21:55	22:08	21:31	20:24		19:10	10	08:12 (2)	17:00	16:17
3	08:52	08:19	07:20		07:04	05:56	05:09	05:08	05:50	06:44		07:38		08:04 (2)	07:37	08:31
	16:25	17:18	18:14		20:12	21:07	21:56	22:08	21:30	20:22		19:08	7	08:11 (2)	16:58	16:16
4	08:52	08:17	07:17		07:02	05:54	05:08	05:09	05:52	06:46		07:40		08:06 (2)	07:39	08:32
	16:26	17:20	18:16		20:14	21:09	21:57	22:07	21:28	20:19		19:05	4	08:10 (2)	16:56	16:16
5	08:52	08:15	07:15		07:00	05:52	05:07	05:10	05:53	06:48		07:42		08:08 (2)	07:40	08:34
	16:27	17:22	18:18		20:16	21:11	21:59	22:07	21:26	20:17		19:03	1	08:09 (2)	16:54	16:15
6	08:51	08:13	07:13		06:57	05:50	05:06	05:11	05:55	06:50		07:43			07:42	08:35
	16:29	17:24	18:20		20:18	21:13	22:00	22:06	21:24	20:15		19:01			16:52	16:14
7	08:51	08:11	07:10		06:55	05:48	05:06	05:12	05:57	06:52		07:45			07:44	08:36
	16:30	17:26	18:21		20:20	21:15	22:01	22:06	21:22	20:12		18:58			16:51	16:14
8	08:50	08:10	07:08		06:52	05:46	05:05	05:13	05:59	06:53		07:47			07:46	08:38
	16:31	17:28	18:23		20:21	21:16	22:02	22:05	21:20	20:10		18:56			16:49	16:14
9	08:50	08:08	07:06		07:30 (2)	06:50	05:44	05:05	05:14	06:00		07:49			07:48	08:39
	16:33	17:30	18:25	3	07:33 (2)	20:23	21:18	22:02	22:04	21:18		18:53			16:47	16:13
10	08:49	08:06	07:03		07:27 (2)	06:48	05:42	05:04	05:15	06:02		07:51			07:50	08:40
	16:34	17:32	18:27	6	07:33 (2)	20:25	21:20	22:03	22:03	21:16		18:51			16:45	16:13
11	08:48	08:04	07:01		07:25 (2)	06:45	05:40	05:04	05:16	06:04		07:53			07:52	08:41
	16:36	17:34	18:29	9	07:34 (2)	20:27	21:22	22:04	22:02	21:14		18:49			16:43	16:13
12	08:47	08:02	06:58		07:22 (2)	06:43	05:39	05:03	05:17	06:05		07:54			07:54	08:42
	16:37	17:36	18:31	11	07:33 (2)	20:29	21:23	22:05	22:01	21:12		18:46			16:42	16:13
13	08:47	08:00	06:56		07:20 (2)	06:40	05:37	05:03	05:18	06:07		07:56			07:56	08:43
	16:39	17:38	18:33	14	07:34 (2)	20:31	21:25	22:06	22:00	21:10		18:44			16:40	16:12
14	08:46	07:58	06:54		07:17 (2)	06:38	05:35	05:03	05:20	06:09		07:58			07:58	08:44
	16:41	17:40	18:35	16	07:33 (2)	20:32	21:27	22:06	21:59	21:08		18:42			16:39	16:12
15	08:45	07:56	06:51		07:15 (2)	06:36	05:33	05:02	05:21	06:11		08:00			08:00	08:45
	16:42	17:42	18:37	17	07:32 (2)	20:34	21:29	22:07	21:58	21:06		18:39			16:37	16:12
16	08:44	07:53	06:49		07:13 (2)	06:33	05:32	05:02	05:22	06:13		08:02			08:02	08:46
	16:44	17:44	18:39	19	07:32 (2)	20:36	21:30	22:07	21:57	21:03		18:37			16:35	16:12
17	08:43	07:51	06:46		07:11 (2)	06:31	05:30	05:02	05:24	06:14		08:04			08:03	08:47
	16:46	17:46	18:40	19	07:30 (2)	20:38	21:32	22:08	21:56	21:01		18:35			16:34	16:13
18	08:42	07:49	06:44		07:12 (2)	06:29	05:29	05:02	05:25	06:16		08:06			08:05	08:48
	16:48	17:48	18:42	17	07:29 (2)	20:40	21:34	22:08	21:55	20:59		18:32			16:32	16:13
19	08:41	07:47	06:41		07:13 (2)	06:26	05:27	05:02	05:26	06:18		08:08			08:07	08:49
	16:49	17:50	18:44	13	07:26 (2)	20:42	21:35	22:09	21:54	20:57		18:30			16:31	16:13
20	08:40	07:45	06:39		07:16 (2)	06:24	05:25	05:02	05:28	06:20		08:10			08:09	08:49
	16:51	17:52	18:46	7	07:23 (2)	20:44	21:37	22:09	21:52	20:55		18:28			16:30	16:13
21	08:38	07:43	06:36			06:22	05:24	05:02	05:29	06:21		08:11			08:11	08:50
	16:53	17:54	18:48			20:45	21:38	22:09	21:51	20:52		18:26			16:28	16:14
22	08:37	07:40	06:34			06:20	05:23	05:02	05:31	06:23		08:13			08:13	08:50
	16:55	17:56	18:50			20:47	21:40	22:09	21:49	20:50		18:23			16:27	16:14
23	08:36	07:38	06:31			06:17	05:21	05:03	05:32	06:25		07:20		08:02 (2)	08:15	08:14	08:51
	16:57	17:58	18:52			20:49	21:41	22:10	21:48	20:48		19:33	3	08:05 (2)	18:21	16:26	16:15
24	08:34	07:36	06:29			06:15	05:20	05:03	05:34	06:27		07:22		07:57 (2)	08:17	08:16	08:51
	16:58	18:00	18:54			20:51	21:43	22:10	21:46	20:45		19:30	12	08:09 (2)	18:19	16:25	16:15
25	08:33	07:34	06:27			06:13	05:18	05:03	05:35	06:29		07:24		07:55 (2)	07:19	08:18	08:52
	17:00	18:02	18:55			20:53	21:44	22:10	21:45	20:43		19:28	16	08:11 (2)	17:17	16:23	16:16
26	08:32	07:31	06:24			06:11	05:17	05:04	05:37	06:30		07:25		07:54 (2)	07:21	08:20	08:52
	17:02	18:04	18:57			20:55	21:46	22:10	21:43	20:41		19:25	19	08:13 (2)	17:15	16:22	16:17
27	08:30	07:29	06:22			06:09	05:16	05:04	05:38	06:32		07:27		07:53 (2)	07:23	08:21	08:52
	17:04	18:06	18:59			20:57	21:47	22:10	21:42	20:38		19:23	19	08:12 (2)	17:12	16:21	16:18
28	08:29	07:27	06:19			06:06	05:15	05:05	05:40	06:34		07:29		07:55 (2)	07:25	08:23	08:52
	17:06	18:08	19:01			20:58	21:49	22:09	21:40	20:36		19:20	18	08:13 (2)	17:10	16:20	16:18
29	08:27		07:17			06:04	05:14	05:05	05:42	06:36		07:31		07:57 (2)	07:27	08:25	08:53
	17:08		20:03			21:00	21:50	22:09	21:38	20:34		19:18	16	08:13 (2)	17:08	16:19	16:19
30	08:25		07:14			06:02	05:13	05:06	05:43	06:37		07:33		07:59 (2)	07:29	08:26	08:53
	17:10		20:05			21:02	21:51	22:09	21:37	20:31		19:15	14	08:13 (2)	17:06	16:19	16:20
31	08:24		07:12				05:12		05:45	06:39					07:31		08:53
	17:12		20:07				21:53		21:35	20:29					17:04		16:21
Potential sun hours	250	273	367		420	494	510	512	460	382		328		259	233	
Total, worst case				151							117		34			
Sun reduction				0.22							0.25		0.23			
Oper. time red.				1.00							1.00		1.00			
Wind dir. red.				0.63							0.63		0.63			
Total reduction				0.14							0.16		0.14			
Total, real				21							19		5			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar

Calculation: Curtailment Stratedy **Shadow receptor:** EO - H235

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March		April	May	June	July	August	September		October	November	December
1	08:53	08:22	07:25		07:09	06:00	05:11	05:07	05:47	06:41		07:34	07:33	08:28
	16:23	17:14	18:10		20:08	21:04	21:54	22:09	21:33	20:27		19:13	17:02	16:18
2	08:52	08:20	07:22		07:07	05:58	05:10	05:07	05:48	06:43		07:36	07:35	08:29
	16:24	17:16	18:12		20:10	21:06	21:55	22:08	21:31	20:24		19:10	17:00	16:17
3	08:52	08:19	07:20		07:04	05:56	05:09	05:08	05:50	06:44		07:38	07:37	08:31
	16:25	17:18	18:14		20:12	21:07	21:56	22:08	21:30	20:22		19:08	16:58	16:16
4	08:52	08:17	07:17		07:02	05:54	05:08	05:09	05:52	06:46		07:40	07:39	08:32
	16:26	17:20	18:16		20:14	21:09	21:57	22:07	21:28	20:19		19:05	16:56	16:16
5	08:52	08:15	07:15		07:00	05:52	05:07	05:10	05:53	06:48		07:42	07:40	08:34
	16:27	17:22	18:18		20:16	21:11	21:58	22:07	21:26	20:17		19:03	16:54	16:15
6	08:51	08:13	07:13		06:57	05:50	05:06	05:11	05:55	06:50		07:43	07:42	08:35
	16:29	17:24	18:20		20:18	21:13	22:00	22:06	21:24	20:14		19:01	16:52	16:14
7	08:51	08:11	07:10		06:55	05:48	05:06	05:12	05:57	06:52		07:45	07:44	08:36
	16:30	17:26	18:21		20:19	21:15	22:01	22:06	21:22	20:12		18:58	16:51	16:14
8	08:50	08:09	07:08		06:52	05:46	05:05	05:13	05:59	06:53		07:47	07:46	08:38
	16:31	17:28	18:23		20:21	21:16	22:02	22:05	21:20	20:10		18:56	16:49	16:14
9	08:50	08:08	07:06		06:50	05:44	05:05	05:14	06:00	06:55		07:49	07:48	08:39
	16:33	17:30	18:25		20:23	21:18	22:02	22:04	21:18	20:07		18:53	16:47	16:13
10	08:49	08:06	07:03		06:48	05:42	05:04	05:15	06:02	06:57		07:51	07:50	08:40
	16:34	17:32	18:27		20:25	21:20	22:03	22:03	21:16	20:05		18:51	16:45	16:13
11	08:48	08:04	07:01		06:45	05:40	05:04	05:16	06:04	06:59		07:53	07:52	08:41
	16:36	17:34	18:29		20:27	21:22	22:04	22:02	21:14	20:02		18:49	16:43	16:13
12	08:47	08:02	06:58		06:43	05:39	05:03	05:17	06:05	07:00		07:54	07:54	08:42
	16:37	17:36	18:31		20:29	21:23	22:05	22:01	21:12	20:00		18:46	16:42	16:13
13	08:47	08:00	06:56		06:40	05:37	05:03	05:18	06:07	07:02		07:56	07:56	08:43
	16:39	17:38	18:33		20:31	21:25	22:06	22:00	21:10	19:57		18:44	16:40	16:12
14	08:46	07:58	06:54		06:38	05:35	05:03	05:20	06:09	07:04		07:58	07:58	08:44
	16:41	17:40	18:35		20:32	21:27	22:06	21:59	21:08	19:55		18:42	16:39	16:12
15	08:45	07:56	06:51		07:15 (2)	06:36	05:02	05:21	06:11	07:06		08:00	08:00	08:45
	16:42	17:42	18:37	2	07:17 (2)	20:34	21:29	22:07	21:58	21:05	19:52		18:39	16:37	16:12
16	08:44	07:53	06:49		07:13 (2)	06:33	05:32	05:02	05:22	06:13	07:08		08:02	08:02	08:46
	16:44	17:44	18:39	5	07:18 (2)	20:36	21:30	22:07	21:57	21:03	19:50	10	07:57 (2)	18:37	16:35	16:12
17	08:43	07:51	06:46		07:10 (2)	06:31	05:30	05:02	05:24	06:14	07:09		07:44 (2)	08:04	08:03	08:47
	16:46	17:46	18:40	8	07:18 (2)	20:38	21:32	22:08	21:56	21:01	19:47	16	08:00 (2)	18:35	16:34	16:13
18	08:42	07:49	06:44		07:08 (2)	06:29	05:29	05:02	05:25	06:16	07:11		07:42 (2)	08:06	08:05	08:48
	16:48	17:48	18:42	11	07:19 (2)	20:40	21:34	22:08	21:55	20:59	19:45	18	08:00 (2)	18:32	16:32	16:13
19	08:41	07:47	06:41		07:05 (2)	06:26	05:27	05:02	05:26	06:18	07:13		07:40 (2)	08:08	08:07	08:49
	16:49	17:50	18:44	13	07:18 (2)	20:42	21:35	22:09	21:53	20:57	19:42	21	08:01 (2)	18:30	16:31	16:13
20	08:40	07:45	06:39		07:03 (2)	06:24	05:25	05:02	05:28	06:20	07:15		07:41 (2)	08:10	08:09	08:49
	16:51	17:52	18:46	15	07:18 (2)	20:44	21:37	22:09	21:52	20:54	19:40	21	08:02 (2)	18:28	16:30	16:13
21	08:38	07:43	06:36		07:00 (2)	06:22	05:24	05:02	05:29	06:21	07:16		07:43 (2)	08:11	08:11	08:50
	16:53	17:54	18:48	17	07:17 (2)	20:45	21:38	22:09	21:51	20:52	19:37	20	08:03 (2)	18:26	16:28	16:14
22	08:37	07:40	06:34		06:58 (2)	06:20	05:23	05:02	05:31	06:23	07:18		07:44 (2)	08:13	08:13	08:50
	16:55	17:56	18:50	19	07:17 (2)	20:47	21:40	22:09	21:49	20:50	19:35	18	08:02 (2)	18:23	16:27	16:14
23	08:36	07:38	06:31		06:55 (2)	06:17	05:21	05:03	05:32	06:25	07:20		07:46 (2)	08:15	08:14	08:51
	16:57	17:58	18:52	21	07:16 (2)	20:49	21:41	22:10	21:48	20:48	19:33	16	08:02 (2)	18:21	16:26	16:15
24	08:34	07:36	06:29		06:54 (2)	06:15	05:20	05:03	05:34	06:27	07:22		07:48 (2)	08:17	08:16	08:51
	16:58	18:00	18:54	21	07:15 (2)	20:51	21:43	22:10	21:46	20:45	19:30	14	08:02 (2)	18:19	16:25	16:15
25	08:33	07:34	06:27		06:54 (2)	06:13	05:18	05:03	05:35	06:29	07:24		07:50 (2)	07:19	08:18	08:52
	17:00	18:02	18:55	19	07:13 (2)	20:53	21:44	22:10	21:45	20:43	19:28	11	08:01 (2)	17:17	16:23	16:16
26	08:32	07:31	06:24		06:56 (2)	06:11	05:17	05:04	05:37	06:30	07:25		07:52 (2)	07:21	08:20	08:52
	17:02	18:04	18:57	16	07:12 (2)	20:55	21:46	22:10	21:43	20:41	19:25	9	08:01 (2)	17:15	16:22	16:17
27	08:30	07:29	06:22		06:57 (2)	06:09	05:16	05:04	05:38	06:32	07:27		07:53 (2)	07:23	08:21	08:52
	17:04	18:06	18:59	11	07:08 (2)	20:56	21:47	22:10	21:42	20:38	19:23	6	07:59 (2)	17:12	16:21	16:18
28	08:29	07:27	06:19			06:06	05:15	05:05	05:40	06:34	07:29		07:55 (2)	07:25	08:23	08:52
	17:06	18:08	19:01			20:58	21:49	22:09	21:40	20:36	19:20	3	07:58 (2)	17:10	16:20	16:18
29	08:27		07:17			06:04	05:14	05:05	05:42	06:36	07:31			07:27	08:25	08:53
	17:08		20:03			21:00	21:50	22:09	21:38	20:34	19:18			17:08	16:19	16:19
30	08:25		07:14			06:02	05:13	05:06	05:43	06:37	07:32			07:29	08:26	08:53
	17:10		20:05			21:02	21:51	22:09	21:37	20:31	19:15			17:06	16:19	16:20
31	08:24		07:12				05:12		05:45	06:39				07:31		08:53
	17:12		20:07				21:53		21:35	20:29				17:04		16:21
Potential sun hours	250	273	367		420	494	510	512	460	382		328	259	233
Total, worst case				178							183			
Sun reduction				0.22							0.25			
Oper. time red.				1.00							1.00			
Wind dir. red.				0.64							0.64			
Total reduction				0.14							0.16			
Total, real				25							29			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

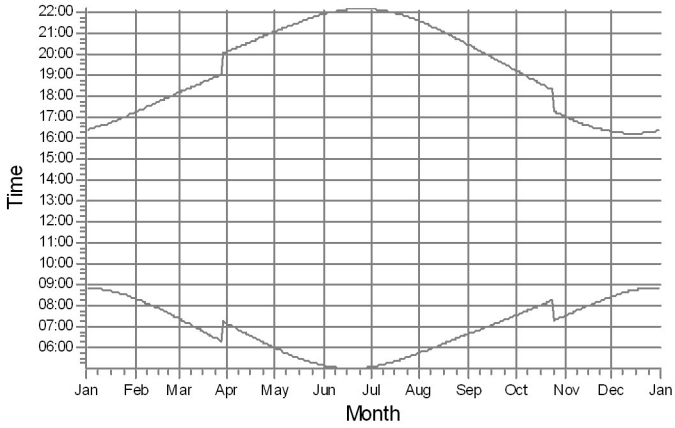
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

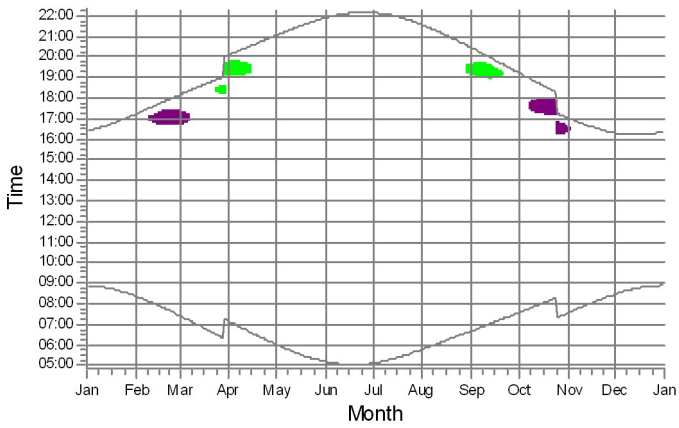
SHADOW - Calendar, graphical

Calculation: Curtailment Stratedy

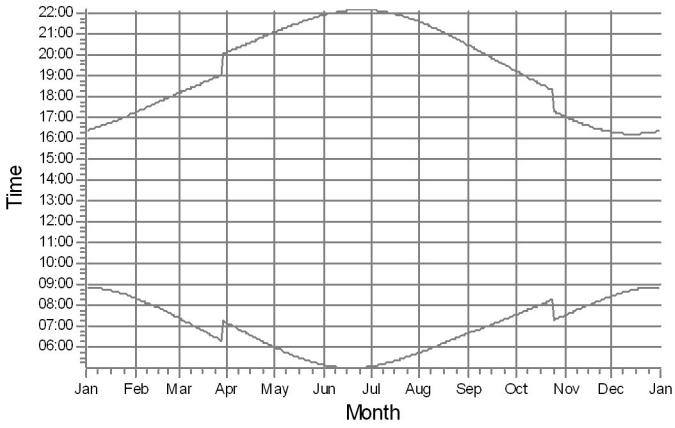
A: H001*



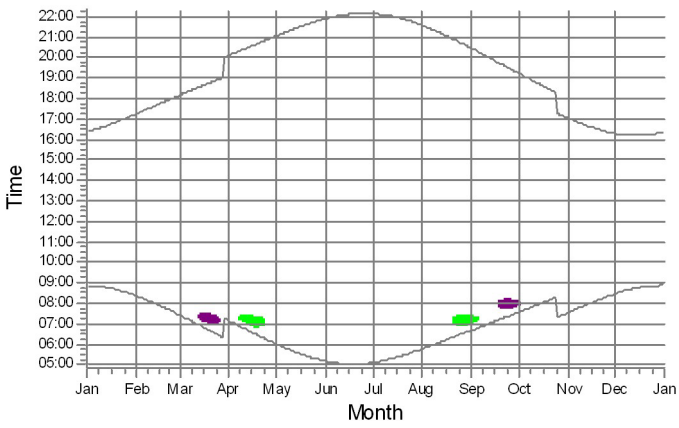
B: H002*



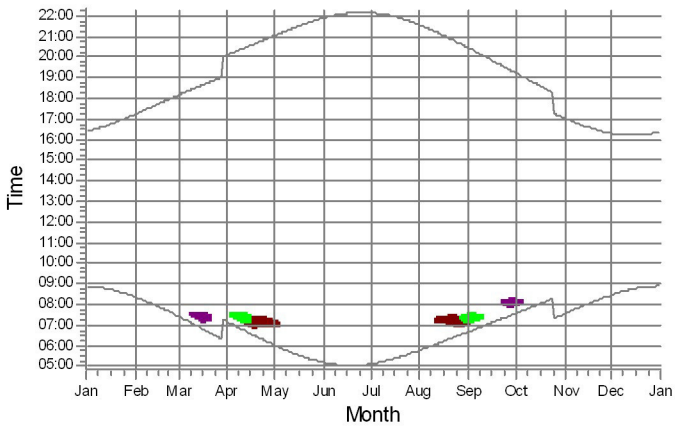
C: H003



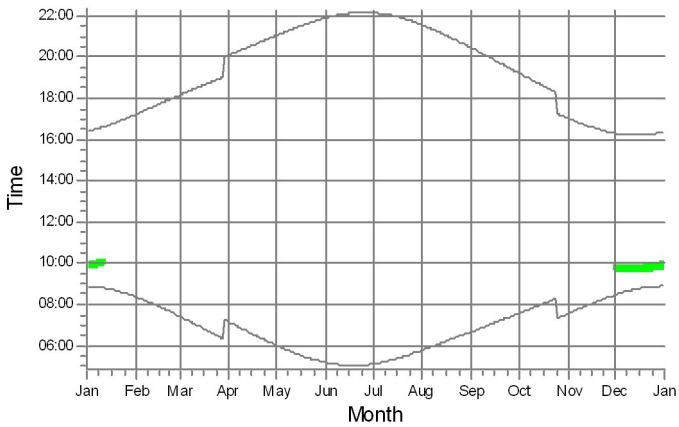
D: H004*



E: H005*



F: H006*



WTGs

8: T08 9: T09 10: T10 11: T11

** Results reduced by flicker curtailment*

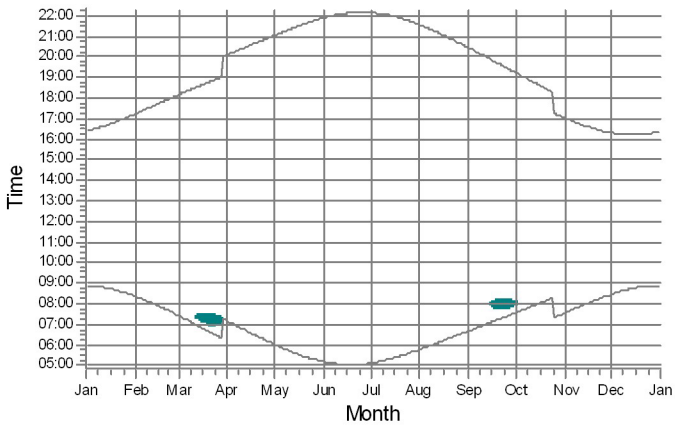
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

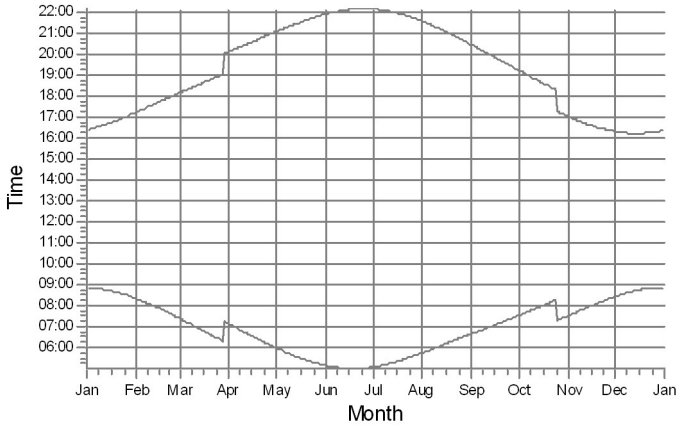
SHADOW - Calendar, graphical

Calculation: Curtailment Stratedy

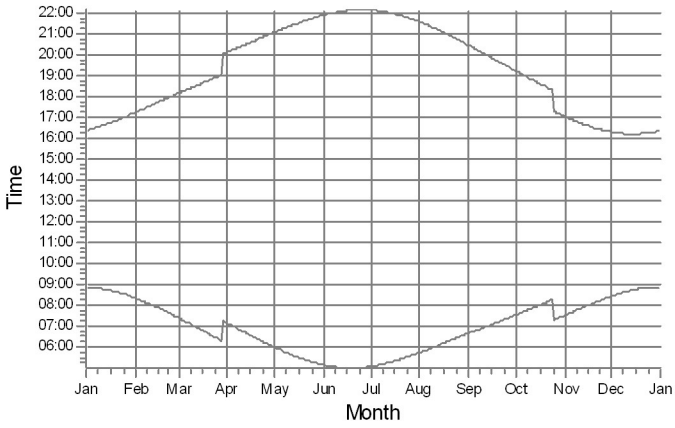
G: H007*



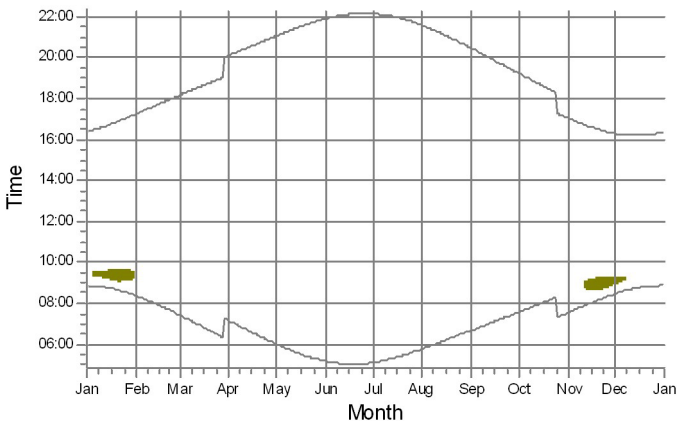
H: H008



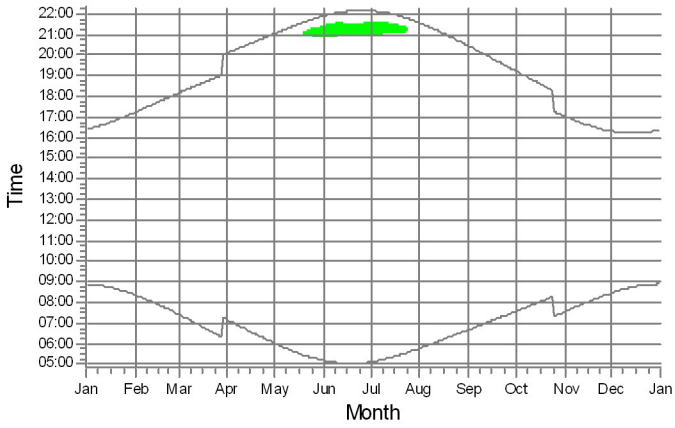
I: H009



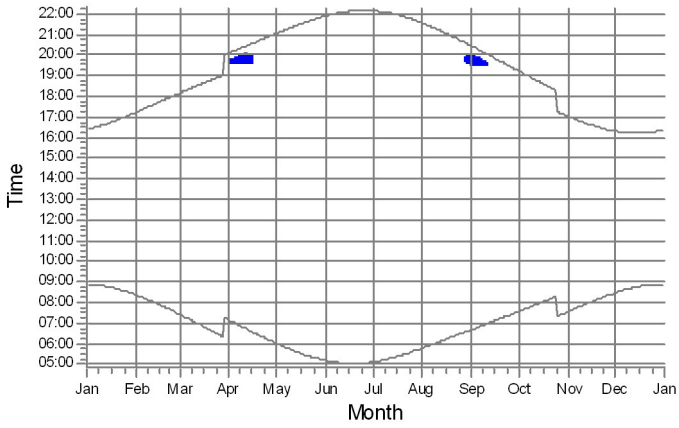
J: H010*



K: H011*



L: H012*



WTGs

3: T03	6: T06	9: T09
4: T04	7: T07	10: T10
5: T05	8: T08	11: T11

** Results reduced by flicker curtailment*

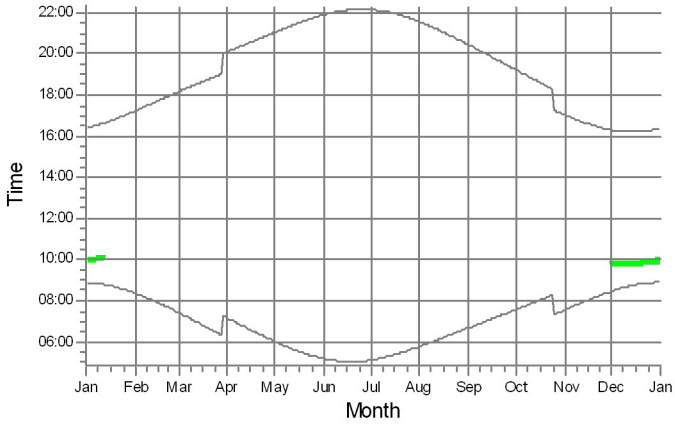
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

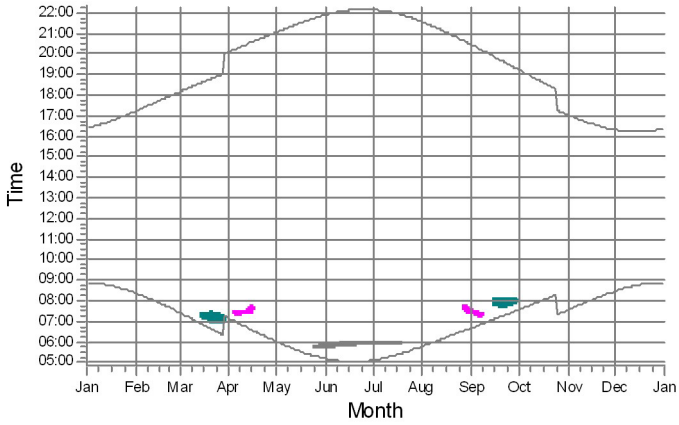
SHADOW - Calendar, graphical

Calculation: Curtailment Stratedy

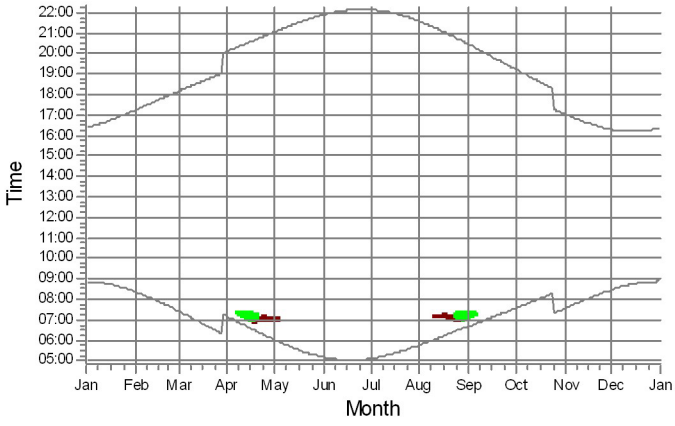
M: H013*



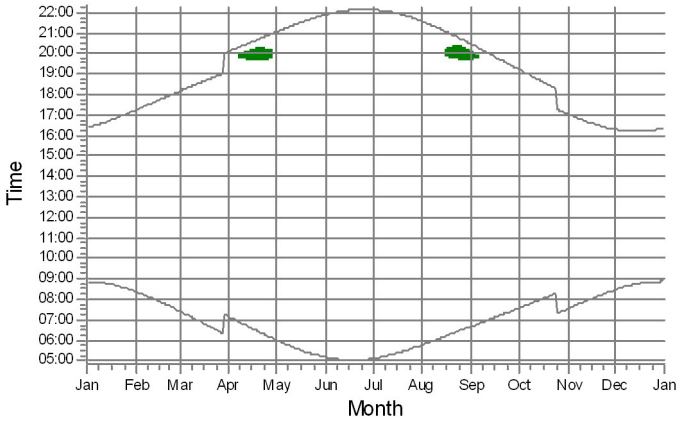
N: H014*



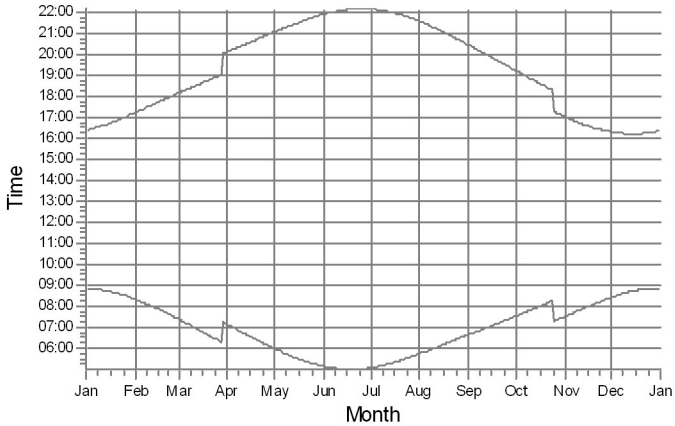
O: H015*



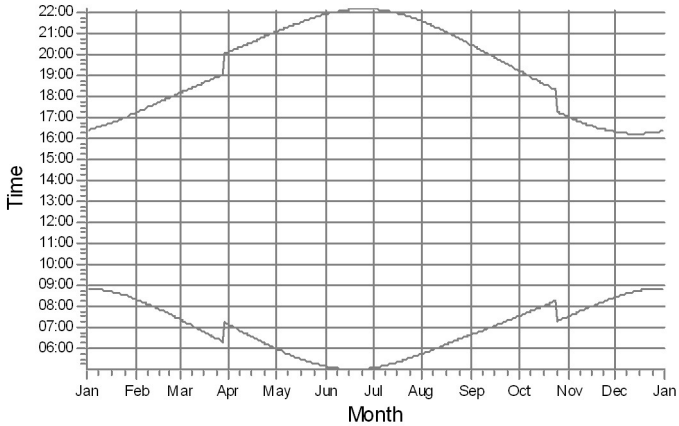
P: H016*



Q: H018



R: H019



WTGs

	1: T01		4: T04		6: T06		9: T09
	3: T03		5: T05		8: T08		

** Results reduced by flicker curtailment*

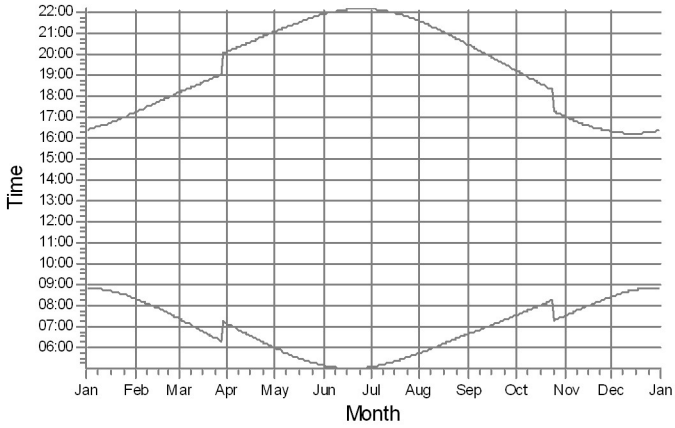
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

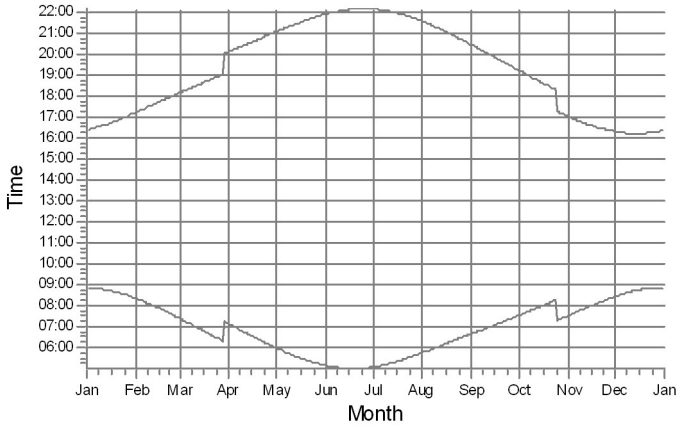
SHADOW - Calendar, graphical

Calculation: Curtailment Stratedy

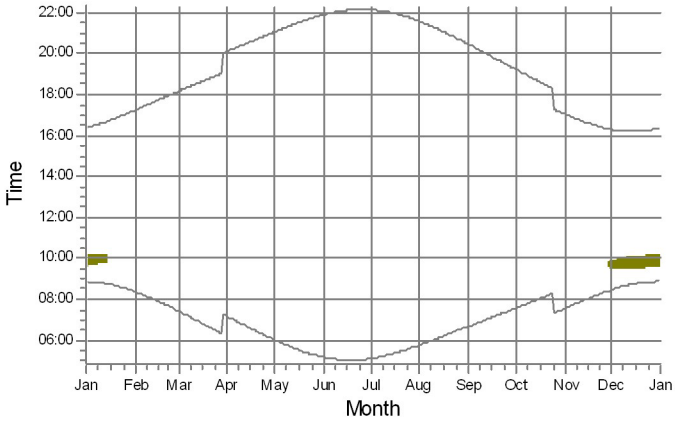
S: H020



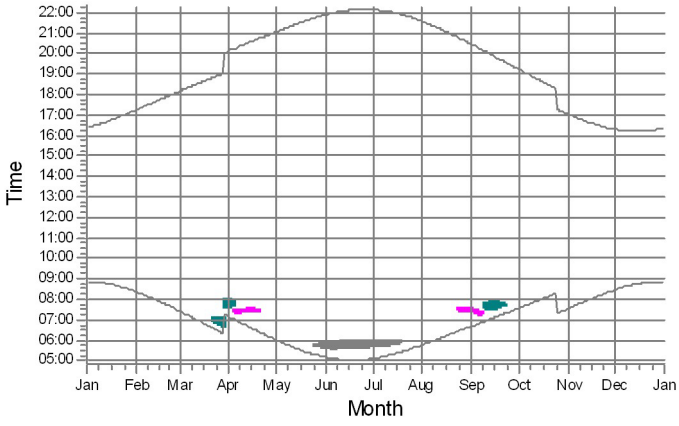
T: H021*



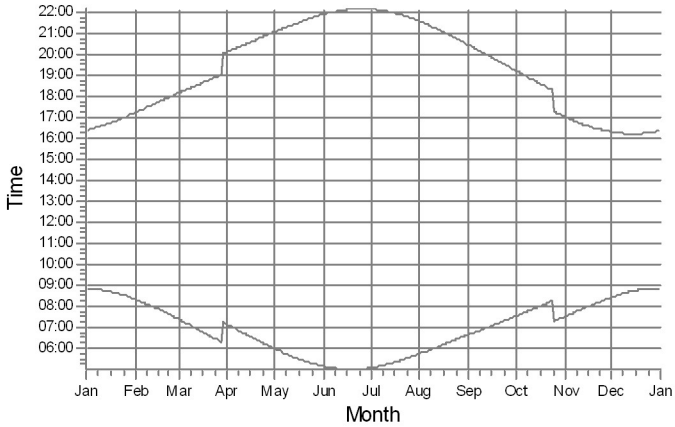
U: H022*



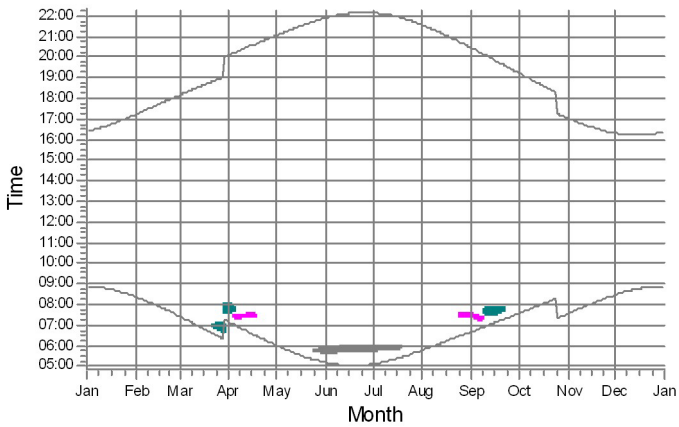
V: H023*



W: H024



X: H025*



WTGs

4: T04	6: T06	9: T09
5: T05	8: T08	10: T10

** Results reduced by flicker curtailment*

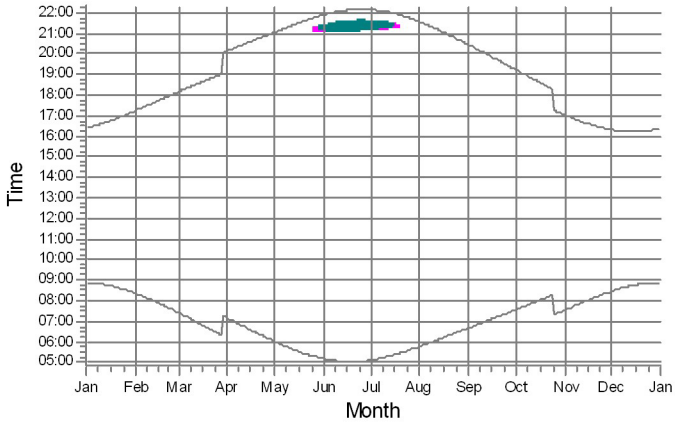
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

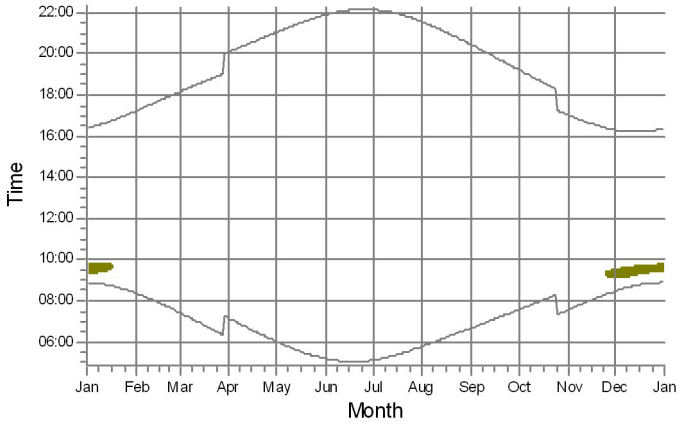
SHADOW - Calendar, graphical

Calculation: Curtailment Stratedy

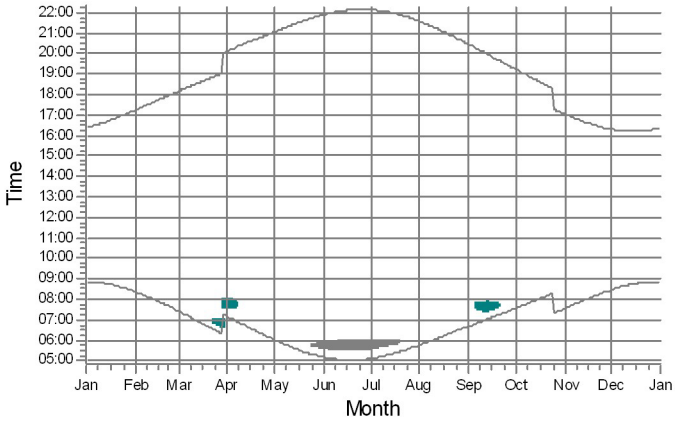
Y: H027



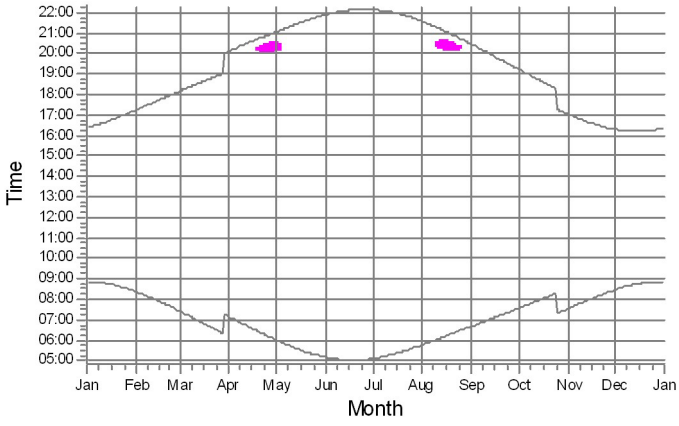
Z: H028



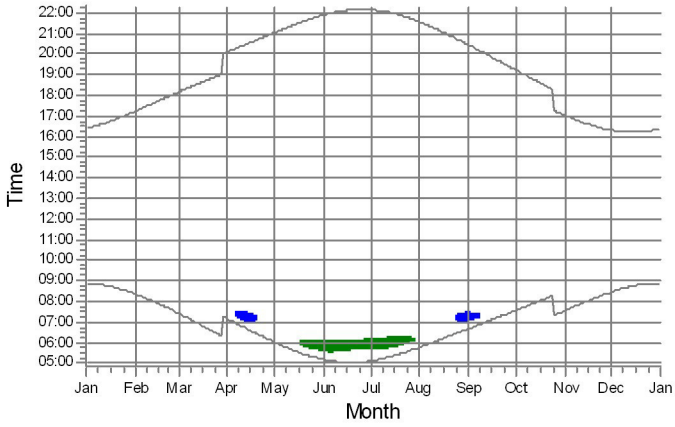
AA: H029*



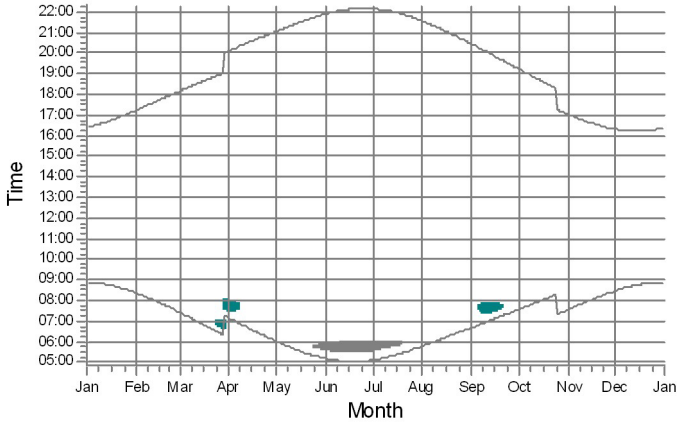
AB: H030*



AC: H031*



AD: H032*



WTGs

	1: T01		3: T03		5: T05		7: T07
	2: T02		4: T04		6: T06		10: T10

** Results reduced by flicker curtailment*

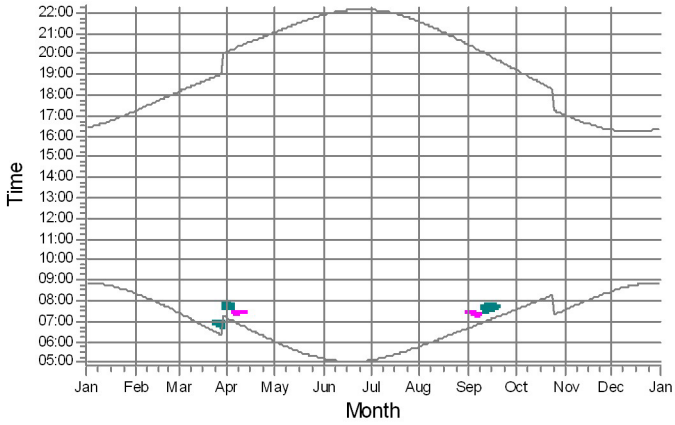
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

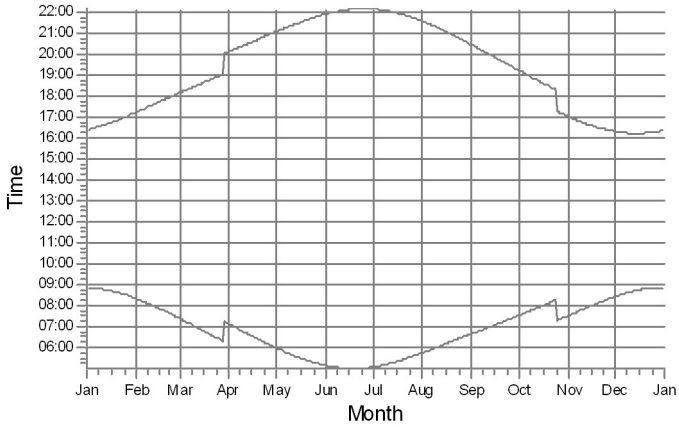
SHADOW - Calendar, graphical

Calculation: Curtailment Stratedy

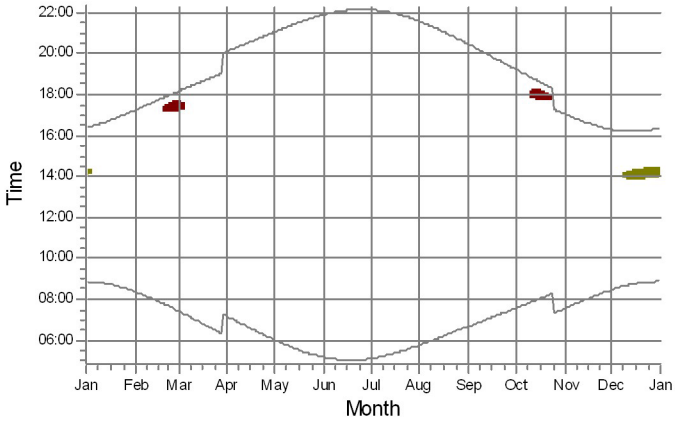
AE: H033*



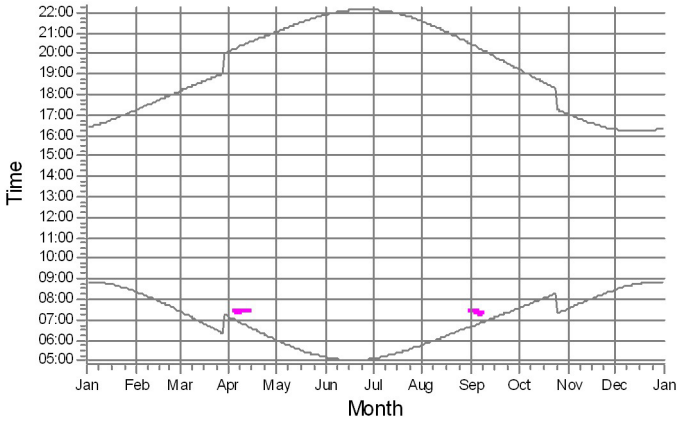
AF: H034



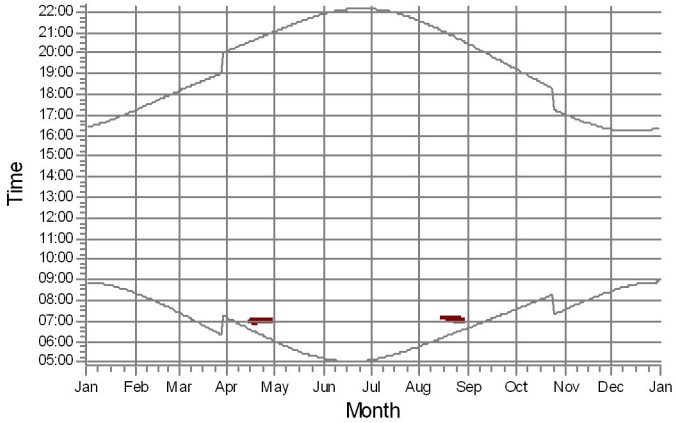
AG: H035*



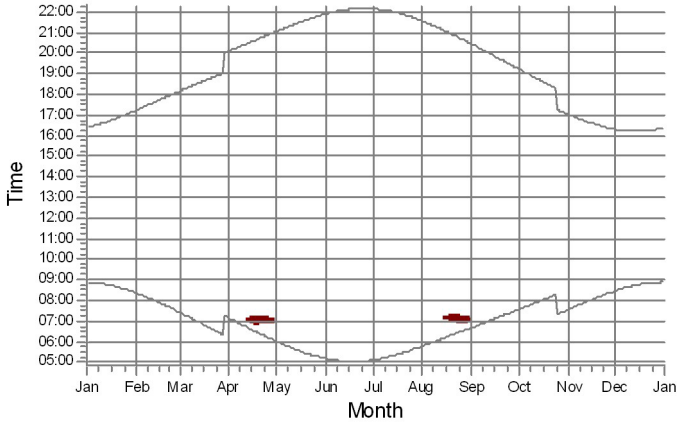
AH: H036*



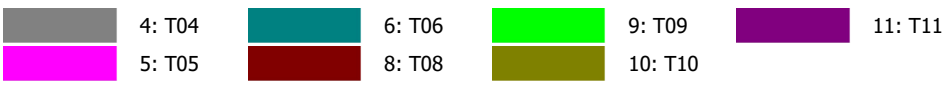
AI: H037*



AJ: H038*



WTGs



** Results reduced by flicker curtailment*

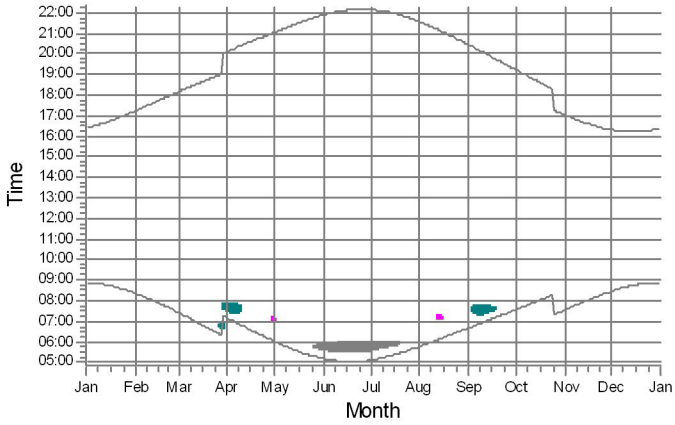
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

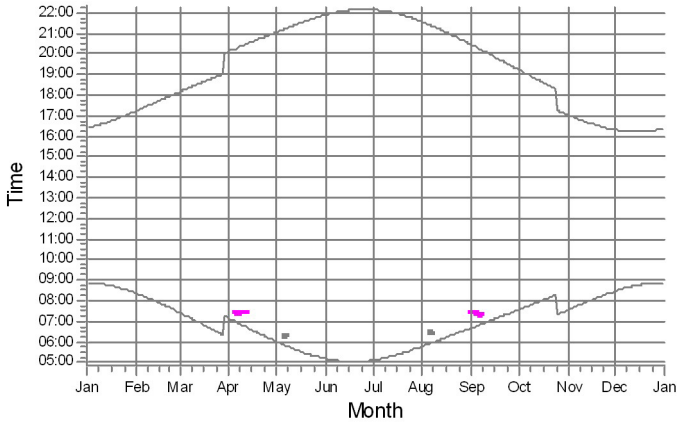
SHADOW - Calendar, graphical

Calculation: Curtailment Stratedy

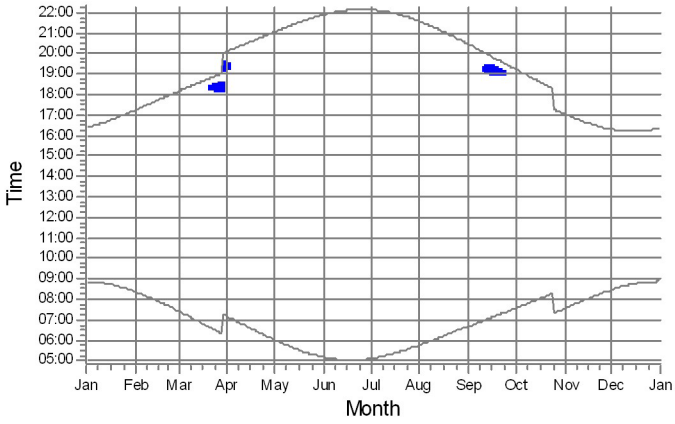
AK: H039*



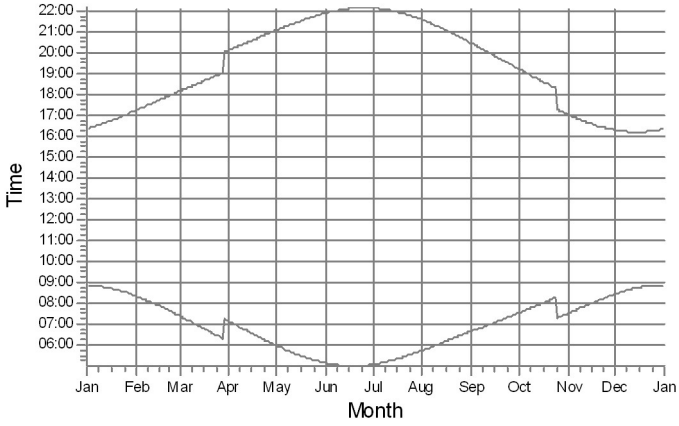
AL: H040*



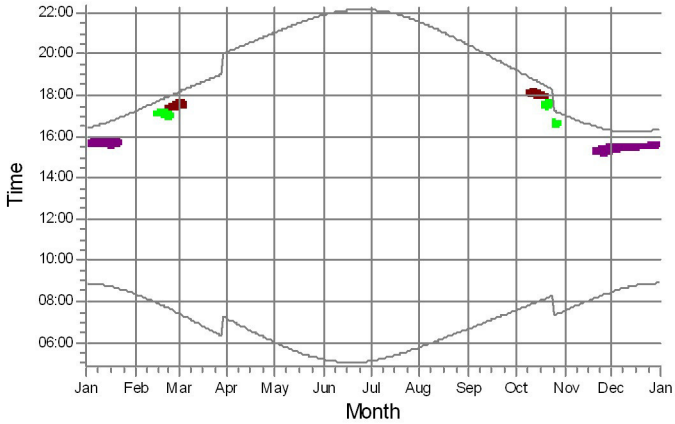
AM: H041*



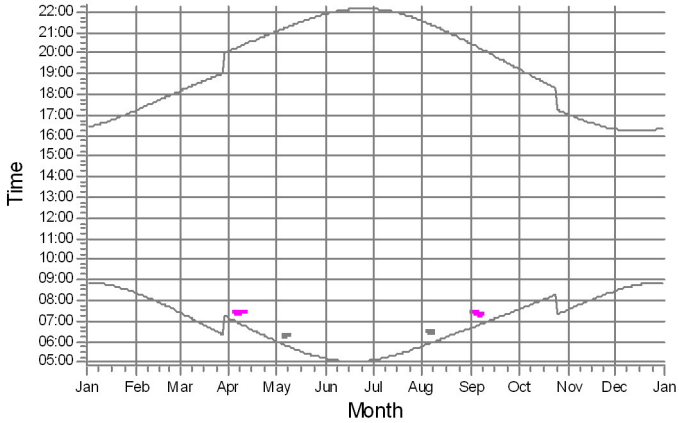
AN: H042



AO: H043*



AP: H044*



WTGs

	3: T03		5: T05		8: T08		10: T10
	4: T04		6: T06		9: T09		11: T11

** Results reduced by flicker curtailment*

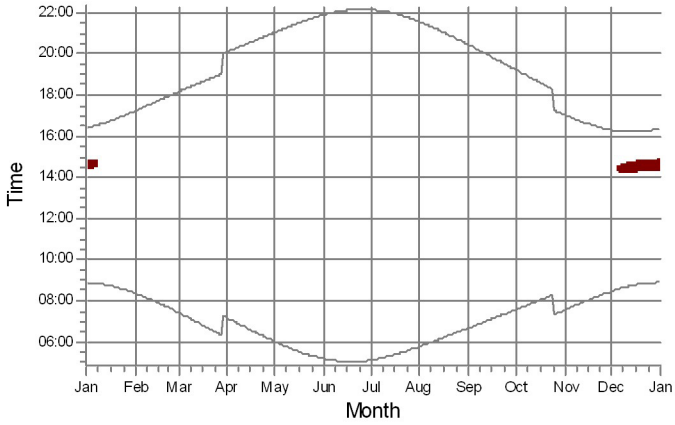
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

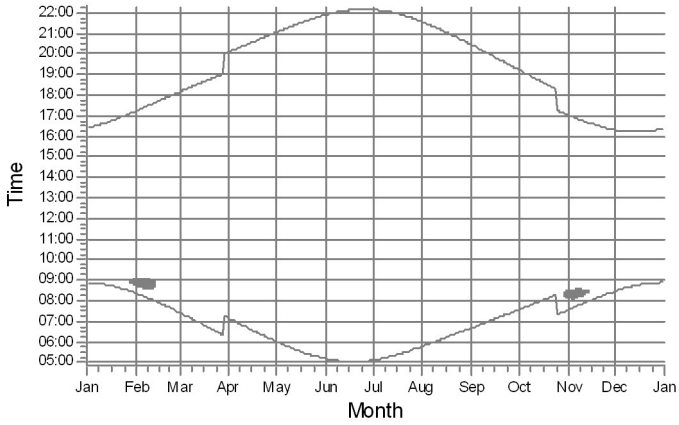
SHADOW - Calendar, graphical

Calculation: Curtailment Stratedy

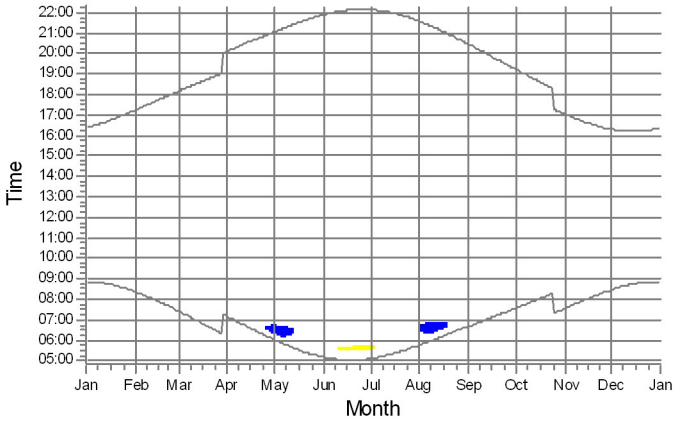
AQ: H045*



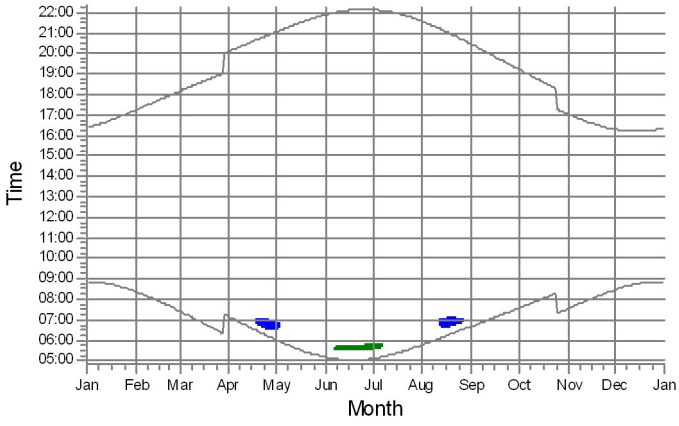
AR: H046*



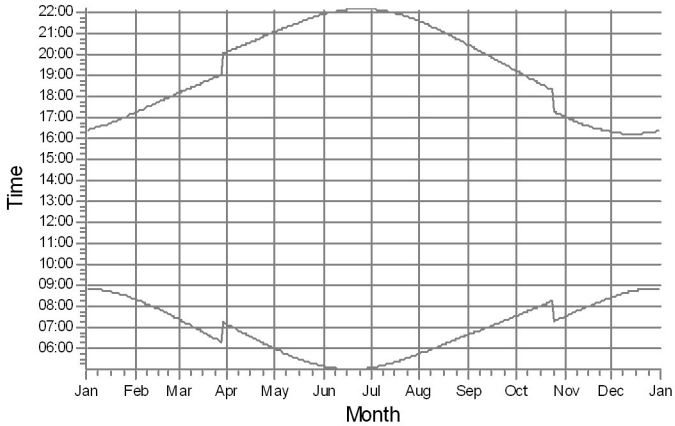
AS: H047*



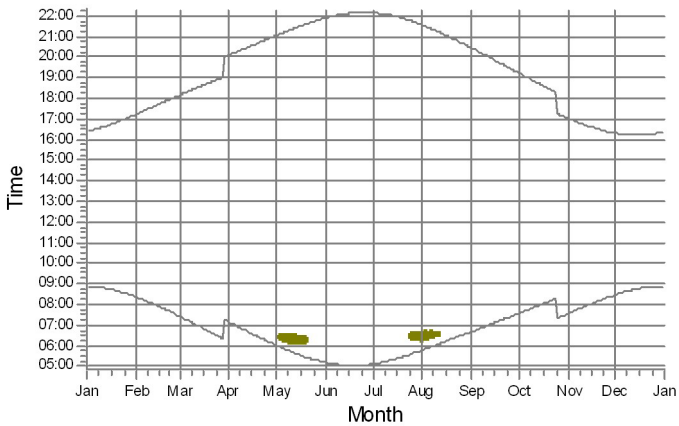
AT: H048*



AU: H049*



AV: H050*



WTGs

	1: T01		3: T03		8: T08		11: T11
	2: T02		4: T04		10: T10		

** Results reduced by flicker curtailment*

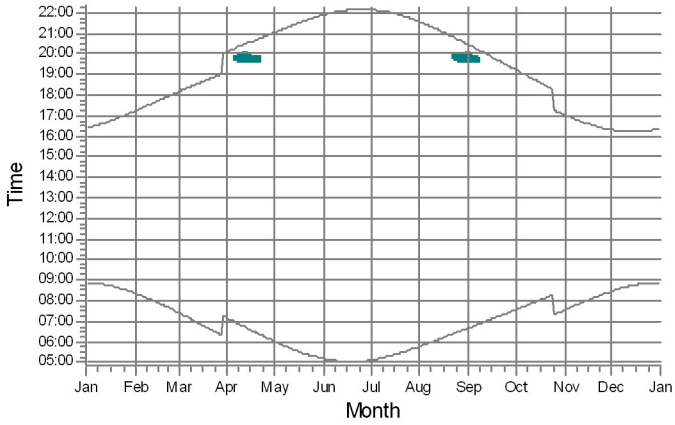
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

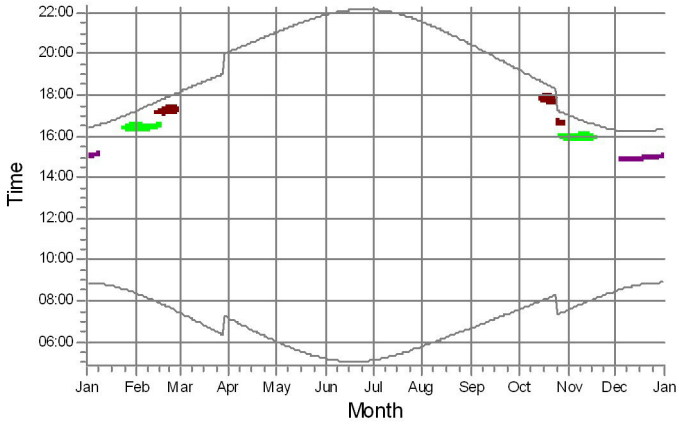
SHADOW - Calendar, graphical

Calculation: Curtailment Stratedy

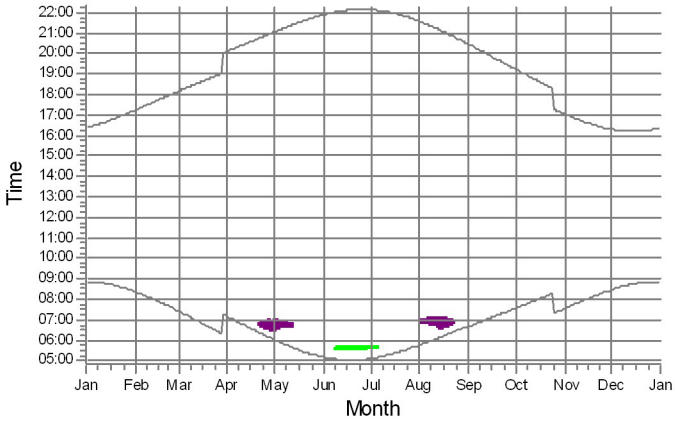
AW: H052*



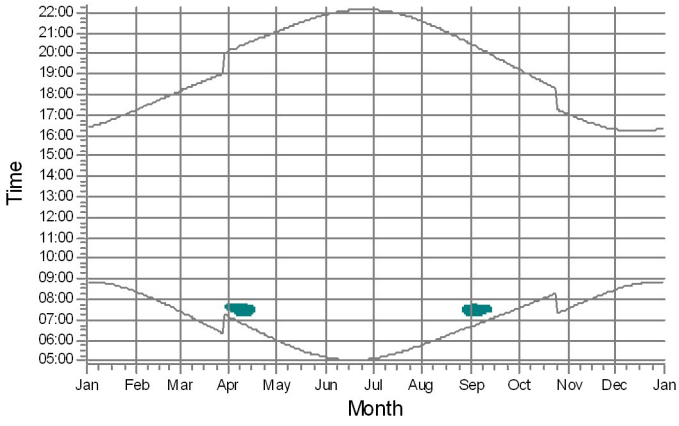
AX: H053*



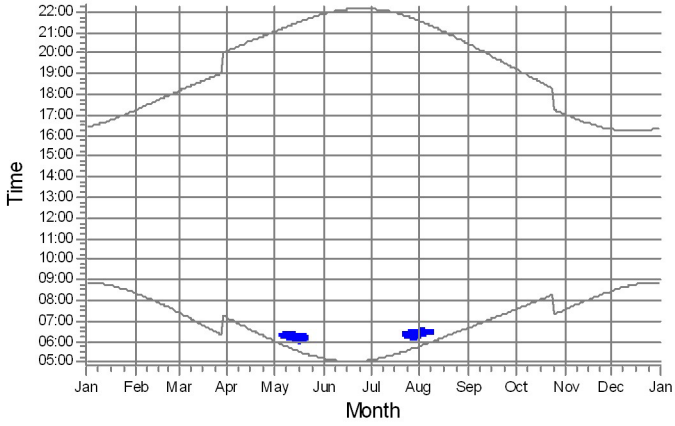
AY: H054*



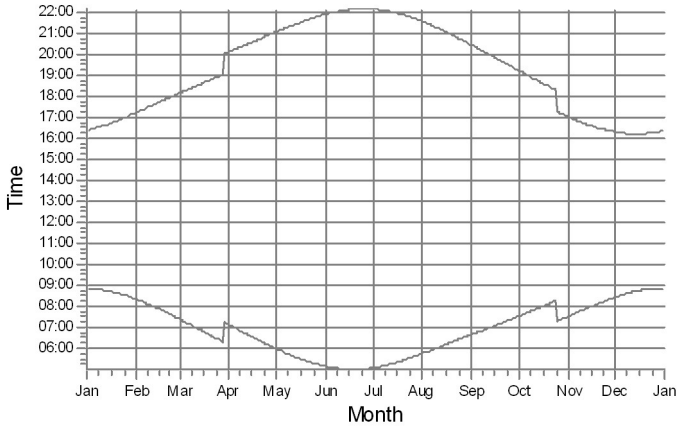
AZ: H055*



BA: H056



BB: H058



WTGs

3: T03	6: T06	8: T08	11: T11
5: T05	7: T07	9: T09	

** Results reduced by flicker curtailment*

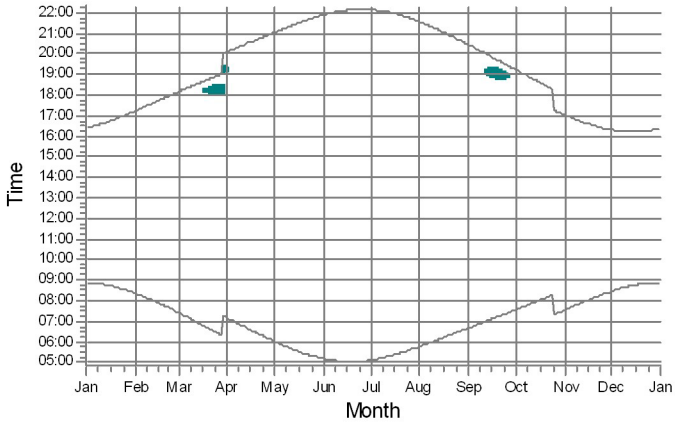
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

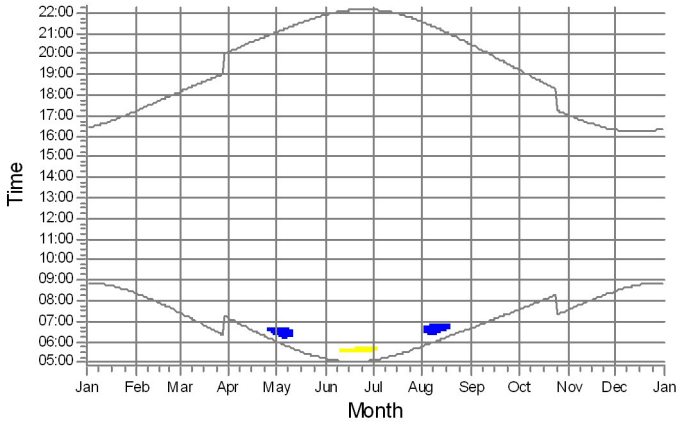
SHADOW - Calendar, graphical

Calculation: Curtailment Stratedy

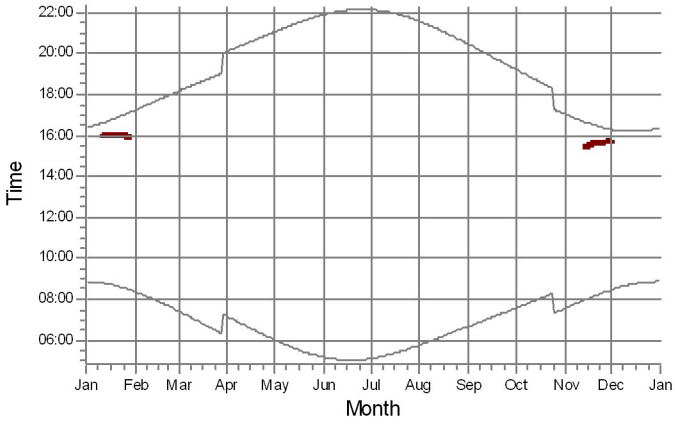
BC: H059*



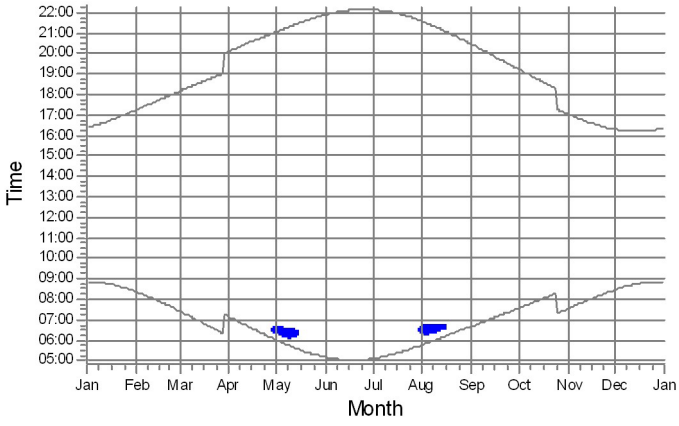
BD: H060*



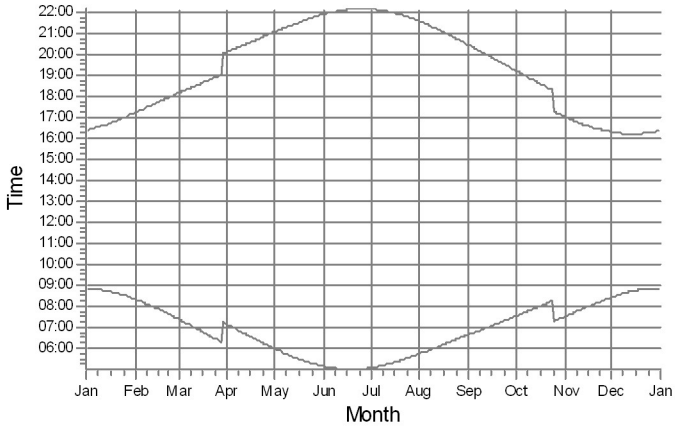
BE: H061*



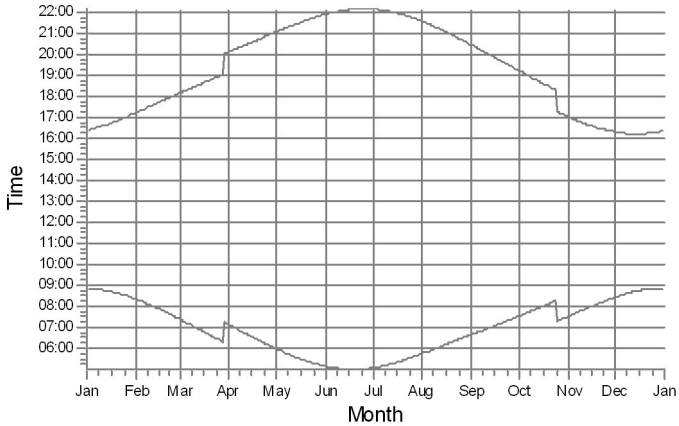
BF: H062



BG: H063



BH: H064*



WTGs

2: T02	6: T06	8: T08
3: T03	7: T07	

** Results reduced by flicker curtailment*

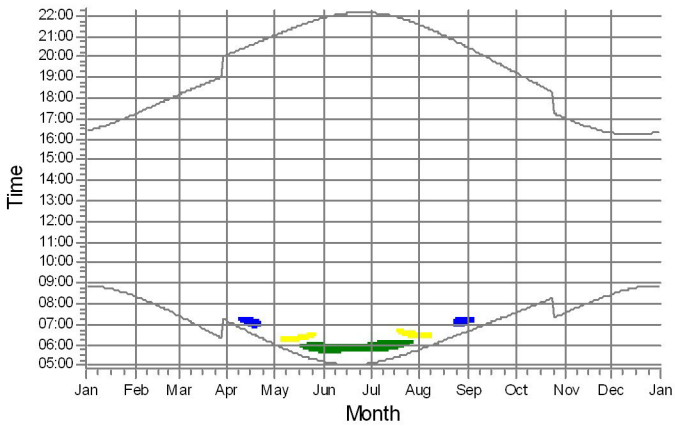
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

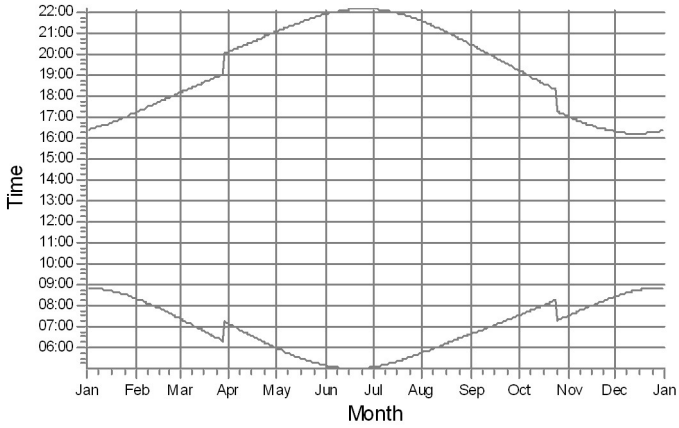
SHADOW - Calendar, graphical

Calculation: Curtailment Stratedy

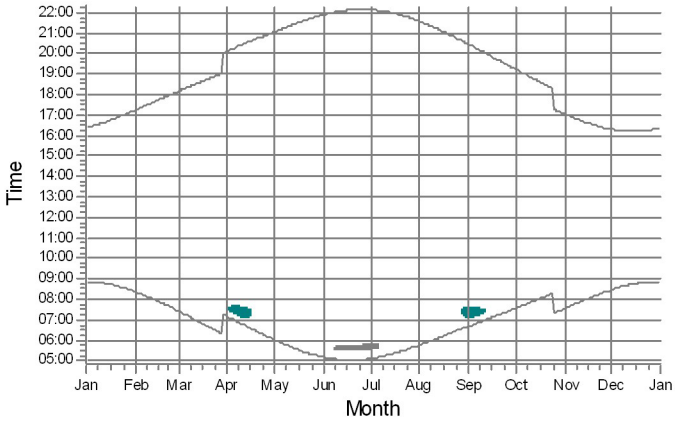
BI: H065*



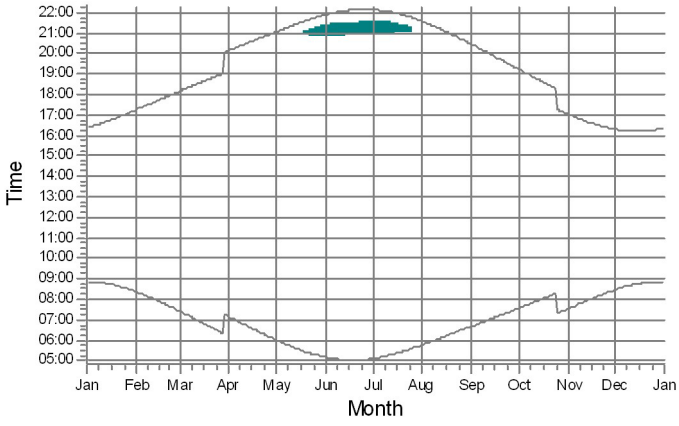
BJ: H066



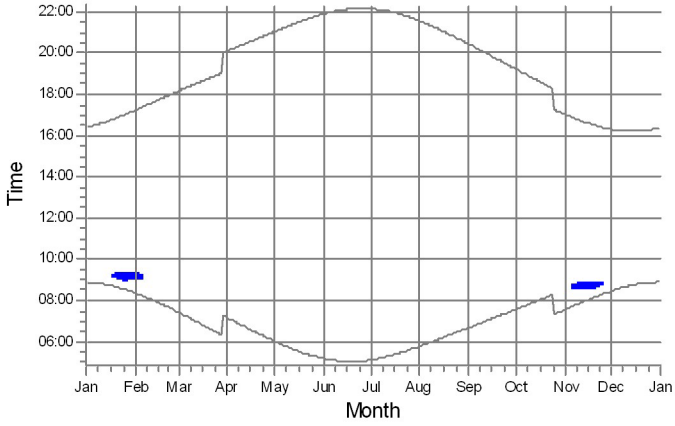
BK: H067*



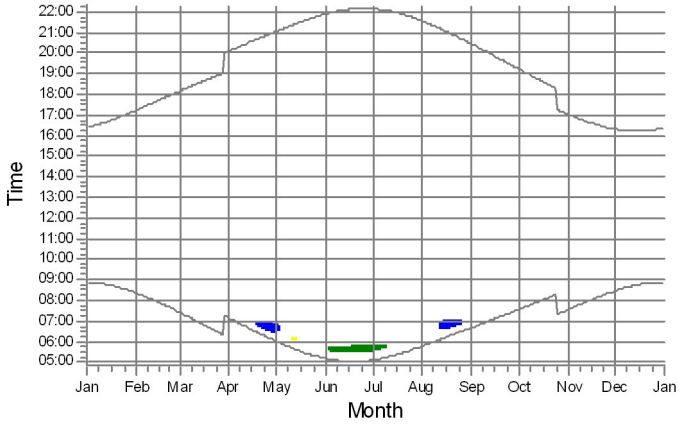
BL: H068



BM: H070*



BN: H071*



WTGs

	1: T01		3: T03		5: T05
	2: T02		4: T04		6: T06

** Results reduced by flicker curtailment*

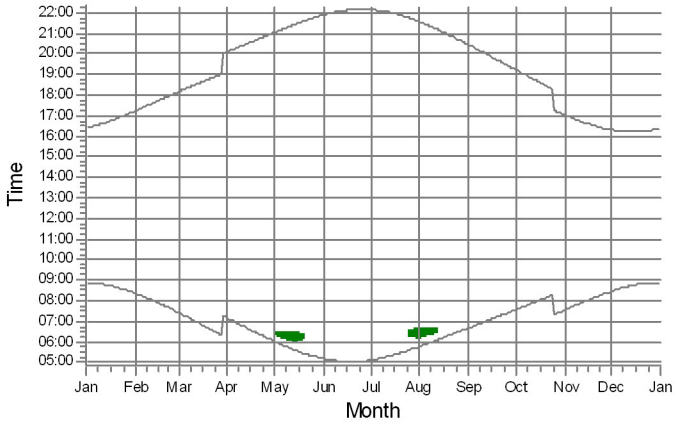
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

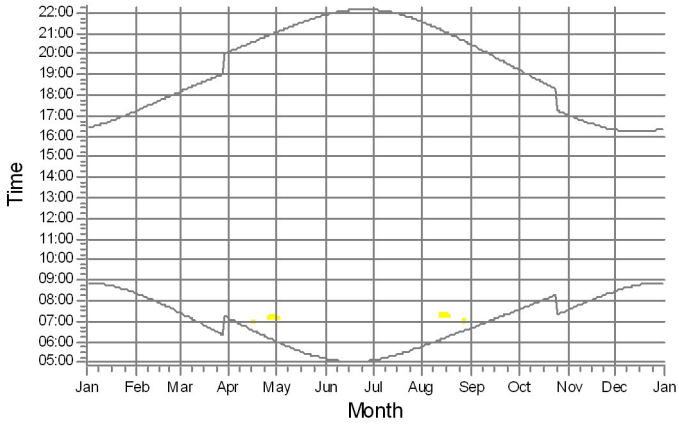
SHADOW - Calendar, graphical

Calculation: Curtailment Stratedy

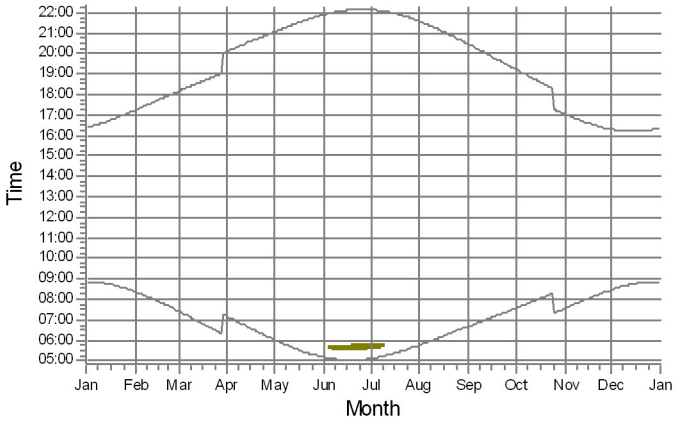
BO: H072*



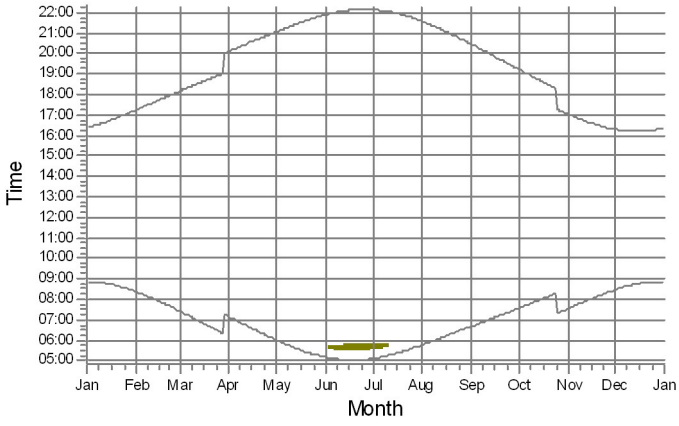
BP: H073*



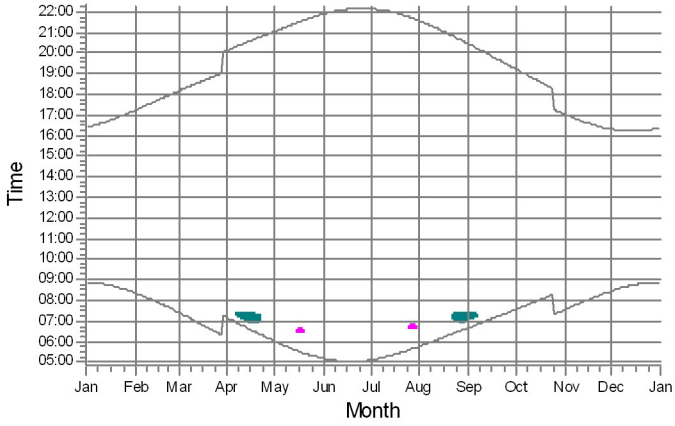
BQ: H074



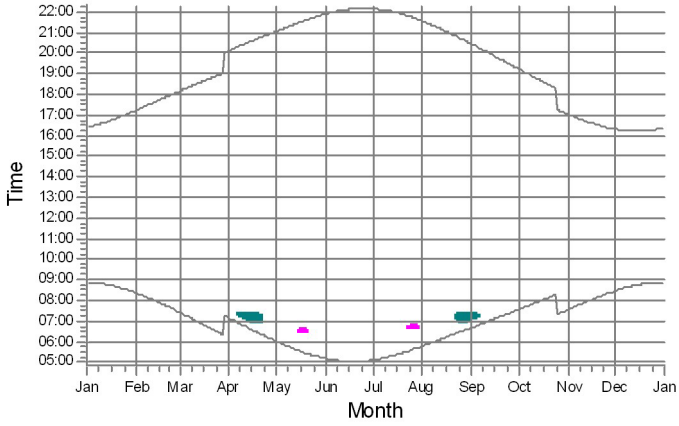
BR: H075



BS: H076*



BT: H077*



WTGs

1: T01	5: T05	10: T10
2: T02	6: T06	

** Results reduced by flicker curtailment*

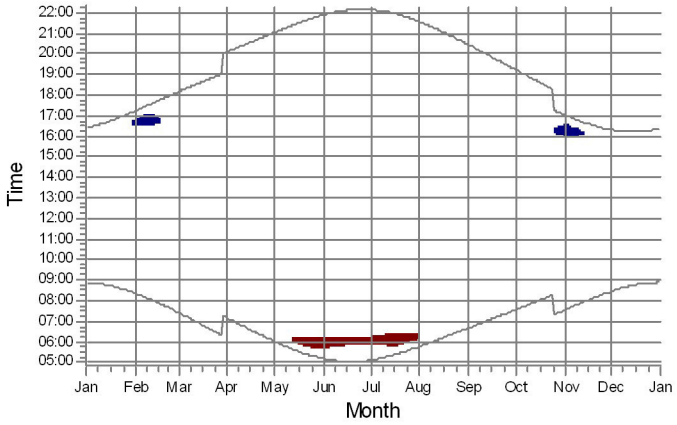
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

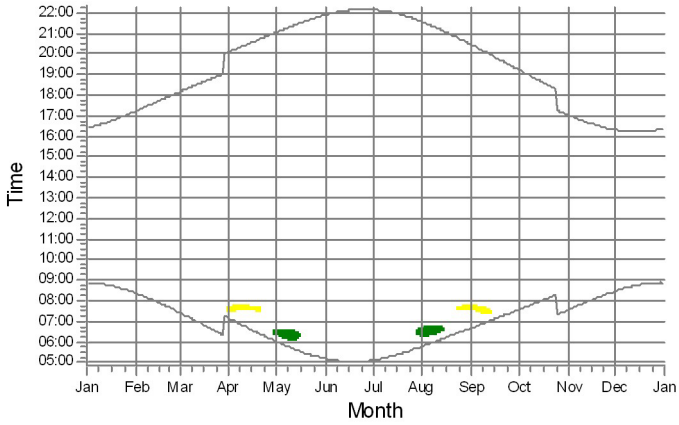
SHADOW - Calendar, graphical

Calculation: Curtailment Stratedy

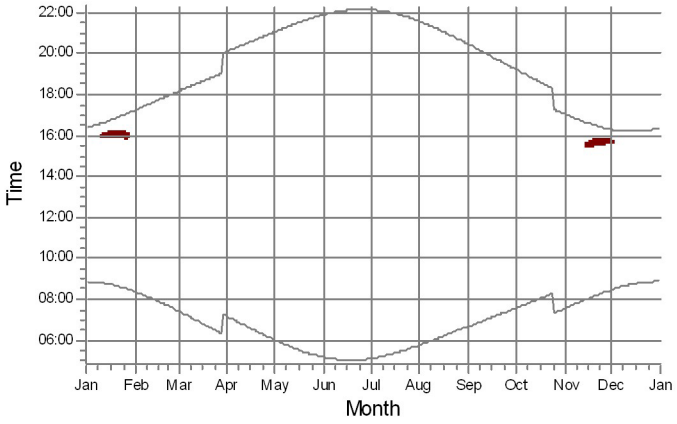
BU: H078



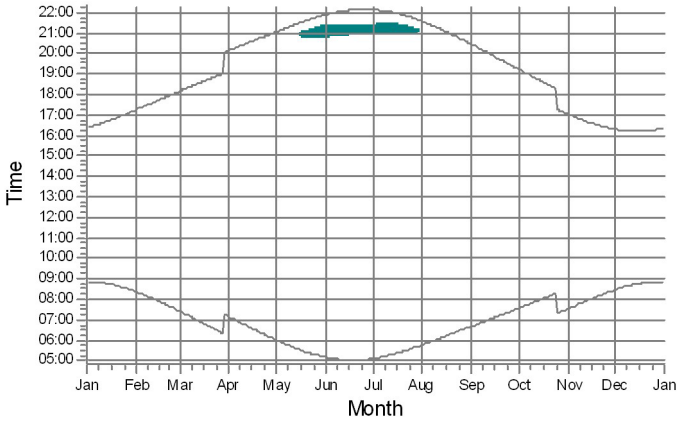
BV: H079*



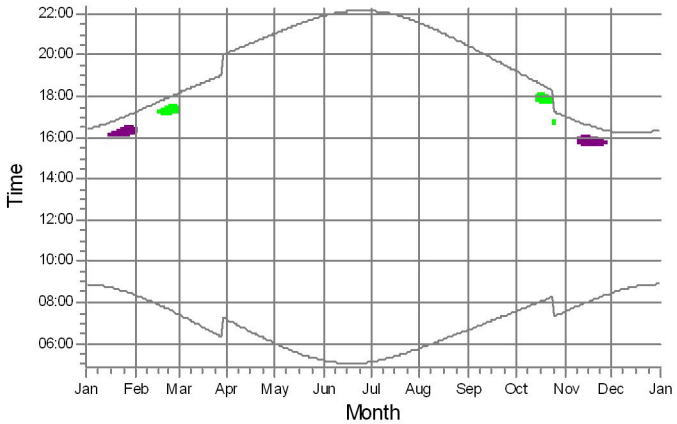
BW: H081*



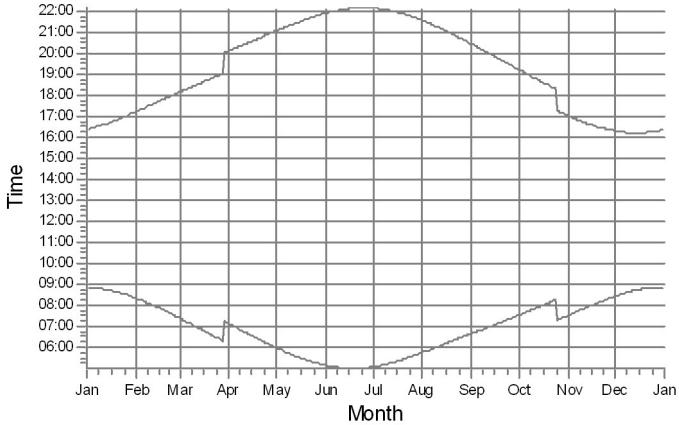
BX: H083



BY: H084*



BZ: H085*



WTGs

1: T01	6: T06	8: T08	10: T10
2: T02	7: T07	9: T09	11: T11

** Results reduced by flicker curtailment*

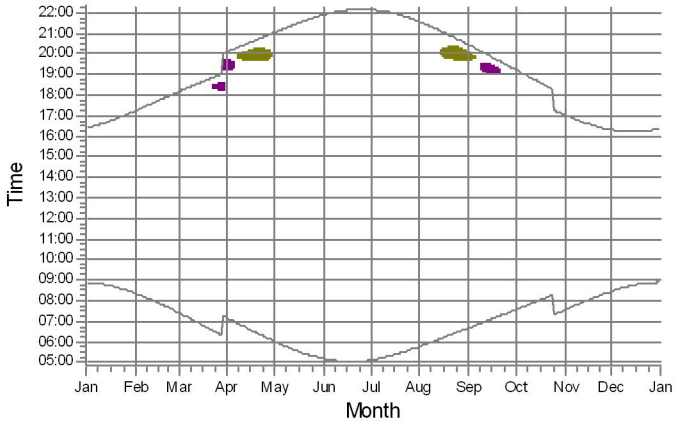
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

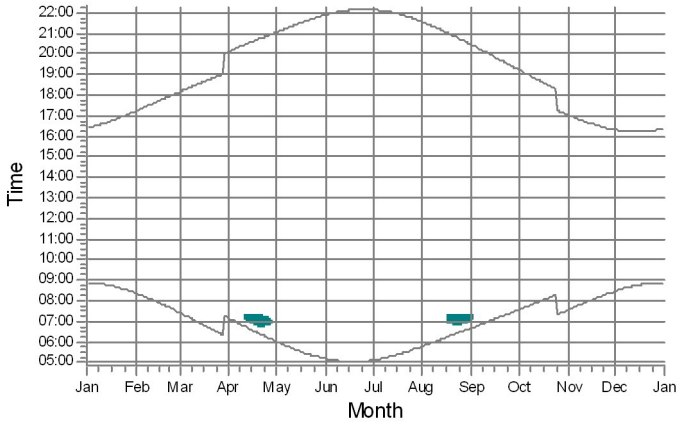
SHADOW - Calendar, graphical

Calculation: Curtailment Stratedy

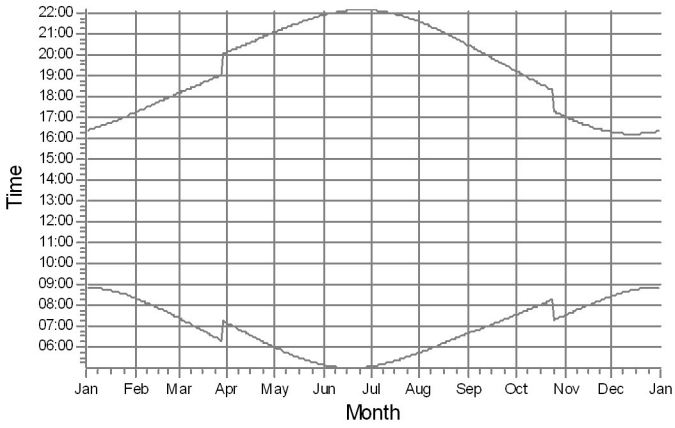
CA: H086



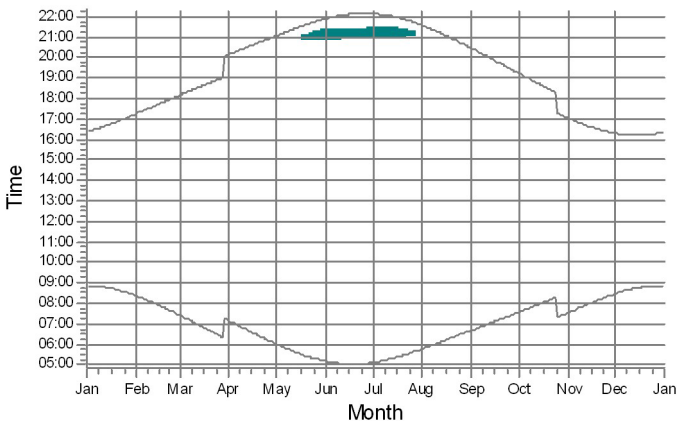
CB: H087*



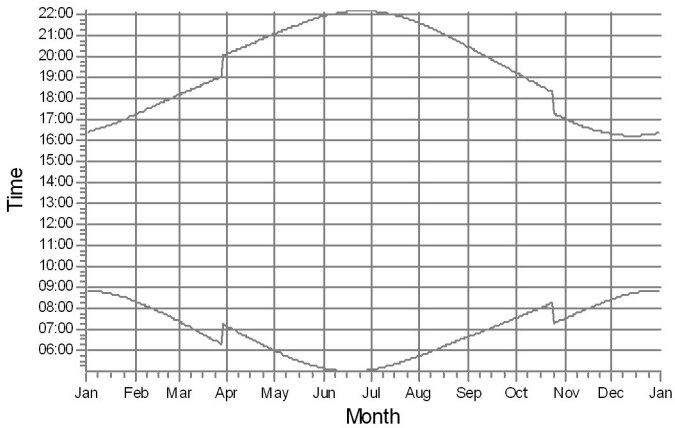
CC: H089



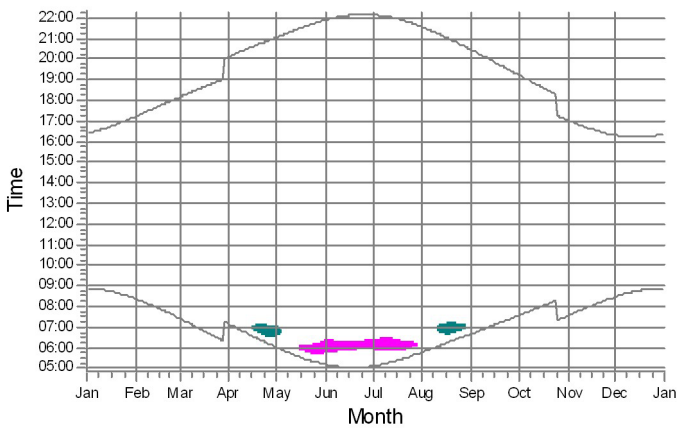
CD: H090



CE: H091



CF: H093*



WTGs

5: T05 6: T06 10: T10 11: T11

** Results reduced by flicker curtailment*

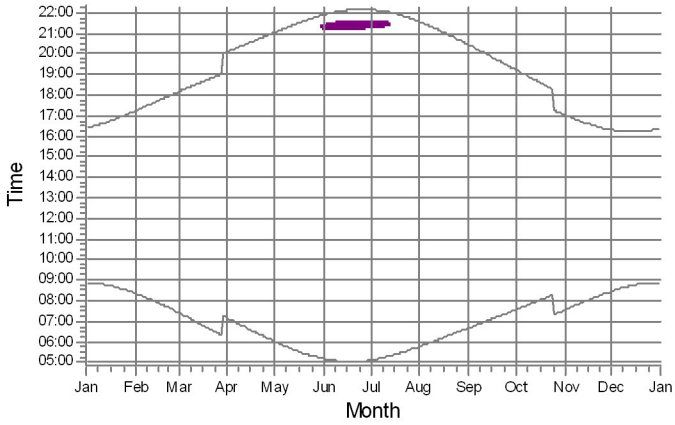
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

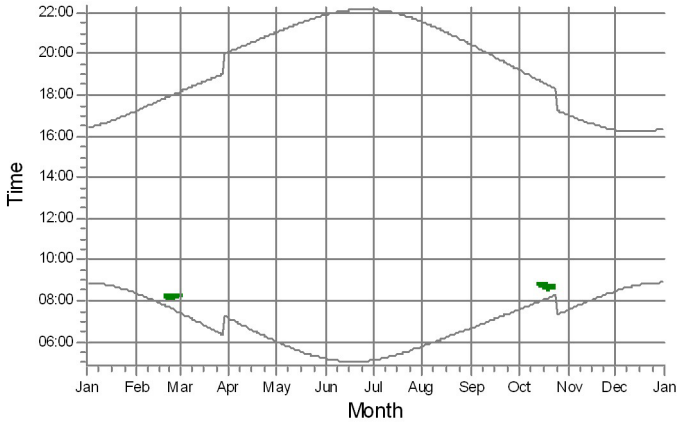
SHADOW - Calendar, graphical

Calculation: Curtailment Stratedy

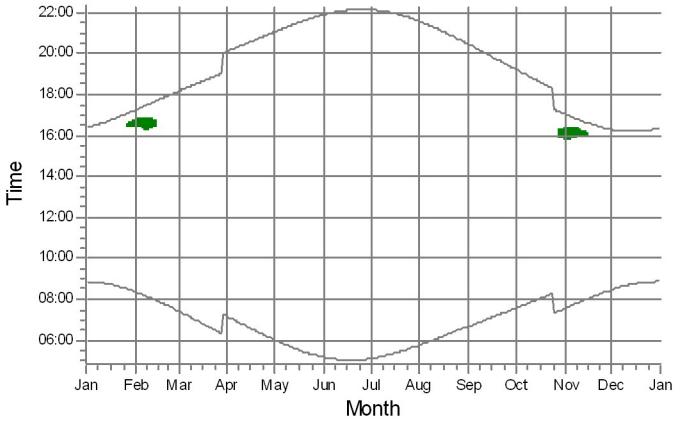
CG: H094



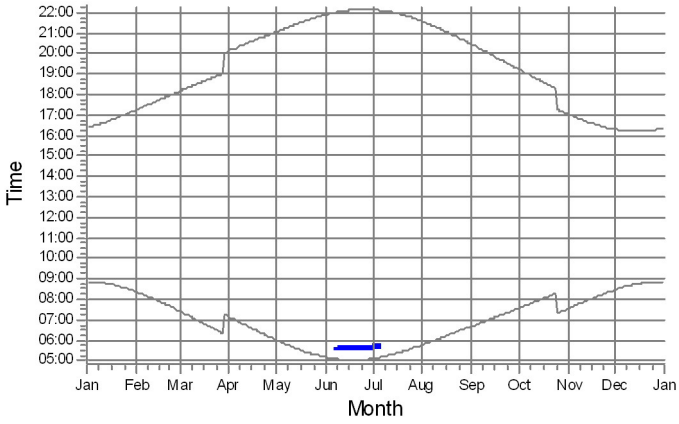
CH: H095*



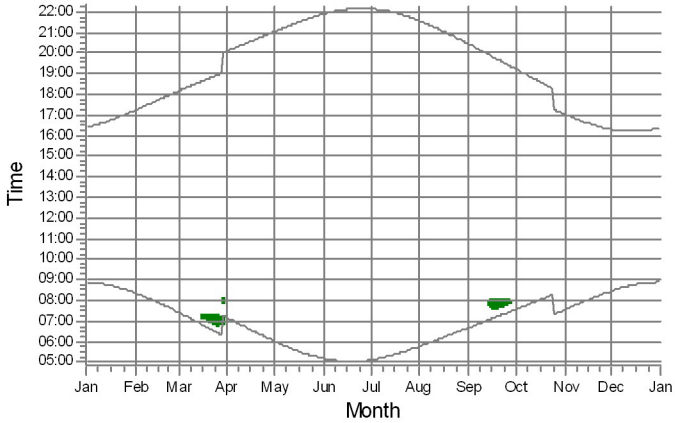
CI: H096*



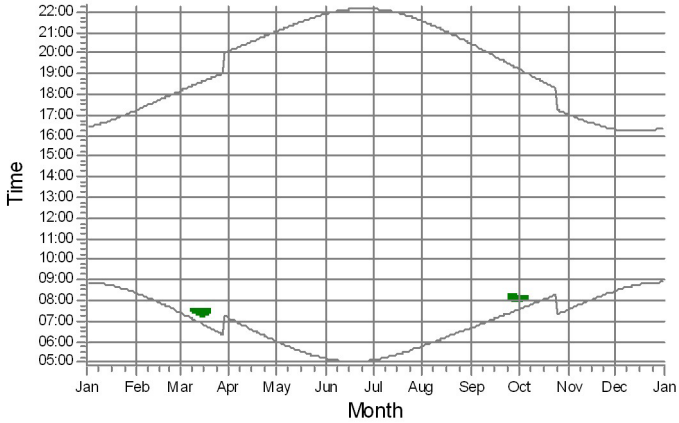
CJ: H097



CK: H098*



CL: H099*



WTGs

1: T01 2: T02 3: T03 11: T11

** Results reduced by flicker curtailment*

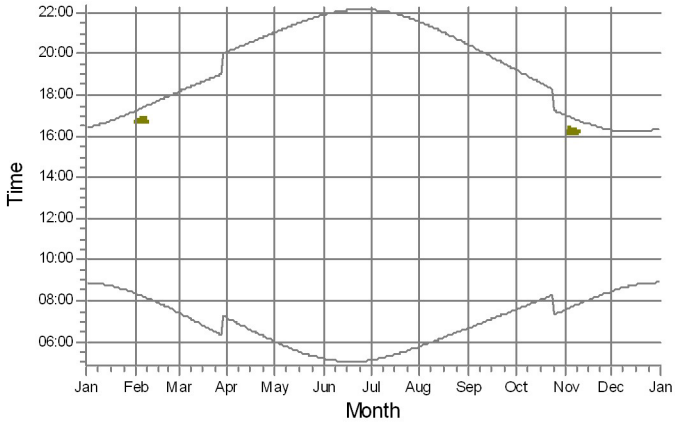
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

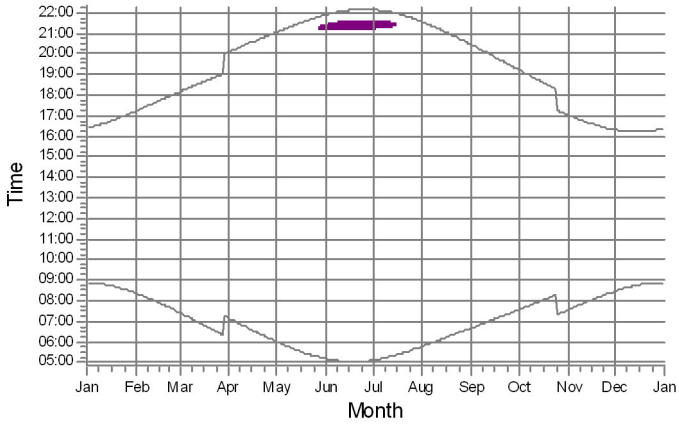
SHADOW - Calendar, graphical

Calculation: Curtailment Stratedy

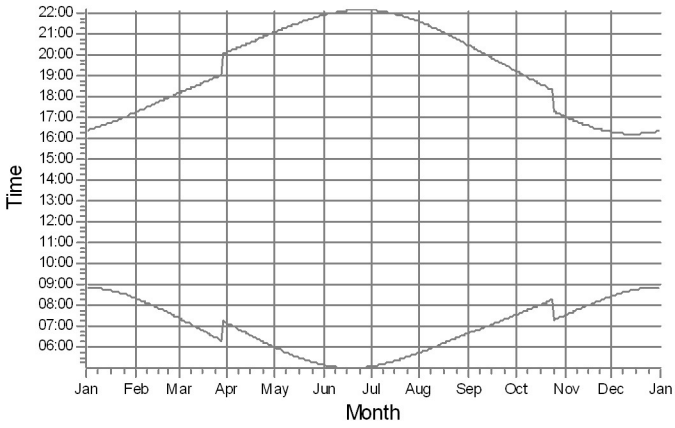
CM: H100*



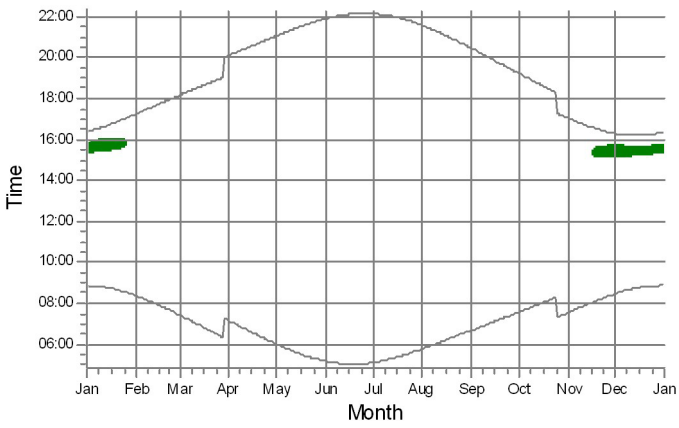
CN: H101



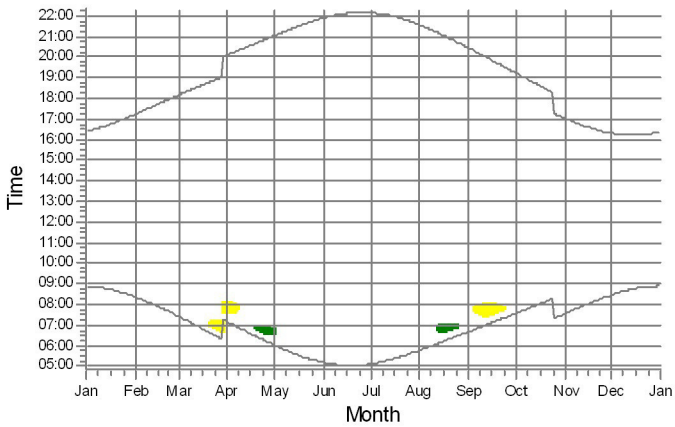
CO: H102



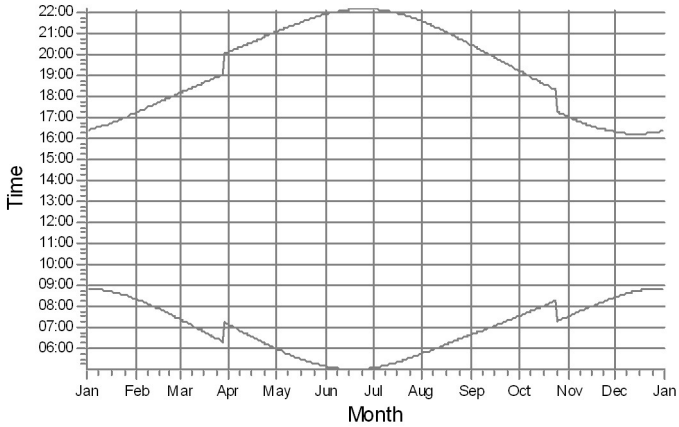
CP: H103*



CQ: H104



CR: H105



WTGs

1: T01 2: T02 10: T10 11: T11

** Results reduced by flicker curtailment*

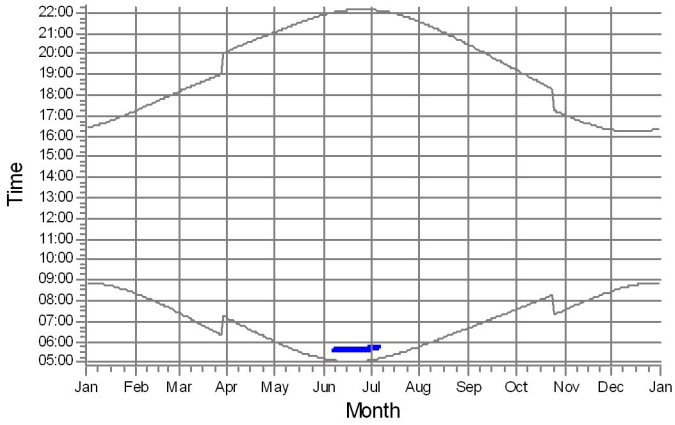
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

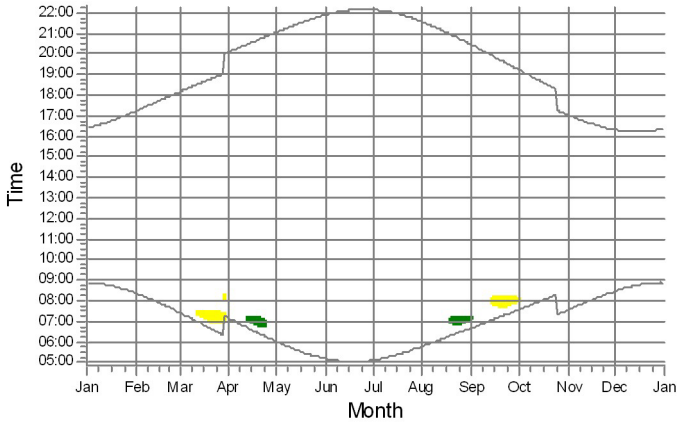
SHADOW - Calendar, graphical

Calculation: Curtailment Stratedy

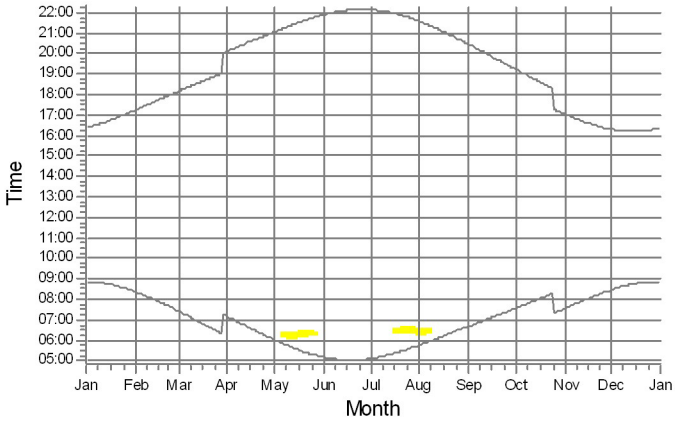
CS: H106



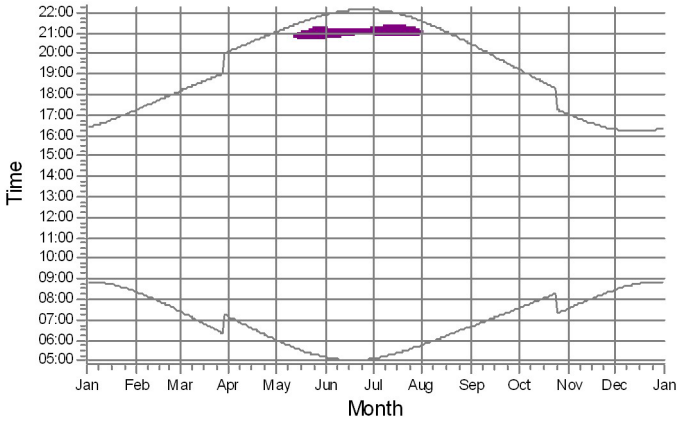
CT: H107



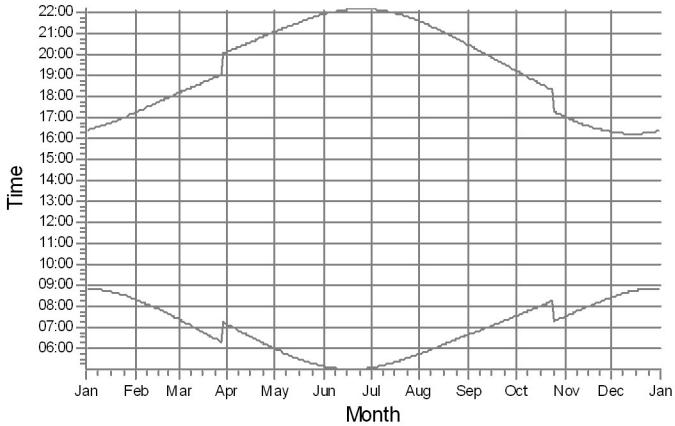
CU: H108*



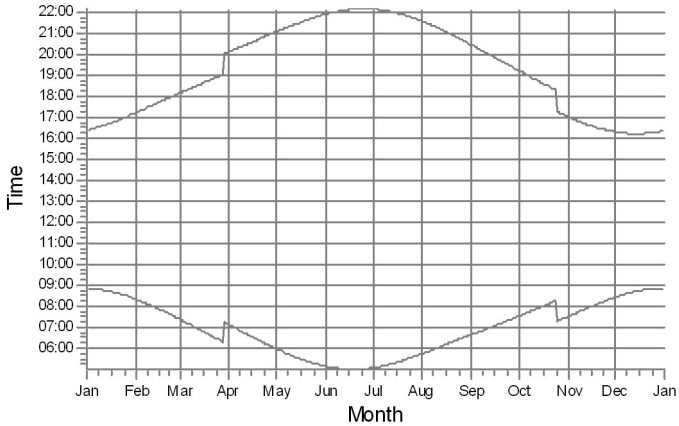
CV: H110



CW: H111



CX: H112



WTGs

1: T01 2: T02 3: T03 11: T11

** Results reduced by flicker curtailment*

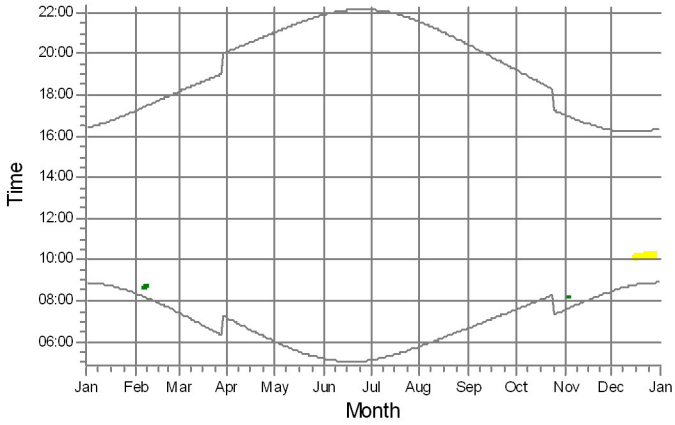
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

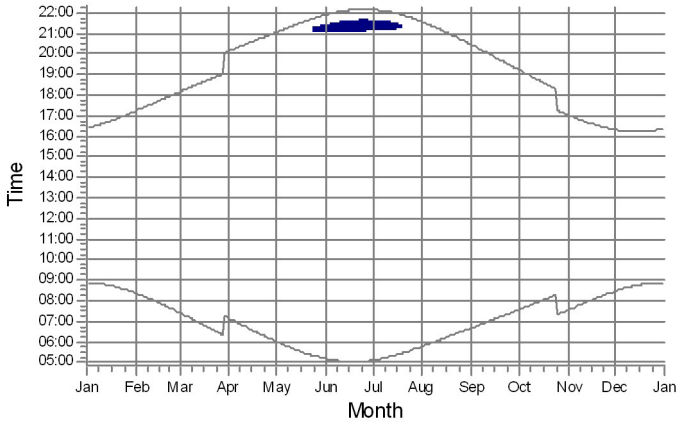
SHADOW - Calendar, graphical

Calculation: Curtailment Stratedy

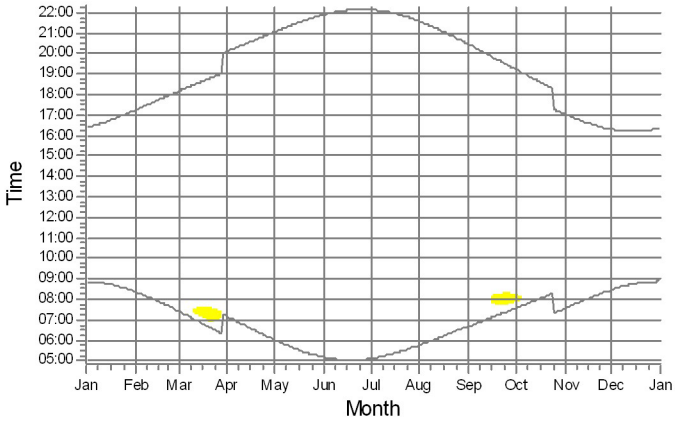
CY: H113*



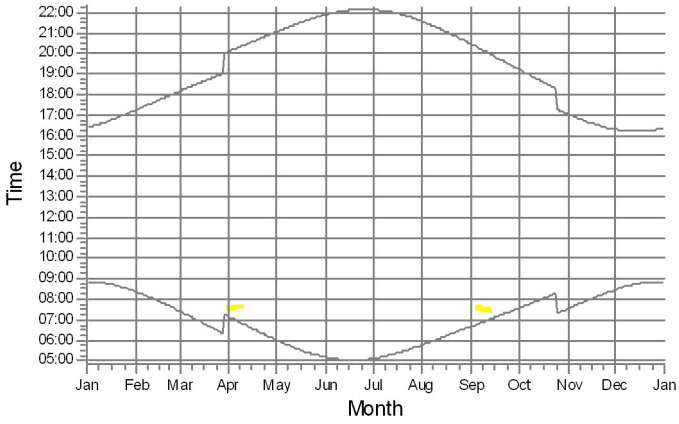
CZ: H114



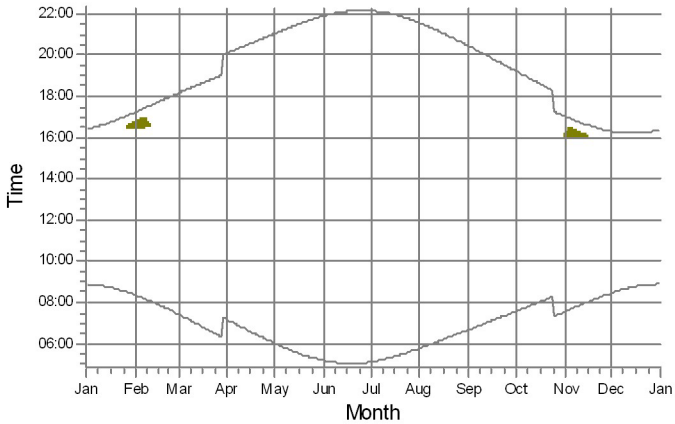
DA: H115



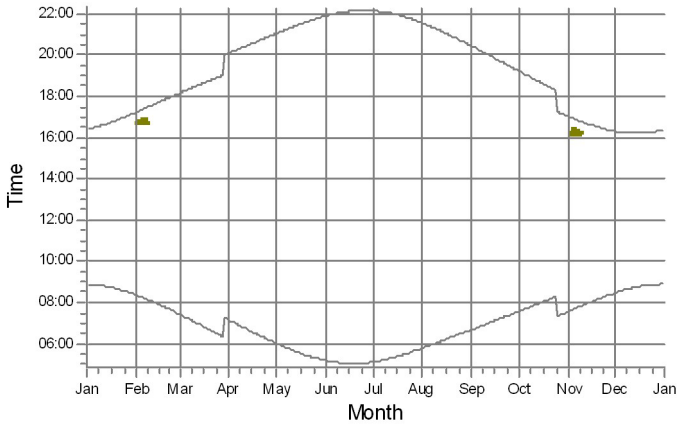
DB: H116*



DC: H117*



DD: H118*



WTGs

1: T01 2: T02 7: T07 10: T10

** Results reduced by flicker curtailment*

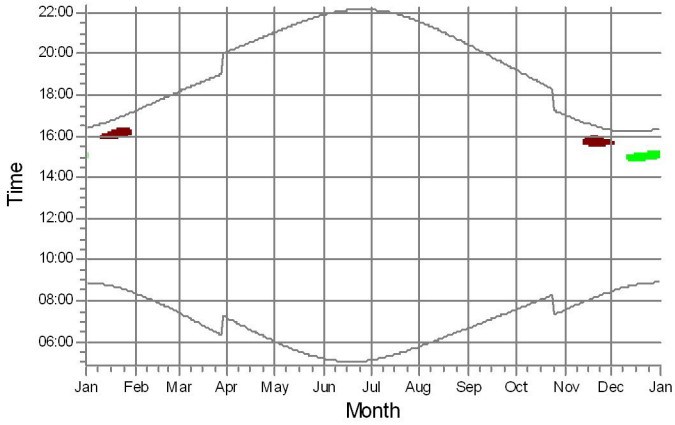
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

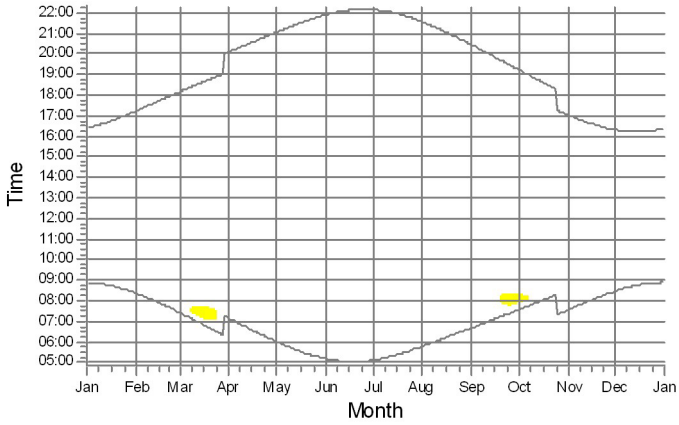
SHADOW - Calendar, graphical

Calculation: Curtailment Stratedy

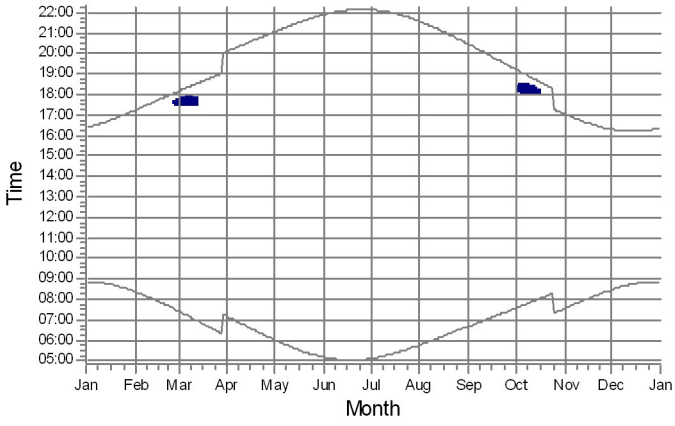
DE: H119*



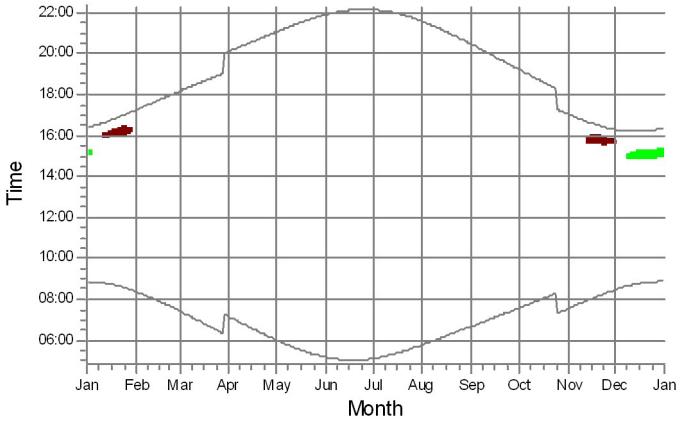
DF: H120



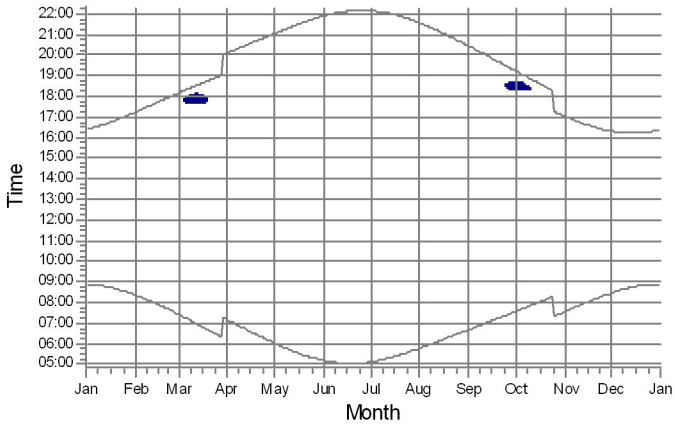
DG: H123



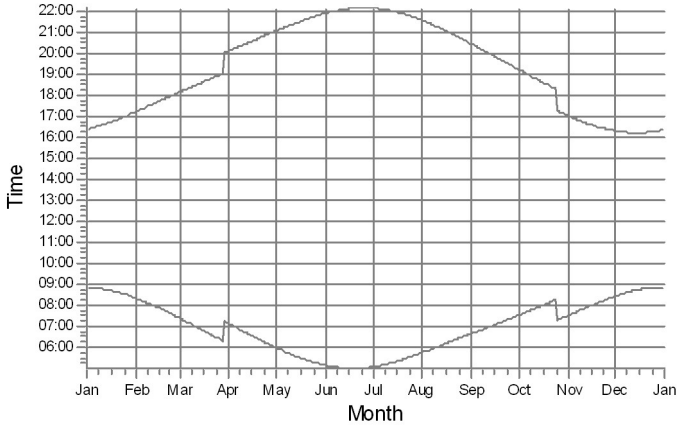
DH: H124



DI: H125*



DJ: H126



WTGs

2: T02 | 7: T07 | 8: T08 | 9: T09

** Results reduced by flicker curtailment*

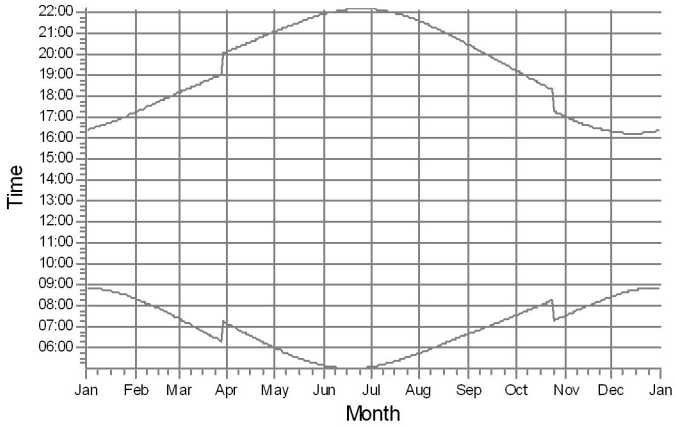
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

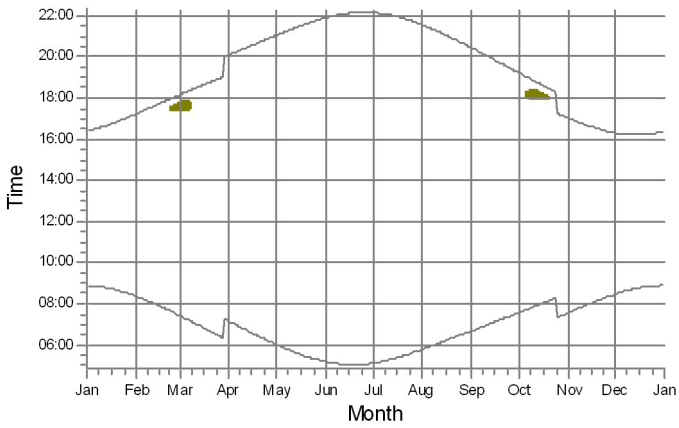
SHADOW - Calendar, graphical

Calculation: Curtailment Stratedy

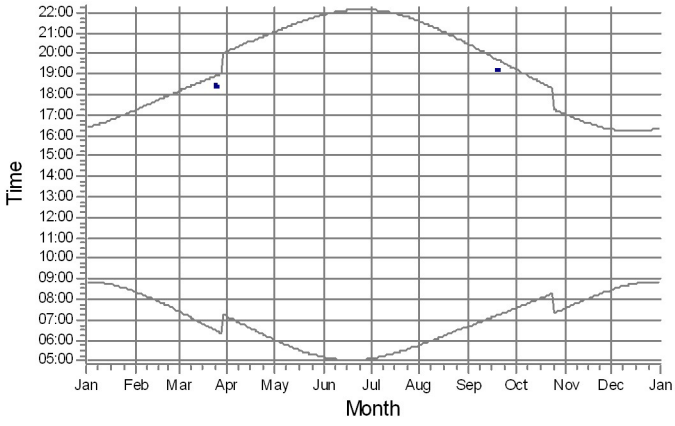
DK: H128



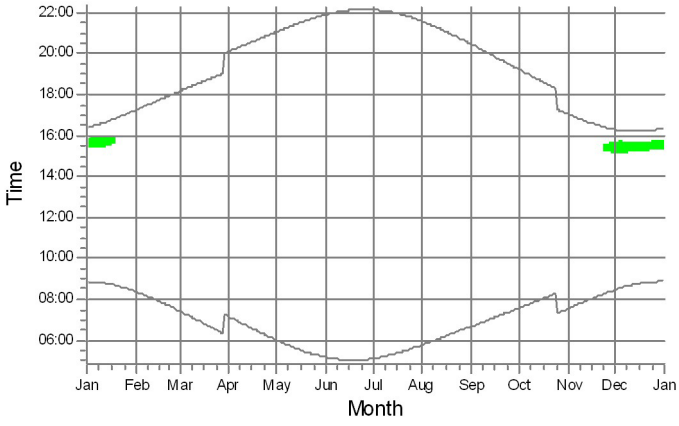
DL: H129*



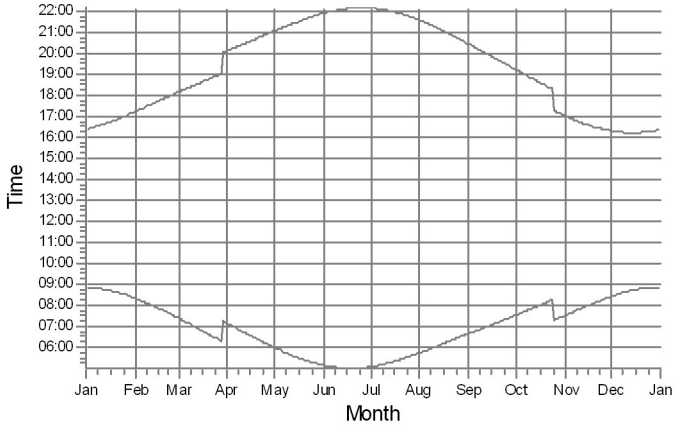
DM: H130*



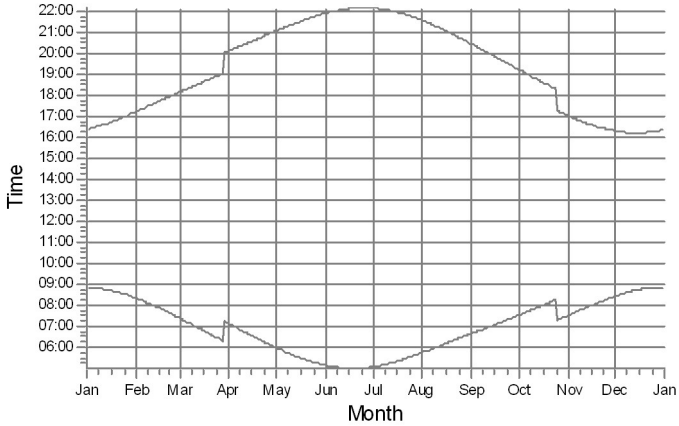
DN: H131



DO: H132



DP: H133



WTGs

7: T07 9: T09 10: T10

** Results reduced by flicker curtailment*

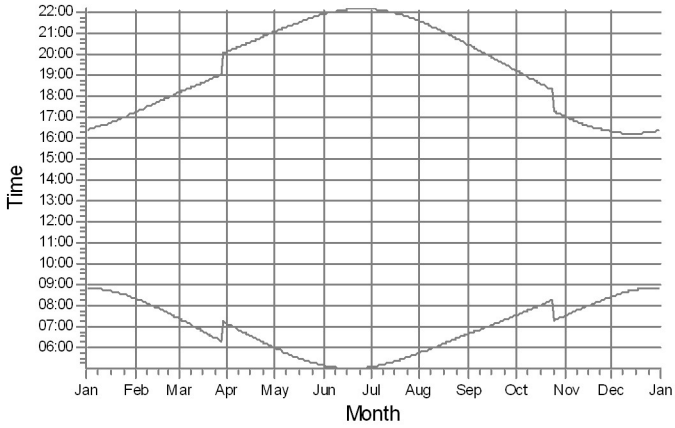
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

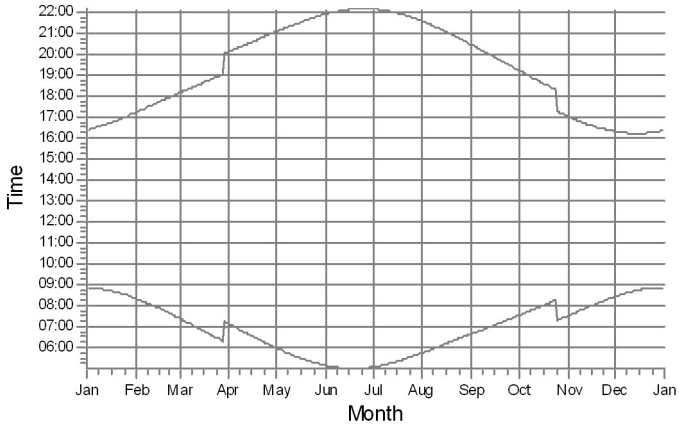
SHADOW - Calendar, graphical

Calculation: Curtailment Stratedy

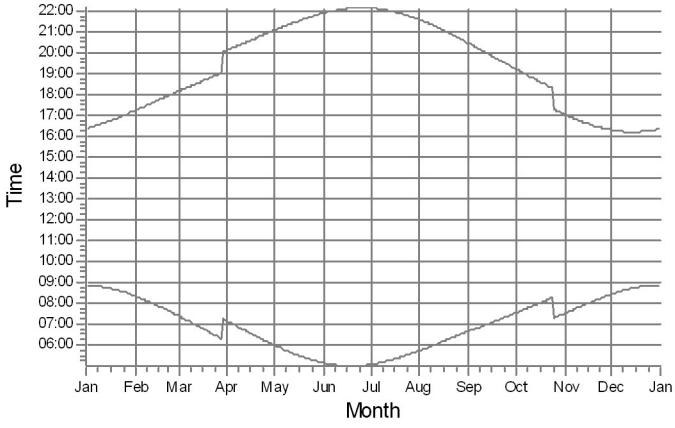
DQ: H135*



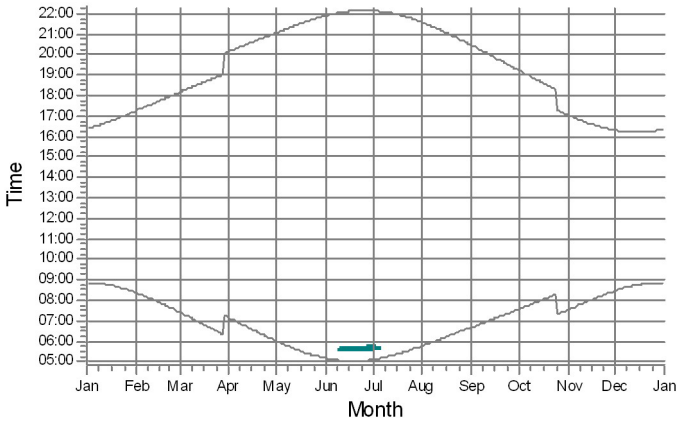
DR: H136



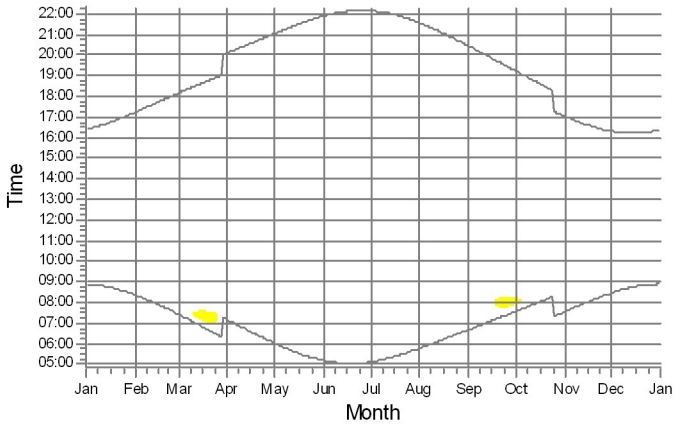
DS: H137



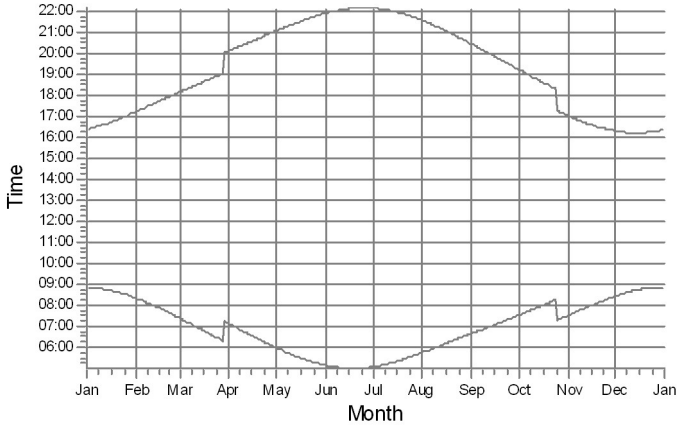
DT: H138



DU: H139



DV: H140*



WTGs

** Results reduced by flicker curtailment*

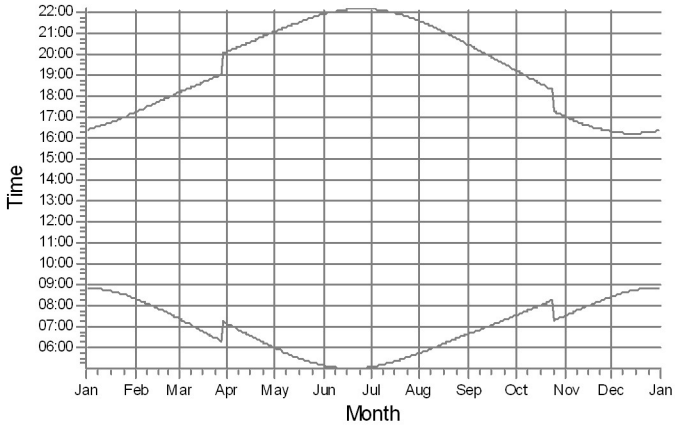
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

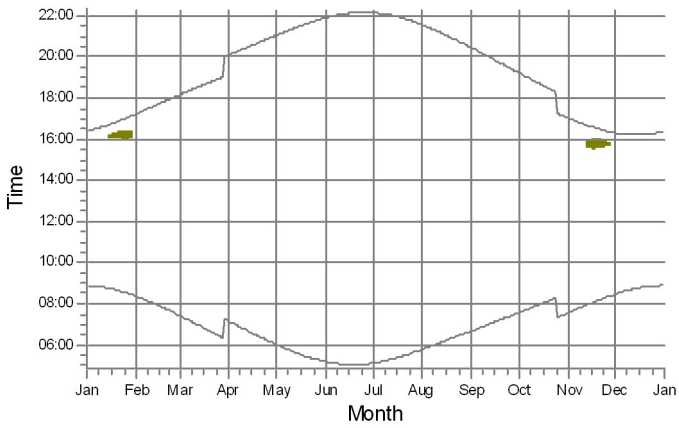
SHADOW - Calendar, graphical

Calculation: Curtailment Stratedy

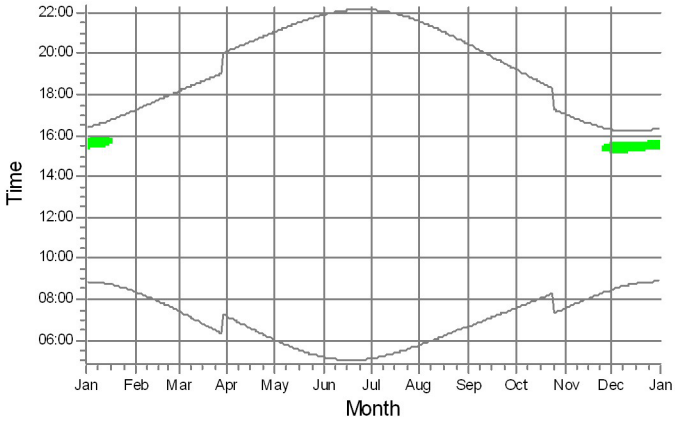
DW: H141



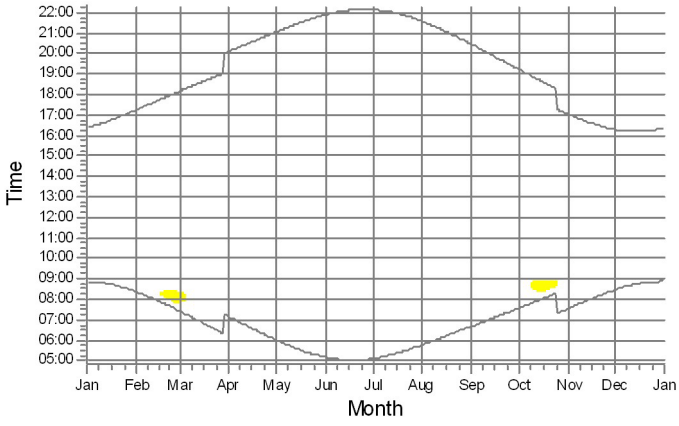
DX: H142*



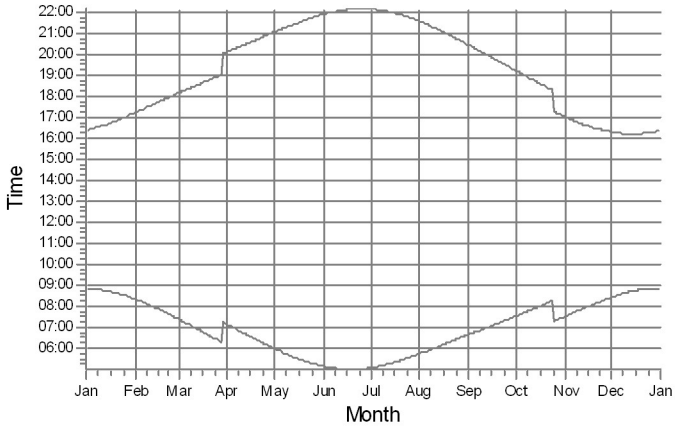
DY: H143



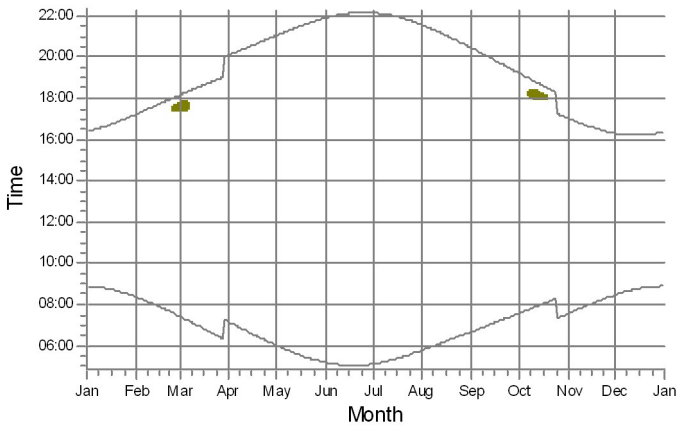
DZ: H144



EA: H145



EB: H146



WTGs

2: T02 9: T09 10: T10

** Results reduced by flicker curtailment*

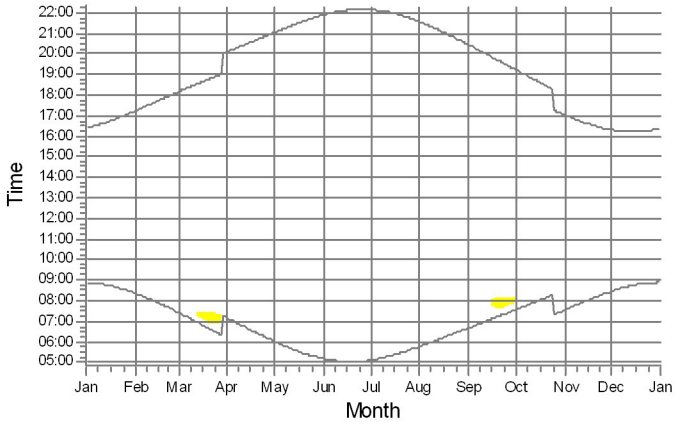
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

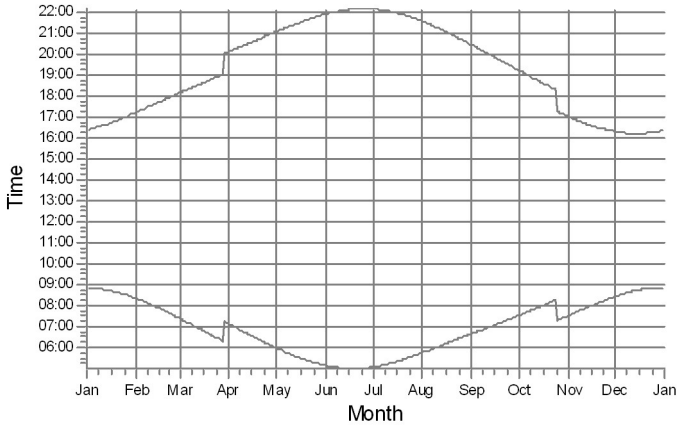
SHADOW - Calendar, graphical

Calculation: Curtailment Stratedy

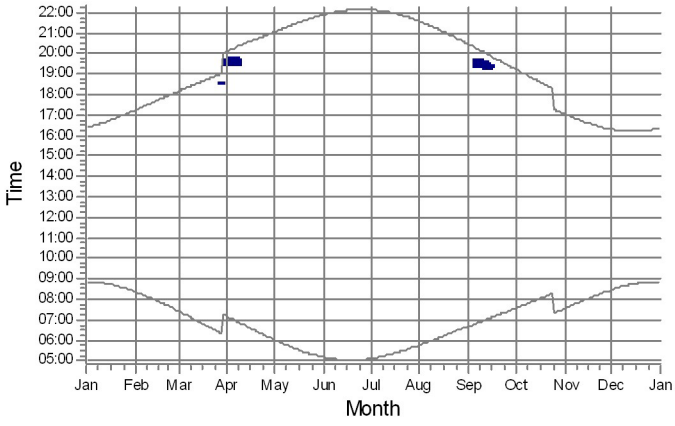
EC: H147



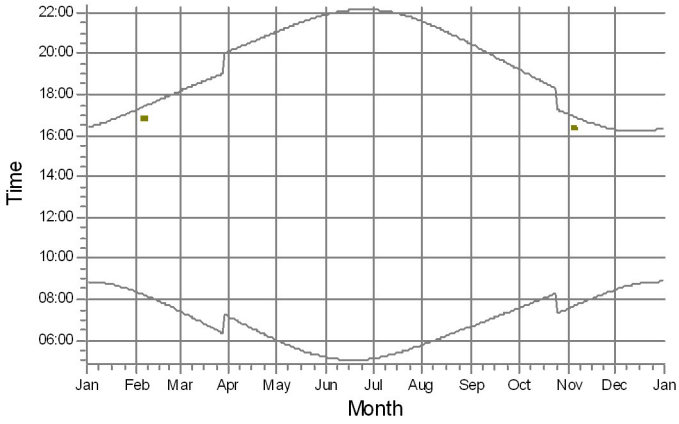
ED: H148



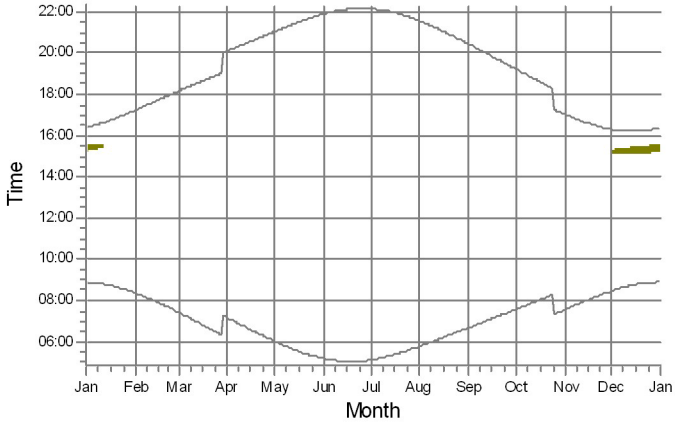
EE: H149



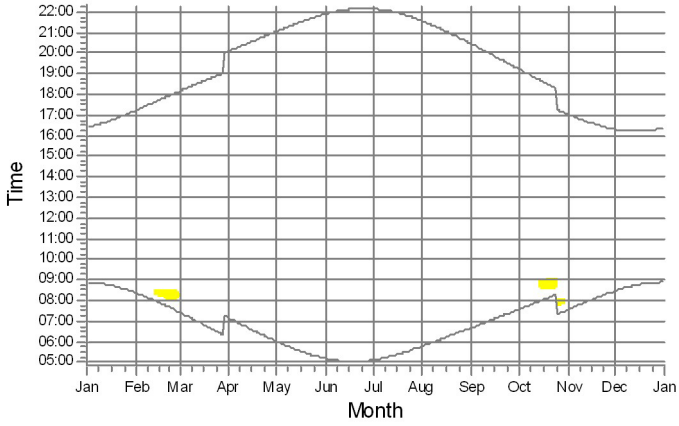
EF: H151*



EG: H152*



EH: H153



WTGs

2: T02 7: T07 10: T10

** Results reduced by flicker curtailment*

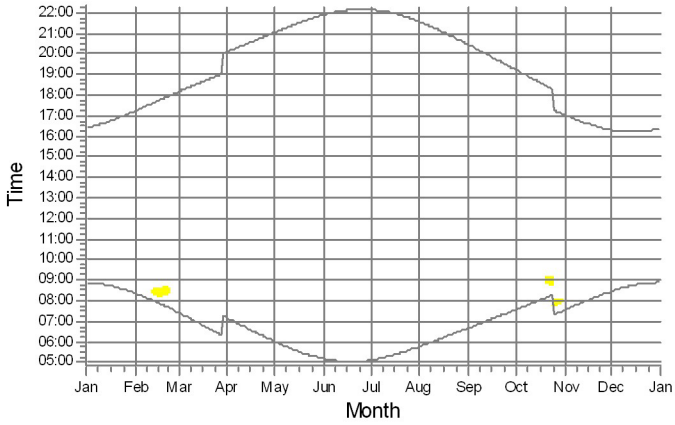
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

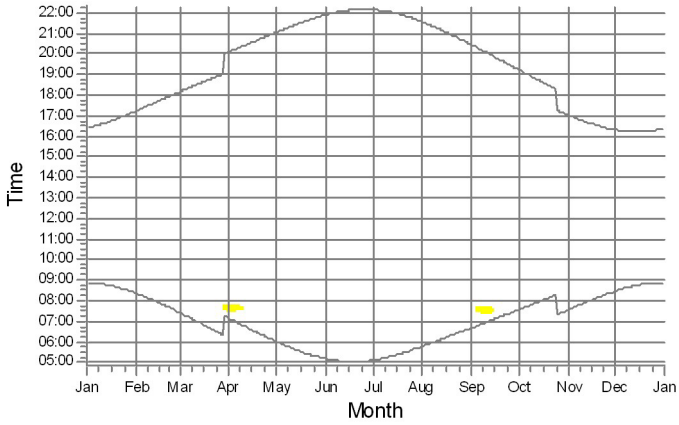
SHADOW - Calendar, graphical

Calculation: Curtailment Stratedy

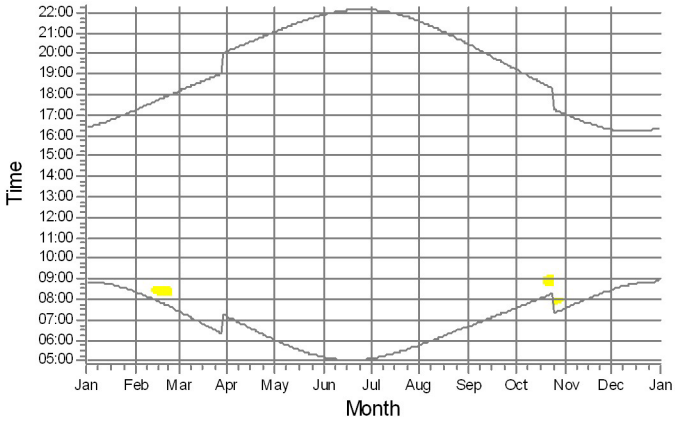
EI: H156*



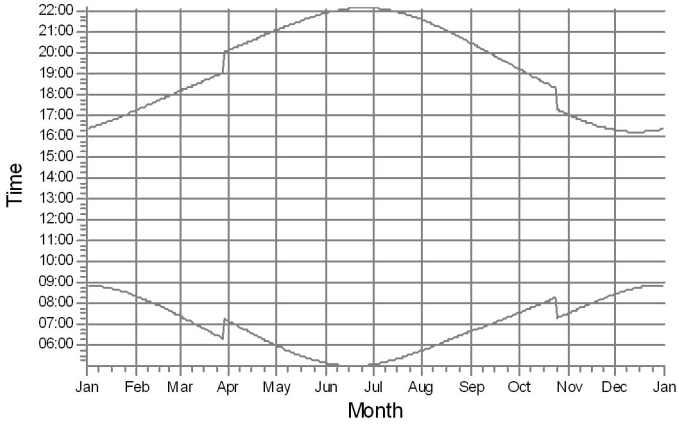
EJ: H157*



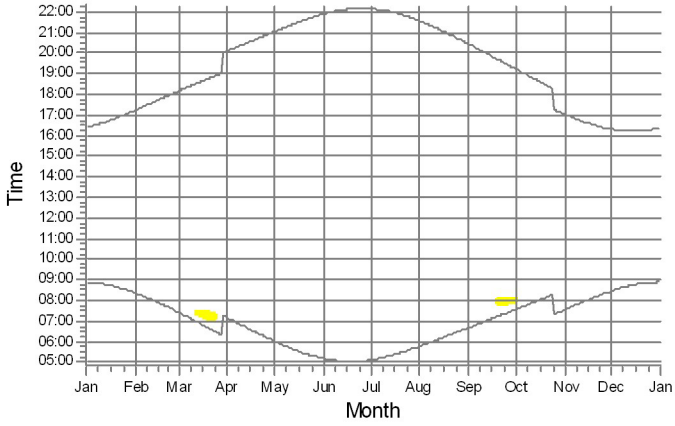
EK: H158*



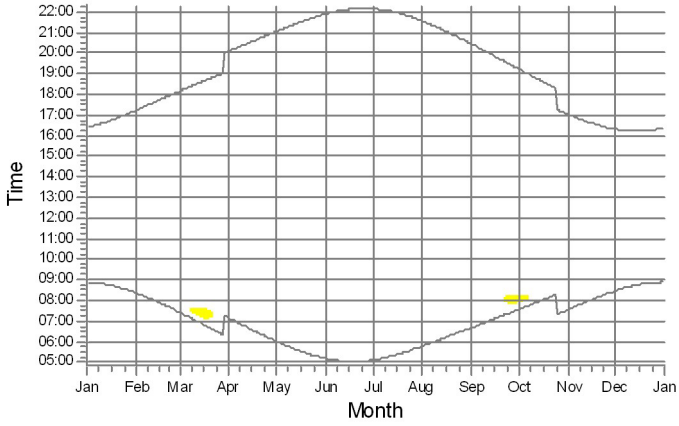
EL: H159



EM: H161



EN: H165



WTGs

2: T02

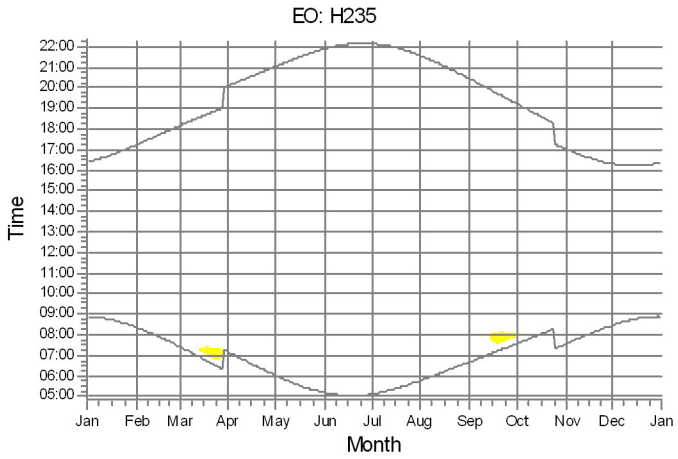
** Results reduced by flicker curtailment*

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar, graphical

Calculation: Curtailment Stratedy



WTGs

2: T02

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar per WTG

Calculation: Curtailment Stratedy **WTG:** 1 - T01

Assumptions for shadow calculations

Flicker curtailment applied to this turbine

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March		April		May		June	
1	08:52	15:25-15:45/20	08:22	16:31-16:42/11	07:24	08:16-08:17/1	07:09		06:00	06:26-06:31/5	05:10	05:41-06:03/22
	16:22		17:14		18:10		20:08		21:04		21:54	
2	08:52	15:25-15:45/20	08:20	16:31-16:44/13	07:22		07:07		05:58	06:24-06:32/8	05:09	05:40-06:03/23
	16:24		17:16		18:12		20:10		21:06		21:55	
3	08:52	15:26-15:47/21	08:19	16:30-16:46/16	07:20		07:04		05:56	06:22-06:32/10	05:09	05:40-06:03/23
	16:25		17:18		18:14		20:12		21:07		21:56	
4	08:52	15:26-15:48/22	08:17	16:29-16:48/19	07:17		07:02		05:54	06:20-06:32/12	05:08	05:39-06:03/24
	16:26		17:20		18:16		20:14		21:09		21:57	
5	08:51	15:27-15:50/23	08:15	16:28-16:50/22	07:15		06:59		05:52	06:18-06:31/13	05:07	05:38-06:03/25
	16:27		17:22		18:17		20:16		21:11		21:58	
6	08:51	15:27-15:51/24	08:13	08:40-08:41/1	07:13		06:57		05:50	06:16-06:31/15	05:06	05:38-06:03/25
	16:29		17:24	16:26-16:49/23	18:19		20:18		21:13		21:59	
7	08:51	15:28-15:53/25	08:11	08:40-08:42/2	07:10		06:55		05:48	06:15-06:31/16	05:06	05:37-06:03/26
	16:30		17:26	16:24-16:49/25	18:21		20:19		21:15		22:00	
8	08:50	15:28-15:54/26	08:09	08:42-08:43/1	07:08	07:32-07:33/1	06:52	19:53-19:54/1	05:46	06:13-06:31/18	05:05	05:37-06:03/26
	16:31		17:28	16:22-16:48/26	18:23		20:21		21:16		22:01	
9	08:49	15:28-15:56/28	08:07	16:23-16:48/25	07:05	07:30-07:33/3	06:50	19:51-19:56/5	05:44	06:11-06:30/19	05:04	05:36-06:02/26
	16:33		17:30		18:25		20:23		21:18		22:02	
10	08:49	15:29-15:57/28	08:06	16:24-16:47/23	07:03	07:27-07:32/5	06:47	19:49-19:57/8	05:42	06:09-06:29/20	05:04	05:36-06:03/27
	16:34		17:32		18:27		20:25		21:20		22:03	
11	08:48	15:29-15:59/30	08:04	16:26-16:46/20	07:01	07:25-07:33/8	06:45	19:48-19:59/11	05:40	06:08-06:29/21	05:03	05:36-06:03/27
	16:36		17:34		18:29		20:27		21:22		22:04	
12	08:47	15:30-15:59/29	08:02	16:28-16:44/16	06:58	07:22-07:32/10	06:43	07:07-07:08/1	05:39	06:06-06:27/21	05:03	05:35-06:02/27
	16:37		17:36		18:31		20:29	19:47-20:01/14	21:23		22:05	
13	08:47	15:30-15:59/29	08:00	16:31-16:42/11	06:56	07:20-07:33/13	06:40	07:04-07:08/4	05:37	06:05-06:26/21	05:03	05:35-06:02/27
	16:39		17:38		18:33		20:31	19:46-20:02/16	21:25		22:05	
14	08:46	15:31-15:59/28	07:57		06:53	07:17-07:32/15	06:38	07:02-07:09/7	05:35	06:06-06:25/19	05:02	05:35-06:02/27
	16:41		17:40		18:35		20:32	19:45-20:04/19	21:27		22:06	
15	08:45	15:32-15:59/27	07:55		06:51	07:18-07:33/15	06:36	07:00-07:09/9	05:33	06:07-06:23/16	05:02	05:35-06:03/28
	16:42		17:42		18:37		20:34	19:45-20:06/21	21:28		22:07	
16	08:44	15:33-15:59/26	07:53		06:49	07:19-07:33/14	06:33	06:58-07:09/11	05:32	06:09-06:22/13	05:02	05:35-06:03/28
	16:44		17:44		18:38	07:12-07:13/1	20:36	19:44-20:07/23	21:30		22:07	
17	08:43	15:34-15:59/25	07:51		06:46	07:20-07:34/14	06:31	06:55-07:08/13	05:30	06:10-06:20/10	05:02	05:35-05:43/8
	16:46		17:46		18:40	07:10-07:14/4	20:38	19:44-20:09/25	21:32	05:58-06:00/2	22:08	05:44-06:03/19
18	08:42	15:34-15:58/24	07:49		06:44	07:22-07:34/12	06:29	06:53-07:08/15	05:28	06:13-06:18/5	05:02	05:35-06:03/28
	16:47		17:48		18:42	07:08-07:16/8	20:40	19:44-20:11/27	21:33	05:57-06:01/4	22:08	
19	08:41	15:35-15:58/23	07:47		06:41	07:25-07:32/7	06:26	06:51-07:07/16	05:27	05:56-06:02/6	05:02	05:35-06:03/28
	16:49		17:50		18:44	07:05-07:15/10	20:42	19:44-20:13/29	21:35		22:09	
20	08:39	15:37-15:59/22	07:45	08:10-08:14/4	06:39	07:03-07:16/13	06:24	06:49-07:06/17	05:25	05:54-06:02/8	05:02	05:35-06:03/28
	16:51		17:52		18:46		20:43	19:44-20:13/29	21:37		22:09	
21	08:38	15:37-15:58/21	07:43	08:08-08:15/7	06:36	07:00-07:15/15	06:22	06:47-07:05/18	05:24	05:53-06:02/9	05:02	05:35-06:03/28
	16:53		17:54		18:48		20:45	19:44-20:11/27	21:38		22:09	
22	08:37	15:39-15:58/19	07:40	08:06-08:15/9	06:34	06:58-07:16/18	06:19	06:44-07:03/19	05:22	05:52-06:03/11	05:02	05:35-06:03/28
	16:55		17:56		18:50		20:47	19:45-20:11/26	21:40		22:09	
23	08:36	15:40-15:56/16	07:38	08:04-08:15/11	06:31	06:55-07:15/20	06:17	06:42-07:01/19	05:21	05:50-06:02/12	05:03	05:36-06:04/28
	16:56		17:58		18:52		20:49	19:46-20:10/24	21:41		22:09	
24	08:34	15:43-15:55/12	07:36	08:08-08:17/9	06:29	06:53-07:14/21	06:15	06:40-06:53/13	05:20	05:49-06:03/14	05:03	05:36-06:04/28
	16:58		18:00		18:53		20:51	19:47-20:08/21	21:43		22:10	
25	08:33	15:47-15:51/4	07:34	08:11-08:18/7	06:26	06:50-07:13/23	06:13	06:38-06:53/15	05:18	05:48-06:03/15	05:03	05:36-06:04/28
	17:00		18:02		18:55		20:53	19:48-20:07/19	21:44		22:10	
26	08:31		07:31	08:12-08:17/5	06:24	06:51-07:12/21	06:11	06:36-06:52/16	05:17	05:47-06:03/16	05:04	05:37-05:45/8
	17:02		18:04		18:57		20:55	19:50-20:05/15	21:46		22:10	05:46-06:05/19
27	08:30		07:29	08:14-08:18/4	06:21	06:52-07:10/18	06:08	06:34-06:51/17	05:16	05:46-06:03/17	05:04	05:37-06:05/28
	17:04		18:06		18:59		20:56	19:53-20:02/9	21:47		22:09	
28	08:28	16:32-16:33/1	07:27	08:15-08:18/3	06:19	06:54-07:08/14	06:06	06:35-06:50/15	05:15	05:45-06:03/18	05:05	05:38-06:06/28
	17:06		18:08		19:01		20:58		21:49		22:09	
29	08:27	16:32-16:35/3			07:17	07:56-08:05/9	06:04	06:36-06:48/12	05:13	05:44-06:03/19	05:05	05:38-06:05/27
	17:08				20:03		21:00		21:50		22:09	
30	08:25	16:32-16:38/6			07:14		06:02	06:38-06:46/8	05:12	05:43-06:03/20	05:06	05:39-06:06/27
	17:10				20:05		21:02	06:28-06:31/3	21:51		22:09	
31	08:24	16:32-16:40/8			07:12				05:11	05:42-06:03/21		
	17:12				20:06				21:53			
Potential sun hours	250		273		367		420		494		510	
Sum of minutes with flicker		590		313		313		617		454		799

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar per WTG

Calculation: Curtailment Stratedy **WTG:** 1 - T01

Assumptions for shadow calculations

Flicker curtailment applied to this turbine

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August		September		October		November		December	
1	05:06	05:40-06:07/27	05:46	06:17-06:38/21	06:41	19:47-19:58/11	07:34	08:01-08:12/11	07:33	15:54-16:17/23	08:28	15:11-15:41/30
	22:09		21:33		20:26		19:13		17:02		16:18	
2	05:07	05:40-06:07/27	05:48	06:19-06:39/20	06:43	19:48-19:56/8	07:36	08:02-08:11/9	07:34	15:52-16:18/26	08:29	15:12-15:41/29
	22:08		21:31		20:24		19:10		17:00		16:17	
3	05:08	05:41-06:07/26	05:50	06:20-06:40/20	06:44	19:48-19:53/5	07:38	08:04-08:10/6	07:36	08:12-08:13/1	08:31	15:12-15:40/28
	22:08		21:30		20:22		19:08		16:58	15:52-16:18/26	16:16	
4	05:09	05:42-06:08/26	05:51	06:22-06:41/19	06:46	19:50-19:51/1	07:40	08:06-08:10/4	07:38	08:10-08:11/1	08:32	15:12-15:39/27
	22:07		21:28		20:19		19:05		16:56	15:54-16:19/25	16:15	
5	05:10	05:43-06:09/26	05:53	06:23-06:40/17	06:48		07:41	08:08-08:10/2	07:40	15:56-16:19/23	08:34	15:13-15:38/25
	22:07		21:26		20:17		19:03		16:54		16:15	
6	05:11	05:44-06:09/25	05:55	06:25-06:41/16	06:50		07:43		07:42	15:58-16:20/22	08:35	15:13-15:37/24
	22:06		21:24		20:14		19:00		16:52		16:14	
7	05:12	05:45-06:10/25	05:57	06:27-06:41/14	06:51		07:45		07:44	16:00-16:19/19	08:36	15:14-15:37/23
	22:05		21:22		20:12		18:58		16:50		16:14	
8	05:13	05:46-06:10/24	05:58	06:28-06:41/13	06:53		07:47		07:46	16:01-16:17/16	08:38	15:14-15:36/22
	22:05		21:20		20:09		18:56		16:49		16:13	
9	05:14	05:47-06:11/24	06:00	06:30-06:41/11	06:55		07:49		07:48	16:01-16:14/13	08:39	15:14-15:35/21
	22:04		21:18		20:07		18:53		16:47		16:13	
10	05:15	05:48-06:11/23	06:02	06:31-06:40/9	06:57		07:51		07:50	16:02-16:12/10	08:40	15:15-15:36/21
	22:03		21:16		20:05		18:51		16:45		16:13	
11	05:16	05:49-06:11/22	06:04	06:33-06:40/7	06:59		07:53		07:52	16:03-16:10/7	08:41	15:16-15:35/19
	22:02		21:14		20:02		18:48		16:43		16:13	
12	05:17	05:50-06:12/22	06:05	06:35-06:40/5	07:00		07:54		07:54	16:03-16:09/6	08:42	15:16-15:35/19
	22:01		21:12		20:00		18:46		16:42		16:12	
13	05:18	05:51-06:12/21	06:07	06:45-06:54/9	07:02		07:56	08:48-08:50/2	07:56	16:03-16:07/4	08:43	15:16-15:34/18
	22:00		21:10	06:36-06:38/2	19:57		18:44		16:40		16:12	
14	05:19	05:52-06:12/20	06:09	06:43-06:56/13	07:04	07:47-07:54/7	07:58	08:47-08:50/3	07:58	16:04-16:05/1	08:44	15:17-15:34/17
	21:59		21:08		19:55		18:41		16:38		16:12	
15	05:21	05:53-06:12/19	06:11	06:42-06:58/16	07:06	07:43-07:57/14	08:00	08:45-08:50/5	08:00		08:45	15:17-15:34/17
	21:58		21:05		19:52		18:39		16:37		16:12	
16	05:22	05:54-06:12/18	06:12	06:41-06:58/17	07:07	07:42-07:59/17	08:02	08:43-08:49/6	08:01		08:46	15:18-15:34/16
	21:57		21:03	19:58-20:09/11	19:50		18:37		16:35		16:12	
17	05:23	05:56-06:13/17	06:14	06:43-06:59/16	07:09	07:40-08:00/20	08:04	08:41-08:49/8	08:03	15:21-15:25/4	08:47	15:19-15:35/16
	21:56		21:01	19:56-20:12/16	19:47		18:34		16:34		16:12	
18	05:25	05:57-06:13/16	06:16	06:45-07:00/15	07:11	07:38-08:00/22	08:06	08:38-08:47/9	08:05	15:17-15:29/12	08:48	15:19-15:35/16
	21:55		20:59	19:54-20:14/20	19:45		18:32		16:32		16:13	
19	05:26	05:58-06:12/14	06:18	06:46-07:03/17	07:13	07:39-08:01/22	08:07	08:35-08:46/11	08:07	15:15-15:31/16	08:48	15:19-15:35/16
	21:53		20:57	19:52-20:14/22	19:42		18:30		16:31		16:13	
20	05:28	06:00-06:13/13	06:19	06:48-07:07/19	07:14	07:41-08:01/20	08:09	08:37-08:46/9	08:09	15:14-15:33/19	08:49	15:20-15:35/15
	21:52		20:54	19:51-20:15/24	19:40		18:28		16:30		16:13	
21	05:29	06:01-06:13/12	06:21	06:50-07:09/19	07:16	07:43-08:01/18	08:11	08:39-08:45/6	08:11	15:13-15:34/21	08:50	15:20-15:35/15
	21:51		20:52	19:50-20:16/26	19:37		18:25		16:28		16:14	
22	05:31	06:02-06:12/10	06:23	06:51-07:09/18	07:18	07:44-08:00/16	08:13	08:41-08:44/3	08:12	15:13-15:35/22	08:50	15:21-15:36/15
	21:49		20:50	19:49-20:16/27	19:35		18:23		16:27		16:14	
23	05:32	06:04-06:13/9	06:25	06:53-07:10/17	07:20	07:46-08:00/14	08:15		08:14	15:12-15:35/23	08:51	15:21-15:36/15
	21:48		20:48	19:48-20:17/29	19:32		18:21		16:26		16:15	
24	05:34	06:05-06:12/7	06:27	06:55-07:11/16	07:22	07:48-07:59/11	08:17		08:16	15:12-15:36/24	08:51	15:22-15:37/15
	21:46		20:45	19:48-20:17/29	19:30		18:19		16:24		16:15	
25	05:35	06:07-06:12/5	06:28	06:56-07:10/14	07:23	08:06-08:18/12	07:19		08:18	15:12-15:37/25	08:52	15:22-15:38/16
	21:45		20:43	19:47-20:14/27	19:27	07:50-07:58/8	17:17		16:23		16:16	
26	05:37	06:22-06:30/8	06:30	06:58-07:11/13	07:25	08:03-08:16/13	07:21		08:19	15:11-15:37/26	08:52	15:22-15:38/16
	21:43	06:08-06:11/3	20:41	19:47-20:12/25	19:25	07:52-07:57/5	17:14		16:22		16:17	
27	05:38	06:19-06:31/12	06:32	07:00-07:11/11	07:27	08:01-08:15/14	07:23		08:21	15:11-15:38/27	08:52	15:23-15:39/16
	21:42	06:09-06:10/1	20:38	19:47-20:10/23	19:22	07:53-07:55/2	17:12		16:21		16:17	
28	05:40	06:19-06:33/14	06:34	07:02-07:11/9	07:29	07:59-08:14/15	07:25		08:23	15:11-15:39/28	08:52	15:23-15:40/17
	21:40		20:36	19:46-20:07/21	19:20		17:10		16:20		16:18	
29	05:41	06:17-06:34/17	06:35	07:03-07:09/6	07:31	07:58-08:13/15	07:27	16:00-16:12/12	08:24	15:11-15:40/29	08:52	15:24-15:41/17
	21:38		20:34	19:46-20:05/19	19:18		17:08		16:19		16:19	
30	05:43	06:16-06:36/20	06:37	07:05-07:09/4	07:32	07:59-08:13/14	07:29	15:57-16:14/17	08:26	15:12-15:41/29	08:52	15:24-15:42/18
	21:37		20:31	19:47-20:03/16	19:15		17:06		16:18		16:20	
31	05:45	06:16-06:37/21	06:39	07:07-07:08/1			07:31	15:55-16:16/21			08:52	15:25-15:43/18
	21:35		20:29	19:46-20:00/14			17:04				16:21	
Potential sun hours	512		460		382		328		259		233	
Sum of minutes with flicker		574		773		304		144		528		597

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar per WTG

Calculation: Curtailment Stratedy **WTG:** 2 - T02

Assumptions for shadow calculations

Flicker curtailment applied to this turbine

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February		March		April		May		June	
1	08:52	08:22		07:24	07:57-08:16/19	07:09	07:33-08:05/32	06:00	07:10-07:11/1	05:10	
	16:23	17:14		18:10		20:08		21:04		21:54	
2	08:52	08:20		07:22	07:59-08:15/16	07:07	07:32-08:04/32	05:58		05:10	
	16:24	17:16		18:12		20:10		21:06		21:55	
3	08:52	08:19		07:20	08:00-08:12/12	07:04	07:33-08:02/29	05:56		05:09	
	16:25	17:18		18:14		20:12		21:07		21:56	
4	08:52	08:17		07:17		07:02	07:35-08:01/26	05:54		05:08	
	16:26	17:20		18:16		20:14		21:09		21:57	
5	08:51	08:15		07:15		06:59	07:35-07:58/23	05:52	06:18-06:19/1	05:07	
	16:27	17:22		18:17		20:16		21:11		21:58	
6	08:51	08:13		07:13		06:57	07:37-07:56/19	05:50	06:16-06:19/3	05:06	
	16:29	17:24		18:19		20:18		21:13		21:59	
7	08:51	08:11		07:10		06:55	07:38-07:43/5	05:48	06:15-06:20/5	05:06	
	16:30	17:26		18:21		20:19	07:46-07:52/6	21:15		22:00	
8	08:50	08:09		07:08		06:52	07:37-07:42/5	05:46	06:13-06:20/7	05:05	
	16:31	17:28		18:23		20:21		21:16		22:01	
9	08:49	08:07		07:06	07:30-07:34/4	06:50	07:38-07:43/5	05:44	06:11-06:20/9	05:04	
	16:33	17:30		18:25		20:23		21:18		22:02	
10	08:49	08:06		07:03	07:27-07:35/8	06:47	07:38-07:42/4	05:42	06:09-06:20/11	05:04	
	16:34	17:32		18:27		20:25		21:20		22:03	
11	08:48	08:04		07:01	07:25-07:36/11	06:45	07:38-07:42/4	05:40	06:08-06:21/13	05:03	05:36-05:37/1
	16:36	17:34		18:29		20:27		21:22		22:04	
12	08:47	08:02	08:28-08:30/2	06:58	07:22-07:36/14	06:43	07:38-07:42/4	05:39	06:09-06:21/12	05:03	05:35-05:36/1
	16:37	17:36		18:31		20:29		21:23		22:05	
13	08:47	08:00	08:26-08:30/4	06:56	07:20-07:36/16	06:40	07:37-07:40/3	05:37	06:10-06:21/11	05:03	05:35-05:37/2
	16:39	17:38		18:33		20:31		21:25		22:05	
14	08:46	07:57	08:24-08:31/7	06:53	07:17-07:36/19	06:38	07:37-07:40/3	05:35	06:12-06:22/10	05:02	05:35-05:37/2
	16:41	17:40		18:35		20:32		21:27		22:06	
15	08:45	07:55	08:21-08:31/10	06:51	07:15-07:36/21	06:36	07:37-07:40/3	05:33	06:13-06:22/9	05:02	05:35-05:38/3
	16:42	17:42		18:37		20:34		21:28		22:07	
16	08:44	07:53	08:19-08:32/13	06:49	07:13-07:36/23	06:33	07:37-07:39/2	05:32	06:14-06:23/9	05:02	05:35-05:38/3
	16:44	17:44		18:38		20:36	06:58-07:00/2	21:30		22:07	
17	08:43	07:51	08:17-08:33/16	06:46	07:10-07:35/25	06:31	07:35-07:37/2	05:30	06:14-06:24/10	05:02	05:35-05:38/3
	16:46	17:46		18:40		20:38		21:32		22:08	
18	08:42	07:49	08:15-08:35/20	06:44	07:08-07:35/27	06:29	07:35-07:36/1	05:28	06:16-06:25/9	05:02	05:35-05:38/3
	16:47	17:48		18:42		20:40		21:33		22:08	
19	08:41	07:47	08:13-08:36/23	06:41	07:05-07:33/28	06:26	07:34-07:35/1	05:27	06:17-06:26/9	05:02	05:35-05:38/3
	16:49	17:50		18:44		20:42		21:35		22:09	
20	08:39	07:45	08:10-08:36/26	06:39	07:03-07:32/29	06:24		05:25	06:17-06:26/9	05:02	05:35-05:39/4
	16:51	17:52		18:46		20:43		21:37		22:09	
21	08:38	07:43	08:08-08:33/25	06:36	07:00-07:30/30	06:22		05:24	06:17-06:27/10	05:02	05:35-05:39/4
	16:53	17:54		18:48		20:45		21:38		22:09	
22	08:37	07:40	08:06-08:31/25	06:34	06:58-07:29/31	06:20		05:22	06:18-06:29/11	05:02	05:35-05:39/4
	16:55	17:56		18:50		20:47		21:40		22:09	
23	08:36	07:38	08:03-08:27/24	06:31	06:55-07:26/31	06:17		05:21	06:18-06:23/5	05:03	05:36-05:40/4
	16:56	17:58		18:52		20:49		21:41	06:24-06:29/5	22:09	
24	08:34	07:36	08:01-08:27/26	06:29	06:53-07:26/33	06:15		05:20	06:19-06:23/4	05:03	05:36-05:39/3
	16:58	18:00		18:53		20:51		21:43	06:26-06:31/5	22:10	
25	08:33	07:34	07:59-08:25/26	06:26	06:50-07:24/34	06:13		05:18	06:19-06:22/3	05:03	05:36-05:39/3
	17:00	18:02		18:55		20:53		21:44	06:29-06:32/3	22:10	
26	08:31	07:31	07:56-08:22/26	06:24	06:48-07:23/35	06:11	07:09-07:10/1	05:17	06:19-06:21/2	05:04	05:37-05:40/3
	17:02	18:04		18:57		20:55		21:46		22:10	
27	08:30	07:29	07:55-08:19/24	06:22	06:45-07:21/36	06:08	07:09-07:16/7	05:16	06:20-06:21/1	05:04	05:37-05:40/3
	17:04	18:06		18:59		20:56		21:47		22:09	
28	08:28	07:27	07:56-08:18/22	06:19	06:43-07:19/36	06:06	07:09-07:15/6	05:15		05:05	05:38-05:40/2
	17:06	18:08		19:01		20:58		21:49		22:09	
29	08:27			07:17	07:40-08:14/34	06:04	07:10-07:14/4	05:14		05:05	05:38-05:40/2
	17:08			20:03		21:00		21:50		22:09	
30	08:25			07:14	07:38-08:07/29	06:02	07:10-07:12/2	05:12		05:06	05:39-05:41/2
	17:10			20:05		21:02		21:51		22:09	
31	08:24			07:12	07:35-08:05/30			05:11			
	17:12			20:06				21:53			
Potential sun hours	250	273		367		420		494		510	
Sum of minutes with flicker	0	319		631		231		187		55	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar per WTG

Calculation: Curtailment Stratedy **WTG:** 2 - T02

Assumptions for shadow calculations

Flicker curtailment applied to this turbine

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July	August	September	October	November	December
1	05:07 05:40-05:41/1 22:09	05:46 06:19-06:31/12 21:33	06:41 07:37-07:41/4 20:26	07:34 08:01-08:16/15 19:13	07:33 17:02	08:28 16:18
2	05:07 05:40-05:41/1 22:08	05:48 06:19-06:31/12 21:31	06:43 07:37-07:41/4 20:24	07:36 08:02-08:14/12 19:10	07:35 17:00	08:29 16:17
3	05:08 22:08	05:50 06:20-06:30/10 21:30	06:44 07:36-07:41/5 20:22	07:38 08:04-08:13/9 19:08	07:36 16:58	08:31 16:16
4	05:09 22:07	05:52 06:22-06:30/8 21:28	06:46 07:35-07:39/4 20:19	07:40 08:06-08:12/6 19:05	07:38 16:56	08:32 16:16
5	05:10 22:07	05:53 06:23-06:29/6 21:26	06:48 07:34-07:39/5 20:17 07:43-07:47/4	07:41 08:08-08:10/2 19:03	07:40 16:54	08:34 16:15
6	05:11 22:06	05:55 06:25-06:29/4 21:24	06:50 07:33-07:52/19 20:14	07:43 19:00	07:42 16:52	08:35 16:14
7	05:12 22:05	05:57 06:27-06:29/2 21:22	06:51 07:31-07:53/22 20:12	07:45 18:58	07:44 16:50	08:36 16:14
8	05:13 22:05	05:58 21:20	06:53 07:29-07:55/26 20:10	07:47 18:56	07:46 16:49	08:38 16:13
9	05:14 22:04	06:00 21:18	06:55 07:28-07:56/28 20:07	07:49 18:53	07:48 16:47	08:39 16:13
10	05:15 22:03	06:02 21:16	06:57 07:25-07:57/32 20:05	07:51 08:38-08:45/7 18:51	07:50 16:45	08:40 16:13
11	05:16 22:02	06:04 21:14	06:59 07:25-07:57/32 20:02	07:53 08:33-08:47/14 18:49	07:52 16:43	08:41 16:13
12	05:17 22:01	06:05 07:18-07:20/2 21:12	07:00 07:27-07:58/31 20:00	07:54 08:31-08:49/18 18:46	07:54 16:42	08:42 16:12
13	05:18 22:00	06:07 07:17-07:20/3 21:10	07:02 07:29-07:58/29 19:57	07:56 08:29-08:50/21 18:44	07:56 16:40	08:43 16:12
14	05:20 21:59	06:09 07:17-07:22/5 21:08	07:04 07:30-08:04/34 19:55	07:58 08:28-08:51/23 18:41	07:58 16:38	08:44 16:12
15	05:21 21:58	06:11 07:17-07:23/6 21:05	07:06 07:32-08:07/35 19:52	08:00 08:27-08:53/26 18:39	08:00 16:37	08:45 10:05-10:09/4 16:12
16	05:22 06:28-06:29/1 21:57	06:12 07:16-07:23/7 21:03	07:07 07:34-08:10/36 19:50	08:02 08:29-08:55/26 18:37	08:01 16:35	08:46 10:04-10:11/7 16:12
17	05:23 06:29-06:31/2 21:56	06:14 07:15-07:16/1 21:01	07:09 07:36-08:11/35 19:47	08:04 08:31-08:57/26 18:34	08:03 16:34	08:47 10:05-10:12/7 16:13
18	05:25 06:29-06:31/2 21:55 06:41-06:43/2	06:16 20:59	07:11 07:37-08:11/34 19:45	08:06 08:33-08:58/25 18:32	08:05 16:32	08:48 10:05-10:13/8 16:13
19	05:26 06:28-06:32/4 21:53 06:37-06:41/4	06:18 20:57	07:13 07:39-08:12/33 19:42	08:08 08:35-09:00/25 18:30	08:07 16:31	08:48 10:05-10:13/8 16:13
20	05:28 06:29-06:33/4 21:52 06:36-06:40/4	06:20 20:54	07:15 07:41-08:13/32 19:40	08:09 08:37-09:02/25 18:28	08:09 16:30	08:49 10:06-10:15/9 16:13
21	05:29 06:28-06:39/11 21:51	06:21 20:52	07:16 07:43-08:14/31 19:37	08:11 08:39-09:04/25 18:25	08:11 16:28	08:50 10:06-10:15/9 16:14
22	05:31 06:27-06:38/11 21:49	06:23 20:50	07:18 07:44-08:14/30 19:35	08:13 08:41-09:07/26 18:23	08:12 16:27	08:50 10:07-10:16/9 16:14
23	05:32 06:28-06:37/9 21:48	06:25 20:48	07:20 07:46-08:16/30 19:32	08:15 08:43-09:05/22 18:21	08:14 16:26	08:51 10:07-10:16/9 16:15
24	05:34 06:27-06:36/9 21:46	06:27 07:38-07:39/1 20:45	07:22 07:48-08:17/29 19:30	08:17 08:45-09:04/19 18:19	08:16 16:25	08:51 10:08-10:17/9 16:15
25	05:35 06:27-06:36/9 21:45	06:28 07:38-07:39/1 20:43	07:23 07:50-08:17/27 19:27	07:19 07:47-08:02/15 17:17	08:18 16:23	08:52 10:08-10:16/8 16:16
26	05:37 06:26-06:35/9 21:43	06:30 07:38-07:40/2 20:41	07:25 07:52-08:18/26 19:25	07:21 07:49-08:01/12 17:14	08:19 16:22	08:52 10:09-10:16/7 16:17
27	05:38 06:25-06:34/9 21:42	06:32 07:39-07:41/2 20:38 07:00-07:02/2	07:27 07:53-08:17/24 19:23	07:23 07:52-08:01/9 17:12	08:21 16:21	08:52 10:09-10:16/7 16:17
28	05:40 06:24-06:33/9 21:40	06:34 07:38-07:42/4 20:36	07:29 07:55-08:17/22 19:20	07:25 07:54-08:00/6 17:10	08:23 16:20	08:52 10:10-10:16/6 16:18
29	05:42 06:23-06:32/9 21:38	06:36 07:38-07:41/3 20:34	07:31 07:57-08:17/20 19:18	07:27 07:56-08:00/4 17:08	08:24 16:19	08:52 16:19
30	05:43 06:22-06:32/10 21:37	06:37 07:38-07:41/3 20:31	07:32 07:59-08:16/17 19:15	07:29 07:58-07:59/1 17:06	08:26 16:18	08:52 16:20
31	05:45 06:21-06:32/11 21:35	06:39 07:38-07:42/4 20:29		07:31 17:04		08:52 16:21
Potential sun hours	512	460	382	328	259	233
Sum of minutes with flicker	131	100	740	419	0	107

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar per WTG

Calculation: Curtailment Stratedy **WTG:** 3 - T03

Assumptions for shadow calculations

Flicker curtailment applied to this turbine

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June
1	08:52	08:22 09:08-09:16/8	07:24	07:09 19:18-19:28/10	06:00 06:26-06:41/15	05:10
	16:22	17:14	18:10	20:08	21:04 06:42-06:45/3	21:54
2	08:52	08:20 09:09-09:15/6	07:22	07:07 19:42-19:43/1	05:58 06:24-06:39/15	05:09
	16:24	17:16	18:12	20:10	21:06	21:55
3	08:52	08:19 09:09-09:13/4	07:20	07:04 19:40-19:45/5	05:56 06:22-06:39/17	05:09
	16:25	17:18	18:14	20:12	21:07	21:56
4	08:52	08:17 09:09-09:11/2	07:17	07:02 19:40-19:47/7	05:54 06:20-06:38/18	05:08
	16:26	17:20	18:16	20:14	21:09	21:57
5	08:51	08:15	07:15	06:59 19:38-19:48/10	05:52 06:18-06:37/19	05:07
	16:27	17:22	18:17	20:16	21:11	21:58
6	08:51	08:13	07:13	06:57 07:21-07:24/3	05:50 06:16-06:37/21	05:06
	16:29	17:24	18:19	20:18 19:38-19:50/12	21:13	21:59
7	08:51	08:11	07:10	06:55 07:19-07:25/6	05:48 06:15-06:36/21	05:06 05:37-05:38/1
	16:30	17:26	18:21	20:19 19:37-19:52/15	21:15	22:00
8	08:50	08:09	07:08	06:52 07:16-07:25/9	05:46 06:13-06:35/22	05:05 05:37-05:39/2
	16:31	17:28	18:23	20:21 19:37-19:54/17	21:16	22:01
9	08:49	08:07	07:05	06:50 07:14-07:25/11	05:44 06:11-06:33/22	05:04 05:36-05:39/3
	16:33	17:30	18:25	20:23 19:37-19:56/19	21:18	22:02
10	08:49	08:05	07:03	06:47 07:11-07:24/13	05:42 06:09-06:31/22	05:04 05:36-05:39/3
	16:34	17:32	18:27	20:25 19:37-19:57/20	21:20	22:03
11	08:48	08:04	07:01	06:45 07:09-07:24/15	05:40 06:08-06:29/21	05:03 05:36-05:40/4
	16:36	17:34	18:29	20:27 19:38-19:59/21	21:22	22:04
12	08:47	08:02	06:58	06:43 07:07-07:24/17	05:39 06:06-06:27/21	05:03 05:35-05:39/4
	16:37	17:36	18:31	20:29 19:39-19:58/19	21:23	22:05
13	08:47	07:59	06:56	06:40 07:04-07:22/18	05:37 06:04-06:24/20	05:03 05:35-05:40/5
	16:39	17:38	18:33	20:30 19:39-19:56/17	21:25	22:05
14	08:46	07:57	06:53	06:38 07:02-07:22/20	05:35 06:03-06:22/19	05:02 05:35-05:40/5
	16:41	17:40	18:35	20:32 19:41-19:54/13	21:27	22:06
15	08:45	07:55	06:51	06:36 07:00-07:21/21	05:33 06:01-06:21/20	05:02 05:35-05:41/6
	16:42	17:42	18:37	20:34 19:44-19:51/7	21:28	22:07
16	08:44	07:53	06:48	06:33 06:58-07:19/21	05:32 06:00-06:21/21	05:02 05:35-05:41/6
	16:44	17:44	18:38	20:36	21:30	22:07
17	08:43	07:51	06:46	06:31 06:55-07:16/21	05:30 06:01-06:20/19	05:02 05:35-05:41/6
	16:46	17:46	18:40	20:38	21:32	22:08
18	08:42 09:13-09:14/1	07:49	06:44	06:29 06:53-07:13/20	05:28 06:02-06:19/17	05:02 05:35-05:41/6
	16:47	17:48	18:42	20:40	21:33	22:08
19	08:41 09:11-09:14/3	07:47	06:41	06:26 06:51-07:08/17	05:27 06:04-06:18/14	05:02 05:35-05:42/7
	16:49	17:50	18:44	20:42	21:35	22:08
20	08:39 09:10-09:15/5	07:45	06:39 18:18-18:19/1	06:24 06:49-06:57/8	05:25 06:04-06:16/12	05:02 05:35-05:42/7
	16:51	17:52	18:46	20:43 07:01-07:04/3	21:37	22:09
21	08:38 09:08-09:15/7	07:42	06:36 18:16-18:21/5	06:22 06:47-06:57/10	05:24 06:06-06:15/9	05:02 05:35-05:42/7
	16:53	17:54	18:48	20:45	21:38	22:09
22	08:37 09:07-09:16/9	07:40	06:34 18:15-18:23/8	06:19 06:44-06:56/12	05:22	05:02 05:35-05:42/7
	16:55	17:56	18:50	20:47	21:40	22:09
23	08:36 09:05-09:16/11	07:38	06:31 18:14-18:25/11	06:17 06:42-06:56/14	05:21	05:03 05:36-05:43/7
	16:56	17:58	18:52	20:49	21:41	22:09
24	08:34 09:04-09:17/13	07:36	06:29 18:13-18:26/13	06:15 06:40-06:56/16	05:20	05:03 05:36-05:42/6
	16:58	18:00	18:53	20:51	21:43	22:10
25	08:33 09:02-09:17/15	07:34	06:26 18:13-18:29/16	06:13 06:38-06:55/17	05:18	05:03 05:36-05:42/6
	17:00	18:02	18:55	20:53	21:44	22:10
26	08:31 09:03-09:18/15	07:31	06:24 18:13-18:31/18	06:11 06:36-06:55/19	05:17	05:04 05:37-05:43/6
	17:02	18:04	18:57	20:55	21:46	22:10
27	08:30 09:04-09:18/14	07:29	06:21 18:13-18:32/19	06:08 06:34-06:54/20	05:16	05:04 05:37-05:43/6
	17:04	18:06	18:59	20:56	21:47	22:09
28	08:28 09:05-09:18/13	07:27	06:19 18:13-18:34/21	06:06 06:32-06:53/21	05:15	05:05 05:38-05:43/5
	17:06	18:08	19:01	20:58	21:49	22:09
29	08:27 09:06-09:17/11		07:17 19:13-19:34/21	06:04 06:30-06:51/21	05:14	05:05 05:38-05:43/5
	17:08		20:03	21:00	21:50	22:09
30	08:25 09:07-09:18/11		07:14 19:14-19:33/19	06:02 06:28-06:49/21	05:12	05:06 05:39-05:44/5
	17:10		20:05	21:02	21:51	22:09
31	08:24 09:08-09:17/9		07:12 19:15-19:31/16		05:11	
	17:12		20:06		21:52	
Potential sun hours	250	273	367	420	494	510
Sum of minutes with flicker	137	20	168	587	388	125

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar per WTG

Calculation: Curtailment Stratedy **WTG:** 3 - T03

Assumptions for shadow calculations

Flicker curtailment applied to this turbine

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August		September		October	November		December	
1	05:06	05:40-05:44/4	05:46	06:17-06:38/21	06:41	07:08-07:23/15	07:34	07:33		08:28	
	22:09		21:33		20:26	19:36-19:58/22	19:13	17:02		16:18	
2	05:07	05:40-05:44/4	05:48	06:19-06:41/22	06:43	07:10-07:23/13	07:36	07:34		08:29	
	22:08		21:31		20:24	19:36-19:56/20	19:10	17:00		16:17	
3	05:08	05:41-05:44/3	05:50	06:20-06:43/23	06:44	07:12-07:23/11	07:38	07:36		08:31	
	22:08		21:29		20:22	19:34-19:53/19	19:08	16:58		16:16	
4	05:09	05:42-05:44/2	05:51	06:22-06:44/22	06:46	07:13-07:22/9	07:40	07:38		08:32	
	22:07		21:28		20:19	19:34-19:51/17	19:05	16:56		16:15	
5	05:10	05:43-05:44/1	05:53	06:23-06:45/22	06:48	07:15-07:21/6	07:41	07:40		08:33	
	22:07		21:26		20:17	19:34-19:49/15	19:03	16:54		16:15	
6	05:11	05:44-05:45/1	05:55	06:25-06:46/21	06:50	07:17-07:21/4	07:43	07:42		08:35	
	22:06		21:24		20:14	19:34-19:47/13	19:00	16:52		16:14	
7	05:12		05:57	06:27-06:47/20	06:51	19:33-19:44/11	07:45	07:44	08:40-08:42/2	08:36	
	22:05		21:22		20:12		18:58	16:50		16:14	
8	05:13		05:58	06:28-06:47/19	06:53	19:34-19:41/7	07:47	07:46	08:40-08:44/4	08:37	
	22:05		21:20		20:09		18:56	16:49		16:13	
9	05:14		06:00	06:30-06:48/18	06:55	19:35-19:39/4	07:49	07:48	08:39-08:46/7	08:39	
	22:04		21:18		20:07		18:53	16:47		16:13	
10	05:15		06:02	06:31-06:47/16	06:57	19:35-19:36/1	07:51	07:50	08:39-08:47/8	08:40	
	22:03		21:16		20:05		18:51	16:45		16:13	
11	05:16		06:04	06:33-06:48/15	06:59	19:10-19:20/10	07:52	07:52	08:39-08:48/9	08:41	
	22:02		21:14		20:02		18:48	16:43		16:13	
12	05:17		06:05	06:35-06:55/20	07:00	19:08-19:23/15	07:54	07:54	08:38-08:48/10	08:42	
	22:01		21:12		20:00		18:46	16:42		16:12	
13	05:18		06:07	06:36-06:57/21	07:02	19:06-19:24/18	07:56	07:56	08:38-08:49/11	08:43	
	22:00		21:10		19:57		18:44	16:40		16:12	
14	05:19		06:09	06:38-06:59/21	07:04	19:04-19:24/20	07:58	07:58	08:38-08:50/12	08:44	
	21:59		21:07		19:55		18:41	16:38		16:12	
15	05:21		06:11	06:40-07:00/20	07:06	19:03-19:24/21	08:00	08:00	08:37-08:51/14	08:45	
	21:58		21:05		19:52		18:39	16:37		16:12	
16	05:22		06:12	06:41-07:01/20	07:07	19:02-19:22/20	08:02	08:01	08:36-08:51/15	08:46	
	21:57		21:03		19:50		18:37	16:35		16:12	
17	05:23		06:14	06:43-07:01/18	07:09	19:01-19:19/18	08:04	08:03	08:36-08:51/15	08:47	
	21:56		21:01		19:47		18:34	16:34		16:12	
18	05:25		06:16	06:45-07:02/17	07:11	19:00-19:16/16	08:06	08:05	08:38-08:51/13	08:48	
	21:55		20:59		19:45		18:32	16:32		16:13	
19	05:26		06:18	06:46-07:02/16	07:13	19:00-19:14/14	08:07	08:07	08:40-08:51/11	08:48	
	21:53		20:57		19:42		18:30	16:31		16:13	
20	05:28		06:19	06:48-07:02/14	07:14	19:01-19:12/11	08:09	08:09	08:42-08:51/9	08:49	
	21:52		20:54		19:40		18:28	16:30		16:13	
21	05:29		06:21	06:50-07:02/12	07:16	19:00-19:09/9	08:11	08:11	08:44-08:51/7	08:50	
	21:51		20:52		19:37		18:25	16:28		16:14	
22	05:31	06:18-06:23/5	06:23	06:51-07:01/10	07:18	19:01-19:06/5	08:13	08:12	08:46-08:51/5	08:50	
	21:49		20:50		19:35		18:23	16:27		16:14	
23	05:32	06:16-06:26/10	06:25	06:53-07:01/8	07:20	19:02-19:04/2	08:15	08:14	08:48-08:51/3	08:51	
	21:48		20:48	07:04-07:09/5	19:32		18:21	16:26		16:15	
24	05:34	06:14-06:27/13	06:27	06:55-07:00/5	07:22		08:17	08:16	08:50-08:51/1	08:51	
	21:46		20:45	07:01-07:12/11	19:30		18:19	16:24		16:15	
25	05:35	06:13-06:29/16	06:28	06:56-07:16/20	07:23		07:19	08:18		08:52	
	21:45		20:43		19:27		17:17	16:23		16:16	
26	05:37	06:12-06:30/18	06:30	06:58-07:19/21	07:25		07:21	08:19		08:52	
	21:43		20:41		19:25		17:14	16:22		16:17	
27	05:38	06:11-06:30/19	06:32	07:00-07:21/21	07:27		07:23	08:21		08:52	
	21:42		20:38		19:22		17:12	16:21		16:17	
28	05:40	06:11-06:32/21	06:34	07:01-07:22/21	07:29		07:25	08:23		08:52	
	21:40		20:36	19:44-19:52/8	19:20		17:10	16:20		16:18	
29	05:41	06:12-06:32/20	06:35	07:03-07:23/20	07:31		07:27	08:24		08:52	
	21:38		20:34	19:41-19:55/14	19:18		17:08	16:19		16:19	
30	05:43	06:14-06:33/19	06:37	07:05-07:23/18	07:32		07:29	08:26		08:52	
	21:37		20:31	19:40-19:57/17	19:15		17:06	16:18		16:20	
31	05:45	06:16-06:37/21	06:39	07:07-07:24/17			07:31			08:52	
	21:35		20:29	19:37-19:57/20			17:04			16:21	
Potential sun hours	512		460		382		328	259		233	
Sum of minutes with flicker	177		634		366		0	156		0	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar per WTG

Calculation: Curtailment Stratedy **WTG:** 4 - T04

Assumptions for shadow calculations

Flicker curtailment applied to this turbine

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June
1	08:52 16:22	08:22 08:50-08:59/9 17:14	07:24 18:10	07:09 20:08	06:00 21:04	05:10 05:41-05:50/9 21:54
2	08:52 16:24	08:20 08:48-09:00/12 17:16	07:22 18:12	07:07 20:10	05:58 21:05	05:09 05:40-05:51/11 21:55
3	08:52 16:25	08:18 08:46-09:00/14 17:18	07:20 18:14	07:04 20:12	05:56 21:07	05:09 05:40-05:52/12 21:56
4	08:52 16:26	08:17 08:44-09:00/16 17:20	07:17 18:15	07:02 20:14	05:54 21:09	05:08 05:39-05:52/13 21:57
5	08:51 16:27	08:15 08:42-09:00/18 17:22	07:15 18:17	06:59 20:16	05:52 21:11	05:07 05:38-05:52/14 21:58
6	08:51 16:29	08:13 08:40-09:00/20 17:24	07:13 18:19	06:57 20:17	05:50 06:16-06:19/3 21:13	05:06 05:38-05:53/15 21:59
7	08:50 16:30	08:11 08:39-08:59/20 17:26	07:10 18:21	06:55 20:19	05:48 06:18-06:20/2 21:15	05:06 05:37-05:53/16 22:00
8	08:50 16:31	08:09 08:39-08:59/20 17:28	07:08 18:23	06:52 20:21	05:46 06:19-06:21/2 21:16	05:05 05:37-05:53/16 22:01
9	08:49 16:33	08:07 08:40-08:58/18 17:30	07:05 18:25	06:50 20:23	05:44 06:20-06:21/1 21:18	05:04 05:36-05:53/17 22:02
10	08:49 16:34	08:05 08:41-08:57/16 17:32	07:03 18:27	06:47 20:25	05:42 21:20	05:04 05:36-05:54/18 22:03
11	08:48 16:36	08:03 08:43-08:56/13 17:34	07:01 18:29	06:45 20:27	05:40 21:22	05:03 05:36-05:55/19 22:04
12	08:47 16:37	08:01 08:46-08:53/7 17:36	06:58 18:31	06:43 20:29	05:39 21:23	05:03 05:35-05:54/19 22:05
13	08:46 16:39	07:59 17:38	06:56 18:33	06:40 20:30	05:37 21:25	05:03 05:35-05:55/20 22:05
14	08:46 16:41	07:57 17:40	06:53 18:35	06:38 20:32	05:35 21:27	05:02 05:35-05:56/21 22:06
15	08:45 16:42	07:55 17:42	06:51 18:37	06:36 20:34	05:33 21:28	05:02 05:35-05:56/21 22:07
16	08:44 16:44	07:53 17:44	06:48 18:38	06:33 20:36	05:32 21:30	05:02 05:35-05:56/21 22:07
17	08:43 16:46	07:51 17:46	06:46 18:40	06:31 20:38	05:30 21:32	05:02 05:35-05:57/22 22:08
18	08:42 16:47	07:49 17:48	06:44 18:42	06:29 20:40	05:28 21:33	05:02 05:35-05:57/22 22:08
19	08:41 16:49	07:47 17:50	06:41 18:44	06:26 20:42	05:27 21:35	05:02 05:35-05:57/22 22:08
20	08:39 16:51	07:45 17:52	06:39 18:46	06:24 20:43	05:25 21:37	05:02 05:35-05:57/22 22:09
21	08:38 16:53	07:42 17:54	06:36 18:48	06:22 20:45	05:24 21:38	05:02 05:35-05:57/22 22:09
22	08:37 16:55	07:40 17:56	06:34 18:50	06:19 20:47	05:22 21:40	05:02 05:35-05:57/22 22:09
23	08:36 16:56	07:38 17:58	06:31 18:51	06:17 20:49	05:21 21:41	05:03 05:36-05:58/22 22:09
24	08:34 16:58	07:36 18:00	06:29 18:53	06:15 20:51	05:20 21:43	05:03 05:36-05:58/22 22:09
25	08:33 17:00	07:34 18:02	06:26 18:55	06:13 20:53	05:18 05:48-05:49/1 21:44	05:03 05:36-05:58/22 22:10
26	08:31 17:02	07:31 18:04	06:24 18:57	06:11 20:54	05:17 05:47-05:49/2 21:46	05:04 05:37-05:59/22 22:09
27	08:30 17:04	07:29 18:06	06:21 18:59	06:08 20:56	05:16 05:46-05:49/3 21:47	05:04 05:37-05:58/21 22:09
28	08:28 17:06	07:27 18:08	06:19 19:01	06:06 20:58	05:15 05:45-05:50/5 21:48	05:05 05:38-05:59/21 22:09
29	08:27 08:55-08:56/1 17:08		07:17 20:03	06:04 21:00	05:13 05:44-05:50/6 21:50	05:05 05:38-05:58/20 22:09
30	08:25 08:54-08:58/4 17:10		07:14 20:04	06:02 21:02	05:12 05:43-05:50/7 21:51	05:06 05:39-05:59/20 22:09
31	08:24 08:52-08:59/7 17:12		07:12 20:06		05:11 05:42-05:50/8 21:52	
Potential sun hours	250	273	367	420	494	510
Sum of minutes with flicker	12	183	0	0	40	564

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar per WTG

Calculation: Curtailment Stratedy **WTG:** 4 - T04

Assumptions for shadow calculations

Flicker curtailment applied to this turbine

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August		September	October		November		December
1	05:06	05:40-05:59/19	05:46		06:41	07:34		07:32	08:11-08:27/16	08:28
	22:08		21:33		20:26	19:13		17:02		16:18
2	05:07	05:40-05:58/18	05:48		06:43	07:36		07:34	08:10-08:28/18	08:29
	22:08		21:31		20:24	19:10		17:00		16:17
3	05:08	05:41-05:59/18	05:50		06:44	07:38		07:36	08:09-08:29/20	08:31
	22:08		21:29		20:22	19:08		16:58		16:16
4	05:09	05:42-05:59/17	05:51	06:30-06:31/1	06:46	07:40		07:38	08:08-08:29/21	08:32
	22:07		21:28		20:19	19:05		16:56		16:15
5	05:10	05:43-05:59/16	05:53	06:28-06:30/2	06:48	07:41		07:40	08:10-08:30/20	08:33
	22:07		21:26		20:17	19:03		16:54		16:15
6	05:11	05:44-05:59/15	05:55	06:27-06:30/3	06:50	07:43		07:42	08:13-08:31/18	08:35
	22:06		21:24		20:14	19:00		16:52		16:14
7	05:12	05:45-05:59/14	05:57	06:27-06:29/2	06:51	07:45		07:44	08:15-08:31/16	08:36
	22:05		21:22		20:12	18:58		16:50		16:14
8	05:13	05:46-05:58/12	05:58		06:53	07:47		07:46	08:17-08:31/14	08:37
	22:05		21:20		20:09	18:56		16:49		16:13
9	05:14	05:46-05:58/12	06:00		06:55	07:49		07:48	08:19-08:30/11	08:39
	22:04		21:18		20:07	18:53		16:47		16:13
10	05:15	05:48-05:59/11	06:02		06:57	07:51		07:50	08:21-08:30/9	08:40
	22:03		21:16		20:05	18:51		16:45		16:13
11	05:16	05:49-05:59/10	06:04		06:59	07:52		07:52	08:23-08:29/6	08:41
	22:02		21:14		20:02	18:48		16:43		16:13
12	05:17	05:50-05:59/9	06:05		07:00	07:54		07:54	08:25-08:29/4	08:42
	22:01		21:12		20:00	18:46		16:42		16:12
13	05:18	05:51-05:59/8	06:07		07:02	07:56		07:56	08:27-08:28/1	08:43
	22:00		21:10		19:57	18:44		16:40		16:12
14	05:19	05:52-05:58/6	06:09		07:04	07:58		07:58		08:44
	21:59		21:07		19:55	18:41		16:38		16:12
15	05:21	05:53-05:58/5	06:11		07:06	08:00		08:00		08:45
	21:58		21:05		19:52	18:39		16:37		16:12
16	05:22	05:54-05:58/4	06:12		07:07	08:02		08:01		08:46
	21:57		21:03		19:50	18:37		16:35		16:12
17	05:23	05:56-05:59/3	06:14		07:09	08:04		08:03		08:47
	21:56		21:01		19:47	18:34		16:34		16:12
18	05:25	05:57-05:59/2	06:16		07:11	08:06		08:05		08:48
	21:55		20:59		19:45	18:32		16:32		16:13
19	05:26		06:18		07:13	08:07		08:07		08:48
	21:53		20:57		19:42	18:30		16:31		16:13
20	05:28		06:19		07:14	08:09		08:09		08:49
	21:52		20:54		19:40	18:28		16:30		16:13
21	05:29		06:21		07:16	08:11		08:11		08:50
	21:51		20:52		19:37	18:25		16:28		16:14
22	05:31		06:23		07:18	08:13		08:12		08:50
	21:49		20:50		19:35	18:23		16:27		16:14
23	05:32		06:25		07:20	08:15		08:14		08:51
	21:48		20:48		19:32	18:21		16:26		16:15
24	05:34		06:27		07:22	08:17		08:16		08:51
	21:46		20:45		19:30	18:19		16:24		16:15
25	05:35		06:28		07:23	07:19		08:18		08:52
	21:45		20:43		19:27	17:17		16:23		16:16
26	05:37		06:30		07:25	07:21		08:19		08:52
	21:43		20:41		19:25	17:14		16:22		16:17
27	05:38		06:32		07:27	07:23		08:21		08:52
	21:42		20:38		19:22	17:12		16:21		16:17
28	05:40		06:34		07:29	07:25		08:23		08:52
	21:40		20:36		19:20	17:10		16:20		16:18
29	05:41		06:35		07:31	07:27		08:24		08:52
	21:38		20:34		19:18	17:08		16:19		16:19
30	05:43		06:37		07:32	07:29	08:15-08:23/8	08:26		08:52
	21:37		20:31		19:15	17:06		16:18		16:20
31	05:45		06:39			07:31	08:12-08:26/14			08:52
	21:35		20:29			17:04				16:21
Potential sun hours	512		460		382	328		259		233
Sum of minutes with flicker	199		8		0	22		174		0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar per WTG

Calculation: Curtailment Stratedy **WTG:** 5 - T05

Assumptions for shadow calculations

Flicker curtailment applied to this turbine

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April		May		June	
1	08:52	08:22	07:24	07:09		06:00	20:12-20:25/13	05:10	05:50-06:17/27
	16:22	17:14	18:10	20:08		21:04		21:54	21:08-21:19/11
2	08:52	08:20	07:22	07:07		05:58	20:14-20:23/9	05:09	05:51-06:17/26
	16:24	17:16	18:12	20:10		21:05		21:55	21:08-21:20/12
3	08:52	08:18	07:20	07:04		05:56		05:09	05:52-06:17/25
	16:25	17:18	18:14	20:12		21:07		21:56	21:09-21:22/13
4	08:52	08:17	07:17	07:02	07:26-07:27/1	05:54		05:08	05:52-06:17/25
	16:26	17:20	18:15	20:14		21:09		21:57	21:09-21:22/13
5	08:51	08:15	07:15	06:59	07:23-07:26/3	05:52		05:07	05:52-06:16/24
	16:27	17:22	18:17	20:16		21:11		21:58	21:08-21:23/15
6	08:51	08:13	07:13	06:57	07:21-07:27/6	05:50		05:06	05:54-06:16/22
	16:29	17:24	18:19	20:17		21:13		21:59	21:09-21:24/15
7	08:50	08:11	07:10	06:55	07:23-07:27/4	05:48		05:06	05:54-06:16/22
	16:30	17:26	18:21	20:19		21:14		22:00	21:09-21:25/16
8	08:50	08:09	07:08	06:52	07:24-07:27/3	05:46		05:05	05:55-06:16/21
	16:31	17:28	18:23	20:21		21:16		22:01	21:09-21:26/17
9	08:49	08:07	07:05	06:50	07:25-07:28/3	05:44		05:04	05:55-06:15/20
	16:33	17:30	18:25	20:23		21:18		22:02	21:09-21:26/17
10	08:49	08:05	07:03	06:47	07:25-07:28/3	05:42		05:04	05:56-06:15/19
	16:34	17:32	18:27	20:25		21:20		22:03	21:09-21:28/19
11	08:48	08:03	07:01	06:45	07:26-07:29/3	05:40		05:03	05:57-06:15/18
	16:36	17:34	18:29	20:27		21:22		22:04	21:09-21:28/19
12	08:47	08:01	06:58	06:43	07:27-07:31/4	05:39		05:03	05:57-06:14/17
	16:37	17:36	18:31	20:29		21:23		22:05	21:09-21:29/20
13	08:46	07:59	06:56	06:40	07:27-07:32/5	05:37		05:03	05:57-06:14/17
	16:39	17:38	18:33	20:30		21:25		22:05	21:10-21:29/19
14	08:46	07:57	06:53	06:38	07:27-07:35/8	05:35		05:02	05:58-06:15/17
	16:41	17:40	18:35	20:32		21:27		22:06	21:10-21:30/20
15	08:45	07:55	06:51	06:36	07:28-07:44/16	05:33	06:32-06:33/1	05:02	05:59-06:15/16
	16:42	17:42	18:36	20:34		21:28		22:07	21:11-21:31/20
16	08:44	07:53	06:48	06:33	07:28-07:31/3	05:32	06:00-06:01/1	05:02	05:59-06:15/16
	16:44	17:44	18:38	20:36	07:35-07:38/3	21:30	06:32-06:35/3	22:07	21:11-21:31/20
17	08:43	07:51	06:46	06:31	07:27-07:29/2	05:30	05:58-06:00/2	05:02	06:00-06:14/14
	16:46	17:46	18:40	20:38		21:32	06:31-06:36/5	22:08	21:11-21:32/21
18	08:42	07:49	06:44	06:29	07:27-07:28/1	05:28	05:57-06:01/4	05:02	06:00-06:14/14
	16:47	17:48	18:42	20:40		21:33	06:31-06:35/4	22:08	21:11-21:32/21
19	08:41	07:47	06:41	06:26	20:12-20:13/1	05:27	05:55-06:01/6	05:02	06:00-06:14/14
	16:49	17:50	18:44	20:42	07:26-07:27/1	21:35	06:30-06:33/3	22:08	21:12-21:33/21
20	08:39	07:45	06:39	06:24	20:10-20:14/4	05:25	05:54-06:02/8	05:02	06:01-06:14/13
	16:51	17:52	18:46	20:43		21:37	06:30-06:32/2	22:09	21:12-21:33/21
21	08:38	07:42	06:36	06:22	20:09-20:16/7	05:24	05:53-06:03/10	05:02	06:01-06:14/13
	16:53	17:54	18:48	20:45		21:38		22:09	21:12-21:33/21
22	08:37	07:40	06:34	06:19	20:09-20:18/9	05:22	05:52-06:04/12	05:02	06:01-06:14/13
	16:55	17:56	18:50	20:47		21:40		22:09	21:12-21:33/21
23	08:36	07:38	06:31	06:17	20:08-20:20/12	05:21	05:50-06:04/14	05:03	06:02-06:15/13
	16:56	17:58	18:51	20:49		21:41		22:09	21:13-21:34/21
24	08:34	07:36	06:29	06:15	20:08-20:22/14	05:20	05:49-06:05/16	05:03	06:01-06:15/14
	16:58	18:00	18:53	20:51		21:43		22:09	21:12-21:33/21
25	08:33	07:34	06:26	06:13	20:08-20:24/16	05:18	05:48-06:06/18	05:03	06:01-06:15/14
	17:00	18:02	18:55	20:53		21:44		22:09	21:12-21:33/21
26	08:31	07:31	06:24	06:11	20:08-20:25/17	05:17	05:48-06:07/19	05:04	06:01-06:17/16
	17:02	18:04	18:57	20:54		21:46	21:10-21:12/2	22:09	21:13-21:34/21
27	08:30	07:29	06:21	06:08	20:08-20:27/19	05:16	05:49-06:08/19	05:04	06:01-06:17/16
	17:04	18:06	18:59	20:56		21:47	21:10-21:13/3	22:09	21:13-21:33/20
28	08:28	07:27	06:19	06:06	20:09-20:29/20	05:15	05:49-06:09/20	05:05	06:01-06:18/17
	17:06	18:08	19:01	20:58		21:48	21:10-21:15/5	22:09	21:13-21:33/20
29	08:27		07:17	06:04	07:03-07:07/4	05:14	05:49-06:10/21	05:05	06:01-06:17/16
	17:08		20:03	21:00	20:10-20:28/18	21:50	21:09-21:16/7	22:09	21:13-21:33/20
30	08:25		07:14	06:02	07:03-07:05/2	05:12	05:50-06:12/22	05:06	06:01-06:18/17
	17:10		20:04	21:02	20:10-20:27/17	21:51	21:09-21:17/8	22:09	21:14-21:33/19
31	08:24		07:12			05:11	05:50-06:14/24		
	17:12		20:06			21:52	21:09-21:18/9		
Potential sun hours	250	273	367	420		494		510	
Sum of minutes with flicker	0	0	0	229		290		1091	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar per WTG

Calculation: Curtailment Stratedy **WTG:** 5 - T05

Assumptions for shadow calculations

Flicker curtailment applied to this turbine

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August		September		October	November	December
1	05:06	06:01-06:19/18	05:46		06:41	07:25-07:28/3	07:34	07:32	08:27
	22:08	21:14-21:33/19	21:33		20:26		19:13	17:02	16:18
2	05:07	06:00-06:19/19	05:48		06:43	07:24-07:27/3	07:36	07:34	08:29
	22:08	21:14-21:32/18	21:31		20:24		19:10	17:00	16:17
3	05:08	06:00-06:20/20	05:50		06:44	07:23-07:26/3	07:38	07:36	08:31
	22:08	21:14-21:32/18	21:29		20:22		19:08	16:58	16:16
4	05:09	06:00-06:21/21	05:51		06:46	07:21-07:24/3	07:40	07:38	08:32
	22:07	21:15-21:32/17	21:28		20:19		19:05	16:56	16:15
5	05:10	06:00-06:22/22	05:53		06:48	07:19-07:23/4	07:41	07:40	08:33
	22:07	21:15-21:31/16	21:26		20:17		19:03	16:54	16:15
6	05:11	06:00-06:23/23	05:55		06:50	07:17-07:23/6	07:43	07:42	08:35
	22:06	21:15-21:31/16	21:24		20:14		19:00	16:52	16:14
7	05:12	06:00-06:23/23	05:57		06:51	07:18-07:22/4	07:45	07:44	08:36
	22:05	21:15-21:30/15	21:22		20:12		18:58	16:50	16:14
8	05:13	06:00-06:24/24	05:58		06:53	07:20-07:21/1	07:47	07:46	08:37
	22:05	21:15-21:29/14	21:20		20:09		18:56	16:49	16:13
9	05:14	05:59-06:24/25	06:00		06:55		07:49	07:48	08:39
	22:04	21:15-21:28/13	21:18		20:07		18:53	16:47	16:13
10	05:15	05:59-06:25/26	06:02	20:24-20:29/5	06:57		07:51	07:50	08:40
	22:03	21:15-21:28/13	21:16		20:05		18:51	16:45	16:13
11	05:16	05:59-06:25/26	06:04	20:21-20:32/11	06:58		07:52	07:52	08:41
	22:02	21:16-21:27/11	21:14		20:02		18:48	16:43	16:13
12	05:17	05:59-06:26/27	06:05	20:20-20:34/14	07:00		07:54	07:54	08:42
	22:01	21:17-21:27/10	21:12		20:00		18:46	16:42	16:12
13	05:18	05:58-06:21/23	06:07	07:10-07:13/3	07:02		07:56	07:56	08:43
	22:00	21:17-21:26/9	21:10	20:18-20:34/16	19:57		18:44	16:40	16:12
14	05:19	05:58-06:19/21	06:09	07:10-07:12/2	07:04		07:58	07:58	08:44
	21:59	21:18-21:25/7	21:07	20:17-20:35/18	19:55		18:41	16:38	16:12
15	05:21	05:58-06:18/20	06:11	20:15-20:35/20	07:06		08:00	07:59	08:45
	21:58	21:18-21:24/6	21:05		19:52		18:39	16:37	16:12
16	05:22	05:57-06:17/20	06:12	20:15-20:33/18	07:07		08:02	08:01	08:46
	21:57	21:18-21:22/4	21:03		19:50		18:37	16:35	16:12
17	05:23	05:58-06:17/19	06:14	20:15-20:32/17	07:09		08:04	08:03	08:47
	21:56	21:20-21:22/2	21:01		19:47		18:34	16:34	16:12
18	05:25	05:58-06:16/18	06:16	20:14-20:29/15	07:11		08:06	08:05	08:48
	21:55	21:20-21:21/1	20:59		19:45		18:32	16:32	16:13
19	05:26	05:58-06:15/17	06:18	20:14-20:27/13	07:13		08:07	08:07	08:48
	21:53		20:57		19:42		18:30	16:31	16:13
20	05:28	06:00-06:15/15	06:19	20:14-20:25/11	07:14		08:09	08:09	08:49
	21:52		20:54		19:40		18:28	16:30	16:13
21	05:29	06:01-06:14/13	06:21	20:14-20:22/8	07:16		08:11	08:11	08:50
	21:51		20:52		19:37		18:25	16:28	16:14
22	05:31	06:02-06:13/11	06:23	20:14-20:21/7	07:18		08:13	08:12	08:50
	21:49		20:50		19:35		18:23	16:27	16:14
23	05:32	06:04-06:13/9	06:25	20:15-20:19/4	07:20		08:15	08:14	08:51
	21:48	06:41-06:42/1	20:48		19:32		18:21	16:26	16:15
24	05:34	06:05-06:12/7	06:27	20:16-20:17/1	07:22		08:17	08:16	08:51
	21:46	06:41-06:43/2	20:45	07:30-07:31/1	19:30		18:19	16:24	16:15
25	05:35	06:07-06:12/5	06:28	07:29-07:31/2	07:23		07:19	08:18	08:51
	21:45	06:42-06:45/3	20:43		19:27		17:17	16:23	16:16
26	05:37	06:08-06:11/3	06:30	07:29-07:32/3	07:25		07:21	08:19	08:52
	21:43	06:42-06:46/4	20:41		19:25		17:14	16:22	16:17
27	05:38	06:09-06:11/2	06:32	07:30-07:32/2	07:27		07:23	08:21	08:52
	21:42	06:42-06:46/4	20:38	07:36-07:41/5	19:22		17:12	16:21	16:17
28	05:40	06:42-06:44/2	06:34	07:28-07:45/17	07:29		07:25	08:23	08:52
	21:40		20:36		19:20		17:10	16:20	16:18
29	05:41		06:35	07:28-07:36/8	07:31		07:27	08:24	08:52
	21:38		20:34		19:18		17:08	16:19	16:19
30	05:43		06:37	07:28-07:33/5	07:32		07:29	08:26	08:52
	21:37		20:31		19:15		17:06	16:18	16:20
31	05:45		06:39	07:27-07:31/4			07:31		08:52
	21:35		20:29				17:04		16:21
Potential sun hours	512		460		382		328	259	233
Sum of minutes with flicker	702		230		27		0	0	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar per WTG

Calculation: Curtailment Stratedy **WTG:** 6 - T06

Assumptions for shadow calculations

Flicker curtailment applied to this turbine

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June
1	08:52	08:22	07:24	07:09 07:33-07:59/26	06:00 06:42-06:54/12	05:10 20:54-21:19/25
	16:22	17:14	18:10	20:08	21:04	21:54
2	08:52	08:20	07:22	07:07 07:31-07:58/27	05:58 06:46-06:50/4	05:09 20:54-21:20/26
	16:24	17:16	18:12	20:10	21:05	21:55
3	08:52	08:18	07:20	07:04 07:28-07:56/28	05:56	05:09 20:55-21:22/27
	16:25	17:18	18:14	20:12	21:07	21:56
4	08:52	08:17	07:17	07:02 07:26-07:55/29	05:54	05:08 20:55-21:22/27
	16:26	17:20	18:15	20:14	21:09	21:57
5	08:51	08:15	07:15	06:59 07:23-07:52/29	05:52	05:07 20:55-21:23/28
	16:27	17:22	18:17	20:16 19:47-19:48/1	21:11	21:58
6	08:51	08:13	07:13	06:57 07:21-07:50/29	05:50	05:06 20:56-21:24/28
	16:29	17:24	18:19	20:17 19:45-19:50/5	21:13	21:59
7	08:50	08:11	07:10	06:55 07:18-07:45/27	05:48	05:06 20:56-21:25/29
	16:30	17:26	18:21	20:19 19:43-19:52/9	21:14	22:00
8	08:50	08:09	07:08	06:52 07:16-07:43/27	05:46	05:05 20:57-21:26/29
	16:31	17:28	18:23	20:21 19:42-19:54/12	21:16	22:01
9	08:49	08:07	07:05	06:50 07:14-07:43/29	05:44	05:04 05:36-05:37/1
	16:33	17:30	18:25	20:23 19:41-19:56/15	21:18	22:02 20:57-21:26/29
10	08:49	08:05	07:03	06:47 07:11-07:42/31	05:42	05:04 05:36-05:38/2
	16:34	17:32	18:27	20:25 19:40-19:57/17	21:20	22:03 20:58-21:28/30
11	08:48	08:03	07:01	06:45 07:09-07:41/32	05:40	05:03 05:36-05:39/3
	16:36	17:34	18:29	20:27 19:39-19:59/20	21:22	22:04 20:57-21:28/31
12	08:47	08:01	06:58 07:22-07:23/1	06:43 07:07-07:40/33	05:39	05:03 05:35-05:39/4
	16:37	17:36	18:31	20:29 19:39-20:00/21	21:23	22:05 20:58-21:29/31
13	08:46	07:59	06:56 07:20-07:25/5	06:40 07:04-07:38/34	05:37	05:03 05:35-05:40/5
	16:39	17:38	18:33	20:30 19:38-19:57/19	21:25	22:05 20:59-21:29/30
14	08:46	07:57	06:53 07:17-07:25/8	06:38 07:02-07:36/34	05:35	05:02 05:35-05:40/5
	16:41	17:40	18:35	20:32 19:39-19:55/16	21:27	22:06 20:59-21:30/31
15	08:45	07:55	06:51 07:15-07:27/12	06:36 07:00-07:34/34	05:33	05:02 05:35-05:41/6
	16:42	17:42	18:36	20:34 19:39-19:54/15	21:28	22:07 21:00-21:31/31
16	08:44	07:53	06:48 07:12-07:27/15	06:33 06:58-07:21/23 19:38-19:52/14	05:32 20:56-20:58/2	05:02 05:35-05:41/6
	16:44	17:44	18:38	20:36 07:24-07:31/7	21:30	22:07 21:00-21:31/31
17	08:43	07:51	06:46 18:13-18:14/1	06:31 06:55-07:20/25	05:30 20:55-20:59/4	05:02 05:35-05:42/7
	16:46	17:46	18:40 07:10-07:27/17	20:38 19:39-19:51/12	21:32	22:08 21:01-21:32/31
18	08:42	07:49	06:44 18:10-18:15/5	06:29 06:53-07:19/26	05:28 20:54-21:01/7	05:02 05:35-05:42/7
	16:47	17:48	18:42 07:07-07:27/20	20:40 19:40-19:51/11	21:33	22:08 21:01-21:32/31
19	08:40	07:47	06:41 18:09-18:18/9	06:26 06:51-07:18/27	05:27 20:53-21:02/9	05:02 05:35-05:42/7
	16:49	17:50	18:44 07:05-07:27/22	20:42 19:42-19:51/9	21:35	22:08 21:01-21:33/32
20	08:39	07:45	06:39 18:07-18:19/12	06:24 06:49-07:16/27	05:25 20:53-21:04/11	05:02 05:35-05:42/7
	16:51	17:52	18:46 07:03-07:27/24	20:43 19:42-19:49/7	21:37	22:09 21:01-21:33/32
21	08:38	07:42	06:36 18:07-18:21/14	06:22 06:46-07:12/26	05:24 20:53-21:05/12	05:02 05:35-05:42/7
	16:53	17:54	18:48 07:00-07:26/26	20:45 19:45-19:49/4	21:38	22:09 21:02-21:33/31
22	08:37	07:40	06:34 18:06-18:23/17	06:19 06:44-07:11/27	05:22 20:52-21:06/14	05:02 05:35-05:42/7
	16:55	17:56	18:50 06:58-07:26/28	20:47	21:40	22:09 21:02-21:33/31
23	08:36	07:38	06:31 18:06-18:25/19	06:17 06:42-07:09/27	05:21 20:52-21:08/16	05:03 05:36-05:43/7
	16:56	17:58	18:51 06:55-07:24/29	20:49	21:41	22:09 21:02-21:34/32
24	08:34	07:36	06:29 18:05-18:26/21	06:15 06:40-07:08/28	05:20 20:52-21:09/17	05:03 05:36-05:43/7
	16:58	18:00	18:53 06:53-07:23/30	20:51	21:43	22:09 21:02-21:33/31
25	08:33	07:33	06:26 18:05-18:29/24	06:13 06:38-07:06/28	05:18 20:53-21:11/18	05:03 05:36-05:43/7
	17:00	18:02	18:55 06:50-07:21/31	20:53	21:44	22:09 21:02-21:33/31
26	08:31	07:31	06:24 18:05-18:28/23	06:11 06:37-07:01/24	05:17 20:53-21:12/19	05:04 05:37-05:43/6
	17:02	18:04	18:57 06:48-07:19/31	20:54	21:46	22:09 21:03-21:34/31
27	08:30	07:29	06:21 18:06-18:28/22	06:08 06:37-07:00/23	05:16 20:53-21:13/20	05:04 05:37-05:43/6
	17:04	18:06	18:59 06:45-07:15/30	20:56	21:47	22:09 21:02-21:33/31
28	08:28	07:27	06:19 18:07-18:27/20 07:03-07:12/9	06:06 06:38-06:59/21	05:15 20:53-21:15/22	05:05 05:38-05:44/6
	17:06	18:08	19:01 06:43-07:02/19	20:58	21:48	22:09 21:03-21:33/30
29	08:27		07:17 19:07-19:25/18	06:04 06:39-06:57/18	05:13 20:53-21:16/23	05:05 05:38-05:43/5
	17:08		20:03 07:40-08:01/21	21:00	21:50	22:09 21:02-21:33/31
30	08:25		07:14 19:09-19:23/14	06:02 06:40-06:56/16	05:12 20:53-21:17/24	05:06 05:39-05:43/4
	17:10		20:04 07:38-08:01/23	21:02	21:51	22:09 21:02-21:33/31
31	08:24		07:12 19:11-19:19/8		05:11 20:53-21:18/25	
	17:12		20:06 07:35-07:59/24		21:52	
Potential sun hours	250	273	367	420	494	510
Sum of minutes with flicker	0	0	652	1029	259	1021

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar per WTG

Calculation: Curtailment Stratedy **WTG:** 6 - T06

Assumptions for shadow calculations

Flicker curtailment applied to this turbine

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August		September		October		November	December
1	05:06	05:40-05:44/4	05:46		06:41	07:08-07:40/32	07:34	08:01-08:03/2	07:32	08:27
	22:08	21:03-21:33/30	21:33		20:26	19:38-19:58/20	19:13		17:02	16:18
2	05:07	05:40-05:43/3	05:48		06:43	07:10-07:41/31	07:36		07:34	08:29
	22:08	21:02-21:32/30	21:31		20:24	19:39-19:56/17	19:10		17:00	16:17
3	05:08	05:41-05:43/2	05:50		06:44	07:12-07:41/29	07:38		07:36	08:30
	22:08	21:02-21:32/30	21:29		20:22	19:38-19:53/15	19:08		16:58	16:16
4	05:09	05:42-05:43/1	05:51		06:46	07:13-07:40/27	07:40		07:38	08:32
	22:07	21:02-21:32/30	21:28		20:19	19:39-19:51/12	19:05		16:56	16:15
5	05:10	21:02-21:31/29	05:53		06:48	07:15-07:41/26	07:41		07:40	08:33
	22:07		21:26		20:17	19:40-19:49/9	19:03		16:54	16:15
6	05:11	21:01-21:31/30	05:55		06:50	07:17-07:46/29	07:43		07:42	08:35
	22:06		21:24		20:14	19:41-19:47/6	19:00		16:52	16:14
7	05:12	21:01-21:30/29	05:57		06:51	07:18-07:47/29	07:45		07:44	08:36
	22:05		21:22		20:12	19:42-19:43/1	18:58		16:50	16:14
8	05:13	21:01-21:29/28	05:58		06:53	07:20-07:49/29	07:47		07:46	08:37
	22:05		21:20		20:09		18:56		16:49	16:13
9	05:14	21:01-21:28/27	06:00		06:55	07:22-07:50/28	07:49		07:48	08:39
	22:04		21:18		20:07		18:53		16:47	16:13
10	05:15	21:01-21:28/27	06:02		06:57	07:24-07:51/27	07:51		07:50	08:40
	22:03		21:16		20:04		18:51		16:45	16:13
11	05:16	21:01-21:27/26	06:04	06:53-07:00/7	06:58	07:25-07:51/26	07:52		07:52	08:41
	22:02		21:14		20:02		18:48		16:43	16:13
12	05:17	21:02-21:27/25	06:05	06:50-07:03/13	07:00	19:04-19:11/7	07:54		07:54	08:42
	22:01		21:12		20:00	07:27-07:51/24	18:46		16:42	16:12
13	05:18	21:02-21:26/24	06:07	06:47-07:04/17	07:02	19:00-19:13/13	07:56		07:56	08:43
	22:00		21:10		19:57	07:29-07:52/23	18:44		16:40	16:12
14	05:19	21:02-21:25/23	06:09	06:46-07:05/19	07:04	18:58-19:15/17	07:58		07:58	08:44
	21:59		21:07		19:55	07:30-07:51/21	18:41		16:38	16:12
15	05:21	21:02-21:24/22	06:11	06:46-07:06/20	07:06	18:56-19:16/20 07:54-08:01/7	08:00		07:59	08:45
	21:58		21:05		19:52	07:32-07:52/20	18:39		16:37	16:12
16	05:22	21:01-21:22/21	06:12	06:44-07:06/22	07:07	18:55-19:17/22	08:02		08:01	08:46
	21:57		21:03		19:50	07:34-08:04/30	18:37		16:35	16:12
17	05:23	21:01-21:21/20	06:14	06:43-07:09/26	07:09	18:53-19:17/24	08:04		08:03	08:47
	21:56		21:01		19:47	07:36-08:07/31	18:34		16:34	16:12
18	05:25	21:02-21:21/19	06:16	06:45-07:13/28	07:11	18:53-19:16/23	08:06		08:05	08:48
	21:55		20:59		19:45	07:37-08:08/31	18:32		16:32	16:13
19	05:26	21:02-21:19/17	06:18	06:46-07:14/28	07:13	18:52-19:14/22	08:07		08:07	08:48
	21:53		20:57		19:42	07:39-08:09/30	18:30		16:31	16:13
20	05:28	21:02-21:18/16	06:19	06:48-07:15/27	07:14	18:52-19:12/20	08:09		08:09	08:49
	21:52		20:54		19:40	07:41-08:10/29	18:28		16:30	16:13
21	05:29	21:03-21:17/14	06:21	06:50-07:16/26	07:16	18:51-19:09/18	08:11		08:11	08:50
	21:51		20:52		19:37	07:43-08:11/28	18:25		16:28	16:14
22	05:31	21:03-21:16/13	06:23	06:51-07:18/27	07:18	18:51-19:06/15	08:13		08:12	08:50
	21:49		20:50	19:49-19:54/5	19:35	07:44-08:11/27	18:23		16:27	16:14
23	05:32	21:04-21:15/11	06:25	06:53-07:20/27	07:20	18:52-19:04/12	08:15		08:14	08:51
	21:48		20:47	19:47-19:54/7	19:32	07:46-08:11/25	18:21		16:26	16:15
24	05:34	21:04-21:13/9	06:27	06:55-07:21/26	07:22	18:53-19:02/9	08:17		08:16	08:51
	21:46		20:45	19:45-19:54/9	19:30	07:48-08:11/23	18:19		16:24	16:15
25	05:35	21:04-21:12/8	06:28	06:56-07:22/26	07:23	18:53-18:59/6	07:19		08:18	08:51
	21:45		20:43	19:43-19:54/11	19:27	07:50-08:11/21	17:17		16:23	16:16
26	05:37	21:05-21:11/6	06:30	06:58-07:23/25	07:25	18:54-18:56/2	07:21		08:19	08:52
	21:43		20:41	19:42-19:54/12	19:25	07:51-08:09/18	17:14		16:22	16:17
27	05:38	21:05-21:09/4	06:32	07:00-07:23/23 19:41-19:55/14	07:27	07:53-08:09/16	07:23		08:21	08:52
	21:42		20:38	07:26-07:33/7	19:22		17:12		16:21	16:17
28	05:40	21:07-21:08/1	06:34	07:01-07:35/34	07:29	07:55-08:08/13	07:25		08:23	08:52
	21:40		20:36	19:40-19:55/15	19:20		17:10		16:20	16:18
29	05:41		06:35	07:03-07:37/34	07:30	07:57-08:07/10	07:27		08:24	08:52
	21:38		20:34	19:39-19:56/17	19:17		17:08		16:19	16:19
30	05:43		06:37	07:05-07:39/34	07:32	07:59-08:05/6	07:29		08:26	08:52
	21:37		20:31	19:39-19:58/19	19:15		17:06		16:18	16:20
31	05:45		06:39	07:07-07:39/32			07:30			08:52
	21:35		20:29	19:38-19:59/21			17:04			16:21
Potential sun hours	512		460		382		328		259	233
Sum of minutes with flicker	579		658		1056		2		0	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar per WTG

Calculation: Curtailment Stratedy **WTG:** 7 - T07

Assumptions for shadow calculations

Flicker curtailment applied to this turbine

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June
1	08:52 16:22	08:22 16:36-16:42/6 17:14	07:24 17:31-17:42/11 18:10	07:09 19:26-19:41/15 20:08	06:00 21:04	05:10 21:07-21:19/12 21:54
2	08:52 16:24	08:20 16:35-16:44/9 17:16	07:22 17:30-17:44/14 18:12	07:07 19:26-19:43/17 20:10	05:58 21:05	05:09 21:07-21:20/13 21:55
3	08:52 16:25	08:18 16:34-16:46/12 17:18	07:20 17:29-17:46/17 18:13	07:04 19:26-19:45/19 20:12	05:56 21:07	05:09 21:07-21:22/15 21:56
4	08:52 16:26	08:17 16:34-16:48/14 17:20	07:17 17:29-17:48/19 18:15	07:02 19:26-19:46/20 20:14	05:54 21:09	05:08 21:07-21:22/15 21:57
5	08:51 16:27	08:15 16:34-16:50/16 17:22	07:15 17:29-17:50/21 18:17	06:59 19:26-19:47/21 20:16	05:52 21:11	05:07 21:07-21:23/16 21:58
6	08:51 16:29	08:13 16:34-16:53/19 17:24	07:13 17:29-17:52/23 18:19	06:57 19:28-19:46/18 20:17	05:50 21:13	05:06 21:07-21:24/17 21:59
7	08:50 16:30	08:11 16:34-16:55/21 17:26	07:10 17:29-17:54/25 18:21	06:55 19:28-19:44/16 20:19	05:48 21:14	05:06 21:07-21:25/18 22:00
8	08:50 16:31	08:09 16:34-16:57/23 17:28	07:08 17:30-17:56/26 18:23	06:52 19:30-19:41/11 20:21	05:46 21:16	05:05 21:07-21:26/19 22:01
9	08:49 16:33	08:07 16:35-16:58/23 17:30	07:05 17:30-17:58/28 18:25	06:50 20:23	05:44 21:18	05:04 21:07-21:26/19 22:02
10	08:49 16:34	08:05 16:36-16:58/22 17:32	07:03 17:31-18:00/29 18:27	06:47 20:25	05:42 21:20	05:04 21:08-21:27/19 22:03
11	08:48 16:36	08:03 16:36-16:57/21 17:34	07:01 17:34-18:02/28 18:29	06:45 20:27	05:40 21:21	05:03 21:07-21:28/21 22:04
12	08:47 16:37	08:01 16:38-16:56/18 17:36	06:58 17:36-18:04/28 18:31	06:43 20:29	05:39 21:23	05:03 21:07-21:29/22 22:05
13	08:46 16:39	07:59 16:39-16:55/16 17:38	06:56 17:41-18:01/20 18:33	06:40 20:30	05:37 21:25	05:03 21:08-21:29/21 22:05
14	08:46 16:41	07:57 16:40-16:52/12 17:40	06:53 17:41-17:58/17 18:35	06:38 20:32	05:35 21:27	05:02 21:08-21:30/22 22:06
15	08:45 16:42	07:55 16:44-16:49/5 17:42	06:51 17:42-17:57/15 18:36	06:35 20:34	05:33 21:28	05:02 21:09-21:31/22 22:07
16	08:44 16:44	07:53 17:44	06:48 17:43-17:55/12 18:38	06:33 20:36	05:32 21:30	05:02 21:09-21:31/22 22:07
17	08:43 16:46	07:51 17:46	06:46 17:45-17:54/9 18:40	06:31 20:38	05:30 21:32	05:02 21:09-21:32/23 22:08
18	08:42 16:47	07:49 17:48	06:44 17:47-17:52/5 18:42	06:29 20:40	05:28 21:33	05:02 21:09-21:32/23 22:08
19	08:40 16:49	07:47 17:50	06:41 18:44	06:26 20:41	05:27 21:35	05:02 21:09-21:33/24 22:08
20	08:39 16:51	07:45 17:52	06:39 18:46	06:24 20:43	05:25 21:37	05:02 21:10-21:33/23 22:09
21	08:38 16:53	07:42 17:54	06:36 18:48	06:22 20:45	05:24 21:38	05:02 21:10-21:33/23 22:09
22	08:37 16:55	07:40 17:56	06:34 18:50	06:19 20:47	05:22 21:40	05:02 21:10-21:33/23 22:09
23	08:35 16:56	07:38 17:58	06:31 18:51	06:17 20:49	05:21 21:41	05:02 21:10-21:34/24 22:09
24	08:34 16:58	07:36 18:00	06:29 18:24-18:25/1 18:53	06:15 20:51	05:20 21:43	05:03 21:10-21:33/23 22:09
25	08:33 17:00	07:33 18:02	06:26 18:23-18:24/1 18:55	06:13 20:53	05:18 21:10-21:11/1 21:44	05:03 21:10-21:33/23 22:09
26	08:31 17:02	07:31 17:35-17:36/1 18:04	06:24 18:57	06:11 20:54	05:17 21:09-21:12/3 21:46	05:04 21:11-21:34/23 22:09
27	08:30 17:04	07:29 17:34-17:38/4 18:06	06:21 18:31-18:32/1 18:59	06:08 20:56	05:16 21:09-21:13/4 21:47	05:04 21:11-21:33/22 22:09
28	08:28 17:06	07:27 17:32-17:40/8 18:08	06:19 18:30-18:34/4 19:01	06:06 20:58	05:15 21:08-21:15/7 21:48	05:05 21:11-21:33/22 22:09
29	08:27 17:08		07:16 19:28-19:36/8 20:03	06:04 21:00	05:13 21:08-21:16/8 21:50	05:05 21:11-21:33/22 22:09
30	08:25 17:10		07:14 19:28-19:38/10 20:04	06:02 21:02	05:12 21:08-21:17/9 21:51	05:06 21:12-21:33/21 22:09
31	08:24 16:36-16:40/4 17:12		07:12 19:26-19:39/13 20:06		05:11 21:07-21:18/11 21:52	
Potential sun hours	250	273	367	420	494	510
Sum of minutes with flicker	4	250	385	137	43	612

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar per WTG

Calculation: Curtailment Stratedy **WTG:** 7 - T07

Assumptions for shadow calculations

Flicker curtailment applied to this turbine

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July	August	September	October	November	December
1	05:06 21:12-21:33/21 22:08	05:46 21:33	06:41 20:26	07:34 18:20-18:41/21 19:13	07:32 16:05-16:27/22 17:02	08:27 16:18
2	05:07 21:12-21:32/20 22:08	05:48 21:31	06:43 20:24	07:36 18:13-18:41/28 19:10	07:34 16:04-16:28/24 17:00	08:29 16:17
3	05:08 21:12-21:32/20 22:08	05:50 21:29	06:44 20:22	07:38 18:10-18:39/29 19:08	07:36 16:04-16:26/22 16:58	08:30 16:16
4	05:09 21:13-21:32/19 22:07	05:51 21:28	06:46 19:27-19:38/11 20:19	07:40 18:08-18:37/29 19:05	07:38 16:04-16:24/20 16:56	08:32 16:15
5	05:10 21:13-21:31/18 22:07	05:53 21:26	06:48 19:25-19:41/16 20:17	07:41 18:07-18:34/27 19:03	07:40 16:04-16:22/18 16:54	08:33 16:15
6	05:11 21:13-21:30/17 22:06	05:55 21:24	06:50 19:23-19:41/18 20:14	07:43 18:06-18:32/26 19:00	07:42 16:04-16:20/16 16:52	08:35 16:14
7	05:12 21:13-21:29/16 22:05	05:57 21:22	06:51 19:22-19:42/20 20:12	07:45 18:04-18:29/25 18:58	07:44 16:04-16:18/14 16:50	08:36 16:14
8	05:13 21:13-21:29/16 22:05	05:58 21:20	06:53 19:21-19:41/20 20:09	07:47 18:04-18:26/22 18:56	07:46 16:05-16:17/12 16:49	08:37 16:13
9	05:14 21:14-21:28/14 22:04	06:00 21:18	06:55 19:20-19:39/19 20:07	07:49 18:04-18:24/20 18:53	07:48 16:06-16:15/9 16:47	08:39 16:13
10	05:15 21:14-21:28/14 22:03	06:02 21:16	06:57 19:19-19:36/17 20:04	07:51 18:03-18:21/18 18:51	07:50 16:06-16:13/7 16:45	08:40 16:13
11	05:16 21:14-21:27/13 22:02	06:04 21:14	06:58 19:19-19:34/15 20:02	07:52 18:04-18:19/15 18:48	07:52 16:07-16:11/4 16:43	08:41 16:13
12	05:17 21:15-21:27/12 22:01	06:05 21:12	07:00 19:19-19:32/13 20:00	07:54 18:04-18:17/13 18:46	07:54 16:08-16:09/1 16:42	08:42 16:12
13	05:18 21:16-21:26/10 22:00	06:07 21:10	07:02 19:18-19:29/11 19:57	07:56 18:04-18:14/10 18:44	07:56 16:40	08:43 16:12
14	05:19 21:16-21:25/9 21:59	06:09 21:07	07:04 19:18-19:26/8 19:55	07:58 18:05-18:12/7 18:41	07:58 16:38	08:44 16:12
15	05:21 21:17-21:24/7 21:58	06:11 21:05	07:06 19:19-19:24/5 19:52	08:00 18:06-18:10/4 18:39	07:59 16:37	08:45 16:12
16	05:22 21:17-21:22/5 21:57	06:12 21:03	07:07 19:20-19:22/2 19:50	08:02 18:37	08:01 16:35	08:46 16:12
17	05:23 21:17-21:21/4 21:56	06:14 21:01	07:09 19:47	08:04 18:34	08:03 16:34	08:47 16:12
18	05:25 21:19-21:21/2 21:54	06:16 20:59	07:11 19:45	08:05 18:32	08:05 16:32	08:48 16:13
19	05:26 21:53	06:18 20:56	07:13 19:11-19:12/1 19:42	08:07 18:30	08:07 16:31	08:48 16:13
20	05:28 21:52	06:19 20:54	07:14 19:11-19:12/1 19:40	08:09 18:28	08:09 16:29	08:49 16:13
21	05:29 21:51	06:21 20:52	07:16 19:37	08:11 18:25	08:11 16:28	08:50 16:14
22	05:30 21:49	06:23 20:50	07:18 19:35	08:13 18:23	08:12 16:27	08:50 16:14
23	05:32 21:48	06:25 20:47	07:20 19:32	08:15 18:21	08:14 16:26	08:51 16:15
24	05:34 21:46	06:27 20:45	07:21 19:30	08:17 18:19	08:16 16:24	08:51 16:15
25	05:35 21:45	06:28 20:43	07:23 18:31-18:35/4 19:27	07:19 17:17	08:18 16:23	08:51 16:16
26	05:37 21:43	06:30 20:41	07:25 18:27-18:35/8 19:25	07:21 17:14	08:19 16:22	08:52 16:17
27	05:38 21:42	06:32 20:38	07:27 18:25-18:36/11 19:22	07:23 16:12-16:20/8 17:12	08:21 16:21	08:52 16:17
28	05:40 21:40	06:34 20:36	07:29 18:24-18:37/13 19:20	07:25 16:09-16:22/13 17:10	08:23 16:20	08:52 16:18
29	05:41 21:38	06:35 20:33	07:30 18:22-18:38/16 19:17	07:27 16:07-16:24/17 17:08	08:24 16:19	08:52 16:19
30	05:43 21:37	06:37 20:31	07:32 18:20-18:40/20 19:15	07:29 16:07-16:26/19 17:06	08:26 16:18	08:52 16:20
31	05:45 21:35	06:39 20:29		07:30 16:06-16:27/21 17:04		08:52 16:21
Potential sun hours	512	460	382	328	259	233
Sum of minutes with flicker	237	0	249	372	169	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar per WTG

Calculation: Curtailment Stratedy **WTG:** 8 - T08

Assumptions for shadow calculations

Flicker curtailment applied to this turbine

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March		April		May		June	
1	08:52	14:27-14:47/20	08:22		07:24	17:18-17:42/24	07:09	19:25-19:41/16	06:00	07:01-07:08/7	05:10	05:47-06:10/23
	16:22		17:14		18:09		20:08		21:03		21:54	
2	08:52	14:28-14:47/19	08:20		07:22	17:19-17:42/23	07:07	19:24-19:43/19	05:58	07:01-07:04/3	05:09	05:47-06:09/22
	16:23		17:16		18:11		20:10		21:05		21:55	
3	08:52	14:30-14:47/17	08:18		07:19	17:22-17:40/18	07:04	19:24-19:45/21	05:56	07:00-07:01/1	05:08	05:48-06:09/21
	16:24		17:18		18:13		20:12		21:07		21:56	
4	08:52	14:31-14:46/15	08:17		07:17	17:28-17:38/10	07:02	19:24-19:46/22	05:54		05:07	05:49-06:09/20
	16:26		17:20		18:15		20:14		21:09		21:57	
5	08:51	14:33-14:45/12	08:15		07:15		06:59	19:25-19:46/21	05:52		05:07	05:49-06:09/20
	16:27		17:22		18:17		20:15		21:11		21:58	
6	08:51	14:35-14:44/9	08:13		07:12		06:57	19:26-19:45/19	05:50		05:06	05:50-06:09/19
	16:28		17:24		18:19		20:17		21:13		21:59	
7	08:50		08:11		07:10		06:54	19:27-19:42/15	05:48		05:05	05:50-06:08/18
	16:30		17:26		18:21		20:19		21:14		22:00	
8	08:50		08:09		07:08		06:52	19:29-19:40/11	05:46		05:05	05:51-06:08/17
	16:31		17:28		18:23		20:21		21:16		22:01	
9	08:49		08:07		07:05		06:50		05:44		05:04	05:51-06:08/17
	16:32		17:30		18:25		20:23		21:18		22:02	
10	08:49		08:05		07:03		06:47	07:11-07:14/3	05:42		05:04	05:52-06:08/16
	16:34		17:32		18:27		20:25		21:20		22:03	
11	08:48	15:58-15:59/1	08:03		07:00		06:45	07:09-07:16/7	05:40		05:03	05:52-06:07/15
	16:35		17:34		18:29		20:27		21:21		22:04	
12	08:47	15:58-16:01/3	08:01		06:58		06:42	07:07-07:17/10	05:38		05:03	05:53-06:07/14
	16:37		17:36		18:31		20:28		21:23		22:04	
13	08:46	15:59-16:02/3	07:59		06:56		06:40	07:04-07:18/14	05:37	06:04-06:06/2	05:02	05:54-06:07/13
	16:39		17:38		18:32		20:30		21:25		22:05	
14	08:45	15:59-16:04/5	07:57	17:09-17:10/1	06:53		06:38	07:02-07:19/17	05:35	06:03-06:07/4	05:02	05:55-06:07/12
	16:40		17:40		18:34		20:32		21:27		22:06	
15	08:45	15:59-16:06/7	07:55	17:08-17:12/4	06:51		06:35	07:00-07:19/19	05:33	06:01-06:07/6	05:02	05:56-06:07/11
	16:42		17:42		18:36		20:34		21:28		22:06	
16	08:44	16:00-16:08/8	07:53	17:08-17:15/7	06:48		06:33	06:57-07:19/22	05:31	06:00-06:09/9	05:02	05:55-06:06/11
	16:44		17:44		18:38		20:36		21:30		22:07	
17	08:43	15:59-16:09/10	07:51	17:07-17:17/10	06:46		06:31	06:55-07:19/24	05:30	05:58-06:09/11	05:02	05:56-06:05/9
	16:45		17:46		18:40		20:38		21:32		22:07	
18	08:41	15:59-16:12/13	07:49	17:06-17:18/12	06:43		06:28	06:54-07:20/26	05:28	05:57-06:09/12	05:02	05:57-06:06/9
	16:47		17:48		18:42		20:40		21:33		22:08	
19	08:40	15:59-16:14/15	07:47	17:07-17:21/14	06:41		06:26	06:56-07:20/24	05:27	05:55-06:09/14	05:02	05:58-06:06/8
	16:49		17:50		18:44		20:41		21:35		22:08	
20	08:39	15:58-16:15/17	07:44	17:07-17:23/16	06:38		06:24	06:57-07:19/22	05:25	05:54-06:10/16	05:02	05:58-06:06/8
	16:51		17:52		18:46		20:43		21:36		22:09	
21	08:38	15:59-16:18/19	07:42	17:07-17:26/19	06:36		06:21	06:58-07:19/21	05:24	05:53-06:10/17	05:02	05:58-06:06/8
	16:52		17:54		18:48		20:45		21:38		22:09	
22	08:37	15:59-16:20/21	07:40	17:07-17:27/20	06:34		06:19	06:59-07:18/19	05:22	05:51-06:10/19	05:02	05:58-06:06/8
	16:54		17:56		18:49		20:47		21:40		22:09	
23	08:35	15:58-16:22/24	07:38	17:08-17:29/21	06:31		06:17	07:00-07:18/18	05:21	05:50-06:10/20	05:02	05:58-06:06/8
	16:56		17:58		18:51		20:49		21:41		22:09	
24	08:34	15:57-16:23/26	07:36	17:10-17:32/22	06:29		06:15	07:01-07:18/17	05:19	05:49-06:10/21	05:03	05:59-06:07/8
	16:58		18:00		18:53		20:51		21:43		22:09	
25	08:33	15:56-16:23/27	07:33	17:10-17:33/23	06:26		06:13	07:01-07:17/16	05:18	05:48-06:10/22	05:03	05:58-06:07/9
	17:00		18:02		18:55		20:52		21:44		22:09	
26	08:31	16:05-16:22/17	07:31	17:13-17:36/23	06:24		06:10	07:01-07:16/15	05:17	05:47-06:11/24	05:03	05:59-06:08/9
	17:02	15:54-16:04/10	18:04		18:57		20:54		21:46		22:09	
27	08:30	16:08-16:22/14	07:29	17:17-17:38/21	06:21	18:29-18:32/3	06:08	07:02-07:15/13	05:16	05:46-06:11/25	05:04	05:58-06:09/11
	17:04	15:52-16:02/10	18:06		18:59		20:56		21:47		22:09	
28	08:28	16:10-16:20/10	07:26	17:17-17:40/23	06:19	18:27-18:33/6	06:06	07:01-07:13/12	05:14	05:46-06:11/25	05:04	05:58-06:10/12
	17:06	15:50-15:55/5	18:07		19:01		20:58		21:48		22:09	
29	08:27				07:16	19:26-19:36/10	06:04	07:01-07:11/10	05:13	05:46-06:10/24	05:05	05:57-06:10/13
	17:08				20:02		21:00		21:50		22:09	
30	08:25				07:14	19:25-19:37/12	06:02	07:00-07:09/9	05:12	05:46-06:10/24	05:05	05:58-06:11/13
	17:10				20:04		21:02		21:51		22:09	
31	08:23				07:11	19:25-19:39/14			05:11	05:47-06:10/23		
	17:12				20:06				21:52			
Potential sun hours	250		273		367		420		494		510	
Sum of minutes with flicker		357		236		120		482		329		402

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar per WTG

Calculation: Curtailment Stratedy **WTG:** 8 - T08

Assumptions for shadow calculations

Flicker curtailment applied to this turbine

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July	August	September	October	November	December
1	05:06 05:57-06:11/14 22:08	05:46 21:33	06:41 07:08-07:15/7 20:26	07:34 19:12	07:32 17:02	08:27 15:40-15:41/1 16:17
2	05:07 05:57-06:12/15 22:08	05:48 21:31	06:42 07:10-07:13/3 20:24	07:36 19:10	07:34 17:00	08:29 16:17
3	05:08 05:57-06:13/16 22:07	05:50 21:29	06:44 20:21	07:38 19:07	07:36 16:58	08:30 16:16
4	05:09 05:57-06:13/16 22:07	05:51 21:27	06:46 19:26-19:37/11 20:19	07:39 19:05	07:38 16:56	08:32 16:15
5	05:09 05:57-06:14/17 22:06	05:53 21:26	06:48 19:24-19:39/15 20:17	07:41 19:03	07:40 16:54	08:33 16:15
6	05:10 05:56-06:14/18 22:06	05:55 21:24	06:49 19:21-19:40/19 20:14	07:43 19:00	07:42 16:52	08:35 14:21-14:30/9 16:14
7	05:11 05:55-06:15/20 22:05	05:56 21:22	06:51 19:20-19:41/21 20:12	07:45 18:58	07:44 16:50	08:36 14:19-14:31/12 16:14
8	05:12 05:55-06:15/20 22:04	05:58 21:20	06:53 19:19-19:41/22 20:09	07:47 18:55	07:46 16:48	08:37 14:19-14:34/15 16:13
9	05:13 05:55-06:16/21 22:04	06:00 21:18	06:55 19:18-19:38/20 20:07	07:49 18:04-18:10/6 18:53	07:48 16:47	08:39 14:18-14:35/17 16:13
10	05:14 05:55-06:16/21 22:03	06:02 07:09-07:10/1 21:16	06:56 19:17-19:36/19 20:04	07:50 18:01-18:13/12 18:51	07:50 16:45	08:40 14:17-14:36/19 16:13
11	05:16 05:55-06:17/22 22:02	06:03 07:09-07:14/5 21:14	06:58 19:17-19:34/17 20:02	07:52 17:55-18:15/20 18:48	07:52 16:43	08:41 14:18-14:38/20 16:12
12	05:17 05:54-06:17/23 22:01	06:05 07:09-07:16/7 21:11	07:00 19:17-19:32/15 19:59	07:54 17:53-18:16/23 18:46	07:54 16:41	08:42 14:18-14:39/21 16:12
13	05:18 05:55-06:19/24 22:00	06:07 07:09-07:18/9 21:09	07:02 19:16-19:29/13 19:57	07:56 17:51-18:14/23 18:43	07:56 16:40	08:43 14:17-14:39/22 16:12
14	05:19 05:55-06:19/24 21:59	06:09 07:09-07:20/11 21:07	07:04 19:17-19:26/9 19:54	07:58 17:50-18:12/22 18:41	07:57 15:42-15:52/10 16:38 15:22-15:27/5	08:44 14:18-14:40/22 16:12
15	05:20 05:54-06:19/25 21:58	06:10 07:08-07:21/13 21:05	07:05 19:17-19:24/7 19:52	08:00 17:49-18:09/20 18:39	07:59 15:39-15:54/15 16:37 15:24-15:34/10	08:45 14:18-14:41/23 16:12
16	05:22 05:54-06:19/25 21:57	06:12 07:08-07:22/14 21:03	07:07 19:17-19:21/4 19:49	08:02 17:44-18:07/23 18:36	08:01 15:38-15:55/17 16:35 15:27-15:37/10	08:46 14:19-14:42/23 16:12
17	05:23 05:55-06:19/24 21:56	06:14 07:08-07:23/15 21:01	07:09 19:18-19:19/1 19:47	08:03 17:42-18:05/23 18:34	08:03 15:29-15:56/27 16:33	08:47 14:20-14:43/23 16:12
18	05:24 05:57-06:20/23 21:54	06:16 07:07-07:23/16 20:59	07:11 19:45	08:05 17:40-18:02/22 18:32	08:05 15:30-15:57/27 16:32	08:48 14:20-14:43/23 16:12
19	05:26 05:58-06:20/22 21:53	06:17 07:06-07:23/17 20:56	07:12 19:42	08:07 17:39-18:00/21 18:30	08:07 15:33-15:57/24 16:31	08:48 14:21-14:43/22 16:13
20	05:27 05:59-06:20/21 21:52	06:19 07:06-07:24/18 20:54	07:14 19:40	08:09 17:38-17:58/20 18:27	08:09 15:34-15:55/21 16:29	08:49 14:22-14:44/22 16:13
21	05:29 06:01-06:20/19 21:50	06:21 07:04-07:23/19 20:52	07:16 19:37	08:11 17:38-17:55/17 18:25	08:10 15:35-15:54/19 16:28	08:50 14:22-14:44/22 16:13
22	05:30 06:02-06:20/18 21:49	06:23 07:03-07:23/20 20:50	07:18 19:35	08:13 17:37-17:53/16 18:23	08:12 15:35-15:53/18 16:27	08:50 14:23-14:45/22 16:14
23	05:32 06:03-06:20/17 21:48	06:25 07:01-07:24/23 20:47	07:20 19:32	08:15 17:37-17:51/14 18:21	08:14 15:35-15:50/15 16:25	08:51 14:23-14:45/22 16:14
24	05:33 06:05-06:20/15 21:46	06:26 06:59-07:23/24 20:45	07:21 19:30	08:17 17:37-17:48/11 18:18	08:16 15:36-15:49/13 16:24	08:51 14:23-14:45/22 16:15
25	05:35 06:06-06:19/13 21:45	06:28 06:56-07:22/26 20:43	07:23 19:27	07:19 16:37-16:46/9 17:16	08:18 15:37-15:48/11 16:23	08:51 14:24-14:47/23 16:16
26	05:36 06:08-06:20/12 21:43	06:30 06:58-07:22/24 20:40	07:25 19:25	07:21 16:37-16:43/6 17:14	08:19 15:38-15:46/8 16:22	08:52 14:24-14:47/23 16:16
27	05:38 06:09-06:19/10 21:41	06:32 07:00-07:22/22 20:38	07:27 19:22	07:23 16:38-16:41/3 17:12	08:21 15:38-15:45/7 16:21	08:52 14:24-14:47/23 16:17
28	05:40 06:11-06:19/8 21:40	06:33 07:01-07:20/19 20:36	07:29 19:20	07:25 16:38-16:39/1 17:10	08:23 15:39-15:44/5 16:20	08:52 14:24-14:47/23 16:18
29	05:41 06:12-06:17/5 21:38	06:35 07:03-07:19/16 20:33	07:30 19:17	07:26 17:08	08:24 15:40-15:44/4 16:19	08:52 14:25-14:47/22 16:19
30	05:43 06:14-06:17/3 21:36	06:37 07:05-07:18/13 20:31	07:32 19:15	07:28 17:06	08:26 15:39-15:42/3 16:18	08:52 14:25-14:47/22 16:20
31	05:44 21:35	06:39 07:06-07:16/10 20:29		07:30 17:04		08:52 14:26-14:48/22 16:21
Potential sun hours	512	460	382	328	259	233
Sum of minutes with flicker	531	342	203	312	269	540

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar per WTG

Calculation: Curtailment Stratedy **WTG:** 9 - T09

Assumptions for shadow calculations

Flicker curtailment applied to this turbine

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June
1	08:52 15:25-15:44/19 09:48-09:59/11	08:22 16:20-16:36/16	07:24	07:09 19:12-19:41/29	06:00	05:10 20:59-21:19/20
	16:22 15:04-15:15/11	17:14	18:09	20:08	21:03	21:54
2	08:52 15:26-15:45/19 09:49-10:00/11	08:20 16:20-16:35/15	07:22	07:06 19:11-19:43/32	05:58	05:09 20:59-21:20/21
	16:23 15:06-15:14/8	17:16	18:11	20:10	21:05	21:55
3	08:52 15:27-15:47/20 09:50-10:01/11	08:18 16:20-16:34/14	07:19	07:04 07:28-07:30/2	05:56	05:08 20:58-21:21/23
	16:24 15:09-15:14/5	17:18	18:13	20:12 19:11-19:45/34	21:07	21:56
4	08:51 15:27-15:48/21	08:16 16:20-16:33/13	07:17	07:02 07:25-07:30/5	05:53	05:07 20:59-21:22/23
	16:26 09:50-10:01/11	17:20	18:15	20:14 19:10-19:44/34	21:09	21:57
5	08:51 15:28-15:50/22	08:15 16:21-16:33/12	07:15	06:59 07:23-07:31/8	05:51	05:07 20:59-21:23/24
	16:27 09:52-10:03/11	17:22	18:17	20:15 19:10-19:44/34	21:11	21:58
6	08:51 15:28-15:51/23	08:13 16:21-16:32/11	07:12	06:57 07:21-07:32/11	05:50	05:06 20:59-21:23/24
	16:28 09:52-10:03/11	17:24	18:19	20:17 19:11-19:44/33	21:12	21:59
7	08:50 15:29-15:52/23	08:11 16:21-16:32/11	07:10	06:54 07:18-07:31/13	05:48	05:05 21:00-21:25/25
	16:30 09:53-10:03/10	17:26	18:21	20:19 19:11-19:42/31	21:14	22:00
8	08:50 15:30-15:54/24	08:09 16:22-16:32/10	07:08	06:52 07:16-07:32/16	05:46	05:05 05:36-05:37/1
	16:31 09:55-10:05/10	17:28	18:23	20:21 19:12-19:42/30	21:16	22:01 20:59-21:25/26
9	08:49 15:31-15:54/23	08:07 16:23-16:32/9	07:05	06:50 07:14-07:32/18	05:44	05:04 05:36-05:38/2
	16:32 09:57-10:05/8	17:30	18:25	20:23 19:12-19:40/28	21:18	22:02 21:00-21:26/26
10	08:49 15:31-15:54/23	08:05 16:24-16:32/8	07:03	06:47 07:11-07:30/19	05:42	05:04 05:36-05:39/3
	16:34 09:58-10:06/8	17:32	18:27	20:25 19:13-19:38/25	21:20	22:03 21:01-21:28/27
11	08:48 15:32-15:54/22	08:03 16:25-16:32/7	07:00	06:45 07:09-07:30/21	05:40	05:03 05:35-05:38/3
	16:35 10:01-10:07/6	17:34	18:29	20:27 19:15-19:37/22	21:21	22:04 21:00-21:28/28
12	08:47 15:33-15:53/20	08:01 16:26-16:33/7	06:58	06:42 07:07-07:29/22	05:38	05:03 05:35-05:39/4
	16:37	17:36	18:31	20:28 19:16-19:34/18	21:23	22:04 21:01-21:27/26
13	08:46 15:34-15:53/19	07:59 16:27-16:32/5	06:56	06:40 07:04-07:27/23	05:36	05:02 05:35-05:40/5
	16:39	17:38 17:04-17:07/3	18:32	20:30 19:19-19:31/12	21:25	22:05 21:01-21:27/26
14	08:45 15:36-15:53/17	07:57 16:29-16:33/4	06:53	06:38 07:02-07:26/24	05:35	05:02 05:35-05:40/5
	16:40	17:40 17:04-17:10/6	18:34	20:32	21:27	22:06 21:02-21:26/24
15	08:45 15:37-15:52/15	07:55 16:33-16:34/1	06:51	06:35 07:00-07:24/24	05:33	05:02 05:35-05:41/6
	16:42	17:42 17:04-17:12/8	18:36	20:34	21:28	22:06 21:01-21:25/24
16	08:44 15:39-15:52/13	07:53 17:03-17:15/12	06:48	06:33 06:57-07:18/21	05:31	05:02 05:34-05:40/6
	16:44	17:44	18:38	20:36	21:30	22:07 21:01-21:24/23
17	08:43 15:40-15:50/10	07:51 17:02-17:17/15	06:46	06:31 06:55-07:17/22	05:30	05:02 05:34-05:40/6
	16:45	17:46	18:40	20:38	21:32	22:07 21:02-21:24/22
18	08:41 15:45-15:46/1	07:49 17:00-17:18/18	06:43	06:28 06:55-07:16/21	05:28	05:02 05:34-05:41/7
	16:47	17:48	18:42	20:39	21:33	22:08 21:02-21:24/22
19	08:40	07:47 16:59-17:21/22	06:41	06:26 06:56-07:15/19	05:27	05:02 05:35-05:42/7
	16:49	17:50	18:44	20:41	21:35	22:08 21:02-21:24/22
20	08:39	07:44 16:57-17:23/26	06:38	06:24 06:56-07:13/17	05:25 21:02-21:04/2	05:02 05:35-05:42/7
	16:51	17:52	18:46	20:43	21:36	22:09 21:03-21:25/22
21	08:38	07:42 16:54-17:26/32	06:36	06:21 06:58-07:11/13	05:24 21:01-21:04/3	05:02 05:35-05:42/7
	16:52	17:54	18:48	20:45	21:38	22:09 21:03-21:25/22
22	08:37	07:40 17:11-17:27/16	06:33	06:19 07:00-07:09/9	05:22 21:00-21:06/6	05:02 05:35-05:42/7
	16:54	17:56 16:51-17:09/18	18:49	20:47	21:40	22:09 21:03-21:25/22
23	08:35	07:38 17:12-17:29/17	06:31	06:17	05:21 21:00-21:08/8	05:02 05:35-05:42/7
	16:56	17:58 16:53-17:07/14	18:51	20:49	21:41	22:09 21:03-21:25/22
24	08:34 16:23-16:24/1	07:36 17:13-17:32/19	06:29 18:21-18:26/5	06:15	05:19 21:00-21:09/9	05:03 05:36-05:43/7
	16:58	18:00 16:58-17:03/5	18:53	20:51	21:43	22:09 21:04-21:26/22
25	08:33 16:23-16:26/3	07:33 17:13-17:32/19	06:26 18:19-18:29/10	06:12	05:18 21:00-21:11/11	05:03 05:36-05:43/7
	17:00	18:02	18:55	20:52	21:44	22:09 21:04-21:26/22
26	08:31 16:22-16:28/6	07:31 17:15-17:31/16	06:24 18:17-18:30/13	06:10	05:17 20:58-21:11/13	05:03 05:37-05:43/6
	17:02	18:04	18:57	20:54	21:45	22:09 21:04-21:26/22
27	08:30 16:22-16:31/9	07:29 17:16-17:28/12	06:21 18:16-18:32/16	06:08	05:16 20:58-21:12/14	05:04 05:37-05:43/6
	17:04	18:05	18:59	20:56	21:47	22:09 21:04-21:27/23
28	08:28 16:21-16:33/12	07:26 17:22-17:24/2	06:19 18:14-18:33/19	06:06	05:14 20:58-21:14/16	05:04 05:38-05:43/5
	17:06	18:07	19:01	20:58	21:48	22:09 21:04-21:28/24
29	08:27 16:21-16:35/14		07:16 19:13-19:36/23	06:04	05:13 20:58-21:15/17	05:05 05:38-05:43/5
	17:08		20:02	21:00	21:50	22:09 21:04-21:29/25
30	08:25 16:20-16:37/17		07:14 19:12-19:37/25	06:02	05:12 20:58-21:16/18	05:05 05:39-05:43/4
	17:10		20:04	21:02	21:51	22:09 21:05-21:31/26
31	08:23 16:21-16:37/16		07:11 19:12-19:39/27		05:11 20:59-21:18/19	
	17:12		20:06		21:52	
Potential sun hours	250	273	367	420	494	510
Sum of minutes with flicker	544	423	138	690	136	831

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com
Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar per WTG

Calculation: Curtailment Stratedy **WTG:** 9 - T09

Assumptions for shadow calculations

Flicker curtailment applied to this turbine

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August		September		October		November		December	
1	05:06	05:39-05:43/4	05:46		06:41	07:08-07:29/21	07:34		07:32	15:53-16:02/9	08:27	15:14-15:36/22
	22:08	21:04-21:32/28	21:33		20:26	19:14-19:36/22	19:12		17:02		16:17	09:44-09:49/5
2	05:07	05:40-05:43/3	05:48		06:42	07:10-07:29/19	07:36		07:34	15:52-16:02/10	08:29	15:15-15:37/22
	22:08	21:05-21:32/27	21:31		20:24	19:11-19:36/25	19:10		17:00		16:17	09:42-09:49/7
3	05:08	05:41-05:43/2	05:49		06:44	07:11-07:29/18	07:38		07:36	15:52-16:02/10	08:30	15:14-15:37/23
	22:07	21:05-21:32/27	21:29		20:21	19:10-19:38/28	19:07		16:58		16:16	09:40-09:48/8
4	05:08	05:42-05:43/1	05:51		06:46	07:13-07:29/16	07:39		07:38	15:51-16:02/11	08:32	15:14-15:38/24
	22:07	21:06-21:32/26	21:27		20:19	19:09-19:39/30	19:05		16:56		16:15	09:39-09:49/10
5	05:09	21:05-21:30/25	05:53		06:48	07:15-07:28/13	07:41		07:40	15:51-16:02/11	08:33	15:14-15:37/23
	22:06		21:25		20:17	19:08-19:39/31	19:03		16:54		16:15	09:39-09:49/10
6	05:10	21:05-21:30/25	05:55		06:49	07:16-07:27/11	07:43		07:42	15:50-16:03/13	08:35	15:14-15:37/23
	22:06		21:24		20:14	19:06-19:39/33	19:00		16:52		16:14	09:39-09:49/10
7	05:11	21:05-21:30/25	05:56		06:51	07:18-07:27/9	07:45		07:44	15:50-16:03/13	08:36	15:14-15:36/22
	22:05		21:22		20:12	19:06-19:39/33	18:58		16:50		16:14	09:38-09:49/11
8	05:12	21:06-21:29/23	05:58		06:53	07:20-07:26/6	07:47		07:46	15:50-16:04/14	08:37	15:15-15:36/21
	22:04		21:20		20:09	19:05-19:39/34	18:55		16:48		16:13	09:38-09:49/11
9	05:13	21:06-21:28/22	06:00		06:55	07:22-07:25/3	07:49		07:48	15:51-16:06/15	08:38	15:15-15:35/20 09:38-09:49/11
	22:04		21:18		20:07	19:04-19:38/34	18:53		16:47		16:13	14:57-15:01/4
10	05:14	21:06-21:28/22	06:02		06:56	19:04-19:36/32	07:50		07:50	15:51-16:07/16	08:40	15:15-15:35/20 09:38-09:49/11
	22:03		21:16		20:04		18:51		16:45		16:12	14:55-15:03/8
11	05:16	21:06-21:27/21	06:03		06:58	19:04-19:34/30	07:52		07:52	15:52-16:08/16	08:41	15:16-15:35/19 09:39-09:50/11
	22:02		21:14		20:02		18:48		16:43		16:12	14:55-15:06/11
12	05:17	21:06-21:26/20	06:05		07:00	19:04-19:32/28	07:54		07:54	15:52-16:09/17	08:42	15:16-15:35/19 09:39-09:51/12
	22:01		21:11		19:59		18:46		16:41		16:12	14:54-15:07/13
13	05:18	21:06-21:25/19	06:07		07:02	19:03-19:29/26	07:56		07:55	15:52-16:07/15	08:43	15:16-15:34/18 09:39-09:51/12
	22:00		21:09		19:57		18:43		16:40		16:12	14:53-15:08/15
14	05:19	21:08-21:25/17	06:09		07:04	19:04-19:26/22	07:58	17:52-18:00/8	07:57	15:53-16:05/12	08:44	15:17-15:34/17 09:39-09:51/12
	21:59		21:07		19:54		18:41		16:38		16:12	14:53-15:09/16
15	05:20	21:08-21:24/16	06:10		07:05	19:04-19:24/20	08:00	17:49-18:02/13	07:59	15:54-16:03/9	08:45	15:17-15:34/17 09:39-09:52/13
	21:58		21:05		19:52		18:39		16:37		16:12	14:53-15:10/17
16	05:22	21:08-21:23/15	06:12		07:07	19:04-19:21/17	08:02	17:47-18:04/17	08:01	15:55-16:01/6	08:46	15:18-15:34/16 09:40-09:52/12
	21:57		21:03		19:49		18:36		16:35		16:12	14:53-15:10/17
17	05:23	21:08-21:21/13	06:14		07:09	19:05-19:19/14	08:03	17:45-18:05/20	08:03	15:56-15:59/3	08:47	15:17-15:34/17 09:40-09:53/13
	21:56		21:01		19:47		18:34		16:33		16:12	14:53-15:11/18
18	05:24	21:08-21:20/12	06:16		07:11	19:07-19:16/9	08:05	17:44-18:02/18	08:05	15:57-15:58/1	08:47	15:18-15:34/16 09:40-09:52/12
	21:54		20:59		19:45		18:32	17:27-17:36/9	16:32		16:12	14:52-15:11/19
19	05:26	21:09-21:20/11	06:17		07:12	19:08-19:14/6	08:07	17:43-18:00/17	08:07		08:48	15:19-15:34/15 09:41-09:53/12
	21:53		20:56		19:42		18:30	17:24-17:39/15	16:31		16:13	14:53-15:12/19
20	05:27	21:09-21:18/9	06:19		07:14	19:10-19:11/1	08:09	17:43-17:58/15	08:09		08:49	15:20-15:35/15 09:41-09:54/13
	21:52		20:54		19:40		18:27	17:21-17:41/20	16:29		16:13	14:54-15:13/19
21	05:29	21:10-21:17/7	06:21	07:04-07:14/10	07:16		08:11	17:26-17:55/29	08:10		08:49	15:20-15:35/15 09:41-09:54/13
	21:50		20:52		19:37		18:25		16:28		16:13	14:53-15:13/20
22	05:30	21:11-21:16/5	06:23	07:02-07:16/14	07:18		08:13	17:28-17:53/25	08:12		08:50	15:21-15:36/15 09:42-09:55/13
	21:49		20:50		19:35		18:23		16:27		16:14	14:54-15:14/20
23	05:32	21:12-21:14/2	06:25	07:01-07:18/17	07:20		08:15	17:30-17:51/21	08:14		08:51	15:21-15:36/15 09:42-09:55/13
	21:48		20:47		19:32		18:21		16:25		16:14	14:54-15:14/20
24	05:33		06:26	06:58-07:18/20	07:21		08:17	17:31-17:48/17	08:16		08:51	15:21-15:36/15 09:43-09:55/12
	21:46		20:45		19:30		18:18		16:24		16:15	14:55-15:14/19
25	05:35		06:28	06:58-07:19/21	07:23		07:19	16:32-16:46/14	08:17	15:18-15:28/10	08:51	15:22-15:38/16 09:44-09:56/12
	21:45		20:43		19:27		17:16		16:23		16:16	14:56-15:15/19
26	05:36		06:30	06:58-07:20/22	07:25		07:21	16:33-16:43/10	08:19	15:17-15:30/13	08:52	15:22-15:38/16 09:44-09:56/12
	21:43		20:40		19:25		17:14		16:22		16:16	14:57-15:15/18
27	05:38		06:32	07:00-07:22/22	07:27		07:23	16:01-16:03/2	08:21	15:16-15:31/15	08:52	15:23-15:39/16 09:45-09:57/12
	21:41		20:38		19:22		17:12	16:33-16:41/8	16:21		16:17	14:57-15:15/18
28	05:40		06:33	07:01-07:25/24	07:28		07:24	15:58-16:02/4	08:23	15:16-15:33/17	08:52	15:23-15:40/17 09:45-09:57/12
	21:40		20:36		19:20		17:10	16:34-16:39/5	16:20		16:18	14:58-15:16/18
29	05:41		06:35	07:03-07:27/24	07:30		07:26	15:56-16:02/6	08:24	15:15-15:34/19	08:52	15:24-15:41/17 09:46-09:58/12
	21:38		20:33		19:17		17:08	16:34-16:37/3	16:19		16:19	14:59-15:16/17
30	05:43		06:37	07:05-07:28/23	07:32		07:28	15:54-16:01/7	08:26	15:14-15:34/20	08:52	15:24-15:42/18 09:47-09:59/12
	21:36		20:31	19:18-19:31/13	19:15		17:06		16:18		16:20	15:00-15:16/16
31	05:44		06:39	07:06-07:28/22			07:30	15:54-16:02/8			08:52	15:25-15:43/18 09:47-09:59/12
	21:35		20:29	19:16-19:34/18			17:04				16:21	15:02-15:16/14
Potential sun hours	512		460		382		328		259		233	
Sum of minutes with flicker	427		250		591		311		295		1293	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar per WTG

Calculation: Curtailment Stratedy **WTG:** 10 - T10

Assumptions for shadow calculations

Flicker curtailment applied to this turbine

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June
1	08:52 15:20-15:28/8 09:26-10:07/41	08:22 16:32-16:42/10	07:24 17:27-17:42/15	07:09	06:00	05:10
	16:22 14:06-14:19/13	17:14	18:09	20:08	21:03	21:53
2	08:52 15:21-15:29/8 09:26-10:08/42	08:20 16:32-16:44/12	07:22 17:26-17:44/18	07:06	05:58 06:24-06:27/3	05:09
	16:23 14:09-14:19/10	17:16	18:11	20:10	21:05	21:55
3	08:52 15:22-15:30/8 09:26-10:08/42	08:18 16:32-16:46/14	07:19 17:27-17:46/19	07:04	05:55 06:22-06:28/6	05:08 05:39-05:40/1
	16:24 14:12-14:17/5	17:18	18:13	20:12	21:07	21:56
4	08:51 15:23-15:30/7	08:16 16:32-16:48/16	07:17 17:27-17:46/19	07:02	05:53 06:20-06:28/8	05:07 05:39-05:41/2
	16:26 09:25-10:08/43	17:20	18:15	20:13	21:09	21:57
5	08:51 15:24-15:30/6	08:15 16:32-16:50/18	07:15 17:26-17:46/20	06:59	05:51 06:18-06:28/10	05:07 05:38-05:41/3
	16:27 09:25-10:09/44	17:22	18:17	20:15	21:11	21:58
6	08:51 15:25-15:30/5	08:13 16:33-16:53/20	07:12 17:28-17:44/16	06:57	05:49 06:16-06:28/12	05:06 05:38-05:42/4
	16:28 09:24-10:08/44	17:24	18:19	20:17	21:12	21:59
7	08:50 15:26-15:30/4	08:11 16:34-16:55/21	07:10 17:30-17:41/11	06:54	05:48 06:14-06:28/14	05:05 05:37-05:42/5
	16:30 09:23-10:08/45	17:26	18:21	20:19	21:14	22:00
8	08:50 15:28-15:31/3 09:48-10:08/20	08:09 16:35-16:43/8	07:08	06:52 19:52-19:54/2	05:46 06:12-06:28/16	05:05 05:36-05:42/6
	16:31 09:23-09:47/24	17:28	18:23	20:21	21:16	22:01
9	08:49 15:29-15:32/3 09:49-10:08/19	08:07 16:36-16:38/2	07:05	06:49 19:50-19:55/5	05:44 06:11-06:29/18	05:04 05:36-05:42/6
	16:32 09:22-09:46/24	17:30	18:25	20:23	21:18	22:02
10	08:48 15:31-15:32/1 09:50-10:07/17	08:05	07:03	06:47 19:48-19:57/9	05:42 06:09-06:28/19	05:04 05:36-05:43/7
	16:34 09:21-09:46/25	17:32	18:27	20:25	21:20	22:03
11	08:48 09:20-09:46/26	08:03	07:00	06:45 19:47-19:59/12	05:40 06:07-06:28/21	05:03 05:35-05:43/8
	16:35 09:51-10:06/15	17:34	18:29	20:26	21:21	22:04
12	08:47 09:19-09:46/27	08:01	06:58	06:42 19:46-20:00/14	05:38 06:06-06:28/22	05:03 05:35-05:43/8
	16:37 09:53-10:05/12	17:36	18:31	20:28	21:23	22:04
13	08:46 09:31-09:45/14 09:18-09:30/12	07:59	06:55	06:40 19:45-20:02/17	05:36 06:06-06:27/21	05:02 05:35-05:44/9
	16:39 09:55-10:04/9	17:38	18:32	20:30	21:25	22:05
14	08:45 09:32-09:45/13	07:57	06:53	06:38 19:44-20:04/20	05:35 06:07-06:27/20	05:02 05:35-05:44/9
	16:40 09:17-09:31/14	17:40	18:34	20:32	21:26	22:06
15	08:44 09:34-09:44/10	07:55	06:51	06:35 19:43-20:05/22	05:33 06:07-06:26/19	05:02 05:35-05:45/10
	16:42 09:16-09:32/16	17:42	18:36	20:34	21:28	22:06
16	08:43 16:07-16:08/1 09:15-09:32/17	07:53	06:48	06:33 19:43-20:07/24	05:31 06:07-06:25/18	05:02 05:34-05:44/10
	16:44 09:37-09:42/5	17:44	18:38	20:36	21:30	22:07
17	08:42 16:07-16:10/3	07:51	06:46	06:31 19:43-20:09/26	05:30 06:09-06:24/15	05:02 05:34-05:44/10
	16:45 09:14-09:33/19	17:46	18:40	20:38	21:31	22:07
18	08:41 16:07-16:12/5	07:49	06:43	06:28 19:43-20:11/28	05:28 06:10-06:23/13	05:02 05:34-05:45/11
	16:47 09:12-09:33/21	17:48	18:42	20:39	21:33	22:08
19	08:40 16:07-16:14/7	07:47	06:41	06:26 19:42-20:12/30	05:27 06:12-06:21/9	05:02 05:35-05:46/11
	16:49 09:11-09:33/22	17:50	18:44	20:41	21:35	22:08
20	08:39 16:06-16:15/9	07:44	06:38	06:24 19:43-20:12/29	05:25 06:16-06:18/2	05:02 05:35-05:46/11
	16:51 09:10-09:34/24	17:52	18:46	20:43	21:36	22:09
21	08:38 16:07-16:18/11	07:42	06:36	06:21 19:43-20:12/29	05:24	05:02 05:35-05:46/11
	16:52 09:08-09:33/25	17:54	18:47	20:45	21:38	22:09
22	08:37 16:06-16:19/13	07:40	06:33	06:19 19:44-20:11/27	05:22	05:02 05:35-05:46/11
	16:54 09:09-09:34/25	17:56	18:49	20:47	21:39	22:09
23	08:35 16:06-16:22/16	07:38 17:27-17:29/2	06:31	06:17 19:45-20:10/25	05:21	05:02 05:35-05:46/11
	16:56 09:09-09:33/24	17:58	18:51	20:49	21:41	22:09
24	08:34 16:05-16:22/17	07:35 17:26-17:32/6	06:29	06:15 19:46-20:09/23	05:19	05:02 05:36-05:47/11
	16:58 09:10-09:34/24	18:00	18:53	20:51	21:43	22:09
25	08:33 16:04-16:22/18	07:33 17:25-17:33/8	06:26	06:12 19:46-20:07/21	05:18	05:03 05:36-05:46/10
	17:00 09:11-09:33/22	18:02	18:55	20:52	21:44	22:09
26	08:31 16:05-16:21/16	07:31 17:26-17:36/10	06:24	06:10 19:48-20:05/17	05:17	05:03 05:37-05:47/10
	17:02 09:11-09:32/21	18:03	18:57	20:54	21:45	22:09
27	08:30 16:07-16:21/14	07:29 17:26-17:37/11	06:21	06:08 19:50-20:02/12	05:15	05:04 05:37-05:47/10
	17:04 09:13-09:32/19	18:05	18:59	20:56	21:47	22:09
28	08:28 16:09-16:18/9 09:14-09:30/16	07:26 17:26-17:40/14	06:19	06:06 19:55-19:57/2	05:14	05:04 05:38-05:47/9
	17:06 16:32-16:33/1	18:07	19:00	20:58	21:48	22:09
29	08:27 16:31-16:35/4		07:16	06:04	05:13	05:05 05:38-05:47/9
	17:08 09:16-09:29/13		20:02	21:00	21:50	22:09
30	08:25 16:31-16:37/6		07:14	06:02	05:12	05:05 05:39-05:48/9
	17:10 09:19-09:26/7		20:04	21:02	21:51	22:09
31	08:23 16:31-16:39/8		07:11		05:11	
	17:12		20:06		21:52	
Potential sun hours	250	273	367	420	494	510
Sum of minutes with flicker	1141	172	118	394	266	232

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar per WTG

Calculation: Curtailment Stratedy **WTG:** 10 - T10

Assumptions for shadow calculations

Flicker curtailment applied to this turbine

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July	August	September	October	November	December
1	05:06 05:39-05:47/8 22:08	05:46 06:17-06:38/21 21:33	06:40 19:46-19:58/12 20:26	07:34 19:12	07:32 17:02	08:27 09:02-09:28/26 16:17 09:33-09:48/15
2	05:07 05:40-05:47/7 22:08	05:48 06:18-06:38/20 21:31	06:42 19:46-19:55/9 20:24	07:36 19:10	07:34 16:05-16:09/4 17:00	08:29 15:14-15:15/1 09:33-09:50/17 16:17 09:04-09:29/25
3	05:08 05:41-05:48/7 22:07	05:49 06:20-06:39/19 21:29	06:44 19:48-19:53/5 20:21	07:37 19:07	07:36 16:04-16:13/9 16:58	08:30 15:12-15:15/3 09:32-09:51/19 16:16 09:05-09:30/25
4	05:08 05:42-05:48/6 22:07	05:51 06:21-06:38/17 21:27	06:46 19:49-19:51/2 20:19	07:39 19:05	07:38 16:03-16:24/21 16:56	08:32 15:12-15:16/4 09:32-09:52/20 16:15 09:07-09:31/24
5	05:09 05:42-05:47/5 22:06	05:53 06:23-06:38/15 21:25	06:48 20:16	07:41 19:03	07:40 16:03-16:22/19 16:54	08:33 15:11-15:15/4 16:15 09:09-09:54/45
6	05:10 05:43-05:47/4 22:06	05:55 06:25-06:39/14 21:24	06:49 20:14	07:43 18:07-18:15/8 19:00	07:42 16:02-16:20/18 16:52	08:35 15:11-15:16/5 16:14 09:10-09:54/44
7	05:11 05:44-05:47/3 22:05	05:56 06:26-06:38/12 21:22	06:51 20:12	07:45 18:04-18:18/14 18:58	07:44 16:02-16:18/16 16:50	08:36 15:10-15:16/6 16:14 09:11-09:55/44
8	05:12 05:45-05:47/2 22:04	05:58 06:28-06:38/10 21:20	06:53 20:09	07:47 18:02-18:20/18 18:55	07:46 16:02-16:16/14 16:48	08:37 15:11-15:18/7 16:13 09:13-09:56/43
9	05:13 05:46-05:47/1 22:04	06:00 06:30-06:37/7 21:18	06:55 20:07	07:48 18:01-18:21/20 18:53	07:48 16:02-16:15/13 16:46	08:38 15:11-15:18/7 09:14-09:57/43 16:13 14:00-14:05/5
10	05:14 22:03	06:02 06:31-06:36/5 21:16	06:56 20:04	07:50 18:01-18:21/20 18:51	07:50 16:02-16:12/10 16:45	08:40 15:10-15:18/8 09:15-09:57/42 16:12 13:58-14:08/10
11	05:16 22:02	06:03 06:33-06:35/2 21:13	06:58 20:02	07:52 18:00-18:19/19 18:48	07:52 16:03-16:10/7 16:43	08:41 15:10-15:18/8 09:17-09:58/41 16:12 13:58-14:10/12
12	05:17 22:01	06:05 21:11	07:00 19:59	07:54 18:00-18:17/17 18:46	07:54 16:03-16:09/6 16:41 08:50-08:58/8	08:42 15:11-15:20/9 09:18-09:59/41 16:12 13:57-14:12/15
13	05:18 22:00	06:07 21:09	07:02 19:57	07:56 18:00-18:14/14 18:43	07:55 16:03-16:07/4 16:40 08:48-09:01/13	08:43 15:11-15:20/9 09:19-09:59/40 16:12 13:56-14:13/17
14	05:19 21:59	06:09 21:07	07:04 19:54	07:58 17:59-18:12/13 18:41	07:57 15:41-15:50/9 08:46-09:02/16 16:38 16:04-16:05/1	08:44 15:12-15:21/9 09:20-10:00/40 16:12 13:56-14:14/18
15	05:20 21:58	06:10 20:00-20:07/7 21:05	07:05 19:52	08:00 17:59-18:10/11 18:39	07:59 15:39-15:53/14 16:36 08:45-09:04/19	08:45 15:12-15:21/9 09:21-10:01/40 16:12 13:56-14:15/19
16	05:22 21:57	06:12 19:57-20:11/14 21:03	07:07 19:49	08:02 17:58-18:07/9 18:36	08:01 15:38-15:54/16 16:35 08:44-09:05/21	08:46 15:12-15:22/10 09:22-10:01/39 16:12 13:56-14:16/20
17	05:23 21:56	06:14 19:55-20:13/18 21:01	07:09 19:47	08:03 17:57-18:05/8 18:34	08:03 15:37-15:55/18 16:33 08:44-09:06/22	08:47 15:12-15:22/10 09:23-10:02/39 16:12 13:55-14:16/21
18	05:24 21:54	06:16 19:52-20:14/22 20:59	07:11 19:44	08:05 17:58-18:02/4 18:32	08:05 15:39-15:56/17 16:32 08:44-09:08/24	08:47 15:13-15:22/9 09:23-10:02/39 16:12 13:56-14:17/21
19	05:26 21:53	06:17 19:51-20:15/24 20:56	07:12 19:42	08:07 17:59-18:00/1 18:30	08:07 15:40-15:56/16 16:31 08:44-09:08/24	08:48 15:13-15:23/10 09:24-10:03/39 16:13 13:56-14:18/22
20	05:27 21:52	06:19 19:50-20:16/26 20:54	07:14 19:39	08:09 18:27	08:09 15:41-15:55/14 16:29 08:44-09:09/25	08:49 15:14-15:24/10 09:25-10:04/39 16:13 13:57-14:19/22
21	05:29 21:50	06:21 19:48-20:16/28 20:52	07:16 19:37	08:11 18:25	08:10 15:42-15:53/11 16:28 08:44-09:09/25	08:49 15:14-15:24/10 09:25-10:03/38 16:13 13:57-14:19/22
22	05:30 21:49	06:23 19:48-20:17/29 20:50	07:18 19:35	08:13 18:23	08:12 15:42-15:52/10 16:27 08:46-09:10/24	08:50 15:15-15:25/10 09:26-10:04/38 16:14 13:58-14:20/22
23	05:32 21:48	06:24 19:47-20:17/30 20:47	07:19 19:32	08:15 18:21	08:14 15:43-15:50/7 16:25 08:48-09:10/22	08:50 15:15-15:25/10 09:26-10:04/38 16:14 13:58-14:20/22
24	05:33 06:24-06:30/6 21:46	06:26 19:46-20:16/30 20:45	07:21 19:30	08:17 18:18	08:16 15:44-15:49/5 16:24 08:49-09:10/21	08:51 15:15-15:25/10 09:26-10:05/39 16:15 13:58-14:20/22
25	05:35 06:21-06:32/11 21:45	06:28 19:46-20:14/28 20:43	07:23 19:27	07:19 17:16	08:17 15:45-15:48/3 16:23 08:51-09:10/19	08:51 15:16-15:26/10 09:27-10:06/39 16:16 13:59-14:21/22
26	05:36 06:20-06:34/14 21:43	06:30 19:46-20:12/26 20:40	07:25 19:25	07:21 17:14	08:19 15:45-15:47/2 08:53-09:10/17 16:22 09:15-09:20/5	08:52 15:17-15:27/10 09:27-10:06/39 16:16 14:00-14:21/21
27	05:38 06:19-06:35/16 21:41	06:32 19:45-20:09/24 20:38	07:27 19:22	07:23 17:12	08:21 09:13-09:23/10 16:21 08:55-09:11/16	08:52 15:17-15:27/10 09:27-10:06/39 16:17 14:01-14:21/20
28	05:40 06:18-06:36/18 21:40	06:33 19:45-20:07/22 20:36	07:28 19:20	07:24 17:10	08:22 09:12-09:25/13 16:20 08:57-09:11/14	08:52 15:18-15:27/9 09:27-10:07/40 16:18 14:01-14:21/20
29	05:41 06:17-06:37/20 21:38	06:35 19:45-20:05/20 20:33	07:30 19:17	07:26 17:08	08:24 08:59-09:26/27 16:19 09:37-09:45/8	08:52 15:18-15:28/10 09:27-10:07/40 16:19 14:02-14:21/19
30	05:43 06:17-06:38/21 21:36	06:37 19:45-20:02/17 20:31	07:32 19:15	07:28 17:06	08:26 09:00-09:27/27 16:18 09:34-09:46/12	08:52 15:19-15:28/9 09:27-10:07/40 16:20 14:04-14:21/17
31	05:44 06:16-06:38/22 21:35	06:39 19:45-20:00/15 20:29	 	07:30 17:04	 	08:52 15:20-15:29/9 09:27-10:08/41 16:21 14:05-14:21/16
Potential sun hours	512	460	382	328	259	233
Sum of minutes with flicker	171	522	28	176	716	1930

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar per WTG

Calculation: Curtailment Stratedy **WTG:** 11 - T11

Assumptions for shadow calculations

Flicker curtailment applied to this turbine

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March		April		May		June	
1	08:52	15:01-15:05/4	08:22	16:17-16:25/8	07:24	16:49-17:17/28	07:09	19:19-19:37/18	06:00	06:36-06:56/20	05:10	20:49-21:11/22
	16:22	15:33-15:44/11	17:14		18:09		20:08		21:03		21:53	21:13-21:19/6
2	08:52	15:02-15:06/4	08:20		07:22	16:49-17:15/26	07:06	19:19-19:35/16	05:58	06:38-06:55/17	05:09	20:49-21:10/21
	16:23	15:34-15:46/12	17:16		18:11		20:10		21:05		21:55	21:13-21:20/7
3	08:52	15:04-15:07/3	08:18		07:19	16:51-17:14/23	07:04	19:21-19:33/12	05:56	06:40-06:55/15	05:08	20:50-21:10/20
	16:24	15:34-15:47/13	17:18		18:13		20:12		21:07		21:56	21:12-21:21/9
4	08:51	15:04-15:07/3	08:16		07:17	16:53-17:12/19	07:02	19:25-19:27/2	05:53	06:41-06:54/13	05:07	20:51-21:10/19
	16:26	15:34-15:48/14	17:20		18:15		20:14		21:09		21:57	21:13-21:22/9
5	08:51	15:05-15:08/3	08:15		07:15	16:56-17:08/12	06:59		05:51	06:41-06:54/13	05:07	20:51-21:10/19
	16:27	15:35-15:50/15	17:22		18:17		20:15		21:11		21:58	21:12-21:23/11
6	08:51	15:06-15:09/3	08:13		07:12		06:57		05:50	06:42-06:53/11	05:06	20:51-21:09/18
	16:28	15:34-15:51/17	17:24		18:19		20:17		21:12		21:59	21:12-21:23/11
7	08:50	15:07-15:09/2	08:11		07:10		06:54		05:48	06:42-06:52/10	05:05	20:53-21:09/16
	16:30	15:34-15:51/17	17:26		18:21		20:19		21:14		22:00	21:12-21:25/13
8	08:50	15:09-15:10/1	08:09		07:08		06:52		05:46	06:42-06:51/9	05:05	20:53-21:08/15
	16:31	15:35-15:52/17	17:28		18:23		20:21		21:16		22:01	21:12-21:25/13
9	08:49	15:35-15:52/17	08:07		07:05	07:29-07:31/2	06:50		05:44	06:44-06:50/6	05:04	20:54-21:08/14
	16:32		17:30		18:25		20:23		21:18		22:02	21:12-21:26/14
10	08:49	15:35-15:52/17	08:05	16:59-17:02/3	07:03	07:27-07:33/6	06:47		05:42	06:44-06:48/4	05:04	20:55-21:09/14
	16:34		17:32		18:27		20:25		21:20		22:03	21:13-21:28/15
11	08:48	15:34-15:52/18	08:03	16:56-17:04/8	07:00	07:25-07:34/9	06:45		05:40	06:44-06:46/2	05:03	20:55-21:08/13
	16:35		17:34		18:29		20:26		21:21		22:04	21:12-21:28/16
12	08:47	15:34-15:52/18	08:01	16:54-17:06/12	06:58	07:22-07:34/12	06:42		05:38		05:03	20:56-21:08/12
	16:37		17:36		18:31		20:28		21:23		22:04	21:12-21:29/17
13	08:46	15:34-15:53/19	07:59	16:51-17:08/17	06:56	07:20-07:34/14	06:40		05:36	20:50-20:53/3	05:02	20:57-21:07/10
	16:39		17:38		18:32		20:30		21:25		22:05	21:13-21:29/16
14	08:45	15:33-15:53/20	07:57	16:50-17:10/20	06:53	07:17-07:34/17	06:38		05:35	20:49-20:54/5	05:02	20:58-21:07/9
	16:40		17:40		18:34		20:32		21:26		22:06	21:13-21:30/17
15	08:44	15:33-15:53/20	07:55	16:49-17:12/23	06:51	07:15-07:34/19	06:35		05:33	20:48-20:56/8	05:02	20:58-21:06/8
	16:42		17:42		18:36		20:34		21:28		22:06	21:12-21:30/18
16	08:44	16:07-16:08/1	07:53	16:49-17:15/26	06:48	07:12-07:32/20	06:33		05:31	20:47-20:57/10	05:02	20:59-21:06/7
	16:44	15:32-15:53/21	17:44		18:38		20:36		21:30		22:07	21:12-21:30/18
17	08:42	16:06-16:10/4	07:51	16:48-17:17/29	06:46	07:10-07:32/22	06:31		05:30	20:47-20:59/12	05:02	20:59-21:06/7
	16:45	15:30-15:52/22	17:46		18:40		20:38		21:32		22:07	21:13-21:31/18
18	08:41	16:06-16:12/6	07:49	16:47-17:18/31	06:43	07:07-07:30/23	06:28		05:28	20:46-21:00/14	05:02	21:00-21:05/5
	16:47	15:32-15:52/20	17:48		18:42		20:39		21:33		22:08	21:13-21:31/18
19	08:40	16:07-16:14/7	07:47	16:46-17:21/35	06:41	07:05-07:28/23	06:26		05:27	20:46-21:02/16	05:02	21:01-21:05/4
	16:49	15:33-15:51/18	17:50		18:44		20:41		21:35		22:08	21:13-21:32/19
20	08:39	16:06-16:16/10	07:44	16:46-17:22/36	06:38	07:02-07:25/23	06:24		05:25	20:47-21:04/17	05:02	21:02-21:06/4
	16:51	15:34-15:50/16	17:52		18:46		20:43		21:36		22:09	21:14-21:33/19
21	08:38	16:07-16:18/11	07:42	16:46-17:22/36	06:36	07:03-07:23/20	06:21	06:46-06:50/4	05:24	20:46-21:04/18	05:02	21:02-21:06/4
	16:52	15:37-15:49/12	17:54		18:48		20:45		21:38		22:09	21:14-21:33/19
22	08:37	16:07-16:19/12	07:40	16:45-17:21/36	06:33	07:03-07:21/18	06:19	06:44-06:52/8	05:22	20:46-21:06/20	05:02	21:02-21:06/4
	16:54	15:40-15:47/7	17:56		18:49		20:47		21:39		22:09	21:14-21:33/19
23	08:35	16:07-16:22/15	07:38	16:46-17:21/35	06:31	18:23-18:25/2	06:17	06:42-06:53/11	05:21	20:46-21:08/22	05:02	21:02-21:06/4
	16:56		17:58		18:51	07:04-07:20/16	20:49		21:41		22:09	21:14-21:33/19
24	08:34	16:07-16:24/17	07:36	16:46-17:21/35	06:29	18:21-18:26/5	06:15	06:40-06:54/14	05:19	20:47-21:09/22	05:03	21:02-21:07/5
	16:58		18:00		18:53	07:05-07:17/12	20:51		21:43		22:09	21:15-21:33/18
25	08:33	16:08-16:26/18	07:33	16:46-17:20/34	06:26	18:20-18:29/9	06:12	06:38-06:55/17	05:18	20:47-21:11/24	05:03	21:02-21:08/6
	17:00		18:02		18:55	07:10-07:12/2	20:52		21:44		22:09	21:15-21:33/18
26	08:31	16:09-16:28/19	07:31	16:46-17:20/34	06:24	18:18-18:30/12	06:10	06:36-06:55/19	05:17	20:46-21:11/25	05:03	21:01-21:08/7
	17:02		18:04		18:57		20:54		21:45		22:09	21:15-21:33/18
27	08:30	16:10-16:31/21	07:29	16:46-17:19/33	06:21	18:18-18:32/14	06:08	06:34-06:56/22	05:16	20:46-21:11/25	05:04	21:01-21:09/8
	17:04		18:05		18:59		20:56		21:47		22:09	21:15-21:33/18
28	08:28	16:11-16:30/19	07:26	16:47-17:18/31	06:19	18:17-18:33/16	06:06	06:31-06:55/24	05:14	20:47-21:11/24	05:04	21:00-21:09/9
	17:06		18:07		19:01		20:58		21:48		22:09	21:15-21:33/18
29	08:27	16:11-16:29/18			07:16	19:17-19:36/19	06:04	06:29-06:55/26	05:13	20:47-21:10/23	05:05	21:00-21:10/10
	17:08				20:02		21:00		21:50	21:14-21:15/1	22:09	21:16-21:33/17
30	08:25	16:12-16:28/16			07:14	19:17-19:37/20	06:02	06:33-06:55/22	05:12	20:47-21:10/23	05:05	21:01-21:12/11
	17:10				20:04		21:02		21:51	21:15-21:17/2	22:09	21:16-21:33/17
31	08:23	16:14-16:26/12			07:11	19:18-19:38/20			05:11	20:49-21:11/22		
	17:12				20:06				21:52	21:14-21:18/4		
Potential sun hours	250		273		367		420		494		510	
Sum of minutes with flicker		590		522		483		215		460		790

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar per WTG

Calculation: Curtailment Stratedy **WTG:** 11 - T11

Assumptions for shadow calculations

Flicker curtailment applied to this turbine

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July	August	September	October	November	December
1	05:06 21:00-21:12/12	05:46	06:41	07:34 08:00-08:13/13	07:32 16:29-16:31/2	08:27 15:16-15:34/18
	22:08 21:16-21:32/16	21:33	20:26	19:12	17:02	16:17
2	05:07 20:59-21:13/14	05:48 06:54-06:57/3	06:42	07:36 08:02-08:12/10	07:34	08:29 15:18-15:35/17
	22:08 21:17-21:32/15	21:31	20:24	19:10	17:00	16:17
3	05:08 20:59-21:14/15	05:50 06:54-06:59/5	06:44	07:38 08:04-08:11/7	07:36	08:30 15:18-15:35/17
	22:07 21:17-21:32/15	21:29	20:21	19:07	16:58	16:16
4	05:09 20:59-21:14/15	05:51 06:53-07:00/7	06:46	07:39 08:06-08:10/4	07:38	08:32 14:53-14:55/2
	22:07 21:18-21:32/14	21:27	20:19	19:05	16:56	16:15 15:19-15:36/17
5	05:09 20:58-21:14/16	05:53 06:53-07:01/8	06:48	07:41	07:40	08:33 14:52-14:54/2
	22:06 21:17-21:30/13	21:25	20:17	19:03	16:54	16:15 15:19-15:36/17
6	05:10 20:58-21:15/17	05:55 06:52-07:02/10	06:49	07:43	07:42	08:35 14:52-14:55/3
	22:06 21:18-21:30/12	21:24	20:14	19:00	16:52	16:14 15:21-15:37/16
7	05:11 20:58-21:16/18	05:56 06:51-07:02/11	06:51	07:45	07:44	08:36 14:52-14:54/2
	22:05 21:18-21:30/12	21:22	20:12	18:58	16:50	16:14 15:21-15:36/15
8	05:12 20:58-21:16/18	05:58 06:50-07:03/13	06:53	07:47 17:34-17:41/7	07:46	08:37 14:52-14:55/3
	22:04 21:19-21:29/10	21:20	20:09	18:55	16:48	16:13 15:22-15:36/14
9	05:13 20:57-21:17/20	06:00 06:50-07:04/14	06:55 19:15-19:26/11	07:48 17:29-17:45/16	07:48	08:38 14:52-14:55/3
	22:04 21:19-21:28/9	21:18	20:07	18:53	16:47	16:13 15:22-15:35/13
10	05:14 20:57-21:17/20	06:02 06:48-07:04/16	06:56 19:13-19:28/15	07:50 17:26-17:47/21	07:50 15:48-15:56/8	08:40 14:51-14:55/4
	22:03 21:20-21:28/8	21:16	20:04	18:51	16:45	16:12 15:23-15:35/12
11	05:16 20:57-21:18/21	06:03 06:46-07:04/18	06:58 19:11-19:29/18	07:52 17:24-17:49/25	07:52 15:46-15:58/12	08:41 14:52-14:56/4
	22:02 21:21-21:27/6	21:14	20:02	18:48	16:43	16:12 15:24-15:35/11
12	05:17 20:56-21:18/22	06:05 06:44-07:03/19	07:00 19:10-19:30/20	07:54 17:23-17:50/27	07:54 15:44-16:00/16	08:42 14:52-14:56/4
	22:01 21:21-21:26/5	21:11	19:59	18:46	16:41	16:12 15:24-15:35/11
13	05:18 20:56-21:19/23	06:07 06:41-07:04/23	07:02 19:08-19:29/21	07:56 17:21-17:51/30	07:55 15:43-16:01/18	08:43 14:52-14:57/5
	22:00 21:22-21:25/3	21:09	19:57	18:43	16:40	16:12 15:25-15:34/9
14	05:19 20:57-21:20/23	06:09 06:38-07:04/26	07:04 19:08-19:26/18	07:58 17:20-17:52/32	07:57 15:42-16:02/20	08:44 14:53-14:57/4
	21:59 21:24-21:25/1	21:07	19:54	18:41	16:38	16:12 15:25-15:34/9
15	05:20 20:56-21:20/24	06:10 06:39-07:03/24	07:05 19:08-19:24/16	08:00 17:19-17:52/33	07:59 15:42-16:03/21	08:45 14:53-14:57/4
	21:58	21:05	19:52	18:39	16:37	16:12 15:26-15:34/8
16	05:22 20:56-21:20/24	06:12 06:41-07:02/21	07:07 19:07-19:21/14	08:02 17:18-17:52/34	08:01 15:42-16:01/19	08:46 14:53-14:58/5
	21:57	21:03	19:49	18:36	16:35	16:12 15:26-15:34/8
17	05:23 20:56-21:20/24	06:14 06:43-07:02/19	07:09 19:07-19:19/12	08:03 17:18-17:53/35	08:03 15:41-15:59/18	08:47 14:53-14:58/5
	21:56	21:01	19:47	18:34	16:33	16:12 15:26-15:34/8
18	05:24 20:56-21:20/24	06:16 06:44-07:00/16	07:11 19:07-19:16/9	08:05 17:17-17:53/36	08:05 15:41-15:58/17	08:47 14:54-14:58/4
	21:54	20:59	19:44	18:32	16:32	16:12 15:27-15:34/7
19	05:26 20:56-21:20/24	06:17 06:46-07:00/14	07:12 19:08-19:14/6	08:07 17:17-17:53/36	08:07 15:41-15:56/15	08:48 14:54-14:59/5
	21:53	20:56	19:42 07:54-08:04/10	18:30	16:31	16:13 15:28-15:35/7
20	05:27 20:56-21:18/22	06:19 06:48-06:59/11	07:14 19:08-19:11/3	08:09 17:17-17:53/36	08:09 15:42-15:55/13	08:49 14:55-15:00/5
	21:52	20:54	19:40 07:51-08:06/15	18:27	16:29 15:14-15:21/7	16:13 15:28-15:35/7
21	05:29 20:56-21:16/20	06:21 06:49-06:56/7	07:16 07:49-08:06/17	08:11 17:17-17:52/35	08:10 15:42-15:53/11	08:49 14:55-15:00/5
	21:50	20:52	19:37	18:25	16:28 15:12-15:24/12	16:13 15:28-15:35/7
22	05:30 20:56-21:16/20	06:23 06:51-06:54/3	07:18 07:48-08:07/19	08:13 17:17-17:52/35	08:12 15:42-15:52/10	08:50 14:56-15:01/5
	21:49	20:50	19:35	18:23	16:27 15:10-15:26/16	16:14 15:29-15:36/7
23	05:32 20:56-21:14/18	06:25	07:20 07:47-08:08/21	08:15 17:17-17:51/34	08:14 15:43-15:50/7	08:50 14:56-15:01/5
	21:48	20:47	19:32	18:21	16:25 15:10-15:27/17	16:14 15:29-15:36/7
24	05:33 20:57-21:13/16	06:26	07:21 07:48-08:11/23	08:17 17:17-17:48/31	08:16 15:43-15:49/6	08:51 14:56-15:01/5
	21:46	20:45	19:30	18:18	16:24 15:09-15:29/20	16:15 15:30-15:36/6
25	05:35 20:57-21:12/15	06:28	07:23 07:49-08:12/23	07:19 16:18-16:46/28	08:17 15:44-15:48/4	08:51 14:57-15:02/5
	21:45	20:43	19:27	17:16	16:23 15:09-15:30/21	16:16 15:31-15:38/7
26	05:36 20:58-21:11/13	06:30	07:25 07:51-08:13/22	07:21 16:18-16:44/26	08:19 15:45-15:47/2	08:52 14:58-15:02/4
	21:43	20:40	19:25	17:14	16:22 15:09-15:31/22	16:16 15:31-15:38/7
27	05:38 20:58-21:09/11	06:32	07:27 07:53-08:14/21	07:23 16:19-16:41/22	08:21 15:12-15:32/20	08:52 14:58-15:03/5
	21:41	20:38	19:22	17:12	16:21	16:17 15:31-15:39/8
28	05:40 20:59-21:08/9	06:33	07:28 07:55-08:14/19	07:24 16:20-16:39/19	08:22 15:13-15:33/20	08:52 14:59-15:03/4
	21:40	20:36	19:20	17:10	16:20	16:18 15:32-15:40/8
29	05:41 20:59-21:06/7	06:35	07:30 07:57-08:14/17	07:26 16:21-16:37/16	08:24 15:15-15:34/19	08:52 14:59-15:04/5
	21:38	20:33	19:17	17:08	16:19	16:19 15:32-15:41/9
30	05:43 21:00-21:05/5	06:37	07:32 07:58-08:13/15	07:28 16:23-16:34/11	08:26 15:15-15:34/19	08:52 15:00-15:04/4
	21:36	20:31	19:15	17:06	16:18	16:20 15:33-15:42/9
31	05:44 21:01-21:03/2	06:39		07:30 16:25-16:32/7		08:52 15:01-15:05/4
	21:35	20:29		17:04		16:21 15:33-15:43/10
Potential sun hours	512	460	382	328	259	233
Sum of minutes with flicker	671	288	385	666	412	441

Table layout: For each day in each month the following matrix apply

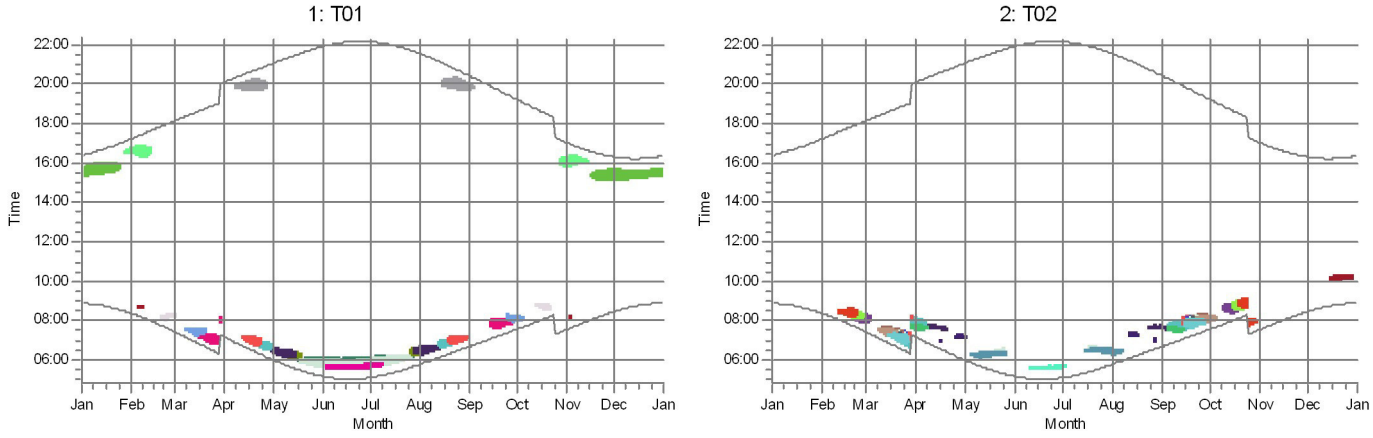
Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Calendar per WTG, graphical

Calculation: Curtailment Stratedy



Shadow receptors

G: H007*	AA: H029*	AL: H040*	AZ: H055*	BL: H068	BV: H079*	CI: H096*	CT: H107	DU: H139	EK: H158*
L: H012*	AB: H030*	AM: H041*	BA: H056	BM: H070*	BX: H083	CJ: H097	CU: H108*	DV: H140*	EM: H161
N: H014*	AC: H031*	AP: H044*	BC: H059*	BN: H071*	BZ: H085*	CK: H098*	CY: H113*	DZ: H144	EN: H165
P: H016*	AD: H032*	AR: H046*	BD: H060*	BO: H072*	CB: H087*	CL: H099*	DA: H115	EC: H147	EO: H235
V: H023*	AE: H033*	AS: H047*	BF: H062	BP: H073*	CD: H090	CP: H103*	DB: H116*	EH: H153	
X: H025*	AH: H036*	AT: H048*	BI: H065*	BS: H076*	CF: H093*	CQ: H104	DF: H120	EI: H156*	
Y: H027	AK: H039*	AW: H052*	BK: H067*	BT: H077*	CH: H095*	CS: H106	DT: H138	EJ: H157*	

** Results reduced by flicker curtailment*

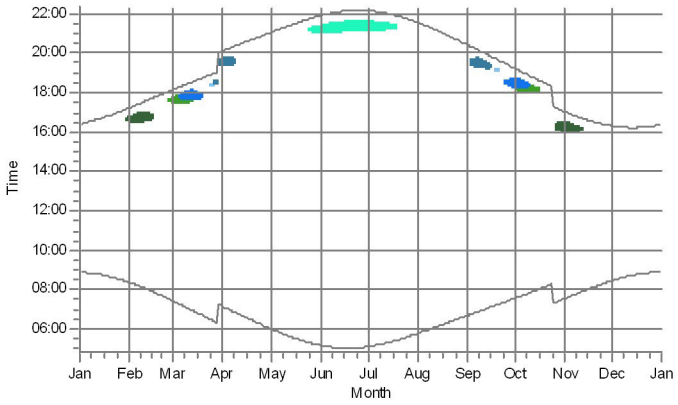
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

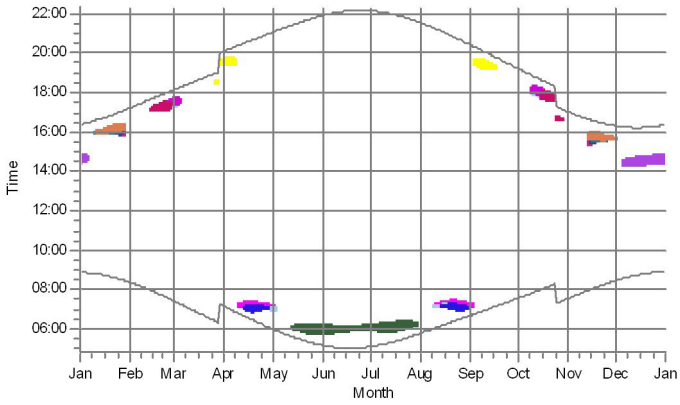
SHADOW - Calendar per WTG, graphical

Calculation: Curtailment Stratedy

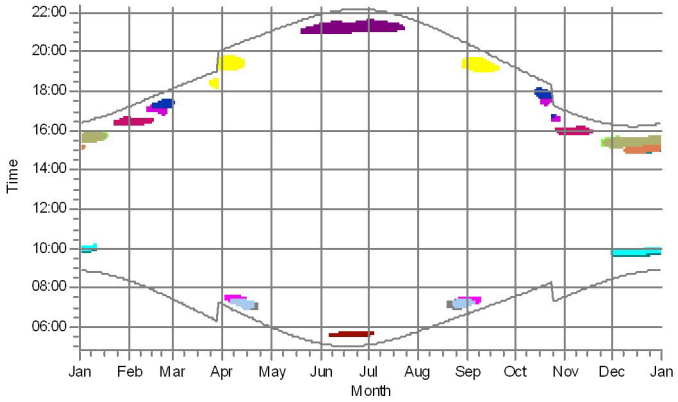
7: T07



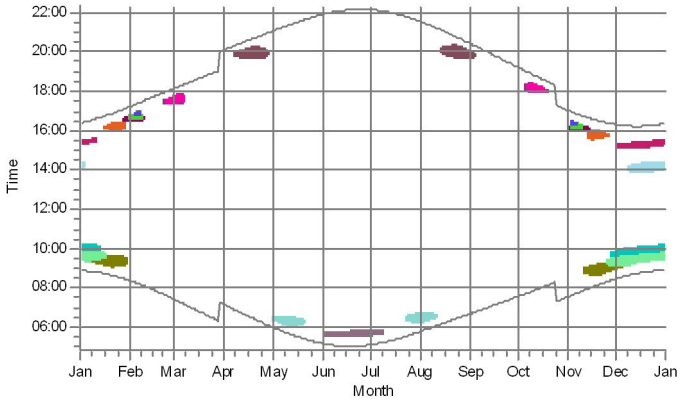
8: T08



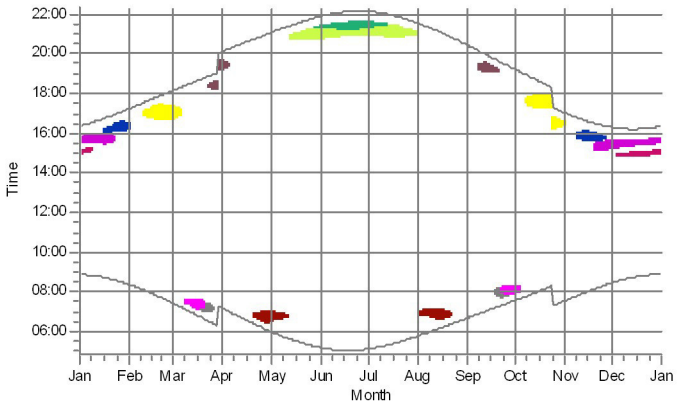
9: T09



10: T10



11: T11



Shadow receptors

A: H001*	J: H010*	T: H021*	AI: H037*	AV: H050*	BE: H061*	BW: H081*	CN: H101	DE: H119*	DM: H130*	EB: H146
B: H002*	K: H011*	U: H022*	AJ: H038*	AW: H052*	BH: H064*	BY: H084*	CV: H110	DG: H123	DN: H131	EE: H149
D: H004*	L: H012*	Z: H028	AO: H043*	AX: H053*	BQ: H074	CA: H086	CZ: H114	DH: H124	DQ: H135*	EF: H151*
E: H005*	M: H013*	AB: H030*	AQ: H045*	AY: H054*	BR: H075	CG: H094	DC: H117*	DI: H125*	DX: H142*	EG: H152*
F: H006*	O: H015*	AG: H035*	AU: H049*	BC: H059*	BU: H078	CM: H100*	DD: H118*	DL: H129*	DY: H143

** Results reduced by flicker curtailment*

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Flicker curtailment calendar

Calculation: Curtailment Stratedy **WTG:** 1 - T01

Flicker curtailment by stopping specific turbines

	January	February	March	April	May	June	July	August	September	October	November	December
1		16:02-16:31	07:49-08:16							08:12-08:56	08:02-08:14	
2		16:03-16:31	07:47-08:17							08:11-08:56	08:04-08:13	
3		16:04-16:30	07:44-08:17							08:10-08:56	15:45-15:50 08:06-08:12	
4		16:05-16:29	07:42-08:18							08:10-08:55	15:40-15:54 08:08-08:10	
5		16:07-16:28	07:39-08:18							08:10-08:55	15:38-15:56	
6		16:09-16:26	07:37-08:18							08:10-08:55	15:37-15:58	
7		16:11-16:24 08:38-08:40	07:35-08:19							08:12-08:55	15:36-16:00	
8		08:36-08:42	07:33-08:18							08:14-08:54	15:35-16:01	
9		08:34-08:44	07:33-08:19							08:16-08:53	15:34-16:01	
10		08:32-08:45	07:32-08:18							08:17-08:52	15:33-16:02	
11		08:30-08:46	07:33-08:18							08:19-08:51	15:33-16:03	
12	15:59-16:01	08:28-08:47	07:32-08:17							08:21-08:50	15:32-16:03	
13	15:59-16:02	08:26-08:47	07:33-08:16							08:59-09:06 08:23-08:48	15:32-16:03	
14	15:59-16:04	08:24-08:48	07:32-08:15							08:55-09:10 08:25-08:47	15:32-16:04	
15	15:59-16:06	08:21-08:48	07:33-08:15							08:52-09:12 08:27-08:45	15:33-16:04	
16	15:59-16:08	08:19-08:48	07:33-08:13							08:50-09:14 08:29-08:43	15:33-16:02	
17	15:59-16:11	08:17-08:48	07:34-08:12							08:49-09:15 08:31-08:41	15:33-16:00	
18	15:58-16:12	08:15-08:49	07:34-08:10							08:47-09:16 08:33-08:38	15:33-15:59	
19	15:58-16:14	08:15-08:49	07:36-08:09							08:46-09:17	15:33-15:57	
20	15:59-16:17	08:14-08:47	07:38-08:07						08:32-08:42	08:46-09:17	15:34-15:56	
21	15:58-16:18	08:15-08:47	07:39-08:04						08:28-08:47	08:45-09:18	15:34-15:54	
22	15:59-16:21	08:15-08:47	07:41-08:02						08:24-08:48	08:44-09:18	15:35-15:53	
23	15:58-16:22	08:15-08:45 08:03-08:04	07:44-07:57						08:22-08:50	08:44-09:18	15:35-15:51	
24	15:59-16:25	08:17-08:45 08:01-08:08							08:20-08:52	08:45-09:18	15:36-15:50	
25	15:59-16:26	08:18-08:44 07:59-08:11							08:19-08:53	07:47-08:18	15:37-15:49	
26	16:00-16:29	08:19-08:41 07:56-08:12							08:16-08:54	07:49-08:17	15:37-15:47	
27	16:00-16:31	08:21-08:39 07:54-08:14							08:15-08:54	07:52-08:18	15:38-15:45	
28	16:00-16:32	08:24-08:36 07:52-08:15							08:14-08:55	07:54-08:18	15:39-15:45	
29	16:00-16:32								08:13-08:56	07:56-08:17	15:40-15:44	
30	16:01-16:32								08:13-08:56	07:58-08:16	15:41-15:43	
31	16:02-16:32									08:00-08:15		

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Flicker curtailment calendar

Calculation: Curtailment Stratedy **WTG:** 2 - T02

Flicker curtailment by stopping specific turbines

	January	February	March	April	May	June
1	10:44-11:21 09:39-10:11	09:06-09:33 08:50-08:56			06:26-07:10	05:41-06:21
2	10:44-11:20 09:39-10:11	09:07-09:32 08:48-08:57		07:31-07:32	06:24-07:10	05:40-06:21
3	10:46-11:21 09:40-10:12	09:09-09:31 08:46-08:58		07:28-07:33	06:22-07:09	05:40-06:22
4	10:46-11:20 09:41-10:12	09:10-09:30 08:44-08:59		07:26-07:35	06:20-07:09	05:39-06:21
5	10:47-11:21 09:42-10:12	09:12-09:28 08:42-09:00		07:23-07:35	06:19-07:09	05:38-06:21
6	10:48-11:20 09:42-10:12	09:15-09:25 08:40-09:00		07:21-07:37	06:19-07:08	05:38-06:22
7	10:50-11:20 09:43-10:13	08:38-09:01		07:19-07:38	06:20-07:09	05:37-06:22
8	10:51-11:20 09:44-10:13	08:36-09:01		07:16-07:37	06:20-07:08	05:37-06:22
9	10:52-11:19 09:44-10:12 09:22-09:24	08:34-09:01		07:14-07:38	06:20-07:08	05:36-06:22
10	10:53-11:18 09:45-10:12 09:21-09:25	08:32-09:02		07:11-07:38	06:20-07:07	05:36-06:23
11	10:55-11:17 09:46-10:12 09:20-09:26	08:30-09:02		07:09-07:38	06:21-07:07	05:37-06:23
12	10:57-11:16 09:47-10:12 09:19-09:26	08:30-09:02		07:07-07:38	06:21-07:06 06:06-06:09	05:36-06:23
13	10:59-11:14 09:48-10:11 09:18-09:27	08:30-09:01		07:04-07:37	06:21-07:05 06:04-06:10	05:37-06:23
14	11:03-11:11 09:49-10:11 09:17-09:28	08:31-09:01		07:02-07:37	06:22-07:05 06:03-06:12	05:37-06:23
15	09:50-10:10 09:16-09:29	08:31-09:00		07:00-07:37	06:22-07:04 06:01-06:13	05:38-06:24
16	09:52-10:10 09:15-09:30	08:32-08:59		07:00-07:37	06:23-07:04 06:00-06:14	05:38-06:24
17	09:54-10:09 09:14-09:31	08:33-08:58		06:55-07:35	06:24-07:03 05:58-06:14	05:38-06:24
18	09:57-10:07 09:13-09:32	08:35-08:57		06:53-07:35	06:25-07:03 05:57-06:16	05:38-06:24
19	09:11-09:32	08:36-08:55		06:51-07:34	06:26-07:02 05:56-06:17	05:38-06:24
20	09:10-09:33	08:38-08:52		06:49-07:33	06:26-07:01 05:54-06:17	05:39-06:24
21	09:08-09:33	08:43-08:47		06:47-07:32	06:27-07:00 05:53-06:17	05:39-06:24
22	09:07-09:34			06:44-07:30	06:29-06:59 05:52-06:18	05:39-06:24
23	09:05-09:34			06:42-07:28	06:29-06:57 05:50-06:18	05:40-06:25
24	09:04-09:35			06:40-07:26	06:31-06:56 05:49-06:19	05:39-06:25
25	09:02-09:34			06:38-07:24	06:32-06:55 05:48-06:19	05:39-06:25
26	09:03-09:35			07:10-07:21 06:36-07:09	06:34-06:54 05:47-06:19	05:40-06:26
27	09:03-09:35			06:34-07:09	06:36-06:52 05:46-06:20	05:40-06:26
28	09:03-09:34			06:32-07:09	06:38-06:50 05:45-06:20	05:40-06:26
29	09:05-09:35			06:30-07:10	06:43-06:45 05:44-06:20	05:40-06:26
30	09:05-09:34			06:28-07:10	05:43-06:21	05:41-06:27
31	09:06-09:34 08:52-08:55				05:42-06:21	

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Flicker curtailment calendar

Calculation: Curtailment Stratedy **WTG:** 2 - T02

Flicker curtailment by stopping specific turbines

	July	August	September	October	November	December
1	05:41-06:27	06:31-07:17 06:17-06:19	07:08-07:37		08:02-08:31	10:37-10:59 09:28-09:54 09:02-09:08
2	05:41-06:27	06:31-07:18	07:10-07:37		08:04-08:31	10:36-11:01 09:28-09:55 09:04-09:08
3	05:41-06:27	06:30-07:18	07:12-07:36		08:06-08:31	10:36-11:03 09:28-09:56 09:06-09:08
4	05:42-06:28	06:30-07:18	07:13-07:35		08:08-08:30	10:35-11:04 09:28-09:57
5	05:43-06:28	06:29-07:18	07:15-07:34		08:45-08:56 08:11-08:31	10:35-11:05 09:28-09:58
6	05:44-06:28	06:29-07:18	07:17-07:33		08:43-08:59 08:13-08:30	10:34-11:06 09:28-09:58
7	05:45-06:29	06:29-07:19	07:18-07:31		08:41-09:01 08:15-08:30	10:35-11:08 09:29-09:59
8	05:46-06:29	06:28-07:18	07:20-07:29		08:39-09:02 08:17-08:29	10:34-11:08 09:28-09:59
9	05:47-06:29	06:30-07:19	07:22-07:28		08:38-09:03 08:19-08:28	10:34-11:09 09:28-10:00
10	05:48-06:29	06:31-07:18	07:24-07:25		08:37-09:04 08:21-08:27	10:35-11:10 09:29-10:01
11	05:49-06:29	06:33-07:18			08:37-09:05 08:23-08:26	10:34-11:11 09:29-10:01
12	05:50-06:29	06:35-07:18			08:36-09:05	10:34-11:12 09:30-10:02
13	05:51-06:29	06:36-07:17			08:36-09:06	10:34-11:12 09:30-10:02
14	05:52-06:29	06:38-07:17			08:36-09:07	10:35-11:13 09:30-10:03
15	06:48-06:57 05:53-06:29	06:40-07:17			08:36-09:08	10:35-11:14 09:31-10:03
16	06:45-07:00 05:54-06:28	06:41-07:16			08:36-09:08	10:35-11:14 09:31-10:04
17	06:44-07:03 05:56-06:29	07:16-07:28 06:43-07:15			08:36-09:08	10:36-11:15 09:32-10:05
18	06:43-07:04 05:57-06:29	06:45-07:31			08:38-09:08	10:36-11:16 09:32-10:05
19	06:41-07:05 05:58-06:28	06:46-07:32			08:40-09:09	10:36-11:16 09:32-10:05
20	06:40-07:07 06:00-06:29	06:48-07:34			08:42-09:09	10:37-11:17 09:33-10:06
21	06:39-07:08 06:01-06:28	06:50-07:36		09:11-09:20	08:44-09:09	10:37-11:17 09:33-10:06
22	06:38-07:09 06:02-06:27	06:51-07:36		09:08-09:23	08:46-09:09	10:38-11:18 09:34-10:07
23	06:37-07:11 06:04-06:28	06:53-07:37		09:05-09:25	08:48-09:09	10:38-11:18 09:34-10:07
24	06:36-07:11 06:05-06:27	06:55-07:38		09:04-09:27	09:34-09:44 08:50-09:09	10:39-11:19 09:35-10:08
25	06:36-07:13 06:07-06:27	06:56-07:38		08:02-08:28	09:32-09:47 08:52-09:09	10:39-11:19 09:35-10:08
26	06:35-07:13 06:08-06:26	06:58-07:38		08:01-08:29	09:31-09:49 08:54-09:09	10:40-11:19 09:36-10:09
27	06:34-07:14 06:09-06:25	07:02-07:39		08:01-08:30	09:30-09:49 08:55-09:08	10:40-11:19 09:36-10:09
28	06:33-07:15 06:11-06:24	07:01-07:38		08:00-08:31	10:44-10:50 09:29-09:51 08:57-09:08	10:41-11:20 09:36-10:09
29	06:32-07:15 06:12-06:23	07:03-07:38		08:00-08:31	10:41-10:55 09:29-09:52 08:59-09:09	10:41-11:20 09:37-10:10
30	06:32-07:16 06:14-06:22	07:05-07:38		07:59-08:31	10:39-10:58 09:29-09:54 09:01-09:09	10:42-11:20 09:38-10:10
31	06:32-07:17 06:16-06:21	07:07-07:38		08:00-08:31		10:43-11:21 09:38-10:11

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Flicker curtailment calendar

Calculation: Curtailment Stratedy **WTG:** 3 - T03

Flicker curtailment by stopping specific turbines

	January	February	March	April	May	June	July	August	September	October	November	December
1		08:50-09:08	17:23-17:42							17:57-18:33	08:12-08:37	
2		08:48-09:09	17:22-17:45							17:56-18:33	08:11-08:38	
3		08:46-09:09	17:20-17:46							17:55-18:33	08:11-08:38	
4		08:44-09:09	17:20-17:48							17:55-18:33	08:10-08:38	
5		08:42-09:09	17:19-17:50							17:55-18:33	08:10-08:39	
6		08:40-09:09	17:19-17:52							17:55-18:32	08:13-08:40	
7		08:40-09:09	17:18-17:54							17:55-18:30	08:15-08:40	
8		08:41-09:08	17:18-17:56							17:54-18:26	08:17-08:40	
9		08:42-09:08	17:18-17:56							17:54-18:24	08:19-08:39	
10		08:43-09:07	17:17-17:55							17:54-18:21	08:21-08:39	
11		08:44-09:07	17:18-17:55							17:55-18:19	08:23-08:39	
12		08:45-09:05	17:18-17:54							17:55-18:17	08:25-08:38	
13		08:47-09:04	17:18-17:54							17:56-18:14	08:27-08:38	
14		08:49-09:02	17:18-17:52							17:57-18:12	08:30-08:38	
15		08:53-08:56	17:20-17:51							17:59-18:10	08:32-08:37	
16			17:20-17:49							18:01-18:07	08:34-08:36	
17			17:22-17:48							18:03-18:05		
18			17:23-17:45									
19			17:26-17:43									
20			17:29-17:38									
21												
22												
23									18:17-18:19			
24									18:11-18:26			
25		17:30-17:33							18:08-18:28			
26	09:01-09:03	17:28-17:36							18:04-18:29			
27	08:59-09:04	17:26-17:38							18:02-18:31	08:22-08:29		
28	08:57-09:05	17:24-17:40							18:01-18:32	08:18-08:32		
29	08:55-09:06								18:00-18:32	08:16-08:34		
30	08:54-09:07								17:59-18:33	08:14-08:35		
31	08:52-09:08									08:13-08:36		

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Flicker curtailment calendar

Calculation: Curtailment Stratedy **WTG:** 4 - T04

Flicker curtailment by stopping specific turbines

	January	February	March	April	May	June	July	August	September	October	November	December
1				19:08-19:38		05:50-06:27	05:59-06:31	06:17-06:33		18:17-18:44		
2				19:07-19:36		05:51-06:27	05:58-06:31	06:19-06:33		18:17-18:41		
3				19:08-19:36		05:52-06:27	05:59-06:32	06:20-06:31		18:17-18:39		
4				19:09-19:35		05:52-06:27	05:59-06:32	06:22-06:30	19:14-19:22	18:17-18:37		
5			17:46-17:50	19:10-19:33		05:52-06:27	05:59-06:33	06:23-06:28	19:10-19:25	18:18-18:34		
6			17:44-17:52	19:11-19:31		05:53-06:27	05:59-06:33	06:25-06:27	19:08-19:27	18:19-18:32		
7			17:42-17:54	19:13-19:28	06:15-06:18	05:53-06:27	05:59-06:34		19:05-19:28	18:20-18:30		
8			17:41-17:56	19:16-19:25	06:13-06:19	05:53-06:27	05:58-06:33		19:04-19:29	18:20-18:26		
9			17:40-17:59		06:11-06:20	05:53-06:27	05:58-06:34		19:03-19:30	18:22-18:24		
10			17:39-18:00		06:09-06:21	05:54-06:27	05:59-06:35		19:01-19:29			
11			17:39-18:02		06:08-06:23	05:55-06:27	05:59-06:35		19:00-19:30			
12			17:38-18:04		06:06-06:23	05:54-06:26	05:59-06:36		19:00-19:30			
13			17:38-18:06		06:04-06:23	05:55-06:27	05:59-06:36		18:59-19:30			
14			17:37-18:07		06:03-06:25	05:56-06:27	05:58-06:36		18:58-19:26			
15			17:38-18:07		06:01-06:25	05:56-06:27	05:58-06:36		18:58-19:24			
16			17:37-18:06		06:00-06:26	05:56-06:27	05:58-06:36		18:58-19:22			
17			17:38-18:05		05:58-06:25	05:57-06:27	05:59-06:37		18:58-19:19			
18			17:38-18:04		05:57-06:26	05:57-06:28	05:59-06:37		18:58-19:16			
19			17:40-18:03		05:55-06:26	05:57-06:28	05:58-06:37		18:59-19:14			
20			17:40-18:00		05:54-06:26	05:57-06:28	06:00-06:37		19:00-19:12			
21			18:18-18:21 17:43-17:58		05:53-06:27	05:57-06:28	06:01-06:37		19:00-19:09 18:33-18:38			
22			18:15-18:23 17:45-17:54		05:52-06:27	05:57-06:28	06:02-06:37		19:02-19:06 18:28-18:42			
23			18:14-18:25		05:50-06:27	05:58-06:29	06:04-06:37		18:26-18:44			
24			18:12-18:26		05:49-06:27	05:58-06:29	06:05-06:37		18:24-18:46			
25			18:11-18:29		05:49-06:27	05:58-06:28	06:06-06:36		18:22-18:47			
26			18:10-18:31		05:49-06:27	05:59-06:29	06:08-06:36		18:20-18:47			
27			18:09-18:32		05:49-06:27	05:58-06:29	06:09-06:36		18:19-18:47			
28			18:09-18:34		05:50-06:27	05:59-06:30	06:11-06:36		18:19-18:48			
29			19:08-19:36		05:50-06:27	05:58-06:30	06:12-06:35		18:18-18:48			
30			19:08-19:38		05:50-06:27	05:59-06:31	06:14-06:35		18:18-18:47			
31			19:07-19:38		05:50-06:27		06:15-06:34					

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Flicker curtailment calendar

Calculation: Curtailment Stratedy **WTG:** 5 - T05

Flicker curtailment by stopping specific turbines

	January	February	March	April	May	June
1		16:27-16:42	16:58-17:26	07:33-08:02	06:26-07:03	
2		16:27-16:44	16:59-17:25	07:31-08:02	06:24-07:02	
3		16:26-16:46	17:00-17:23	07:28-08:02	06:22-07:02	
4		16:26-16:48	17:02-17:21	07:27-08:02	06:20-07:02	
5		16:25-16:50	17:04-17:18	07:26-08:01	06:18-07:01	
6		16:25-16:53	17:10-17:12	07:27-08:00	06:16-07:00	
7		16:25-16:55		07:27-08:00 07:19-07:23	06:15-07:01	
8		16:25-16:55		07:27-07:58 07:16-07:24	06:13-07:00	
9		16:25-16:56		07:28-07:57 07:14-07:25	06:11-06:59	
10		16:26-16:55		07:28-07:55 07:11-07:25	06:09-06:58	
11		16:26-16:55		07:29-07:54 07:09-07:26	06:08-06:58	
12		16:27-16:55		07:31-07:53 07:07-07:27	06:06-06:56	
13		17:06-17:09 16:28-16:54		07:32-07:49 07:04-07:27	06:04-06:55	
14		17:03-17:10 16:28-16:53		07:35-07:46 07:02-07:27	06:03-06:54	
15		17:02-17:12 16:29-16:52		07:00-07:28	06:33-06:52 06:01-06:32	
16		17:01-17:15 16:31-16:51		06:58-07:28	06:35-06:51 06:01-06:32	
17		17:00-17:17 16:33-16:49		06:55-07:27	06:37-06:48 06:00-06:31	
18		16:59-17:19 16:36-16:47		06:53-07:27	06:01-06:31	
19		16:58-17:21		06:51-07:26	06:01-06:30	
20		16:57-17:23		06:49-07:26	06:02-06:30	
21		16:57-17:26		06:46-07:24	06:03-06:30	
22		16:56-17:27		06:44-07:24	06:04-06:30	
23		16:56-17:29		06:42-07:23	06:04-06:28	
24		16:56-17:29	06:53-06:55	06:40-07:22	06:05-06:28	
25		16:56-17:28	06:50-06:57	06:38-07:20	06:06-06:27	
26		16:56-17:28	06:48-06:59	06:36-07:19	06:07-06:27	
27		16:57-17:28	06:45-07:00	06:34-07:17	06:08-06:26	
28	16:31-16:33	16:57-17:26	06:43-07:01	06:32-07:14	06:09-06:25	
29	16:29-16:35		07:40-08:01	06:30-07:03	06:10-06:24	
30	16:28-16:37		07:38-08:02	06:28-07:03	06:12-06:22	
31	16:28-16:40		07:35-08:02		06:14-06:20	

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Flicker curtailment calendar

Calculation: Curtailment Stratedy **WTG:** 5 - T05

Flicker curtailment by stopping specific turbines

	July	August	September	October	November	December
1		06:17-07:07	07:28-07:53 07:08-07:25		15:55-16:25	
2		06:19-07:08	07:27-07:54 07:10-07:24		15:55-16:25	
3		06:20-07:09	07:26-07:55 07:12-07:23		15:55-16:25	
4		06:22-07:10	07:24-07:55 07:13-07:21		15:55-16:24	
5		06:23-07:09	07:23-07:56 07:15-07:19		15:55-16:22	
6		06:25-07:10	07:23-07:56		15:55-16:20	
7		06:27-07:11	07:22-07:56		15:56-16:19	
8		06:28-07:11	07:21-07:56	17:41-17:51	15:57-16:17	
9		06:30-07:11	07:22-07:56	17:38-17:54	15:57-16:15	
10		06:31-07:11	07:24-07:56	17:35-17:56	15:58-16:13	
11		06:33-07:11	07:25-07:54	17:33-17:57	15:59-16:11	
12		06:35-07:11	07:27-07:54	17:32-17:58	16:00-16:09	
13	06:21-06:30	06:36-07:10	07:29-07:53	17:31-17:59	16:01-16:07	
14	06:19-06:31	07:12-07:18 06:38-07:10	07:30-07:52	17:30-18:00	16:03-16:05	
15	06:18-06:33	06:40-07:22	07:32-07:51	17:29-18:00		
16	06:17-06:34	06:41-07:24	07:34-07:49	17:28-18:00		
17	06:17-06:36	06:43-07:26	07:36-07:48	17:28-18:00		
18	06:16-06:37	06:45-07:27	07:37-07:45	17:28-18:00		
19	06:15-06:37	06:46-07:28	07:39-07:42	17:27-18:00		
20	06:15-06:39	06:48-07:29		17:27-17:58		
21	06:14-06:39	06:50-07:29		17:27-17:55		
22	06:13-06:39	06:51-07:29		17:28-17:53		
23	06:13-06:41	06:53-07:30		17:28-17:51		
24	06:12-06:41	06:55-07:30		17:29-17:48 17:04-17:17		
25	06:12-06:42	06:56-07:29		16:29-16:46 16:02-16:19		
26	06:49-06:57 06:11-06:42	06:58-07:29		16:30-16:44 16:00-16:21		
27	06:46-07:00 06:11-06:42	07:00-07:30		16:32-16:41 15:58-16:22		
28	06:44-07:02 06:11-06:42	07:01-07:28		16:33-16:39 15:57-16:23		
29	06:12-07:03	07:36-07:47 07:03-07:28		16:37-16:38 15:57-16:24		
30	06:14-07:05	07:33-07:50 07:05-07:28		15:56-16:25		
31	06:15-07:06	07:31-07:53 07:07-07:27		15:56-16:25		

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Flicker curtailment calendar

Calculation: Curtailment Stratedy **WTG:** 6 - T06

Flicker curtailment by stopping specific turbines

	January	February	March	April	May	June	July	August	September	October	November	December
1	15:02-15:36	15:40-16:19			19:59-20:06						15:19-15:41	14:48-15:41
2	15:44-15:46 15:02-15:37	15:40-16:18									15:17-15:43	14:49-15:41
3	15:44-15:47 15:03-15:38	15:41-16:18									15:15-15:44	14:49-15:39
4	15:43-15:48 15:03-15:38	15:42-16:17									15:14-15:45	15:25-15:39 14:49-15:24
5	15:42-15:50 15:04-15:39	15:43-16:17									15:13-15:46	15:27-15:39 14:50-15:25
6	15:41-15:51 15:04-15:39	15:43-16:16									15:12-15:47	15:27-15:37 14:50-15:25
7	15:41-15:52 15:04-15:39	15:45-16:15									15:12-15:48	15:28-15:36 14:50-15:25
8	15:41-15:55 15:05-15:40	15:46-16:14									15:12-15:49	15:31-15:36 14:51-15:26
9	15:06-15:56	15:48-16:13									15:11-15:49	15:32-15:36 14:51-15:26
10	15:06-15:58	15:50-16:11									15:11-15:49	15:33-15:35 14:51-15:26
11	15:06-15:59	15:53-16:09									15:11-15:50	14:53-15:27
12	15:07-16:01	15:57-16:05		20:00-20:01				20:07-20:15			15:10-15:50	14:53-15:27
13	15:07-16:03			19:57-20:02				20:03-20:17			15:10-15:50	14:53-15:28
14	15:08-16:05			19:55-20:04				20:01-20:19			15:10-15:50	14:54-15:28
15	15:09-16:07			19:54-20:06				19:59-20:20			15:10-15:50	14:54-15:29
16	15:10-16:09			19:52-20:07				19:58-20:21			15:11-15:50 14:57-15:08	14:55-15:29
17	15:11-16:11			19:51-20:09				19:57-20:22			15:12-15:51 14:54-15:10	14:56-15:30
18	15:11-16:12			19:51-20:11				19:56-20:22			14:53-15:51	14:55-15:29
19	15:12-16:14			19:51-20:13				19:55-20:22			14:52-15:51	14:56-15:30
20	15:13-16:15			19:49-20:14				19:55-20:23			14:51-15:51	14:57-15:31
21	15:14-16:15			19:49-20:16				19:54-20:22			14:50-15:51	14:57-15:31
22	15:16-16:16			19:49-20:17				19:54-20:21			14:49-15:51	14:58-15:32
23	15:17-16:16			19:50-20:17				19:54-20:19			14:49-15:51	14:58-15:32
24	15:19-16:18			19:50-20:17				19:54-20:17			14:49-15:50	14:58-15:32
25	15:38-16:18 15:20-15:36			19:50-20:16				19:54-20:14			14:48-15:48	14:59-15:33
26	15:38-16:18 15:23-15:34			19:51-20:15				19:54-20:12			14:48-15:47	15:00-15:34
27	15:38-16:18			19:52-20:14				19:55-20:10			14:48-15:46	15:00-15:34
28	15:38-16:18			19:53-20:13				19:55-20:07			14:48-15:45	15:00-15:34
29	15:38-16:18			19:54-20:11				19:56-20:05			14:48-15:44	15:01-15:35
30	15:39-16:18			19:56-20:09				19:58-20:03		15:25-15:36	14:48-15:42	15:01-15:35
31	15:40-16:19							19:59-20:00		15:22-15:39		15:02-15:36

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Flicker curtailment calendar

Calculation: Curtailment Stratedy **WTG:** 7 - T07

Flicker curtailment by stopping specific turbines

	January	February	March	April	May	June	July	August	September	October	November	December
1	13:39-14:28			18:56-19:14	19:42-20:34			20:06-20:45	19:45-19:58	18:41-18:44		13:29-14:12
2	13:40-14:29			18:58-19:09	19:44-20:36			20:05-20:45	19:47-19:56			13:29-14:13
3	13:41-14:30				19:45-20:37			20:05-20:45	19:48-19:53			13:29-14:13
4	13:41-14:29				19:48-20:36			20:05-20:46				13:29-14:14
5	13:42-14:30				19:54-20:36			20:04-20:46				13:29-14:16
6	13:43-14:30				19:54-20:36			20:04-20:46				13:29-14:16
7	13:43-14:30				19:54-20:36			20:03-20:45				13:29-14:16
8	13:45-14:30				19:55-20:36			20:04-20:46				13:29-14:17
9	13:45-14:30			19:51-19:56	19:55-20:36			19:57-20:46				13:29-14:18
10	13:46-14:30			19:48-19:57	19:55-20:35			19:53-20:45	18:52-19:02			13:29-14:18
11	13:47-14:30			19:46-19:59	19:55-20:34			19:52-20:44	18:48-19:05			13:30-14:20
12	13:48-14:29			19:44-20:01	19:56-20:34			19:50-20:42	18:46-19:08			13:30-14:20
13	13:49-14:29		18:01-18:06	19:42-20:02	19:56-20:34			19:48-20:39	18:43-19:08			13:30-14:20
14	13:50-14:29		17:58-18:08	19:41-20:04	19:57-20:34			19:47-20:38	18:42-19:09			13:31-14:21
15	13:52-14:29		17:57-18:10	19:40-20:06	19:57-20:33			19:45-20:35	18:40-19:10			13:31-14:22
16	13:53-14:28		17:55-18:11	19:39-20:07	19:58-20:32			19:45-20:33	18:39-19:11			13:32-14:22
17	13:55-14:28		17:54-18:14	19:38-20:09	19:58-20:31		20:24-20:26	19:44-20:32	18:38-19:10			13:32-14:23
18	13:56-14:26		17:52-18:15	19:38-20:11	20:00-20:31		20:20-20:31	19:43-20:29	18:37-19:11			13:32-14:23
19	13:58-14:25		17:52-18:18	19:38-20:13	20:00-20:30		20:18-20:33	19:43-20:27	18:36-19:11			13:32-14:24
20	14:01-14:24		17:50-18:19	19:37-20:14	20:01-20:29		20:16-20:34	19:42-20:25	18:36-19:11		13:42-13:54	13:33-14:24
21	14:03-14:22		17:50-18:21	19:37-20:16	20:03-20:28		20:15-20:37	19:41-20:22	18:35-19:09		13:39-13:58	13:33-14:24
22	14:07-14:19		17:49-18:23	19:37-20:18	20:03-20:27		20:13-20:37	19:41-20:21	18:35-19:06		13:37-14:00	13:34-14:25
23			17:50-18:25	19:37-20:20	20:05-20:26		20:12-20:38	19:41-20:19	18:35-19:04		13:35-14:02	13:34-14:25
24			17:49-18:24	19:37-20:22	20:07-20:24		20:11-20:40	19:41-20:17	18:35-19:02		13:34-14:04	13:34-14:25
25			17:49-18:23	19:37-20:24	20:09-20:23		20:10-20:40	19:41-20:14	18:35-18:59		13:32-14:05	13:36-14:27
26			17:49-18:22	19:38-20:25	20:12-20:20		20:10-20:42	19:41-20:12	18:35-18:56		13:31-14:06	13:36-14:27
27			17:50-18:22	19:38-20:27			20:08-20:42	19:42-20:10	18:36-18:54		13:31-14:08	13:36-14:27
28			17:51-18:21	19:39-20:29			20:08-20:43	19:41-20:07	18:37-18:52		13:30-14:09	13:37-14:27
29			18:51-19:19	19:40-20:31			20:07-20:43	19:42-20:05	18:38-18:49		13:30-14:10	13:37-14:28
30			18:52-19:18	19:41-20:32			20:07-20:44	19:43-20:03	18:40-18:47		13:29-14:11	13:38-14:28
31			18:53-19:16				20:06-20:44	19:43-20:00				13:39-14:29

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Flicker curtailment calendar

Calculation: Curtailment Stratedy **WTG:** 8 - T08

Flicker curtailment by stopping specific turbines

	January	February	March	April	May	June	July	August	September	October	November	December
1	14:52-15:44 13:55-14:24 12:27-12:50				06:27-07:01			06:43-07:03				15:07-15:40 14:44-15:03
2	14:53-15:45 13:56-14:25 12:28-12:50				06:27-07:01			06:41-07:03				15:08-15:40 14:44-15:05 13:54-14:01
3	14:55-15:47 13:58-14:25 12:30-12:49				06:27-07:00			06:41-07:05				15:08-15:39 14:43-15:06 13:50-14:04
4	14:55-15:48 13:58-14:24 12:32-12:48				06:27-07:00			06:39-07:06				15:08-15:39 14:43-15:07 13:49-14:06
5	14:56-15:50 14:00-14:24 12:35-12:47				06:27-06:59			06:39-07:07				15:08-15:37 14:42-15:07 13:48-14:08
6	14:57-15:51 14:01-14:23 12:40-12:42				06:28-06:58			06:38-07:08				14:43-15:37 13:47-14:09
7	15:23-15:52 14:57-15:22 14:02-14:22				06:28-06:57			06:37-07:08				14:42-15:36 13:46-14:10 12:21-12:32
8	15:24-15:54 14:59-15:23 14:05-14:22				06:29-06:57			06:36-07:09				14:43-15:36 13:46-14:12 12:20-12:36
9	15:25-15:56 15:00-15:23 14:07-14:21				06:30-06:56			06:36-07:09				14:43-15:35 13:46-14:13 12:19-12:37
10	15:25-15:57 15:01-15:22 14:10-14:18				06:31-06:54			06:35-07:09				14:43-15:35 13:45-14:14 12:18-12:39
11	15:25-15:58 15:02-15:21				06:32-06:53			06:35-07:09				14:44-15:35 13:46-14:15 12:18-12:41
12	15:26-15:58 15:04-15:21				06:34-06:52			06:34-07:09				14:44-15:35 13:46-14:16 12:17-12:42
13	15:26-15:59 15:05-15:20				06:35-06:49			06:36-07:09				14:44-15:34 13:46-14:17 12:17-12:43
14	15:27-15:59 15:08-15:18				06:39-06:47			06:38-07:09				14:44-15:34 13:46-14:18 12:17-12:44
15	15:27-15:59 15:12-15:15							06:39-07:08			15:15-15:24	14:44-15:34 13:46-14:18 12:17-12:45
16	15:28-16:00							06:41-07:08			15:12-15:27	14:45-15:34 13:46-14:19 12:17-12:46
17	15:28-15:59							06:43-07:08			15:10-15:29	14:45-15:35 13:47-14:20 12:17-12:47
18	15:29-15:59			06:53-06:54				06:44-07:07			15:09-15:30	14:45-15:34 13:46-14:20 12:17-12:47
19	15:30-15:59			06:51-06:56				06:46-07:06			15:09-15:33	14:46-15:34 13:47-14:21 12:17-12:48
20	15:30-15:58			06:48-06:57				06:48-07:06			15:08-15:34	14:47-15:35 13:48-14:22 12:18-12:49
21	15:32-15:59			06:46-06:58				06:49-07:04			15:08-15:35	14:46-15:35 13:48-14:22 12:18-12:49
22	15:33-15:59			06:44-06:59				06:51-07:03			15:07-15:35	14:47-15:36 13:48-14:23 12:19-12:50
23	15:34-15:58			06:42-07:00				06:53-07:01			15:06-15:35	14:48-15:36 13:49-14:23 12:19-12:50
24	15:36-15:57			06:40-07:01				06:54-06:59			15:06-15:36	14:48-15:36 13:49-14:23 12:19-12:50
25	15:37-15:56			06:38-07:01							15:06-15:37	14:49-15:38 13:50-14:24 12:21-12:51
26	15:39-15:54			06:36-07:01							15:06-15:38	14:49-15:38 13:51-14:24 12:21-12:51
27	15:43-15:52			06:34-07:02							15:07-15:38 14:52-14:53	14:50-15:39 13:51-14:24 12:22-12:51
28				06:31-07:01							15:07-15:39 14:48-14:58	14:50-15:40 13:52-14:24 12:23-12:51
29				06:29-07:01							15:07-15:40 14:47-15:01	14:51-15:41 13:52-14:25 12:23-12:51
30				06:27-07:00			06:48-06:59				15:07-15:39 14:45-15:02	14:52-15:42 13:53-14:25 12:25-12:51
31							06:45-07:00					14:52-15:43 13:54-14:25 12:26-12:51

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Flicker curtailment calendar

Calculation: Curtailment Stratedy **WTG:** 9 - T09

Flicker curtailment by stopping specific turbines

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:59-10:41	16:36-16:42									16:02-16:31	09:49-10:25
2	10:00-10:42	16:35-16:44									16:02-16:28	09:49-10:26
3	10:01-10:43	16:34-16:46									16:02-16:26	09:48-10:26
4	10:01-10:42	16:33-16:48									16:02-16:24	09:49-10:27
5	10:03-10:43	16:33-16:50									16:02-16:22	09:49-10:29
6	10:03-10:43	16:32-16:52									16:03-16:20	09:49-10:29
7	10:03-10:43	16:32-16:55									16:03-16:18	09:49-10:29
8	10:05-10:43	16:32-16:57									16:04-16:16	09:49-10:30
9	10:05-10:43	16:32-16:59									16:06-16:14	09:49-10:31
10	10:06-10:43	16:32-17:02									16:07-16:12	09:49-10:31
11	10:07-10:43	16:32-17:04									16:08-16:10	09:50-10:32
12	10:07-10:43	16:33-17:06				21:27-21:29						09:51-10:33
13	10:08-10:42	16:32-17:04				21:27-21:30						09:51-10:33
14	10:10-10:42	16:33-17:04				21:26-21:30						09:51-10:34
15	10:11-10:42	16:34-17:04				21:25-21:30						09:52-10:34
16	10:12-10:41	16:35-17:03				21:24-21:31						09:52-10:35
17	10:14-10:41	16:36-17:02				21:24-21:31						09:53-10:36
18	10:15-10:39	16:36-17:00				21:24-21:31						09:52-10:35
19	10:17-10:38	16:38-16:59				21:24-21:32						09:53-10:36
20	10:19-10:37	16:40-16:57				21:25-21:33						09:54-10:37
21	10:22-10:34	16:44-16:54				21:25-21:33				17:13-17:26	09:58-10:10	09:54-10:37
22						21:25-21:33				17:10-17:28	09:55-10:13	09:55-10:38
23						21:25-21:33				17:08-17:30	09:54-10:15	09:55-10:38
24						21:26-21:34				17:06-17:31	09:52-10:16	09:55-10:38
25						21:26-21:33				16:05-16:32	09:51-10:18	09:56-10:39
26						21:26-21:33				16:04-16:33	09:50-10:19	09:56-10:40
27						21:27-21:33				16:03-16:33	09:50-10:21	09:57-10:40
28						21:28-21:33				16:02-16:34	09:50-10:22	09:57-10:40
29						21:29-21:33				16:02-16:34	09:50-10:23	09:58-10:41
30						21:31-21:33				16:01-16:34	09:49-10:24	09:59-10:41
31	16:37-16:40									16:02-16:33		09:59-10:42

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Flicker curtailment calendar

Calculation: Curtailment Stratedy **WTG:** 10 - T10

Flicker curtailment by stopping specific turbines

	January	February	March	April	May	June	July	August	September	October	November	December
1	15:28-15:44 14:26-14:56		16:14-17:27							16:53-18:01	16:06-16:31	15:14-15:41 14:22-14:35
2	15:29-15:46 14:27-14:57		16:13-17:26							16:52-18:02	16:09-16:29	15:15-15:41 14:20-14:37
3	15:30-15:47 14:29-14:57		16:13-17:27							16:51-18:02	16:13-16:26	15:15-15:39 14:19-14:38
4	15:30-15:48 14:29-14:57		16:13-17:27							16:51-18:02		15:16-15:39 14:18-14:40
5	15:30-15:50 14:31-14:57		16:13-17:26							16:50-18:02		15:15-15:37 14:17-14:41
6	15:30-15:51 14:31-14:56		16:13-17:26							16:49-18:01		15:16-15:37 14:17-14:43
7	15:30-15:52 14:32-14:56		16:12-17:25							16:48-18:01		15:16-15:36 14:17-14:43
8	15:31-15:54 14:34-14:56	16:43-16:57	16:13-17:25							16:48-18:01		15:18-15:36 14:17-14:45
9	15:32-15:56 14:36-14:55	16:38-16:59	16:12-17:24							16:47-18:01		15:18-15:35 14:17-14:45
10	15:32-15:57 14:37-14:54	16:35-17:02	16:13-17:24							16:47-18:01		15:18-15:35 14:16-14:46
11	15:32-15:59 14:39-14:53	16:33-17:04	16:13-17:23							16:47-18:00		15:18-15:34 14:17-14:48
12	15:33-16:01 14:42-14:51	16:31-17:06	16:14-17:23							16:47-18:00		15:20-15:35 14:17-14:48
13	15:33-16:02	16:28-17:08	16:13-17:21							16:47-18:00		15:20-15:34 14:17-14:49
14	15:34-16:04	16:27-17:10	16:14-17:21							16:47-17:59	15:22-15:31	15:21-15:34 14:17-14:49
15	15:34-16:06	16:26-17:12	16:15-17:20							16:47-17:59	15:19-15:34	15:21-15:34 14:18-14:50
16	15:35-16:07	16:24-17:15	16:16-17:19						17:29-17:40	16:48-17:58	15:18-15:36	15:22-15:34 14:18-14:51
17	15:35-16:07	16:23-17:17	16:17-17:18						17:22-17:46	16:48-17:57	15:16-15:37	15:22-15:34 14:18-14:51
18	15:36-16:07	16:21-17:18	16:17-17:16						17:18-17:49	16:48-17:57	15:15-15:39	15:22-15:34 14:18-14:51
19	15:37-16:07	16:21-17:21	16:19-17:15						17:15-17:52	16:49-17:56	15:14-15:40	15:23-15:35 14:19-14:52
20	15:37-16:06	16:20-17:23	16:20-17:13						17:11-17:53	16:49-17:55	15:14-15:41	15:24-15:35 14:20-14:53
21	15:38-16:07	16:19-17:24	16:22-17:12						17:09-17:55	16:50-17:54	15:13-15:42	15:24-15:35 14:19-14:53
22	15:39-16:06	16:18-17:24	16:23-17:09						17:07-17:56	16:51-17:53	15:13-15:42	15:25-15:36 14:20-14:54
23	15:40-16:06	16:17-17:25	16:25-17:08						17:05-17:57	16:51-17:51	15:13-15:43	15:25-15:36 14:21-14:54
24	15:41-16:05	16:17-17:26	16:27-17:05						17:03-17:59	16:52-17:48	15:13-15:44	15:25-15:36 14:21-14:54
25	15:43-16:04	16:16-17:25	16:30-17:02						17:01-17:59	15:53-16:46	15:13-15:45	15:26-15:38 14:22-14:55
26	15:45-16:03	16:15-17:26	16:33-16:58						16:59-17:59	15:54-16:44	15:13-15:45	15:27-15:38 14:22-14:56
27	15:48-16:02	16:14-17:26	16:38-16:53						16:58-18:00	15:55-16:41	15:13-15:45	15:27-15:39 14:23-14:56
28	15:50-15:59	16:14-17:26							16:57-18:01	15:57-16:39	15:14-15:45	15:27-15:40 14:23-14:56
29									16:56-18:02	15:58-16:37	15:14-15:44	15:28-15:41 14:24-14:56
30									16:54-18:01	16:00-16:34	15:14-15:42 14:24-14:31	15:28-15:42 14:25-14:57
31										16:02-16:32		15:29-15:43 14:26-14:57

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Flicker curtailment calendar

Calculation: Curtailment Stratedy **WTG:** 11 - T11

Flicker curtailment by stopping specific turbines

	January	February	March	April	May	June
1	15:05-15:33			17:28-19:06	19:45-20:19 17:38-18:48 06:25-06:36	06:16-06:39
2	15:06-15:34			17:27-19:06	19:45-20:18 17:39-18:47 06:24-06:38	06:17-06:38
3	15:07-15:34			17:27-19:06	19:47-20:19 17:42-18:46 06:22-06:40	06:17-06:37
4	15:07-15:34			17:26-19:05	19:47-20:18 17:43-18:45 06:20-06:41	06:19-06:37
5	15:08-15:35			17:26-19:05	19:48-20:17 17:44-18:44 06:18-06:41	06:20-06:36
6	15:09-15:34			17:26-19:06	19:49-20:15 17:46-18:42 06:16-06:42	06:20-06:35
7	15:09-15:34		17:17-17:30	17:25-19:05	19:50-20:14 17:47-18:40 06:14-06:42	06:22-06:34
8	15:10-15:35		17:10-17:38	17:26-19:05	19:51-20:12 17:49-18:39 06:12-06:42	06:23-06:33
9	15:11-15:35		17:05-17:41	17:25-19:04	19:53-20:12 17:52-18:38 06:11-06:44	06:25-06:31
10	15:12-15:35		17:01-17:45	17:25-19:04	19:55-20:09 17:54-18:35 06:09-06:44	
11	15:13-15:34		16:57-17:47	17:26-19:04	19:58-20:05 17:56-18:33 06:08-06:44	
12	15:14-15:34		16:55-17:50	17:25-19:03	17:59-18:31 06:09-06:44	
13	15:15-15:34		16:52-17:51	17:25-19:03	18:02-18:28 06:08-06:44	
14	15:16-15:33		16:50-17:54	20:02-20:04 17:26-19:03	18:05-18:24 06:09-06:45	
15	15:18-15:33		16:49-17:56	19:57-20:05 17:25-19:01	06:08-06:44	
16	15:20-15:32		16:46-17:57	19:55-20:07 17:26-19:01	06:08-06:44	
17	15:23-15:28		16:45-17:58	19:53-20:09 17:27-19:01	06:08-06:44	
18			16:43-17:59	19:51-20:11 17:27-19:00	06:09-06:44	
19			16:41-18:01	19:49-20:12 17:27-18:59	06:08-06:44	
20			16:39-18:01	19:48-20:14 17:28-18:58	06:09-06:44	
21			16:39-18:02	19:48-20:16 17:29-18:58	06:10-06:44	
22			16:37-18:02	19:47-20:18 17:30-18:57	06:09-06:43	
23			16:36-18:03	19:47-20:20 17:30-18:56	06:10-06:43	
24			16:34-18:03	19:46-20:22 17:31-18:56	06:11-06:43	
25			16:34-18:04	19:46-20:22 17:32-18:55	06:11-06:42	
26			16:32-18:04	19:45-20:21 17:32-18:53	06:12-06:42	
27			16:32-18:05	19:45-20:21 17:33-18:52	06:13-06:42	
28			16:30-18:05	19:45-20:20 17:34-18:51	06:13-06:41	
29			17:30-19:05	19:45-20:20 17:36-18:50	06:14-06:41	
30			17:29-19:05	19:45-20:20 17:37-18:49 06:27-06:33	06:15-06:40	
31			17:28-19:06		06:15-06:39	

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Flicker curtailment calendar

Calculation: Curtailment Stratedy **WTG:** 11 - T11

Flicker curtailment by stopping specific turbines

	July	August	September	October	November	December
1		18:08-18:43 06:19-06:55	17:25-19:03	17:33-18:30		14:55-15:16
2		20:07-20:17 18:05-18:44 06:19-06:54	17:24-19:03	17:35-18:27		14:55-15:18
3	06:32-06:36	20:04-20:20 18:03-18:46 06:20-06:54	17:23-19:02	17:38-18:24		14:54-15:18
4	06:30-06:38	20:02-20:22 18:00-18:48 06:21-06:53	17:23-19:02	17:41-18:21		14:55-15:19
5	06:28-06:39	20:01-20:23 17:59-18:49 06:23-06:53	17:22-19:02	17:45-18:17		14:54-15:19
6	06:27-06:40	20:00-20:25 17:57-18:51 06:25-06:52	17:21-19:01	17:49-18:10		14:55-15:21
7	06:26-06:42	19:58-20:25 17:55-18:52 06:26-06:51	17:21-19:01			14:54-15:21
8	06:26-06:43	19:57-20:26 17:53-18:53 06:28-06:50	17:21-19:00			14:55-15:22
9	06:25-06:44	19:56-20:26 17:51-18:54 06:30-06:50	17:20-18:59			14:55-15:22
10	06:24-06:45	19:55-20:27 17:50-18:55 06:31-06:48	17:20-18:59			14:55-15:23
11	06:24-06:46	19:55-20:28 17:48-18:57 06:33-06:46	17:20-18:58			14:56-15:24
12	06:23-06:47	19:53-20:28 17:46-18:57 06:34-06:44	17:21-18:58			14:56-15:24
13	06:24-06:48	19:53-20:28 17:45-18:58 06:36-06:41	17:20-18:56			14:57-15:25
14	06:23-06:49	19:53-20:29 17:44-18:59	17:20-18:56			14:57-15:25
15	06:22-06:49	19:52-20:28 17:42-18:59	17:20-18:55			14:57-15:26
16	06:22-06:50	19:52-20:28 17:41-19:00	17:20-18:54			14:58-15:26
17	06:21-06:50	19:52-20:28 17:40-19:01	17:20-18:53			14:58-15:26
18	06:21-06:52	19:52-20:27 17:38-19:01	17:21-18:52			14:58-15:27
19	06:21-06:52	19:52-20:27 17:37-19:01	17:22-18:51			14:59-15:28
20	06:20-06:52	19:52-20:25 17:36-19:02	17:21-18:49			15:00-15:28
21	06:20-06:53	19:52-20:22 17:34-19:02	17:22-18:48			15:00-15:28
22	06:20-06:53	19:53-20:21 17:33-19:02	17:23-18:47			15:01-15:29
23	06:19-06:53	19:53-20:19 17:32-19:03	17:24-18:46			15:01-15:29
24	06:19-06:54	19:53-20:16 17:31-19:03	17:25-18:45			15:01-15:30
25	06:19-06:54	19:54-20:14 17:30-19:03	17:25-18:42		15:01-15:06	15:02-15:31
26	06:19-06:55	19:56-20:12 17:29-19:03	17:26-18:41		14:58-15:09	15:02-15:31
27	06:19-06:54	19:57-20:09 17:28-19:03	17:27-18:39		14:57-15:12	15:03-15:31
28	06:19-06:55	19:59-20:07 17:27-19:03	17:29-18:37		14:56-15:13	15:03-15:32
29	18:20-18:31 06:18-06:55	20:03-20:05 17:27-19:03	17:30-18:35		14:56-15:15	15:04-15:32
30	18:15-18:37 06:19-06:55	17:25-19:03	17:31-18:32		14:55-15:15	15:04-15:33
31	18:11-18:40 06:19-06:54	17:25-19:03				15:05-15:33

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Flicker curtailment protection

Calculation: Curtailment Stratedy

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP
1																																											
2																													X														
3																X																												
4							X					X																													X			
5							X					X															X														X			
6												X																X													X			
7												X																X																
8				X						X								X																										
9	X									X																							X										
10		X																																									
11	X										X																						X										

	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT	BU	BV	BW	BX
1		X																					X												
2		X		X																					X										
3		X																																	
4																																			
5										X																									
6																																			
7							X						X																						
8					X													X																	
9																																			
10																																			
11						X																													

	BY	BZ	CA	CB	CC	CD	CE	CF	CG	CH	CI	CJ	CK	CL	CM	CN	CO	CP	CQ	CR	CS	CT	CU	CV	CW	CX	CY	CZ	DA	DB	DC	DD	DE	DF
1		X																																
2										X			X	X																					
3																																			
4																																			
5				X																															
6																																			
7																																			
8																																			
9																																			
10	X																																		
11																																			

	DG	DH	DI	DJ	DK	DL	DM	DN	DO	DP	DQ	DR	DS	DT	DU	DV	DW	DX	DY	DZ	EA	EB	EC	ED	EE	EF	EG	EH	EI	EJ	EK	EL	EM
1																																	
2																																	
3																																	
4																																	
5																																	
6																																	
7																																	
8																																	
9																																	
10																																	
11																																	

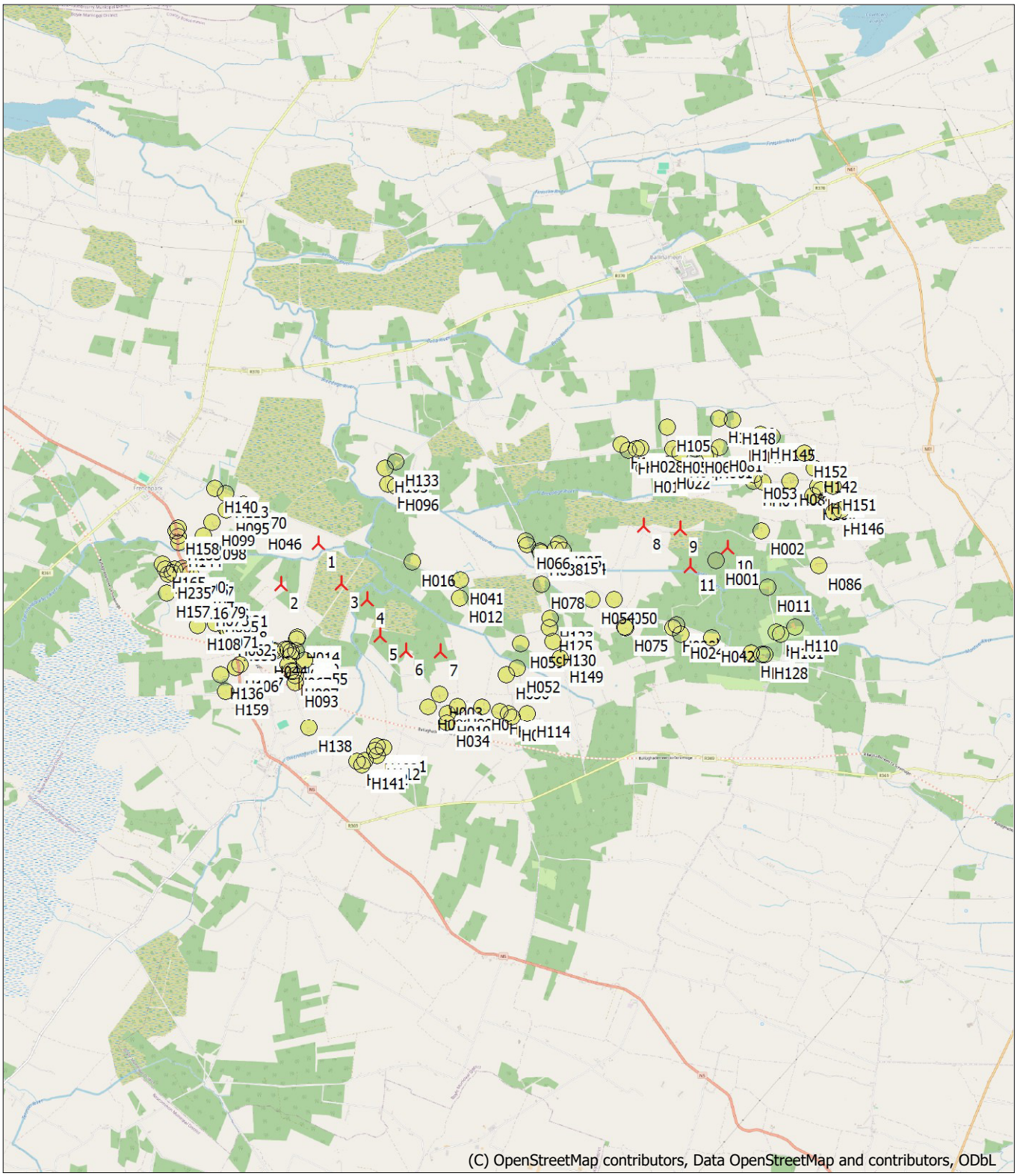
	EN	EO
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
23/03/2026 10:03/4.2.285

SHADOW - Map

Calculation: Curtailment Stratedy



0 1 2 3 4 km

Map: EMD OpenStreetMap , Print scale 1:75,000, Map center Irish ITM-IRENET95 (IE), geocentric, GRS80 East: 577,925 North: 789,780

New WTG Shadow receptor

Flicker map level: Height Contours: CONTOURLINE_Carrigeen Renewable Energy Development _.wpo (1)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Main Result

Calculation: Real Case Analysis

Assumptions for shadow calculations

Maximum distance for influence
Calculate only when more than 20 % of sun is covered by the blade
Please look in WTG table

Minimum sun height over horizon for influence	3 °
Day step for calculation	1 days
Time step for calculation	1 minutes

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

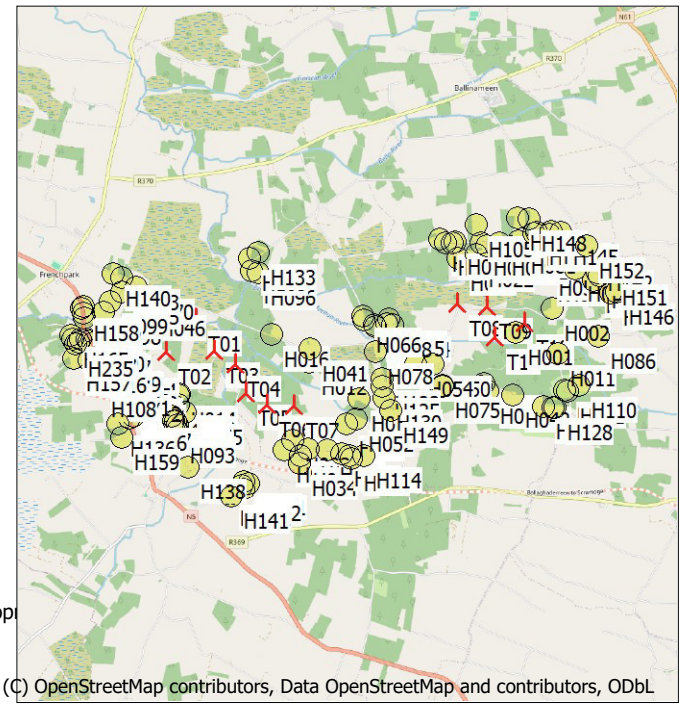
Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW
220	198	165	317	218	306	541	740	684	712	1,330	910

W	WNW	NW	NNW	Sum
725	710	432	552	8,760

Monthly aggregation of real case reduction
A ZVI (Zones of Visual Influence) calculation is performed before flicker calculation so non visible WTG do not contribute to calculated flicker values. A WTG will be visible if it is visible from any part of the receiver window. The ZVI calculation is based on the following assumptions:
DHM: Height Contours: CONTOURLINE_Carrigeen Renewable Energy Develop
Receptor grid resolution: 1.0 m
Topographic shadow included in calculation

All coordinates are in
Irish ITM-IRENET95 (IE), geocentric, GRS80



Scale 1:125,000

New WTG Shadow receptor

WTGs

	Easting	Northing	Z	Row data/Description	WTG type Valid	Manufact.	Type-generator	Power, rated	Rotor diameter	Hub height	Shadow data Calculation distance	RPM
			[m]					[kW]	[m]	[m]	[m]	[RPM]
1	575,477	790,430	67.0	T01	Yes	NORDEX	N163/5.X-5,700	5,700	163.0	103.5	1,789	10.7
2	574,977	789,898	68.1	T02	Yes	NORDEX	N163/5.X-5,700	5,700	163.0	103.5	1,789	10.7
3	575,779	789,896	69.4	T03	Yes	NORDEX	N163/5.X-5,700	5,700	163.0	103.5	1,789	10.7
4	576,135	789,684	77.4	T04	Yes	NORDEX	N163/5.X-5,700	5,700	163.0	103.5	1,789	10.7
5	576,298	789,215	82.7	T05	Yes	NORDEX	N163/5.X-5,700	5,700	163.0	103.5	1,789	10.7
6	576,648	789,007	89.4	T06	Yes	NORDEX	N163/5.X-5,700	5,700	163.0	103.5	1,789	10.7
7	577,096	788,988	80.8	T07	Yes	NORDEX	N163/5.X-5,700	5,700	163.0	103.5	1,789	10.7
8	579,819	790,661	74.6	T08	Yes	NORDEX	N163/5.X-5,700	5,700	163.0	103.5	1,789	10.7
9	580,296	790,613	75.0	T09	Yes	NORDEX	N163/5.X-5,700	5,700	163.0	103.5	1,789	10.7
10	580,937	790,353	75.1	T10	Yes	NORDEX	N163/5.X-5,700	5,700	163.0	103.5	1,789	10.7
11	580,433	790,105	90.8	T11	Yes	NORDEX	N163/5.X-5,700	5,700	163.0	103.5	1,789	10.7

Shadow receptor-Input

No.	Name	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
				[m]	[m]	[m]	[m]	[°]		[m]
A	H001	580,789	790,181	77.9	2.0	2.0	0.5	90.0	"Green house mode"	2.5
B	H002	581,390	790,585	74.4	2.0	2.0	0.5	90.0	"Green house mode"	2.5
C	H003	577,081	788,430	72.0	2.0	2.0	0.5	90.0	"Green house mode"	2.5
D	H004	578,745	790,321	76.4	2.0	2.0	0.5	90.0	"Green house mode"	2.5
E	H005	578,683	790,413	75.6	2.0	2.0	0.5	90.0	"Green house mode"	2.5
F	H006	579,527	791,732	81.1	2.0	2.0	0.5	90.0	"Green house mode"	2.5
G	H007	575,204	789,190	80.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5
H	H008	576,938	788,257	74.8	2.0	2.0	0.5	90.0	"Green house mode"	2.5
I	H009	577,329	788,268	77.1	2.0	2.0	0.5	90.0	"Green house mode"	2.5
J	H010	579,831	791,411	77.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
K	H011	581,475	789,829	74.9	2.0	2.0	0.5	90.0	"Green house mode"	2.5
L	H012	577,359	789,698	72.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
M	H013	579,616	791,664	78.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
N	H014	575,185	789,166	82.0	2.0	2.0	0.5	90.0	"Green house mode"	2.5

To be continued on next page...

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Main Result

Calculation: Real Case Analysis

...continued from previous page

No.	Name	Easting	Northing	Z [m]	Width [m]	Height [m]	Elevation a.g.l. [m]	Slope of window [°]	Direction mode	Eye height (ZVI) a.g.l. [m]
O	H015	578,641	790,334	77.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
P	H016	576,727	790,172	69.1	2.0	2.0	0.5	90.0	"Green house mode"	2.5
Q	H018	580,249	789,333	74.9	2.0	2.0	0.5	90.0	"Green house mode"	2.5
R	H019	577,194	788,164	78.8	2.0	2.0	0.5	90.0	"Green house mode"	2.5
S	H020	580,201	789,297	74.6	2.0	2.0	0.5	90.0	"Green house mode"	2.5
T	H021	579,730	791,677	80.8	2.0	2.0	0.5	90.0	"Green house mode"	2.5
U	H022	580,133	791,471	79.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
V	H023	575,080	789,037	88.4	2.0	2.0	0.5	90.0	"Green house mode"	2.5
W	H024	580,303	789,219	79.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
X	H025	575,035	789,036	88.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
Y	H027	577,645	788,259	76.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
Z	H028	579,790	791,684	80.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AA	H029	575,178	789,011	84.9	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AB	H030	577,980	788,684	76.6	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AC	H031	574,231	789,656	86.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AD	H032	575,109	788,998	88.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AE	H033	574,894	789,011	92.1	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AF	H034	577,186	788,041	77.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AG	H035	581,288	791,234	81.4	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AH	H036	574,858	789,015	91.8	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AI	H037	578,453	790,291	74.0	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AJ	H038	578,431	790,315	75.1	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AK	H039	575,107	788,949	89.4	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AL	H040	574,780	789,003	91.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AM	H041	577,369	789,939	69.1	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AN	H042	580,724	789,157	75.0	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AO	H043	581,408	791,228	83.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AP	H044	574,754	788,997	91.6	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AQ	H045	580,309	791,616	78.4	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AR	H046	574,684	790,678	70.0	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AS	H047	574,299	789,325	86.0	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AT	H048	574,222	789,442	85.4	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AU	H049	580,641	791,582	78.8	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AV	H050	579,419	789,670	72.0	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AW	H052	578,121	788,772	73.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AX	H053	581,297	791,327	83.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AY	H054	579,122	789,675	73.4	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AZ	H055	575,293	788,892	82.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BA	H056	574,345	789,211	88.9	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BB	H058	580,214	791,675	78.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BC	H059	578,168	789,100	78.6	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BD	H060	574,251	789,308	87.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BE	H061	580,699	791,604	80.4	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BF	H062	574,274	789,274	88.1	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BG	H063	578,242	790,463	75.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BH	H064	580,503	791,665	78.9	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BI	H065	574,105	789,577	89.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BJ	H066	578,262	790,401	74.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BK	H067	575,080	788,834	91.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BL	H068	577,895	788,194	78.8	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BM	H070	574,487	790,963	71.1	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BN	H071	574,111	789,384	88.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BO	H072	573,979	789,757	80.9	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BP	H073	573,981	789,674	85.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BQ	H074	579,571	789,300	77.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BR	H075	579,562	789,305	77.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BS	H076	575,108	788,747	90.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BT	H077	575,142	788,747	90.1	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BU	H078	578,462	789,878	69.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BV	H079	573,944	789,778	80.4	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BW	H081	580,831	791,693	82.4	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BX	H083	578,010	788,170	81.1	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BY	H084	581,772	791,238	92.9	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BZ	H085	576,405	791,229	73.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5

To be continued on next page...

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Main Result

Calculation: Real Case Analysis

...continued from previous page

No.	Name	Easting	Northing	Z [m]	Width [m]	Height [m]	Elevation a.g.l. [m]	Slope of window [°]	Direction mode	Eye height (ZVI) a.g.l. [m]
CA	H086	582,149	790,105	79.0	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CB	H087	575,168	788,691	89.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CC	H089	576,255	787,731	79.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CD	H090	578,052	788,124	82.0	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CE	H091	576,332	787,706	80.6	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CF	H093	575,167	788,598	88.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CG	H094	581,583	789,236	78.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CH	H095	574,258	790,891	72.1	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CI	H096	576,524	791,190	73.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CJ	H097	574,426	788,836	92.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CK	H098	573,960	790,550	72.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CL	H099	574,065	790,731	71.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CM	H100	582,072	791,047	103.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CN	H101	581,635	789,213	79.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CO	H102	576,223	787,673	80.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CP	H103	576,377	791,424	75.6	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CQ	H104	573,778	789,924	79.6	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CR	H105	580,135	791,968	82.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CS	H106	574,375	788,805	93.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CT	H107	573,775	790,044	77.1	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CU	H108	573,872	789,358	91.9	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CV	H110	581,834	789,296	74.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CW	H111	581,238	788,967	75.8	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CX	H112	576,252	787,605	80.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CY	H113	574,255	791,111	71.0	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CZ	H114	578,254	788,161	83.0	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DA	H115	573,709	790,073	78.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DB	H116	573,701	789,762	85.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DC	H117	582,142	791,162	103.9	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DD	H118	582,175	791,120	106.0	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DE	H119	581,101	791,829	86.0	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DF	H120	573,670	790,116	78.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DG	H123	578,571	789,420	71.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DH	H124	581,131	791,834	86.6	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DI	H125	578,555	789,301	74.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DJ	H126	581,390	788,941	75.8	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DK	H128	581,429	788,941	76.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DL	H129	582,357	790,827	88.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DM	H130	578,600	789,118	78.6	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DN	H131	581,345	791,802	90.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DO	H132	576,088	787,540	78.8	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DP	H133	576,525	791,517	75.9	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DQ	H135	580,831	792,068	89.1	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DR	H136	574,166	788,703	98.1	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DS	H137	575,978	787,531	78.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DT	H138	575,347	787,982	72.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DU	H139	573,573	790,098	80.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DV	H140	574,110	791,177	72.1	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DW	H141	576,056	787,492	79.6	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DX	H142	582,096	791,405	102.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DY	H143	581,382	791,862	88.4	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DZ	H144	573,630	790,453	76.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5
EA	H145	581,531	791,829	93.4	2.0	2.0	0.5	90.0	"Green house mode"	2.5
EB	H146	582,452	790,855	95.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
EC	H147	573,530	790,061	81.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
ED	H148	581,005	792,045	90.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
EE	H149	578,706	788,900	80.9	2.0	2.0	0.5	90.0	"Green house mode"	2.5
EF	H151	582,347	791,161	100.0	2.0	2.0	0.5	90.0	"Green house mode"	2.5
EG	H152	581,965	791,612	98.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
EH	H153	573,614	790,539	78.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
EI	H156	573,611	790,654	77.9	2.0	2.0	0.5	90.0	"Green house mode"	2.5
EJ	H157	573,450	789,791	86.0	2.0	2.0	0.5	90.0	"Green house mode"	2.5
EK	H158	573,584	790,617	78.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5
EL	H159	574,239	788,490	98.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5

To be continued on next page...

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Main Result

Calculation: Real Case Analysis

...continued from previous page

No.	Name	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
				[m]	[m]	[m]	[m]	[°]		[m]
EM	H161	573,440	790,099	81.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
EN	H165	573,397	790,172	80.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
EO	H235	573,483	790,037	82.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5

Calculation Results

Shadow receptor

		Shadow, worst case			**Shadow, expected values**
No.	Name	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
A	H001	177:45	158	1:40	30:13
B	H002	107:39	131	1:14	15:52
C	H003	0:00	0	0:00	0:00
D	H004	33:17	100	0:35	5:53
E	H005	26:34	84	0:33	4:37
F	H006	14:50	42	0:27	1:09
G	H007	71:22	160	0:39	11:53
H	H008	0:00	0	0:00	0:00
I	H009	0:00	0	0:00	0:00
J	H010	63:07	80	1:14	5:41
K	H011	46:36	121	0:36	7:41
L	H012	119:16	202	1:06	14:17
M	H013	16:40	44	0:28	1:18
N	H014	67:43	157	0:38	11:17
O	H015	20:36	62	0:32	3:44
P	H016	33:23	89	0:38	5:15
Q	H018	0:00	0	0:00	0:00
R	H019	0:00	0	0:00	0:00
S	H020	0:00	0	0:00	0:00
T	H021	3:47	20	0:15	0:16
U	H022	35:49	46	1:02	2:56
V	H023	49:53	143	0:32	8:19
W	H024	0:00	0	0:00	0:00
X	H025	47:49	142	0:31	7:59
Y	H027	13:23	54	0:22	2:01
Z	H028	14:26	52	0:21	1:13
AA	H029	43:28	133	0:34	7:21
AB	H030	44:17	91	0:42	7:45
AC	H031	74:52	154	0:50	13:06
AD	H032	44:08	136	0:31	7:24
AE	H033	29:28	117	0:26	5:03
AF	H034	0:00	0	0:00	0:00
AG	H035	50:56	118	0:51	5:24
AH	H036	21:54	83	0:26	3:51
AI	H037	10:36	38	0:26	1:55
AJ	H038	9:52	36	0:26	1:47
AK	H039	35:36	125	0:31	6:06
AL	H040	17:41	73	0:24	3:07
AM	H041	70:48	173	0:35	8:16
AN	H042	0:00	0	0:00	0:00
AO	H043	59:48	119	0:54	6:10
AP	H044	16:25	70	0:23	2:54
AQ	H045	11:02	32	0:25	0:54
AR	H046	69:36	148	0:46	8:04
AS	H047	9:56	60	0:21	1:46
AT	H048	53:34	110	0:49	8:52
AU	H049	30:47	74	0:33	3:05
AV	H050	36:04	83	0:38	6:18
AW	H052	24:59	60	0:37	4:25
AX	H053	33:47	109	0:31	3:44
AY	H054	16:37	71	0:28	3:01
AZ	H055	36:02	95	0:37	6:32
BA	H056	7:59	37	0:21	1:24

To be continued on next page...

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Main Result

Calculation: Real Case Analysis

...continued from previous page

		Shadow, worst case			Shadow, expected values
No.	Name	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
BB	H058	0:00	0	0:00	0:00
BC	H059	18:33	43	0:40	2:50
BD	H060	12:09	67	0:19	2:07
BE	H061	26:11	76	0:31	2:42
BF	H062	6:27	32	0:20	1:11
BG	H063	0:00	0	0:00	0:00
BH	H064	20:59	50	0:32	1:48
BI	H065	51:10	148	0:42	8:57
BJ	H066	0:00	0	0:00	0:00
BK	H067	22:27	99	0:29	4:03
BL	H068	23:09	67	0:27	3:32
BM	H070	24:45	81	0:34	3:03
BN	H071	48:05	109	0:45	7:57
BO	H072	27:38	84	0:37	4:59
BP	H073	20:20	50	0:37	3:41
BQ	H074	3:44	34	0:10	0:36
BR	H075	4:35	37	0:11	0:44
BS	H076	22:35	78	0:30	4:05
BT	H077	24:51	82	0:31	4:29
BU	H078	28:59	112	0:25	4:28
BV	H079	25:10	80	0:36	4:33
BW	H081	17:35	74	0:27	1:52
BX	H083	21:52	74	0:25	3:23
BY	H084	38:38	109	0:41	4:16
BZ	H085	18:24	55	0:32	2:12
CA	H086	18:50	67	0:30	3:13
CB	H087	28:54	92	0:31	5:08
CC	H089	0:00	0	0:00	0:00
CD	H090	20:03	71	0:23	3:05
CE	H091	0:00	0	0:00	0:00
CF	H093	37:58	122	0:30	6:28
CG	H094	8:49	43	0:18	1:20
CH	H095	36:41	90	0:33	3:38
CI	H096	13:31	42	0:30	1:40
CJ	H097	2:06	29	0:06	0:20
CK	H098	21:44	72	0:32	2:51
CL	H099	27:28	87	0:32	3:18
CM	H100	8:44	34	0:25	1:08
CN	H101	10:11	47	0:19	1:32
CO	H102	0:00	0	0:00	0:00
CP	H103	24:47	70	0:30	2:27
CQ	H104	16:26	62	0:30	2:46
CR	H105	0:00	0	0:00	0:00
CS	H106	2:20	30	0:07	0:23
CT	H107	16:17	61	0:30	2:35
CU	H108	18:29	59	0:30	3:14
CV	H110	19:50	80	0:25	3:07
CW	H111	0:00	0	0:00	0:00
CX	H112	0:00	0	0:00	0:00
CY	H113	11:50	49	0:27	1:24
CZ	H114	14:52	55	0:24	2:14
DA	H115	9:53	33	0:28	1:28
DB	H116	9:50	36	0:27	1:46
DC	H117	7:03	32	0:22	0:52
DD	H118	6:24	30	0:21	0:49
DE	H119	11:28	60	0:20	1:10
DF	H120	9:02	31	0:27	1:20
DG	H123	7:24	29	0:24	1:04
DH	H124	12:40	60	0:19	1:15
DI	H125	7:46	29	0:25	1:08
DJ	H126	0:00	0	0:00	0:00
DK	H128	0:00	0	0:00	0:00
DL	H129	6:14	27	0:22	0:53

To be continued on next page...

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Main Result

Calculation: Real Case Analysis

...continued from previous page

No.	Name	Shadow, worst case: Shadow hours per year [h/year]	Shadow, worst case: Shadow days per year [days/year]	Shadow, worst case: Max shadow hours per day [h/day]	Shadow, expected values: Shadow hours per year [h/year]
DM	H130	7:04	28	0:23	1:04
DN	H131	16:05	55	0:24	1:29
DO	H132	0:00	0	0:00	0:00
DP	H133	0:00	0	0:00	0:00
DQ	H135	1:18	12	0:08	0:06
DR	H136	0:00	0	0:00	0:00
DS	H137	0:00	0	0:00	0:00
DT	H138	2:12	26	0:07	0:21
DU	H139	7:20	29	0:24	1:05
DV	H140	13:47	57	0:23	1:25
DW	H141	0:00	0	0:00	0:00
DX	H142	7:53	38	0:21	0:55
DY	H143	14:57	52	0:23	1:20
DZ	H144	7:37	30	0:24	1:00
EA	H145	0:00	0	0:00	0:00
EB	H146	4:38	23	0:19	0:39
EC	H147	6:43	28	0:23	1:00
ED	H148	0:00	0	0:00	0:00
EE	H149	5:48	26	0:21	1:00
EF	H151	4:44	26	0:19	0:37
EG	H152	12:27	40	0:22	1:02
EH	H153	7:00	30	0:23	0:54
EI	H156	6:43	30	0:22	0:51
EJ	H157	5:42	26	0:21	1:00
EK	H158	6:24	28	0:22	0:49
EL	H159	0:00	0	0:00	0:00
EM	H161	5:34	26	0:21	0:50
EN	H165	5:02	25	0:19	0:44
EO	H235	6:01	26	0:21	0:54

Total amount of flickering on the shadow receptors caused by each WTG

No.	Name	Worst case [h/year]	Expected [h/year]
1	T01	166:08	23:26
2	T02	249:55	35:40
3	T03	79:45	12:19
4	T04	90:47	14:32
5	T05	151:27	24:55
6	T06	174:53	24:36
7	T07	158:31	22:34
8	T08	171:31	21:12
9	T09	154:01	18:56
10	T10	234:59	28:59
11	T11	356:05	56:19

Total times in Receptor wise and WTG wise tables can differ, as a WTG can lead to flicker at 2 or more receptors simultaneously and/or receptors may receive flicker from 2 or more WTGs simultaneously.

The calculation of the total expected values for a given receptor assumes a weighted average directional reduction for all WTGs contributing to shadow flicker within the same day. In the case where shadow flicker from different WTGs is not concurrent within the day, the total expected time at a given receptor may deviate marginally from the individual flicker time caused by each turbine separately.

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Detailed Results

Calculation: Real Case Analysis

Worst case, Shadow hours per year [h/year]

Receptor	WTG 1	2	3	4	5	6	7	8	9	10	11	Total
A	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:54	0:00	175:51	177:45
B	0:00	0:00	0:00	0:00	0:00	0:00	0:00	6:22	16:46	90:43	20:56	107:39
C	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
D	0:00	0:00	0:00	0:00	0:00	0:00	0:00	20:38	6:55	0:00	5:47	33:17
E	0:00	0:00	0:00	0:00	0:00	0:00	0:00	16:47	6:05	0:00	5:10	26:34
F	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	14:50	0:00	0:00	14:50
G	0:00	0:00	0:00	45:29	17:19	8:34	0:00	0:00	0:00	0:00	0:00	71:22
H	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
I	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
J	0:00	0:00	0:00	0:00	0:00	0:00	0:00	12:40	37:35	12:52	0:00	63:07
K	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	22:32	0:00	24:04	46:36
L	0:00	0:00	6:11	13:05	16:10	38:36	45:14	0:00	0:00	0:00	0:00	119:16
M	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	16:40	0:00	0:00	16:40
N	0:00	0:00	0:00	42:57	16:33	8:13	0:00	0:00	0:00	0:00	0:00	67:43
O	0:00	0:00	0:00	0:00	0:00	0:00	0:00	15:28	5:35	0:00	0:00	20:36
P	12:23	0:00	21:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	33:23
Q	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
R	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
S	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
T	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	3:47	0:00	0:00	3:47
U	0:00	0:00	0:00	0:00	0:00	0:00	0:00	18:09	0:00	17:40	0:00	35:49
V	0:00	0:00	0:00	30:31	12:53	6:29	0:00	0:00	0:00	0:00	0:00	49:53
W	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
X	0:00	0:00	0:00	30:17	11:33	5:59	0:00	0:00	0:00	0:00	0:00	47:49
Y	0:00	0:00	0:00	0:00	13:18	11:40	0:00	0:00	0:00	0:00	0:00	13:23
Z	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	14:26	0:00	14:26
AA	0:00	0:00	0:00	18:28	16:54	8:06	0:00	0:00	0:00	0:00	0:00	43:28
AB	0:00	0:00	0:00	0:00	5:54	12:18	37:06	0:00	0:00	0:00	0:00	44:17
AC	21:19	47:59	5:34	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	74:52
AD	0:00	0:00	0:00	23:08	14:03	6:57	0:00	0:00	0:00	0:00	0:00	44:08
AE	0:00	0:00	0:00	16:39	8:21	4:28	0:00	0:00	0:00	0:00	0:00	29:28
AF	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
AG	0:00	0:00	0:00	0:00	0:00	0:00	0:00	5:57	15:43	7:33	21:43	50:56
AH	0:00	0:00	0:00	14:12	7:42	0:00	0:00	0:00	0:00	0:00	0:00	21:54
AI	0:00	0:00	0:00	0:00	0:00	0:00	0:00	10:36	0:00	0:00	0:00	10:36
AJ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	9:52	0:00	0:00	0:00	9:52
AK	0:00	0:00	0:00	14:44	13:59	6:53	0:00	0:00	0:00	0:00	0:00	35:36
AL	0:00	0:00	0:00	11:06	6:35	0:00	0:00	0:00	0:00	0:00	0:00	17:41
AM	0:00	0:00	5:57	12:11	15:16	37:24	0:00	0:00	0:00	0:00	0:00	70:48
AN	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
AO	0:00	0:00	0:00	0:00	0:00	0:00	0:00	4:35	11:55	19:57	23:21	59:48
AP	0:00	0:00	0:00	10:13	6:12	0:00	0:00	0:00	0:00	0:00	0:00	16:25
AQ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	11:02	0:00	0:00	0:00	11:02
AR	30:50	25:44	12:47	6:31	0:00	0:00	0:00	0:00	0:00	0:00	0:00	69:36
AS	0:00	2:58	6:58	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	9:56
AT	2:31	46:50	5:47	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	53:34
AU	0:00	0:00	0:00	0:00	0:00	0:00	0:00	30:47	0:00	0:00	0:00	30:47
AV	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	8:56	35:44	36:04
AW	0:00	0:00	0:00	0:00	0:00	9:22	22:47	0:00	0:00	0:00	0:00	24:59
AX	0:00	0:00	0:00	0:00	0:00	0:00	0:00	5:33	15:03	0:00	13:11	33:47
AY	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	2:13	0:00	14:24	16:37
AZ	0:00	0:00	0:00	0:00	25:19	10:43	0:00	0:00	0:00	0:00	0:00	36:02
BA	0:00	0:00	7:59	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	7:59
BB	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
BC	0:00	0:00	0:00	0:00	0:00	7:37	17:11	0:00	0:00	0:00	0:00	18:33
BD	0:00	6:03	6:06	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	12:09
BE	0:00	0:00	0:00	0:00	0:00	0:00	0:00	26:11	0:00	0:00	0:00	26:11
BF	0:00	0:00	6:27	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	6:27
BG	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
BH	0:00	0:00	0:00	0:00	0:00	0:00	0:00	20:59	0:00	0:00	0:00	20:59
BI	15:23	31:41	4:06	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	51:10
BJ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
BK	0:00	0:00	0:00	2:22	13:34	6:31	0:00	0:00	0:00	0:00	0:00	22:27
BL	0:00	0:00	0:00	0:00	0:00	23:09	0:00	0:00	0:00	0:00	0:00	23:09

To be continued on next page...

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Detailed Results

Calculation: Real Case Analysis

...continued from previous page

Receptor	WTG 1	2	3	4	5	6	7	8	9	10	11	Total
BM	16:48	0:00	7:57	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	24:45
BN	3:38	41:08	4:20	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	48:05
BO	7:21	20:17	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	27:38
BP	0:00	20:20	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	20:20
BQ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	3:44	0:00	3:44
BR	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	4:35	0:00	4:35
BS	0:00	0:00	0:00	0:00	15:37	6:58	0:00	0:00	0:00	0:00	0:00	22:35
BT	0:00	0:00	0:00	0:00	17:19	7:32	0:00	0:00	0:00	0:00	0:00	24:51
BU	0:00	0:00	0:00	0:00	0:00	0:00	8:08	20:51	0:00	0:00	0:00	28:59
BV	6:42	18:28	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	25:10
BW	0:00	0:00	0:00	0:00	0:00	0:00	0:00	17:35	0:00	0:00	0:00	17:35
BX	0:00	0:00	0:00	0:00	0:00	21:52	0:00	0:00	0:00	0:00	0:00	21:52
BY	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	4:58	26:33	7:11	38:38
BZ	18:24	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	18:24
CA	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	13:22	5:28	18:50
CB	0:00	0:00	0:00	0:00	20:42	8:12	0:00	0:00	0:00	0:00	0:00	28:54
CC	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CD	0:00	0:00	0:00	0:00	0:00	20:03	0:00	0:00	0:00	0:00	0:00	20:03
CE	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CF	0:00	0:00	0:00	0:00	29:30	8:28	0:00	0:00	0:00	0:00	0:00	37:58
CG	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	8:49	8:49
CH	10:26	26:15	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	36:41
CI	13:31	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	13:31
CJ	0:00	0:00	2:06	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	2:06
CK	6:31	15:13	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	21:44
CL	7:39	19:49	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	27:28
CM	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	8:44	0:00	8:44
CN	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	10:11	10:11
CO	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CP	24:47	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	24:47
CQ	4:29	11:57	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	16:26
CR	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CS	0:00	0:00	2:20	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	2:20
CT	4:33	11:44	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	16:17
CU	0:00	18:29	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	18:29
CV	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	19:50	19:50
CW	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CX	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CY	9:51	1:59	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	11:50
CZ	0:00	0:00	0:00	0:00	0:00	0:00	14:52	0:00	0:00	0:00	0:00	14:52
DA	0:00	9:53	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	9:53
DB	0:00	9:50	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	9:50
DC	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	7:03	0:00	7:03
DD	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	6:24	0:00	6:24
DE	0:00	0:00	0:00	0:00	0:00	0:00	0:00	7:17	4:11	0:00	0:00	11:28
DF	0:00	9:02	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	9:02
DG	0:00	0:00	0:00	0:00	0:00	0:00	7:24	0:00	0:00	0:00	0:00	7:24
DH	0:00	0:00	0:00	0:00	0:00	0:00	0:00	6:42	5:58	0:00	0:00	12:40
DI	0:00	0:00	0:00	0:00	0:00	0:00	7:46	0:00	0:00	0:00	0:00	7:46
DJ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DK	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DL	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	6:14	0:00	6:14
DM	0:00	0:00	0:00	0:00	0:00	0:00	7:04	0:00	0:00	0:00	0:00	7:04
DN	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	16:05	0:00	0:00	16:05
DO	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DP	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DQ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:18	0:00	0:00	0:00	1:18
DR	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DS	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DT	0:00	0:00	0:00	0:00	0:00	2:12	0:00	0:00	0:00	0:00	0:00	2:12
DU	0:00	7:20	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	7:20
DV	7:08	6:39	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	13:47
DW	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DX	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	7:53	0:00	7:53
DY	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	14:57	0:00	0:00	14:57

To be continued on next page...

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Detailed Results

Calculation: Real Case Analysis

...continued from previous page

Receptor	WTG 1	2	3	4	5	6	7	8	9	10	11	Total
DZ	0:00	7:37	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	7:37
EA	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
EB	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	4:38	0:00	4:38
EC	0:00	6:43	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	6:43
ED	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
EE	0:00	0:00	0:00	0:00	0:00	0:00	5:48	0:00	0:00	0:00	0:00	5:48
EF	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	4:44	0:00	4:44
EG	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	12:27	0:00	12:27
EH	0:00	7:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	7:00
EI	0:00	6:43	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	6:43
EJ	0:00	5:42	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	5:42
EK	0:00	6:24	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	6:24
EL	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
EM	0:00	5:34	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	5:34
EN	0:00	5:02	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	5:02
EO	0:00	6:01	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	6:01
Total	166:08	249:55	79:45	90:47	151:27	174:53	158:31	171:31	154:01	234:59	356:05	

Worst case, Shadow days per year [days/year]

Receptor	WTG 1	2	3	4	5	6	7	8	9	10	11	Total
A	0	0	0	0	0	0	0	0	19	0	139	158
B	0	0	0	0	0	0	0	27	43	97	49	131
C	0	0	0	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	53	30	0	26	100
E	0	0	0	0	0	0	0	46	27	0	24	84
F	0	0	0	0	0	0	0	0	42	0	0	42
G	0	0	0	92	44	32	0	0	0	0	0	160
H	0	0	0	0	0	0	0	0	0	0	0	0
I	0	0	0	0	0	0	0	0	0	0	0	0
J	0	0	0	0	0	0	0	31	62	50	0	80
K	0	0	0	0	0	0	0	0	65	0	56	121
L	0	0	28	38	44	84	64	0	0	0	0	202
M	0	0	0	0	0	0	0	0	44	0	0	44
N	0	0	0	89	44	30	0	0	0	0	0	157
O	0	0	0	0	0	0	0	46	26	0	0	62
P	40	0	49	0	0	0	0	0	0	0	0	89
Q	0	0	0	0	0	0	0	0	0	0	0	0
R	0	0	0	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0	0	0	0
T	0	0	0	0	0	0	0	0	20	0	0	20
U	0	0	0	0	0	0	0	40	0	46	0	46
V	0	0	0	76	40	27	0	0	0	0	0	143
W	0	0	0	0	0	0	0	0	0	0	0	0
X	0	0	0	80	36	26	0	0	0	0	0	142
Y	0	0	0	0	54	46	0	0	0	0	0	54
Z	0	0	0	0	0	0	0	0	0	52	0	52
AA	0	0	0	58	45	30	0	0	0	0	0	133
AB	0	0	0	0	29	40	75	0	0	0	0	91
AC	72	86	26	0	0	0	0	0	0	0	0	154
AD	0	0	0	65	42	29	0	0	0	0	0	136
AE	0	0	0	61	32	24	0	0	0	0	0	117
AF	0	0	0	0	0	0	0	0	0	0	0	0
AG	0	0	0	0	0	0	0	26	44	26	54	118
AH	0	0	0	53	30	0	0	0	0	0	0	83
AI	0	0	0	0	0	0	0	38	0	0	0	38
AJ	0	0	0	0	0	0	0	36	0	0	0	36
AK	0	0	0	54	41	30	0	0	0	0	0	125
AL	0	0	0	45	28	0	0	0	0	0	0	73
AM	0	0	26	37	44	72	0	0	0	0	0	173
AN	0	0	0	0	0	0	0	0	0	0	0	0
AO	0	0	0	0	0	0	0	24	38	44	64	119
AP	0	0	0	42	28	0	0	0	0	0	0	70
AQ	0	0	0	0	0	0	0	32	0	0	0	32
AR	58	48	42	30	0	0	0	0	0	0	0	148

To be continued on next page...

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Detailed Results

Calculation: Real Case Analysis

...continued from previous page

Receptor	WTG 1	2	3	4	5	6	7	8	9	10	11	Total
AS	0	28	32	0	0	0	0	0	0	0	0	60
AT	30	82	28	0	0	0	0	0	0	0	0	110
AU	0	0	0	0	0	0	0	74	0	0	0	74
AV	0	0	0	0	0	0	0	0	0	38	83	83
AW	0	0	0	0	0	34	52	0	0	0	0	60
AX	0	0	0	0	0	0	0	27	46	0	40	109
AY	0	0	0	0	0	0	0	0	27	0	44	71
AZ	0	0	0	0	59	36	0	0	0	0	0	95
BA	0	0	37	0	0	0	0	0	0	0	0	37
BB	0	0	0	0	0	0	0	0	0	0	0	0
BC	0	0	0	0	0	30	43	0	0	0	0	43
BD	0	37	30	0	0	0	0	0	0	0	0	67
BE	0	0	0	0	0	0	0	76	0	0	0	76
BF	0	0	32	0	0	0	0	0	0	0	0	32
BG	0	0	0	0	0	0	0	0	0	0	0	0
BH	0	0	0	0	0	0	0	50	0	0	0	50
BI	70	71	24	0	0	0	0	0	0	0	0	148
BJ	0	0	0	0	0	0	0	0	0	0	0	0
BK	0	0	0	28	43	28	0	0	0	0	0	99
BL	0	0	0	0	0	67	0	0	0	0	0	67
BM	45	0	36	0	0	0	0	0	0	0	0	81
BN	35	83	26	0	0	0	0	0	0	0	0	109
BO	34	50	0	0	0	0	0	0	0	0	0	84
BP	0	50	0	0	0	0	0	0	0	0	0	50
BQ	0	0	0	0	0	0	0	0	0	34	0	34
BR	0	0	0	0	0	0	0	0	0	37	0	37
BS	0	0	0	0	49	29	0	0	0	0	0	78
BT	0	0	0	0	52	30	0	0	0	0	0	82
BU	0	0	0	0	0	0	33	79	0	0	0	112
BV	32	48	0	0	0	0	0	0	0	0	0	80
BW	0	0	0	0	0	0	0	74	0	0	0	74
BX	0	0	0	0	0	74	0	0	0	0	0	74
BY	0	0	0	0	0	0	0	0	25	76	34	109
BZ	55	0	0	0	0	0	0	0	0	0	0	55
CA	0	0	0	0	0	0	0	0	0	42	25	67
CB	0	0	0	0	60	32	0	0	0	0	0	92
CC	0	0	0	0	0	0	0	0	0	0	0	0
CD	0	0	0	0	0	71	0	0	0	0	0	71
CE	0	0	0	0	0	0	0	0	0	0	0	0
CF	0	0	0	0	88	34	0	0	0	0	0	122
CG	0	0	0	0	0	0	0	0	0	0	43	43
CH	34	56	0	0	0	0	0	0	0	0	0	90
CI	42	0	0	0	0	0	0	0	0	0	0	42
CJ	0	0	29	0	0	0	0	0	0	0	0	29
CK	28	44	0	0	0	0	0	0	0	0	0	72
CL	29	58	0	0	0	0	0	0	0	0	0	87
CM	0	0	0	0	0	0	0	0	0	34	0	34
CN	0	0	0	0	0	0	0	0	0	0	47	47
CO	0	0	0	0	0	0	0	0	0	0	0	0
CP	70	0	0	0	0	0	0	0	0	0	0	70
CQ	24	38	0	0	0	0	0	0	0	0	0	62
CR	0	0	0	0	0	0	0	0	0	0	0	0
CS	0	0	30	0	0	0	0	0	0	0	0	30
CT	25	36	0	0	0	0	0	0	0	0	0	61
CU	0	59	0	0	0	0	0	0	0	0	0	59
CV	0	0	0	0	0	0	0	0	0	0	80	80
CW	0	0	0	0	0	0	0	0	0	0	0	0
CX	0	0	0	0	0	0	0	0	0	0	0	0
CY	35	14	0	0	0	0	0	0	0	0	0	49
CZ	0	0	0	0	0	0	55	0	0	0	0	55
DA	0	33	0	0	0	0	0	0	0	0	0	33
DB	0	36	0	0	0	0	0	0	0	0	0	36
DC	0	0	0	0	0	0	0	0	0	32	0	32
DD	0	0	0	0	0	0	0	0	0	30	0	30
DE	0	0	0	0	0	0	0	38	22	0	0	60

To be continued on next page...

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Detailed Results

Calculation: Real Case Analysis

...continued from previous page

Receptor	WTG 1	2	3	4	5	6	7	8	9	10	11	Total
DF	0	31	0	0	0	0	0	0	0	0	0	31
DG	0	0	0	0	0	0	29	0	0	0	0	29
DH	0	0	0	0	0	0	0	34	26	0	0	60
DI	0	0	0	0	0	0	29	0	0	0	0	29
DJ	0	0	0	0	0	0	0	0	0	0	0	0
DK	0	0	0	0	0	0	0	0	0	0	0	0
DL	0	0	0	0	0	0	0	0	0	27	0	27
DM	0	0	0	0	0	0	28	0	0	0	0	28
DN	0	0	0	0	0	0	0	0	55	0	0	55
DO	0	0	0	0	0	0	0	0	0	0	0	0
DP	0	0	0	0	0	0	0	0	0	0	0	0
DQ	0	0	0	0	0	0	0	12	0	0	0	12
DR	0	0	0	0	0	0	0	0	0	0	0	0
DS	0	0	0	0	0	0	0	0	0	0	0	0
DT	0	0	0	0	0	26	0	0	0	0	0	26
DU	0	29	0	0	0	0	0	0	0	0	0	29
DV	29	28	0	0	0	0	0	0	0	0	0	57
DW	0	0	0	0	0	0	0	0	0	0	0	0
DX	0	0	0	0	0	0	0	0	0	38	0	38
DY	0	0	0	0	0	0	0	0	52	0	0	52
DZ	0	30	0	0	0	0	0	0	0	0	0	30
EA	0	0	0	0	0	0	0	0	0	0	0	0
EB	0	0	0	0	0	0	0	0	0	23	0	23
EC	0	28	0	0	0	0	0	0	0	0	0	28
ED	0	0	0	0	0	0	0	0	0	0	0	0
EE	0	0	0	0	0	0	26	0	0	0	0	26
EF	0	0	0	0	0	0	0	0	0	26	0	26
EG	0	0	0	0	0	0	0	0	0	40	0	40
EH	0	30	0	0	0	0	0	0	0	0	0	30
EI	0	30	0	0	0	0	0	0	0	0	0	30
EJ	0	26	0	0	0	0	0	0	0	0	0	26
EK	0	28	0	0	0	0	0	0	0	0	0	28
EL	0	0	0	0	0	0	0	0	0	0	0	0
EM	0	26	0	0	0	0	0	0	0	0	0	26
EN	0	25	0	0	0	0	0	0	0	0	0	25
EO	0	26	0	0	0	0	0	0	0	0	0	26
Total	787	1294	475	848	932	961	434	863	713	792	808	

Worst case, Max shadow hours per day [h/day]

Receptor	WTG 1	2	3	4	5	6	7	8	9	10	11	Total
A	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:08	0:00	1:40	1:40
B	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:22	0:34	1:14	0:36	1:14
C	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
D	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:35	0:22	0:00	0:21	0:35
E	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:33	0:21	0:00	0:20	0:33
F	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:27	0:00	0:00	0:27
G	0:00	0:00	0:00	0:39	0:35	0:25	0:00	0:00	0:00	0:00	0:00	0:39
H	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
I	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
J	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:31	0:44	0:25	0:00	1:14
K	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:29	0:00	0:36	0:36
L	0:00	0:00	0:22	0:31	0:33	0:40	0:52	0:00	0:00	0:00	0:00	1:06
M	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:28	0:00	0:00	0:28
N	0:00	0:00	0:00	0:38	0:34	0:25	0:00	0:00	0:00	0:00	0:00	0:38
O	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:32	0:20	0:00	0:00	0:32
P	0:29	0:00	0:38	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:38
Q	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
R	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
S	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
T	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:15	0:00	0:00	0:15
U	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:35	0:00	0:28	0:00	1:02
V	0:00	0:00	0:00	0:32	0:30	0:22	0:00	0:00	0:00	0:00	0:00	0:32
W	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
X	0:00	0:00	0:00	0:31	0:29	0:22	0:00	0:00	0:00	0:00	0:00	0:31

To be continued on next page...

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Detailed Results

Calculation: Real Case Analysis

...continued from previous page

Receptor	WTG 1	2	3	4	5	6	7	8	9	10	11	Total
Y	0:00	0:00	0:00	0:00	0:21	0:22	0:00	0:00	0:00	0:00	0:00	0:22
Z	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:21	0:00	0:21
AA	0:00	0:00	0:00	0:28	0:34	0:24	0:00	0:00	0:00	0:00	0:00	0:34
AB	0:00	0:00	0:00	0:00	0:20	0:28	0:42	0:00	0:00	0:00	0:00	0:42
AC	0:25	0:50	0:20	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:50
AD	0:00	0:00	0:00	0:31	0:31	0:23	0:00	0:00	0:00	0:00	0:00	0:31
AE	0:00	0:00	0:00	0:26	0:25	0:19	0:00	0:00	0:00	0:00	0:00	0:26
AF	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
AG	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:21	0:33	0:22	0:29	0:51
AH	0:00	0:00	0:00	0:26	0:24	0:00	0:00	0:00	0:00	0:00	0:00	0:26
AI	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:26	0:00	0:00	0:00	0:26
AJ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:26	0:00	0:00	0:00	0:26
AK	0:00	0:00	0:00	0:23	0:31	0:23	0:00	0:00	0:00	0:00	0:00	0:31
AL	0:00	0:00	0:00	0:24	0:22	0:00	0:00	0:00	0:00	0:00	0:00	0:24
AM	0:00	0:00	0:21	0:30	0:31	0:35	0:00	0:00	0:00	0:00	0:00	0:35
AN	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
AO	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:19	0:29	0:34	0:27	0:54
AP	0:00	0:00	0:00	0:23	0:21	0:00	0:00	0:00	0:00	0:00	0:00	0:23
AQ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:25	0:00	0:00	0:00	0:25
AR	0:46	0:40	0:29	0:21	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:46
AS	0:00	0:09	0:21	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:21
AT	0:07	0:47	0:20	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:49
AU	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:33	0:00	0:00	0:00	0:33
AV	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:22	0:37	0:38
AW	0:00	0:00	0:00	0:00	0:00	0:26	0:37	0:00	0:00	0:00	0:00	0:37
AX	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:21	0:31	0:00	0:24	0:31
AY	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:07	0:00	0:28	0:28
AZ	0:00	0:00	0:00	0:00	0:37	0:27	0:00	0:00	0:00	0:00	0:00	0:37
BA	0:00	0:00	0:21	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:21
BB	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
BC	0:00	0:00	0:00	0:00	0:00	0:24	0:35	0:00	0:00	0:00	0:00	0:40
BD	0:00	0:14	0:19	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:19
BE	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:31	0:00	0:00	0:00	0:31
BF	0:00	0:00	0:20	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:20
BG	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
BH	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:32	0:00	0:00	0:00	0:32
BI	0:21	0:42	0:17	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:42
BJ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
BK	0:00	0:00	0:00	0:07	0:29	0:22	0:00	0:00	0:00	0:00	0:00	0:29
BL	0:00	0:00	0:00	0:00	0:00	0:27	0:00	0:00	0:00	0:00	0:00	0:27
BM	0:34	0:00	0:22	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:34
BN	0:09	0:40	0:17	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:45
BO	0:20	0:37	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:37
BP	0:00	0:37	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:37
BQ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:10	0:00	0:10
BR	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:11	0:00	0:11
BS	0:00	0:00	0:00	0:00	0:30	0:22	0:00	0:00	0:00	0:00	0:00	0:30
BT	0:00	0:00	0:00	0:00	0:31	0:23	0:00	0:00	0:00	0:00	0:00	0:31
BU	0:00	0:00	0:00	0:00	0:00	0:00	0:24	0:25	0:00	0:00	0:00	0:25
BV	0:20	0:36	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:36
BW	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:27	0:00	0:00	0:00	0:27
BX	0:00	0:00	0:00	0:00	0:00	0:25	0:00	0:00	0:00	0:00	0:00	0:25
BY	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:20	0:32	0:21	0:41
BZ	0:32	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:32
CA	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:30	0:21	0:30
CB	0:00	0:00	0:00	0:00	0:31	0:24	0:00	0:00	0:00	0:00	0:00	0:31
CC	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CD	0:00	0:00	0:00	0:00	0:00	0:23	0:00	0:00	0:00	0:00	0:00	0:23
CE	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CF	0:00	0:00	0:00	0:00	0:30	0:24	0:00	0:00	0:00	0:00	0:00	0:30
CG	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:18	0:18
CH	0:28	0:33	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:33
CI	0:30	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:30
CJ	0:00	0:00	0:06	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:06
CK	0:23	0:32	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:32

To be continued on next page...

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Detailed Results

Calculation: Real Case Analysis

...continued from previous page

Receptor	WTG 1	2	3	4	5	6	7	8	9	10	11	Total
CL	0:25	0:32	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:32
CM	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:25	0:00	0:25
CN	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:19	0:19
CO	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CP	0:30	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:30
CQ	0:17	0:30	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:30
CR	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CS	0:00	0:00	0:07	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:07
CT	0:17	0:30	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:30
CU	0:00	0:30	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:30
CV	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:25	0:25
CW	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CX	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CY	0:27	0:11	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:27
CZ	0:00	0:00	0:00	0:00	0:00	0:00	0:24	0:00	0:00	0:00	0:00	0:24
DA	0:00	0:28	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:28
DB	0:00	0:27	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:27
DC	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:22	0:00	0:22
DD	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:21	0:00	0:21
DE	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:20	0:15	0:00	0:00	0:20
DF	0:00	0:27	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:27
DG	0:00	0:00	0:00	0:00	0:00	0:00	0:24	0:00	0:00	0:00	0:00	0:24
DH	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:19	0:17	0:00	0:00	0:19
DI	0:00	0:00	0:00	0:00	0:00	0:00	0:25	0:00	0:00	0:00	0:00	0:25
DJ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DK	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DL	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:22	0:00	0:22
DM	0:00	0:00	0:00	0:00	0:00	0:00	0:23	0:00	0:00	0:00	0:00	0:23
DN	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:24	0:00	0:00	0:24
DO	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DP	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DQ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:08	0:00	0:00	0:00	0:08
DR	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DS	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DT	0:00	0:00	0:00	0:00	0:00	0:07	0:00	0:00	0:00	0:00	0:00	0:07
DU	0:00	0:24	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:24
DV	0:23	0:18	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:23
DW	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DX	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:21	0:00	0:21
DY	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:23	0:00	0:00	0:23
DZ	0:00	0:24	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:24
EA	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
EB	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:19	0:00	0:19
EC	0:00	0:23	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:23
ED	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
EE	0:00	0:00	0:00	0:00	0:00	0:00	0:21	0:00	0:00	0:00	0:00	0:21
EF	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:19	0:00	0:19
EG	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:22	0:00	0:22
EH	0:00	0:23	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:23
EI	0:00	0:22	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:22
EJ	0:00	0:21	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:21
EK	0:00	0:22	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:22
EL	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
EM	0:00	0:21	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:21
EN	0:00	0:19	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:19
EO	0:00	0:21	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:21
Total	7:43	14:30	5:00	6:50	10:09	9:42	5:07	8:41	7:27	8:00	7:42	

Real case, Shadow hours per year [h/year]

Receptor	WTG 1	2	3	4	5	6	7	8	9	10	11	Total
A	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:18	0:00	29:55	30:13
B	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:06	2:53	12:57	2:53	15:52
C	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
D	0:00	0:00	0:00	0:00	0:00	0:00	0:00	3:47	1:15	0:00	0:52	5:53

To be continued on next page...

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Detailed Results

Calculation: Real Case Analysis

...continued from previous page

Receptor	WTG 1	2	3	4	5	6	7	8	9	10	11	Total
E	0:00	0:00	0:00	0:00	0:00	0:00	0:00	3:02	1:06	0:00	0:46	4:37
F	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:10	0:00	0:00	1:09
G	0:00	0:00	0:00	7:36	3:00	1:17	0:00	0:00	0:00	0:00	0:00	11:53
H	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
I	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
J	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:02	3:17	1:23	0:00	5:41
K	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	3:26	0:00	4:16	7:41
L	0:00	0:00	1:06	2:10	2:14	4:34	4:14	0:00	0:00	0:00	0:00	14:17
M	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:19	0:00	0:00	1:18
N	0:00	0:00	0:00	7:09	2:55	1:14	0:00	0:00	0:00	0:00	0:00	11:17
O	0:00	0:00	0:00	0:00	0:00	0:00	0:00	2:50	1:00	0:00	0:00	3:44
P	2:11	0:00	3:05	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	5:15
Q	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
R	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
S	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
T	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:17	0:00	0:00	0:16
U	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:32	0:00	1:25	0:00	2:56
V	0:00	0:00	0:00	4:58	2:19	1:02	0:00	0:00	0:00	0:00	0:00	8:19
W	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
X	0:00	0:00	0:00	4:58	2:05	0:57	0:00	0:00	0:00	0:00	0:00	7:59
Y	0:00	0:00	0:00	0:00	2:00	1:46	0:00	0:00	0:00	0:00	0:00	2:01
Z	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:14	0:00	1:13
AA	0:00	0:00	0:00	2:59	3:02	1:20	0:00	0:00	0:00	0:00	0:00	7:21
AB	0:00	0:00	0:00	0:00	1:03	2:10	6:29	0:00	0:00	0:00	0:00	7:45
AC	3:27	8:39	1:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	13:06
AD	0:00	0:00	0:00	3:44	2:32	1:09	0:00	0:00	0:00	0:00	0:00	7:24
AE	0:00	0:00	0:00	2:50	1:30	0:43	0:00	0:00	0:00	0:00	0:00	5:03
AF	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
AG	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:50	2:03	0:36	1:56	5:24
AH	0:00	0:00	0:00	2:28	1:23	0:00	0:00	0:00	0:00	0:00	0:00	3:51
AI	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:56	0:00	0:00	0:00	1:55
AJ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:48	0:00	0:00	0:00	1:47
AK	0:00	0:00	0:00	2:23	2:32	1:12	0:00	0:00	0:00	0:00	0:00	6:06
AL	0:00	0:00	0:00	1:57	1:11	0:00	0:00	0:00	0:00	0:00	0:00	3:07
AM	0:00	0:00	0:55	1:48	1:57	3:36	0:00	0:00	0:00	0:00	0:00	8:16
AN	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
AO	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:39	1:36	1:42	2:14	6:10
AP	0:00	0:00	0:00	1:48	1:07	0:00	0:00	0:00	0:00	0:00	0:00	2:54
AQ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:55	0:00	0:00	0:00	0:54
AR	4:23	2:09	1:30	0:46	0:00	0:00	0:00	0:00	0:00	0:00	0:00	8:04
AS	0:00	0:30	1:17	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:46
AT	0:25	7:39	1:03	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	8:52
AU	0:00	0:00	0:00	0:00	0:00	0:00	0:00	3:05	0:00	0:00	0:00	3:05
AV	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:36	6:15	6:18
AW	0:00	0:00	0:00	0:00	0:00	1:40	4:01	0:00	0:00	0:00	0:00	4:25
AX	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:46	1:54	0:00	1:06	3:44
AY	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:22	0:00	2:39	3:01
AZ	0:00	0:00	0:00	0:00	4:37	1:56	0:00	0:00	0:00	0:00	0:00	6:32
BA	0:00	0:00	1:25	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:24
BB	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
BC	0:00	0:00	0:00	0:00	0:00	1:10	2:38	0:00	0:00	0:00	0:00	2:50
BD	0:00	0:59	1:08	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	2:07
BE	0:00	0:00	0:00	0:00	0:00	0:00	0:00	2:42	0:00	0:00	0:00	2:42
BF	0:00	0:00	1:11	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:11
BG	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
BH	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:48	0:00	0:00	0:00	1:48
BI	2:30	5:44	0:44	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	8:57
BJ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
BK	0:00	0:00	0:00	0:23	2:30	1:11	0:00	0:00	0:00	0:00	0:00	4:03
BL	0:00	0:00	0:00	0:00	0:00	3:32	0:00	0:00	0:00	0:00	0:00	3:32
BM	2:10	0:00	0:53	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	3:03
BN	0:36	6:44	0:47	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	7:57
BO	1:20	3:40	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	4:59
BP	0:00	3:41	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	3:41
BQ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:37	0:00	0:36

To be continued on next page...

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Detailed Results

Calculation: Real Case Analysis

...continued from previous page

Receptor	WTG 1	2	3	4	5	6	7	8	9	10	11	Total
BR	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:45	0:00	0:44
BS	0:00	0:00	0:00	0:00	2:50	1:15	0:00	0:00	0:00	0:00	0:00	4:05
BT	0:00	0:00	0:00	0:00	3:08	1:21	0:00	0:00	0:00	0:00	0:00	4:29
BU	0:00	0:00	0:00	0:00	0:00	0:00	1:02	3:27	0:00	0:00	0:00	4:28
BV	1:14	3:20	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	4:33
BW	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:53	0:00	0:00	0:00	1:52
BX	0:00	0:00	0:00	0:00	0:00	3:23	0:00	0:00	0:00	0:00	0:00	3:23
BY	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:41	2:45	0:50	4:16
BZ	2:12	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	2:12
CA	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	2:21	0:53	3:13
CB	0:00	0:00	0:00	0:00	3:40	1:29	0:00	0:00	0:00	0:00	0:00	5:08
CC	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CD	0:00	0:00	0:00	0:00	0:00	3:05	0:00	0:00	0:00	0:00	0:00	3:05
CE	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CF	0:00	0:00	0:00	0:00	4:55	1:33	0:00	0:00	0:00	0:00	0:00	6:28
CG	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:20	1:20
CH	1:25	2:13	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	3:38
CI	1:41	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:40
CJ	0:00	0:00	0:21	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:20
CK	0:59	1:53	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	2:51
CL	1:06	2:12	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	3:18
CM	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:08	0:00	1:08
CN	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:32	1:32
CO	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CP	2:28	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	2:27
CQ	0:49	1:57	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	2:46
CR	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CS	0:00	0:00	0:23	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:23
CT	0:49	1:46	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	2:35
CU	0:00	3:15	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	3:14
CV	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	3:08	3:07
CW	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CX	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CY	1:16	0:09	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:24
CZ	0:00	0:00	0:00	0:00	0:00	0:00	2:15	0:00	0:00	0:00	0:00	2:14
DA	0:00	1:29	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:28
DB	0:00	1:46	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:46
DC	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:53	0:00	0:52
DD	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:50	0:00	0:49
DE	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:51	0:20	0:00	0:00	1:10
DF	0:00	1:20	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:20
DG	0:00	0:00	0:00	0:00	0:00	0:00	1:04	0:00	0:00	0:00	0:00	1:04
DH	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:47	0:28	0:00	0:00	1:15
DI	0:00	0:00	0:00	0:00	0:00	0:00	1:09	0:00	0:00	0:00	0:00	1:08
DJ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DK	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DL	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:53	0:00	0:53
DM	0:00	0:00	0:00	0:00	0:00	0:00	1:04	0:00	0:00	0:00	0:00	1:04
DN	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:29	0:00	0:00	1:29
DO	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DP	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DQ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:06	0:00	0:00	0:00	0:06
DR	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DS	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DT	0:00	0:00	0:00	0:00	0:00	0:22	0:00	0:00	0:00	0:00	0:00	0:21
DU	0:00	1:06	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:05
DV	0:55	0:30	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:25
DW	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DX	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:55	0:00	0:55
DY	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:21	0:00	0:00	1:20
DZ	0:00	1:01	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:00
EA	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
EB	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:40	0:00	0:39
EC	0:00	1:01	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:00
ED	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00

To be continued on next page...

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Detailed Results

Calculation: Real Case Analysis

...continued from previous page

Receptor	WTG 1	2	3	4	5	6	7	8	9	10	11	Total
EE	0:00	0:00	0:00	0:00	0:00	0:00	1:00	0:00	0:00	0:00	0:00	1:00
EF	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:38	0:00	0:37
EG	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:03	0:00	1:02
EH	0:00	0:55	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:54
EI	0:00	0:52	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:51
EJ	0:00	1:01	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:00
EK	0:00	0:50	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:49
EL	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
EM	0:00	0:50	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:50
EN	0:00	0:44	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:44
EO	0:00	0:55	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:54
Total	23:26	35:40	12:19	14:33	24:56	24:37	22:35	21:13	18:56	28:59	56:20	

Total time can be different from the sum in case of concurrent Shadow flicker events

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** A - H001

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March			April			May			June		
1	08:52		08:22		07:24			07:09			17:28 (11)		06:00		17:38 (11)	05:10		
	16:22		17:14		18:09			20:08	98		19:06 (11)		21:03	70	18:48 (11)	21:53		
2	08:52		08:20		07:22			07:06			17:27 (11)		05:58		17:39 (11)	05:09		
	16:23		17:16		18:11			20:10	99		19:06 (11)		21:05	68	18:47 (11)	21:55		
3	08:52		08:18		07:19			07:04			17:27 (11)		05:55		17:42 (11)	05:08		
	16:24		17:18		18:13			20:12	99		19:06 (11)		21:07	64	18:46 (11)	21:56		
4	08:51		08:16		07:17			07:02			17:26 (11)		05:53		17:43 (11)	05:07		
	16:26		17:20		18:15			20:13	99		19:05 (11)		21:09	62	18:45 (11)	21:57		
5	08:51		08:15		07:15			06:59			17:26 (11)		05:51		17:44 (11)	05:07		
	16:27		17:22		18:17			20:15	99		19:05 (11)		21:11	60	18:44 (11)	21:58		
6	08:51		08:13		07:12			06:57			17:26 (11)		05:50		17:46 (11)	05:06		
	16:28		17:24		18:19			20:17	100		19:06 (11)		21:12	56	18:42 (11)	21:59		
7	08:50		08:11		07:10		17:17 (11)	06:54			17:25 (11)		05:48		17:47 (11)	05:05		
	16:30		17:26		18:21	13	17:30 (11)	20:19	100		19:05 (11)		21:14	53	18:40 (11)	22:00		
8	08:50		08:09		07:08		17:10 (11)	06:52			17:26 (11)		05:46		17:49 (11)	05:05		
	16:31		17:28		18:23	28	17:38 (11)	20:21	99		19:05 (11)		21:16	50	18:39 (11)	22:01		
9	08:49		08:07		07:05		17:05 (11)	06:49			17:25 (11)		05:44		17:52 (11)	05:04		
	16:32		17:30		18:25	36	17:41 (11)	20:23	99		19:04 (11)		21:18	46	18:38 (11)	22:02		
10	08:48		08:05		07:03		17:01 (11)	06:47			17:25 (11)		05:42		17:54 (11)	05:04		
	16:34		17:32		18:27	44	17:45 (11)	20:25	99		19:04 (11)		21:20	41	18:35 (11)	22:03		
11	08:48		08:03		07:00		16:57 (11)	06:45			17:26 (11)		05:40		17:56 (11)	05:03		
	16:35		17:34		18:29	50	17:47 (11)	20:26	98		19:04 (11)		21:21	37	18:33 (11)	22:04		
12	08:47		08:01		06:58		16:55 (11)	06:42			17:25 (11)		05:38		17:59 (11)	05:03		21:27 (9)
	16:37		17:36		18:31	55	17:50 (11)	20:28	98		19:03 (11)		21:23	32	18:31 (11)	22:04	2	21:29 (9)
13	08:46		07:59		06:55		16:52 (11)	06:40			17:25 (11)		05:36		18:02 (11)	05:02		21:27 (9)
	16:39		17:38		18:32	59	17:51 (11)	20:30	98		19:03 (11)		21:25	26	18:28 (11)	22:05	3	21:30 (9)
14	08:45		07:57		06:53		16:50 (11)	06:38			17:26 (11)		05:35		18:05 (11)	05:02		21:26 (9)
	16:40		17:40		18:34	64	17:54 (11)	20:32	97		19:03 (11)		21:26	19	18:24 (11)	22:06	4	21:30 (9)
15	08:44		07:55		06:51		16:49 (11)	06:35			17:25 (11)		05:33			05:02		21:25 (9)
	16:42		17:42		18:36	67	17:56 (11)	20:34	96		19:01 (11)		21:28			22:06	5	21:30 (9)
16	08:43		07:53		06:48		16:46 (11)	06:33			17:26 (11)		05:31			05:02		21:24 (9)
	16:44		17:44		18:38	71	17:57 (11)	20:36	95		19:01 (11)		21:30			22:07	7	21:31 (9)
17	08:42		07:51		06:46		16:45 (11)	06:31			17:27 (11)		05:30			05:02		21:24 (9)
	16:45		17:46		18:40	73	17:58 (11)	20:38	94		19:01 (11)		21:31			22:07	7	21:31 (9)
18	08:41		07:49		06:43		16:43 (11)	06:28			17:27 (11)		05:28			05:02		21:24 (9)
	16:47		17:48		18:42	76	17:59 (11)	20:39	93		19:00 (11)		21:33			22:08	7	21:31 (9)
19	08:40		07:47		06:41		16:41 (11)	06:26			17:27 (11)		05:27			05:02		21:24 (9)
	16:49		17:50		18:44	80	18:01 (11)	20:41	92		18:59 (11)		21:35			22:08	8	21:32 (9)
20	08:39		07:44		06:38		16:39 (11)	06:24			17:28 (11)		05:25			05:02		21:25 (9)
	16:51		17:52		18:46	82	18:01 (11)	20:43	90		18:58 (11)		21:36			22:09	8	21:33 (9)
21	08:38		07:42		06:36		16:39 (11)	06:21			17:29 (11)		05:24			05:02		21:25 (9)
	16:52		17:54		18:47	83	18:02 (11)	20:45	89		18:58 (11)		21:38			22:09	8	21:33 (9)
22	08:37		07:40		06:33		16:37 (11)	06:19			17:30 (11)		05:22			05:02		21:25 (9)
	16:54		17:56		18:49	85	18:02 (11)	20:47	87		18:57 (11)		21:39			22:09	8	21:33 (9)
23	08:35		07:38		06:31		16:36 (11)	06:17			17:30 (11)		05:21			05:02		21:25 (9)
	16:56		17:58		18:51	87	18:03 (11)	20:49	86		18:56 (11)		21:41			22:09	8	21:33 (9)
24	08:34		07:36		06:29		16:34 (11)	06:15			17:31 (11)		05:19			05:03		21:26 (9)
	16:58		18:00		18:53	89	18:03 (11)	20:51	85		18:56 (11)		21:43			22:09	8	21:34 (9)
25	08:33		07:33		06:26		16:34 (11)	06:12			17:32 (11)		05:18			05:03		21:26 (9)
	17:00		18:02		18:55	90	18:04 (11)	20:52	83		18:55 (11)		21:44			22:09	7	21:33 (9)
26	08:31		07:31		06:24		16:32 (11)	06:10			17:32 (11)		05:17			05:03		21:26 (9)
	17:02		18:03		18:57	92	18:04 (11)	20:54	81		18:53 (11)		21:45			22:09	7	21:33 (9)
27	08:30		07:29		06:21		16:32 (11)	06:08			17:33 (11)		05:16			05:04		21:27 (9)
	17:04		18:05		18:59	93	18:05 (11)	20:56	79		18:52 (11)		21:47			22:09	6	21:33 (9)
28	08:28		07:26		06:19		16:30 (11)	06:06			17:34 (11)		05:14			05:04		21:28 (9)
	17:06		18:07		19:01	95	18:05 (11)	20:58	77		18:51 (11)		21:48			22:09	5	21:33 (9)
29	08:27				07:16		17:30 (11)	06:04			17:36 (11)		05:13			05:05		21:29 (9)
	17:08				20:02	95	19:05 (11)	21:00	74		18:50 (11)		21:50			22:09	4	21:33 (9)
30	08:25				07:14		17:29 (11)	06:02			17:37 (11)		05:12			05:05		21:31 (9)
	17:10				20:04	96	19:05 (11)	21:02	72		18:49 (11)		21:51			22:09	2	21:33 (9)
31	08:23				07:11		17:28 (11)						05:11					
	17:12				20:06	98	19:06 (11)						21:52					
Potential sun hours	250		273		367			420			494				510			
Total, worst case						1801			2755			684				114		
Sun reduction						0.22			0.31			0.31				0.26		
Oper. time red.						1.00			1.00			1.00				1.00		
Wind dir. red.						0.64			0.64			0.64				0.61		
Total reduction						0.14			0.20			0.20				0.16		
Total, real						254			544			138				18		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** A - H001

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July			August			September			October			November	December
1	05:06			05:46		18:08 (11)	06:40		17:25 (11)	07:34		17:33 (11)	07:32	08:27
	22:08			21:33	35	18:43 (11)	20:26	98	19:03 (11)	19:12	57	18:30 (11)	17:02	16:17
2	05:07			05:48		18:05 (11)	06:42		17:24 (11)	07:36		17:35 (11)	07:34	08:29
	22:08			21:31	39	18:44 (11)	20:24	99	19:03 (11)	19:10	52	18:27 (11)	17:00	16:17
3	05:08			05:49		18:03 (11)	06:44		17:23 (11)	07:37		17:38 (11)	07:36	08:30
	22:07			21:29	43	18:46 (11)	20:21	99	19:02 (11)	19:07	46	18:24 (11)	16:58	16:16
4	05:08			05:51		18:00 (11)	06:46		17:23 (11)	07:39		17:41 (11)	07:38	08:32
	22:07			21:27	48	18:48 (11)	20:19	99	19:02 (11)	19:05	40	18:21 (11)	16:56	16:15
5	05:09			05:53		17:59 (11)	06:48		17:22 (11)	07:41		17:45 (11)	07:40	08:33
	22:06			21:25	50	18:49 (11)	20:16	100	19:02 (11)	19:03	32	18:17 (11)	16:54	16:15
6	05:10			05:55		17:57 (11)	06:49		17:21 (11)	07:43		17:49 (11)	07:42	08:35
	22:06			21:24	54	18:51 (11)	20:14	100	19:01 (11)	19:00	21	18:10 (11)	16:52	16:14
7	05:11			05:56		17:55 (11)	06:51		17:21 (11)	07:45			07:44	08:36
	22:05			21:22	57	18:52 (11)	20:12	100	19:01 (11)	18:58			16:50	16:14
8	05:12			05:58		17:53 (11)	06:53		17:21 (11)	07:47			07:46	08:37
	22:04			21:20	60	18:53 (11)	20:09	99	19:00 (11)	18:55			16:48	16:13
9	05:13			06:00		17:51 (11)	06:55		17:20 (11)	07:48			07:48	08:38
	22:04			21:18	63	18:54 (11)	20:07	99	18:59 (11)	18:53			16:47	16:13
10	05:14			06:02		17:50 (11)	06:56		17:20 (11)	07:50			07:50	08:40
	22:03			21:16	65	18:55 (11)	20:04	99	18:59 (11)	18:51			16:45	16:12
11	05:16			06:03		17:48 (11)	06:58		17:20 (11)	07:52			07:52	08:41
	22:02			21:13	69	18:57 (11)	20:02	98	18:58 (11)	18:48			16:43	16:12
12	05:17			06:05		17:46 (11)	07:00		17:21 (11)	07:54			07:54	08:42
	22:01			21:11	71	18:57 (11)	19:59	97	18:58 (11)	18:46			16:41	16:12
13	05:18			06:07		17:45 (11)	07:02		17:20 (11)	07:56			07:55	08:43
	22:00			21:09	73	18:58 (11)	19:57	96	18:56 (11)	18:43			16:40	16:12
14	05:19			06:09		17:44 (11)	07:04		17:20 (11)	07:58			07:57	08:44
	21:59			21:07	75	18:59 (11)	19:54	96	18:56 (11)	18:41			16:38	16:12
15	05:20			06:10		17:42 (11)	07:05		17:20 (11)	08:00			07:59	08:45
	21:58			21:05	77	18:59 (11)	19:52	95	18:55 (11)	18:39			16:36	16:12
16	05:22			06:12		17:41 (11)	07:07		17:20 (11)	08:02			08:01	08:46
	21:57			21:03	79	19:00 (11)	19:49	94	18:54 (11)	18:36			16:35	16:12
17	05:23			06:14		17:40 (11)	07:09		17:20 (11)	08:03			08:03	08:47
	21:56			21:01	81	19:01 (11)	19:47	93	18:53 (11)	18:34			16:33	16:12
18	05:24			06:16		17:38 (11)	07:11		17:21 (11)	08:05			08:05	08:47
	21:54			20:59	83	19:01 (11)	19:44	91	18:52 (11)	18:32			16:32	16:12
19	05:26			06:17		17:37 (11)	07:12		17:22 (11)	08:07			08:07	08:48
	21:53			20:56	84	19:01 (11)	19:42	89	18:51 (11)	18:30			16:31	16:13
20	05:27			06:19		17:36 (11)	07:14		17:21 (11)	08:09			08:09	08:49
	21:52			20:54	86	19:02 (11)	19:40	88	18:49 (11)	18:27			16:29	16:13
21	05:29			06:21		17:34 (11)	07:16		17:22 (11)	08:11			08:10	08:49
	21:50			20:52	88	19:02 (11)	19:37	86	18:48 (11)	18:25			16:28	16:13
22	05:30			06:23		17:33 (11)	07:18		17:23 (11)	08:13			08:12	08:50
	21:49			20:50	89	19:02 (11)	19:35	84	18:47 (11)	18:23			16:27	16:14
23	05:32			06:25		17:32 (11)	07:19		17:24 (11)	08:15			08:14	08:50
	21:48			20:47	91	19:03 (11)	19:32	82	18:46 (11)	18:21			16:25	16:14
24	05:33			06:26		17:31 (11)	07:21		17:25 (11)	08:17			08:16	08:51
	21:46			20:45	92	19:03 (11)	19:30	80	18:45 (11)	18:18			16:24	16:15
25	05:35			06:28		17:30 (11)	07:23		17:25 (11)	07:19			08:17	08:51
	21:45			20:43	93	19:03 (11)	19:27	77	18:42 (11)	17:16			16:23	16:16
26	05:36			06:30		17:29 (11)	07:25		17:26 (11)	07:21			08:19	08:52
	21:43			20:40	94	19:03 (11)	19:25	75	18:41 (11)	17:14			16:22	16:16
27	05:38			06:32		17:28 (11)	07:27		17:27 (11)	07:23			08:21	08:52
	21:41			20:38	95	19:03 (11)	19:22	72	18:39 (11)	17:12			16:21	16:17
28	05:40			06:33		17:27 (11)	07:28		17:29 (11)	07:24			08:22	08:52
	21:40			20:36	96	19:03 (11)	19:20	68	18:37 (11)	17:10			16:20	16:18
29	05:41		18:20 (11)	06:35		17:27 (11)	07:30		17:30 (11)	07:26			08:24	08:52
	21:38	11	18:31 (11)	20:33	96	19:03 (11)	19:17	65	18:35 (11)	17:08			16:19	16:19
30	05:43		18:15 (11)	06:37		17:25 (11)	07:32		17:31 (11)	07:28			08:26	08:52
	21:36	22	18:37 (11)	20:31	98	19:03 (11)	19:15	61	18:32 (11)	17:06			16:18	16:20
31	05:44		18:11 (11)	06:39		17:25 (11)				07:30				08:52
	21:35	29	18:40 (11)	20:29	98	19:03 (11)				17:04				16:21
Potential sun hours	512			460			382			328			259	233
Total, worst case		62			2322			2679			248			
Sun reduction		0.22			0.26			0.25			0.23			
Oper. time red.		1.00			1.00			1.00			1.00			
Wind dir. red.		0.64			0.64			0.64			0.64			
Total reduction		0.14			0.16			0.16			0.15			
Total, real		9			382			432			36			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** B - H002

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February		March		April		May	June
1	08:52	08:22		07:24		16:14 (10)	07:09	19:12 (9)	06:00	05:10
	16:22	17:13		18:09	73	17:27 (10)	20:08	19:41 (9)	21:03	21:53
2	08:52	08:20		07:22		16:13 (10)	07:06	19:11 (9)	05:57	05:09
	16:23	17:15		18:11	73	17:26 (10)	20:10	19:43 (9)	21:05	21:55
3	08:52	08:18		07:19		16:13 (10)	07:04	19:11 (9)	05:55	05:08
	16:24	17:17		18:13	74	17:27 (10)	20:12	19:45 (9)	21:07	21:56
4	08:51	08:16		07:17		16:13 (10)	07:02	19:10 (9)	05:53	05:07
	16:26	17:19		18:15	74	17:27 (10)	20:13	19:46 (8)	21:09	21:57
5	08:51	08:15		07:15		16:13 (10)	06:59	19:10 (9)	05:51	05:07
	16:27	17:21		18:17	73	17:26 (10)	20:15	19:46 (8)	21:11	21:58
6	08:51	08:13		07:12		16:13 (10)	06:57	19:11 (9)	05:49	05:06
	16:28	17:23		18:19	73	17:26 (10)	20:17	19:45 (8)	21:12	21:59
7	08:50	08:11		07:10		16:12 (10)	06:54	19:11 (9)	05:48	05:05
	16:30	17:25		18:21	73	17:25 (10)	20:19	19:42 (9)	21:14	22:00
8	08:50	08:09	16:43 (10)	07:08		16:13 (10)	06:52	19:12 (9)	05:46	05:05
	16:31	17:28	14 16:57 (10)	18:23	72	17:25 (10)	20:21	19:42 (9)	21:16	22:01
9	08:49	08:07	16:38 (10)	07:05		16:12 (10)	06:49	19:12 (9)	05:44	05:04
	16:32	17:30	21 16:59 (10)	18:25	72	17:24 (10)	20:23	28 19:40 (9)	21:18	22:02
10	08:48	08:05	16:35 (10)	07:03		16:13 (10)	06:47	19:13 (9)	05:42	05:03
	16:34	17:32	27 17:02 (10)	18:27	71	17:24 (10)	20:25	25 19:38 (9)	21:20	22:03
11	08:48	08:03	16:33 (10)	07:00		16:13 (10)	06:45	19:15 (9)	05:40	05:03
	16:35	17:34	31 17:04 (10)	18:29	70	17:23 (10)	20:26	22 19:37 (9)	21:21	22:04
12	08:47	08:01	16:31 (10)	06:58		16:14 (10)	06:42	19:16 (9)	05:38	05:03
	16:37	17:36	35 17:06 (10)	18:31	69	17:23 (10)	20:28	18 19:34 (9)	21:23	22:04
13	08:46	07:59	16:28 (10)	06:55		16:13 (10)	06:40	19:19 (9)	05:36	05:02
	16:39	17:38	40 17:08 (10)	18:32	68	17:21 (10)	20:30	12 19:31 (9)	21:25	22:05
14	08:45	07:57	16:27 (10)	06:53		16:14 (10)	06:38		05:35	05:02
	16:40	17:40	43 17:10 (10)	18:34	67	17:21 (10)	20:32		21:26	22:06
15	08:44	07:55	16:26 (10)	06:51		16:15 (10)	06:35		05:33	05:02
	16:42	17:42	46 17:12 (10)	18:36	65	17:20 (10)	20:34		21:28	22:06
16	08:43	07:53	16:24 (10)	06:48		16:16 (10)	06:33		05:31	05:02
	16:44	17:44	51 17:15 (10)	18:38	63	17:19 (10)	20:36		21:30	22:07
17	08:42	07:51	16:23 (10)	06:46		16:17 (10)	06:31		05:30	05:02
	16:45	17:46	54 17:17 (10)	18:40	61	17:18 (10)	20:38		21:31	22:07
18	08:41	07:49	16:21 (10)	06:43		16:17 (10)	06:28		05:28	05:02
	16:47	17:48	57 17:18 (10)	18:42	59	17:16 (10)	20:39		21:33	22:08
19	08:40	07:47	16:21 (10)	06:41		16:19 (10)	06:26		05:26	05:02
	16:49	17:50	60 17:21 (10)	18:44	56	17:15 (10)	20:41		21:35	22:08
20	08:39	07:44	16:20 (10)	06:38		16:20 (10)	06:24		05:25	05:02
	16:51	17:52	63 17:23 (10)	18:46	53	17:13 (10)	20:43		21:36	22:09
21	08:38	07:42	16:19 (10)	06:36		16:22 (10)	06:21		05:23	05:02
	16:52	17:54	65 17:24 (10)	18:47	50	17:12 (10)	20:45		21:38	22:09
22	08:37	07:40	16:18 (10)	06:33		16:23 (10)	06:19		05:22	05:02
	16:54	17:56	66 17:24 (10)	18:49	46	17:09 (10)	20:47		21:39	22:09
23	08:35	07:38	16:17 (10)	06:31		16:25 (10)	06:17		05:21	05:02
	16:56	17:58	68 17:25 (10)	18:51	43	17:08 (10)	20:49		21:41	22:09
24	08:34	07:35	16:17 (10)	06:29		16:27 (10)	06:15		05:19	05:02
	16:58	18:00	69 17:26 (10)	18:53	43	18:26 (9)	20:51		21:42	22:09
25	08:33	07:33	16:16 (10)	06:26		16:30 (10)	06:12		05:18	05:03
	17:00	18:01	69 17:25 (10)	18:55	42	18:29 (9)	20:52		21:44	22:09
26	08:31	07:31	16:15 (10)	06:24		16:33 (10)	06:10		05:17	05:03
	17:02	18:03	71 17:26 (10)	18:57	38	18:30 (9)	20:54		21:45	22:09
27	08:30	07:29	16:14 (10)	06:21		16:38 (10)	06:08		05:15	05:04
	17:04	18:05	72 17:26 (10)	18:59	31	18:32 (9)	20:56		21:47	22:09
28	08:28	07:26	16:14 (10)	06:19		18:14 (9)	06:06		05:14	05:04
	17:06	18:07	72 17:26 (10)	19:00	19	18:33 (9)	20:58		21:48	22:09
29	08:27			07:16		19:13 (9)	06:04		05:13	05:05
	17:08			20:02	23	19:36 (9)	21:00		21:50	22:09
30	08:25			07:14		19:12 (9)	06:02		05:12	05:05
	17:10			20:04	25	19:37 (9)	21:02		21:51	22:09
31	08:23			07:11		19:12 (9)			05:11	
	17:12			20:06	27	19:39 (9)			21:52	
Potential sun hours	250	273		367			420		494	510
Total, worst case			1094		1746			367		
Sun reduction			0.19		0.22			0.31		
Oper. time red.			1.00		1.00			1.00		
Wind dir. red.			0.65		0.65			0.64		
Total reduction			0.13		0.14			0.20		
Total, real			138		248			73		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** B - H002

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August			September			October			November			December
1	05:06		05:46			06:40		19:14 (9)	07:34		16:53 (10)	07:32		16:06 (10)	08:27
	22:08		21:33			20:26	22	19:36 (9)	19:12	68	18:01 (10)	17:02	25	16:31 (10)	16:17
2	05:07		05:48			06:42		19:11 (9)	07:36		16:52 (10)	07:34		16:09 (10)	08:29
	22:08		21:31			20:24	25	19:36 (9)	19:10	70	18:02 (10)	17:00	20	16:29 (10)	16:16
3	05:08		05:49			06:44		19:10 (9)	07:37		16:51 (10)	07:36		16:13 (10)	08:30
	22:07		21:29			20:21	28	19:38 (9)	19:07	71	18:02 (10)	16:58	13	16:26 (10)	16:16
4	05:08		05:51			06:46		19:09 (9)	07:39		16:51 (10)	07:38			08:32
	22:07		21:27			20:19	30	19:39 (9)	19:05	71	18:02 (10)	16:56			16:15
5	05:09		05:53			06:48		19:08 (9)	07:41		16:50 (10)	07:40			08:33
	22:06		21:25			20:16	31	19:39 (9)	19:03	72	18:02 (10)	16:54			16:15
6	05:10		05:55			06:49		19:06 (9)	07:43		16:49 (10)	07:42			08:35
	22:06		21:23			20:14	34	19:40 (8)	19:00	72	18:01 (10)	16:52			16:14
7	05:11		05:56			06:51		19:06 (9)	07:45		16:48 (10)	07:44			08:36
	22:05		21:22			20:12	35	19:41 (8)	18:58	73	18:01 (10)	16:50			16:13
8	05:12		05:58			06:53		19:05 (9)	07:47		16:48 (10)	07:46			08:37
	22:04		21:20			20:09	36	19:41 (8)	18:55	73	18:01 (10)	16:48			16:13
9	05:13		06:00			06:55		19:04 (9)	07:48		16:47 (10)	07:48			08:38
	22:04		21:18			20:07	34	19:38 (9)	18:53	74	18:01 (10)	16:46			16:13
10	05:14		06:01			06:56		19:04 (9)	07:50		16:47 (10)	07:50			08:40
	22:03		21:16			20:04	32	19:36 (9)	18:50	74	18:01 (10)	16:45			16:12
11	05:15		06:03			06:58		19:04 (9)	07:52		16:47 (10)	07:52			08:41
	22:02		21:13			20:02	30	19:34 (9)	18:48	73	18:00 (10)	16:43			16:12
12	05:17		06:05			07:00		19:04 (9)	07:54		16:47 (10)	07:54			08:42
	22:01		21:11			19:59	28	19:32 (9)	18:46	73	18:00 (10)	16:41			16:12
13	05:18		06:07			07:02		19:03 (9)	07:56		16:47 (10)	07:55			08:43
	22:00		21:09			19:57	26	19:29 (9)	18:43	73	18:00 (10)	16:40			16:12
14	05:19		06:09			07:03		19:04 (9)	07:58		16:47 (10)	07:57			08:44
	21:59		21:07			19:54	22	19:26 (9)	18:41	72	17:59 (10)	16:38			16:12
15	05:20		06:10			07:05		19:04 (9)	08:00		16:47 (10)	07:59			08:45
	21:58		21:05			19:52	20	19:24 (9)	18:39	72	17:59 (10)	16:36			16:12
16	05:22		06:12			07:07		17:29 (10)	08:01		16:48 (10)	08:01			08:46
	21:57		21:03			19:49	28	19:21 (9)	18:36	70	17:58 (10)	16:35			16:12
17	05:23		06:14			07:09		17:22 (10)	08:03		16:48 (10)	08:03			08:47
	21:56		21:01			19:47	38	19:19 (9)	18:34	69	17:57 (10)	16:33			16:12
18	05:24		06:16			07:11		17:18 (10)	08:05		16:48 (10)	08:05			08:47
	21:54		20:58			19:44	40	19:16 (9)	18:32	69	17:57 (10)	16:32			16:12
19	05:26		06:17			07:12		17:15 (10)	08:07		16:49 (10)	08:07			08:48
	21:53		20:56			19:42	43	19:14 (9)	18:30	67	17:56 (10)	16:31			16:13
20	05:27		06:19			07:14		17:11 (10)	08:09		16:49 (10)	08:09			08:49
	21:52		20:54			19:39	43	19:11 (9)	18:27	66	17:55 (10)	16:29			16:13
21	05:29		06:21			07:16		17:09 (10)	08:11		16:50 (10)	08:10			08:49
	21:50		20:52			19:37	46	17:55 (10)	18:25	64	17:54 (10)	16:28			16:13
22	05:30		06:23			07:18		17:07 (10)	08:13		16:51 (10)	08:12			08:50
	21:49		20:50			19:35	49	17:56 (10)	18:23	62	17:53 (10)	16:27			16:14
23	05:32		06:24			07:19		17:05 (10)	08:15		16:51 (10)	08:14			08:50
	21:48		20:47			19:32	52	17:57 (10)	18:21	60	17:51 (10)	16:25			16:14
24	05:33		06:26			07:21		17:03 (10)	08:17		16:52 (10)	08:16			08:51
	21:46		20:45			19:30	56	17:59 (10)	18:18	56	17:48 (10)	16:24			16:15
25	05:35		06:28			07:23		17:01 (10)	07:19		15:53 (10)	08:17			08:51
	21:45		20:43			19:27	58	17:59 (10)	17:16	53	16:46 (10)	16:23			16:16
26	05:36		06:30			07:25		16:59 (10)	07:21		15:54 (10)	08:19			08:52
	21:43		20:40			19:25	60	17:59 (10)	17:14	50	16:44 (10)	16:22			16:16
27	05:38		06:32			07:27		16:58 (10)	07:22		15:55 (10)	08:21			08:52
	21:41		20:38			19:22	62	18:00 (10)	17:12	46	16:41 (10)	16:21			16:17
28	05:39		06:33			07:28		16:57 (10)	07:24		15:57 (10)	08:22			08:52
	21:40		20:36			19:20	64	18:01 (10)	17:10	42	16:39 (10)	16:20			16:18
29	05:41		06:35			07:30		16:56 (10)	07:26		15:58 (10)	08:24			08:52
	21:38		20:33			19:17	66	18:02 (10)	17:08	39	16:37 (10)	16:19			16:19
30	05:43		06:37		19:18 (9)	07:32		16:54 (10)	07:28		16:00 (10)	08:26			08:52
	21:36		20:31	13	19:31 (9)	19:15	67	18:01 (10)	17:06	34	16:34 (10)	16:18			16:20
31	05:44		06:39		19:16 (9)				07:30		16:02 (10)				08:52
	21:35		20:29	18	19:34 (9)				17:04	30	16:32 (10)				16:21
Potential sun hours	512		460			382			328			259			233
Total, worst case				31			1205			1958			58		
Sun reduction				0.26			0.25			0.23			0.20		
Oper. time red.				1.00			1.00			1.00			1.00		
Wind dir. red.				0.64			0.65			0.65			0.65		
Total reduction				0.17			0.16			0.15			0.13		
Total, real				5			195			287			7		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** C - H003

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:10	20:08	21:04	21:54	22:08	21:33	20:26	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:09	05:07	05:48	06:43	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:14	20:12	21:07	21:56	22:08	21:29	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:51	06:46	07:40	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52	05:07	05:10	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	21:58	22:06	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:55	05:48	05:06	05:12	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:56	16:49	16:13
9	08:49	08:07	07:05	06:50	05:44	05:04	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:01	06:45	05:40	05:03	05:16	06:04	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:13
12	08:47	08:01	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	22:00	21:09	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:34	16:12
18	08:42	07:49	06:44	06:29	05:28	05:02	05:25	06:16	07:11	08:05	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:28	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:28	16:30	16:13
21	08:38	07:42	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	05:02	05:31	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34	06:27	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	21:44	22:09	21:45	20:43	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:41	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:22	17:12	16:21	16:17
28	08:28	07:27	06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:14	05:05	05:41	06:35	07:30	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:29	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:12		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** D - H004

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March		April		May		June
1	08:52	08:22	07:24		07:09		06:00		06:27 (8)	05:10
	16:22	17:14	18:09		20:08		21:04	34	07:01 (8)	21:54
2	08:52	08:20	07:22		07:07		05:58		06:27 (8)	05:09
	16:23	17:16	18:11		20:10		21:05	34	07:01 (8)	21:55
3	08:52	08:18	07:20		07:04		05:56		06:27 (8)	05:08
	16:25	17:18	18:13		20:12		21:07	33	07:00 (8)	21:56
4	08:52	08:17	07:17		07:02		05:54		06:27 (8)	05:08
	16:26	17:20	18:15		20:14		21:09	33	07:00 (8)	21:57
5	08:51	08:15	07:15		06:59		05:52		06:27 (8)	05:07
	16:27	17:22	18:17		20:15		21:11	32	06:59 (8)	21:58
6	08:51	08:13	07:12		06:57		05:50		06:28 (8)	05:06
	16:28	17:24	18:19		20:17		21:13	30	06:58 (8)	21:59
7	08:50	08:11	07:10		06:54		05:48		06:28 (8)	05:05
	16:30	17:26	18:21		20:19		21:14	29	06:57 (8)	22:00
8	08:50	08:09	07:08		06:52		05:46		06:29 (8)	05:05
	16:31	17:28	18:23		20:21	1	07:17 (9)	21:16	28	06:57 (8)	22:01
9	08:49	08:07	07:05		06:50		07:14 (9)	05:44		06:30 (8)	05:04
	16:33	17:30	18:25		20:23	4	07:18 (9)	21:18	26	06:56 (8)	22:02
10	08:49	08:05	07:03		06:47		07:11 (9)	05:42		06:31 (8)	05:04
	16:34	17:32	18:27		20:25	7	07:18 (9)	21:20	23	06:54 (8)	22:03
11	08:48	08:03	07:00		06:45		07:09 (9)	05:40		06:32 (8)	05:03
	16:36	17:34	18:29		20:27	10	07:19 (9)	21:21	21	06:53 (8)	22:04
12	08:47	08:01	06:58		06:42		07:07 (9)	05:38		06:34 (8)	05:03
	16:37	17:36	18:31		20:28	12	07:19 (9)	21:23	18	06:52 (8)	22:05
13	08:46	07:59	06:56		07:20 (11)	06:40		07:04 (9)	05:37		06:35 (8)	05:02
	16:39	17:38	18:33	3	07:23 (11)	20:30	15	07:19 (9)	21:25	14	06:49 (8)	22:05
14	08:46	07:57	06:53		07:17 (11)	06:38		07:02 (9)	05:35		06:39 (8)	05:02
	16:40	17:40	18:34	7	07:24 (11)	20:32	17	07:19 (9)	21:27	8	06:47 (8)	22:06
15	08:45	07:55	06:51		07:15 (11)	06:35		07:00 (9)	05:33			05:02
	16:42	17:42	18:36	10	07:25 (11)	20:34	19	07:19 (9)	21:28			22:06
16	08:44	07:53	06:48		07:12 (11)	06:33		06:57 (9)	05:31			05:02
	16:44	17:44	18:38	13	07:25 (11)	20:36	20	07:17 (9)	21:30			22:07
17	08:43	07:51	06:46		07:10 (11)	06:31		06:55 (9)	05:30			05:02
	16:45	17:46	18:40	15	07:25 (11)	20:38	22	07:17 (9)	21:32			22:08
18	08:42	07:49	06:43		07:07 (11)	06:28		06:53 (8)	05:28			05:02
	16:47	17:48	18:42	17	07:24 (11)	20:40	22	07:16 (9)	21:33			22:08
19	08:40	07:47	06:41		07:05 (11)	06:26		06:51 (8)	05:27			05:02
	16:49	17:50	18:44	19	07:24 (11)	20:41	24	07:15 (9)	21:35			22:08
20	08:39	07:45	06:39		07:02 (11)	06:24		06:48 (8)	05:25			05:02
	16:51	17:52	18:46	21	07:23 (11)	20:43	25	07:13 (9)	21:36			22:09
21	08:38	07:42	06:36		07:03 (11)	06:22		06:46 (8)	05:24			05:02
	16:53	17:54	18:48	20	07:23 (11)	20:45	25	07:11 (9)	21:38			22:09
22	08:37	07:40	06:34		07:03 (11)	06:19		06:44 (8)	05:22			05:02
	16:54	17:56	18:49	18	07:21 (11)	20:47	24	07:09 (9)	21:40			22:09
23	08:35	07:38	06:31		07:04 (11)	06:17		06:42 (8)	05:21			05:02
	16:56	17:58	18:51	16	07:20 (11)	20:49	18	07:00 (8)	21:41			22:09
24	08:34	07:36	06:29		07:05 (11)	06:15		06:40 (8)	05:19			05:03
	16:58	18:00	18:53	12	07:17 (11)	20:51	21	07:01 (8)	21:43			22:09
25	08:33	07:33	06:26		07:10 (11)	06:13		06:38 (8)	05:18			05:03
	17:00	18:02	18:55	2	07:12 (11)	20:52	23	07:01 (8)	21:44			22:09
26	08:31	07:31	06:24			06:10		06:36 (8)	05:17			05:03
	17:02	18:04	18:57			20:54	25	07:01 (8)	21:46			22:09
27	08:30	07:29	06:21			06:08		06:34 (8)	05:16			05:04
	17:04	18:06	18:59			20:56	28	07:02 (8)	21:47			22:09
28	08:28	07:27	06:19			06:06		06:31 (8)	05:14			05:04
	17:06	18:08	19:01			20:58	30	07:01 (8)	21:48			22:09
29	08:27		07:16			06:04		06:29 (8)	05:13			05:05
	17:08		20:02			21:00	32	07:01 (8)	21:50			22:09
30	08:25		07:14			06:02		06:27 (8)	05:12			05:06
	17:10		20:04			21:02	33	07:00 (8)	21:51			22:09
31	08:23		07:11						05:11			
	17:12		20:06						21:52			
Potential sun hours	250	273	367		420		494		510
Total, worst case			173		457		363		
Sun reduction			0.22		0.31		0.31		
Oper. time red.			1.00		1.00		1.00		
Wind dir. red.			0.64		0.64		0.65		
Total reduction			0.14		0.20		0.20		
Total, real			24		90		74		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** D - H004

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July			August			September			October			November	December
1	05:06			05:46		06:43 (8)	06:41		07:08 (9)	07:34		08:00 (11)	07:32	08:27
	22:08			21:33	20	07:03 (8)	20:26	10	07:18 (9)	19:12	1	08:01 (11)	17:02	16:17
2	05:07			05:48		06:41 (8)	06:42		07:10 (9)	07:36			07:34	08:29
	22:08			21:31	22	07:03 (8)	20:24	7	07:17 (9)	19:10			17:00	16:17
3	05:08			05:50		06:41 (8)	06:44		07:11 (9)	07:38			07:36	08:30
	22:08			21:29	24	07:05 (8)	20:21	4	07:15 (9)	19:08			16:58	16:16
4	05:09			05:51		06:39 (8)	06:46		07:13 (9)	07:39			07:38	08:32
	22:07			21:27	27	07:06 (8)	20:19	1	07:14 (9)	19:05			16:56	16:15
5	05:09			05:53		06:39 (8)	06:48			07:41			07:40	08:33
	22:07			21:26	28	07:07 (8)	20:17			19:03			16:54	16:15
6	05:10			05:55		06:38 (8)	06:49			07:43			07:42	08:35
	22:06			21:24	30	07:08 (8)	20:14			19:00			16:52	16:14
7	05:11			05:56		06:37 (8)	06:51			07:45			07:44	08:36
	22:05			21:22	31	07:08 (8)	20:12			18:58			16:50	16:14
8	05:12			05:58		06:36 (8)	06:53			07:47			07:46	08:37
	22:05			21:20	33	07:09 (8)	20:09			18:55			16:48	16:13
9	05:13			06:00		06:36 (8)	06:55			07:49			07:48	08:39
	22:04			21:18	33	07:09 (8)	20:07			18:53			16:47	16:13
10	05:15			06:02		06:35 (8)	06:57			07:50			07:50	08:40
	22:03			21:16	34	07:09 (8)	20:04			18:51			16:45	16:13
11	05:16			06:03		06:35 (8)	06:58			07:52			07:52	08:41
	22:02			21:14	34	07:09 (8)	20:02			18:48			16:43	16:12
12	05:17			06:05		06:34 (8)	07:00			07:54			07:54	08:42
	22:01			21:12	35	07:09 (8)	19:59			18:46			16:41	16:12
13	05:18			06:07		06:36 (8)	07:02			07:56			07:56	08:43
	22:00			21:09	33	07:09 (8)	19:57			18:44			16:40	16:12
14	05:19			06:09		06:38 (8)	07:04			07:58			07:57	08:44
	21:59			21:07	31	07:09 (8)	19:55			18:41			16:38	16:12
15	05:21			06:10		06:39 (8)	07:05			08:00			07:59	08:45
	21:58			21:05	29	07:08 (8)	19:52			18:39			16:37	16:12
16	05:22			06:12		06:41 (8)	07:07			08:02			08:01	08:46
	21:57			21:03	27	07:08 (8)	19:50			18:37			16:35	16:12
17	05:23			06:14		06:43 (8)	07:09			08:04			08:03	08:47
	21:56			21:01	25	07:08 (8)	19:47			18:34			16:34	16:12
18	05:25			06:16		06:44 (8)	07:11			08:05			08:05	08:48
	21:54			20:59	23	07:07 (8)	19:45			18:32			16:32	16:12
19	05:26			06:18		06:46 (8)	07:12		07:54 (11)	08:07			08:07	08:48
	21:53			20:56	20	07:06 (8)	19:42	10	08:04 (11)	18:30			16:31	16:13
20	05:27			06:19		06:48 (8)	07:14		07:51 (11)	08:09			08:09	08:49
	21:52			20:54	18	07:06 (8)	19:40	15	08:06 (11)	18:27			16:29	16:13
21	05:29			06:21		06:49 (8)	07:16		07:49 (11)	08:11			08:10	08:50
	21:51			20:52	25	07:14 (9)	19:37	17	08:06 (11)	18:25			16:28	16:14
22	05:30			06:23		06:51 (8)	07:18		07:48 (11)	08:13			08:12	08:50
	21:49			20:50	25	07:16 (9)	19:35	19	08:07 (11)	18:23			16:27	16:14
23	05:32			06:25		06:53 (8)	07:20		07:47 (11)	08:15			08:14	08:51
	21:48			20:47	25	07:18 (9)	19:32	21	08:08 (11)	18:21			16:25	16:15
24	05:33			06:26		06:54 (8)	07:21		07:48 (11)	08:17			08:16	08:51
	21:46			20:45	24	07:18 (9)	19:30	20	08:08 (11)	18:19			16:24	16:15
25	05:35			06:28		06:58 (9)	07:23		07:49 (11)	07:19			08:18	08:51
	21:45			20:43	21	07:19 (9)	19:27	18	08:07 (11)	17:16			16:23	16:16
26	05:36			06:30		06:58 (9)	07:25		07:51 (11)	07:21			08:19	08:52
	21:43			20:40	22	07:20 (9)	19:25	16	08:07 (11)	17:14			16:22	16:16
27	05:38			06:32		07:00 (9)	07:27		07:53 (11)	07:23			08:21	08:52
	21:41			20:38	20	07:20 (9)	19:22	13	08:06 (11)	17:12			16:21	16:17
28	05:40			06:34		07:01 (9)	07:29		07:55 (11)	07:25			08:23	08:52
	21:40			20:36	19	07:20 (9)	19:20	11	08:06 (11)	17:10			16:20	16:18
29	05:41			06:35		07:03 (9)	07:30		07:57 (11)	07:27			08:24	08:52
	21:38			20:33	17	07:20 (9)	19:17	8	08:05 (11)	17:08			16:19	16:19
30	05:43		06:48 (8)	06:37		07:05 (9)	07:32		07:58 (11)	07:28			08:26	08:52
	21:36	11	06:59 (8)	20:31	15	07:20 (9)	19:15	5	08:03 (11)	17:06			16:18	16:20
31	05:45		06:45 (8)	06:39		07:06 (9)				07:30				08:52
	21:35	15	07:00 (8)	20:29	12	07:18 (9)				17:04				16:21
Potential sun hours	512			460			382			328			259	233
Total, worst case		26			782			195			1			
Sun reduction		0.22			0.26			0.25			0.23			
Oper. time red.		1.00			1.00			1.00			1.00			
Wind dir. red.		0.65			0.65			0.64			0.64			
Total reduction		0.15			0.17			0.16			0.14			
Total, real		4			130			31			0			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** E - H005

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March		April		May		June	
1	08:52	16:22	08:22	17:14	07:24	18:09	07:09	20:08	06:00	21:04	06:54 (8)	07:08 (8)
2	08:52	16:23	08:20	17:16	07:22	18:11	07:07	20:10	05:58	21:05	06:57 (8)	07:04 (8)
3	08:52	16:25	08:18	17:18	07:20	18:13	07:04	20:12	07:28 (9)	07:30 (9)	05:56	07:07
4	08:52	16:26	08:17	17:20	07:17	18:15	07:02	20:14	07:25 (9)	07:30 (9)	05:54	07:09
5	08:51	16:27	08:15	17:22	07:15	18:17	06:59	20:15	07:23 (9)	07:31 (9)	05:52	07:11
6	08:51	16:28	08:13	17:24	07:12	18:19	06:57	20:17	07:21 (9)	07:32 (9)	05:50	07:13
7	08:50	16:30	08:11	17:26	07:10	18:21	06:54	20:19	07:18 (9)	07:31 (9)	05:48	07:14
8	08:50	16:31	08:09	17:28	07:08	18:23	06:52	20:21	07:16 (9)	07:32 (9)	05:46	07:16
9	08:49	16:33	08:07	17:30	07:05	18:25	07:29 (11)	07:31 (11)	06:50	20:23	07:14 (9)	07:32 (9)
10	08:49	16:34	08:05	17:32	07:03	18:27	07:27 (11)	07:33 (11)	06:47	20:25	07:11 (9)	07:30 (9)
11	08:48	16:36	08:03	17:34	07:00	18:29	07:25 (11)	07:34 (11)	06:45	20:27	07:09 (9)	07:30 (9)
12	08:47	16:37	08:01	17:36	06:58	18:31	07:22 (11)	07:34 (11)	06:42	20:28	07:07 (8)	07:29 (9)
13	08:46	16:39	07:59	17:38	06:56	18:33	07:20 (11)	07:34 (11)	06:40	20:30	07:04 (8)	07:27 (9)
14	08:46	16:40	07:57	17:40	06:53	18:34	07:17 (11)	07:34 (11)	06:38	20:32	07:02 (8)	07:26 (9)
15	08:45	16:42	07:55	17:42	06:51	18:36	07:15 (11)	07:34 (11)	06:35	20:34	07:00 (8)	07:24 (9)
16	08:44	16:44	07:53	17:44	06:48	18:38	07:12 (11)	07:32 (11)	06:33	20:36	06:57 (8)	07:19 (8)
17	08:43	16:45	07:51	17:46	06:46	18:40	07:13 (11)	07:32 (11)	06:31	20:38	06:55 (8)	07:19 (8)
18	08:42	16:47	07:49	17:48	06:43	18:42	07:13 (11)	07:30 (11)	06:28	20:40	06:53 (8)	07:20 (8)
19	08:40	16:49	07:47	17:50	06:41	18:44	07:15 (11)	07:28 (11)	06:26	20:41	06:51 (8)	07:20 (8)
20	08:39	16:51	07:45	17:52	06:39	18:46	07:17 (11)	07:25 (11)	06:24	20:43	06:48 (8)	07:19 (8)
21	08:38	16:53	07:42	17:54	06:36	18:48	06:22	20:45	06:46 (8)	07:19 (8)	05:24	07:38
22	08:37	16:54	07:40	17:56	06:34	18:49	06:19	20:47	06:46 (8)	07:18 (8)	05:22	07:40
23	08:35	16:56	07:38	17:58	06:31	18:51	06:17	20:49	06:46 (8)	07:18 (8)	05:21	07:41
24	08:34	16:58	07:36	18:00	06:29	18:53	06:15	20:51	06:47 (8)	07:18 (8)	05:19	07:43
25	08:33	17:00	07:33	18:02	06:26	18:55	06:13	20:53	06:47 (8)	07:17 (8)	05:18	07:44
26	08:31	17:02	07:31	18:04	06:24	18:57	06:10	20:54	06:48 (8)	07:16 (8)	05:17	07:46
27	08:30	17:04	07:29	18:06	06:21	18:59	06:08	20:56	06:48 (8)	07:15 (8)	05:16	07:47
28	08:28	17:06	07:27	18:08	06:19	19:01	06:06	20:58	06:48 (8)	07:13 (8)	05:14	07:48
29	08:27	17:08			07:16	20:02	06:04	21:00	06:49 (8)	07:11 (8)	05:13	07:50
30	08:25	17:10			07:14	20:04	06:02	21:02	06:51 (8)	07:09 (8)	05:12	07:51
31	08:23	17:12			07:11	20:06			05:11	21:52		
Potential sun hours	250		273		367		420		494		510	
Total, worst case					156		617		21			
Sun reduction					0.22		0.31		0.31			
Oper. time red.					1.00		1.00		1.00			
Wind dir. red.					0.63		0.64		0.64			
Total reduction					0.14		0.20		0.20			
Total, real					22		122		4			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** E - H005

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August			September			October			November	December
1	05:06		05:46			06:41		07:08 (9)	07:34		08:00 (11)	07:32	08:27
	22:08		21:33			20:26	21	07:29 (9)	19:12	13	08:13 (11)	17:02	16:17
2	05:07		05:48			06:42		07:10 (9)	07:36		08:02 (11)	07:34	08:29
	22:08		21:31			20:24	19	07:29 (9)	19:10	10	08:12 (11)	17:00	16:17
3	05:08		05:50			06:44		07:11 (9)	07:38		08:04 (11)	07:36	08:30
	22:08		21:29			20:21	18	07:29 (9)	19:08	7	08:11 (11)	16:58	16:16
4	05:09		05:51			06:46		07:13 (9)	07:39		08:06 (11)	07:38	08:32
	22:07		21:27			20:19	16	07:29 (9)	19:05	4	08:10 (11)	16:56	16:15
5	05:09		05:53			06:48		07:15 (9)	07:41			07:40	08:33
	22:07		21:26			20:17	13	07:28 (9)	19:03			16:54	16:15
6	05:10		05:55			06:49		07:16 (9)	07:43			07:42	08:35
	22:06		21:24			20:14	11	07:27 (9)	19:00			16:52	16:14
7	05:11		05:56			06:51		07:18 (9)	07:45			07:44	08:36
	22:05		21:22			20:12	9	07:27 (9)	18:58			16:50	16:14
8	05:12		05:58			06:53		07:20 (9)	07:47			07:46	08:37
	22:05		21:20			20:09	6	07:26 (9)	18:55			16:48	16:13
9	05:13		06:00			06:55		07:22 (9)	07:49			07:48	08:39
	22:04		21:18			20:07	3	07:25 (9)	18:53			16:47	16:13
10	05:15		06:02			06:57			07:50			07:50	08:40
	22:03		21:16			20:04			18:51			16:45	16:13
11	05:16		06:03		07:04 (8)	06:58			07:52			07:52	08:41
	22:02		21:14	10	07:14 (8)	20:02			18:48			16:43	16:12
12	05:17		06:05		07:01 (8)	07:00			07:54			07:54	08:42
	22:01		21:12	15	07:16 (8)	19:59			18:46			16:41	16:12
13	05:18		06:07		06:59 (8)	07:02			07:56			07:56	08:43
	22:00		21:09	19	07:18 (8)	19:57			18:44			16:40	16:12
14	05:19		06:09		06:58 (8)	07:04			07:58			07:57	08:44
	21:59		21:07	22	07:20 (8)	19:55			18:41			16:38	16:12
15	05:21		06:10		06:56 (8)	07:05			08:00			07:59	08:45
	21:58		21:05	25	07:21 (8)	19:52			18:39			16:37	16:12
16	05:22		06:12		06:55 (8)	07:07			08:02			08:01	08:46
	21:57		21:03	27	07:22 (8)	19:50			18:37			16:35	16:12
17	05:23		06:14		06:54 (8)	07:09			08:04			08:03	08:47
	21:56		21:01	29	07:23 (8)	19:47			18:34			16:34	16:12
18	05:25		06:16		06:52 (8)	07:11			08:05			08:05	08:48
	21:54		20:59	31	07:23 (8)	19:45			18:32			16:32	16:12
19	05:26		06:18		06:52 (8)	07:12			08:07			08:07	08:48
	21:53		20:56	31	07:23 (8)	19:42			18:30			16:31	16:13
20	05:27		06:19		06:52 (8)	07:14			08:09			08:09	08:49
	21:52		20:54	32	07:24 (8)	19:40			18:27			16:29	16:13
21	05:29		06:21		06:51 (8)	07:16			08:11			08:10	08:50
	21:51		20:52	32	07:23 (8)	19:37			18:25			16:28	16:14
22	05:30		06:23		06:51 (8)	07:18			08:13			08:12	08:50
	21:49		20:50	32	07:23 (8)	19:35			18:23			16:27	16:14
23	05:32		06:25		06:53 (8)	07:20		08:03 (11)	08:15			08:14	08:51
	21:48		20:47	31	07:24 (8)	19:32	5	08:08 (11)	18:21			16:25	16:15
24	05:33		06:26		06:54 (8)	07:21		08:00 (11)	08:17			08:16	08:51
	21:46		20:45	29	07:23 (8)	19:30	11	08:11 (11)	18:19			16:24	16:15
25	05:35		06:28		06:56 (8)	07:23		07:57 (11)	07:19			08:18	08:51
	21:45		20:43	26	07:22 (8)	19:27	15	08:12 (11)	17:16			16:23	16:16
26	05:36		06:30		06:58 (8)	07:25		07:55 (11)	07:21			08:19	08:52
	21:43		20:40	24	07:22 (8)	19:25	18	08:13 (11)	17:14			16:22	16:16
27	05:38		06:32		07:00 (8)	07:27		07:54 (11)	07:23			08:21	08:52
	21:41		20:38	22	07:22 (9)	19:22	20	08:14 (11)	17:12			16:21	16:17
28	05:40		06:34		07:01 (8)	07:29		07:55 (11)	07:25			08:23	08:52
	21:40		20:36	24	07:25 (9)	19:20	19	08:14 (11)	17:10			16:20	16:18
29	05:41		06:35		07:03 (8)	07:30		07:57 (11)	07:27			08:24	08:52
	21:38		20:33	24	07:27 (9)	19:17	17	08:14 (11)	17:08			16:19	16:19
30	05:43		06:37		07:05 (8)	07:32		07:58 (11)	07:28			08:26	08:52
	21:36		20:31	23	07:28 (9)	19:15	15	08:13 (11)	17:06			16:18	16:20
31	05:45		06:39		07:06 (8)				07:30				08:52
	21:35		20:29	22	07:28 (9)				17:04				16:21
Potential sun hours	512		460			382			328			259	233
Total, worst case				530			236			34			
Sun reduction				0.26			0.25			0.23			
Oper. time red.				1.00			1.00			1.00			
Wind dir. red.				0.64			0.64			0.63			
Total reduction				0.16			0.16			0.14			
Total, real				87			38			5			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** F - H006

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February	March	April	May	June	July	August	September	October	November	December		
1	08:52		09:48 (9)	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27		09:44 (9)
	16:22	23	10:11 (9)	17:14	18:09	20:08	21:04	21:54	22:08	21:33	20:26	19:12	17:02	16:17	4	09:48 (9)
2	08:52		09:49 (9)	08:20	07:22	07:07	05:58	05:09	05:07	05:48	06:42	07:36	07:34	08:29		09:42 (9)
	16:23	23	10:12 (9)	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17	9	09:51 (9)
3	08:52		09:50 (9)	08:18	07:19	07:04	05:56	05:08	05:08	05:49	06:44	07:38	07:36	08:30		09:40 (9)
	16:24	22	10:12 (9)	17:18	18:13	20:12	21:07	21:56	22:08	21:29	20:21	19:07	16:58	16:16	13	09:53 (9)
4	08:52		09:50 (9)	08:17	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38	08:32		09:39 (9)
	16:26	21	10:11 (9)	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15	16	09:55 (9)
5	08:51		09:52 (9)	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40	08:33		09:39 (9)
	16:27	20	10:12 (9)	17:22	18:17	20:15	21:11	21:58	22:07	21:26	20:17	19:03	16:54	16:15	18	09:57 (9)
6	08:51		09:52 (9)	08:13	07:12	06:57	05:50	05:06	05:10	05:55	06:49	07:43	07:42	08:35		09:39 (9)
	16:28	19	10:11 (9)	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14	18	09:57 (9)
7	08:50		09:53 (9)	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44	08:36		09:38 (9)
	16:30	18	10:11 (9)	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14	20	09:58 (9)
8	08:50		09:55 (9)	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37		09:38 (9)
	16:31	16	10:11 (9)	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:55	16:48	16:13	21	09:59 (9)
9	08:49		09:57 (9)	08:07	07:05	06:50	05:44	05:04	05:13	06:00	06:55	07:49	07:48	08:39		09:38 (9)
	16:32	13	10:10 (9)	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13	22	10:00 (9)
10	08:49		09:58 (9)	08:05	07:03	06:47	05:42	05:04	05:14	06:02	06:57	07:50	07:50	08:40		09:38 (9)
	16:34	10	10:08 (9)	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:12	23	10:01 (9)
11	08:48		10:01 (9)	08:03	07:00	06:45	05:40	05:03	05:16	06:03	06:58	07:52	07:52	08:41		09:39 (9)
	16:35	5	10:06 (9)	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:12	23	10:02 (9)
12	08:47			08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42		09:39 (9)
	16:37			17:36	18:31	20:28	21:23	22:05	22:01	21:12	19:59	18:46	16:41	16:12	24	10:03 (9)
13	08:46			07:59	06:56	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:56	08:43		09:39 (9)
	16:39			17:38	18:33	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12	24	10:03 (9)
14	08:46			07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57	08:44		09:39 (9)
	16:40			17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38	16:12	25	10:04 (9)
15	08:45			07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59	08:45		09:39 (9)
	16:42			17:42	18:36	20:34	21:28	22:07	21:58	21:05	19:52	18:39	16:37	16:12	26	10:05 (9)
16	08:44			07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01	08:46		09:40 (9)
	16:44			17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:36	16:35	16:12	25	10:05 (9)
17	08:43			07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03	08:47		09:40 (9)
	16:45			17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:33	16:12	26	10:06 (9)
18	08:42			07:49	06:43	06:28	05:28	05:02	05:24	06:16	07:11	08:05	08:05	08:48		09:40 (9)
	16:47			17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:12	26	10:06 (9)
19	08:40			07:47	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07	08:48		09:41 (9)
	16:49			17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13	26	10:07 (9)
20	08:39			07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49		09:41 (9)
	16:51			17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29	16:13	27	10:08 (9)
21	08:38			07:42	06:36	06:21	05:24	05:02	05:29	06:21	07:16	08:11	08:10	08:50		09:41 (9)
	16:52			17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:13	27	10:08 (9)
22	08:37			07:40	06:34	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50		09:42 (9)
	16:54			17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14	27	10:09 (9)
23	08:35			07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15	08:14	08:51		09:42 (9)
	16:56			17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	16:14	27	10:09 (9)
24	08:34			07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16	08:51		09:43 (9)
	16:58			18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24	16:15	26	10:09 (9)
25	08:33			07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51		09:44 (9)
	17:00			18:02	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	16:16	26	10:10 (9)
26	08:31			07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:52		09:44 (9)
	17:02			18:04	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22	16:16	26	10:10 (9)
27	08:30			07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52		09:45 (9)
	17:04			18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:22	17:12	16:21	16:17	25	10:10 (9)
28	08:28			07:26	06:19	06:06	05:14	05:04	05:40	06:33	07:29	07:25	08:23	08:52		09:45 (9)
	17:06			18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18	26	10:11 (9)
29	08:27				07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52		09:46 (9)
	17:08				20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19	25	10:11 (9)
30	08:25				07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26	08:52		09:47 (9)
	17:10				20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20	24	10:11 (9)
31	08:23				07:11		05:11		05:44	06:39		07:30		08:52		09:47 (9)
	17:12				20:06		21:52		21:35	20:29		17:04		16:21	25	10:12 (9)
Potential sun hours	250			273	367	420	494	510	513	460	382	328	259	233		
Total, worst case		190													700	
Sun reduction		0.16													0.12	
Oper. time red.		1.00													1.00	
Wind dir. red.		0.61													0.61	
Total reduction		0.10													0.07	
Total, real		19													51	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** G - H007

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March		April		May		June	
1	08:52		08:22		07:24		07:09		07:33 (5)		06:00	
	16:23		17:14		18:10		20:08	29	08:02 (5)		21:04	
2	08:52		08:20		07:22		07:07		07:31 (5)		05:58	
	16:24		17:16		18:12		20:10	31	08:02 (5)		21:06	
3	08:52		08:19		07:20		07:04		07:28 (5)		05:56	
	16:25		17:18		18:14		20:12	34	08:02 (5)		21:07	
4	08:52		08:17		07:17		07:02		07:27 (5)		05:54	
	16:26		17:20		18:16		20:14	35	08:02 (5)		21:09	
5	08:51		08:15		07:15		06:59		07:26 (5)		05:52	
	16:27		17:22		18:17		20:16	35	08:01 (5)		21:11	
6	08:51		08:13		07:13		06:57		07:27 (5)		05:50	
	16:29		17:24		18:19		20:18	33	08:00 (5)		21:13	
7	08:51		08:11		07:10		06:55		07:27 (5)		05:48	
	16:30		17:26		18:21		20:19	33	08:00 (5)		21:15	3
8	08:50		08:09		07:08		06:52		07:27 (5)		05:46	
	16:31		17:28		18:23		20:21	31	07:58 (5)		21:16	6
9	08:49		08:07		07:05		06:50		07:28 (5)		05:44	
	16:33		17:30		18:25		20:23	29	07:57 (5)		21:18	9
10	08:49		08:05		07:03		06:47		07:28 (5)		05:42	
	16:34		17:32		18:27		20:25	27	07:55 (5)		21:20	12
11	08:48		08:04		07:01		06:45		07:29 (5)		05:40	
	16:36		17:34		18:29		20:27	25	07:54 (5)		21:22	15
12	08:47		08:02		06:58	07:22 (6)	06:43		07:31 (5)		05:39	
	16:37		17:36		18:31	1 07:23 (6)	20:29	22	07:53 (5)		21:23	17
13	08:47		07:59		06:56	07:20 (6)	06:40		07:32 (5)		05:37	
	16:39		17:38		18:33	5 07:25 (6)	20:30	17	07:49 (5)		21:25	19
14	08:46		07:57		06:53	07:17 (6)	06:38		07:35 (5)		05:35	
	16:41		17:40		18:35	8 07:25 (6)	20:32	11	07:46 (5)		21:27	22
15	08:45		07:55		06:51	07:15 (6)	06:36				05:33	
	16:42		17:42		18:37	12 07:27 (6)	20:34				21:28	24
16	08:44		07:53		06:49	07:12 (6)	06:33				05:32	
	16:44		17:44		18:38	15 07:27 (6)	20:36				21:30	26
17	08:43		07:51		06:46	07:10 (6)	06:31				05:30	
	16:46		17:46		18:40	17 07:27 (6)	20:38				21:32	27
18	08:42		07:49		06:44	07:07 (6)	06:29				05:28	
	16:47		17:48		18:42	20 07:27 (6)	20:40				21:33	29
19	08:41		07:47		06:41	07:05 (6)	06:26				05:27	
	16:49		17:50		18:44	22 07:27 (6)	20:42				21:35	31
20	08:39		07:45		06:39	07:03 (6)	06:24				05:25	
	16:51		17:52		18:46	24 07:27 (6)	20:43				21:37	32
21	08:38		07:43		06:36	07:01 (6)	06:22				05:24	
	16:53		17:54		18:48	25 07:26 (6)	20:45				21:38	34
22	08:37		07:40		06:34	07:01 (6)	06:20				05:22	
	16:55		17:56		18:50	25 07:26 (6)	20:47				21:40	35
23	08:36		07:38		06:31	07:01 (6)	06:17				05:21	
	16:57		17:58		18:52	23 07:24 (6)	20:49				21:41	37
24	08:34		07:36		06:29	06:53 (5)	06:15				05:20	
	16:58		18:00		18:53	22 07:23 (6)	20:51				21:43	38
25	08:33		07:34		06:26	06:50 (5)	06:13				05:18	
	17:00		18:02		18:55	25 07:21 (6)	20:53				21:44	38
26	08:31		07:31		06:24	06:48 (5)	06:11				05:17	
	17:02		18:04		18:57	25 07:19 (6)	20:55				21:46	38
27	08:30		07:29		06:22	06:45 (5)	06:08				05:16	
	17:04		18:06		18:59	22 07:15 (6)	20:56				21:47	38
28	08:28		07:27		06:19	06:43 (5)	06:06				05:15	
	17:06		18:08		19:01	18 07:01 (5)	20:58				21:49	37
29	08:27				07:17	07:40 (5)	06:04				05:14	
	17:08				20:03	21 08:01 (5)	21:00				21:50	37
30	08:25				07:14	07:38 (5)	06:02				05:12	
	17:10				20:05	24 08:02 (5)	21:02				21:51	37
31	08:24				07:12	07:35 (5)					05:11	
	17:12				20:06	27 08:02 (5)					21:52	37
Potential sun hours	250		273		367		420		494		510	
Total, worst case						381		392		678		969
Sun reduction						0.22		0.31		0.31		0.26
Oper. time red.						1.00		1.00		1.00		1.00
Wind dir. red.						0.64		0.65		0.64		0.64
Total reduction						0.14		0.20		0.20		0.17
Total, real						54		78		137		162

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** G - H007

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July			August			September			October			November	December
1	05:07		05:59 (4)	05:46		06:17 (4)	06:41		07:28 (5)	07:34		08:01 (6)	07:33	08:28
	22:09	32	06:31 (4)	21:33	16	06:33 (4)	20:26	25	07:53 (5)	19:13	2	08:03 (6)	17:02	16:18
2	05:07		05:58 (4)	05:48		06:19 (4)	06:43		07:27 (5)	07:36			07:34	08:29
	22:08	33	06:31 (4)	21:31	14	06:33 (4)	20:24	27	07:54 (5)	19:10			17:00	16:17
3	05:08		05:59 (4)	05:50		06:20 (4)	06:44		07:26 (5)	07:38			07:36	08:31
	22:08	33	06:32 (4)	21:29	11	06:31 (4)	20:22	29	07:55 (5)	19:08			16:58	16:16
4	05:09		05:59 (4)	05:52		06:22 (4)	06:46		07:24 (5)	07:40			07:38	08:32
	22:07	33	06:32 (4)	21:28	8	06:30 (4)	20:19	31	07:55 (5)	19:05			16:56	16:16
5	05:10		05:59 (4)	05:53		06:23 (4)	06:48		07:23 (5)	07:41			07:40	08:33
	22:07	34	06:33 (4)	21:26	5	06:28 (4)	20:17	33	07:56 (5)	19:03			16:54	16:15
6	05:11		05:59 (4)	05:55		06:25 (4)	06:50		07:23 (5)	07:43			07:42	08:35
	22:06	34	06:33 (4)	21:24	2	06:27 (4)	20:14	33	07:56 (5)	19:00			16:52	16:14
7	05:12		05:59 (4)	05:57			06:51		07:22 (5)	07:45			07:44	08:36
	22:05	35	06:34 (4)	21:22			20:12	34	07:56 (5)	18:58			16:50	16:14
8	05:13		05:58 (4)	05:58			06:53		07:21 (5)	07:47			07:46	08:37
	22:05	35	06:33 (4)	21:20			20:09	35	07:56 (5)	18:56			16:49	16:14
9	05:14		05:58 (4)	06:00			06:55		07:22 (5)	07:49			07:48	08:39
	22:04	36	06:34 (4)	21:18			20:07	34	07:56 (5)	18:53			16:47	16:13
10	05:15		05:59 (4)	06:02			06:57		07:24 (5)	07:51			07:50	08:40
	22:03	36	06:35 (4)	21:16			20:05	32	07:56 (5)	18:51			16:45	16:13
11	05:16		05:59 (4)	06:04			06:59		07:25 (5)	07:53			07:52	08:41
	22:02	36	06:35 (4)	21:14			20:02	29	07:54 (5)	18:48			16:43	16:13
12	05:17		05:59 (4)	06:05			07:00		07:27 (5)	07:54			07:54	08:42
	22:01	37	06:36 (4)	21:12			20:00	27	07:54 (5)	18:46			16:42	16:12
13	05:18		05:59 (4)	06:07			07:02		07:29 (5)	07:56			07:56	08:43
	22:00	37	06:36 (4)	21:10			19:57	24	07:53 (5)	18:44			16:40	16:12
14	05:20		05:58 (4)	06:09			07:04		07:30 (5)	07:58			07:58	08:44
	21:59	38	06:36 (4)	21:08			19:55	22	07:52 (5)	18:41			16:38	16:12
15	05:21		05:58 (4)	06:11			07:06		07:32 (5)	08:00			08:00	08:45
	21:58	38	06:36 (4)	21:05			19:52	19	07:51 (5)	18:39			16:37	16:12
16	05:22		05:58 (4)	06:12			07:07		07:34 (5)	08:02			08:01	08:46
	21:57	38	06:36 (4)	21:03			19:50	18	08:02 (6)	18:37			16:35	16:12
17	05:23		05:59 (4)	06:14			07:09		07:36 (5)	08:04			08:03	08:47
	21:56	38	06:37 (4)	21:01			19:47	25	08:07 (6)	18:34			16:34	16:13
18	05:25		05:59 (4)	06:16			07:11		07:37 (5)	08:06			08:05	08:48
	21:55	38	06:37 (4)	20:59			19:45	25	08:08 (6)	18:32			16:32	16:13
19	05:26		05:58 (4)	06:18			07:13		07:39 (5)	08:07			08:07	08:48
	21:53	39	06:37 (4)	20:57			19:42	23	08:09 (6)	18:30			16:31	16:13
20	05:28		06:00 (4)	06:20			07:14		07:48 (6)	08:09			08:09	08:49
	21:52	37	06:37 (4)	20:54			19:40	22	08:10 (6)	18:28			16:30	16:13
21	05:29		06:01 (4)	06:21			07:16		07:47 (6)	08:11			08:11	08:50
	21:51	36	06:37 (4)	20:52			19:37	24	08:11 (6)	18:25			16:28	16:14
22	05:31		06:02 (4)	06:23			07:18		07:46 (6)	08:13			08:12	08:50
	21:49	35	06:37 (4)	20:50			19:35	25	08:11 (6)	18:23			16:27	16:14
23	05:32		06:04 (4)	06:25			07:20		07:46 (6)	08:15			08:14	08:51
	21:48	33	06:37 (4)	20:48			19:32	25	08:11 (6)	18:21			16:26	16:15
24	05:34		06:05 (4)	06:27			07:22		07:48 (6)	08:17			08:16	08:51
	21:46	32	06:37 (4)	20:45			19:30	23	08:11 (6)	18:19			16:25	16:15
25	05:35		06:06 (4)	06:28			07:23		07:50 (6)	07:19			08:18	08:52
	21:45	30	06:36 (4)	20:43			19:27	21	08:11 (6)	17:17			16:23	16:16
26	05:37		06:08 (4)	06:30			07:25		07:51 (6)	07:21			08:19	08:52
	21:43	28	06:36 (4)	20:41			19:25	18	08:09 (6)	17:14			16:22	16:17
27	05:38		06:09 (4)	06:32			07:27		07:53 (6)	07:23			08:21	08:52
	21:42	27	06:36 (4)	20:38			19:23	16	08:09 (6)	17:12			16:21	16:18
28	05:40		06:11 (4)	06:34			07:29		07:55 (6)	07:25			08:23	08:52
	21:40	25	06:36 (4)	20:36			19:20	13	08:08 (6)	17:10			16:20	16:18
29	05:42		06:12 (4)	06:36		07:36 (5)	07:31		07:57 (6)	07:27			08:24	08:52
	21:38	23	06:35 (4)	20:34	11	07:47 (5)	19:18	10	08:07 (6)	17:08			16:19	16:19
30	05:43		06:14 (4)	06:37		07:33 (5)	07:32		07:59 (6)	07:29			08:26	08:52
	21:37	21	06:35 (4)	20:31	17	07:50 (5)	19:15	6	08:05 (6)	17:06			16:19	16:20
31	05:45		06:15 (4)	06:39		07:31 (5)				07:31				08:52
	21:35	19	06:34 (4)	20:29	22	07:53 (5)				17:04				16:21
Potential sun hours	512			460			382			328			259	233
Total, worst case		1026			106			728			2			
Sun reduction		0.22			0.26			0.25			0.23			
Oper. time red.		1.00			1.00			1.00			1.00			
Wind dir. red.		0.64			0.65			0.64			0.64			
Total reduction		0.14			0.17			0.16			0.14			
Total, real		148			18			118			0			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** H - H008

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:10	20:08	21:04	21:54	22:08	21:33	20:26	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:09	05:07	05:48	06:43	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:14	20:12	21:07	21:56	22:08	21:29	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:51	06:46	07:40	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52	05:07	05:10	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	21:58	22:06	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:55	05:48	05:06	05:12	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:56	16:49	16:13
9	08:49	08:07	07:05	06:50	05:44	05:04	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:01	06:45	05:40	05:03	05:16	06:04	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:13
12	08:47	08:01	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	22:00	21:09	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:34	16:13
18	08:42	07:49	06:44	06:29	05:28	05:02	05:25	06:16	07:11	08:05	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:28	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:28	16:30	16:13
21	08:38	07:42	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	05:02	05:31	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	21:44	22:09	21:45	20:43	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:41	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:22	17:12	16:21	16:17
28	08:28	07:27	06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:14	05:05	05:41	06:35	07:30	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:29	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:12		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** I - H009

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:10	20:08	21:04	21:54	22:08	21:33	20:26	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:09	05:07	05:48	06:43	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12	21:07	21:56	22:08	21:29	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:51	06:46	07:40	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52	05:07	05:10	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	21:58	22:06	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:55	05:48	05:06	05:12	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:56	16:49	16:13
9	08:49	08:07	07:05	06:50	05:44	05:04	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:01	06:45	05:40	05:03	05:16	06:04	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:13
12	08:47	08:01	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	22:00	21:09	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	05:33	05:02	05:21	06:11	07:06	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:07	21:56	21:01	19:47	18:34	16:34	16:12
18	08:42	07:49	06:43	06:29	05:28	05:02	05:25	06:16	07:11	08:05	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:28	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:28	16:30	16:13
21	08:38	07:42	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:10	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	05:02	05:31	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34	06:27	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	21:44	22:09	21:45	20:43	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:27	06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:12		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** J - H010

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February	March	April	May	June	July	August	September	October	November			December		
1	08:52		09:59 (9)	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32			08:27		09:02 (10)
	16:22	65	12:50 (8)	17:14	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02			16:17	45	10:25 (9)
2	08:52		10:00 (9)	08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34			08:29		09:04 (10)
	16:23	64	12:50 (8)	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00			16:17	45	10:26 (9)
3	08:52		10:01 (9)	08:18	07:19	07:04	05:56	05:08	05:08	05:49	06:44	07:38	07:36			08:30		09:05 (10)
	16:24	61	12:49 (8)	17:18	18:13	20:12	21:07	21:56	22:08	21:29	20:21	19:07	16:58			16:16	44	10:26 (9)
4	08:52		10:01 (9)	08:17	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38			08:32		09:07 (10)
	16:26	57	12:48 (8)	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56			16:15	43	10:27 (9)
5	08:51		10:03 (9)	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40			08:33		09:09 (10)
	16:27	52	12:47 (8)	17:22	18:17	20:15	21:11	21:58	22:06	21:26	20:17	19:03	16:54			16:15	43	10:29 (9)
6	08:51		09:24 (10)	08:13	07:12	06:57	05:50	05:06	05:10	05:55	06:49	07:43	07:42			08:35		09:10 (10)
	16:28	44	12:42 (8)	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52			16:14	42	10:29 (9)
7	08:50		09:23 (10)	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44			08:36		09:49 (9)
	16:30	43	10:43 (9)	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50			16:14	51	12:32 (8)
8	08:50		09:23 (10)	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46			08:37		09:49 (9)
	16:31	43	10:43 (9)	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:55	16:48			16:13	57	12:36 (8)
9	08:49		09:22 (10)	08:07	07:05	06:50	05:44	05:04	05:13	06:00	06:55	07:49	07:48			08:39		09:49 (9)
	16:32	44	10:43 (9)	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47			16:13	60	12:37 (8)
10	08:49		09:21 (10)	08:05	07:03	06:47	05:42	05:04	05:14	06:02	06:56	07:50	07:50			08:40		09:49 (9)
	16:34	45	10:43 (9)	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45			16:12	63	12:39 (8)
11	08:48		09:20 (10)	08:03	07:00	06:45	05:40	05:03	05:16	06:03	06:58	07:52	07:52			08:41		09:50 (9)
	16:35	45	10:43 (9)	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43			16:12	65	12:41 (8)
12	08:47		09:19 (10)	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54		08:50 (10)	08:42		09:51 (9)
	16:37	47	10:43 (9)	17:36	18:31	20:28	21:23	22:05	22:01	21:12	19:59	18:46	16:41	8	08:58 (10)	16:12	67	12:42 (8)
13	08:46		09:18 (10)	07:59	06:56	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:56		08:48 (10)	08:43		09:51 (9)
	16:39	46	10:42 (9)	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	13	09:01 (10)	16:12	68	12:43 (8)
14	08:45		09:17 (10)	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57		08:46 (10)	08:44		09:51 (9)
	16:40	46	10:42 (9)	17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38	16	09:02 (10)	16:12	70	12:44 (8)
15	08:45		09:16 (10)	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59		08:45 (10)	08:45		09:52 (9)
	16:42	47	10:42 (9)	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	19	09:04 (10)	16:12	70	12:45 (8)
16	08:44		09:15 (10)	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01		08:44 (10)	08:46		09:52 (9)
	16:44	46	10:41 (9)	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	21	09:05 (10)	16:12	72	12:46 (8)
17	08:43		09:14 (10)	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03		08:44 (10)	08:47		09:53 (9)
	16:45	46	10:41 (9)	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:33	22	09:06 (10)	16:12	73	12:47 (8)
18	08:42		09:12 (10)	07:49	06:43	06:28	05:28	05:02	05:24	06:16	07:11	08:05	08:05		08:44 (10)	08:48		09:52 (9)
	16:47	45	10:39 (9)	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	24	09:08 (10)	16:12	73	12:47 (8)
19	08:40		09:11 (10)	07:47	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07		08:44 (10)	08:48		09:53 (9)
	16:49	43	10:38 (9)	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	24	09:08 (10)	16:13	74	12:48 (8)
20	08:39		09:10 (10)	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09		08:44 (10)	08:49		09:54 (9)
	16:51	42	10:37 (9)	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29	25	09:09 (10)	16:13	74	12:49 (8)
21	08:38		09:08 (10)	07:42	06:36	06:21	05:24	05:02	05:29	06:21	07:16	08:11	08:10		08:44 (10)	08:50		09:54 (9)
	16:52	37	10:34 (9)	17:54	18:48	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	37	10:10 (9)	16:13	74	12:49 (8)
22	08:37		09:09 (10)	07:40	06:34	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12		08:46 (10)	08:50		09:55 (9)
	16:54	25	09:34 (10)	17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	42	10:13 (9)	16:14	74	12:50 (8)
23	08:35		09:09 (10)	07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15	08:14		08:48 (10)	08:51		09:55 (9)
	16:56	24	09:33 (10)	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	43	10:15 (9)	16:14	74	12:50 (8)
24	08:34		09:10 (10)	07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16		08:49 (10)	08:51		09:55 (9)
	16:58	24	09:34 (10)	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24	45	10:16 (9)	16:15	74	12:50 (8)
25	08:33		09:11 (10)	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:18		08:51 (10)	08:51		09:56 (9)
	17:00	22	09:33 (10)	18:02	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	46	10:18 (9)	16:16	73	12:51 (8)
26	08:31		09:11 (10)	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19		08:53 (10)	08:52		09:56 (9)
	17:02	21	09:32 (10)	18:04	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22	46	10:19 (9)	16:16	74	12:51 (8)
27	08:30		09:13 (10)	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21		08:55 (10)	08:52		09:57 (9)
	17:04	19	09:32 (10)	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	47	10:21 (9)	16:17	72	12:51 (8)
28	08:28		09:14 (10)	07:26	06:19	06:06	05:14	05:04	05:40	06:33	07:29	07:25	08:23		08:57 (10)	08:52		09:57 (9)
	17:06	16	09:30 (10)	18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	46	10:22 (9)	16:18	71	12:51 (8)
29	08:27		09:16 (10)		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24		08:59 (10)	08:52		09:58 (9)
	17:08	13	09:29 (10)		20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	46	10:23 (9)	16:19	71	12:51 (8)
30	08:25		09:19 (10)		07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26		09:00 (10)	08:52		09:59 (9)
	17:10	7	09:26 (10)		20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	46	10:24 (9)	16:20	68	12:51 (8)
31	08:23				07:11		05:11		05:44	06:39		07:30				08:52		09:59 (9)
	17:12				20:06		21:52		21:35	20:29		17:04				16:21	68	12:51 (8)
Potential sun hours	250			273	367	420	494	510	513	460	382	328	259			233		
Total, worst case		1179												616			1992	
Sun reduction		0.16												0.20			0.12	
Oper. time red.		1.00												1.00			1.00	
Wind dir. red.		0.62												0.61			0.63	
Total reduction		0.10												0.12			0.08	
Total, real		118												75			150	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** K - H011

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March		April			May			June		
1	08:52		08:22		07:24		07:09			06:00		19:45 (11)	05:10		20:59 (9)
	16:22		17:14		18:09		20:08			21:03	34	20:19 (11)	21:53	20	21:19 (9)
2	08:52		08:20		07:22		07:06			05:58		19:45 (11)	05:09		20:59 (9)
	16:23		17:15		18:11		20:10			21:05	33	20:18 (11)	21:55	21	21:20 (9)
3	08:52		08:18		07:19		07:04			05:55		19:47 (11)	05:08		20:58 (9)
	16:24		17:17		18:13		20:12			21:07	32	20:19 (11)	21:56	23	21:21 (9)
4	08:51		08:16		07:17		07:02			05:53		19:47 (11)	05:07		20:59 (9)
	16:26		17:19		18:15		20:13			21:09	31	20:18 (11)	21:57	23	21:22 (9)
5	08:51		08:15		07:15		06:59			05:51		19:48 (11)	05:07		20:59 (9)
	16:27		17:21		18:17		20:15			21:11	29	20:17 (11)	21:58	24	21:23 (9)
6	08:51		08:13		07:12		06:57			05:49		19:49 (11)	05:06		20:59 (9)
	16:28		17:23		18:19		20:17			21:12	26	20:15 (11)	21:59	24	21:23 (9)
7	08:50		08:11		07:10		06:54			05:48		19:50 (11)	05:05		21:00 (9)
	16:30		17:26		18:21		20:19			21:14	24	20:14 (11)	22:00	25	21:25 (9)
8	08:50		08:09		07:08		06:52			05:46		19:51 (11)	05:05		20:59 (9)
	16:31		17:28		18:23		20:21			21:16	21	20:12 (11)	22:01	26	21:25 (9)
9	08:49		08:07		07:05		06:49			05:44		19:53 (11)	05:04		21:00 (9)
	16:32		17:30		18:25		20:23			21:18	19	20:12 (11)	22:02	26	21:26 (9)
10	08:48		08:05		07:03		06:47			05:42		19:55 (11)	05:04		21:01 (9)
	16:34		17:32		18:27		20:25			21:19	14	20:09 (11)	22:03	27	21:28 (9)
11	08:48		08:03		07:00		06:45			05:40		19:58 (11)	05:03		21:00 (9)
	16:35		17:34		18:29		20:26			21:21	7	20:05 (11)	22:04	28	21:28 (9)
12	08:47		08:01		06:58		06:42			05:38			05:03		21:01 (9)
	16:37		17:36		18:31		20:28			21:23			22:04	28	21:29 (9)
13	08:46		07:59		06:55		06:40			05:36			05:02		21:01 (9)
	16:39		17:38		18:32		20:30			21:25			22:05	28	21:29 (9)
14	08:45		07:57		06:53		06:38		20:02 (11)	05:35			05:02		21:02 (9)
	16:40		17:40		18:34		20:32	2	20:04 (11)	21:26			22:06	28	21:30 (9)
15	08:44		07:55		06:51		06:35		19:57 (11)	05:33			05:02		21:01 (9)
	16:42		17:42		18:36		20:34	8	20:05 (11)	21:28			22:06	28	21:29 (9)
16	08:43		07:53		06:48		06:33		19:55 (11)	05:31			05:02		21:01 (9)
	16:44		17:44		18:38		20:36	12	20:07 (11)	21:30			22:07	28	21:29 (9)
17	08:42		07:51		06:46		06:31		19:53 (11)	05:30			05:02		21:02 (9)
	16:45		17:46		18:40		20:38	16	20:09 (11)	21:31			22:07	28	21:30 (9)
18	08:41		07:49		06:43		06:28		19:51 (11)	05:28			05:02		21:02 (9)
	16:47		17:48		18:42		20:39	20	20:11 (11)	21:33			22:08	28	21:30 (9)
19	08:40		07:47		06:41		06:26		19:49 (11)	05:27			05:02		21:02 (9)
	16:49		17:50		18:44		20:41	23	20:12 (11)	21:35			22:08	28	21:30 (9)
20	08:39		07:44		06:38		06:24		19:48 (11)	05:25		21:02 (9)	05:02		21:03 (9)
	16:51		17:52		18:46		20:43	26	20:14 (11)	21:36	2	21:04 (9)	22:08	28	21:31 (9)
21	08:38		07:42		06:36		06:21		19:48 (11)	05:24		21:01 (9)	05:02		21:03 (9)
	16:52		17:54		18:47		20:45	28	20:16 (11)	21:38	3	21:04 (9)	22:09	28	21:31 (9)
22	08:37		07:40		06:33		06:19		19:47 (11)	05:22		21:00 (9)	05:02		21:03 (9)
	16:54		17:56		18:49		20:47	31	20:18 (11)	21:39	6	21:06 (9)	22:09	28	21:31 (9)
23	08:35		07:38		06:31		06:17		19:47 (11)	05:21		21:00 (9)	05:02		21:03 (9)
	16:56		17:58		18:51		20:49	33	20:20 (11)	21:41	8	21:08 (9)	22:09	28	21:31 (9)
24	08:34		07:35		06:29		06:15		19:46 (11)	05:19		21:00 (9)	05:02		21:04 (9)
	16:58		18:00		18:53		20:50	36	20:22 (11)	21:42	9	21:09 (9)	22:09	28	21:32 (9)
25	08:33		07:33		06:26		06:12		19:46 (11)	05:18		21:00 (9)	05:03		21:04 (9)
	17:00		18:01		18:55		20:52	36	20:22 (11)	21:44	11	21:11 (9)	22:09	28	21:32 (9)
26	08:31		07:31		06:24		06:10		19:45 (11)	05:17		20:58 (9)	05:03		21:04 (9)
	17:02		18:03		18:57		20:54	36	20:21 (11)	21:45	13	21:11 (9)	22:09	27	21:31 (9)
27	08:30		07:29		06:21		06:08		19:45 (11)	05:15		20:58 (9)	05:04		21:04 (9)
	17:04		18:05		18:59		20:56	36	20:21 (11)	21:47	14	21:12 (9)	22:09	28	21:32 (9)
28	08:28		07:26		06:19		06:06		19:45 (11)	05:14		20:58 (9)	05:04		21:04 (9)
	17:06		18:07		19:00		20:58	35	20:20 (11)	21:48	16	21:14 (9)	22:09	28	21:32 (9)
29	08:27				07:16		06:04		19:45 (11)	05:13		20:58 (9)	05:05		21:04 (9)
	17:08				20:02		21:00	35	20:20 (11)	21:50	17	21:15 (9)	22:09	29	21:33 (9)
30	08:25				07:14		06:02		19:45 (11)	05:12		20:58 (9)	05:05		21:05 (9)
	17:10				20:04		21:02	35	20:20 (11)	21:51	18	21:16 (9)	22:08	28	21:33 (9)
31	08:23				07:11					05:11		20:59 (9)			
	17:12				20:06					21:52	19	21:18 (9)			
Potential sun hours	250		273		367		420			494			510		
Total, worst case							448			406			799		
Sun reduction							0.31			0.31			0.26		
Oper. time red.							1.00			1.00			1.00		
Wind dir. red.							0.63			0.62			0.60		
Total reduction							0.19			0.19			0.16		
Total, real							86			79			124		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** K - H011

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July			August			September	October	November	December
1	05:06		21:04 (9)	05:46			06:40	07:34	07:32	08:27
	22:08	28	21:32 (9)	21:33			20:26	19:12	17:02	16:17
2	05:07		21:05 (9)	05:48		20:07 (11)	06:42	07:36	07:34	08:29
	22:08	27	21:32 (9)	21:31	10	20:17 (11)	20:24	19:10	17:00	16:16
3	05:08		21:05 (9)	05:49		20:04 (11)	06:44	07:37	07:36	08:30
	22:07	27	21:32 (9)	21:29	16	20:20 (11)	20:21	19:07	16:58	16:16
4	05:08		21:06 (9)	05:51		20:02 (11)	06:46	07:39	07:38	08:32
	22:07	26	21:32 (9)	21:27	20	20:22 (11)	20:19	19:05	16:56	16:15
5	05:09		21:05 (9)	05:53		20:01 (11)	06:48	07:41	07:40	08:33
	22:06	25	21:30 (9)	21:25	22	20:23 (11)	20:16	19:03	16:54	16:15
6	05:10		21:05 (9)	05:55		20:00 (11)	06:49	07:43	07:42	08:35
	22:06	25	21:30 (9)	21:23	25	20:25 (11)	20:14	19:00	16:52	16:14
7	05:11		21:05 (9)	05:56		19:58 (11)	06:51	07:45	07:44	08:36
	22:05	25	21:30 (9)	21:22	27	20:25 (11)	20:12	18:58	16:50	16:14
8	05:12		21:06 (9)	05:58		19:57 (11)	06:53	07:47	07:46	08:37
	22:04	23	21:29 (9)	21:20	29	20:26 (11)	20:09	18:55	16:48	16:13
9	05:13		21:06 (9)	06:00		19:56 (11)	06:55	07:48	07:48	08:38
	22:04	22	21:28 (9)	21:18	30	20:26 (11)	20:07	18:53	16:46	16:13
10	05:14		21:06 (9)	06:02		19:55 (11)	06:56	07:50	07:50	08:40
	22:03	22	21:28 (9)	21:15	32	20:27 (11)	20:04	18:50	16:45	16:12
11	05:16		21:06 (9)	06:03		19:55 (11)	06:58	07:52	07:52	08:41
	22:02	21	21:27 (9)	21:13	33	20:28 (11)	20:02	18:48	16:43	16:12
12	05:17		21:06 (9)	06:05		19:53 (11)	07:00	07:54	07:53	08:42
	22:01	20	21:26 (9)	21:11	35	20:28 (11)	19:59	18:46	16:41	16:12
13	05:18		21:06 (9)	06:07		19:53 (11)	07:02	07:56	07:55	08:43
	22:00	19	21:25 (9)	21:09	35	20:28 (11)	19:57	18:43	16:40	16:12
14	05:19		21:08 (9)	06:09		19:53 (11)	07:03	07:58	07:57	08:44
	21:59	17	21:25 (9)	21:07	36	20:29 (11)	19:54	18:41	16:38	16:12
15	05:20		21:08 (9)	06:10		19:52 (11)	07:05	08:00	07:59	08:45
	21:58	16	21:24 (9)	21:05	36	20:28 (11)	19:52	18:39	16:36	16:12
16	05:22		21:08 (9)	06:12		19:52 (11)	07:07	08:01	08:01	08:46
	21:57	15	21:23 (9)	21:03	36	20:28 (11)	19:49	18:36	16:35	16:12
17	05:23		21:08 (9)	06:14		19:52 (11)	07:09	08:03	08:03	08:47
	21:55	13	21:21 (9)	21:01	36	20:28 (11)	19:47	18:34	16:33	16:12
18	05:24		21:08 (9)	06:16		19:52 (11)	07:11	08:05	08:05	08:47
	21:54	12	21:20 (9)	20:58	35	20:27 (11)	19:44	18:32	16:32	16:12
19	05:26		21:09 (9)	06:17		19:52 (11)	07:12	08:07	08:07	08:48
	21:53	11	21:20 (9)	20:56	35	20:27 (11)	19:42	18:30	16:31	16:13
20	05:27		21:09 (9)	06:19		19:52 (11)	07:14	08:09	08:08	08:49
	21:52	9	21:18 (9)	20:54	33	20:25 (11)	19:39	18:27	16:29	16:13
21	05:29		21:10 (9)	06:21		19:52 (11)	07:16	08:11	08:10	08:49
	21:50	7	21:17 (9)	20:52	30	20:22 (11)	19:37	18:25	16:28	16:13
22	05:30		21:11 (9)	06:23		19:53 (11)	07:18	08:13	08:12	08:50
	21:49	5	21:16 (9)	20:49	28	20:21 (11)	19:34	18:23	16:27	16:14
23	05:32		21:12 (9)	06:24		19:53 (11)	07:19	08:15	08:14	08:50
	21:47	2	21:14 (9)	20:47	26	20:19 (11)	19:32	18:21	16:25	16:14
24	05:33			06:26		19:53 (11)	07:21	08:17	08:16	08:51
	21:46			20:45	23	20:16 (11)	19:30	18:18	16:24	16:15
25	05:35			06:28		19:54 (11)	07:23	07:19	08:17	08:51
	21:44			20:43	20	20:14 (11)	19:27	17:16	16:23	16:16
26	05:36			06:30		19:56 (11)	07:25	07:21	08:19	08:51
	21:43			20:40	16	20:12 (11)	19:25	17:14	16:22	16:16
27	05:38			06:32		19:57 (11)	07:27	07:22	08:21	08:52
	21:41			20:38	12	20:09 (11)	19:22	17:12	16:21	16:17
28	05:40			06:33		19:59 (11)	07:28	07:24	08:22	08:52
	21:40			20:36	8	20:07 (11)	19:20	17:10	16:20	16:18
29	05:41			06:35		20:03 (11)	07:30	07:26	08:24	08:52
	21:38			20:33	2	20:05 (11)	19:17	17:08	16:19	16:19
30	05:43			06:37			07:32	07:28	08:26	08:52
	21:36			20:31			19:15	17:06	16:18	16:20
31	05:44			06:39				07:30		08:52
	21:35			20:28				17:04		16:21
Potential sun hours	512			460			382	328	259	233
Total, worst case		417			726					
Sun reduction		0.22			0.26					
Oper. time red.		1.00			1.00					
Wind dir. red.		0.60			0.63					
Total reduction		0.13			0.16					
Total, real		56			117					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** L - H012

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February			March			April			May		June
1	08:52		13:39 (7)	08:22		15:40 (6)	07:24		16:58 (5)	07:09		19:08 (4)	06:00		05:10
	16:22	49	14:28 (7)	17:14	39	16:19 (6)	18:10	28	17:26 (5)	20:08	30	19:38 (4)	21:04		21:54
2	08:52		13:40 (7)	08:20		15:40 (6)	07:22		16:59 (5)	07:07		19:07 (4)	05:58		05:09
	16:24	51	15:46 (6)	17:16	38	16:18 (6)	18:12	26	17:25 (5)	20:10	30	19:43 (3)	21:05		21:55
3	08:52		13:41 (7)	08:18		15:41 (6)	07:20		17:00 (5)	07:04		19:08 (4)	05:56		05:08
	16:25	52	15:47 (6)	17:18	37	16:18 (6)	18:13	23	17:23 (5)	20:12	33	19:45 (3)	21:07		21:56
4	08:52		13:41 (7)	08:17		15:42 (6)	07:17		17:02 (5)	07:02		19:09 (4)	05:54		05:08
	16:26	53	15:48 (6)	17:20	35	16:17 (6)	18:15	19	17:21 (5)	20:14	33	19:47 (3)	21:09		21:57
5	08:51		13:42 (7)	08:15		15:43 (6)	07:15		17:04 (5)	06:59		19:10 (4)	05:52		05:07
	16:27	56	15:50 (6)	17:22	34	16:17 (6)	18:17	14	17:18 (5)	20:16	33	19:48 (3)	21:11		21:58
6	08:51		13:43 (7)	08:13		15:43 (6)	07:13		17:10 (5)	06:57		19:11 (4)	05:50		05:06
	16:28	57	15:51 (6)	17:24	33	16:16 (6)	18:19	2	17:12 (5)	20:17	32	19:50 (3)	21:13		21:59
7	08:50		13:43 (7)	08:11		15:45 (6)	07:10			06:55		19:13 (4)	05:48		05:05
	16:30	58	15:52 (6)	17:26	30	16:15 (6)	18:21			20:19	30	19:52 (3)	21:14		22:00
8	08:50		13:45 (7)	08:09		15:46 (6)	07:08			06:52		19:16 (4)	05:46		05:05
	16:31	59	15:55 (6)	17:28	28	16:14 (6)	18:23			20:21	26	19:54 (3)	21:16		22:01
9	08:49		13:45 (7)	08:07		15:48 (6)	07:05			06:50		19:37 (3)	05:44		05:04
	16:33	61	15:56 (6)	17:30	25	16:13 (6)	18:25			20:23	19	19:56 (3)	21:18		22:02
10	08:49		13:46 (7)	08:05		15:50 (6)	07:03			06:47		19:37 (3)	05:42		05:04
	16:34	62	15:58 (6)	17:32	21	16:11 (6)	18:27			20:25	20	19:57 (3)	21:20		22:03
11	08:48		13:47 (7)	08:03		15:53 (6)	07:01			06:45		19:38 (3)	05:40		05:03
	16:36	63	15:59 (6)	17:34	16	16:09 (6)	18:29			20:27	21	19:59 (3)	21:21		22:04
12	08:47		13:48 (7)	08:01		15:57 (6)	06:58			06:43		19:39 (3)	05:38		05:03
	16:37	63	16:01 (6)	17:36	8	16:05 (6)	18:31			20:29	19	19:58 (3)	21:23		22:05
13	08:46		13:49 (7)	07:59		17:06 (5)	06:56			06:40		19:39 (3)	05:37		05:03
	16:39	64	16:03 (6)	17:38	3	17:09 (5)	18:33			20:30	17	19:56 (3)	21:25		22:05
14	08:46		13:50 (7)	07:57		17:03 (5)	06:53			06:38		19:41 (3)	05:35		05:02
	16:40	65	16:05 (6)	17:40	7	17:10 (5)	18:35			20:32	13	19:54 (3)	21:27		22:06
15	08:45		13:52 (7)	07:55		17:02 (5)	06:51			06:35		19:44 (3)	05:33		05:02
	16:42	66	16:07 (6)	17:42	10	17:12 (5)	18:36			20:34	7	19:51 (3)	21:28		22:07
16	08:44		13:53 (7)	07:53		17:01 (5)	06:48			06:33			05:32		05:02
	16:44	66	16:09 (6)	17:44	14	17:15 (5)	18:38			20:36			21:30		22:07
17	08:43		13:55 (7)	07:51		17:00 (5)	06:46			06:31			05:30		05:02
	16:46	66	16:11 (6)	17:46	17	17:17 (5)	18:40			20:38			21:32		22:08
18	08:42		13:56 (7)	07:49		16:59 (5)	06:43			06:28			05:28		05:02
	16:47	64	16:12 (6)	17:48	20	17:19 (5)	18:42			20:40			21:33		22:08
19	08:40		13:58 (7)	07:47		16:58 (5)	06:41			06:26			05:27		05:02
	16:49	63	16:14 (6)	17:50	23	17:21 (5)	18:44			20:41			21:35		22:08
20	08:39		14:01 (7)	07:45		16:57 (5)	06:39			06:24			05:25		05:02
	16:51	60	16:15 (6)	17:52	26	17:23 (5)	18:46			20:43			21:37		22:09
21	08:38		14:03 (7)	07:42		16:57 (5)	06:36		18:18 (4)	06:22			05:24		05:02
	16:53	56	16:15 (6)	17:54	29	17:26 (5)	18:48	3	18:21 (4)	20:45			21:38		22:09
22	08:37		14:07 (7)	07:40		16:56 (5)	06:34		18:15 (4)	06:19			05:22		05:02
	16:55	50	16:16 (6)	17:56	31	17:27 (5)	18:50	8	18:23 (4)	20:47			21:40		22:09
23	08:36		15:38 (6)	07:38		16:56 (5)	06:31		18:14 (4)	06:17			05:21		05:02
	16:56	38	16:16 (6)	17:58	33	17:29 (5)	18:51	11	18:25 (4)	20:49			21:41		22:09
24	08:34		15:38 (6)	07:36		16:56 (5)	06:29		18:12 (4)	06:15			05:20		05:03
	16:58	40	16:18 (6)	18:00	33	17:29 (5)	18:53	14	18:26 (4)	20:51			21:43		22:09
25	08:33		15:38 (6)	07:33		16:56 (5)	06:26		18:11 (4)	06:13			05:18		05:03
	17:00	40	16:18 (6)	18:02	32	17:28 (5)	18:55	18	18:29 (4)	20:53			21:44		22:09
26	08:31		15:38 (6)	07:31		16:56 (5)	06:24		18:10 (4)	06:10			05:17		05:04
	17:02	40	16:18 (6)	18:04	32	17:28 (5)	18:57	21	18:31 (4)	20:54			21:46		22:09
27	08:30		15:38 (6)	07:29		16:57 (5)	06:21		18:09 (4)	06:08			05:16		05:04
	17:04	40	16:18 (6)	18:06	31	17:28 (5)	18:59	23	18:32 (4)	20:56			21:47		22:09
28	08:28		15:38 (6)	07:27		16:57 (5)	06:19		18:09 (4)	06:06			05:15		05:04
	17:06	40	16:18 (6)	18:08	29	17:26 (5)	19:01	25	18:34 (4)	20:58			21:48		22:09
29	08:27		15:38 (6)				07:16		19:08 (4)	06:04			05:13		05:05
	17:08	40	16:18 (6)				20:03	28	19:36 (4)	21:00			21:50		22:09
30	08:25		15:39 (6)				07:14		19:08 (4)	06:02			05:12		05:06
	17:10	39	16:18 (6)				20:04	30	19:38 (4)	21:02			21:51		22:09
31	08:24		15:40 (6)				07:12		19:07 (4)				05:11		
	17:12	39	16:19 (6)				20:06	31	19:38 (4)				21:52		
Potential sun hours	250			273			367			420			494		510
Total, worst case		1660			714			324			363				
Sun reduction		0.16			0.19			0.22			0.31				
Oper. time red.		1.00			1.00			1.00			1.00				
Wind dir. red.		0.65			0.65			0.65			0.64				
Total reduction		0.11			0.13			0.14			0.20				
Total, real		175			90			46			72				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** L - H012

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August			September			October			November			December		
1	05:06		05:46			06:41		19:36 (3)	07:34			07:32		15:19 (6)	08:27		13:29 (7)
	22:08		21:33			20:26	22	19:58 (3)	19:13			17:02	22	15:41 (6)	16:18	63	15:41 (6)
2	05:07		05:48			06:42		19:36 (3)	07:36			07:34		15:17 (6)	08:29		13:29 (7)
	22:08		21:31			20:24	20	19:56 (3)	19:10			17:00	26	15:43 (6)	16:17	62	15:41 (6)
3	05:08		05:50			06:44		19:34 (3)	07:38			07:36		15:15 (6)	08:30		13:29 (7)
	22:08		21:29			20:22	19	19:53 (3)	19:08			16:58	29	15:44 (6)	16:16	60	15:39 (6)
4	05:09		05:51			06:46		19:14 (4)	07:40			07:38		15:14 (6)	08:32		13:29 (7)
	22:07		21:28			20:19	25	19:51 (3)	19:05			16:56	31	15:45 (6)	16:15	59	15:39 (6)
5	05:10		05:53			06:48		19:10 (4)	07:41			07:40		15:13 (6)	08:33		13:29 (7)
	22:07		21:26			20:17	30	19:49 (3)	19:03			16:54	33	15:46 (6)	16:15	59	15:39 (6)
6	05:11		05:55			06:50		19:08 (4)	07:43			07:42		15:12 (6)	08:35		13:29 (7)
	22:06		21:24			20:14	32	19:47 (3)	19:00			16:52	35	15:47 (6)	16:14	57	15:37 (6)
7	05:11		05:57			06:51		19:05 (4)	07:45			07:44		15:12 (6)	08:36		13:29 (7)
	22:05		21:22			20:12	34	19:44 (3)	18:58			16:50	36	15:48 (6)	16:14	55	15:36 (6)
8	05:12		05:58			06:53		19:04 (4)	07:47		17:41 (5)	07:46		15:12 (6)	08:37		13:29 (7)
	22:05		21:20			20:09	32	19:41 (3)	18:56	10	17:51 (5)	16:49	37	15:49 (6)	16:13	53	15:36 (6)
9	05:14		06:00			06:55		19:03 (4)	07:49		17:38 (5)	07:48		15:11 (6)	08:39		13:29 (7)
	22:04		21:18			20:07	31	19:39 (3)	18:53	16	17:54 (5)	16:47	38	15:49 (6)	16:13	53	15:36 (6)
10	05:15		06:02			06:57		19:01 (4)	07:51		17:35 (5)	07:50		15:11 (6)	08:40		13:29 (7)
	22:03		21:16			20:04	29	19:36 (3)	18:51	21	17:56 (5)	16:45	38	15:49 (6)	16:13	51	15:35 (6)
11	05:16		06:04			06:58		19:00 (4)	07:52		17:33 (5)	07:52		15:11 (6)	08:41		13:30 (7)
	22:02		21:14			20:02	30	19:30 (4)	18:48	24	17:57 (5)	16:43	39	15:50 (6)	16:12	50	14:20 (7)
12	05:17		06:05			07:00		19:00 (4)	07:54		17:32 (5)	07:54		15:10 (6)	08:42		13:30 (7)
	22:01		21:12			20:00	30	19:30 (4)	18:46	26	17:58 (5)	16:42	40	15:50 (6)	16:12	50	14:20 (7)
13	05:18		06:07			07:02		18:59 (4)	07:56		17:31 (5)	07:56		15:10 (6)	08:43		13:30 (7)
	22:00		21:10			19:57	31	19:30 (4)	18:44	28	17:59 (5)	16:40	40	15:50 (6)	16:12	50	14:20 (7)
14	05:19		06:09			07:04		18:58 (4)	07:58		17:30 (5)	07:58		15:10 (6)	08:44		13:31 (7)
	21:59		21:07			19:55	28	19:26 (4)	18:41	30	18:00 (5)	16:38	40	15:50 (6)	16:12	50	14:21 (7)
15	05:21		06:11			07:05		18:58 (4)	08:00		17:29 (5)	07:59		15:10 (6)	08:45		13:31 (7)
	21:58		21:05			19:52	26	19:24 (4)	18:39	31	18:00 (5)	16:37	40	15:50 (6)	16:12	51	14:22 (7)
16	05:22		06:12			07:07		18:58 (4)	08:02		17:28 (5)	08:01		15:11 (6)	08:46		13:32 (7)
	21:57		21:03			19:50	24	19:22 (4)	18:37	32	18:00 (5)	16:35	39	15:50 (6)	16:12	50	14:22 (7)
17	05:23		06:14			07:09		18:58 (4)	08:04		17:28 (5)	08:03		15:12 (6)	08:47		13:32 (7)
	21:56		21:01			19:47	21	19:19 (4)	18:34	32	18:00 (5)	16:34	39	15:51 (6)	16:12	51	14:23 (7)
18	05:25		06:16			07:11		18:58 (4)	08:05		17:28 (5)	08:05		15:12 (6)	08:48		13:32 (7)
	21:55		20:59			19:45	18	19:16 (4)	18:32	32	18:00 (5)	16:32	39	15:51 (6)	16:13	51	14:23 (7)
19	05:26		06:18			07:13		18:59 (4)	08:07		17:27 (5)	08:07		15:13 (6)	08:48		13:32 (7)
	21:53		20:56			19:42	15	19:14 (4)	18:30	33	18:00 (5)	16:31	38	15:51 (6)	16:13	52	14:24 (7)
20	05:28		06:19			07:14		19:00 (4)	08:09		17:27 (5)	08:09		13:42 (7)	08:49		13:33 (7)
	21:52		20:54			19:40	12	19:12 (4)	18:28	31	17:58 (5)	16:29	50	15:51 (6)	16:13	51	14:24 (7)
21	05:29		06:21			07:16		19:00 (4)	08:11		17:27 (5)	08:11		13:39 (7)	08:50		13:33 (7)
	21:51		20:52			19:37	9	19:09 (4)	18:25	28	17:55 (5)	16:28	56	15:51 (6)	16:14	51	14:24 (7)
22	05:30		06:23			07:18		19:02 (4)	08:13		17:28 (5)	08:12		13:37 (7)	08:50		13:34 (7)
	21:49		20:50			19:35	4	19:06 (4)	18:23	25	17:53 (5)	16:27	60	15:51 (6)	16:14	51	14:25 (7)
23	05:32		06:25			07:20			08:15		17:28 (5)	08:14		13:35 (7)	08:51		13:34 (7)
	21:48		20:47			19:32			18:21	23	17:51 (5)	16:26	63	15:51 (6)	16:15	51	14:25 (7)
24	05:33		06:27			07:21			08:17		17:29 (5)	08:16		13:34 (7)	08:51		13:34 (7)
	21:46		20:45			19:30			18:19	19	17:48 (5)	16:24	64	15:50 (6)	16:15	51	14:25 (7)
25	05:35		06:28			07:23			07:19		16:29 (5)	08:18		13:32 (7)	08:51		13:36 (7)
	21:45		20:43			19:27			17:16	17	16:46 (5)	16:23	65	15:48 (6)	16:16	51	14:27 (7)
26	05:37		06:30			07:25			07:21		16:30 (5)	08:19		13:31 (7)	08:52		13:36 (7)
	21:43		20:41			19:25			17:14	14	16:44 (5)	16:22	66	15:47 (6)	16:17	51	14:27 (7)
27	05:38		06:32			07:27			07:23		16:32 (5)	08:21		13:31 (7)	08:52		13:36 (7)
	21:42		20:38			19:22			17:12	9	16:41 (5)	16:21	66	15:46 (6)	16:17	51	14:27 (7)
28	05:40		06:34		19:44 (3)	07:29			07:25		16:33 (5)	08:23		13:30 (7)	08:52		13:37 (7)
	21:40		20:36	8	19:52 (3)	19:20			17:10	6	16:39 (5)	16:20	65	15:45 (6)	16:18	50	14:27 (7)
29	05:41		06:35		19:41 (3)	07:30			07:27		16:37 (5)	08:24		13:30 (7)	08:52		13:37 (7)
	21:38		20:33	14	19:55 (3)	19:17			17:08	1	16:38 (5)	16:19	64	15:44 (6)	16:19	51	14:28 (7)
30	05:43		06:37		19:40 (3)	07:32			07:29		15:25 (6)	08:26		13:29 (7)	08:52		13:38 (7)
	21:37		20:31	17	19:57 (3)	19:15			17:06	11	15:36 (6)	16:18	64	15:42 (6)	16:20	50	14:28 (7)
31	05:45		06:39		19:37 (3)				07:30		15:22 (6)				08:52		13:39 (7)
	21:35		20:29	20	19:57 (3)				17:04	17	15:39 (6)				16:21	50	14:29 (7)
Potential sun hours	512		460			382			328			259			233		
Total, worst case				59			522			516			1362			1636	
Sun reduction				0.26			0.25			0.23			0.20			0.12	
Oper. time red.				1.00			1.00			1.00			1.00			1.00	
Wind dir. red.				0.64			0.64			0.65			0.65			0.66	
Total reduction				0.16			0.16			0.15			0.13			0.08	
Total, real				10			84			76			176			129	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** M - H013

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February	March	April	May	June	July	August	September	October	November			December		
1	08:52		09:54 (9)	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32			08:27		09:48 (9)
	16:22	26	10:20 (9)	17:14	18:09	20:08	21:04	21:54	22:08	21:33	20:26	19:12	17:02			16:17	10	09:58 (9)
2	08:52		09:55 (9)	08:20	07:22	07:07	05:58	05:09	05:07	05:48	06:42	07:36	07:34			08:29		09:47 (9)
	16:23	25	10:20 (9)	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00			16:17	14	10:01 (9)
3	08:52		09:56 (9)	08:18	07:19	07:04	05:56	05:08	05:08	05:49	06:44	07:38	07:36			08:30		09:46 (9)
	16:24	24	10:20 (9)	17:18	18:13	20:12	21:07	21:56	22:08	21:29	20:21	19:07	16:58			16:16	16	10:02 (9)
4	08:52		09:56 (9)	08:17	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38			08:32		09:45 (9)
	16:26	24	10:20 (9)	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56			16:15	19	10:04 (9)
5	08:51		09:58 (9)	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40			08:33		09:45 (9)
	16:27	22	10:20 (9)	17:22	18:17	20:15	21:11	21:58	22:07	21:26	20:17	19:03	16:54			16:15	20	10:05 (9)
6	08:51		09:59 (9)	08:13	07:12	06:57	05:50	05:06	05:10	05:55	06:49	07:43	07:42			08:35		09:45 (9)
	16:28	21	10:20 (9)	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52			16:14	21	10:06 (9)
7	08:50		09:59 (9)	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44			08:36		09:44 (9)
	16:30	20	10:19 (9)	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50			16:14	22	10:06 (9)
8	08:50		10:01 (9)	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46			08:37		09:45 (9)
	16:31	18	10:19 (9)	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:55	16:48			16:13	23	10:08 (9)
9	08:49		10:02 (9)	08:07	07:05	06:50	05:44	05:04	05:13	06:00	06:55	07:49	07:48			08:39		09:44 (9)
	16:32	17	10:19 (9)	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47			16:13	25	10:09 (9)
10	08:49		10:04 (9)	08:05	07:03	06:47	05:42	05:04	05:14	06:02	06:57	07:50	07:50			08:40		09:44 (9)
	16:34	14	10:18 (9)	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45			16:12	25	10:09 (9)
11	08:48		10:06 (9)	08:03	07:00	06:45	05:40	05:03	05:16	06:03	06:58	07:52	07:52			08:41		09:45 (9)
	16:35	10	10:16 (9)	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43			16:12	26	10:11 (9)
12	08:47		10:09 (9)	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54			08:42		09:45 (9)
	16:37	4	10:13 (9)	17:36	18:31	20:28	21:23	22:05	22:01	21:12	19:59	18:46	16:41			16:12	26	10:11 (9)
13	08:46			07:59	06:56	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:56			08:43		09:45 (9)
	16:39			17:38	18:33	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40			16:12	27	10:12 (9)
14	08:46			07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57			08:44		09:45 (9)
	16:40			17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38			16:12	27	10:12 (9)
15	08:45			07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59			08:45		09:46 (9)
	16:42			17:42	18:36	20:34	21:28	22:07	21:58	21:05	19:52	18:39	16:37			16:12	27	10:13 (9)
16	08:44			07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01			08:46		09:46 (9)
	16:44			17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:36	16:35			16:12	28	10:14 (9)
17	08:43			07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03			08:47		09:47 (9)
	16:45			17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:33			16:12	28	10:15 (9)
18	08:42			07:49	06:43	06:28	05:28	05:02	05:24	06:16	07:11	08:05	08:05			08:48		09:46 (9)
	16:47			17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32			16:12	28	10:14 (9)
19	08:40			07:47	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07			08:48		09:47 (9)
	16:49			17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31			16:13	28	10:15 (9)
20	08:39			07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09			08:49		09:48 (9)
	16:51			17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29			16:13	28	10:16 (9)
21	08:38			07:42	06:36	06:21	05:24	05:02	05:29	06:21	07:16	08:11	08:10			08:50		09:48 (9)
	16:52			17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28			16:13	28	10:16 (9)
22	08:37			07:40	06:34	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12			08:50		09:49 (9)
	16:54			17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27			16:14	28	10:17 (9)
23	08:35			07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15	08:14			08:51		09:49 (9)
	16:56			17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25			16:14	28	10:17 (9)
24	08:34			07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16			08:51		09:49 (9)
	16:58			18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24			16:15	28	10:17 (9)
25	08:33			07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:18			08:51		09:50 (9)
	17:00			18:02	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23			16:16	28	10:18 (9)
26	08:31			07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19			08:52		09:50 (9)
	17:02			18:04	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22			16:16	28	10:18 (9)
27	08:30			07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21			08:52		09:51 (9)
	17:04			18:06	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21			16:17	28	10:19 (9)
28	08:28			07:26	06:19	06:06	05:14	05:04	05:40	06:33	07:29	07:25	08:23			08:52		09:51 (9)
	17:06			18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20			16:18	28	10:19 (9)
29	08:27				07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24			08:52		09:52 (9)
	17:08				20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19			16:19	27	10:19 (9)
30	08:25				07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26		09:51 (9)	08:52		09:53 (9)
	17:10				20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	3	09:54 (9)	16:20	27	10:20 (9)
31	08:23				07:11		05:11		05:44	06:39		07:30				08:52		09:54 (9)
	17:12				20:06		21:52		21:35	20:29		17:04				16:21	26	10:20 (9)
Potential sun hours	250			273	367	420	494	510	513	460	382	328	259			233		
Total, worst case		225												3			772	
Sun reduction		0.16												0.20			0.12	
Oper. time red.		1.00												1.00			1.00	
Wind dir. red.		0.61												0.61			0.61	
Total reduction		0.10												0.12			0.07	
Total, real		22												0			56	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** N - H014

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March		April		May		June		
1	08:52	08:22	07:24		07:09		07:33 (5)	06:00		05:10	05:48 (4)
	16:23	17:14	18:10		20:08	24	07:57 (5)	21:04		21:54	36 06:24 (4)
2	08:52	08:20	07:22		07:07		07:31 (5)	05:58		05:10	05:48 (4)
	16:24	17:16	18:12		20:10	26	07:57 (5)	21:06		21:55	36 06:24 (4)
3	08:52	08:19	07:20		07:04		07:28 (5)	05:56		05:09	05:49 (4)
	16:25	17:18	18:14		20:12	29	07:57 (5)	21:07		21:56	35 06:24 (4)
4	08:52	08:17	07:17		07:02		07:26 (5)	05:54		05:08	05:49 (4)
	16:26	17:20	18:16		20:14	31	07:57 (5)	21:09		21:57	35 06:24 (4)
5	08:51	08:15	07:15		06:59		07:23 (5)	05:52		05:07	05:49 (4)
	16:27	17:22	18:17		20:16	33	07:56 (5)	21:11		21:58	35 06:24 (4)
6	08:51	08:13	07:13		06:57		07:22 (5)	05:50		05:06	05:50 (4)
	16:29	17:24	18:19		20:18	34	07:56 (5)	21:13		21:59	34 06:24 (4)
7	08:51	08:11	07:10		06:55		07:23 (5)	05:48		05:06	05:50 (4)
	16:30	17:26	18:21		20:19	33	07:56 (5)	21:15		22:00	34 06:24 (4)
8	08:50	08:09	07:08		06:52		07:22 (5)	05:46	06:13 (4)	05:05	05:51 (4)
	16:31	17:28	18:23		20:21	33	07:55 (5)	21:16	1 06:14 (4)	22:01	33 06:24 (4)
9	08:49	08:07	07:05		06:50		07:23 (5)	05:44	06:11 (4)	05:04	05:51 (4)
	16:33	17:30	18:25		20:23	31	07:54 (5)	21:18	5 06:16 (4)	22:02	33 06:24 (4)
10	08:49	08:05	07:03		06:47		07:23 (5)	05:42	06:09 (4)	05:04	05:51 (4)
	16:34	17:32	18:27		20:25	29	07:52 (5)	21:20	8 06:17 (4)	22:03	33 06:24 (4)
11	08:48	08:04	07:01		06:45		07:24 (5)	05:40	06:08 (4)	05:04	05:52 (4)
	16:36	17:34	18:29		20:27	28	07:52 (5)	21:22	11 06:19 (4)	22:04	32 06:24 (4)
12	08:47	08:02	06:58		06:43		07:25 (5)	05:39	06:06 (4)	05:03	05:52 (4)
	16:37	17:36	18:31		20:29	25	07:50 (5)	21:23	13 06:19 (4)	22:05	32 06:24 (4)
13	08:47	07:59	06:56		06:40		07:25 (5)	05:37	06:04 (4)	05:03	05:52 (4)
	16:39	17:38	18:33		20:30	23	07:48 (5)	21:25	16 06:20 (4)	22:05	32 06:24 (4)
14	08:46	07:57	06:53	07:17 (6)	06:38		07:27 (5)	05:35	06:03 (4)	05:02	05:53 (4)
	16:41	17:40	18:35	3 07:20 (6)	20:32	19	07:46 (5)	21:27	18 06:21 (4)	22:06	31 06:24 (4)
15	08:45	07:55	06:51	07:15 (6)	06:36		07:29 (5)	05:33	06:01 (4)	05:02	05:53 (4)
	16:42	17:42	18:37	6 07:21 (6)	20:34	15	07:44 (5)	21:28	20 06:21 (4)	22:07	31 06:24 (4)
16	08:44	07:53	06:49	07:12 (6)	06:33		07:35 (5)	05:32	06:00 (4)	05:02	05:54 (4)
	16:44	17:44	18:38	10 07:22 (6)	20:36	3	07:38 (5)	21:30	22 06:22 (4)	22:07	31 06:25 (4)
17	08:43	07:51	06:46	07:10 (6)	06:31			05:30	05:58 (4)	05:02	05:54 (4)
	16:46	17:46	18:40	13 07:23 (6)	20:38			21:32	24 06:22 (4)	22:08	31 06:25 (4)
18	08:42	07:49	06:44	07:07 (6)	06:29			05:28	05:57 (4)	05:02	05:54 (4)
	16:47	17:48	18:42	16 07:23 (6)	20:40			21:33	26 06:23 (4)	22:08	31 06:25 (4)
19	08:41	07:47	06:41	07:05 (6)	06:26			05:27	05:55 (4)	05:02	05:54 (4)
	16:49	17:50	18:44	18 07:23 (6)	20:42			21:35	27 06:22 (4)	22:08	31 06:25 (4)
20	08:39	07:45	06:39	07:03 (6)	06:24			05:25	05:54 (4)	05:02	05:55 (4)
	16:51	17:52	18:46	21 07:24 (6)	20:43			21:37	29 06:23 (4)	22:09	30 06:25 (4)
21	08:38	07:43	06:36	07:00 (6)	06:22			05:24	05:53 (4)	05:02	05:55 (4)
	16:53	17:54	18:48	23 07:23 (6)	20:45			21:38	31 06:24 (4)	22:09	30 06:25 (4)
22	08:37	07:40	06:34	06:58 (6)	06:20			05:22	05:52 (4)	05:02	05:55 (4)
	16:55	17:56	18:50	25 07:23 (6)	20:47			21:40	32 06:24 (4)	22:09	30 06:25 (4)
23	08:36	07:38	06:31	06:57 (6)	06:17			05:21	05:50 (4)	05:03	05:56 (4)
	16:57	17:58	18:52	24 07:21 (6)	20:49			21:41	33 06:23 (4)	22:09	30 06:26 (4)
24	08:34	07:36	06:29	06:58 (6)	06:15			05:20	05:49 (4)	05:03	05:55 (4)
	16:58	18:00	18:53	23 07:21 (6)	20:51			21:43	35 06:24 (4)	22:10	31 06:26 (4)
25	08:33	07:34	06:26	06:58 (6)	06:13			05:18	05:48 (4)	05:03	05:55 (4)
	17:00	18:02	18:55	21 07:19 (6)	20:53			21:44	36 06:24 (4)	22:10	31 06:26 (4)
26	08:31	07:31	06:24	06:48 (5)	06:11			05:17	05:47 (4)	05:04	05:56 (4)
	17:02	18:04	18:57	22 07:18 (6)	20:55			21:46	37 06:24 (4)	22:10	31 06:27 (4)
27	08:30	07:29	06:22	06:45 (5)	06:08			05:16	05:47 (4)	05:04	05:55 (4)
	17:04	18:06	18:59	23 07:15 (6)	20:56			21:47	37 06:24 (4)	22:09	31 06:26 (4)
28	08:28	07:27	06:19	06:43 (5)	06:06			05:15	05:47 (4)	05:05	05:56 (4)
	17:06	18:08	19:01	21 07:12 (6)	20:58			21:49	37 06:24 (4)	22:09	31 06:27 (4)
29	08:27		07:17	07:40 (5)	06:04			05:14	05:47 (4)	05:05	05:56 (4)
	17:08		20:03	15 07:55 (5)	21:00			21:50	37 06:24 (4)	22:09	31 06:27 (4)
30	08:25		07:14	07:38 (5)	06:02			05:12	05:48 (4)	05:06	05:56 (4)
	17:10		20:05	18 07:56 (5)	21:02			21:51	36 06:24 (4)	22:09	32 06:28 (4)
31	08:24		07:12	07:35 (5)				05:11	05:48 (4)		
	17:12		20:06	21 07:56 (5)				21:52	36 06:24 (4)		
Potential sun hours	250	273	367		420			494		510	
Total, worst case				323		416			607		964
Sun reduction				0.22		0.31			0.31		0.26
Oper. time red.				1.00		1.00			1.00		1.00
Wind dir. red.				0.64		0.65			0.64		0.64
Total reduction				0.14		0.20			0.20		0.17
Total, real				45		83			123		160

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** N - H014

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August		September		October	November	December
1	05:07		05:56 (4)	05:46	06:17 (4)	06:41	07:22 (5)	07:34	07:33	08:28
	22:09	32	06:28 (4)	21:33 12	06:29 (4)	20:26 29	07:51 (5)	19:13	17:02	16:18
2	05:07		05:56 (4)	05:48	06:19 (4)	06:43	07:22 (5)	07:36	07:34	08:29
	22:08	32	06:28 (4)	21:31 10	06:29 (4)	20:24 29	07:51 (5)	19:10	17:00	16:17
3	05:08		05:56 (4)	05:50	06:20 (4)	06:44	07:21 (5)	07:38	07:36	08:31
	22:08	33	06:29 (4)	21:29 7	06:27 (4)	20:22 31	07:52 (5)	19:08	16:58	16:16
4	05:09		05:56 (4)	05:52	06:22 (4)	06:46	07:19 (5)	07:40	07:38	08:32
	22:07	33	06:29 (4)	21:28 4	06:26 (4)	20:19 33	07:52 (5)	19:05	16:56	16:16
5	05:10		05:56 (4)	05:53		06:48	07:19 (5)	07:41	07:40	08:33
	22:07	34	06:30 (4)	21:26		20:17 33	07:52 (5)	19:03	16:54	16:15
6	05:11		05:56 (4)	05:55		06:50	07:18 (5)	07:43	07:42	08:35
	22:06	34	06:30 (4)	21:24		20:14 34	07:52 (5)	19:00	16:52	16:14
7	05:12		05:56 (4)	05:57		06:51	07:18 (5)	07:45	07:44	08:36
	22:05	35	06:31 (4)	21:22		20:12 33	07:51 (5)	18:58	16:50	16:14
8	05:13		05:56 (4)	05:58		06:53	07:20 (5)	07:47	07:46	08:37
	22:05	34	06:30 (4)	21:20		20:09 31	07:51 (5)	18:56	16:49	16:14
9	05:14		05:55 (4)	06:00		06:55	07:22 (5)	07:49	07:48	08:39
	22:04	36	06:31 (4)	21:18		20:07 29	07:51 (5)	18:53	16:47	16:13
10	05:15		05:56 (4)	06:02		06:57	07:24 (5)	07:51	07:50	08:40
	22:03	36	06:32 (4)	21:16		20:05 27	07:51 (5)	18:51	16:45	16:13
11	05:16		05:56 (4)	06:04		06:59	07:25 (5)	07:53	07:52	08:41
	22:02	36	06:32 (4)	21:14		20:02 24	07:49 (5)	18:48	16:43	16:13
12	05:17		05:56 (4)	06:05		07:00	07:27 (5)	07:54	07:54	08:42
	22:01	37	06:33 (4)	21:12		20:00 22	07:49 (5)	18:46	16:42	16:12
13	05:18		05:56 (4)	06:07		07:02	07:29 (5)	07:56	07:56	08:43
	22:00	37	06:33 (4)	21:10		19:57 19	07:48 (5)	18:44	16:40	16:12
14	05:20		05:56 (4)	06:09		07:04	07:30 (5)	07:58	07:58	08:44
	21:59	37	06:33 (4)	21:08		19:55 15	07:45 (5)	18:41	16:38	16:12
15	05:21		05:56 (4)	06:11		07:06	07:32 (5)	08:00	08:00	08:45
	21:58	37	06:33 (4)	21:05		19:52 19	08:01 (6)	18:39	16:37	16:12
16	05:22		05:56 (4)	06:12		07:07	07:34 (5)	08:02	08:01	08:46
	21:57	37	06:33 (4)	21:03		19:50 22	08:04 (6)	18:37	16:35	16:12
17	05:23		05:56 (4)	06:14		07:09	07:36 (5)	08:04	08:03	08:47
	21:56	38	06:34 (4)	21:01		19:47 22	08:06 (6)	18:34	16:34	16:13
18	05:25		05:57 (4)	06:16		07:11	07:46 (6)	08:06	08:05	08:48
	21:55	37	06:34 (4)	20:59		19:45 20	08:06 (6)	18:32	16:32	16:13
19	05:26		05:58 (4)	06:18		07:13	07:45 (6)	08:07	08:07	08:48
	21:53	35	06:33 (4)	20:57		19:42 22	08:07 (6)	18:30	16:31	16:13
20	05:28		06:00 (4)	06:20		07:14	07:44 (6)	08:09	08:09	08:49
	21:52	34	06:34 (4)	20:54		19:40 24	08:08 (6)	18:28	16:30	16:13
21	05:29		06:01 (4)	06:21		07:16	07:43 (6)	08:11	08:11	08:50
	21:51	33	06:34 (4)	20:52		19:37 25	08:08 (6)	18:25	16:28	16:14
22	05:31		06:02 (4)	06:23		07:18	07:44 (6)	08:13	08:12	08:50
	21:49	31	06:33 (4)	20:50		19:35 23	08:07 (6)	18:23	16:27	16:14
23	05:32		06:04 (4)	06:25		07:20	07:46 (6)	08:15	08:14	08:51
	21:48	30	06:34 (4)	20:48		19:32 21	08:07 (6)	18:21	16:26	16:15
24	05:34		06:05 (4)	06:27		07:22	07:48 (6)	08:17	08:16	08:51
	21:46	28	06:33 (4)	20:45		19:30 19	08:07 (6)	18:19	16:25	16:15
25	05:35		06:06 (4)	06:28		07:23	07:50 (6)	07:19	08:18	08:52
	21:45	27	06:33 (4)	20:43		19:27 17	08:07 (6)	17:17	16:23	16:16
26	05:37		06:08 (4)	06:30		07:25	07:51 (6)	07:21	08:19	08:52
	21:43	25	06:33 (4)	20:41		19:25 14	08:05 (6)	17:14	16:22	16:17
27	05:38		06:09 (4)	06:32	07:36 (5)	07:27	07:53 (6)	07:23	08:21	08:52
	21:42	23	06:32 (4)	20:38 5	07:41 (5)	19:23 11	08:04 (6)	17:12	16:21	16:18
28	05:40		06:11 (4)	06:34	07:30 (5)	07:29	07:55 (6)	07:25	08:23	08:52
	21:40	21	06:32 (4)	20:36 15	07:45 (5)	19:20 8	08:03 (6)	17:10	16:20	16:18
29	05:42		06:12 (4)	06:36	07:28 (5)	07:31	07:57 (6)	07:27	08:24	08:52
	21:38	19	06:31 (4)	20:34 19	07:47 (5)	19:18 4	08:01 (6)	17:08	16:19	16:19
30	05:43		06:14 (4)	06:37	07:26 (5)	07:32		07:29	08:26	08:52
	21:37	17	06:31 (4)	20:31 23	07:49 (5)	19:15		17:06	16:19	16:20
31	05:45		06:15 (4)	06:39	07:25 (5)			07:31		08:52
	21:35	15	06:30 (4)	20:29 25	07:50 (5)			17:04		16:21
Potential sun hours	512			460		382		328	259	233
Total, worst case		973		120		660				
Sun reduction		0.22		0.26		0.25				
Oper. time red.		1.00		1.00		1.00				
Wind dir. red.		0.64		0.65		0.64				
Total reduction		0.14		0.17		0.16				
Total, real		140		20		107				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** O - H015

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	06:36 (8)	05:10	05:06	05:46	06:41	07:08 (9)	07:34	07:32	08:27
	16:22	17:14	18:09	20:08	21:04 27	07:03 (8)	21:54	22:08	21:33	20:26 13	07:21 (9)	19:12	17:02	16:17
2	08:52	08:20	07:22	07:07	05:58	06:37 (8)	05:09	05:07	05:48	06:42	07:10 (9)	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05 25	07:02 (8)	21:55	22:08	21:31	20:24 11	07:21 (9)	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	06:38 (8)	05:08	05:08	05:50	06:44	07:11 (9)	07:38	07:36	08:30
	16:25	17:18	18:13	20:12	21:07 23	07:01 (8)	21:56	22:08	21:29	20:21 8	07:19 (9)	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	06:39 (8)	05:08	05:09	05:51	06:46	07:13 (9)	07:39	07:38	08:32
	16:26	17:20	18:15	20:14	21:09 20	06:59 (8)	21:57	22:07	21:27	20:19 5	07:18 (9)	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52	06:40 (8)	05:07	05:09	05:53	06:48	07:15 (9)	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11 17	06:57 (8)	21:58	22:07	21:26	20:17 2	07:17 (9)	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50	06:42 (8)	05:06	05:10	05:55	06:54 (8)	06:49	07:43	07:42	08:35
	16:28	17:24	18:19	20:17	21:13 13	06:55 (8)	21:59	22:06	21:24 9	07:03 (8)	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	07:18 (9) 05:48	06:46 (8)	05:05	05:11	05:56	06:51 (8)	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19 2	07:20 (9) 21:14 5	06:51 (8)	22:00	22:05	21:22 14	07:05 (8)	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	07:16 (9) 05:46		05:05	05:12	05:58	06:49 (8)	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21 5	07:21 (9) 21:16		22:01	22:05	21:20 18	07:07 (8)	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:50	07:14 (9) 05:44		05:04	05:13	06:00	06:48 (8)	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23 8	07:22 (9) 21:18		22:02	22:04	21:18 21	07:09 (8)	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	07:11 (9) 05:42		05:04	05:15	06:02	06:46 (8)	06:57	07:50	07:50	08:40
	16:34	17:32	18:27	20:25 11	07:22 (9) 21:20		22:03	22:03	21:16 24	07:10 (8)	20:04	18:51	16:45	16:13
11	08:48	08:03	07:00	06:45	07:09 (9) 05:40		05:03	05:16	06:03	06:45 (8)	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27 13	07:22 (9) 21:21		22:04	22:02	21:14 26	07:11 (8)	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	07:07 (9) 05:38		05:03	05:17	06:05	06:44 (8)	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28 15	07:22 (9) 21:23		22:05	22:01	21:12 27	07:11 (8)	19:59	18:46	16:41	16:12
13	08:46	07:59	06:56	06:40	07:04 (9) 05:37		05:02	05:18	06:07	06:43 (8)	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30 17	07:21 (9) 21:25		22:05	22:00	21:09 29	07:12 (8)	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	07:02 (9) 05:35		05:02	05:19	06:09	06:43 (8)	07:04	07:58	07:57	08:44
	16:40	17:40	18:34	20:32 18	07:20 (9) 21:27		22:06	21:59	21:07 29	07:12 (8)	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	07:00 (9) 05:33		05:02	05:21	06:10	06:41 (8)	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34 20	07:20 (9) 21:28		22:07	21:58	21:05 31	07:12 (8)	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	06:57 (8) 05:31		05:02	05:22	06:12	06:41 (8)	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36 21	07:18 (9) 21:30		22:07	21:57	21:03 32	07:13 (8)	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	06:55 (8) 05:30		05:02	05:23	06:14	06:43 (8)	07:09	08:04	08:03	08:47
	16:45	17:46	18:40	20:38 22	07:17 (9) 21:32		22:08	21:56	21:01 30	07:13 (8)	19:47	18:34	16:34	16:12
18	08:42	07:49	06:43	06:28	06:53 (8) 05:28		05:02	05:25	06:16	06:44 (8)	07:11	08:05	08:05	08:48
	16:47	17:48	18:42	20:40 22	07:15 (9) 21:33		22:08	21:54	20:59 28	07:12 (8)	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	06:51 (8) 05:27		05:02	05:26	06:18	06:46 (8)	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:41 22	07:13 (9) 21:35		22:08	21:53	20:56 26	07:12 (8)	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	06:48 (8) 05:25		05:02	05:27	06:19	06:48 (8)	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43 17	07:05 (8) 21:36		22:09	21:52	20:54 24	07:12 (8)	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:22	06:46 (8) 05:24		05:02	05:29	06:21	06:49 (8)	07:16	08:11	08:10	08:50
	16:53	17:54	18:48	20:45 20	07:06 (8) 21:38		22:09	21:51	20:52 22	07:11 (8)	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	06:44 (8) 05:22		05:02	05:30	06:23	06:51 (8)	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47 22	07:06 (8) 21:40		22:09	21:49	20:50 20	07:11 (8)	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	06:42 (8) 05:21		05:02	05:32	06:25	06:53 (8)	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49 24	07:06 (8) 21:41		22:09	21:48	20:47 17	07:10 (8)	19:32	18:21	16:25	16:15
24	08:34	07:36	06:29	06:15	06:40 (8) 05:19		05:03	05:33	06:26	06:54 (8)	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51 27	07:07 (8) 21:43		22:09	21:46	20:45 22	07:16 (9)	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	06:38 (8) 05:18		05:03	05:35	06:28	06:56 (8)	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53 28	07:06 (8) 21:44		22:09	21:45	20:43 22	07:18 (9)	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	06:36 (8) 05:17		05:03	05:36	06:30	06:58 (8)	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54 30	07:06 (8) 21:46		22:09	21:43	20:40 22	07:20 (9)	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	06:35 (8) 05:16		05:04	05:38	06:32	07:00 (8)	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56 31	07:06 (8) 21:47		22:09	21:41	20:38 21	07:21 (9)	19:22	17:12	16:21	16:17
28	08:28	07:27	06:19	06:06	06:35 (8) 05:14		05:04	05:40	06:34	07:01 (9)	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58 30	07:05 (8) 21:48		22:09	21:40	20:36 20	07:21 (9)	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	06:34 (8) 05:13		05:05	05:41	06:35	07:03 (9)	07:30	07:27	08:24	08:52
	17:08		20:02	21:00 30	07:04 (8) 21:50		22:09	21:38	20:33 18	07:21 (9)	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	06:35 (8) 05:12		05:06	05:43	06:37	07:05 (9)	07:32	07:28	08:26	08:52
	17:10		20:04	21:02 28	07:03 (8) 21:51		22:09	21:36	20:31 17	07:22 (9)	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11			05:45	06:39	07:06 (9)		07:30		08:52
	17:12		20:06		21:52			21:35	20:29 15	07:21 (9)		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case				483	130			584	39			
Sun reduction				0.31	0.31			0.26	0.25			
Oper. time red.				1.00	1.00			1.00	1.00			
Wind dir. red.				0.65	0.65			0.65	0.64			
Total reduction				0.20	0.20			0.17	0.16			
Total, real				96	26			97	6			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** P - H016

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February		March		April		May	June
1	08:52	08:22		07:24		17:23 (3)	07:09	06:00	05:10
	16:22	17:14		18:10	19	17:42 (3)	20:08	21:04	21:54
2	08:52	08:20		07:22		17:22 (3)	07:07	05:58	05:09
	16:24	17:16		18:12	23	17:45 (3)	20:10	21:05	21:55
3	08:52	08:18		07:20		17:20 (3)	07:04	05:56	05:09
	16:25	17:18		18:14	26	17:46 (3)	20:12	21:07	21:56
4	08:52	08:17		07:17		17:20 (3)	07:02	05:54	05:08
	16:26	17:20		18:15	28	17:48 (3)	20:14	21:09	21:57
5	08:51	08:15		07:15		17:19 (3)	06:59	05:52	05:07
	16:27	17:22		18:17	31	17:50 (3)	20:16	21:11	21:58
6	08:51	08:13		07:13		17:19 (3)	06:57	05:50	05:06
	16:28	17:24		18:19	33	17:52 (3)	20:17	21:13	21:59
7	08:50	08:11		07:10		17:18 (3)	06:55	05:48	05:05
	16:30	17:26		18:21	36	17:54 (3)	20:19	21:14	22:00
8	08:50	08:09		07:08		17:18 (3)	06:52	19:53 (1)	05:46	05:05
	16:31	17:28		18:23	38	17:56 (3)	20:21	1	19:54 (1)	21:16	22:01
9	08:49	08:07		07:05		17:18 (3)	06:50	19:51 (1)	05:44	05:04
	16:33	17:30		18:25	38	17:56 (3)	20:23	5	19:56 (1)	21:18	22:02
10	08:49	08:05		07:03		17:17 (3)	06:47	19:49 (1)	05:42	05:04
	16:34	17:32		18:27	38	17:55 (3)	20:25	8	19:57 (1)	21:20	22:03
11	08:48	08:03		07:01		17:18 (3)	06:45	19:48 (1)	05:40	05:03
	16:36	17:34		18:29	37	17:55 (3)	20:27	11	19:59 (1)	21:22	22:04
12	08:47	08:01		06:58		17:18 (3)	06:43	19:47 (1)	05:38	05:03
	16:37	17:36		18:31	36	17:54 (3)	20:29	14	20:01 (1)	21:23	22:05
13	08:46	07:59		06:56		17:18 (3)	06:40	19:46 (1)	05:37	05:03
	16:39	17:38		18:33	36	17:54 (3)	20:30	16	20:02 (1)	21:25	22:05
14	08:46	07:57		06:53		17:18 (3)	06:38	19:45 (1)	05:35	05:02
	16:40	17:40		18:35	34	17:52 (3)	20:32	19	20:04 (1)	21:27	22:06
15	08:45	07:55		06:51		17:20 (3)	06:35	19:45 (1)	05:33	05:02
	16:42	17:42		18:36	31	17:51 (3)	20:34	21	20:06 (1)	21:28	22:07
16	08:44	07:53		06:48		17:20 (3)	06:33	19:44 (1)	05:32	05:02
	16:44	17:44		18:38	29	17:49 (3)	20:36	23	20:07 (1)	21:30	22:07
17	08:43	07:51		06:46		17:22 (3)	06:31	19:44 (1)	05:30	05:02
	16:46	17:46		18:40	26	17:48 (3)	20:38	25	20:09 (1)	21:32	22:08
18	08:42	07:49		06:44		17:23 (3)	06:29	19:44 (1)	05:28	05:02
	16:47	17:48		18:42	22	17:45 (3)	20:40	27	20:11 (1)	21:33	22:08
19	08:41	07:47		06:41		17:26 (3)	06:26	19:44 (1)	05:27	05:02
	16:49	17:50		18:44	17	17:43 (3)	20:42	29	20:13 (1)	21:35	22:08
20	08:39	07:45		06:39		17:29 (3)	06:24	19:44 (1)	05:25	05:02
	16:51	17:52		18:46	9	17:38 (3)	20:43	29	20:13 (1)	21:37	22:09
21	08:38	07:42		06:36			06:22	19:44 (1)	05:24	05:02
	16:53	17:54		18:48			20:45	27	20:11 (1)	21:38	22:09
22	08:37	07:40		06:34			06:19	19:45 (1)	05:22	05:02
	16:55	17:56		18:50			20:47	26	20:11 (1)	21:40	22:09
23	08:36	07:38		06:31			06:17	19:46 (1)	05:21	05:02
	16:56	17:58		18:51			20:49	24	20:10 (1)	21:41	22:09
24	08:34	07:36		06:29			06:15	19:47 (1)	05:20	05:03
	16:58	18:00		18:53			20:51	21	20:08 (1)	21:43	22:09
25	08:33	07:33	17:30 (3)	06:26			06:13	19:48 (1)	05:18	05:03
	17:00	18:02	3 17:33 (3)	18:55			20:53	19	20:07 (1)	21:44	22:10
26	08:31	07:31	17:28 (3)	06:24			06:11	19:50 (1)	05:17	05:04
	17:02	18:04	8 17:36 (3)	18:57			20:54	15	20:05 (1)	21:46	22:09
27	08:30	07:29	17:26 (3)	06:21			06:08	19:53 (1)	05:16	05:04
	17:04	18:06	12 17:38 (3)	18:59			20:56	9	20:02 (1)	21:47	22:09
28	08:28	07:27	17:24 (3)	06:19			06:06		05:15	05:05
	17:06	18:08	16 17:40 (3)	19:01			20:58		21:48	22:09
29	08:27			07:16			06:04		05:13	05:05
	17:08			20:03			21:00		21:50	22:09
30	08:25			07:14			06:02		05:12	05:06
	17:10			20:04			21:02		21:51	22:09
31	08:24			07:12					05:11	
	17:12			20:06					21:52	
Potential sun hours	250	273		367			420		494	510
Total, worst case			39		587			369		
Sun reduction			0.19		0.22			0.31		
Oper. time red.			1.00		1.00			1.00		
Wind dir. red.			0.65		0.65			0.63		
Total reduction			0.13		0.14			0.19		
Total, real			5		84			71		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** P - H016

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July	August			September			October			November	December
1	05:06	05:46			06:41		19:47 (1)	07:34		17:57 (3)	07:32	08:28
	22:08	21:33			20:26	11	19:58 (1)	19:13	36	18:33 (3)	17:02	16:18
2	05:07	05:48			06:43		19:48 (1)	07:36		17:56 (3)	07:34	08:29
	22:08	21:31			20:24	8	19:56 (1)	19:10	37	18:33 (3)	17:00	16:17
3	05:08	05:50			06:44		19:48 (1)	07:38		17:55 (3)	07:36	08:31
	22:08	21:29			20:22	5	19:53 (1)	19:08	38	18:33 (3)	16:58	16:16
4	05:09	05:51			06:46		19:50 (1)	07:40		17:55 (3)	07:38	08:32
	22:07	21:28			20:19	1	19:51 (1)	19:05	38	18:33 (3)	16:56	16:15
5	05:10	05:53			06:48			07:41		17:55 (3)	07:40	08:33
	22:07	21:26			20:17			19:03	38	18:33 (3)	16:54	16:15
6	05:11	05:55			06:50			07:43		17:55 (3)	07:42	08:35
	22:06	21:24			20:14			19:00	37	18:32 (3)	16:52	16:14
7	05:11	05:57			06:51			07:45		17:55 (3)	07:44	08:36
	22:05	21:22			20:12			18:58	35	18:30 (3)	16:50	16:14
8	05:13	05:58			06:53			07:47		17:54 (3)	07:46	08:37
	22:05	21:20			20:09			18:56	32	18:26 (3)	16:49	16:13
9	05:14	06:00			06:55			07:49		17:54 (3)	07:48	08:39
	22:04	21:18			20:07			18:53	30	18:24 (3)	16:47	16:13
10	05:15	06:02			06:57			07:51		17:54 (3)	07:50	08:40
	22:03	21:16			20:05			18:51	27	18:21 (3)	16:45	16:13
11	05:16	06:04			06:58			07:52		17:55 (3)	07:52	08:41
	22:02	21:14			20:02			18:48	24	18:19 (3)	16:43	16:12
12	05:17	06:05			07:00			07:54		17:55 (3)	07:54	08:42
	22:01	21:12			20:00			18:46	22	18:17 (3)	16:42	16:12
13	05:18	06:07			07:02			07:56		17:56 (3)	07:56	08:43
	22:00	21:10			19:57			18:44	18	18:14 (3)	16:40	16:12
14	05:19	06:09			07:04			07:58		17:57 (3)	07:58	08:44
	21:59	21:07			19:55			18:41	15	18:12 (3)	16:38	16:12
15	05:21	06:11			07:06			08:00		17:59 (3)	07:59	08:45
	21:58	21:05			19:52			18:39	11	18:10 (3)	16:37	16:12
16	05:22	06:12		19:58 (1)	07:07			08:02		18:01 (3)	08:01	08:46
	21:57	21:03	11	20:09 (1)	19:50			18:37	6	18:07 (3)	16:35	16:12
17	05:23	06:14		19:56 (1)	07:09			08:04		18:03 (3)	08:03	08:47
	21:56	21:01	16	20:12 (1)	19:47			18:34	2	18:05 (3)	16:34	16:12
18	05:25	06:16		19:54 (1)	07:11			08:06			08:05	08:48
	21:55	20:59	20	20:14 (1)	19:45			18:32			16:32	16:13
19	05:26	06:18		19:52 (1)	07:13			08:07			08:07	08:48
	21:53	20:57	22	20:14 (1)	19:42			18:30			16:31	16:13
20	05:28	06:19		19:51 (1)	07:14			08:09			08:09	08:49
	21:52	20:54	24	20:15 (1)	19:40			18:28			16:29	16:13
21	05:29	06:21		19:50 (1)	07:16			08:11			08:11	08:50
	21:51	20:52	26	20:16 (1)	19:37			18:25			16:28	16:14
22	05:30	06:23		19:49 (1)	07:18			08:13			08:12	08:50
	21:49	20:50	27	20:16 (1)	19:35			18:23			16:27	16:14
23	05:32	06:25		19:48 (1)	07:20		18:17 (3)	08:15			08:14	08:51
	21:48	20:48	29	20:17 (1)	19:32	2	18:19 (3)	18:21			16:26	16:15
24	05:33	06:27		19:48 (1)	07:22		18:11 (3)	08:17			08:16	08:51
	21:46	20:45	29	20:17 (1)	19:30	15	18:26 (3)	18:19			16:24	16:15
25	05:35	06:28		19:47 (1)	07:23		18:08 (3)	07:19			08:18	08:51
	21:45	20:43	27	20:14 (1)	19:27	20	18:28 (3)	17:17			16:23	16:16
26	05:37	06:30		19:47 (1)	07:25		18:04 (3)	07:21			08:19	08:52
	21:43	20:41	25	20:12 (1)	19:25	25	18:29 (3)	17:14			16:22	16:17
27	05:38	06:32		19:47 (1)	07:27		18:02 (3)	07:23			08:21	08:52
	21:42	20:38	23	20:10 (1)	19:22	29	18:31 (3)	17:12			16:21	16:17
28	05:40	06:34		19:46 (1)	07:29		18:01 (3)	07:25			08:23	08:52
	21:40	20:36	21	20:07 (1)	19:20	31	18:32 (3)	17:10			16:20	16:18
29	05:41	06:35		19:46 (1)	07:30		18:00 (3)	07:27			08:24	08:52
	21:38	20:34	19	20:05 (1)	19:17	32	18:32 (3)	17:08			16:19	16:19
30	05:43	06:37		19:47 (1)	07:32		17:59 (3)	07:29			08:26	08:52
	21:37	20:31	16	20:03 (1)	19:15	34	18:33 (3)	17:06			16:18	16:20
31	05:45	06:39		19:46 (1)				07:31				08:52
	21:35	20:29	14	20:00 (1)				17:04				16:21
Potential sun hours	512	460			382			328			259	233
Total, worst case			349			213			446			
Sun reduction			0.26			0.25			0.23			
Oper. time red.			1.00			1.00			1.00			
Wind dir. red.			0.63			0.65			0.65			
Total reduction			0.16			0.16			0.15			
Total, real			56			35			65			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** Q - H018

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:09	20:08	21:03	21:53	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:19	07:04	05:56	05:08	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58	16:16
4	08:51	08:16	07:17	07:02	05:54	05:07	05:09	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52	05:07	05:09	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11	21:58	22:06	21:25	20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50	05:06	05:10	05:55	06:49	07:43	07:42	08:35
	16:28	17:24	18:19	20:17	21:12	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:50	05:44	05:04	05:13	06:00	06:55	07:49	07:48	08:38
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:48	08:05	07:03	06:47	05:42	05:04	05:14	06:02	06:56	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:00	06:45	05:40	05:03	05:16	06:03	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:26	21:21	22:04	22:02	21:13	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:56	06:40	05:37	05:02	05:18	06:07	07:02	07:56	07:55	08:43
	16:39	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:26	22:06	21:59	21:07	19:54	18:41	16:38	16:12
15	08:44	07:55	06:51	06:35	05:33	05:02	05:21	06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:43	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16:12
17	08:42	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:31	22:07	21:56	21:01	19:47	18:34	16:34	16:12
18	08:41	07:49	06:43	06:28	05:28	05:02	05:25	06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:39	21:33	22:08	21:54	20:59	19:44	18:32	16:32	16:12
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:24	05:02	05:29	06:21	07:16	08:11	08:10	08:49
	16:53	17:54	18:48	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:13
22	08:37	07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:39	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15	08:14	08:50
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	16:14
24	08:34	07:36	06:29	06:15	05:19	05:03	05:33	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:42	22:09	21:46	20:45	19:30	18:18	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:17	08:51
	17:00	18:02	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	05:04	05:40	06:33	07:28	07:24	08:22	08:52
	17:06	18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** R - H019

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:10	20:08	21:04	21:54	22:08	21:33	20:26	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:09	05:07	05:48	06:43	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12	21:07	21:56	22:08	21:29	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:51	06:46	07:40	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52	05:07	05:10	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	21:58	22:06	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:55	05:48	05:06	05:12	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:56	16:49	16:13
9	08:49	08:07	07:05	06:50	05:44	05:04	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:01	06:45	05:40	05:03	05:16	06:04	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:13
12	08:47	08:01	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	22:00	21:09	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	05:33	05:02	05:21	06:11	07:06	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:34	16:12
18	08:42	07:49	06:44	06:29	05:28	05:02	05:25	06:16	07:11	08:05	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:28	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:28	16:30	16:13
21	08:38	07:42	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:10	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	05:02	05:31	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34	06:27	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	21:44	22:09	21:45	20:43	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:41	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:27	06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:14	05:05	05:41	06:35	07:30	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:12		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** S - H020

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:09	20:08	21:03	21:53	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:19	07:04	05:56	05:08	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58	16:16
4	08:51	08:16	07:17	07:02	05:54	05:08	05:09	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52	05:07	05:09	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11	21:58	22:06	21:25	20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50	05:06	05:10	05:55	06:49	07:43	07:42	08:35
	16:28	17:24	18:19	20:17	21:12	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:50	05:44	05:04	05:13	06:00	06:55	07:49	07:48	08:38
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:48	08:05	07:03	06:47	05:42	05:04	05:14	06:02	06:56	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:00	06:45	05:40	05:03	05:16	06:03	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:26	21:21	22:04	22:02	21:13	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:56	06:40	05:37	05:02	05:18	06:07	07:02	07:56	07:55	08:43
	16:39	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:26	22:06	21:59	21:07	19:54	18:41	16:38	16:12
15	08:44	07:55	06:51	06:35	05:33	05:02	05:21	06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:43	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16:12
17	08:42	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:31	22:07	21:56	21:01	19:47	18:34	16:34	16:12
18	08:41	07:49	06:43	06:28	05:28	05:02	05:25	06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:39	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:12
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:24	05:02	05:29	06:21	07:16	08:11	08:10	08:49
	16:53	17:54	18:48	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:13
22	08:37	07:40	06:34	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:39	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15	08:14	08:50
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	16:14
24	08:34	07:36	06:29	06:15	05:19	05:03	05:33	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:42	22:09	21:46	20:45	19:30	18:18	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:17	08:51
	17:00	18:02	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	05:04	05:40	06:33	07:28	07:24	08:22	08:52
	17:06	18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** T - H021

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December		
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27		
	16:22	17:14	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02	16:17		
2	08:52	08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34	08:29		
	16:23	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17		
3	08:52	08:18	07:19	07:04	05:56	05:08	05:08	05:49	06:44	07:38	07:36	08:30		
	16:24	17:18	18:13	20:12	21:07	21:56	22:08	21:29	20:21	19:07	16:58	16:16		
4	08:52	08:17	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38	08:32		
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15		
5	08:51	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40	08:33		
	16:27	17:22	18:17	20:15	21:11	21:58	22:07	21:26	20:17	19:03	16:54	16:15		
6	08:51	08:13	07:12	06:57	05:50	05:06	05:10	05:55	06:49	07:43	07:42	08:35		
	16:28	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14		
7	08:50	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44	08:36		
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14		
8	08:50	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37		
	16:31	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:55	16:48	16:13		
9	08:49	08:07	07:05	06:50	05:44	05:04	05:13	06:00	06:55	07:49	07:48	08:39		
	16:32	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13		
10	08:49	08:05	07:03	06:47	05:42	05:04	05:14	06:02	06:56	07:50	07:50	08:40		
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:12		
11	08:48	08:03	07:00	06:45	05:40	05:03	05:16	06:03	06:58	07:52	07:52	08:41		
	16:35	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:12		
12	08:47	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42		10:17 (9)
	16:37	17:36	18:31	20:28	21:23	22:05	22:01	21:12	19:59	18:46	16:41	16:12	2	10:19 (9)
13	08:46	07:59	06:56	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:56	08:43		10:15 (9)
	16:39	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12	7	10:22 (9)
14	08:46	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57	08:44		10:15 (9)
	16:40	17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38	16:12	9	10:24 (9)
15	08:45	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59	08:45		10:14 (9)
	16:42	17:42	18:36	20:34	21:28	22:07	21:58	21:05	19:52	18:39	16:37	16:12	11	10:25 (9)
16	08:44	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01	08:46		10:14 (9)
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:36	16:35	16:12	12	10:26 (9)
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03	08:47		10:14 (9)
	16:45	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:33	16:12	13	10:27 (9)
18	08:42	07:49	06:43	06:28	05:28	05:02	05:24	06:16	07:11	08:05	08:05	08:48		10:14 (9)
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:12	13	10:27 (9)
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07	08:48		10:14 (9)
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13	15	10:29 (9)
20	08:39	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49		10:15 (9)
	16:51	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29	16:13	15	10:30 (9)
21	08:38	07:42	06:36	06:21	05:24	05:02	05:29	06:21	07:16	08:11	08:10	08:50		10:15 (9)
	16:52	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:13	15	10:30 (9)
22	08:37	07:40	06:34	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50		10:16 (9)
	16:54	17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14	15	10:31 (9)
23	08:35	07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15	08:14	08:51		10:16 (9)
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	16:14	15	10:31 (9)
24	08:34	07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16	08:51		10:16 (9)
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24	16:15	15	10:31 (9)
25	08:33	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51		10:18 (9)
	17:00	18:02	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	16:16	13	10:31 (9)
26	08:31	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:52		10:18 (9)
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22	16:16	13	10:31 (9)
27	08:30	07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21	08:52		10:19 (9)
	17:04	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17	12	10:31 (9)
28	08:28	07:26	06:19	06:06	05:14	05:04	05:40	06:33	07:29	07:25	08:23	08:52		10:20 (9)
	17:06	18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18	11	10:31 (9)
29	08:27		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52		10:21 (9)
	17:08		20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19	10	10:31 (9)
30	08:25		07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26	08:52		10:23 (9)
	17:10		20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20	7	10:30 (9)
31	08:23		07:11		05:11		05:44	06:39		07:30		08:52		10:25 (9)
	17:12		20:06		21:52		21:35	20:29		17:04		16:21	4	10:29 (9)
Potential sun hours	250	273	367	420	494	510	513	460	382	328	259	233		
Total, worst case													227	
Sun reduction													0.12	
Oper. time red.													1.00	
Wind dir. red.													0.62	
Total reduction													0.07	
Total, real													17	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** U - H022

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February	March	April	May	June	July	August	September	October	November			December		
1	08:52		09:42 (10)	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32			08:27		09:33 (10)
	16:22	54	14:24 (8)	17:14	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02			16:17	15	09:48 (10)
2	08:52		09:43 (10)	08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34			08:29		09:33 (10)
	16:23	54	14:25 (8)	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00			16:17	24	14:01 (8)
3	08:52		09:44 (10)	08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:38	07:36			08:30		09:32 (10)
	16:24	51	14:25 (8)	17:18	18:13	20:12	21:07	21:56	22:08	21:29	20:21	19:07	16:58			16:16	33	14:04 (8)
4	08:52		09:44 (10)	08:17	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38			08:32		09:32 (10)
	16:26	50	14:24 (8)	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56			16:15	37	14:06 (8)
5	08:51		09:45 (10)	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40			08:33		09:32 (10)
	16:27	48	14:24 (8)	17:22	18:17	20:15	21:11	21:58	22:06	21:26	20:17	19:03	16:54			16:15	42	14:08 (8)
6	08:51		09:46 (10)	08:13	07:12	06:57	05:49	05:06	05:10	05:55	06:49	07:43	07:42			08:35		09:32 (10)
	16:28	44	14:23 (8)	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52			16:14	44	14:09 (8)
7	08:50		09:46 (10)	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44			08:36		09:31 (10)
	16:30	42	14:22 (8)	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50			16:14	48	14:10 (8)
8	08:50		09:48 (10)	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46			08:37		09:32 (10)
	16:31	37	14:22 (8)	17:28	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48			16:13	50	14:12 (8)
9	08:49		09:49 (10)	08:07	07:05	06:50	05:44	05:04	05:13	06:00	06:55	07:49	07:48			08:39		09:32 (10)
	16:32	33	14:21 (8)	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47			16:13	52	14:13 (8)
10	08:49		09:50 (10)	08:05	07:03	06:47	05:42	05:04	05:14	06:02	06:56	07:50	07:50			08:40		09:32 (10)
	16:34	25	14:18 (8)	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45			16:12	54	14:14 (8)
11	08:48		09:51 (10)	08:03	07:00	06:45	05:40	05:03	05:16	06:03	06:58	07:52	07:52			08:41		09:33 (10)
	16:35	15	10:06 (10)	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43			16:12	54	14:15 (8)
12	08:47		09:53 (10)	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54			08:42		09:33 (10)
	16:37	12	10:05 (10)	17:36	18:31	20:28	21:23	22:05	22:01	21:11	19:59	18:46	16:41			16:12	56	14:16 (8)
13	08:46		09:55 (10)	07:59	06:56	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:56			08:43		09:33 (10)
	16:39	9	10:04 (10)	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40			16:12	57	14:17 (8)
14	08:45			07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57			08:44		09:33 (10)
	16:40			17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38			16:12	59	14:18 (8)
15	08:45			07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59			08:45		09:34 (10)
	16:42			17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36			16:12	59	14:18 (8)
16	08:44			07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01			08:46		09:34 (10)
	16:44			17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35			16:12	60	14:19 (8)
17	08:43			07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03			08:47		09:35 (10)
	16:45			17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:33			16:12	60	14:20 (8)
18	08:41			07:49	06:43	06:28	05:28	05:02	05:24	06:16	07:11	08:05	08:05			08:48		09:34 (10)
	16:47			17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32			16:12	62	14:20 (8)
19	08:40			07:47	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07			08:48		09:35 (10)
	16:49			17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31			16:13	62	14:21 (8)
20	08:39			07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09			08:49		09:36 (10)
	16:51			17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29			16:13	62	14:22 (8)
21	08:38			07:42	06:36	06:21	05:24	05:02	05:29	06:21	07:16	08:11	08:10			08:50		09:36 (10)
	16:52			17:54	18:48	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28			16:13	61	14:22 (8)
22	08:37			07:40	06:34	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12			08:50		09:37 (10)
	16:54			17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27			16:14	62	14:23 (8)
23	08:35			07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15	08:14			08:51		09:37 (10)
	16:56			17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25			16:14	61	14:23 (8)
24	08:34			07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16			08:51		09:37 (10)
	16:58			18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24			16:15	62	14:23 (8)
25	08:33			07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:18			08:51		09:38 (10)
	17:00			18:02	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23			16:16	62	14:24 (8)
26	08:31			07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19			08:52		09:38 (10)
	17:02			18:04	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22			16:16	61	14:24 (8)
27	08:30			07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21			08:52		09:39 (10)
	17:04			18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21			16:17	60	14:24 (8)
28	08:28			07:26	06:19	06:06	05:14	05:04	05:40	06:33	07:28	07:25	08:23			08:52		09:39 (10)
	17:06			18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20			16:18	60	14:24 (8)
29	08:27				07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24		09:37 (10)	08:52		09:40 (10)
	17:08				20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	8	09:45 (10)	16:19	60	14:25 (8)
30	08:25				07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26		09:34 (10)	08:52		09:41 (10)
	17:10				20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	12	09:46 (10)	16:20	58	14:25 (8)
31	08:23				07:11		05:11		05:44	06:39		07:30				08:52		09:41 (10)
	17:12				20:06		21:52		21:35	20:29		17:04				16:21	58	14:25 (8)
Potential sun hours	250			273	367	420	494	510	513	460	382	328	259			233		
Total, worst case		474												20			1655	
Sun reduction		0.16												0.20			0.12	
Oper. time red.		1.00												1.00			1.00	
Wind dir. red.		0.63												0.61			0.64	
Total reduction		0.10												0.12			0.08	
Total, real		48												2			126	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** V - H023

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March			April			May			June		
1	08:52		08:22		07:24			07:09			07:40 (6)	06:00			05:10		05:41 (4)
	16:23		17:14		18:10			20:08	18		07:58 (6)	21:04			21:54	29	06:10 (4)
2	08:52		08:20		07:22			07:07			07:41 (6)	05:58			05:10		05:40 (4)
	16:24		17:16		18:12			20:10	15		07:56 (6)	21:06			21:55	30	06:10 (4)
3	08:52		08:19		07:20			07:04			07:43 (6)	05:56			05:09		05:40 (4)
	16:25		17:18		18:14			20:12	10		07:53 (6)	21:07			21:56	30	06:10 (4)
4	08:52		08:17		07:17			07:02			07:26 (5)	05:54			05:08		05:39 (4)
	16:26		17:20		18:16			20:14	3		07:29 (5)	21:09			21:57	31	06:10 (4)
5	08:51		08:15		07:15			07:00			07:23 (5)	05:52			05:07		05:38 (4)
	16:27		17:22		18:17			20:16	7		07:30 (5)	21:11			21:58	32	06:10 (4)
6	08:51		08:13		07:13			06:57			07:21 (5)	05:50			05:06		05:39 (4)
	16:29		17:24		18:19			20:18	10		07:31 (5)	21:13			21:59	31	06:10 (4)
7	08:51		08:11		07:10			06:55			07:19 (5)	05:48			05:06		05:38 (4)
	16:30		17:26		18:21			20:19	13		07:32 (5)	21:15			22:00	32	06:10 (4)
8	08:50		08:09		07:08			06:52			07:16 (5)	05:46			05:05		05:39 (4)
	16:31		17:28		18:23			20:21	16		07:32 (5)	21:16			22:01	32	06:11 (4)
9	08:49		08:07		07:05			06:50			07:14 (5)	05:44			05:04		05:39 (4)
	16:33		17:30		18:25			20:23	19		07:33 (5)	21:18			22:02	31	06:10 (4)
10	08:49		08:05		07:03			06:47			07:11 (5)	05:42			05:04		05:40 (4)
	16:34		17:32		18:27			20:25	21		07:32 (5)	21:20			22:03	31	06:11 (4)
11	08:48		08:04		07:01			06:45			07:09 (5)	05:40			05:04		05:40 (4)
	16:36		17:34		18:29			20:27	23		07:32 (5)	21:22			22:04	31	06:11 (4)
12	08:47		08:02		06:58			06:43			07:07 (5)	05:39			05:03		05:40 (4)
	16:37		17:36		18:31			20:29	26		07:33 (5)	21:23			22:05	30	06:10 (4)
13	08:47		08:00		06:56			06:40			07:04 (5)	05:37			05:03		05:40 (4)
	16:39		17:38		18:33			20:31	28		07:32 (5)	21:25			22:05	31	06:11 (4)
14	08:46		07:57		06:53			06:38			07:02 (5)	05:35			05:03		05:41 (4)
	16:41		17:40		18:35			20:32	29		07:31 (5)	21:27			22:06	30	06:11 (4)
15	08:45		07:55		06:51			06:36			07:01 (5)	05:33		06:01 (4)	05:02		05:41 (4)
	16:42		17:42		18:37			20:34	30		07:31 (5)	21:28	2	06:03 (4)	22:07	30	06:11 (4)
16	08:44		07:53		06:49			06:33			07:02 (5)	05:32		06:00 (4)	05:02		05:42 (4)
	16:44		17:44		18:38			20:36	29		07:31 (5)	21:30	4	06:04 (4)	22:07	29	06:11 (4)
17	08:43		07:51		06:46			06:31			07:01 (5)	05:30		05:58 (4)	05:02		05:42 (4)
	16:46		17:46		18:40			20:38	28		07:29 (5)	21:32	7	06:05 (4)	22:08	30	06:12 (4)
18	08:42		07:49		06:44			06:29			07:02 (5)	05:29		05:57 (4)	05:02		05:42 (4)
	16:47		17:48		18:42			20:40	26		07:28 (5)	21:33	9	06:06 (4)	22:08	30	06:12 (4)
19	08:41		07:47		06:41			06:26			07:03 (5)	05:27		05:55 (4)	05:02		05:42 (4)
	16:49		17:50		18:44			20:42	24		07:27 (5)	21:35	11	06:06 (4)	22:08	30	06:12 (4)
20	08:39		07:45		06:39			06:24			07:04 (5)	05:25		05:54 (4)	05:02		05:43 (4)
	16:51		17:52		18:46			20:43	21		07:25 (5)	21:37	13	06:07 (4)	22:09	29	06:12 (4)
21	08:38		07:43		06:36			06:22			07:05 (5)	05:24		05:53 (4)	05:02		05:43 (4)
	16:53		17:54		18:48			20:45	18		07:23 (5)	21:38	15	06:08 (4)	22:09	29	06:12 (4)
22	08:37		07:40		06:34		06:58 (6)	06:20			07:07 (5)	05:22		05:52 (4)	05:02		05:43 (4)
	16:55		17:56		18:50	4	07:02 (6)	20:47	13		07:20 (5)	21:40	16	06:08 (4)	22:09	29	06:12 (4)
23	08:36		07:38		06:31		06:55 (6)	06:17			07:13 (5)	05:21		05:50 (4)	05:03		05:43 (4)
	16:57		17:58		18:52	7	07:02 (6)	20:49	1		07:14 (5)	21:41	18	06:08 (4)	22:09	30	06:13 (4)
24	08:34		07:36		06:29		06:53 (6)	06:15				05:20		05:49 (4)	05:03		05:43 (4)
	16:58		18:00		18:53	10	07:03 (6)	20:51				21:43	19	06:08 (4)	22:10	30	06:13 (4)
25	08:33		07:34		06:26		06:50 (6)	06:13				05:18		05:48 (4)	05:03		05:43 (4)
	17:00		18:02		18:55	13	07:03 (6)	20:53				21:44	21	06:09 (4)	22:10	30	06:13 (4)
26	08:31		07:31		06:24		06:48 (6)	06:11				05:17		05:47 (4)	05:04		05:44 (4)
	17:02		18:04		18:57	15	07:03 (6)	20:55				21:46	22	06:09 (4)	22:10	29	06:13 (4)
27	08:30		07:29		06:22		06:45 (6)	06:08				05:16		05:46 (4)	05:04		05:43 (4)
	17:04		18:06		18:59	17	07:02 (6)	20:56				21:47	23	06:09 (4)	22:09	30	06:13 (4)
28	08:28		07:27		06:19		06:43 (6)	06:06				05:15		05:45 (4)	05:05		05:44 (4)
	17:06		18:08		19:01	19	07:02 (6)	20:58				21:49	25	06:10 (4)	22:09	30	06:14 (4)
29	08:27				07:17		07:40 (6)	06:04				05:14		05:44 (4)	05:05		05:44 (4)
	17:08				20:03	21	08:01 (6)	21:00				21:50	26	06:10 (4)	22:09	30	06:14 (4)
30	08:25				07:14		07:39 (6)	06:02				05:13		05:43 (4)	05:06		05:44 (4)
	17:10				20:05	22	08:01 (6)	21:02				21:51	27	06:10 (4)	22:09	30	06:14 (4)
31	08:24				07:12		07:38 (6)					05:11		05:42 (4)			
	17:12				20:06	21	07:59 (6)					21:52	28	06:10 (4)			
Potential sun hours	250		273		367			420				494			510		
Total, worst case						149			428				286			906	
Sun reduction						0.22			0.31				0.31			0.26	
Oper. time red.						1.00			1.00				1.00			1.00	
Wind dir. red.						0.65			0.64				0.64			0.64	
Total reduction						0.14			0.20				0.20			0.17	
Total, real						21			84				57			150	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** V - H023

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August			September		October		November	December
1	05:07		05:45 (4)	05:47		06:41		07:08 (5)	07:34	07:33	08:28
	22:09	30	06:15 (4)	21:33		20:26	23	07:31 (5)	19:13	17:02	16:18
2	05:07		05:44 (4)	05:48		06:43		07:10 (5)	07:36	07:34	08:29
	22:08	31	06:15 (4)	21:31		20:24	21	07:31 (5)	19:10	17:00	16:17
3	05:08		05:44 (4)	05:50		06:44		07:12 (5)	07:38	07:36	08:31
	22:08	31	06:15 (4)	21:29		20:22	19	07:31 (5)	19:08	16:58	16:16
4	05:09		05:44 (4)	05:52		06:46		07:13 (5)	07:40	07:38	08:32
	22:07	32	06:16 (4)	21:28		20:19	16	07:29 (5)	19:05	16:56	16:16
5	05:10		05:45 (4)	05:53		06:48		07:15 (5)	07:41	07:40	08:33
	22:07	31	06:16 (4)	21:26		20:17	13	07:28 (5)	19:03	16:54	16:15
6	05:11		05:45 (4)	05:55		06:50		07:17 (5)	07:43	07:42	08:35
	22:06	32	06:17 (4)	21:24		20:14	10	07:27 (5)	19:00	16:52	16:14
7	05:12		05:45 (4)	05:57		06:51		07:18 (5)	07:45	07:44	08:36
	22:05	32	06:17 (4)	21:22		20:12	7	07:25 (5)	18:58	16:51	16:14
8	05:13		05:46 (4)	05:58		06:53		07:20 (5)	07:47	07:46	08:37
	22:05	31	06:17 (4)	21:20		20:10	3	07:23 (5)	18:56	16:49	16:14
9	05:14		05:46 (4)	06:00		06:55		07:37 (6)	07:49	07:48	08:39
	22:04	31	06:17 (4)	21:18		20:07	10	07:47 (6)	18:53	16:47	16:13
10	05:15		05:48 (4)	06:02		06:57		07:35 (6)	07:51	07:50	08:40
	22:03	30	06:18 (4)	21:16		20:05	14	07:49 (6)	18:51	16:45	16:13
11	05:16		05:49 (4)	06:04		06:59		07:32 (6)	07:53	07:52	08:41
	22:02	29	06:18 (4)	21:14		20:02	18	07:50 (6)	18:49	16:43	16:13
12	05:17		05:50 (4)	06:05		07:00		07:31 (6)	07:54	07:54	08:42
	22:01	28	06:18 (4)	21:12		20:00	20	07:51 (6)	18:46	16:42	16:12
13	05:18		05:51 (4)	06:07		07:02		07:30 (6)	07:56	07:56	08:43
	22:00	27	06:18 (4)	21:10		19:57	22	07:52 (6)	18:44	16:40	16:12
14	05:20		05:52 (4)	06:09		07:04		07:30 (6)	07:58	07:58	08:44
	21:59	26	06:18 (4)	21:08		19:55	21	07:51 (6)	18:41	16:38	16:12
15	05:21		05:53 (4)	06:11		07:06		07:32 (6)	08:00	08:00	08:45
	21:58	25	06:18 (4)	21:05		19:52	20	07:52 (6)	18:39	16:37	16:12
16	05:22		05:54 (4)	06:12		07:07		07:34 (6)	08:02	08:01	08:46
	21:57	24	06:18 (4)	21:03		19:50	18	07:52 (6)	18:37	16:35	16:12
17	05:23		05:56 (4)	06:14		07:09		07:36 (6)	08:04	08:03	08:47
	21:56	23	06:19 (4)	21:01		19:47	16	07:52 (6)	18:34	16:34	16:13
18	05:25		05:57 (4)	06:16		07:11		07:37 (6)	08:06	08:05	08:48
	21:55	21	06:18 (4)	20:59		19:45	13	07:50 (6)	18:32	16:32	16:13
19	05:26		05:58 (4)	06:18		07:13		07:39 (6)	08:07	08:07	08:48
	21:53	20	06:18 (4)	20:57		19:42	11	07:50 (6)	18:30	16:31	16:13
20	05:28		06:00 (4)	06:20	07:17 (5)	07:14		07:41 (6)	08:09	08:09	08:49
	21:52	19	06:19 (4)	20:54	5 07:22 (5)	19:40	8	07:49 (6)	18:28	16:30	16:13
21	05:29		06:01 (4)	06:21	07:13 (5)	07:16		07:43 (6)	08:11	08:11	08:50
	21:51	17	06:18 (4)	20:52	13 07:26 (5)	19:37	5	07:48 (6)	18:25	16:28	16:14
22	05:31		06:02 (4)	06:23	07:09 (5)	07:18		07:44 (6)	08:13	08:12	08:50
	21:49	15	06:17 (4)	20:50	19 07:28 (5)	19:35	1	07:45 (6)	18:23	16:27	16:14
23	05:32		06:04 (4)	06:25	07:08 (5)	07:20			08:15	08:14	08:51
	21:48	14	06:18 (4)	20:48	21 07:29 (5)	19:32			18:21	16:26	16:15
24	05:34		06:05 (4)	06:27	07:07 (5)	07:22			08:17	08:16	08:51
	21:46	12	06:17 (4)	20:45	24 07:31 (5)	19:30			18:19	16:25	16:15
25	05:35		06:07 (4)	06:28	07:05 (5)	07:23			07:19	08:18	08:52
	21:45	10	06:17 (4)	20:43	26 07:31 (5)	19:27			17:17	16:23	16:16
26	05:37		06:08 (4)	06:30	07:04 (5)	07:25			07:21	08:19	08:52
	21:43	8	06:16 (4)	20:41	28 07:32 (5)	19:25			17:14	16:22	16:17
27	05:38		06:09 (4)	06:32	07:03 (5)	07:27			07:23	08:21	08:52
	21:42	6	06:15 (4)	20:38	29 07:32 (5)	19:23			17:12	16:21	16:18
28	05:40		06:11 (4)	06:34	07:02 (5)	07:29			07:25	08:23	08:52
	21:40	3	06:14 (4)	20:36	30 07:32 (5)	19:20			17:10	16:20	16:18
29	05:42		06:12 (4)	06:36	07:03 (5)	07:31			07:27	08:24	08:52
	21:38	1	06:13 (4)	20:34	29 07:32 (5)	19:18			17:08	16:19	16:19
30	05:43			06:37	07:05 (5)	07:32			07:29	08:26	08:52
	21:37			20:31	27 07:32 (5)	19:15			17:06	16:19	16:20
31	05:45			06:39	07:07 (5)				07:31		08:52
	21:35			20:29	25 07:32 (5)				17:04		16:21
Potential sun hours	512			460		382			328	259	233
Total, worst case		639			276		309				
Sun reduction		0.22			0.26		0.25				
Oper. time red.		1.00			1.00		1.00				
Wind dir. red.		0.64			0.64		0.64				
Total reduction		0.14			0.16		0.16				
Total, real		91			45		50				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** W - H024

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:09	20:08	21:03	21:53	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:19	07:04	05:56	05:08	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58	16:16
4	08:51	08:16	07:17	07:02	05:54	05:08	05:09	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52	05:07	05:09	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11	21:58	22:06	21:25	20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50	05:06	05:10	05:55	06:49	07:43	07:42	08:35
	16:28	17:24	18:19	20:17	21:12	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:50	05:44	05:04	05:13	06:00	06:55	07:48	07:48	08:38
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:48	08:05	07:03	06:47	05:42	05:04	05:14	06:02	06:56	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:00	06:45	05:40	05:03	05:16	06:03	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:26	21:21	22:04	22:02	21:13	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:56	06:40	05:37	05:02	05:18	06:07	07:02	07:56	07:55	08:43
	16:39	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:26	22:06	21:59	21:07	19:54	18:41	16:38	16:12
15	08:44	07:55	06:51	06:35	05:33	05:02	05:21	06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:43	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16:12
17	08:42	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:31	22:07	21:56	21:01	19:47	18:34	16:34	16:12
18	08:41	07:49	06:43	06:28	05:28	05:02	05:25	06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:39	21:33	22:08	21:54	20:59	19:44	18:32	16:32	16:12
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:24	05:02	05:29	06:21	07:16	08:11	08:10	08:49
	16:53	17:54	18:48	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:13
22	08:37	07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:39	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15	08:14	08:50
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	16:14
24	08:34	07:36	06:29	06:15	05:19	05:03	05:33	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:42	22:09	21:46	20:45	19:30	18:18	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:17	08:51
	17:00	18:02	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	05:04	05:40	06:33	07:28	07:24	08:22	08:52
	17:06	18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** X - H025

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March		April		May			June		
1	08:52	08:22	07:24		07:09		07:40 (6)	06:00			05:10	05:41 (4)
	16:23	17:14	18:10		20:08	17	07:57 (6)	21:04			21:54	31 06:12 (4)
2	08:52	08:20	07:22		07:07		07:42 (6)	05:58			05:10	05:41 (4)
	16:24	17:16	18:12		20:10	13	07:55 (6)	21:06			21:55	31 06:12 (4)
3	08:52	08:19	07:20		07:04		07:44 (6)	05:56			05:09	05:43 (4)
	16:25	17:18	18:14		20:12	7	07:51 (6)	21:07			21:56	29 06:12 (4)
4	08:52	08:17	07:17		07:02		07:26 (5)	05:54			05:08	05:43 (4)
	16:26	17:20	18:16		20:14	4	07:30 (5)	21:09			21:57	29 06:12 (4)
5	08:51	08:15	07:15		07:00		07:23 (5)	05:52			05:07	05:43 (4)
	16:27	17:22	18:17		20:16	7	07:30 (5)	21:11			21:58	29 06:12 (4)
6	08:51	08:13	07:13		06:57		07:21 (5)	05:50			05:06	05:44 (4)
	16:29	17:24	18:19		20:18	11	07:32 (5)	21:13			21:59	28 06:12 (4)
7	08:51	08:11	07:10		06:55		07:19 (5)	05:48			05:06	05:43 (4)
	16:30	17:26	18:21		20:19	14	07:33 (5)	21:15			22:00	29 06:12 (4)
8	08:50	08:09	07:08		06:52		07:16 (5)	05:46			05:05	05:44 (4)
	16:31	17:28	18:23		20:21	16	07:32 (5)	21:16			22:01	28 06:12 (4)
9	08:49	08:07	07:05		06:50		07:14 (5)	05:44			05:04	05:44 (4)
	16:33	17:30	18:25		20:23	19	07:33 (5)	21:18			22:02	27 06:11 (4)
10	08:49	08:06	07:03		06:47		07:11 (5)	05:42			05:04	05:45 (4)
	16:34	17:32	18:27		20:25	21	07:32 (5)	21:20			22:03	27 06:12 (4)
11	08:48	08:04	07:01		06:45		07:09 (5)	05:40			05:04	05:46 (4)
	16:36	17:34	18:29		20:27	23	07:32 (5)	21:22			22:04	26 06:12 (4)
12	08:47	08:02	06:58		06:43		07:07 (5)	05:39			05:03	05:45 (4)
	16:37	17:36	18:31		20:29	25	07:32 (5)	21:23			22:05	26 06:11 (4)
13	08:47	08:00	06:56		06:40		07:04 (5)	05:37		06:04 (4)	05:03	05:46 (4)
	16:39	17:38	18:33		20:31	27	07:31 (5)	21:25	2	06:06 (4)	22:05	26 06:12 (4)
14	08:46	07:57	06:53		06:38		07:02 (5)	05:35		06:03 (4)	05:03	05:47 (4)
	16:41	17:40	18:35		20:32	29	07:31 (5)	21:27	5	06:08 (4)	22:06	25 06:12 (4)
15	08:45	07:55	06:51		06:36		07:03 (5)	05:33		06:01 (4)	05:02	05:47 (4)
	16:42	17:42	18:37		20:34	27	07:30 (5)	21:28	7	06:08 (4)	22:07	25 06:12 (4)
16	08:44	07:53	06:49		06:33		07:03 (5)	05:32		06:00 (4)	05:02	05:47 (4)
	16:44	17:44	18:38		20:36	27	07:30 (5)	21:30	9	06:09 (4)	22:07	25 06:12 (4)
17	08:43	07:51	06:46		06:31		07:03 (5)	05:30		05:58 (4)	05:02	05:48 (4)
	16:46	17:46	18:40		20:38	25	07:28 (5)	21:32	11	06:09 (4)	22:08	24 06:12 (4)
18	08:42	07:49	06:44		06:29		07:04 (5)	05:29		05:57 (4)	05:02	05:48 (4)
	16:47	17:48	18:42		20:40	23	07:27 (5)	21:33	13	06:10 (4)	22:08	24 06:12 (4)
19	08:41	07:47	06:41		06:26		07:05 (5)	05:27		05:55 (4)	05:02	05:48 (4)
	16:49	17:50	18:44		20:42	20	07:25 (5)	21:35	15	06:10 (4)	22:08	24 06:12 (4)
20	08:39	07:45	06:39		06:24		07:07 (5)	05:25		05:54 (4)	05:02	05:48 (4)
	16:51	17:52	18:46		20:43	16	07:23 (5)	21:37	17	06:11 (4)	22:09	25 06:13 (4)
21	08:38	07:43	06:36		06:22		07:09 (5)	05:24		05:53 (4)	05:02	05:48 (4)
	16:53	17:54	18:48		20:45	11	07:20 (5)	21:38	18	06:11 (4)	22:09	25 06:13 (4)
22	08:37	07:40	06:34	06:58 (6)	06:20			05:22		05:52 (4)	05:02	05:48 (4)
	16:55	17:56	18:50	3 07:01 (6)	20:47			21:40	20	06:12 (4)	22:09	25 06:13 (4)
23	08:36	07:38	06:31	06:55 (6)	06:17			05:21		05:50 (4)	05:03	05:49 (4)
	16:57	17:58	18:52	6 07:01 (6)	20:49			21:41	21	06:11 (4)	22:09	25 06:14 (4)
24	08:34	07:36	06:29	06:53 (6)	06:15			05:20		05:49 (4)	05:03	05:49 (4)
	16:58	18:00	18:53	9 07:02 (6)	20:51			21:43	23	06:12 (4)	22:10	24 06:13 (4)
25	08:33	07:34	06:26	06:50 (6)	06:13			05:18		05:48 (4)	05:03	05:49 (4)
	17:00	18:02	18:55	12 07:02 (6)	20:53			21:44	24	06:12 (4)	22:10	24 06:13 (4)
26	08:31	07:31	06:24	06:48 (6)	06:11			05:17		05:47 (4)	05:04	05:50 (4)
	17:02	18:04	18:57	14 07:02 (6)	20:55			21:46	25	06:12 (4)	22:10	24 06:14 (4)
27	08:30	07:29	06:22	06:45 (6)	06:08			05:16		05:46 (4)	05:04	05:49 (4)
	17:04	18:06	18:59	17 07:02 (6)	20:56			21:47	26	06:12 (4)	22:09	25 06:14 (4)
28	08:28	07:27	06:19	06:43 (6)	06:06			05:15		05:45 (4)	05:05	05:50 (4)
	17:06	18:08	19:01	18 07:01 (6)	20:58			21:49	27	06:12 (4)	22:09	25 06:15 (4)
29	08:27		07:17	07:40 (6)	06:04			05:14		05:44 (4)	05:05	05:49 (4)
	17:08		20:03	20 08:00 (6)	21:00			21:50	28	06:12 (4)	22:09	26 06:15 (4)
30	08:25		07:14	07:38 (6)	06:02			05:13		05:43 (4)	05:06	05:50 (4)
	17:10		20:05	22 08:00 (6)	21:02			21:51	29	06:12 (4)	22:09	26 06:16 (4)
31	08:24		07:12	07:39 (6)				05:11		05:42 (4)		
	17:12		20:06	19 07:58 (6)				21:52	30	06:12 (4)		
Potential sun hours	250	273	367		420			494			510	
Total, worst case				140		382			350			787
Sun reduction				0.22		0.31			0.31			0.26
Oper. time red.				1.00		1.00			1.00			1.00
Wind dir. red.				0.65		0.64			0.64			0.64
Total reduction				0.14		0.20			0.20			0.17
Total, real				20		75			70			130

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** X - H025

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August		September		October	November	December
1	05:07		05:50 (4)	05:47		06:41	07:08 (5)	07:34	07:33	08:28
	22:09	26	06:16 (4)	21:33		20:26	23	07:31 (5)	19:13	17:02	16:18
2	05:07		05:49 (4)	05:48		06:43	07:10 (5)	07:36	07:34	08:29
	22:08	27	06:16 (4)	21:31		20:24	21	07:31 (5)	19:10	17:00	16:17
3	05:08		05:50 (4)	05:50		06:44	07:12 (5)	07:38	07:36	08:31
	22:08	27	06:17 (4)	21:29		20:22	19	07:31 (5)	19:08	16:58	16:16
4	05:09		05:50 (4)	05:52		06:46	07:13 (5)	07:40	07:38	08:32
	22:07	27	06:17 (4)	21:28		20:19	16	07:29 (5)	19:05	16:56	16:16
5	05:10		05:50 (4)	05:53		06:48	07:15 (5)	07:41	07:40	08:33
	22:07	28	06:18 (4)	21:26		20:17	14	07:29 (5)	19:03	16:54	16:15
6	05:11		05:50 (4)	05:55		06:50	07:17 (5)	07:43	07:42	08:35
	22:06	28	06:18 (4)	21:24		20:14	11	07:28 (5)	19:00	16:52	16:14
7	05:12		05:50 (4)	05:57		06:52	07:18 (5)	07:45	07:44	08:36
	22:05	29	06:19 (4)	21:22		20:12	8	07:26 (5)	18:58	16:51	16:14
8	05:13		05:50 (4)	05:58		06:53	07:20 (5)	07:47	07:46	08:37
	22:05	29	06:19 (4)	21:20		20:10	4	07:24 (5)	18:56	16:49	16:14
9	05:14		05:50 (4)	06:00		06:55	07:38 (6)	07:49	07:48	08:39
	22:04	30	06:20 (4)	21:18		20:07	7	07:45 (6)	18:53	16:47	16:13
10	05:15		05:50 (4)	06:02		06:57	07:35 (6)	07:51	07:50	08:40
	22:03	30	06:20 (4)	21:16		20:05	13	07:48 (6)	18:51	16:45	16:13
11	05:16		05:50 (4)	06:04		06:59	07:32 (6)	07:53	07:52	08:41
	22:02	30	06:20 (4)	21:14		20:02	17	07:49 (6)	18:49	16:43	16:13
12	05:17		05:50 (4)	06:05		07:00	07:31 (6)	07:54	07:54	08:42
	22:01	30	06:20 (4)	21:12		20:00	19	07:50 (6)	18:46	16:42	16:12
13	05:18		05:51 (4)	06:07		07:02	07:30 (6)	07:56	07:56	08:43
	22:00	30	06:21 (4)	21:10		19:57	21	07:51 (6)	18:44	16:40	16:12
14	05:20		05:52 (4)	06:09		07:04	07:30 (6)	07:58	07:58	08:44
	21:59	29	06:21 (4)	21:08		19:55	21	07:51 (6)	18:41	16:38	16:12
15	05:21		05:53 (4)	06:11		07:06	07:32 (6)	08:00	08:00	08:45
	21:58	28	06:21 (4)	21:05		19:52	19	07:51 (6)	18:39	16:37	16:12
16	05:22		05:54 (4)	06:12		07:07	07:34 (6)	08:02	08:01	08:46
	21:57	27	06:21 (4)	21:03		19:50	17	07:51 (6)	18:37	16:35	16:12
17	05:23		05:56 (4)	06:14		07:09	07:36 (6)	08:04	08:03	08:47
	21:56	26	06:22 (4)	21:01		19:47	15	07:51 (6)	18:34	16:34	16:13
18	05:25		05:57 (4)	06:16		07:11	07:37 (6)	08:06	08:05	08:48
	21:55	25	06:22 (4)	20:59		19:45	12	07:49 (6)	18:32	16:32	16:13
19	05:26		05:58 (4)	06:18		07:13	07:39 (6)	08:08	08:07	08:48
	21:53	23	06:21 (4)	20:57		19:42	10	07:49 (6)	18:30	16:31	16:13
20	05:28		06:00 (4)	06:20		07:15	07:41 (6)	08:09	08:09	08:49
	21:52	22	06:22 (4)	20:54		19:40	7	07:48 (6)	18:28	16:30	16:13
21	05:29		06:01 (4)	06:21		07:16	07:43 (6)	08:11	08:11	08:50
	21:51	21	06:22 (4)	20:52		19:37	4	07:47 (6)	18:25	16:28	16:14
22	05:31		06:02 (4)	06:23	07:13 (5)	07:18		08:13	08:12	08:50
	21:49	19	06:21 (4)	20:50	12	07:25 (5)	19:35		18:23	16:27	16:14
23	05:32		06:04 (4)	06:25	07:11 (5)	07:20		08:15	08:14	08:51
	21:48	18	06:22 (4)	20:48	16	07:27 (5)	19:32		18:21	16:26	16:15
24	05:34		06:05 (4)	06:27	07:09 (5)	07:22		08:17	08:16	08:51
	21:46	16	06:21 (4)	20:45	20	07:29 (5)	19:30		18:19	16:25	16:15
25	05:35		06:07 (4)	06:28	07:07 (5)	07:23		07:19	08:18	08:52
	21:45	14	06:21 (4)	20:43	23	07:30 (5)	19:27		17:17	16:23	16:16
26	05:37		06:08 (4)	06:30	07:06 (5)	07:25		07:21	08:19	08:52
	21:43	12	06:20 (4)	20:41	25	07:31 (5)	19:25		17:14	16:22	16:17
27	05:38		06:09 (4)	06:32	07:05 (5)	07:27		07:23	08:21	08:52
	21:42	10	06:19 (4)	20:38	27	07:32 (5)	19:23		17:12	16:21	16:18
28	05:40		06:11 (4)	06:34	07:03 (5)	07:29		07:25	08:23	08:52
	21:40	8	06:19 (4)	20:36	28	07:31 (5)	19:20		17:10	16:20	16:18
29	05:42		06:12 (4)	06:36	07:03 (5)	07:31		07:27	08:24	08:52
	21:38	6	06:18 (4)	20:34	29	07:32 (5)	19:18		17:08	16:19	16:19
30	05:43		06:14 (4)	06:37	07:05 (5)	07:32		07:29	08:26	08:52
	21:37	4	06:18 (4)	20:31	27	07:32 (5)	19:15		17:06	16:19	16:20
31	05:45		06:15 (4)	06:39	07:07 (5)			07:31		08:52
	21:35	1	06:16 (4)	20:29	25	07:32 (5)			17:04		16:21
Potential sun hours	512			460			382		328	259	233
Total, worst case		680			232			298				
Sun reduction		0.22			0.26			0.25				
Oper. time red.		1.00			1.00			1.00				
Wind dir. red.		0.64			0.64			0.64				
Total reduction		0.14			0.16			0.16				
Total, real		97			38			48				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** Y - H027

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	21:08 (5) 05:06	21:14 (5) 05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:10	20:08	21:04	21:54 11	21:19 (6) 22:08 19	21:33 (6) 21:33	20:26	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:09	21:08 (5) 05:07	21:14 (6) 05:48	06:42	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:05	21:55 12	21:20 (6) 22:08 18	21:32 (6) 21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	05:09	21:09 (5) 05:08	21:14 (5) 05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12	21:07	21:56 13	21:22 (6) 22:07 18	21:32 (6) 21:29	20:21	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	21:09 (5) 05:09	21:15 (5) 05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57 13	21:22 (6) 22:07 17	21:32 (6) 21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52	05:07	21:08 (5) 05:10	21:15 (5) 05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	21:58 15	21:23 (6) 22:06 16	21:31 (6) 21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50	05:06	21:09 (5) 05:11	21:15 (5) 05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:17	21:13	21:59 15	21:24 (6) 22:06 16	21:31 (6) 21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:55	05:48	05:06	21:09 (5) 05:12	21:15 (5) 05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00 16	21:25 (6) 22:05 15	21:30 (6) 21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	21:09 (5) 05:13	21:15 (5) 05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01 17	21:26 (6) 22:04 14	21:29 (6) 21:20	20:09	18:56	16:49	16:13
9	08:49	08:07	07:05	06:50	05:44	05:04	21:09 (5) 05:14	21:15 (5) 06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02 17	21:26 (6) 22:04 13	21:28 (6) 21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	21:09 (5) 05:15	21:15 (5) 06:02	06:57	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03 19	21:28 (6) 22:03 13	21:28 (6) 21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:01	06:45	05:40	05:03	21:09 (5) 05:16	21:16 (5) 06:04	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21	22:04 19	21:28 (6) 22:02 11	21:27 (6) 21:14	20:02	18:48	16:43	16:13
12	08:47	08:01	06:58	06:43	05:39	05:03	21:09 (5) 05:17	21:17 (5) 06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23	22:04 20	21:29 (6) 22:01 10	21:27 (6) 21:12	20:00	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	05:37	05:03	21:10 (6) 05:18	21:17 (5) 06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	22:05 19	21:29 (6) 22:00 9	21:26 (6) 21:09	19:57	18:44	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	05:02	21:10 (6) 05:19	21:18 (5) 06:09	07:04	07:58	07:57	08:44
	16:41	17:40	18:35	20:32	21:27	22:06 20	21:30 (6) 21:59 7	21:25 (6) 21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	05:33	05:02	21:11 (6) 05:21	21:18 (5) 06:11	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06 20	21:31 (6) 21:58 6	21:24 (5) 21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32	05:02	21:11 (6) 05:22	21:18 (5) 06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07 20	21:31 (6) 21:57 4	21:22 (5) 21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	21:11 (6) 05:23	21:20 (5) 06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:07 21	21:32 (6) 21:56 2	21:22 (5) 21:01	19:47	18:34	16:34	16:12
18	08:42	07:49	06:43	06:28	05:28	05:02	21:11 (6) 05:25	21:20 (5) 06:16	07:11	08:05	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08 21	21:32 (6) 21:54 1	21:21 (5) 20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	05:02	21:11 (6) 05:26	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08 22	21:33 (6) 21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	21:11 (6) 05:28	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:09 22	21:33 (6) 21:52	20:54	19:40	18:28	16:29	16:13
21	08:38	07:42	06:36	06:22	05:24	05:02	21:11 (6) 05:29	06:21	07:16	08:11	08:10	08:50
	16:53	17:54	18:48	20:45	21:38	22:09 22	21:33 (6) 21:50	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	05:02	21:11 (6) 05:30	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09 22	21:33 (6) 21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:03	21:12 (6) 05:32	06:25	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41	22:09 22	21:34 (6) 21:48	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	21:12 (6) 05:34	06:27	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09 21	21:33 (6) 21:46	20:45	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	21:12 (6) 05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	21:44	22:09 21	21:33 (6) 21:45	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17 21:10 (5)	05:04	21:13 (6) 05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46 2 21:12 (5)	22:09 21	21:34 (6) 21:43	20:40	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16 21:10 (5)	05:04	21:13 (6) 05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47 3 21:13 (5)	22:09 20	21:33 (6) 21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:27	06:19	06:06	05:15 21:10 (5)	05:05	21:13 (5) 05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48 5 21:15 (5)	22:09 20	21:33 (6) 21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13 21:09 (5)	05:05	21:13 (6) 05:41	06:35	07:30	07:27	08:24	08:52
	17:08		20:03	21:00	21:50 7 21:16 (5)	22:09 20	21:33 (6) 21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12 21:09 (5)	05:06	21:14 (6) 05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51 8 21:17 (6)	22:09 19	21:33 (6) 21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:12		05:11 21:09 (5)		05:45	06:39		07:30		08:52
	17:12		20:06		21:52 9 21:18 (6)		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case					34	560	209					
Sun reduction					0.31	0.26	0.22					
Oper. time red.					1.00	1.00	1.00					
Wind dir. red.					0.60	0.60	0.60					
Total reduction					0.19	0.16	0.13					
Total, real					6	87	28					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** Z - H028

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February	March	April	May	June	July	August	September	October	November			December		
1	08:52		09:26 (10)	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32			08:27		09:10 (10)
	16:22	18	09:44 (10)	17:14	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02			16:17	18	09:28 (10)
2	08:52		09:26 (10)	08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34			08:29		09:11 (10)
	16:23	19	09:45 (10)	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00			16:17	18	09:29 (10)
3	08:52		09:26 (10)	08:18	07:19	07:04	05:56	05:08	05:08	05:49	06:44	07:38	07:36			08:30		09:10 (10)
	16:24	20	09:46 (10)	17:18	18:13	20:12	21:07	21:56	22:08	21:29	20:21	19:07	16:58			16:16	20	09:30 (10)
4	08:52		09:25 (10)	08:17	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38			08:32		09:10 (10)
	16:26	20	09:45 (10)	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56			16:15	21	09:31 (10)
5	08:51		09:25 (10)	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40			08:33		09:11 (10)
	16:27	21	09:46 (10)	17:22	18:17	20:15	21:11	21:58	22:07	21:26	20:17	19:03	16:54			16:15	21	09:32 (10)
6	08:51		09:25 (10)	08:13	07:12	06:57	05:50	05:06	05:10	05:55	06:49	07:43	07:42			08:35		09:11 (10)
	16:28	21	09:46 (10)	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52			16:14	21	09:32 (10)
7	08:50		09:25 (10)	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44			08:36		09:11 (10)
	16:30	21	09:46 (10)	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50			16:14	21	09:32 (10)
8	08:50		09:26 (10)	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46			08:37		09:13 (10)
	16:31	21	09:47 (10)	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:55	16:48			16:13	20	09:33 (10)
9	08:49		09:27 (10)	08:07	07:05	06:50	05:44	05:04	05:13	06:00	06:55	07:49	07:48			08:39		09:14 (10)
	16:32	19	09:46 (10)	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47			16:13	20	09:34 (10)
10	08:49		09:28 (10)	08:05	07:03	06:47	05:42	05:04	05:14	06:02	06:56	07:50	07:50			08:40		09:15 (10)
	16:34	18	09:46 (10)	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45			16:12	19	09:34 (10)
11	08:48		09:28 (10)	08:03	07:00	06:45	05:40	05:03	05:16	06:03	06:58	07:52	07:52			08:41		09:17 (10)
	16:35	18	09:46 (10)	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43			16:12	18	09:35 (10)
12	08:47		09:29 (10)	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54			08:42		09:18 (10)
	16:37	17	09:46 (10)	17:36	18:31	20:28	21:23	22:05	22:01	21:12	19:59	18:46	16:41			16:12	18	09:36 (10)
13	08:46		09:31 (10)	07:59	06:56	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:56			08:43		09:19 (10)
	16:39	14	09:45 (10)	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40			16:12	17	09:36 (10)
14	08:46		09:32 (10)	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57			08:44		09:20 (10)
	16:40	13	09:45 (10)	17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38			16:12	17	09:37 (10)
15	08:45		09:34 (10)	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59			08:45		09:21 (10)
	16:42	10	09:44 (10)	17:42	18:36	20:34	21:28	22:07	21:58	21:05	19:52	18:39	16:37			16:12	16	09:37 (10)
16	08:44		09:37 (10)	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01			08:46		09:22 (10)
	16:44	5	09:42 (10)	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:36	16:35			16:12	16	09:38 (10)
17	08:43			07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03			08:47		09:23 (10)
	16:45			17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:33			16:12	15	09:38 (10)
18	08:42			07:49	06:43	06:28	05:28	05:02	05:24	06:16	07:11	08:05	08:05			08:48		09:23 (10)
	16:47			17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32			16:12	15	09:38 (10)
19	08:40			07:47	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07			08:48		09:24 (10)
	16:49			17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31			16:13	15	09:39 (10)
20	08:39			07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09			08:49		09:25 (10)
	16:51			17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29			16:13	15	09:40 (10)
21	08:38			07:42	06:36	06:21	05:24	05:02	05:29	06:21	07:16	08:11	08:10			08:50		09:25 (10)
	16:52			17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28			16:13	15	09:40 (10)
22	08:37			07:40	06:34	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12			08:50		09:26 (10)
	16:54			17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27			16:14	15	09:41 (10)
23	08:35			07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15	08:14			08:51		09:26 (10)
	16:56			17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25			16:14	15	09:41 (10)
24	08:34			07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16			08:51		09:26 (10)
	16:58			18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24			16:15	15	09:41 (10)
25	08:33			07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:18			08:51		09:27 (10)
	17:00			18:02	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23			16:16	15	09:42 (10)
26	08:31			07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19		09:15 (10)	08:52		09:27 (10)
	17:02			18:04	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22	5	09:20 (10)	16:16	15	09:42 (10)
27	08:30			07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21		09:13 (10)	08:52		09:27 (10)
	17:04			18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	10	09:23 (10)	16:17	15	09:42 (10)
28	08:28			07:26	06:19	06:06	05:14	05:04	05:40	06:33	07:29	07:25	08:23		09:12 (10)	08:52		09:27 (10)
	17:06			18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	13	09:25 (10)	16:18	16	09:43 (10)
29	08:27				07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24		09:12 (10)	08:52		09:27 (10)
	17:08				20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	14	09:26 (10)	16:19	16	09:43 (10)
30	08:25				07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26		09:10 (10)	08:52		09:27 (10)
	17:10				20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	17	09:27 (10)	16:20	17	09:44 (10)
31	08:23				07:11		05:11		05:44	06:39		07:30				08:52		09:27 (10)
	17:12				20:06		21:52		21:35	20:29		17:04				16:21	17	09:44 (10)
Potential sun hours	250			273	367	420	494	510	513	460	382	328	259			233		
Total, worst case		275												59			532	
Sun reduction		0.16												0.20			0.12	
Oper. time red.		1.00												1.00			1.00	
Wind dir. red.		0.61												0.61			0.61	
Total reduction		0.10												0.12			0.07	
Total, real		27												7			39	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** AA - H029

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March			April			May			June		
1	08:52	08:22	07:24			07:09		07:35 (6)	06:00			05:10		05:41 (4)
	16:23	17:14	18:10			20:08	24	07:59 (6)	21:04			21:54	16	05:57 (4)
2	08:52	08:20	07:22			07:07		07:35 (6)	05:58			05:10		05:40 (4)
	16:24	17:16	18:12			20:10	23	07:58 (6)	21:06			21:55	17	05:57 (4)
3	08:52	08:19	07:20			07:04		07:35 (6)	05:56			05:09		05:40 (4)
	16:25	17:18	18:14			20:12	21	07:56 (6)	21:07			21:56	18	05:58 (4)
4	08:52	08:17	07:17			07:02		07:37 (6)	05:54			05:08		05:39 (4)
	16:26	17:20	18:16			20:14	18	07:55 (6)	21:09			21:57	19	05:58 (4)
5	08:51	08:15	07:15			06:59		07:38 (6)	05:52			05:07		05:38 (4)
	16:27	17:22	18:17			20:16	14	07:52 (6)	21:11			21:58	20	05:58 (4)
6	08:51	08:13	07:13			06:57		07:41 (6)	05:50			05:06		05:38 (4)
	16:29	17:24	18:19			20:18	9	07:50 (6)	21:13			21:59	21	05:59 (4)
7	08:51	08:11	07:10			06:55		07:19 (5)	05:48			05:06		05:37 (4)
	16:30	17:26	18:21			20:19	4	07:23 (5)	21:15			22:00	22	05:59 (4)
8	08:50	08:09	07:08			06:52		07:16 (5)	05:46			05:05		05:37 (4)
	16:31	17:28	18:23			20:21	8	07:24 (5)	21:16			22:01	23	06:00 (4)
9	08:49	08:07	07:05			06:50		07:14 (5)	05:44			05:04		05:36 (4)
	16:33	17:30	18:25			20:23	11	07:25 (5)	21:18			22:02	23	05:59 (4)
10	08:49	08:05	07:03			06:47		07:11 (5)	05:42			05:04		05:36 (4)
	16:34	17:32	18:27			20:25	14	07:25 (5)	21:20			22:03	24	06:00 (4)
11	08:48	08:04	07:01			06:45		07:09 (5)	05:40			05:04		05:36 (4)
	16:36	17:34	18:29			20:27	17	07:26 (5)	21:22			22:04	25	06:01 (4)
12	08:47	08:02	06:58			06:43		07:07 (5)	05:39			05:03		05:35 (4)
	16:37	17:36	18:31			20:29	20	07:27 (5)	21:23			22:05	25	06:00 (4)
13	08:47	07:59	06:56			06:40		07:04 (5)	05:37			05:03		05:35 (4)
	16:39	17:38	18:33			20:30	23	07:27 (5)	21:25			22:05	26	06:01 (4)
14	08:46	07:57	06:53			06:38		07:02 (5)	05:35			05:03		05:35 (4)
	16:41	17:40	18:35			20:32	25	07:27 (5)	21:27			22:06	26	06:01 (4)
15	08:45	07:55	06:51			06:36		07:00 (5)	05:33			05:02		05:35 (4)
	16:42	17:42	18:37			20:34	28	07:28 (5)	21:28			22:07	26	06:01 (4)
16	08:44	07:53	06:49			06:33		06:58 (5)	05:32			05:02		05:35 (4)
	16:44	17:44	18:38			20:36	30	07:28 (5)	21:30			22:07	27	06:02 (4)
17	08:43	07:51	06:46			06:31		06:55 (5)	05:30			05:02		05:35 (4)
	16:46	17:46	18:40			20:38	32	07:27 (5)	21:32			22:08	27	06:02 (4)
18	08:42	07:49	06:44			06:29		06:53 (5)	05:29			05:02		05:35 (4)
	16:47	17:48	18:42			20:40	34	07:27 (5)	21:33			22:08	27	06:02 (4)
19	08:41	07:47	06:41			06:26		06:53 (5)	05:27			05:02		05:35 (4)
	16:49	17:50	18:44			20:42	33	07:26 (5)	21:35			22:08	27	06:02 (4)
20	08:39	07:45	06:39			06:24		06:54 (5)	05:25			05:02		05:35 (4)
	16:51	17:52	18:46			20:43	32	07:26 (5)	21:37			22:09	28	06:03 (4)
21	08:38	07:43	06:36			06:22		06:53 (5)	05:24			05:02		05:35 (4)
	16:53	17:54	18:48			20:45	31	07:24 (5)	21:38			22:09	28	06:03 (4)
22	08:37	07:40	06:34			06:20		06:54 (5)	05:22			05:02		05:35 (4)
	16:55	17:56	18:50			20:47	30	07:24 (5)	21:40			22:09	28	06:03 (4)
23	08:36	07:38	06:31		06:55 (6)	06:17		06:54 (5)	05:21			05:03		05:36 (4)
	16:57	17:58	18:52	3	06:58 (6)	20:49	29	07:23 (5)	21:41			22:09	27	06:03 (4)
24	08:34	07:36	06:29		06:53 (6)	06:15		06:55 (5)	05:20		05:49 (4)	05:03		05:36 (4)
	16:58	18:00	18:53	7	07:00 (6)	20:51	27	07:22 (5)	21:43	2	05:51 (4)	22:10	27	06:03 (4)
25	08:33	07:34	06:26		06:50 (6)	06:13		06:56 (5)	05:18		05:48 (4)	05:03		05:36 (4)
	17:00	18:02	18:55	10	07:00 (6)	20:53	24	07:20 (5)	21:44	4	05:52 (4)	22:10	27	06:03 (4)
26	08:31	07:31	06:24		06:48 (6)	06:11		06:58 (5)	05:17		05:47 (4)	05:04		05:37 (4)
	17:02	18:04	18:57	13	07:01 (6)	20:55	21	07:19 (5)	21:46	6	05:53 (4)	22:10	27	06:04 (4)
27	08:30	07:29	06:22		06:45 (6)	06:08		06:59 (5)	05:16		05:46 (4)	05:04		05:37 (4)
	17:04	18:06	18:59	16	07:01 (6)	20:56	18	07:17 (5)	21:47	8	05:54 (4)	22:09	27	06:04 (4)
28	08:28	07:27	06:19		06:43 (6)	06:06		07:02 (5)	05:15		05:45 (4)	05:05		05:38 (4)
	17:06	18:08	19:01	18	07:01 (6)	20:58	12	07:14 (5)	21:49	10	05:55 (4)	22:09	26	06:04 (4)
29	08:27		07:17		07:40 (6)	06:04			05:14		05:44 (4)	05:05		05:38 (4)
	17:08		20:03	20	08:00 (6)	21:00			21:50	11	05:55 (4)	22:09	26	06:04 (4)
30	08:25		07:14		07:38 (6)	06:02			05:13		05:43 (4)	05:06		05:39 (4)
	17:10		20:05	22	08:00 (6)	21:02			21:51	13	05:56 (4)	22:09	25	06:04 (4)
31	08:24		07:12		07:35 (6)				05:11		05:42 (4)			
	17:12		20:06	24	07:59 (6)				21:52	14	05:56 (4)			
Potential sun hours	250	273	367			420			494			510		
Total, worst case				133			612			68			735	
Sun reduction				0.22			0.31			0.31			0.26	
Oper. time red.				1.00			1.00			1.00			1.00	
Wind dir. red.				0.65			0.64			0.64			0.64	
Total reduction				0.14			0.20			0.20			0.17	
Total, real				19			120			14			122	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** AA - H029

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August		September		October	November	December
1	05:07		05:40 (4)	05:47		06:41	07:08 (5)	07:34	07:33	08:28
	22:08	25	06:05 (4)	21:33		20:26	17	07:25 (5)	19:13	17:02	16:18
2	05:07		05:40 (4)	05:48		06:43	07:10 (5)	07:36	07:34	08:29
	22:08	24	06:04 (4)	21:31		20:24	14	07:24 (5)	19:10	17:00	16:17
3	05:08		05:41 (4)	05:50		06:44	07:12 (5)	07:38	07:36	08:31
	22:08	24	06:05 (4)	21:29		20:22	11	07:23 (5)	19:08	16:58	16:16
4	05:09		05:42 (4)	05:52		06:46	07:13 (5)	07:40	07:38	08:32
	22:07	23	06:05 (4)	21:28		20:19	8	07:21 (5)	19:05	16:56	16:16
5	05:10		05:43 (4)	05:53		06:48	07:15 (5)	07:41	07:40	08:33
	22:07	22	06:05 (4)	21:26		20:17	4	07:19 (5)	19:03	16:54	16:15
6	05:11		05:44 (4)	05:55		06:50	07:37 (6)	07:43	07:42	08:35
	22:06	21	06:05 (4)	21:24		20:14	9	07:46 (6)	19:00	16:52	16:14
7	05:12		05:45 (4)	05:57		06:51	07:33 (6)	07:45	07:44	08:36
	22:05	20	06:05 (4)	21:22		20:12	14	07:47 (6)	18:58	16:50	16:14
8	05:13		05:46 (4)	05:58		06:53	07:31 (6)	07:47	07:46	08:37
	22:05	19	06:05 (4)	21:20		20:09	18	07:49 (6)	18:56	16:49	16:14
9	05:14		05:46 (4)	06:00		06:55	07:30 (6)	07:49	07:48	08:39
	22:04	18	06:04 (4)	21:18		20:07	20	07:50 (6)	18:53	16:47	16:13
10	05:15		05:48 (4)	06:02		06:57	07:29 (6)	07:51	07:50	08:40
	22:03	17	06:05 (4)	21:16		20:05	22	07:51 (6)	18:51	16:45	16:13
11	05:16		05:49 (4)	06:04		06:59	07:27 (6)	07:53	07:52	08:41
	22:02	16	06:05 (4)	21:14		20:02	24	07:51 (6)	18:49	16:43	16:13
12	05:17		05:50 (4)	06:05		07:00	07:27 (6)	07:54	07:54	08:42
	22:01	15	06:05 (4)	21:12		20:00	24	07:51 (6)	18:46	16:42	16:12
13	05:18		05:51 (4)	06:07		07:02	07:29 (6)	07:56	07:56	08:43
	22:00	13	06:04 (4)	21:10		19:57	23	07:52 (6)	18:44	16:40	16:12
14	05:20		05:52 (4)	06:09	07:12 (5)	07:04	07:30 (6)	07:58	07:58	08:44
	21:59	12	06:04 (4)	21:07	6	07:18 (5)	19:55	21	07:51 (6)	18:41	16:38	16:12
15	05:21		05:53 (4)	06:11	07:08 (5)	07:06	07:32 (6)	08:00	08:00	08:45
	21:58	11	06:04 (4)	21:05	14	07:22 (5)	19:52	18	07:50 (6)	18:39	16:37	16:12
16	05:22		05:54 (4)	06:12	07:05 (5)	07:07	07:34 (6)	08:02	08:01	08:46
	21:57	9	06:03 (4)	21:03	19	07:24 (5)	19:50	16	07:50 (6)	18:37	16:35	16:12
17	05:23		05:56 (4)	06:14	07:04 (5)	07:09	07:36 (6)	08:04	08:03	08:47
	21:56	7	06:03 (4)	21:01	22	07:26 (5)	19:47	13	07:49 (6)	18:34	16:34	16:13
18	05:25		05:57 (4)	06:16	07:03 (5)	07:11	07:37 (6)	08:06	08:05	08:48
	21:55	5	06:02 (4)	20:59	24	07:27 (5)	19:45	11	07:48 (6)	18:32	16:32	16:13
19	05:26		05:58 (4)	06:18	07:01 (5)	07:13	07:39 (6)	08:07	08:07	08:48
	21:53	3	06:01 (4)	20:57	27	07:28 (5)	19:42	7	07:46 (6)	18:30	16:31	16:13
20	05:28		06:00 (4)	06:20	07:00 (5)	07:14	07:41 (6)	08:09	08:09	08:49
	21:52	1	06:01 (4)	20:54	29	07:29 (5)	19:40	4	07:45 (6)	18:28	16:30	16:13
21	05:29			06:21	06:59 (5)	07:16		08:11	08:11	08:50
	21:51			20:52	30	07:29 (5)	19:37		18:25	16:28	16:14
22	05:31			06:23	06:58 (5)	07:18		08:13	08:12	08:50
	21:49			20:50	31	07:29 (5)	19:35		18:23	16:27	16:14
23	05:32			06:25	06:57 (5)	07:20		08:15	08:14	08:51
	21:48			20:48	33	07:30 (5)	19:32		18:21	16:26	16:15
24	05:34			06:27	06:57 (5)	07:22		08:17	08:16	08:51
	21:46			20:45	33	07:30 (5)	19:30		18:19	16:25	16:15
25	05:35			06:28	06:56 (5)	07:23		07:19	08:18	08:52
	21:45			20:43	33	07:29 (5)	19:27		17:17	16:23	16:16
26	05:37			06:30	06:58 (5)	07:25		07:21	08:19	08:52
	21:43			20:41	31	07:29 (5)	19:25		17:14	16:22	16:17
27	05:38			06:32	07:00 (5)	07:27		07:23	08:21	08:52
	21:42			20:38	30	07:30 (5)	19:23		17:12	16:21	16:18
28	05:40			06:34	07:01 (5)	07:29		07:25	08:23	08:52
	21:40			20:36	27	07:28 (5)	19:20		17:10	16:20	16:18
29	05:42			06:36	07:03 (5)	07:31		07:27	08:24	08:52
	21:38			20:34	25	07:28 (5)	19:18		17:08	16:19	16:19
30	05:43			06:37	07:05 (5)	07:32		07:29	08:26	08:52
	21:37			20:31	23	07:28 (5)	19:15		17:06	16:19	16:20
31	05:45			06:39	07:07 (5)			07:31		08:52
	21:35			20:29	20	07:27 (5)			17:04		16:21
Potential sun hours	512			460		382		328	259	233
Total, worst case		305			457		298			
Sun reduction		0.22			0.26		0.25			
Oper. time red.		1.00			1.00		1.00			
Wind dir. red.		0.64			0.64		0.64			
Total reduction		0.14			0.16		0.16			
Total, real		44			75		48			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** AB - H030

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	19:56 (7)	05:10	05:46	20:06 (7)	06:41	07:34	07:32	08:27
	16:22	17:14	18:10	20:08	21:04 38	20:34 (7)	21:54	21:33 39	20:45 (7)	20:26	19:12	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	19:55 (7)	05:09	05:07	20:05 (7)	06:42	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:05 41	20:36 (7)	21:55	22:08	21:31 40	20:45 (7)	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	19:55 (7)	05:09	05:08	05:50	20:05 (7)	06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12	21:07 42	20:37 (7)	21:56	22:07	21:29 40	20:45 (7)	20:21	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	19:54 (7)	05:08	05:09	05:51	20:05 (7)	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14	21:09 42	20:36 (7)	21:57	22:07	21:27 41	20:46 (7)	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52	19:54 (7)	05:07	05:10	05:53	20:04 (7)	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11 42	20:36 (7)	21:58	22:06	21:26 42	20:46 (7)	20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50	19:54 (7)	05:06	05:11	05:55	20:04 (7)	06:50	07:43	07:42	08:35
	16:28	17:24	18:19	20:17	21:13 42	20:36 (7)	21:59	22:06	21:24 42	20:46 (7)	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48	19:54 (7)	05:05	05:11	05:57	20:03 (7)	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14 42	20:36 (7)	22:00	22:05	21:22 42	20:45 (7)	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	19:55 (7)	05:05	05:13	05:58	20:04 (7)	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16 41	20:36 (7)	22:01	22:04	21:20 42	20:46 (7)	20:09	18:55	16:49	16:13
9	08:49	08:07	07:05	06:50	05:44	19:55 (7)	05:04	05:14	06:00	20:04 (7)	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18 41	20:36 (7)	22:02	22:04	21:18 42	20:46 (7)	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	19:55 (7)	05:04	05:15	06:02	20:03 (7)	06:57	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20 40	20:35 (7)	22:03	22:03	21:16 42	20:45 (7)	20:04	18:51	16:45	16:13
11	08:48	08:03	07:00	06:45	05:40	19:55 (7)	05:03	05:16	06:04	20:04 (7)	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21 39	20:34 (7)	22:04	22:02	21:14 40	20:44 (7)	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:43 20:00 (6)	05:38	19:56 (7)	05:03	05:17	06:05	20:04 (7)	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28 1 20:01 (6)	21:23 38	20:34 (7)	22:04	22:01	21:12 38	20:42 (7)	19:59	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40 19:57 (6)	05:37	19:56 (7)	05:03	05:18	06:07	20:03 (6)	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30 5 20:02 (6)	21:25 38	20:34 (7)	22:05	22:00	21:09 36	20:39 (7)	19:57	18:44	16:40	16:12
14	08:45	07:57	06:53	06:38 19:55 (6)	05:35	19:57 (7)	05:02	05:19	06:09	20:01 (6)	07:04	07:58	07:57	08:44
	16:40	17:40	18:35	20:32 9 20:04 (6)	21:27 37	20:34 (7)	22:06	21:59	21:07 37	20:38 (7)	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35 19:54 (6)	05:33	19:57 (7)	05:02	05:21	06:11	19:59 (6)	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34 12 20:06 (6)	21:28 36	20:33 (7)	22:06	21:58	21:05 36	20:35 (7)	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33 19:52 (6)	05:32	19:58 (7)	05:02	05:22	06:12	19:58 (6)	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36 15 20:07 (6)	21:30 34	20:32 (7)	22:07	21:57	21:03 35	20:33 (7)	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31 19:51 (6)	05:30	19:58 (7)	05:02	05:23 20:24 (7)	06:14	19:57 (6)	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38 18 20:09 (6)	21:32 33	20:31 (7)	22:07	21:56 2 20:26 (7)	21:01 35	20:32 (7)	19:47	18:34	16:34	16:12
18	08:42	07:49	06:43	06:28 19:51 (6)	05:28	20:00 (7)	05:02	05:25 20:20 (7)	06:16	19:56 (6)	07:11	08:05	08:05	08:48
	16:47	17:48	18:42	20:40 20 20:11 (6)	21:33 31	20:31 (7)	22:08	21:54 11 20:31 (7)	20:59 33	20:29 (7)	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26 19:51 (6)	05:27	20:00 (7)	05:02	05:26 20:18 (7)	06:18	19:55 (6)	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:41 22 20:13 (6)	21:35 30	20:30 (7)	22:08	21:53 15 20:33 (7)	20:56 32	20:27 (7)	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24 19:49 (6)	05:25	20:01 (7)	05:02	05:28 20:16 (7)	06:19	19:55 (6)	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43 25 20:14 (7)	21:36 28	20:29 (7)	22:09	21:52 18 20:34 (7)	20:54 30	20:25 (7)	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:22 19:49 (6)	05:24	20:03 (7)	05:02	05:29 20:15 (7)	06:21	19:54 (6)	07:16	08:11	08:10	08:50
	16:53	17:54	18:48	20:45 27 20:16 (7)	21:38 25	20:28 (7)	22:09	21:50 22 20:37 (7)	20:52 28	20:22 (7)	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19 19:49 (6)	05:22	20:03 (7)	05:02	05:30 20:13 (7)	06:23	19:54 (6)	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47 29 20:18 (7)	21:40 24	20:27 (7)	22:09	21:49 24 20:37 (7)	20:50 27	20:21 (7)	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17 19:50 (6)	05:21	20:05 (7)	05:02	05:32 20:12 (7)	06:25	19:54 (6)	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49 30 20:20 (7)	21:41 21	20:26 (7)	22:09	21:48 26 20:38 (7)	20:47 25	20:19 (7)	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15 19:50 (6)	05:20	20:07 (7)	05:03	05:33 20:11 (7)	06:26	19:54 (6)	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51 32 20:22 (7)	21:43 17	20:24 (7)	22:09	21:46 29 20:40 (7)	20:45 23	20:17 (6)	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13 19:50 (6)	05:18	20:09 (7)	05:03	05:35 20:10 (7)	06:28	19:54 (6)	07:23	08:19	08:18	08:51
	17:00	18:02	18:55	20:53 34 20:24 (7)	21:44 14	20:23 (7)	22:09	21:45 30 20:40 (7)	20:43 20	20:14 (6)	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10 19:51 (6)	05:17	20:12 (7)	05:04	05:37 20:10 (7)	06:30	19:54 (6)	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54 34 20:25 (7)	21:46 8	20:20 (7)	22:09	21:43 32 20:42 (7)	20:40 18	20:12 (6)	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08 19:52 (6)	05:16		05:04	05:38 20:08 (7)	06:32	19:55 (6)	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56 35 20:27 (7)	21:47		22:09	21:41 34 20:42 (7)	20:38 15	20:10 (6)	19:22	17:12	16:21	16:17
28	08:28	07:27	06:19	06:06 19:53 (6)	05:15		05:05	05:40 20:08 (7)	06:34	19:55 (6)	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58 36 20:29 (7)	21:48		22:09	21:40 35 20:43 (7)	20:36 12	20:07 (6)	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04 19:54 (6)	05:13		05:05	05:41 20:07 (7)	06:35	19:56 (6)	07:30	07:27	08:24	08:52
	17:08		20:03	21:00 37 20:31 (7)	21:50		22:09	21:38 36 20:43 (7)	20:33 9	20:05 (6)	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02 19:56 (7)	05:12		05:06	05:43 20:07 (7)	06:37	19:58 (6)	07:32	07:28	08:26	08:52
	17:10		20:04	21:02 36 20:32 (7)	21:51		22:09	21:36 37 20:44 (7)	20:31 5	20:03 (6)	19:15	17:06	16:18	16:20
31	08:23		07:12		05:11			05:45 20:06 (7)	06:39	19:59 (6)		07:30		08:52
	17:12		20:06		21:52			21:35 38 20:44 (7)	20:29 1	20:00 (6)		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case				457	864		389	947				
Sun reduction				0.31	0.31		0.22	0.26				
Oper. time red.				1.00	1.00		1.00	1.00				
Wind dir. red.				0.63	0.63		0.63	0.63				
Total reduction				0.19	0.20		0.14	0.16				
Total, real				88	170		55	152				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** AC - H031

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March		April			May			June		
1	08:52	16:23	08:22	17:14	07:24	18:10	07:09	20:08		06:00	21:04	44	06:26 (2)	07:10 (2)	05:11	21:54	22	05:41 (1)	06:03 (1)
2	08:52	16:24	08:20	17:16	07:22	18:12	07:07	20:10		05:58	21:06	46	06:24 (2)	07:10 (2)	05:10	21:55	23	05:40 (1)	06:03 (1)
3	08:52	16:25	08:19	17:18	07:20	18:14	07:04	20:12		05:56	21:07	47	06:22 (2)	07:09 (2)	05:09	21:56	23	05:40 (1)	06:03 (1)
4	08:52	16:26	08:17	17:20	07:17	18:16	07:02	20:14		05:54	21:09	49	06:20 (2)	07:09 (2)	05:08	21:57	24	05:39 (1)	06:03 (1)
5	08:51	16:27	08:15	17:22	07:15	18:18	07:00	20:16		05:52	21:11	50	06:19 (2)	07:09 (2)	05:07	21:58	25	05:38 (1)	06:03 (1)
6	08:51	16:29	08:13	17:24	07:13	18:19	06:57	20:18	3	07:21 (3)	05:50	21:13	49	06:19 (2)	07:08 (2)	05:06	21:59	24	05:39 (1)	06:03 (1)
7	08:51	16:30	08:11	17:26	07:10	18:21	06:55	20:19	6	07:19 (3)	07:24 (3)	05:48	21:15	49	06:20 (2)	07:09 (2)	05:06	22:00	24	05:39 (1)	06:03 (1)
8	08:50	16:31	08:09	17:28	07:08	18:23	06:52	20:21	9	07:16 (3)	07:25 (3)	05:46	21:16	48	06:20 (2)	07:08 (2)	05:05	22:01	23	05:40 (1)	06:03 (1)
9	08:50	16:33	08:08	17:30	07:06	18:25	06:50	20:23	11	07:14 (3)	07:25 (3)	05:44	21:18	48	06:20 (2)	07:08 (2)	05:04	22:02	22	05:40 (1)	06:02 (1)
10	08:49	16:34	08:06	17:32	07:03	18:27	06:47	20:25	13	07:11 (3)	07:24 (3)	05:42	21:20	47	06:20 (2)	07:07 (2)	05:04	22:03	22	05:41 (1)	06:03 (1)
11	08:48	16:36	08:04	17:34	07:01	18:29	06:45	20:27	15	07:09 (3)	07:24 (3)	05:40	21:22	46	06:21 (2)	07:07 (2)	05:04	22:04	22	05:41 (1)	06:03 (1)
12	08:47	16:37	08:02	17:36	06:58	18:31	06:43	20:29	17	07:07 (3)	07:24 (3)	05:39	21:23	45	06:21 (2)	07:06 (2)	05:03	22:05	21	05:41 (1)	06:02 (1)
13	08:47	16:39	08:00	17:38	06:56	18:33	06:40	20:31	18	07:04 (3)	07:22 (3)	05:37	21:25	44	06:21 (2)	07:05 (2)	05:03	22:05	20	05:42 (1)	06:02 (1)
14	08:46	16:41	07:58	17:40	06:53	18:35	06:38	20:32	20	07:02 (3)	07:22 (3)	05:35	21:27	43	06:22 (2)	07:05 (2)	05:03	22:06	20	05:42 (1)	06:02 (1)
15	08:45	16:42	07:55	17:42	06:51	18:37	06:36	20:34	19	07:02 (3)	07:21 (3)	05:33	21:29	42	06:22 (2)	07:04 (2)	05:02	22:07	20	05:43 (1)	06:03 (1)
16	08:44	16:44	07:53	17:44	06:49	18:39	06:33	20:36	16	07:03 (3)	07:19 (3)	05:32	21:30	41	06:23 (2)	07:04 (2)	05:02	22:07	20	05:43 (1)	06:03 (1)
17	08:43	16:46	07:51	17:46	06:46	18:40	06:31	20:38	17	06:55 (2)	07:16 (3)	05:30	21:32	41	05:58 (1)	07:03 (2)	05:02	22:08	19	05:44 (1)	06:03 (1)
18	08:42	16:47	07:49	17:48	06:44	18:42	06:29	20:40	15	06:53 (2)	07:13 (3)	05:29	21:34	42	05:57 (1)	07:03 (2)	05:02	22:08	19	05:44 (1)	06:03 (1)
19	08:41	16:49	07:47	17:50	06:41	18:44	06:26	20:42	13	06:51 (2)	07:04 (2)	05:27	21:35	42	05:56 (1)	07:02 (2)	05:02	22:09	19	05:44 (1)	06:03 (1)
20	08:39	16:51	07:45	17:52	06:39	18:46	06:24	20:44	16	06:49 (2)	07:05 (2)	05:25	21:37	43	05:54 (1)	07:01 (2)	05:02	22:09	19	05:44 (1)	06:03 (1)
21	08:38	16:53	07:43	17:54	06:36	18:48	06:22	20:45	19	06:47 (2)	07:06 (2)	05:24	21:38	42	05:53 (1)	07:00 (2)	05:02	22:09	19	05:44 (1)	06:03 (1)
22	08:37	16:55	07:40	17:56	06:34	18:50	06:20	20:47	22	06:44 (2)	07:06 (2)	05:23	21:40	41	05:52 (1)	06:59 (2)	05:02	22:09	19	05:44 (1)	06:03 (1)
23	08:36	16:57	07:38	17:58	06:31	18:52	06:17	20:49	25	06:42 (2)	07:07 (2)	05:21	21:41	40	05:50 (1)	06:57 (2)	05:03	22:10	19	05:45 (1)	06:04 (1)
24	08:34	16:58	07:36	18:00	06:29	18:53	06:15	20:51	28	06:40 (2)	07:08 (2)	05:20	21:43	39	05:49 (1)	06:56 (2)	05:03	22:10	19	05:45 (1)	06:04 (1)
25	08:33	17:00	07:34	18:02	06:26	18:55	06:13	20:53	30	06:38 (2)	07:08 (2)	05:18	21:44	38	05:48 (1)	06:55 (2)	05:03	22:10	19	05:45 (1)	06:04 (1)
26	08:31	17:02	07:31	18:04	06:24	18:57	06:11	20:55	33	06:36 (2)	07:09 (2)	05:17	21:46	36	05:47 (1)	06:54 (2)	05:04	22:10	19	05:46 (1)	06:05 (1)
27	08:30	17:04	07:29	18:06	06:22	18:59	06:09	20:56	35	06:34 (2)	07:09 (2)	05:16	21:47	33	05:46 (1)	06:52 (2)	05:04	22:10	20	05:45 (1)	06:05 (1)
28	08:28	17:06	07:27	18:08	06:19	19:01	06:06	20:58	37	06:32 (2)	07:09 (2)	05:15	21:49	30	05:45 (1)	06:50 (2)	05:05	22:09	20	05:46 (1)	06:06 (1)
29	08:27	17:08			07:17	20:03	06:04	21:00	40	06:30 (2)	07:10 (2)	05:14	21:50	21	05:44 (1)	06:45 (2)	05:05	22:09	20	05:45 (1)	06:05 (1)
30	08:25	17:10			07:14	20:05	06:02	21:02	42	06:28 (2)	07:10 (2)	05:13	21:51	20	05:43 (1)	06:03 (1)	05:06	22:09	21	05:45 (1)	06:06 (1)
31	08:24	17:12			07:12	20:06						05:11	21:53	21	05:42 (1)	06:03 (1)					
Potential sun hours	250		273		367		420			494			510								
Total, worst case								519			1267			626							
Sun reduction								0.31			0.31			0.26							
Oper. time red.								1.00			1.00			1.00							
Wind dir. red.								0.65			0.65			0.64							
Total reduction								0.20			0.20			0.16							
Total, real								103			257			103							

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** AC - H031

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August		September		October	November	December
1	05:07		05:46 (1)	05:47		06:41	07:08 (3)	07:34	07:33	08:28
	22:09	21	06:07 (1)	21:33	46	07:17 (2)	20:27	15	07:23 (3)	19:13	17:02	16:18
2	05:07		05:45 (1)	05:48		06:31 (2)	06:43		07:10 (3)	07:36	07:35	08:29
	22:08	22	06:07 (1)	21:31	47	07:18 (2)	20:24	13	07:23 (3)	19:10	17:00	16:17
3	05:08		05:45 (1)	05:50		06:30 (2)	06:44		07:12 (3)	07:38	07:36	08:31
	22:08	22	06:07 (1)	21:30	48	07:18 (2)	20:22	11	07:23 (3)	19:08	16:58	16:16
4	05:09		05:45 (1)	05:52		06:30 (2)	06:46		07:13 (3)	07:40	07:38	08:32
	22:07	23	06:08 (1)	21:28	48	07:18 (2)	20:19	9	07:22 (3)	19:05	16:56	16:16
5	05:10		05:45 (1)	05:53		06:29 (2)	06:48		07:15 (3)	07:42	07:40	08:34
	22:07	24	06:09 (1)	21:26	49	07:18 (2)	20:17	6	07:21 (3)	19:03	16:54	16:15
6	05:11		05:45 (1)	05:55		06:29 (2)	06:50		07:17 (3)	07:43	07:42	08:35
	22:06	24	06:09 (1)	21:24	49	07:18 (2)	20:14	4	07:21 (3)	19:01	16:52	16:14
7	05:12		05:45 (1)	05:57		06:29 (2)	06:52			07:45	07:44	08:36
	22:05	25	06:10 (1)	21:22	50	07:19 (2)	20:12			18:58	16:51	16:14
8	05:13		05:46 (1)	05:58		06:28 (2)	06:53			07:47	07:46	08:38
	22:05	24	06:10 (1)	21:20	50	07:18 (2)	20:10			18:56	16:49	16:14
9	05:14		05:47 (1)	06:00		06:30 (2)	06:55			07:49	07:48	08:39
	22:04	24	06:11 (1)	21:18	49	07:19 (2)	20:07			18:53	16:47	16:13
10	05:15		05:48 (1)	06:02		06:31 (2)	06:57			07:51	07:50	08:40
	22:03	23	06:11 (1)	21:16	47	07:18 (2)	20:05			18:51	16:45	16:13
11	05:16		05:49 (1)	06:04		06:33 (2)	06:59			07:53	07:52	08:41
	22:02	22	06:11 (1)	21:14	45	07:18 (2)	20:02			18:49	16:43	16:13
12	05:17		05:50 (1)	06:05		06:35 (2)	07:00			07:54	07:54	08:42
	22:01	22	06:12 (1)	21:12	43	07:18 (2)	20:00			18:46	16:42	16:12
13	05:18		05:51 (1)	06:07		06:36 (2)	07:02			07:56	07:56	08:43
	22:00	21	06:12 (1)	21:10	41	07:17 (2)	19:57			18:44	16:40	16:12
14	05:20		05:52 (1)	06:09		06:38 (2)	07:04			07:58	07:58	08:44
	21:59	20	06:12 (1)	21:08	39	07:17 (2)	19:55			18:41	16:38	16:12
15	05:21		05:53 (1)	06:11		06:40 (2)	07:06			08:00	08:00	08:45
	21:58	28	06:57 (2)	21:05	37	07:17 (2)	19:52			18:39	16:37	16:12
16	05:22		05:54 (1)	06:13		06:41 (2)	07:07			08:02	08:02	08:46
	21:57	33	07:00 (2)	21:03	35	07:16 (2)	19:50			18:37	16:35	16:12
17	05:24		05:56 (1)	06:14		06:43 (2)	07:09			08:04	08:03	08:47
	21:56	36	07:03 (2)	21:01	32	07:15 (2)	19:47			18:35	16:34	16:13
18	05:25		05:57 (1)	06:16		06:45 (2)	07:11			08:06	08:05	08:48
	21:55	37	07:04 (2)	20:59	30	07:15 (2)	19:45			18:32	16:32	16:13
19	05:26		05:58 (1)	06:18		06:46 (2)	07:13			08:08	08:07	08:49
	21:53	38	07:05 (2)	20:57	27	07:13 (2)	19:42			18:30	16:31	16:13
20	05:28		06:00 (1)	06:20		06:48 (2)	07:15			08:09	08:09	08:49
	21:52	40	07:07 (2)	20:54	25	07:13 (2)	19:40			18:28	16:30	16:13
21	05:29		06:01 (1)	06:21		06:50 (2)	07:16			08:11	08:11	08:50
	21:51	41	07:08 (2)	20:52	22	07:12 (2)	19:37			18:25	16:28	16:14
22	05:31		06:02 (1)	06:23		06:51 (2)	07:18			08:13	08:13	08:50
	21:49	41	07:09 (2)	20:50	19	07:10 (2)	19:35			18:23	16:27	16:14
23	05:32		06:04 (1)	06:25		06:53 (2)	07:20			08:15	08:14	08:51
	21:48	43	07:11 (2)	20:48	15	07:08 (2)	19:32			18:21	16:26	16:15
24	05:34		06:05 (1)	06:27		06:55 (2)	07:22			08:17	08:16	08:51
	21:46	42	07:11 (2)	20:45	12	07:07 (2)	19:30			18:19	16:25	16:15
25	05:35		06:07 (1)	06:28		06:56 (2)	07:23			07:19	08:18	08:52
	21:45	42	07:13 (2)	20:43	15	07:16 (3)	19:28			17:17	16:23	16:16
26	05:37		06:08 (1)	06:30		06:58 (2)	07:25			07:21	08:20	08:52
	21:43	41	07:13 (2)	20:41	17	07:19 (3)	19:25			17:15	16:22	16:17
27	05:38		06:09 (1)	06:32		07:05 (3)	07:27			07:23	08:21	08:52
	21:42	41	07:14 (2)	20:38	16	07:21 (3)	19:23			17:12	16:21	16:18
28	05:40		06:33 (2)	06:34		07:02 (3)	07:29			07:25	08:23	08:52
	21:40	42	07:15 (2)	20:36	20	07:22 (3)	19:20			17:10	16:20	16:18
29	05:42		06:32 (2)	06:36		07:03 (3)	07:31			07:27	08:24	08:52
	21:38	43	07:15 (2)	20:34	20	07:23 (3)	19:18			17:08	16:19	16:19
30	05:43		06:32 (2)	06:37		07:05 (3)	07:32			07:29	08:26	08:53
	21:37	44	07:16 (2)	20:31	18	07:23 (3)	19:15			17:06	16:19	16:20
31	05:45		06:32 (2)	06:39		07:07 (3)				07:31		08:52
	21:35	45	07:17 (2)	20:29	17	07:24 (3)				17:04		16:21
Potential sun hours	512			460			382			328	259	233
Total, worst case		994			1028			58				
Sun reduction		0.22			0.26			0.25				
Oper. time red.		1.00			1.00			1.00				
Wind dir. red.		0.64			0.65			0.64				
Total reduction		0.14			0.17			0.16				
Total, real		143			171			9				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** AD - H032

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March			April			May			June		
1	08:52		08:22		07:24			07:09			07:33 (6)	06:00			05:10		05:41 (4)
	16:23		17:14		18:10			20:08	23		07:56 (6)	21:04			21:54	20	06:01 (4)
2	08:52		08:20		07:22			07:07			07:34 (6)	05:58			05:10		05:40 (4)
	16:24		17:16		18:12			20:10	21		07:55 (6)	21:06			21:55	21	06:01 (4)
3	08:52		08:19		07:20			07:04			07:34 (6)	05:56			05:09		05:40 (4)
	16:25		17:18		18:14			20:12	20		07:54 (6)	21:07			21:56	22	06:02 (4)
4	08:52		08:17		07:17			07:02			07:35 (6)	05:54			05:08		05:39 (4)
	16:26		17:20		18:16			20:14	17		07:52 (6)	21:09			21:57	23	06:02 (4)
5	08:51		08:15		07:15			07:00			07:36 (6)	05:52			05:07		05:38 (4)
	16:27		17:22		18:17			20:16	13		07:49 (6)	21:11			21:58	24	06:02 (4)
6	08:51		08:13		07:13			06:57			07:40 (6)	05:50			05:06		05:38 (4)
	16:29		17:24		18:19			20:18	6		07:46 (6)	21:13			21:59	25	06:03 (4)
7	08:51		08:11		07:10			06:55			07:19 (5)	05:48			05:06		05:37 (4)
	16:30		17:26		18:21			20:19	3		07:22 (5)	21:15			22:00	26	06:03 (4)
8	08:50		08:09		07:08			06:52			07:16 (5)	05:46			05:05		05:37 (4)
	16:31		17:28		18:23			20:21	7		07:23 (5)	21:16			22:01	26	06:03 (4)
9	08:49		08:07		07:05			06:50			07:14 (5)	05:44			05:04		05:36 (4)
	16:33		17:30		18:25			20:23	10		07:24 (5)	21:18			22:02	27	06:03 (4)
10	08:49		08:05		07:03			06:47			07:11 (5)	05:42			05:04		05:36 (4)
	16:34		17:32		18:27			20:25	13		07:24 (5)	21:20			22:03	28	06:04 (4)
11	08:48		08:04		07:01			06:45			07:09 (5)	05:40			05:04		05:36 (4)
	16:36		17:34		18:29			20:27	16		07:25 (5)	21:22			22:04	28	06:04 (4)
12	08:47		08:02		06:58			06:43			07:07 (5)	05:39			05:03		05:35 (4)
	16:37		17:36		18:31			20:29	19		07:26 (5)	21:23			22:05	29	06:04 (4)
13	08:47		07:59		06:56			06:40			07:04 (5)	05:37			05:03		05:35 (4)
	16:39		17:38		18:33			20:31	21		07:25 (5)	21:25			22:05	29	06:04 (4)
14	08:46		07:57		06:53			06:38			07:02 (5)	05:35			05:03		05:35 (4)
	16:41		17:40		18:35			20:32	23		07:25 (5)	21:27			22:06	29	06:04 (4)
15	08:45		07:55		06:51			06:36			07:00 (5)	05:33			05:02		05:35 (4)
	16:42		17:42		18:37			20:34	26		07:26 (5)	21:28			22:07	30	06:05 (4)
16	08:44		07:53		06:49			06:33			06:58 (5)	05:32			05:02		05:35 (4)
	16:44		17:44		18:38			20:36	28		07:26 (5)	21:30			22:07	30	06:05 (4)
17	08:43		07:51		06:46			06:31			06:55 (5)	05:30			05:02		05:35 (4)
	16:46		17:46		18:40			20:38	29		07:24 (5)	21:32			22:08	30	06:05 (4)
18	08:42		07:49		06:44			06:29			06:53 (5)	05:29			05:02		05:35 (4)
	16:47		17:48		18:42			20:40	31		07:24 (5)	21:33			22:08	30	06:05 (4)
19	08:41		07:47		06:41			06:26			06:54 (5)	05:27			05:02		05:35 (4)
	16:49		17:50		18:44			20:42	30		07:24 (5)	21:35			22:08	30	06:05 (4)
20	08:39		07:45		06:39			06:24			06:54 (5)	05:25		05:54 (4)	05:02		05:35 (4)
	16:51		17:52		18:46			20:43	29		07:23 (5)	21:37	1	05:55 (4)	22:09	31	06:06 (4)
21	08:38		07:43		06:36			06:22			06:54 (5)	05:24		05:53 (4)	05:02		05:35 (4)
	16:53		17:54		18:48			20:45	27		07:21 (5)	21:38	3	05:56 (4)	22:09	31	06:06 (4)
22	08:37		07:40		06:34			06:20			06:54 (5)	05:22		05:52 (4)	05:02		05:35 (4)
	16:55		17:56		18:50			20:47	26		07:20 (5)	21:40	5	05:57 (4)	22:09	31	06:06 (4)
23	08:36		07:38		06:31			06:17			06:55 (5)	05:21		05:50 (4)	05:03		05:36 (4)
	16:57		17:58		18:52			20:49	24		07:19 (5)	21:41	7	05:57 (4)	22:09	31	06:07 (4)
24	08:34		07:36		06:29		06:53 (6)	06:15			06:57 (5)	05:20		05:49 (4)	05:03		05:36 (4)
	16:58		18:00		18:53	3	06:56 (6)	20:51	21		07:18 (5)	21:43	9	05:58 (4)	22:10	30	06:06 (4)
25	08:33		07:34		06:26		06:50 (6)	06:13			06:58 (5)	05:18		05:48 (4)	05:03		05:36 (4)
	17:00		18:02		18:55	7	06:57 (6)	20:53	18		07:16 (5)	21:44	11	05:59 (4)	22:10	30	06:06 (4)
26	08:31		07:31		06:24		06:48 (6)	06:11			07:00 (5)	05:17		05:47 (4)	05:04		05:37 (4)
	17:02		18:04		18:57	10	06:58 (6)	20:55	14		07:14 (5)	21:46	12	05:59 (4)	22:10	30	06:07 (4)
27	08:30		07:29		06:22		06:45 (6)	06:08			07:05 (5)	05:16		05:46 (4)	05:04		05:37 (4)
	17:04		18:06		18:59	13	06:58 (6)	20:56	4		07:09 (5)	21:47	14	06:00 (4)	22:09	30	06:07 (4)
28	08:28		07:27		06:19		06:43 (6)	06:06				05:15		05:45 (4)	05:05		05:38 (4)
	17:06		18:08		19:01	15	06:58 (6)	20:58				21:49	15	06:00 (4)	22:09	30	06:08 (4)
29	08:27				07:17		07:40 (6)	06:04				05:14		05:44 (4)	05:05		05:38 (4)
	17:08				20:03	17	07:57 (6)	21:00				21:50	17	06:01 (4)	22:09	29	06:07 (4)
30	08:25				07:14		07:38 (6)	06:02				05:13		05:43 (4)	05:06		05:39 (4)
	17:10				20:05	19	07:57 (6)	21:02				21:51	18	06:01 (4)	22:09	29	06:08 (4)
31	08:24				07:12		07:35 (6)					05:11		05:42 (4)			
	17:12				20:06	21	07:56 (6)					21:52	19	06:01 (4)			
Potential sun hours	250		273		367			420			494				510		
Total, worst case						105			519			131				839	
Sun reduction						0.22			0.31			0.31				0.26	
Oper. time red.						1.00			1.00			1.00				1.00	
Wind dir. red.						0.65			0.64			0.64				0.64	
Total reduction						0.14			0.20			0.20				0.16	
Total, real						15			102			26				138	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** AD - H032

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August			September		October	November	December
1	05:07		05:40 (4)	05:47		06:41		07:08 (5)	07:34	07:33	08:28
	22:09	28	06:08 (4)	21:33		20:26	16	07:24 (5)	19:13	17:02	16:18
2	05:07		05:40 (4)	05:48		06:43		07:10 (5)	07:36	07:34	08:29
	22:08	28	06:08 (4)	21:31		20:24	13	07:23 (5)	19:10	17:00	16:17
3	05:08		05:41 (4)	05:50		06:44		07:12 (5)	07:38	07:36	08:31
	22:08	27	06:08 (4)	21:29		20:22	10	07:22 (5)	19:08	16:58	16:16
4	05:09		05:42 (4)	05:52		06:46		07:13 (5)	07:40	07:38	08:32
	22:07	27	06:09 (4)	21:28		20:19	7	07:20 (5)	19:05	16:56	16:16
5	05:10		05:43 (4)	05:53		06:48		07:15 (5)	07:41	07:40	08:33
	22:07	26	06:09 (4)	21:26		20:17	3	07:18 (5)	19:03	16:54	16:15
6	05:11		05:44 (4)	05:55		06:50		07:36 (6)	07:43	07:42	08:35
	22:06	25	06:09 (4)	21:24		20:14	6	07:42 (6)	19:00	16:52	16:14
7	05:12		05:45 (4)	05:57		06:51		07:31 (6)	07:45	07:44	08:36
	22:05	25	06:10 (4)	21:22		20:12	13	07:44 (6)	18:58	16:51	16:14
8	05:13		05:46 (4)	05:58		06:53		07:29 (6)	07:47	07:46	08:37
	22:05	24	06:10 (4)	21:20		20:09	17	07:46 (6)	18:56	16:49	16:14
9	05:14		05:46 (4)	06:00		06:55		07:28 (6)	07:49	07:48	08:39
	22:04	23	06:09 (4)	21:18		20:07	20	07:48 (6)	18:53	16:47	16:13
10	05:15		05:48 (4)	06:02		06:57		07:27 (6)	07:51	07:50	08:40
	22:03	22	06:10 (4)	21:16		20:05	22	07:49 (6)	18:51	16:45	16:13
11	05:16		05:49 (4)	06:04		06:59		07:25 (6)	07:53	07:52	08:41
	22:02	21	06:10 (4)	21:14		20:02	23	07:48 (6)	18:49	16:43	16:13
12	05:17		05:50 (4)	06:05		07:00		07:27 (6)	07:54	07:54	08:42
	22:01	20	06:10 (4)	21:12		20:00	22	07:49 (6)	18:46	16:42	16:12
13	05:18		05:51 (4)	06:07		07:02		07:29 (6)	07:56	07:56	08:43
	22:00	19	06:10 (4)	21:10		19:57	20	07:49 (6)	18:44	16:40	16:12
14	05:20		05:52 (4)	06:09		07:04		07:30 (6)	07:58	07:58	08:44
	21:59	17	06:09 (4)	21:08		19:55	18	07:48 (6)	18:41	16:38	16:12
15	05:21		05:53 (4)	06:11		07:06		07:32 (6)	08:00	08:00	08:45
	21:58	16	06:09 (4)	21:05		19:52	16	07:48 (6)	18:39	16:37	16:12
16	05:22		05:54 (4)	06:12		07:10 (5)	07:07	07:34 (6)	08:02	08:01	08:46
	21:57	15	06:09 (4)	21:03	7	07:17 (5)	19:50	13	07:47 (6)	18:37	16:35	16:12
17	05:23		05:56 (4)	06:14		07:06 (5)	07:09		07:36 (6)	08:04	08:03	08:47
	21:56	13	06:09 (4)	21:01	15	07:21 (5)	19:47	10	07:46 (6)	18:34	16:34	16:13
18	05:25		05:57 (4)	06:16		07:04 (5)	07:11		07:37 (6)	08:06	08:05	08:48
	21:55	12	06:09 (4)	20:59	19	07:23 (5)	19:45	7	07:44 (6)	18:32	16:32	16:13
19	05:26		05:58 (4)	06:18		07:02 (5)	07:13		07:39 (6)	08:07	08:07	08:48
	21:53	10	06:08 (4)	20:57	22	07:24 (5)	19:42	4	07:43 (6)	18:30	16:31	16:13
20	05:28		06:00 (4)	06:20		07:01 (5)	07:14		07:41 (6)	08:09	08:09	08:49
	21:52	8	06:08 (4)	20:54	24	07:25 (5)	19:40	1	07:42 (6)	18:28	16:30	16:13
21	05:29		06:01 (4)	06:21		07:00 (5)	07:16			08:11	08:11	08:50
	21:51	6	06:07 (4)	20:52	26	07:26 (5)	19:37			18:25	16:28	16:14
22	05:31		06:02 (4)	06:23		06:58 (5)	07:18			08:13	08:12	08:50
	21:49	4	06:06 (4)	20:50	28	07:26 (5)	19:35			18:23	16:27	16:14
23	05:32		06:04 (4)	06:25		06:58 (5)	07:20			08:15	08:14	08:51
	21:48	2	06:06 (4)	20:48	29	07:27 (5)	19:32			18:21	16:26	16:15
24	05:34			06:27		06:57 (5)	07:22			08:17	08:16	08:51
	21:46			20:45	31	07:28 (5)	19:30			18:19	16:25	16:15
25	05:35			06:28		06:56 (5)	07:23			07:19	08:18	08:52
	21:45			20:43	31	07:27 (5)	19:27			17:17	16:23	16:16
26	05:37			06:30		06:58 (5)	07:25			07:21	08:19	08:52
	21:43			20:41	29	07:27 (5)	19:25			17:14	16:22	16:17
27	05:38			06:32		07:00 (5)	07:27			07:23	08:21	08:52
	21:42			20:38	27	07:27 (5)	19:23			17:12	16:21	16:18
28	05:40			06:34		07:01 (5)	07:29			07:25	08:23	08:52
	21:40			20:36	25	07:26 (5)	19:20			17:10	16:20	16:18
29	05:42			06:36		07:03 (5)	07:31			07:27	08:24	08:52
	21:38			20:34	23	07:26 (5)	19:18			17:08	16:19	16:19
30	05:43			06:37		07:05 (5)	07:32			07:29	08:26	08:52
	21:37			20:31	21	07:26 (5)	19:15			17:06	16:19	16:20
31	05:45			06:39		07:07 (5)				07:31		08:52
	21:35			20:29	18	07:25 (5)				17:04		16:21
Potential sun hours	512			460			382			328	259	233
Total, worst case		418			375			261				
Sun reduction		0.22			0.26			0.25				
Oper. time red.		1.00			1.00			1.00				
Wind dir. red.		0.64			0.64			0.64				
Total reduction		0.14			0.16			0.16				
Total, real		60			61			42				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** AE - H033

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March			April			May			June		
1	08:52	16:23	08:22	17:14	07:24	18:10		07:09	20:08	15	07:37 (6)	07:52 (6)	06:00	21:04		05:10	21:54	19	05:53 (4)	06:12 (4)
2	08:52	16:24	08:20	17:16	07:22	18:12		07:07	20:10	13	07:38 (6)	07:51 (6)	05:58	21:06		05:10	21:55	17	05:54 (4)	06:11 (4)
3	08:52	16:25	08:19	17:18	07:20	18:14		07:04	20:12	7	07:40 (6)	07:47 (6)	05:56	21:07		05:09	21:56	15	05:56 (4)	06:11 (4)
4	08:52	16:26	08:17	17:20	07:17	18:16		07:02	20:14	1	07:26 (5)	07:27 (5)	05:54	21:09		05:08	21:57	13	05:57 (4)	06:10 (4)
5	08:51	16:27	08:15	17:22	07:15	18:18		07:00	20:16	5	07:23 (5)	07:28 (5)	05:52	21:11		05:07	21:58	12	05:57 (4)	06:09 (4)
6	08:51	16:29	08:13	17:24	07:13	18:19		06:57	20:18	8	07:21 (5)	07:29 (5)	05:50	21:13		05:06	21:59	9	05:59 (4)	06:08 (4)
7	08:51	16:30	08:11	17:26	07:10	18:21		06:55	20:19	11	07:19 (5)	07:30 (5)	05:48	21:15		05:06	22:00	5	06:01 (4)	06:06 (4)
8	08:50	16:31	08:09	17:28	07:08	18:23		06:52	20:21	13	07:16 (5)	07:29 (5)	05:46	21:16		05:05	22:01			
9	08:49	16:33	08:07	17:30	07:06	18:25		06:50	20:23	16	07:14 (5)	07:30 (5)	05:44	21:18	2	06:11 (4)	05:04	22:02		
10	08:49	16:34	08:06	17:32	07:03	18:27		06:47	20:25	18	07:11 (5)	07:29 (5)	05:42	21:20	4	06:09 (4)	06:13 (4)	05:04	22:03	
11	08:48	16:36	08:04	17:34	07:01	18:29		06:45	20:27	20	07:09 (5)	07:29 (5)	05:40	21:22	6	06:08 (4)	06:14 (4)	05:04	22:04	
12	08:47	16:37	08:02	17:36	06:58	18:31		06:43	20:29	22	07:07 (5)	07:29 (5)	05:39	21:23	9	06:06 (4)	06:15 (4)	05:03	22:05	
13	08:47	16:39	08:00	17:38	06:56	18:33		06:40	20:31	23	07:04 (5)	07:27 (5)	05:37	21:25	11	06:04 (4)	06:15 (4)	05:03	22:05	
14	08:46	16:41	07:57	17:40	06:53	18:35		06:38	20:32	25	07:02 (5)	07:27 (5)	05:35	21:27	12	06:03 (4)	06:15 (4)	05:03	22:06	
15	08:45	16:42	07:55	17:42	06:51	18:37		06:36	20:34	23	07:03 (5)	07:26 (5)	05:33	21:28	14	06:01 (4)	06:15 (4)	05:02	22:07	
16	08:44	16:44	07:53	17:44	06:49	18:38		06:33	20:36	21	07:04 (5)	07:25 (5)	05:32	21:30	16	06:00 (4)	06:16 (4)	05:02	22:07	
17	08:43	16:46	07:51	17:46	06:46	18:40		06:31	20:38	19	07:04 (5)	07:23 (5)	05:30	21:32	17	05:58 (4)	06:15 (4)	05:02	22:08	
18	08:42	16:47	07:49	17:48	06:44	18:42		06:29	20:40	15	07:06 (5)	07:21 (5)	05:29	21:33	19	05:57 (4)	06:16 (4)	05:02	22:08	
19	08:41	16:49	07:47	17:50	06:41	18:44		06:26	20:42	10	07:08 (5)	07:18 (5)	05:27	21:35	20	05:55 (4)	06:15 (4)	05:02	22:09	
20	08:39	16:51	07:45	17:52	06:39	18:46		06:24	20:43				05:25	21:37	22	05:54 (4)	06:16 (4)	05:02	22:09	
21	08:38	16:53	07:43	17:54	06:36	18:48		06:22	20:45				05:24	21:38	23	05:53 (4)	06:16 (4)	05:02	22:09	
22	08:37	16:55	07:40	17:56	06:34	18:50		06:20	20:47				05:23	21:40	24	05:52 (4)	06:16 (4)	05:02	22:09	
23	08:36	16:57	07:38	17:58	06:31	18:52	1	06:55 (6) 06:56 (6)	06:17	20:49			05:21	21:41	25	05:50 (4)	06:15 (4)	05:03	22:09	
24	08:34	16:58	07:36	18:00	06:29	18:53	4	06:53 (6) 06:57 (6)	06:15	20:51			05:20	21:43	26	05:49 (4)	06:15 (4)	05:03	22:10	
25	08:33	17:00	07:34	18:02	06:26	18:55	7	06:50 (6) 06:57 (6)	06:13	20:53			05:18	21:44	26	05:49 (4)	06:15 (4)	05:03	22:10	
26	08:31	17:02	07:31	18:04	06:24	18:57	9	06:48 (6) 06:57 (6)	06:11	20:55			05:17	21:46	25	05:50 (4)	06:15 (4)	05:04	22:10	
27	08:30	17:04	07:29	18:06	06:22	18:59	12	06:45 (6) 06:57 (6)	06:08	20:56			05:16	21:47	24	05:50 (4)	06:14 (4)	05:04	22:09	
28	08:28	17:06	07:27	18:08	06:19	19:01	14	06:43 (6) 06:57 (6)	06:06	20:58			05:15	21:49	23	05:51 (4)	06:14 (4)	05:05	22:09	
29	08:27	17:08			07:17	20:03	16	07:40 (6) 07:56 (6)	06:04	21:00			05:14	21:50	21	05:52 (4)	06:13 (4)	05:05	22:09	
30	08:25	17:10			07:14	20:05	17	07:38 (6) 07:55 (6)	06:02	21:02			05:13	21:51	21	05:52 (4)	06:13 (4)	05:06	22:09	
31	08:24	17:12			07:12	20:06	19	07:35 (6) 07:54 (6)					05:11	21:52	19	05:53 (4)	06:12 (4)			
Potential sun hours	250		273		367			420			494			510						
Total, worst case						99			285			409					90			
Sun reduction						0.22			0.31			0.31					0.26			
Oper. time red.						1.00			1.00			1.00					1.00			
Wind dir. red.						0.65			0.64			0.64					0.64			
Total reduction						0.14			0.20			0.20					0.17			
Total, real						14			56			83					15			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** AE - H033

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July			August			September			October	November	December
1	05:07			05:47		06:17 (4)	06:41		07:08 (5)	07:34	07:33	08:28
	22:09			21:33	8	06:25 (4)	20:26	20	07:28 (5)	19:13	17:02	16:18
2	05:07			05:48		06:19 (4)	06:43		07:10 (5)	07:36	07:34	08:29
	22:08			21:31	5	06:24 (4)	20:24	18	07:28 (5)	19:10	17:00	16:17
3	05:08			05:50		06:20 (4)	06:44		07:12 (5)	07:38	07:36	08:31
	22:08			21:30	3	06:23 (4)	20:22	16	07:28 (5)	19:08	16:58	16:16
4	05:09			05:52		06:22 (4)	06:46		07:13 (5)	07:40	07:38	08:32
	22:07			21:28	1	06:23 (4)	20:19	13	07:26 (5)	19:05	16:56	16:16
5	05:10		06:08 (4)	05:53			06:48		07:15 (5)	07:41	07:40	08:33
	22:07	3	06:11 (4)	21:26			20:17	11	07:26 (5)	19:03	16:54	16:15
6	05:11		06:06 (4)	05:55			06:50		07:17 (5)	07:43	07:42	08:35
	22:06	8	06:14 (4)	21:24			20:14	8	07:25 (5)	19:01	16:52	16:14
7	05:12		06:05 (4)	05:57			06:52		07:18 (5)	07:45	07:44	08:36
	22:05	10	06:15 (4)	21:22			20:12	5	07:23 (5)	18:58	16:51	16:14
8	05:13		06:04 (4)	05:58			06:53		07:20 (5)	07:47	07:46	08:37
	22:05	13	06:17 (4)	21:20			20:10	1	07:21 (5)	18:56	16:49	16:14
9	05:14		06:04 (4)	06:00			06:55		07:35 (6)	07:49	07:48	08:39
	22:04	14	06:18 (4)	21:18			20:07	6	07:41 (6)	18:53	16:47	16:13
10	05:15		06:03 (4)	06:02			06:57		07:32 (6)	07:51	07:50	08:40
	22:03	16	06:19 (4)	21:16			20:05	12	07:44 (6)	18:51	16:45	16:13
11	05:16		06:02 (4)	06:04			06:59		07:29 (6)	07:53	07:52	08:41
	22:02	18	06:20 (4)	21:14			20:02	16	07:45 (6)	18:49	16:43	16:13
12	05:17		06:02 (4)	06:05			07:00		07:28 (6)	07:54	07:54	08:42
	22:01	18	06:20 (4)	21:12			20:00	18	07:46 (6)	18:46	16:42	16:12
13	05:18		06:01 (4)	06:07			07:02		07:29 (6)	07:56	07:56	08:43
	22:00	20	06:21 (4)	21:10			19:57	17	07:46 (6)	18:44	16:40	16:12
14	05:20		06:00 (4)	06:09			07:04		07:30 (6)	07:58	07:58	08:44
	21:59	22	06:22 (4)	21:08			19:55	16	07:46 (6)	18:41	16:38	16:12
15	05:21		06:00 (4)	06:11			07:06		07:32 (6)	08:00	08:00	08:45
	21:58	22	06:22 (4)	21:05			19:52	14	07:46 (6)	18:39	16:37	16:12
16	05:22		05:59 (4)	06:12			07:07		07:34 (6)	08:02	08:01	08:46
	21:57	24	06:23 (4)	21:03			19:50	12	07:46 (6)	18:37	16:35	16:12
17	05:23		06:00 (4)	06:14			07:09		07:36 (6)	08:04	08:03	08:47
	21:56	24	06:24 (4)	21:01			19:47	10	07:46 (6)	18:34	16:34	16:13
18	05:25		05:59 (4)	06:16			07:11		07:37 (6)	08:06	08:05	08:48
	21:55	25	06:24 (4)	20:59			19:45	7	07:44 (6)	18:32	16:32	16:13
19	05:26		05:58 (4)	06:18			07:13		07:39 (6)	08:08	08:07	08:48
	21:53	26	06:24 (4)	20:57			19:42	5	07:44 (6)	18:30	16:31	16:13
20	05:28		06:00 (4)	06:20			07:15		07:41 (6)	08:09	08:09	08:49
	21:52	25	06:25 (4)	20:54			19:40	1	07:42 (6)	18:28	16:30	16:13
21	05:29		06:01 (4)	06:21			07:16			08:11	08:11	08:50
	21:51	24	06:25 (4)	20:52			19:37			18:25	16:28	16:14
22	05:31		06:02 (4)	06:23			07:18			08:13	08:12	08:50
	21:49	23	06:25 (4)	20:50			19:35			18:23	16:27	16:14
23	05:32		06:04 (4)	06:25			07:20			08:15	08:14	08:51
	21:48	22	06:26 (4)	20:48			19:32			18:21	16:26	16:15
24	05:34		06:05 (4)	06:27		07:12 (5)	07:22			08:17	08:16	08:51
	21:46	21	06:26 (4)	20:45	10	07:22 (5)	19:30			18:19	16:25	16:15
25	05:35		06:07 (4)	06:28		07:08 (5)	07:23			07:19	08:18	08:52
	21:45	20	06:27 (4)	20:43	16	07:24 (5)	19:27			17:17	16:23	16:16
26	05:37		06:08 (4)	06:30		07:07 (5)	07:25			07:21	08:19	08:52
	21:43	18	06:26 (4)	20:41	19	07:26 (5)	19:25			17:14	16:22	16:17
27	05:38		06:09 (4)	06:32		07:06 (5)	07:27			07:23	08:21	08:52
	21:42	17	06:26 (4)	20:38	21	07:27 (5)	19:23			17:12	16:21	16:18
28	05:40		06:11 (4)	06:34		07:04 (5)	07:29			07:25	08:23	08:52
	21:40	15	06:26 (4)	20:36	23	07:27 (5)	19:20			17:10	16:20	16:18
29	05:42		06:12 (4)	06:36		07:03 (5)	07:31			07:27	08:24	08:52
	21:38	13	06:25 (4)	20:34	25	07:28 (5)	19:18			17:08	16:19	16:19
30	05:43		06:14 (4)	06:37		07:05 (5)	07:32			07:29	08:26	08:52
	21:37	12	06:26 (4)	20:31	23	07:28 (5)	19:15			17:06	16:19	16:20
31	05:45		06:16 (4)	06:39		07:07 (5)				07:31		08:52
	21:35	10	06:26 (4)	20:29	22	07:29 (5)				17:04		16:21
Potential sun hours	512			460			382			328	259	233
Total, worst case		483			176			226				
Sun reduction		0.22			0.26			0.25				
Oper. time red.		1.00			1.00			1.00				
Wind dir. red.		0.64			0.64			0.64				
Total reduction		0.14			0.16			0.16				
Total, real		70			29			37				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** AF - H034

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:10	20:08	21:04	21:54	22:08	21:33	20:26	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:09	05:07	05:48	06:43	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:14	20:12	21:07	21:56	22:08	21:29	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:51	06:46	07:40	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52	05:07	05:10	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	21:58	22:06	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:55	05:48	05:06	05:12	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:56	16:49	16:13
9	08:49	08:07	07:05	06:50	05:44	05:04	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:01	06:45	05:40	05:03	05:16	06:04	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:13
12	08:47	08:01	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:04	22:01	21:12	20:00	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	22:00	21:09	19:57	18:44	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:07	21:56	21:01	19:47	18:34	16:34	16:13
18	08:42	07:49	06:44	06:29	05:28	05:02	05:25	06:16	07:11	08:05	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:28	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:28	16:30	16:13
21	08:38	07:42	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:10	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	05:02	05:31	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34	06:27	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	21:44	22:09	21:45	20:43	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:41	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:27	06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:14	05:05	05:41	06:35	07:30	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:12		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** AG - H035

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February			March			April	May	June
1	08:52		14:06 (10)	08:22		16:36 (9)	07:24		17:18 (8)	07:09	06:00	05:10
	16:22	41	15:33 (11)	17:13	6	16:42 (9)	18:09	18	17:36 (8)	20:08	21:03	21:53
2	08:52		14:09 (10)	08:20		16:35 (9)	07:22		17:19 (8)	07:06	05:57	05:09
	16:23	38	15:34 (11)	17:15	9	16:44 (9)	18:11	15	17:34 (8)	20:10	21:05	21:55
3	08:52		14:12 (10)	08:18		16:34 (9)	07:19		17:22 (8)	07:04	05:55	05:08
	16:24	32	15:34 (11)	17:17	12	16:46 (9)	18:13	9	17:31 (8)	20:12	21:07	21:56
4	08:51		15:07 (11)	08:16		16:33 (9)	07:17			07:02	05:53	05:07
	16:26	27	15:34 (11)	17:19	15	16:48 (9)	18:15			20:13	21:09	21:57
5	08:51		15:08 (11)	08:15		16:33 (9)	07:15			06:59	05:51	05:07
	16:27	27	15:35 (11)	17:21	17	16:50 (9)	18:17			20:15	21:11	21:58
6	08:51		15:09 (11)	08:13		16:32 (9)	07:12			06:57	05:49	05:06
	16:28	25	15:34 (11)	17:23	20	16:52 (9)	18:19			20:17	21:12	21:59
7	08:50		15:09 (11)	08:11		16:32 (9)	07:10			06:54	05:47	05:05
	16:30	25	15:34 (11)	17:25	23	16:55 (9)	18:21			20:19	21:14	22:00
8	08:50		15:10 (11)	08:09		16:32 (9)	07:08			06:52	05:46	05:05
	16:31	25	15:35 (11)	17:27	25	16:57 (9)	18:23			20:21	21:16	22:01
9	08:49		15:11 (11)	08:07		16:32 (9)	07:05			06:49	05:44	05:04
	16:32	24	15:35 (11)	17:30	27	16:59 (9)	18:25			20:23	21:18	22:02
10	08:49		15:12 (11)	08:05		16:32 (9)	07:03			06:47	05:42	05:03
	16:34	23	15:35 (11)	17:32	30	17:02 (9)	18:27			20:25	21:20	22:03
11	08:48		15:13 (11)	08:03		16:32 (9)	07:00			06:45	05:40	05:03
	16:35	21	15:34 (11)	17:34	32	17:04 (9)	18:29			20:26	21:21	22:04
12	08:47		15:14 (11)	08:01		16:33 (9)	06:58			06:42	05:38	05:03
	16:37	20	15:34 (11)	17:36	33	17:06 (9)	18:31			20:28	21:23	22:04
13	08:46		15:15 (11)	07:59		16:32 (9)	06:55			06:40	05:36	05:02
	16:39	19	15:34 (11)	17:38	32	17:04 (9)	18:32			20:30	21:25	22:05
14	08:45		15:16 (11)	07:57		16:33 (9)	06:53			06:38	05:35	05:02
	16:40	17	15:33 (11)	17:40	31	17:04 (9)	18:34			20:32	21:26	22:06
15	08:44		15:18 (11)	07:55		16:34 (9)	06:51			06:35	05:33	05:02
	16:42	15	15:33 (11)	17:42	30	17:04 (9)	18:36			20:34	21:28	22:06
16	08:44		15:20 (11)	07:53		16:35 (9)	06:48			06:33	05:31	05:02
	16:44	12	15:32 (11)	17:44	28	17:03 (9)	18:38			20:36	21:30	22:07
17	08:42		15:23 (11)	07:51		16:36 (9)	06:46			06:31	05:30	05:02
	16:45	5	15:28 (11)	17:46	26	17:02 (9)	18:40			20:38	21:32	22:07
18	08:41			07:49		16:36 (9)	06:43			06:28	05:28	05:01
	16:47			17:48	24	17:00 (9)	18:42			20:39	21:33	22:08
19	08:40			07:47		16:38 (9)	06:41			06:26	05:26	05:01
	16:49			17:50	24	17:21 (8)	18:44			20:41	21:35	22:08
20	08:39			07:44		16:40 (9)	06:38			06:24	05:25	05:02
	16:51			17:52	23	17:23 (8)	18:46			20:43	21:36	22:09
21	08:38			07:42		16:44 (9)	06:36			06:21	05:23	05:02
	16:52			17:54	19	17:26 (8)	18:47			20:45	21:38	22:09
22	08:37			07:40		17:16 (8)	06:33			06:19	05:22	05:02
	16:54			17:56	11	17:27 (8)	18:49			20:47	21:39	22:09
23	08:35			07:38		17:16 (8)	06:31			06:17	05:21	05:02
	16:56			17:58	13	17:29 (8)	18:51			20:49	21:41	22:09
24	08:34			07:35		17:16 (8)	06:29			06:15	05:19	05:02
	16:58			18:00	16	17:32 (8)	18:53			20:51	21:43	22:09
25	08:33			07:33		17:15 (8)	06:26			06:12	05:18	05:03
	17:00			18:01	18	17:33 (8)	18:55			20:52	21:44	22:09
26	08:31			07:31		17:16 (8)	06:24			06:10	05:17	05:03
	17:02			18:03	20	17:36 (8)	18:57			20:54	21:45	22:09
27	08:30			07:29		17:17 (8)	06:21			06:08	05:15	05:04
	17:04			18:05	21	17:38 (8)	18:59			20:56	21:47	22:09
28	08:28			07:26		17:17 (8)	06:19			06:06	05:14	05:04
	17:06			18:07	20	17:37 (8)	19:00			20:58	21:48	22:09
29	08:27						07:16			06:04	05:13	05:05
	17:08						20:02			21:00	21:50	22:09
30	08:25						07:14			06:02	05:12	05:05
	17:10						20:04			21:02	21:51	22:09
31	08:23		16:37 (9)				07:11				05:11	
	17:11	3	16:40 (9)				20:06				21:52	
Potential sun hours	250			273			367			420	494	510
Total, worst case		399			605			42				
Sun reduction		0.16			0.19			0.22				
Oper. time red.		1.00			1.00			1.00				
Wind dir. red.		0.65			0.64			0.65				
Total reduction		0.10			0.12			0.14				
Total, real		42			75			6				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** AG - H035

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August		September		October			November			December		
1	05:06		05:46		06:40		07:34			07:32		16:02 (9)	08:27		14:55 (11)
	22:08		21:33		20:26		19:12			17:02	29	16:31 (9)	16:17	21	15:16 (11)
2	05:07		05:48		06:42		07:36			07:34		16:02 (9)	08:29		14:55 (11)
	22:08		21:31		20:24		19:10			17:00	26	16:28 (9)	16:16	23	15:18 (11)
3	05:08		05:49		06:44		07:37			07:36		16:02 (9)	08:30		14:54 (11)
	22:07		21:29		20:21		19:07			16:58	24	16:26 (9)	16:16	24	15:18 (11)
4	05:08		05:51		06:46		07:39			07:38		16:02 (9)	08:32		14:55 (11)
	22:07		21:27		20:19		19:05			16:56	22	16:24 (9)	16:15	24	15:19 (11)
5	05:09		05:53		06:48		07:41			07:40		16:02 (9)	08:33		14:54 (11)
	22:06		21:25		20:16		19:03			16:54	20	16:22 (9)	16:14	25	15:19 (11)
6	05:10		05:55		06:49		07:43			07:42		16:03 (9)	08:35		14:55 (11)
	22:06		21:24		20:14		19:00			16:52	17	16:20 (9)	16:14	26	15:21 (11)
7	05:11		05:56		06:51		07:45			07:44		16:03 (9)	08:36		14:54 (11)
	22:05		21:22		20:12		18:58			16:50	15	16:18 (9)	16:13	27	15:21 (11)
8	05:12		05:58		06:53		07:47			07:46		16:04 (9)	08:37		14:55 (11)
	22:04		21:20		20:09		18:55			16:48	12	16:16 (9)	16:13	27	15:22 (11)
9	05:13		06:00		06:55		07:48			07:48		16:06 (9)	08:38		14:00 (10)
	22:04		21:18		20:07		18:53			16:46	8	16:14 (9)	16:13	32	15:22 (11)
10	05:14		06:01		06:56		07:50			07:50		16:07 (9)	08:40		13:58 (10)
	22:03		21:16		20:04		18:50			16:45	5	16:12 (9)	16:12	38	15:23 (11)
11	05:15		06:03		06:58		07:52		17:55 (8)	07:52		16:08 (9)	08:41		13:58 (10)
	22:02		21:13		20:02		18:48	12	18:07 (8)	16:43	2	16:10 (9)	16:12	40	15:24 (11)
12	05:17		06:05		07:00		07:54		17:53 (8)	07:54			08:42		13:57 (10)
	22:01		21:11		19:59		18:46	15	18:08 (8)	16:41			16:12	43	15:24 (11)
13	05:18		06:07		07:02		07:56		17:51 (8)	07:55			08:43		13:56 (10)
	22:00		21:09		19:57		18:43	19	18:10 (8)	16:40			16:12	45	15:25 (11)
14	05:19		06:09		07:03		07:58		17:50 (8)	07:57			08:44		13:56 (10)
	21:59		21:07		19:54		18:41	21	18:11 (8)	16:38			16:12	46	15:25 (11)
15	05:20		06:10		07:05		08:00		17:49 (8)	07:59			08:45		13:56 (10)
	21:58		21:05		19:52		18:39	20	18:09 (8)	16:36			16:12	48	15:26 (11)
16	05:22		06:12		07:07		08:01		17:48 (8)	08:01			08:46		13:56 (10)
	21:57		21:03		19:49		18:36	19	18:07 (8)	16:35			16:12	48	15:26 (11)
17	05:23		06:14		07:09		08:03		17:47 (8)	08:03			08:47		13:55 (10)
	21:56		21:01		19:47		18:34	18	18:05 (8)	16:33			16:12	49	15:26 (11)
18	05:24		06:16		07:11		08:05		17:47 (8)	08:05			08:47		13:56 (10)
	21:54		20:59		19:44		18:32	15	18:02 (8)	16:32			16:12	50	15:27 (11)
19	05:26		06:17		07:12		08:07		17:47 (8)	08:07			08:48		13:56 (10)
	21:53		20:56		19:42		18:30	13	18:00 (8)	16:31			16:13	51	15:28 (11)
20	05:27		06:19		07:14		08:09		17:47 (8)	08:09			08:49		13:57 (10)
	21:52		20:54		19:39		18:27	11	17:58 (8)	16:29			16:13	50	15:28 (11)
21	05:29		06:21		07:16		08:11		17:13 (9)	08:10			08:49		13:57 (10)
	21:50		20:52		19:37		18:25	21	17:55 (8)	16:28			16:13	50	15:28 (11)
22	05:30		06:23		07:18		08:13		17:10 (9)	08:12			08:50		13:58 (10)
	21:49		20:50		19:35		18:23	23	17:53 (8)	16:27			16:14	50	15:29 (11)
23	05:32		06:24		07:19		08:15		17:08 (9)	08:14			08:50		13:58 (10)
	21:48		20:47		19:32		18:21	24	17:51 (8)	16:25			16:14	50	15:29 (11)
24	05:33		06:26		07:21		08:17		17:06 (9)	08:16			08:51		13:58 (10)
	21:46		20:45		19:30		18:18	25	17:31 (9)	16:24			16:15	51	15:30 (11)
25	05:35		06:28		07:23		07:19		16:05 (9)	08:17		15:01 (11)	08:51		13:59 (10)
	21:45		20:43		19:27		17:16	27	16:32 (9)	16:23	5	15:06 (11)	16:16	51	15:31 (11)
26	05:36		06:30		07:25		07:21		16:04 (9)	08:19		14:58 (11)	08:52		14:00 (10)
	21:43		20:40		19:25		17:14	29	16:33 (9)	16:22	11	15:09 (11)	16:16	50	15:31 (11)
27	05:38		06:32		07:27		07:23		16:03 (9)	08:21		14:57 (11)	08:52		14:01 (10)
	21:41		20:38		19:22		17:12	30	16:33 (9)	16:21	15	15:12 (11)	16:17	48	15:31 (11)
28	05:39		06:33		07:28		07:24		16:02 (9)	08:22		14:56 (11)	08:52		14:01 (10)
	21:40		20:36		19:20		17:10	32	16:34 (9)	16:20	17	15:13 (11)	16:18	49	15:32 (11)
29	05:41		06:35		07:30		07:26		16:02 (9)	08:24		14:56 (11)	08:52		14:02 (10)
	21:38		20:33		19:17		17:08	32	16:34 (9)	16:19	19	15:15 (11)	16:19	47	15:32 (11)
30	05:43		06:37		07:32		07:28		16:01 (9)	08:26		14:55 (11)	08:52		14:04 (10)
	21:36		20:31		19:15		17:06	33	16:34 (9)	16:18	20	15:15 (11)	16:20	46	15:33 (11)
31	05:44		06:39				07:30		16:02 (9)				08:52		14:05 (10)
	21:35		20:29				17:04	31	16:33 (9)				16:21	44	15:33 (11)
Potential sun hours	513		460		382		328			259			233		
Total, worst case								470			267			1273	
Sun reduction								0.23			0.20			0.12	
Oper. time red.								1.00			1.00			1.00	
Wind dir. red.								0.64			0.64			0.65	
Total reduction								0.15			0.13			0.08	
Total, real								68			34			99	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** AH - H036

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April		May		June	
1	08:52	08:22	07:24	07:09		06:00		05:10	06:01 (4)
	16:23	17:14	18:10	20:08		21:04		21:54	9 06:10 (4)
2	08:52	08:20	07:22	07:07		05:58		05:10	06:02 (4)
	16:24	17:16	18:12	20:10		21:06		21:55	6 06:08 (4)
3	08:52	08:19	07:20	07:04		05:56		05:09	
	16:25	17:18	18:14	20:12		21:07		21:56	
4	08:52	08:17	07:17	07:02	07:26 (5)	05:54		05:08	
	16:26	17:20	18:16	20:14	3 07:29 (5)	21:09		21:57	
5	08:51	08:15	07:15	07:00	07:23 (5)	05:52		05:07	
	16:27	17:22	18:18	20:16	6 07:29 (5)	21:11		21:58	
6	08:51	08:13	07:13	06:57	07:21 (5)	05:50		05:06	
	16:29	17:24	18:19	20:18	9 07:30 (5)	21:13		21:59	
7	08:51	08:11	07:10	06:55	07:19 (5)	05:48		05:06	
	16:30	17:26	18:21	20:19	12 07:31 (5)	21:15		22:00	
8	08:50	08:09	07:08	06:52	07:16 (5)	05:46	06:13 (4)	05:05	
	16:31	17:28	18:23	20:21	14 07:30 (5)	21:16	3 06:16 (4)	22:01	
9	08:49	08:07	07:06	06:50	07:14 (5)	05:44	06:11 (4)	05:04	
	16:33	17:30	18:25	20:23	16 07:30 (5)	21:18	5 06:16 (4)	22:02	
10	08:49	08:06	07:03	06:47	07:11 (5)	05:42	06:09 (4)	05:04	
	16:34	17:32	18:27	20:25	18 07:29 (5)	21:20	8 06:17 (4)	22:03	
11	08:48	08:04	07:01	06:45	07:09 (5)	05:40	06:08 (4)	05:04	
	16:36	17:34	18:29	20:27	20 07:29 (5)	21:22	10 06:18 (4)	22:04	
12	08:47	08:02	06:58	06:43	07:07 (5)	05:39	06:06 (4)	05:03	
	16:37	17:36	18:31	20:29	22 07:29 (5)	21:23	12 06:18 (4)	22:05	
13	08:47	08:00	06:56	06:40	07:04 (5)	05:37	06:04 (4)	05:03	
	16:39	17:38	18:33	20:31	24 07:28 (5)	21:25	14 06:18 (4)	22:05	
14	08:46	07:57	06:53	06:38	07:04 (5)	05:35	06:03 (4)	05:03	
	16:41	17:40	18:35	20:32	23 07:27 (5)	21:27	15 06:18 (4)	22:06	
15	08:45	07:55	06:51	06:36	07:05 (5)	05:33	06:01 (4)	05:02	
	16:42	17:42	18:37	20:34	21 07:26 (5)	21:28	17 06:18 (4)	22:07	
16	08:44	07:53	06:49	06:33	07:06 (5)	05:32	06:00 (4)	05:02	
	16:44	17:44	18:38	20:36	19 07:25 (5)	21:30	18 06:18 (4)	22:07	
17	08:43	07:51	06:46	06:31	07:07 (5)	05:30	05:58 (4)	05:02	
	16:46	17:46	18:40	20:38	15 07:22 (5)	21:32	20 06:18 (4)	22:08	
18	08:42	07:49	06:44	06:29	07:10 (5)	05:29	05:57 (4)	05:02	
	16:47	17:48	18:42	20:40	9 07:19 (5)	21:33	21 06:18 (4)	22:08	
19	08:41	07:47	06:41	06:26		05:27	05:55 (4)	05:02	
	16:49	17:50	18:44	20:42		21:35	22 06:17 (4)	22:09	
20	08:39	07:45	06:39	06:24		05:25	05:54 (4)	05:02	
	16:51	17:52	18:46	20:43		21:37	23 06:17 (4)	22:09	
21	08:38	07:43	06:36	06:22		05:24	05:53 (4)	05:02	
	16:53	17:54	18:48	20:45		21:38	25 06:18 (4)	22:09	
22	08:37	07:40	06:34	06:20		05:23	05:52 (4)	05:02	
	16:55	17:56	18:50	20:47		21:40	26 06:18 (4)	22:09	
23	08:36	07:38	06:31	06:17		05:21	05:52 (4)	05:03	
	16:57	17:58	18:52	20:49		21:41	24 06:16 (4)	22:09	
24	08:34	07:36	06:29	06:15		05:20	05:53 (4)	05:03	
	16:58	18:00	18:53	20:51		21:43	23 06:16 (4)	22:10	
25	08:33	07:34	06:26	06:13		05:18	05:54 (4)	05:03	
	17:00	18:02	18:55	20:53		21:44	22 06:16 (4)	22:10	
26	08:31	07:31	06:24	06:11		05:17	05:54 (4)	05:04	
	17:02	18:04	18:57	20:55		21:46	21 06:15 (4)	22:10	
27	08:30	07:29	06:22	06:08		05:16	05:55 (4)	05:04	
	17:04	18:06	18:59	20:56		21:47	20 06:15 (4)	22:09	
28	08:28	07:27	06:19	06:06		05:15	05:56 (4)	05:05	
	17:06	18:08	19:01	20:58		21:49	18 06:14 (4)	22:09	
29	08:27		07:17	06:04		05:14	05:57 (4)	05:05	
	17:08		20:03	21:00		21:50	16 06:13 (4)	22:09	
30	08:25		07:14	06:02		05:13	05:58 (4)	05:06	
	17:10		20:05	21:02		21:51	14 06:12 (4)	22:09	
31	08:24		07:12			05:11	05:59 (4)		
	17:12		20:06			21:53	12 06:11 (4)		
Potential sun hours	250	273	367	420		494		510	
Total, worst case				231		409		15	
Sun reduction				0.31		0.31		0.26	
Oper. time red.				1.00		1.00		1.00	
Wind dir. red.				0.64		0.64		0.64	
Total reduction				0.20		0.20		0.17	
Total, real				46		83		3	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** AH - H036

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July			August			September			October	November	December
1	05:07			05:47		06:17 (4)	06:41		07:08 (5)	07:34	07:33	08:28
	22:09			21:33	11	06:28 (4)	20:26	20	07:28 (5)	19:13	17:02	16:18
2	05:07			05:48		06:19 (4)	06:43		07:10 (5)	07:36	07:34	08:29
	22:08			21:31	9	06:28 (4)	20:24	18	07:28 (5)	19:10	17:00	16:17
3	05:08			05:50		06:20 (4)	06:44		07:12 (5)	07:38	07:36	08:31
	22:08			21:30	7	06:27 (4)	20:22	16	07:28 (5)	19:08	16:58	16:16
4	05:09			05:52		06:22 (4)	06:46		07:13 (5)	07:40	07:38	08:32
	22:07			21:28	5	06:27 (4)	20:19	14	07:27 (5)	19:05	16:56	16:16
5	05:10			05:53		06:23 (4)	06:48		07:15 (5)	07:41	07:40	08:33
	22:07			21:26	2	06:25 (4)	20:17	12	07:27 (5)	19:03	16:54	16:15
6	05:11			05:55			06:50		07:17 (5)	07:43	07:42	08:35
	22:06			21:24			20:14	9	07:26 (5)	19:01	16:52	16:14
7	05:12			05:57			06:52		07:18 (5)	07:45	07:44	08:36
	22:05			21:22			20:12	6	07:24 (5)	18:58	16:51	16:14
8	05:13			05:58			06:53		07:20 (5)	07:47	07:46	08:37
	22:05			21:20			20:10	3	07:23 (5)	18:56	16:49	16:14
9	05:14			06:00			06:55			07:49	07:48	08:39
	22:04			21:18			20:07			18:53	16:47	16:13
10	05:15		06:13 (4)	06:02			06:57			07:51	07:50	08:40
	22:03	1	06:14 (4)	21:16			20:05			18:51	16:45	16:13
11	05:16		06:10 (4)	06:04			06:59			07:53	07:52	08:41
	22:02	8	06:18 (4)	21:14			20:02			18:49	16:43	16:13
12	05:17		06:08 (4)	06:05			07:00			07:54	07:54	08:42
	22:01	11	06:19 (4)	21:12			20:00			18:46	16:42	16:12
13	05:18		06:07 (4)	06:07			07:02			07:56	07:56	08:43
	22:00	13	06:20 (4)	21:10			19:57			18:44	16:40	16:12
14	05:20		06:06 (4)	06:09			07:04			07:58	07:58	08:44
	21:59	15	06:21 (4)	21:08			19:55			18:41	16:38	16:12
15	05:21		06:05 (4)	06:11			07:06			08:00	08:00	08:45
	21:58	17	06:22 (4)	21:05			19:52			18:39	16:37	16:12
16	05:22		06:04 (4)	06:12			07:07			08:02	08:01	08:46
	21:57	19	06:23 (4)	21:03			19:50			18:37	16:35	16:12
17	05:23		06:04 (4)	06:14			07:09			08:04	08:03	08:47
	21:56	21	06:25 (4)	21:01			19:47			18:35	16:34	16:13
18	05:25		06:04 (4)	06:16			07:11			08:06	08:05	08:48
	21:55	21	06:25 (4)	20:59			19:45			18:32	16:32	16:13
19	05:26		06:03 (4)	06:18			07:13			08:08	08:07	08:48
	21:53	23	06:26 (4)	20:57			19:42			18:30	16:31	16:13
20	05:28		06:03 (4)	06:20			07:15			08:09	08:09	08:49
	21:52	24	06:27 (4)	20:54			19:40			18:28	16:30	16:13
21	05:29		06:02 (4)	06:21			07:16			08:11	08:11	08:50
	21:51	25	06:27 (4)	20:52			19:37			18:25	16:28	16:14
22	05:31		06:02 (4)	06:23			07:18			08:13	08:12	08:50
	21:49	25	06:27 (4)	20:50			19:35			18:23	16:27	16:14
23	05:32		06:04 (4)	06:25			07:20			08:15	08:14	08:51
	21:48	24	06:28 (4)	20:48			19:32			18:21	16:26	16:15
24	05:34		06:05 (4)	06:27			07:22			08:17	08:16	08:51
	21:46	23	06:28 (4)	20:45			19:30			18:19	16:25	16:15
25	05:35		06:07 (4)	06:28		07:12 (5)	07:23			07:19	08:18	08:52
	21:45	22	06:29 (4)	20:43	10	07:22 (5)	19:27			17:17	16:23	16:16
26	05:37		06:08 (4)	06:30		07:10 (5)	07:25			07:21	08:19	08:52
	21:43	21	06:29 (4)	20:41	15	07:25 (5)	19:25			17:14	16:22	16:17
27	05:38		06:09 (4)	06:32		07:08 (5)	07:27			07:23	08:21	08:52
	21:42	19	06:28 (4)	20:38	19	07:27 (5)	19:23			17:12	16:21	16:18
28	05:40		06:11 (4)	06:34		07:06 (5)	07:29			07:25	08:23	08:52
	21:40	18	06:29 (4)	20:36	21	07:27 (5)	19:20			17:10	16:20	16:18
29	05:42		06:12 (4)	06:36		07:05 (5)	07:31			07:27	08:24	08:52
	21:38	16	06:28 (4)	20:34	23	07:28 (5)	19:18			17:08	16:19	16:19
30	05:43		06:14 (4)	06:37		07:05 (5)	07:32			07:29	08:26	08:52
	21:37	15	06:29 (4)	20:31	23	07:28 (5)	19:15			17:06	16:19	16:20
31	05:45		06:16 (4)	06:39		07:07 (5)				07:31		08:52
	21:35	13	06:29 (4)	20:29	22	07:29 (5)				17:04		16:21
Potential sun hours	512			460			382			328	259	233
Total, worst case		394			167			98				
Sun reduction		0.22			0.26			0.25				
Oper. time red.		1.00			1.00			1.00				
Wind dir. red.		0.64			0.64			0.64				
Total reduction		0.14			0.16			0.16				
Total, real		57			28			16				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** AI - H037

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	06:41 (8)	05:10	05:06	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:10	20:08	21:04 17	06:58 (8)	21:54	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:07	05:58	06:43 (8)	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05 13	06:56 (8)	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	06:46 (8)	05:08	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12	21:07 6	06:52 (8)	21:56	22:08	21:29	20:21	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54		05:08	05:09	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14	21:09		21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52		05:07	05:09	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11		21:58	22:07	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50		05:06	05:10	05:55	06:50	07:43	07:42	08:35
	16:28	17:24	18:19	20:17	21:13		21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48		05:05	05:11	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14		22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46		05:05	05:12	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16		22:01	22:05	21:20	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:50	05:44		05:04	05:13	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18		22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42		05:04	05:15	06:02	06:54 (8)	06:57	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20		22:03	22:03	21:16 8	07:02 (8)	20:04	18:51	16:45	16:13
11	08:48	08:03	07:00	06:45	05:40		05:03	05:16	06:03	06:51 (8)	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21		22:04	22:02	21:14 14	07:05 (8)	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38		05:03	05:17	06:05	06:49 (8)	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23		22:05	22:01	21:12 17	07:06 (8)	19:59	18:46	16:41	16:12
13	08:46	07:59	06:56	06:40	05:37		05:03	05:18	06:07	06:47 (8)	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25		22:05	22:00	21:09 20	07:07 (8)	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35		05:02	05:19	06:09	06:47 (8)	07:04	07:58	07:58	08:44
	16:40	17:40	18:34	20:32	21:27		22:06	21:59	21:07 22	07:09 (8)	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35 07:00 (8)	05:33		05:02	05:21	06:10	06:45 (8)	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34 1 07:01 (8)	21:28		22:07	21:58	21:05 24	07:09 (8)	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33 06:57 (8)	05:31		05:02	05:22	06:12	06:44 (8)	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36 5 07:02 (8)	21:30		22:07	21:57	21:03 25	07:09 (8)	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31 06:55 (8)	05:30		05:02	05:23	06:14	06:44 (8)	07:09	08:04	08:03	08:47
	16:45	17:46	18:40	20:38 8 07:03 (8)	21:32		22:08	21:56	21:01 26	07:10 (8)	19:47	18:34	16:34	16:12
18	08:42	07:49	06:43	06:28 06:53 (8)	05:28		05:02	05:25	06:16	06:44 (8)	07:11	08:05	08:05	08:48
	16:47	17:48	18:42	20:40 11 07:04 (8)	21:33		22:08	21:54	20:59 26	07:10 (8)	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26 06:51 (8)	05:27		05:02	05:26	06:18	06:46 (8)	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:41 14 07:05 (8)	21:35		22:08	21:53	20:56 24	07:10 (8)	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24 06:48 (8)	05:25		05:02	05:27	06:19	06:48 (8)	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43 16 07:04 (8)	21:36		22:09	21:52	20:54 22	07:10 (8)	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:22 06:46 (8)	05:24		05:02	05:29	06:21	06:49 (8)	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45 18 07:04 (8)	21:38		22:09	21:51	20:52 20	07:09 (8)	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19 06:44 (8)	05:22		05:02	05:30	06:23	06:51 (8)	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47 20 07:04 (8)	21:40		22:09	21:49	20:50 18	07:09 (8)	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17 06:42 (8)	05:21		05:02	05:32	06:25	06:53 (8)	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49 22 07:04 (8)	21:41		22:09	21:48	20:47 16	07:09 (8)	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15 06:40 (8)	05:19		05:03	05:33	06:26	06:54 (8)	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51 24 07:04 (8)	21:43		22:09	21:46	20:45 13	07:07 (8)	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13 06:38 (8)	05:18		05:03	05:35	06:28	06:56 (8)	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53 26 07:04 (8)	21:44		22:09	21:45	20:43 11	07:07 (8)	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10 06:38 (8)	05:17		05:03	05:36	06:30	06:58 (8)	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54 25 07:03 (8)	21:46		22:09	21:43	20:40 8	07:06 (8)	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08 06:38 (8)	05:16		05:04	05:38	06:32	07:00 (8)	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56 25 07:03 (8)	21:47		22:09	21:42	20:38 5	07:05 (8)	19:22	17:12	16:21	16:17
28	08:28	07:27	06:19	06:06 06:39 (8)	05:14		05:04	05:40	06:34	07:01 (8)	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58 23 07:02 (8)	21:48		22:09	21:40	20:36 1	07:02 (8)	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04 06:38 (8)	05:13		05:05	05:41	06:35		07:30	07:27	08:24	08:52
	17:08		20:03	21:00 22 07:00 (8)	21:50		22:09	21:38	20:33		19:17	17:08	16:19	16:19
30	08:25		07:14	06:02 06:40 (8)	05:12		05:06	05:43	06:37		07:32	07:28	08:26	08:52
	17:10		20:04	21:02 20 07:00 (8)	21:51		22:09	21:36	20:31		19:15	17:06	16:18	16:20
31	08:23		07:11		05:11			05:45	06:39			07:30		08:52
	17:12		20:06		21:52			21:35	20:29			17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case				280	36			320				
Sun reduction				0.31	0.31			0.26				
Oper. time red.				1.00	1.00			1.00				
Wind dir. red.				0.65	0.65			0.65				
Total reduction				0.20	0.20			0.17				
Total, real				56	7			53				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** AJ - H038

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April		May	June	July	August		September	October	November	December
1	08:52	08:22	07:24	07:09		06:00	05:10	05:06	05:46		06:41	07:34	07:32	08:27
	16:22	17:14	18:10	20:08		21:04	21:54	22:08	21:33		20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:07		05:58	05:09	05:07	05:48		06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10		21:05	21:55	22:08	21:31		20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04		05:56	05:08	05:08	05:50		06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12		21:07	21:56	22:08	21:29		20:21	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02		05:54	05:08	05:09	05:51		06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14		21:09	21:57	22:07	21:27		20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59		05:52	05:07	05:09	05:53		06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15		21:11	21:58	22:07	21:26		20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57		05:50	05:06	05:10	05:55		06:50	07:43	07:42	08:35
	16:28	17:24	18:19	20:17		21:13	21:59	22:06	21:24		20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54		05:48	05:05	05:11	05:56		06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19		21:14	22:00	22:05	21:22		20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52		05:46	05:05	05:12	05:58		06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21		21:16	22:01	22:05	21:20		20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:50		05:44	05:04	05:13	06:00		06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23		21:18	22:02	22:04	21:18		20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47		05:42	05:04	05:15	06:02		06:57	07:50	07:50	08:40
	16:34	17:32	18:27	20:25		21:20	22:03	22:03	21:16		20:04	18:51	16:45	16:13
11	08:48	08:03	07:00	06:45		05:40	05:03	05:16	06:03		06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27		21:21	22:04	22:02	21:14		20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42		05:38	05:03	05:17	06:05		07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28		21:23	22:05	22:01	21:12		19:59	18:46	16:41	16:12
13	08:46	07:59	06:56	06:40		07:04 (8) 05:37	05:03	05:18	06:07		06:56 (8) 07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	1	07:05 (8) 21:25	22:05	22:00	21:09	10	07:06 (8) 19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38		07:02 (8) 05:35	05:02	05:19	06:09		06:54 (8) 07:04	07:58	07:58	08:44
	16:40	17:40	18:34	20:32	4	07:06 (8) 21:27	22:06	21:59	21:07	15	07:09 (8) 19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35		07:00 (8) 05:33	05:02	05:21	06:10		06:51 (8) 07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	8	07:08 (8) 21:28	22:07	21:58	21:05	19	07:10 (8) 19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33		06:57 (8) 05:31	05:02	05:22	06:12		06:50 (8) 07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	11	07:08 (8) 21:30	22:07	21:57	21:03	21	07:11 (8) 19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31		06:55 (8) 05:30	05:02	05:23	06:14		06:49 (8) 07:09	08:04	08:03	08:47
	16:45	17:46	18:40	20:38	13	07:08 (8) 21:32	22:08	21:56	21:01	23	07:12 (8) 19:47	18:34	16:34	16:12
18	08:42	07:49	06:43	06:28		06:53 (8) 05:28	05:02	05:25	06:16		06:48 (8) 07:11	08:05	08:05	08:48
	16:47	17:48	18:42	20:40	16	07:09 (8) 21:33	22:08	21:54	20:59	24	07:12 (8) 19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26		06:51 (8) 05:27	05:02	05:26	06:18		06:47 (8) 07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	18	07:09 (8) 21:35	22:08	21:53	20:56	26	07:13 (8) 19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24		06:48 (8) 05:25	05:02	05:27	06:19		06:48 (8) 07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	20	07:08 (8) 21:36	22:09	21:52	20:54	25	07:13 (8) 19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:22		06:46 (8) 05:24	05:02	05:29	06:21		06:49 (8) 07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	22	07:08 (8) 21:38	22:09	21:51	20:52	24	07:13 (8) 19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19		06:44 (8) 05:22	05:02	05:30	06:23		06:51 (8) 07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	24	07:08 (8) 21:40	22:09	21:49	20:50	22	07:13 (8) 19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17		06:42 (8) 05:21	05:02	05:32	06:25		06:53 (8) 07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	25	07:07 (8) 21:41	22:09	21:48	20:47	20	07:13 (8) 19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15		06:42 (8) 05:19	05:03	05:33	06:26		06:54 (8) 07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	25	07:07 (8) 21:43	22:09	21:46	20:45	18	07:12 (8) 19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13		06:42 (8) 05:18	05:03	05:35	06:28		06:56 (8) 07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	24	07:06 (8) 21:44	22:09	21:45	20:43	15	07:11 (8) 19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10		06:43 (8) 05:17	05:03	05:36	06:30		06:58 (8) 07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	22	07:05 (8) 21:46	22:09	21:43	20:40	13	07:11 (8) 19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08		06:44 (8) 05:16	05:04	05:38	06:32		07:00 (8) 07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	20	07:04 (8) 21:47	22:09	21:42	20:38	10	07:10 (8) 19:22	17:12	16:21	16:17
28	08:28	07:27	06:19	06:06		06:45 (8) 05:14	05:04	05:40	06:34		07:01 (8) 07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	18	07:03 (8) 21:48	22:09	21:40	20:36	7	07:08 (8) 19:20	17:10	16:20	16:18
29	08:27		07:16	06:04		06:46 (8) 05:13	05:05	05:41	06:35		07:03 (8) 07:30	07:27	08:24	08:52
	17:08		20:03	21:00	15	07:01 (8) 21:50	22:09	21:38	20:33	4	07:07 (8) 19:17	17:08	16:19	16:19
30	08:25		07:14	06:02		06:49 (8) 05:12	05:06	05:43	06:37		07:05 (8) 07:32	07:28	08:26	08:52
	17:10		20:04	21:02	9	06:58 (8) 21:51	22:09	21:36	20:31	1	07:06 (8) 19:15	17:06	16:18	16:20
31	08:23		07:11			05:11		05:45	06:39			07:30		08:52
	17:12		20:06			21:52		21:35	20:29			17:04		16:21
Potential sun hours	250	273	367	420		494	510	512	460		382	328	259	233
Total, worst case					295					297				
Sun reduction					0.31					0.26				
Oper. time red.					1.00					1.00				
Wind dir. red.					0.65					0.65				
Total reduction					0.20					0.17				
Total, real					58					49				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** AK - H039

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March			April			May			June		
1	08:52	08:22	07:24			07:09		07:33 (6)	06:00			05:10		05:41 (4)
	16:23	17:14	18:10			20:08	18	07:51 (6)	21:04			21:54	12	05:53 (4)
2	08:52	08:20	07:22			07:07		07:31 (6)	05:58			05:10		05:40 (4)
	16:24	17:16	18:12			20:10	20	07:51 (6)	21:06			21:55	13	05:53 (4)
3	08:52	08:19	07:20			07:04		07:28 (6)	05:56			05:09		05:40 (4)
	16:25	17:18	18:14			20:12	22	07:50 (6)	21:07			21:56	14	05:54 (4)
4	08:52	08:17	07:17			07:02		07:26 (6)	05:54			05:08		05:39 (4)
	16:26	17:20	18:16			20:14	23	07:49 (6)	21:09			21:57	15	05:54 (4)
5	08:51	08:15	07:15			07:00		07:26 (6)	05:52			05:07		05:38 (4)
	16:27	17:22	18:17			20:16	21	07:47 (6)	21:11			21:58	16	05:54 (4)
6	08:51	08:13	07:13			06:57		07:27 (6)	05:50			05:06		05:38 (4)
	16:29	17:24	18:19			20:18	19	07:46 (6)	21:13			21:59	17	05:55 (4)
7	08:51	08:11	07:10			06:55		07:29 (6)	05:48			05:06		05:37 (4)
	16:30	17:26	18:21			20:19	16	07:45 (6)	21:15			22:00	18	05:55 (4)
8	08:50	08:09	07:08			06:52		07:30 (6)	05:46			05:05		05:37 (4)
	16:31	17:28	18:23			20:21	12	07:42 (6)	21:16			22:01	19	05:56 (4)
9	08:49	08:07	07:05			06:50		07:35 (6)	05:44			05:04		05:36 (4)
	16:33	17:30	18:25			20:23	2	07:37 (6)	21:18			22:02	19	05:55 (4)
10	08:49	08:05	07:03			06:47			05:42			05:04		05:36 (4)
	16:34	17:32	18:27			20:25			21:20			22:03	20	05:56 (4)
11	08:48	08:04	07:01			06:45		07:09 (5)	05:40			05:04		05:36 (4)
	16:36	17:34	18:29			20:27	4	07:13 (5)	21:22			22:04	21	05:57 (4)
12	08:47	08:02	06:58			06:43		07:07 (5)	05:39			05:03		05:35 (4)
	16:37	17:36	18:31			20:29	8	07:15 (5)	21:23			22:05	21	05:56 (4)
13	08:47	07:59	06:56			06:40		07:04 (5)	05:37			05:03		05:35 (4)
	16:39	17:38	18:33			20:30	11	07:15 (5)	21:25			22:05	22	05:57 (4)
14	08:46	07:57	06:53			06:38		07:02 (5)	05:35			05:03		05:35 (4)
	16:41	17:40	18:35			20:32	14	07:16 (5)	21:27			22:06	22	05:57 (4)
15	08:45	07:55	06:51			06:36		07:00 (5)	05:33			05:02		05:35 (4)
	16:42	17:42	18:37			20:34	17	07:17 (5)	21:28			22:07	22	05:57 (4)
16	08:44	07:53	06:49			06:33		06:58 (5)	05:32			05:02		05:35 (4)
	16:44	17:44	18:38			20:36	19	07:17 (5)	21:30			22:07	23	05:58 (4)
17	08:43	07:51	06:46			06:31		06:55 (5)	05:30			05:02		05:35 (4)
	16:46	17:46	18:40			20:38	22	07:17 (5)	21:32			22:08	23	05:58 (4)
18	08:42	07:49	06:44			06:29		06:53 (5)	05:29			05:02		05:35 (4)
	16:47	17:48	18:42			20:40	24	07:17 (5)	21:33			22:08	23	05:58 (4)
19	08:41	07:47	06:41			06:26		06:51 (5)	05:27			05:02		05:35 (4)
	16:49	17:50	18:44			20:42	26	07:17 (5)	21:35			22:08	23	05:58 (4)
20	08:39	07:45	06:39			06:24		06:49 (5)	05:25			05:02		05:35 (4)
	16:51	17:52	18:46			20:43	28	07:17 (5)	21:37			22:09	23	05:58 (4)
21	08:38	07:43	06:36			06:22		06:46 (5)	05:24			05:02		05:35 (4)
	16:53	17:54	18:48			20:45	30	07:16 (5)	21:38			22:09	23	05:58 (4)
22	08:37	07:40	06:34			06:20		06:45 (5)	05:22			05:02		05:35 (4)
	16:55	17:56	18:50			20:47	30	07:15 (5)	21:40			22:09	23	05:58 (4)
23	08:36	07:38	06:31			06:17		06:45 (5)	05:21			05:03		05:36 (4)
	16:57	17:58	18:52			20:49	30	07:15 (5)	21:41			22:09	23	05:59 (4)
24	08:34	07:36	06:29			06:15		06:45 (5)	05:20			05:03		05:36 (4)
	16:58	18:00	18:53			20:51	29	07:14 (5)	21:43			22:10	23	05:59 (4)
25	08:33	07:34	06:26			06:13		06:46 (5)	05:18			05:03		05:36 (4)
	17:00	18:02	18:55			20:53	27	07:13 (5)	21:44			22:10	23	05:59 (4)
26	08:31	07:31	06:24		06:48 (6)	06:11		06:47 (5)	05:17		05:47 (4)	05:04		05:37 (4)
	17:02	18:04	18:57	1	06:49 (6)	20:55	25	07:12 (5)	21:46	2	05:49 (4)	22:10	23	06:00 (4)
27	08:30	07:29	06:22		06:45 (6)	06:08		06:48 (5)	05:16		05:46 (4)	05:04		05:37 (4)
	17:04	18:06	18:59	4	06:49 (6)	20:56	23	07:11 (5)	21:47	4	05:50 (4)	22:09	23	06:00 (4)
28	08:28	07:27	06:19		06:43 (6)	06:06		06:49 (5)	05:15		05:45 (4)	05:05		05:38 (4)
	17:06	18:08	19:01	8	06:51 (6)	20:58	20	07:09 (5)	21:49	6	05:51 (4)	22:09	22	06:00 (4)
29	08:27		07:17		07:40 (6)	06:04		06:51 (5)	05:14		05:44 (4)	05:05		05:38 (4)
	17:08		20:03	10	07:50 (6)	21:00	16	07:07 (5)	21:50	8	05:52 (4)	22:09	22	06:00 (4)
30	08:25		07:14		07:38 (6)	06:02		06:53 (5)	05:13		05:43 (4)	05:06		05:39 (4)
	17:10		20:05	13	07:51 (6)	21:02	12	07:05 (5)	21:51	9	05:52 (4)	22:09	21	06:00 (4)
31	08:24		07:12		07:35 (6)				05:11		05:42 (4)			
	17:12		20:06	16	07:51 (6)				21:52	10	05:52 (4)			
Potential sun hours	250	273	367			420			494			510		
Total, worst case				52			568			39			612	
Sun reduction				0.22			0.31			0.31			0.26	
Oper. time red.				1.00			1.00			1.00			1.00	
Wind dir. red.				0.65			0.64			0.64			0.64	
Total reduction				0.14			0.20			0.20			0.17	
Total, real				7			112			8			101	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** AK - H039

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August		September		October	November	December
1	05:07		05:40 (4)	05:47		06:41	07:08 (5)	07:34	07:33	08:28
	22:09	21	06:01 (4)	21:33		20:26	4 07:12 (5)	19:13	17:02	16:18
2	05:07		05:40 (4)	05:48		06:43		07:36	07:34	08:29
	22:08	20	06:00 (4)	21:31		20:24		19:10	17:00	16:17
3	05:08		05:41 (4)	05:50		06:44	07:33 (6)	07:38	07:36	08:31
	22:08	20	06:01 (4)	21:29		20:22	2 07:35 (6)	19:08	16:58	16:16
4	05:09		05:42 (4)	05:52		06:46	07:27 (6)	07:40	07:38	08:32
	22:07	19	06:01 (4)	21:28		20:19	12 07:39 (6)	19:05	16:56	16:16
5	05:10		05:43 (4)	05:53		06:48	07:25 (6)	07:41	07:40	08:33
	22:07	18	06:01 (4)	21:26		20:17	16 07:41 (6)	19:03	16:54	16:15
6	05:11		05:44 (4)	05:55		06:50	07:24 (6)	07:43	07:42	08:35
	22:06	17	06:01 (4)	21:24		20:14	18 07:42 (6)	19:00	16:52	16:14
7	05:12		05:45 (4)	05:57		06:51	07:21 (6)	07:45	07:44	08:36
	22:05	17	06:02 (4)	21:22		20:12	22 07:43 (6)	18:58	16:51	16:14
8	05:13		05:46 (4)	05:58		06:53	07:21 (6)	07:47	07:46	08:37
	22:05	16	06:02 (4)	21:20		20:09	22 07:43 (6)	18:56	16:49	16:14
9	05:14		05:46 (4)	06:00		06:55	07:22 (6)	07:49	07:48	08:39
	22:04	15	06:01 (4)	21:18		20:07	22 07:44 (6)	18:53	16:47	16:13
10	05:15		05:48 (4)	06:02		06:57	07:24 (6)	07:51	07:50	08:40
	22:03	13	06:01 (4)	21:16		20:05	20 07:44 (6)	18:51	16:45	16:13
11	05:16		05:49 (4)	06:04		06:59	07:25 (6)	07:53	07:52	08:41
	22:02	12	06:01 (4)	21:14		20:02	18 07:43 (6)	18:49	16:43	16:13
12	05:17		05:50 (4)	06:05	07:04 (5)	07:00	07:27 (6)	07:54	07:54	08:42
	22:01	11	06:01 (4)	21:12	6 07:10 (5)	20:00	16 07:43 (6)	18:46	16:42	16:12
13	05:18		05:51 (4)	06:07	07:00 (5)	07:02	07:29 (6)	07:56	07:56	08:43
	22:00	10	06:01 (4)	21:10	13 07:13 (5)	19:57	14 07:43 (6)	18:44	16:40	16:12
14	05:20		05:52 (4)	06:09	06:58 (5)	07:04	07:30 (6)	07:58	07:58	08:44
	21:59	8	06:00 (4)	21:08	17 07:15 (5)	19:55	11 07:41 (6)	18:41	16:38	16:12
15	05:21		05:53 (4)	06:11	06:56 (5)	07:06	07:32 (6)	08:00	08:00	08:45
	21:58	7	06:00 (4)	21:05	21 07:17 (5)	19:52	8 07:40 (6)	18:39	16:37	16:12
16	05:22		05:54 (4)	06:12	06:54 (5)	07:07	07:34 (6)	08:02	08:01	08:46
	21:57	5	05:59 (4)	21:03	24 07:18 (5)	19:50	5 07:39 (6)	18:37	16:35	16:12
17	05:23		05:56 (4)	06:14	06:53 (5)	07:09	07:36 (6)	08:04	08:03	08:47
	21:56	3	05:59 (4)	21:01	26 07:19 (5)	19:47	2 07:38 (6)	18:34	16:34	16:13
18	05:25		05:57 (4)	06:16	06:53 (5)	07:11		08:06	08:05	08:48
	21:55	1	05:58 (4)	20:59	27 07:20 (5)	19:45		18:32	16:32	16:13
19	05:26			06:18	06:51 (5)	07:13		08:07	08:07	08:48
	21:53			20:57	29 07:20 (5)	19:42		18:30	16:31	16:13
20	05:28			06:20	06:51 (5)	07:14		08:09	08:09	08:49
	21:52			20:54	29 07:20 (5)	19:40		18:28	16:30	16:13
21	05:29			06:21	06:50 (5)	07:16		08:11	08:11	08:50
	21:51			20:52	31 07:21 (5)	19:37		18:25	16:28	16:14
22	05:31			06:23	06:51 (5)	07:18		08:13	08:12	08:50
	21:49			20:50	29 07:20 (5)	19:35		18:23	16:27	16:14
23	05:32			06:25	06:53 (5)	07:20		08:15	08:14	08:51
	21:48			20:48	28 07:21 (5)	19:32		18:21	16:26	16:15
24	05:34			06:27	06:55 (5)	07:22		08:17	08:16	08:51
	21:46			20:45	26 07:21 (5)	19:30		18:19	16:25	16:15
25	05:35			06:28	06:56 (5)	07:23		07:19	08:18	08:52
	21:45			20:43	24 07:20 (5)	19:27		17:17	16:23	16:16
26	05:37			06:30	06:58 (5)	07:25		07:21	08:19	08:52
	21:43			20:41	21 07:19 (5)	19:25		17:14	16:22	16:17
27	05:38			06:32	07:00 (5)	07:27		07:23	08:21	08:52
	21:42			20:38	19 07:19 (5)	19:23		17:12	16:21	16:18
28	05:40			06:34	07:01 (5)	07:29		07:25	08:23	08:52
	21:40			20:36	17 07:18 (5)	19:20		17:10	16:20	16:18
29	05:42			06:36	07:03 (5)	07:31		07:27	08:24	08:52
	21:38			20:34	14 07:17 (5)	19:18		17:08	16:19	16:19
30	05:43			06:37	07:05 (5)	07:32		07:29	08:26	08:52
	21:37			20:31	11 07:16 (5)	19:15		17:06	16:19	16:20
31	05:45			06:39	07:07 (5)			07:31		08:52
	21:35			20:29	8 07:15 (5)			17:04		16:21
Potential sun hours	512			460		382		328	259	233
Total, worst case		233			420		212			
Sun reduction		0.22			0.26		0.25			
Oper. time red.		1.00			1.00		1.00			
Wind dir. red.		0.64			0.64		0.65			
Total reduction		0.14			0.16		0.16			
Total, real		33			69		34			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** AL - H040

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April		May		June	July		August		September		October	November	December
1	08:52	08:22	07:24	07:09		06:00		05:11	05:07		05:47		06:17 (4)	06:41	07:08 (5)	07:34	07:33	08:28
	16:23	17:14	18:10	20:08		21:04		21:54	22:09		21:33	14	06:31 (4)	20:26	19	07:27 (5)	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07		05:58		05:10	05:07		05:48		06:19 (4)	06:43		07:10 (5)	07:36	07:34	08:29
	16:24	17:16	18:12	20:10		21:06		21:55	22:08		21:31	12	06:31 (4)	20:24	17	07:27 (5)	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04		05:56		05:09	05:08		05:50		06:20 (4)	06:44		07:12 (5)	07:38	07:36	08:31
	16:25	17:18	18:14	20:12		21:07		21:56	22:08		21:30	10	06:30 (4)	20:22	15	07:27 (5)	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	07:26 (5)	05:54		05:08	05:09		05:52		06:22 (4)	06:46		07:13 (5)	07:40	07:38	08:32
	16:26	17:20	18:16	20:14	2 07:28 (5)	21:09		21:57	22:07		21:28	8	06:30 (4)	20:19	13	07:26 (5)	19:05	16:56	16:16
5	08:51	08:15	07:15	07:00	07:23 (5)	05:52		05:07	05:10		05:53		06:23 (4)	06:48		07:15 (5)	07:41	07:40	08:33
	16:27	17:22	18:18	20:16	5 07:28 (5)	21:11		21:58	22:07		21:26	6	06:29 (4)	20:17	11	07:26 (5)	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	07:21 (5)	05:50	06:16 (4)	05:06	05:11		05:55		06:25 (4)	06:50		07:17 (5)	07:43	07:42	08:35
	16:29	17:24	18:19	20:18	8 07:29 (5)	21:13	2 06:18 (4)	21:59	22:06		21:24	4	06:29 (4)	20:14	8	07:25 (5)	19:01	16:52	16:14
7	08:51	08:11	07:10	06:55	07:19 (5)	05:48	06:15 (4)	05:06	05:12		05:57		06:27 (4)	06:52		07:18 (5)	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	10 07:29 (5)	21:15	4 06:19 (4)	22:00	22:05		21:22	1	06:28 (4)	20:12	5	07:23 (5)	18:58	16:51	16:14
8	08:50	08:09	07:08	06:52	07:16 (5)	05:46	06:13 (4)	05:05	05:13		05:58			06:53		07:20 (5)	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	13 07:29 (5)	21:16	7 06:20 (4)	22:01	22:05		21:20			20:10	2	07:22 (5)	18:56	16:49	16:14
9	08:49	08:07	07:06	06:50	07:14 (5)	05:44	06:11 (4)	05:04	05:14		06:00			06:55			07:49	07:48	08:39
	16:33	17:30	18:25	20:23	15 07:29 (5)	21:18	9 06:20 (4)	22:02	22:04		21:18			20:07			18:53	16:47	16:13
10	08:49	08:06	07:03	06:47	07:11 (5)	05:42	06:09 (4)	05:04	05:15		06:02			06:57			07:51	07:50	08:40
	16:34	17:32	18:27	20:25	17 07:28 (5)	21:20	11 06:20 (4)	22:03	22:03		21:16			20:05			18:51	16:45	16:13
11	08:48	08:04	07:01	06:45	07:09 (5)	05:40	06:08 (4)	05:04	05:16		06:04			06:59			07:53	07:52	08:41
	16:36	17:34	18:29	20:27	19 07:28 (5)	21:22	13 06:21 (4)	22:04	22:02		21:14			20:02			18:49	16:43	16:13
12	08:47	08:02	06:58	06:43	07:07 (5)	05:39	06:06 (4)	05:03	05:17		06:05			07:00			07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21 07:28 (5)	21:23	14 06:20 (4)	22:05	22:01		21:12			20:00			18:46	16:42	16:12
13	08:47	08:00	06:56	06:40	07:04 (5)	05:37	06:04 (4)	05:03	05:18		06:07			07:02			07:56	07:56	08:43
	16:39	17:38	18:33	20:31	22 07:26 (5)	21:25	16 06:20 (4)	22:05	22:00		21:10			19:57			18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	07:05 (5)	05:35	06:03 (4)	05:03	05:20		06:09			07:04			07:58	07:58	08:44
	16:41	17:40	18:35	20:32	20 07:25 (5)	21:27	18 06:21 (4)	22:06	21:59		21:08			19:55			18:41	16:38	16:12
15	08:45	07:55	06:51	06:36	07:06 (5)	05:33	06:01 (4)	05:02	05:21		06:11			07:06			08:00	08:00	08:45
	16:42	17:42	18:37	20:34	18 07:24 (5)	21:28	19 06:20 (4)	22:07	21:58		21:05			19:52			18:39	16:37	16:12
16	08:44	07:53	06:49	06:33	07:07 (5)	05:32	06:00 (4)	05:02	05:22	06:14 (4)	06:12			07:07			08:02	08:01	08:46
	16:44	17:44	18:38	20:36	15 07:22 (5)	21:30	20 06:20 (4)	22:07	21:57	5 06:19 (4)	21:03			19:50			18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	07:08 (5)	05:30	05:58 (4)	05:02	05:24	06:13 (4)	06:14			07:09			08:04	08:03	08:47
	16:46	17:46	18:40	20:38	11 07:19 (5)	21:32	21 06:19 (4)	22:08	21:56	9 06:22 (4)	21:01			19:47			18:35	16:34	16:13
18	08:42	07:49	06:44	06:29		05:29	05:57 (4)	05:02	05:25	06:11 (4)	06:16			07:11			08:06	08:05	08:48
	16:47	17:48	18:42	20:40		21:33	23 06:20 (4)	22:08	21:55	13 06:24 (4)	20:59			19:45			18:32	16:32	16:13
19	08:41	07:47	06:41	06:26		05:27	05:55 (4)	05:02	05:26	06:10 (4)	06:18			07:13			08:08	08:07	08:48
	16:49	17:50	18:44	20:42		21:35	24 06:19 (4)	22:09	21:53	15 06:25 (4)	20:57			19:42			18:30	16:31	16:13
20	08:39	07:45	06:39	06:24		05:25	05:56 (4)	05:02	05:28	06:09 (4)	06:20			07:15			08:09	08:09	08:49
	16:51	17:52	18:46	20:43		21:37	22 06:18 (4)	22:09	21:52	17 06:26 (4)	20:54			19:40			18:28	16:30	16:13
21	08:38	07:43	06:36	06:22		05:24	05:57 (4)	05:02	05:29	06:08 (4)	06:21			07:16			08:11	08:11	08:50
	16:53	17:54	18:48	20:45		21:38	21 06:18 (4)	22:09	21:51	19 06:27 (4)	20:52			19:37			18:25	16:28	16:14
22	08:37	07:40	06:34	06:20		05:23	05:58 (4)	05:02	05:31	06:07 (4)	06:23			07:18			08:13	08:12	08:50
	16:55	17:56	18:50	20:47		21:40	20 06:18 (4)	22:09	21:49	20 06:27 (4)	20:50			19:35			18:23	16:27	16:14
23	08:36	07:38	06:31	06:17		05:21	05:58 (4)	05:03	05:32	06:07 (4)	06:25			07:20			08:15	08:14	08:51
	16:57	17:58	18:52	20:49		21:41	18 06:16 (4)	22:09	21:48	22 06:29 (4)	20:48			19:32			18:21	16:26	16:15
24	08:34	07:36	06:29	06:15		05:20	05:59 (4)	05:03	05:34	06:06 (4)	06:27			07:22			08:17	08:16	08:51
	16:58	18:00	18:53	20:51		21:43	17 06:16 (4)	22:10	21:46	23 06:29 (4)	20:45			19:30			18:19	16:25	16:15
25	08:33	07:34	06:26	06:13		05:18	06:01 (4)	05:03	05:35	06:07 (4)	06:28			07:23			07:19	08:18	08:52
	17:00	18:02	18:55	20:53		21:44	14 06:15 (4)	22:10	21:45	23 06:30 (4)	20:43			19:27			17:17	16:23	16:16
26	08:31	07:31	06:24	06:11		05:17	06:02 (4)	05:04	05:37	06:08 (4)	06:30		07:11 (5)	07:25			07:21	08:19	08:52
	17:02	18:04	18:57	20:55		21:46	11 06:13 (4)	22:10	21:43	22 06:30 (4)	20:41	11	07:22 (5)	19:25			17:14	16:22	16:17
27	08:30	07:29	06:22	06:08		05:16	06:04 (4)	05:04	05:38	06:09 (4)	06:32		07:09 (5)	07:27			07:23	08:21	08:52
	17:04	18:06	18:59	20:56		21:47	8 06:12 (4)	22:09	21:42	21 06:30 (4)	20:38	15	07:24 (5)	19:23			17:12	16:21	16:18
28	08:28	07:27	06:19	06:06		05:15		05:05	05:40	06:11 (4)	06:34		07:06 (5)	07:29			07:25	08:23	08:52
	17:06	18:08	19:01	20:58		21:49		22:09	21:40	20 06:31 (4)	20:36	19	07:25 (5)	19:20			17:10	16:20	16:18
29	08:27		07:17	06:04		05:14		05:05	05:42	06:12 (4)	06:36		07:05 (5)	07:31			07:27	08:24	08:52
	17:08		20:03	21:00		21:50		22:09	21:38	18 06:30 (4)	20:34	21	07:26 (5)	19:18			17:08	16:19	16:19
30	08:25		07:14	06:02		05:13		05:06	05:43	06:14 (4)	06:37		07:05 (5)	07:32			07:29	08:26	08:52
	17:10		20:05	21:02		21:51		22:09	21:37	17 06:31 (4)	20:31	22	07:27 (5)	19:15			17:06	16:19	16:20
31	08:24		07:12			05:11			05:45	06:16 (4)	06:39		07:07 (5)				07:31		08:52
	17:12		20:06			21:53			21:35	15 06:31 (4)	20:29	21	07:28 (5)				17:04		16:21
Potential sun hours	250	273	367	420		494		510	512		460			382			328	259	233
Total, worst case					196		332			279		164			90				
Sun reduction					0.31		0.31			0.22		0.26			0.25				
Oper. time red.					1.00		1.00			1.00		1.00			1.00				
Wind dir. red.					0.64		0.65			0.65		0.64			0.64				
Total reduction					0.20		0.20			0.14		0.17			0.16				
Total, real					39		67			40		27			15				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** AM - H041

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February			March			April			May	June
1	08:52		15:02 (6)	08:22		16:27 (5)	07:24			07:09		19:18 (3)	06:00	05:10
	16:22	34	15:36 (6)	17:14	15	16:42 (5)	18:10			20:08	10	19:28 (3)	21:04	21:54
2	08:52		15:02 (6)	08:20		16:27 (5)	07:22			07:07			05:58	05:09
	16:23	35	15:37 (6)	17:16	17	16:44 (5)	18:12			20:10			21:05	21:55
3	08:52		15:03 (6)	08:18		16:26 (5)	07:20			07:04			05:56	05:08
	16:25	35	15:38 (6)	17:18	20	16:46 (5)	18:13			20:12			21:07	21:56
4	08:52		15:03 (6)	08:17		16:26 (5)	07:17			07:02			05:54	05:08
	16:26	35	15:38 (6)	17:20	22	16:48 (5)	18:15			20:14			21:09	21:57
5	08:51		15:04 (6)	08:15		16:25 (5)	07:15		17:46 (4)	06:59			05:52	05:07
	16:27	35	15:39 (6)	17:22	25	16:50 (5)	18:17	4	17:50 (4)	20:16			21:11	21:58
6	08:51		15:04 (6)	08:13		16:25 (5)	07:13		17:44 (4)	06:57			05:50	05:06
	16:28	35	15:39 (6)	17:24	28	16:53 (5)	18:19	8	17:52 (4)	20:17			21:13	21:59
7	08:50		15:04 (6)	08:11		16:25 (5)	07:10		17:42 (4)	06:55			05:48	05:05
	16:30	35	15:39 (6)	17:26	30	16:55 (5)	18:21	12	17:54 (4)	20:19			21:14	22:00
8	08:50		15:05 (6)	08:09		16:25 (5)	07:08		17:41 (4)	06:52			05:46	05:05
	16:31	35	15:40 (6)	17:28	30	16:55 (5)	18:23	15	17:56 (4)	20:21			21:16	22:01
9	08:49		15:06 (6)	08:07		16:25 (5)	07:05		17:40 (4)	06:50			05:44	05:04
	16:33	34	15:40 (6)	17:30	31	16:56 (5)	18:25	19	17:59 (4)	20:23			21:18	22:02
10	08:49		15:06 (6)	08:05		16:26 (5)	07:03		17:39 (4)	06:47			05:42	05:04
	16:34	34	15:40 (6)	17:32	29	16:55 (5)	18:27	21	18:00 (4)	20:25			21:20	22:03
11	08:48		15:06 (6)	08:03		16:26 (5)	07:01		17:39 (4)	06:45			05:40	05:03
	16:36	34	15:40 (6)	17:34	29	16:55 (5)	18:29	23	18:02 (4)	20:27			21:21	22:04
12	08:47		15:07 (6)	08:01		16:27 (5)	06:58		17:38 (4)	06:43			05:38	05:03
	16:37	34	15:41 (6)	17:36	28	16:55 (5)	18:31	26	18:04 (4)	20:29			21:23	22:05
13	08:46		15:07 (6)	07:59		16:28 (5)	06:56		17:38 (4)	06:40			05:37	05:03
	16:39	34	15:41 (6)	17:38	26	16:54 (5)	18:33	28	18:06 (4)	20:30			21:25	22:05
14	08:46		15:08 (6)	07:57		16:28 (5)	06:53		17:37 (4)	06:38			05:35	05:02
	16:40	33	15:41 (6)	17:40	25	16:53 (5)	18:35	30	18:07 (4)	20:32			21:27	22:06
15	08:45		15:09 (6)	07:55		16:29 (5)	06:51		17:38 (4)	06:35			05:33	05:02
	16:42	32	15:41 (6)	17:42	23	16:52 (5)	18:36	29	18:07 (4)	20:34			21:28	22:07
16	08:44		15:10 (6)	07:53		16:31 (5)	06:48		17:37 (4)	06:33			05:32	05:02
	16:44	31	15:41 (6)	17:44	20	16:51 (5)	18:38	29	18:06 (4)	20:36			21:30	22:07
17	08:43		15:11 (6)	07:51		16:33 (5)	06:46		17:38 (4)	06:31			05:30	05:02
	16:46	31	15:42 (6)	17:46	16	16:49 (5)	18:40	27	18:05 (4)	20:38			21:32	22:08
18	08:42		15:11 (6)	07:49		16:36 (5)	06:43		17:38 (4)	06:28			05:28	05:02
	16:47	30	15:41 (6)	17:48	11	16:47 (5)	18:42	26	18:04 (4)	20:40			21:33	22:08
19	08:40		15:12 (6)	07:47			06:41		17:40 (4)	06:26			05:27	05:02
	16:49	29	15:41 (6)	17:50			18:44	23	18:03 (4)	20:41			21:35	22:08
20	08:39		15:13 (6)	07:45			06:39		17:40 (4)	06:24			05:25	05:02
	16:51	28	15:41 (6)	17:52			18:46	21	18:19 (3)	20:43			21:37	22:09
21	08:38		15:14 (6)	07:42			06:36		17:43 (4)	06:22			05:24	05:02
	16:53	26	15:40 (6)	17:54			18:48	20	18:21 (3)	20:45			21:38	22:09
22	08:37		15:16 (6)	07:40			06:34		17:45 (4)	06:19			05:22	05:02
	16:54	24	15:40 (6)	17:56			18:50	17	18:23 (3)	20:47			21:40	22:09
23	08:36		15:17 (6)	07:38			06:31		18:14 (3)	06:17			05:21	05:02
	16:56	22	15:39 (6)	17:58			18:51	11	18:25 (3)	20:49			21:41	22:09
24	08:34		15:19 (6)	07:36			06:29		18:13 (3)	06:15			05:20	05:03
	16:58	19	15:38 (6)	18:00			18:53	13	18:26 (3)	20:51			21:43	22:09
25	08:33		15:20 (6)	07:33			06:26		18:13 (3)	06:13			05:18	05:03
	17:00	16	15:36 (6)	18:02			18:55	16	18:29 (3)	20:53			21:44	22:09
26	08:31		15:23 (6)	07:31			06:24		18:13 (3)	06:10			05:17	05:03
	17:02	11	15:34 (6)	18:04			18:57	18	18:31 (3)	20:54			21:46	22:09
27	08:30			07:29			06:21		18:13 (3)	06:08			05:16	05:04
	17:04			18:06			18:59	19	18:32 (3)	20:56			21:47	22:09
28	08:28		16:31 (5)	07:27			06:19		18:13 (3)	06:06			05:15	05:04
	17:06	2	16:33 (5)	18:08			19:01	21	18:34 (3)	20:58			21:48	22:09
29	08:27		16:29 (5)				07:16		19:13 (3)	06:04			05:13	05:05
	17:08	6	16:35 (5)				20:03	21	19:34 (3)	21:00			21:50	22:09
30	08:25		16:28 (5)				07:14		19:14 (3)	06:02			05:12	05:06
	17:10	9	16:37 (5)				20:04	19	19:33 (3)	21:02			21:51	22:09
31	08:24		16:28 (5)				07:12		19:15 (3)				05:11	
	17:12	12	16:40 (5)				20:06	16	19:31 (3)				21:52	
Potential sun hours	250			273			367			420			494	510
Total, worst case		810			425			532			10			
Sun reduction		0.16			0.19			0.22			0.31			
Oper. time red.		1.00			1.00			1.00			1.00			
Wind dir. red.		0.65			0.64			0.64			0.65			
Total reduction		0.10			0.12			0.14			0.20			
Total, real		85			53			75			2			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** AM - H041

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August		September			October			November			December		
1	05:06		05:46		06:41			07:34		18:17 (4)	07:32		15:55 (5)	08:27		14:48 (6)
	22:08		21:33		20:26			19:13	27	18:44 (4)	17:02	30	16:25 (5)	16:18	34	15:22 (6)
2	05:07		05:48		06:42			07:36		18:17 (4)	07:34		15:55 (5)	08:29		14:49 (6)
	22:08		21:31		20:24			19:10	24	18:41 (4)	17:00	30	16:25 (5)	16:17	34	15:23 (6)
3	05:08		05:50		06:44			07:38		18:17 (4)	07:36		15:55 (5)	08:30		14:49 (6)
	22:08		21:29		20:22			19:08	22	18:39 (4)	16:58	30	16:25 (5)	16:16	34	15:23 (6)
4	05:09		05:51		06:46			07:40		18:17 (4)	07:38		15:55 (5)	08:32		14:49 (6)
	22:07		21:28		20:19			19:05	20	18:37 (4)	16:56	29	16:24 (5)	16:15	35	15:24 (6)
5	05:10		05:53		06:48			07:41		18:18 (4)	07:40		15:55 (5)	08:33		14:50 (6)
	22:07		21:26		20:17			19:03	16	18:34 (4)	16:54	27	16:22 (5)	16:15	35	15:25 (6)
6	05:10		05:55		06:50			07:43		18:19 (4)	07:42		15:55 (5)	08:35		14:50 (6)
	22:06		21:24		20:14			19:00	13	18:32 (4)	16:52	25	16:20 (5)	16:14	35	15:25 (6)
7	05:11		05:57		06:51			07:45		18:20 (4)	07:44		15:56 (5)	08:36		14:50 (6)
	22:05		21:22		20:12			18:58	10	18:30 (4)	16:50	23	16:19 (5)	16:14	35	15:25 (6)
8	05:12		05:58		06:53			07:47		18:20 (4)	07:46		15:57 (5)	08:37		14:51 (6)
	22:05		21:20		20:09			18:56	6	18:26 (4)	16:49	20	16:17 (5)	16:13	35	15:26 (6)
9	05:14		06:00		06:55			07:49		18:22 (4)	07:48		15:57 (5)	08:39		14:51 (6)
	22:04		21:18		20:07			18:53	2	18:24 (4)	16:47	18	16:15 (5)	16:13	35	15:26 (6)
10	05:15		06:02		06:57			07:51			07:50		15:58 (5)	08:40		14:51 (6)
	22:03		21:16		20:04			18:51			16:45	15	16:13 (5)	16:13	35	15:26 (6)
11	05:16		06:04		06:58		19:10 (3)	07:52			07:52		15:59 (5)	08:41		14:53 (6)
	22:02		21:14		20:02	10	19:20 (3)	18:48			16:43	12	16:11 (5)	16:12	34	15:27 (6)
12	05:17		06:05		07:00		19:08 (3)	07:54			07:54		16:00 (5)	08:42		14:53 (6)
	22:01		21:12		20:00	15	19:23 (3)	18:46			16:42	9	16:09 (5)	16:12	34	15:27 (6)
13	05:18		06:07		07:02		19:06 (3)	07:56			07:56		16:01 (5)	08:43		14:53 (6)
	22:00		21:10		19:57	18	19:24 (3)	18:44			16:40	6	16:07 (5)	16:12	35	15:28 (6)
14	05:19		06:09		07:04		19:04 (3)	07:58			07:58		16:03 (5)	08:44		14:54 (6)
	21:59		21:07		19:55	20	19:24 (3)	18:41			16:38	2	16:05 (5)	16:12	34	15:28 (6)
15	05:21		06:11		07:05		19:03 (3)	08:00			07:59			08:45		14:54 (6)
	21:58		21:05		19:52	21	19:24 (3)	18:39			16:37			16:12	35	15:29 (6)
16	05:22		06:12		07:07		19:02 (3)	08:02			08:01		14:57 (6)	08:46		14:55 (6)
	21:57		21:03		19:50	20	19:22 (3)	18:37			16:35	11	15:08 (6)	16:12	34	15:29 (6)
17	05:23		06:14		07:09		19:01 (3)	08:04			08:03		14:54 (6)	08:47		14:56 (6)
	21:56		21:01		19:47	18	19:19 (3)	18:34			16:34	16	15:10 (6)	16:12	34	15:30 (6)
18	05:25		06:16		07:11		19:00 (3)	08:05			08:05		14:53 (6)	08:48		14:55 (6)
	21:55		20:59		19:45	16	19:16 (3)	18:32			16:32	19	15:12 (6)	16:13	34	15:29 (6)
19	05:26		06:18		07:13		19:00 (3)	08:07			08:07		14:52 (6)	08:48		14:56 (6)
	21:53		20:56		19:42	14	19:14 (3)	18:30			16:31	22	15:14 (6)	16:13	34	15:30 (6)
20	05:27		06:19		07:14		19:01 (3)	08:09			08:09		14:51 (6)	08:49		14:57 (6)
	21:52		20:54		19:40	11	19:12 (3)	18:28			16:29	24	15:15 (6)	16:13	34	15:31 (6)
21	05:29		06:21		07:16		18:33 (4)	08:11			08:11		14:50 (6)	08:50		14:57 (6)
	21:51		20:52		19:37	14	19:09 (3)	18:25			16:28	26	15:16 (6)	16:14	34	15:31 (6)
22	05:30		06:23		07:18		18:28 (4)	08:13			08:12		14:49 (6)	08:50		14:58 (6)
	21:49		20:50		19:35	19	19:06 (3)	18:23			16:27	28	15:17 (6)	16:14	34	15:32 (6)
23	05:32		06:25		07:20		18:26 (4)	08:15			08:14		14:49 (6)	08:51		14:58 (6)
	21:48		20:47		19:32	20	19:04 (3)	18:21			16:26	29	15:18 (6)	16:15	34	15:32 (6)
24	05:33		06:26		07:21		18:24 (4)	08:17		17:04 (5)	08:16		14:49 (6)	08:51		14:58 (6)
	21:46		20:45		19:30	22	18:46 (4)	18:19	13	17:17 (5)	16:24	30	15:19 (6)	16:15	34	15:32 (6)
25	05:35		06:28		07:23		18:22 (4)	07:19		16:02 (5)	08:18		14:48 (6)	08:51		14:59 (6)
	21:45		20:43		19:27	25	18:47 (4)	17:16	17	16:19 (5)	16:23	31	15:19 (6)	16:16	34	15:33 (6)
26	05:37		06:30		07:25		18:20 (4)	07:21		16:00 (5)	08:19		14:48 (6)	08:52		15:00 (6)
	21:43		20:41		19:25	27	18:47 (4)	17:14	21	16:21 (5)	16:22	31	15:19 (6)	16:17	34	15:34 (6)
27	05:38		06:32		07:27		18:19 (4)	07:23		15:58 (5)	08:21		14:48 (6)	08:52		15:00 (6)
	21:42		20:38		19:22	28	18:47 (4)	17:12	24	16:22 (5)	16:21	32	15:20 (6)	16:17	34	15:34 (6)
28	05:40		06:34		07:29		18:19 (4)	07:25		15:57 (5)	08:23		14:48 (6)	08:52		15:00 (6)
	21:40		20:36		19:20	29	18:48 (4)	17:10	26	16:23 (5)	16:20	33	15:21 (6)	16:18	34	15:34 (6)
29	05:41		06:35		07:30		18:18 (4)	07:27		15:57 (5)	08:24		14:48 (6)	08:52		15:01 (6)
	21:38		20:33		19:17	30	18:48 (4)	17:08	27	16:24 (5)	16:19	34	15:22 (6)	16:19	34	15:35 (6)
30	05:43		06:37		07:32		18:18 (4)	07:29		15:56 (5)	08:26		14:48 (6)	08:52		15:01 (6)
	21:37		20:31		19:15	29	18:47 (4)	17:06	29	16:25 (5)	16:18	34	15:22 (6)	16:20	34	15:35 (6)
31	05:45		06:39					07:30		15:56 (5)				08:52		15:02 (6)
	21:35		20:29					17:04	29	16:25 (5)				16:21	34	15:36 (6)
Potential sun hours	512		460		382			328			259			233		
Total, worst case						406			326			676			1063	
Sun reduction						0.25			0.23			0.20			0.12	
Oper. time red.						1.00			1.00			1.00			1.00	
Wind dir. red.						0.64			0.64			0.65			0.65	
Total reduction						0.16			0.14			0.13			0.08	
Total, real						66			47			86			83	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** AN - H042

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:09	20:08	21:03	21:53	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:19	07:04	05:56	05:08	05:08	05:50	06:44	07:37	07:36	08:30
	16:24	17:18	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58	16:16
4	08:51	08:16	07:17	07:02	05:54	05:07	05:09	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:13	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52	05:07	05:09	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11	21:58	22:06	21:25	20:16	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50	05:06	05:10	05:55	06:49	07:43	07:42	08:35
	16:28	17:24	18:19	20:17	21:12	21:59	22:06	21:23	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:50	05:44	05:04	05:13	06:00	06:55	07:48	07:48	08:38
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:48	08:05	07:03	06:47	05:42	05:04	05:14	06:02	06:56	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:00	06:45	05:40	05:03	05:16	06:03	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:26	21:21	22:04	22:02	21:13	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:55	06:40	05:37	05:02	05:18	06:07	07:02	07:56	07:55	08:43
	16:39	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:26	22:06	21:59	21:07	19:54	18:41	16:38	16:12
15	08:44	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:43	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:01	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16:12
17	08:42	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:31	22:07	21:56	21:01	19:47	18:34	16:34	16:12
18	08:41	07:49	06:43	06:28	05:28	05:02	05:24	06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:39	21:33	22:08	21:54	20:58	19:44	18:32	16:32	16:12
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:08	21:52	20:54	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:24	05:02	05:29	06:21	07:16	08:11	08:10	08:49
	16:52	17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:13
22	08:37	07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:39	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:19	08:15	08:14	08:50
	16:56	17:58	18:51	20:49	21:41	22:09	21:47	20:47	19:32	18:21	16:25	16:14
24	08:34	07:35	06:29	06:15	05:19	05:03	05:33	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:42	22:09	21:46	20:45	19:30	18:18	16:24	16:15
25	08:33	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17	08:51
	17:00	18:02	18:55	20:52	21:44	22:09	21:44	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:22	08:21	08:52
	17:04	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	05:04	05:40	06:33	07:28	07:24	08:22	08:52
	17:06	18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	22:08	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11		05:44	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** AO - H043

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February			March			April	May	June
1	08:52		14:26 (10)	08:22			07:24		17:24 (8)	07:09	06:00	05:10
	16:22	53	15:44 (11)	17:13			18:09	18	17:42 (8)	20:08	21:03	21:53
2	08:52		14:27 (10)	08:20			07:22		17:24 (8)	07:06	05:57	05:09
	16:23	54	15:46 (11)	17:15			18:11	18	17:42 (8)	20:10	21:05	21:55
3	08:52		14:29 (10)	08:18			07:19		17:26 (8)	07:04	05:55	05:08
	16:24	52	15:47 (11)	17:17			18:13	14	17:40 (8)	20:12	21:07	21:56
4	08:51		14:29 (10)	08:16			07:17		17:28 (8)	07:02	05:53	05:07
	16:26	54	15:48 (11)	17:19			18:15	10	17:38 (8)	20:13	21:09	21:57
5	08:51		14:31 (10)	08:15			07:15			06:59	05:51	05:07
	16:27	53	15:50 (11)	17:21			18:17			20:15	21:11	21:58
6	08:51		14:31 (10)	08:13		16:49 (9)	07:12			06:57	05:49	05:06
	16:28	52	15:51 (11)	17:23	3	16:52 (9)	18:19			20:17	21:12	21:59
7	08:50		14:32 (10)	08:11		16:48 (9)	07:10			06:54	05:47	05:05
	16:30	51	15:51 (11)	17:25	7	16:55 (9)	18:21			20:19	21:14	22:00
8	08:50		14:34 (10)	08:09		16:47 (9)	07:08			06:52	05:46	05:05
	16:31	49	15:52 (11)	17:27	10	16:57 (9)	18:23			20:21	21:16	22:01
9	08:49		14:36 (10)	08:07		16:47 (9)	07:05			06:49	05:44	05:04
	16:32	46	15:52 (11)	17:30	12	16:59 (9)	18:25			20:23	21:18	22:02
10	08:49		14:37 (10)	08:05		16:46 (9)	07:03			06:47	05:42	05:03
	16:34	43	15:52 (11)	17:32	16	17:02 (9)	18:27			20:25	21:20	22:03
11	08:48		14:39 (10)	08:03		16:46 (9)	07:00			06:45	05:40	05:03
	16:35	40	15:52 (11)	17:34	18	17:04 (9)	18:29			20:26	21:21	22:04
12	08:47		14:42 (10)	08:01		16:46 (9)	06:58			06:42	05:38	05:03
	16:37	34	15:52 (11)	17:36	20	17:06 (9)	18:30			20:28	21:23	22:04
13	08:46		15:27 (11)	07:59		16:45 (9)	06:55			06:40	05:36	05:02
	16:39	26	15:53 (11)	17:38	22	17:07 (9)	18:32			20:30	21:25	22:05
14	08:45		15:28 (11)	07:57		16:45 (9)	06:53			06:38	05:35	05:02
	16:40	25	15:53 (11)	17:40	25	17:10 (9)	18:34			20:32	21:26	22:06
15	08:44		15:29 (11)	07:55		16:45 (9)	06:51			06:35	05:33	05:02
	16:42	24	15:53 (11)	17:42	27	17:12 (9)	18:36			20:34	21:28	22:06
16	08:44		15:30 (11)	07:53		16:46 (9)	06:48			06:33	05:31	05:02
	16:44	23	15:53 (11)	17:44	29	17:15 (9)	18:38			20:36	21:30	22:07
17	08:42		15:30 (11)	07:51		16:46 (9)	06:46			06:31	05:30	05:02
	16:45	22	15:52 (11)	17:46	29	17:15 (9)	18:40			20:38	21:31	22:07
18	08:41		15:32 (11)	07:49		16:46 (9)	06:43			06:28	05:28	05:01
	16:47	20	15:52 (11)	17:48	28	17:14 (9)	18:42			20:39	21:33	22:08
19	08:40		15:33 (11)	07:47		16:47 (9)	06:41			06:26	05:26	05:01
	16:49	18	15:51 (11)	17:50	26	17:13 (9)	18:44			20:41	21:35	22:08
20	08:39		15:34 (11)	07:44		16:48 (9)	06:38			06:24	05:25	05:02
	16:51	16	15:50 (11)	17:52	25	17:13 (9)	18:46			20:43	21:36	22:09
21	08:38		15:37 (11)	07:42		16:50 (9)	06:36			06:21	05:23	05:02
	16:52	12	15:49 (11)	17:54	23	17:26 (8)	18:47			20:45	21:38	22:09
22	08:37		15:40 (11)	07:40		16:51 (9)	06:33			06:19	05:22	05:02
	16:54	7	15:47 (11)	17:56	21	17:27 (8)	18:49			20:47	21:39	22:09
23	08:35			07:38		16:53 (9)	06:31			06:17	05:21	05:02
	16:56			17:58	20	17:29 (8)	18:51			20:49	21:41	22:09
24	08:34			07:35		16:58 (9)	06:29			06:15	05:19	05:02
	16:58			18:00	14	17:32 (8)	18:53			20:51	21:43	22:09
25	08:33			07:33		17:22 (8)	06:26			06:12	05:18	05:03
	17:00			18:01	11	17:33 (8)	18:55			20:52	21:44	22:09
26	08:31			07:31		17:22 (8)	06:24			06:10	05:17	05:03
	17:02			18:03	14	17:36 (8)	18:57			20:54	21:45	22:09
27	08:30			07:29		17:23 (8)	06:21			06:08	05:15	05:04
	17:04			18:05	15	17:38 (8)	18:59			20:56	21:47	22:09
28	08:28			07:26		17:23 (8)	06:19			06:06	05:14	05:04
	17:06			18:07	17	17:40 (8)	19:00			20:58	21:48	22:09
29	08:27						07:16			06:04	05:13	05:05
	17:08						20:02			21:00	21:50	22:09
30	08:25						07:14			06:02	05:12	05:05
	17:10						20:04			21:02	21:51	22:09
31	08:23						07:11				05:11	
	17:11						20:06				21:52	
Potential sun hours	250			273			367			420	494	510
Total, worst case		774			432			60				
Sun reduction		0.16			0.19			0.22				
Oper. time red.		1.00			1.00			1.00				
Wind dir. red.		0.65			0.64			0.65				
Total reduction		0.11			0.13			0.14				
Total, real		82			54			9				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** AO - H043

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July	August	September	October			November			December		
1	05:06	05:46	06:40	07:34			07:32		16:16 (9)	08:27		14:22 (10)
	22:08	21:33	20:26	19:12			17:02	15	16:31 (9)	16:17	39	15:34 (11)
2	05:07	05:48	06:42	07:36			07:34		16:16 (9)	08:29		14:20 (10)
	22:08	21:31	20:24	19:10			17:00	12	16:28 (9)	16:16	43	15:35 (11)
3	05:08	05:49	06:44	07:37			07:36		16:17 (9)	08:30		14:19 (10)
	22:07	21:29	20:21	19:07			16:58	9	16:26 (9)	16:16	46	15:35 (11)
4	05:08	05:51	06:46	07:39			07:38		16:18 (9)	08:32		14:18 (10)
	22:07	21:27	20:19	19:05			16:56	6	16:24 (9)	16:15	49	15:36 (11)
5	05:09	05:53	06:48	07:41			07:40		16:19 (9)	08:33		14:17 (10)
	22:06	21:25	20:16	19:03			16:54	3	16:22 (9)	16:14	51	15:36 (11)
6	05:10	05:55	06:49	07:43			07:42			08:35		14:17 (10)
	22:06	21:24	20:14	19:00			16:52			16:14	53	15:37 (11)
7	05:11	05:56	06:51	07:45			07:44			08:36		14:17 (10)
	22:05	21:22	20:12	18:58			16:50			16:13	52	15:36 (11)
8	05:12	05:58	06:53	07:47			07:46			08:37		14:17 (10)
	22:04	21:20	20:09	18:55			16:48			16:13	53	15:36 (11)
9	05:13	06:00	06:55	07:48		18:04 (8)	07:48			08:38		14:17 (10)
	22:04	21:18	20:07	18:53	6	18:10 (8)	16:46			16:13	52	15:35 (11)
10	05:14	06:01	06:56	07:50		18:01 (8)	07:50			08:40		14:16 (10)
	22:03	21:16	20:04	18:50	12	18:13 (8)	16:45			16:12	54	15:35 (11)
11	05:15	06:03	06:58	07:52		17:59 (8)	07:52			08:41		14:17 (10)
	22:02	21:13	20:02	18:48	16	18:15 (8)	16:43			16:12	54	15:35 (11)
12	05:17	06:05	07:00	07:54		17:57 (8)	07:54			08:42		14:17 (10)
	22:01	21:11	19:59	18:46	19	18:16 (8)	16:41			16:12	54	15:35 (11)
13	05:18	06:07	07:02	07:56		17:56 (8)	07:55			08:43		14:17 (10)
	22:00	21:09	19:57	18:43	18	18:14 (8)	16:40			16:12	53	15:34 (11)
14	05:19	06:08	07:03	07:58		17:56 (8)	07:57			08:44		14:17 (10)
	21:59	21:07	19:54	18:41	16	18:12 (8)	16:38			16:12	53	15:34 (11)
15	05:20	06:10	07:05	08:00		17:55 (8)	07:59			08:45		14:18 (10)
	21:58	21:05	19:52	18:39	14	18:09 (8)	16:36			16:12	52	15:34 (11)
16	05:22	06:12	07:07	08:01		17:55 (8)	08:01			08:46		14:18 (10)
	21:57	21:03	19:49	18:36	12	18:07 (8)	16:35			16:12	53	15:34 (11)
17	05:23	06:14	07:09	08:03		17:54 (8)	08:03			08:47		14:18 (10)
	21:56	21:01	19:47	18:34	11	18:05 (8)	16:33			16:12	53	15:34 (11)
18	05:24	06:16	07:11	08:05		17:27 (9)	08:05			08:47		14:18 (10)
	21:54	20:59	19:44	18:32	16	18:02 (8)	16:32			16:12	52	15:34 (11)
19	05:26	06:17	07:12	08:07		17:24 (9)	08:07			08:48		14:19 (10)
	21:53	20:56	19:42	18:30	20	18:00 (8)	16:31			16:13	52	15:35 (11)
20	05:27	06:19	07:14	08:09		17:21 (9)	08:09		15:14 (11)	08:49		14:20 (10)
	21:52	20:54	19:39	18:27	23	17:58 (8)	16:29	7	15:21 (11)	16:13	52	15:35 (11)
21	05:29	06:21	07:16	08:11		17:20 (9)	08:10		15:12 (11)	08:49		14:19 (10)
	21:50	20:52	19:37	18:25	22	17:42 (9)	16:28	12	15:24 (11)	16:13	53	15:35 (11)
22	05:30	06:23	07:18	08:13		17:18 (9)	08:12		15:10 (11)	08:50		14:20 (10)
	21:49	20:50	19:35	18:23	25	17:43 (9)	16:27	16	15:26 (11)	16:14	53	15:36 (11)
23	05:32	06:24	07:19	08:15		17:17 (9)	08:14		15:10 (11)	08:50		14:21 (10)
	21:48	20:47	19:32	18:21	27	17:44 (9)	16:25	17	15:27 (11)	16:14	52	15:36 (11)
24	05:33	06:26	07:21	08:17		17:16 (9)	08:16		15:09 (11)	08:51		14:21 (10)
	21:46	20:45	19:30	18:18	29	17:45 (9)	16:24	20	15:29 (11)	16:15	52	15:36 (11)
25	05:35	06:28	07:23	07:19		16:16 (9)	08:17		15:09 (11)	08:51		14:22 (10)
	21:45	20:43	19:27	17:16	29	16:45 (9)	16:23	21	15:30 (11)	16:16	52	15:38 (11)
26	05:36	06:30	07:25	07:21		16:15 (9)	08:19		15:08 (11)	08:52		14:22 (10)
	21:43	20:40	19:25	17:14	28	16:43 (9)	16:22	23	15:31 (11)	16:16	53	15:38 (11)
27	05:38	06:32	07:27	07:22		16:15 (9)	08:21		15:08 (11)	08:52		14:23 (10)
	21:41	20:38	19:22	17:12	26	16:41 (9)	16:21	24	15:32 (11)	16:17	53	15:39 (11)
28	05:39	06:33	07:28	07:24		16:15 (9)	08:22		15:08 (11)	08:52		14:23 (10)
	21:40	20:36	19:20	17:10	24	16:39 (9)	16:20	25	15:33 (11)	16:18	53	15:40 (11)
29	05:41	06:35	07:30	07:26		16:14 (9)	08:24		15:08 (11)	08:52		14:24 (10)
	21:38	20:33	19:17	17:08	23	16:37 (9)	16:19	26	15:34 (11)	16:19	53	15:41 (11)
30	05:43	06:37	07:32	07:28		16:14 (9)	08:26		14:24 (10)	08:52		14:25 (10)
	21:36	20:31	19:15	17:06	20	16:34 (9)	16:18	33	15:34 (11)	16:20	53	15:42 (11)
31	05:44	06:39		07:30		16:16 (9)				08:52		14:26 (10)
	21:35	20:29		17:04	17	16:33 (9)				16:21	53	15:43 (11)
Potential sun hours	513	460	382	328			259			233		
Total, worst case					453			269			1600	
Sun reduction					0.23			0.20			0.12	
Oper. time red.					1.00			1.00			1.00	
Wind dir. red.					0.64			0.65			0.65	
Total reduction					0.15			0.13			0.08	
Total, real					66			35			125	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** AP - H044

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:11	05:07	05:47	06:17 (4) 06:41	07:08 (5) 07:34	07:33	08:28
	16:23	17:14	18:10	20:08	21:04	21:54	22:09	21:33 14	06:31 (4) 20:26 18	07:26 (5) 19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:10	05:07	05:48	06:19 (4) 06:43	07:10 (5) 07:36	07:35	08:29
	16:24	17:16	18:12	20:10	21:06	21:55	22:08	21:31 13	06:32 (4) 20:24 16	07:26 (5) 19:10	17:00	16:17
3	08:52	08:19	07:20	07:04	05:56	05:09	05:08	05:50	06:20 (4) 06:44	07:12 (5) 07:38	07:36	08:31
	16:25	17:18	18:14	20:12	21:07	21:56	22:08	21:30 11	06:31 (4) 20:22 14	07:26 (5) 19:08	16:58	16:16
4	08:52	08:17	07:17	07:02 07:26 (5)	05:54	05:08	05:09	05:52	06:22 (4) 06:46	07:13 (5) 07:40	07:38	08:32
	16:26	17:20	18:16	20:14 1 07:27 (5)	21:09	21:57	22:07	21:28 9	06:31 (4) 20:19 12	07:25 (5) 19:05	16:56	16:16
5	08:51	08:15	07:15	07:00 07:23 (5)	05:52	05:07	05:10	05:53	06:23 (4) 06:48	07:15 (5) 07:41	07:40	08:33
	16:27	17:22	18:18	20:16 4 07:27 (5)	21:11	21:58	22:07	21:26 7	06:30 (4) 20:17 10	07:25 (5) 19:03	16:54	16:15
6	08:51	08:13	07:13	06:57 07:21 (5)	05:50 06:16 (4)	05:06	05:11	05:55	06:25 (4) 06:50	07:17 (5) 07:43	07:42	08:35
	16:29	17:24	18:19	20:18 7 07:28 (5)	21:13 3 06:19 (4)	21:59	22:06	21:24 5	06:30 (4) 20:14 7	07:24 (5) 19:01	16:52	16:14
7	08:51	08:11	07:10	06:55 07:19 (5)	05:48 06:15 (4)	05:06	05:12	05:57	06:27 (4) 06:52	07:18 (5) 07:45	07:44	08:36
	16:30	17:26	18:21	20:19 10 07:29 (5)	21:15 5 06:20 (4)	22:00	22:05	21:22 2	06:29 (4) 20:12 4	07:22 (5) 18:58	16:51	16:14
8	08:50	08:09	07:08	06:52 07:16 (5)	05:46 06:13 (4)	05:05	05:13	05:58	06:53	07:20 (5) 07:47	07:46	08:38
	16:31	17:28	18:23	20:21 12 07:28 (5)	21:16 8 06:21 (4)	22:01	22:05	21:20	20:10 1	07:21 (5) 18:56	16:49	16:14
9	08:49	08:07	07:06	06:50 07:14 (5)	05:44 06:11 (4)	05:04	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23 14 07:28 (5)	21:18 10 06:21 (4)	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:06	07:03	06:47 07:11 (5)	05:42 06:09 (4)	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25 17 07:28 (5)	21:20 11 06:20 (4)	22:03	22:03	21:16	20:05	18:51	16:45	16:13
11	08:48	08:04	07:01	06:45 07:09 (5)	05:40 06:08 (4)	05:04	05:16	06:04	06:59	07:53	07:52	08:41
	16:36	17:34	18:29	20:27 18 07:27 (5)	21:22 13 06:21 (4)	22:04	22:02	21:14	20:02	18:49	16:43	16:13
12	08:47	08:02	06:58	06:43 07:07 (5)	05:39 06:06 (4)	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29 20 07:27 (5)	21:23 15 06:21 (4)	22:05	22:01	21:12	20:00	18:46	16:42	16:12
13	08:47	08:00	06:56	06:40 07:04 (5)	05:37 06:04 (4)	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:31 21 07:25 (5)	21:25 16 06:20 (4)	22:05	22:00	21:10	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38 07:04 (5)	05:35 06:03 (4)	05:03	05:20	06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32 21 07:25 (5)	21:27 18 06:21 (4)	22:06	21:59	21:08	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:36 07:06 (5)	05:33 06:01 (4)	05:02	05:21	06:11	07:06	08:00	08:00	08:45
	16:42	17:42	18:37	20:34 17 07:23 (5)	21:28 19 06:20 (4)	22:07	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:49	06:33 07:07 (5)	05:32 06:00 (4)	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36 15 07:22 (5)	21:30 20 06:20 (4)	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31 07:09 (5)	05:30 05:58 (4)	05:02	05:24	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38 9 07:18 (5)	21:32 22 06:20 (4)	22:08	21:56	21:01	19:47	18:35	16:34	16:13
18	08:42	07:49	06:44	06:29	05:29 05:57 (4)	05:02	05:25 06:14 (4)	06:16	07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40	21:33 23 06:20 (4)	22:08	21:55 8 06:22 (4)	20:59	19:45	18:32	16:32	16:13
19	08:41	07:47	06:41	06:26	05:27 05:57 (4)	05:02	05:26 06:12 (4)	06:18	07:13	08:08	08:07	08:48
	16:49	17:50	18:44	20:42	21:35 21 06:18 (4)	22:09	21:53 12 06:24 (4)	20:57	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25 05:58 (4)	05:02	05:28 06:11 (4)	06:20	07:15	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:37 20 06:18 (4)	22:09	21:52 15 06:26 (4)	20:54	19:40	18:28	16:30	16:13
21	08:38	07:43	06:36	06:22	05:24 05:59 (4)	05:02	05:29 06:10 (4)	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38 19 06:18 (4)	22:09	21:51 17 06:27 (4)	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:20	05:23 06:00 (4)	05:02	05:31 06:09 (4)	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40 17 06:17 (4)	22:09	21:49 18 06:27 (4)	20:50	19:35	18:23	16:27	16:14
23	08:36	07:38	06:31	06:17	05:21 06:00 (4)	05:03	05:32 06:09 (4)	06:25	07:20	08:15	08:14	08:51
	16:57	17:58	18:52	20:49	21:41 16 06:16 (4)	22:09	21:48 20 06:29 (4)	20:48	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20 06:02 (4)	05:03	05:34 06:08 (4)	06:27	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43 13 06:15 (4)	22:10	21:46 21 06:29 (4)	20:45	19:30	18:19	16:25	16:15
25	08:33	07:34	06:26	06:13	05:18 06:03 (4)	05:03	05:35 06:08 (4)	06:28	07:23	07:19	08:18	08:52
	17:00	18:02	18:55	20:53	21:44 10 06:13 (4)	22:10	21:45 22 06:30 (4)	20:43	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17 06:06 (4)	05:04	05:37 06:08 (4)	06:30	07:11 (5) 07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:55	21:46 5 06:11 (4)	22:10	21:43 22 06:30 (4)	20:41 10	07:21 (5) 19:25	17:14	16:22	16:17
27	08:30	07:29	06:22	06:09	05:16	05:04	05:38 06:09 (4)	06:32	07:09 (5) 07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:42 21 06:30 (4)	20:38 15	07:24 (5) 19:23	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	05:15	05:05	05:40 06:11 (4)	06:34	07:06 (5) 07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:49	22:09	21:40 20 06:31 (4)	20:36 18	07:24 (5) 19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	05:14	05:05	05:42 06:12 (4)	06:36	07:05 (5) 07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38 19 06:31 (4)	20:34 20	07:25 (5) 19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	05:13	05:06	05:43 06:14 (4)	06:37	07:05 (5) 07:32	07:29	08:26	08:52
	17:10		20:05	21:02	21:51	22:09	21:37 17 06:31 (4)	20:31 21	07:26 (5) 19:15	17:06	16:19	16:20
31	08:24		07:12		05:11		05:45 06:16 (4)	06:39	07:07 (5)	07:31		08:52
	17:12		20:06		21:53		21:35 16 06:32 (4)	20:29 20	07:27 (5)	17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case				186	304		248	165	82			
Sun reduction				0.31	0.31		0.22	0.26	0.25			
Oper. time red.				1.00	1.00		1.00	1.00	1.00			
Wind dir. red.				0.64	0.65		0.65	0.64	0.64			
Total reduction				0.20	0.20		0.14	0.17	0.16			
Total, real				37	62		36	27	13			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** AQ - H045

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February	March	April	May	June	July	August	September	October	November	December		
1	08:52		14:27 (8)	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27		
	16:22	20	14:47 (8)	17:14	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02	16:17		
2	08:52		14:28 (8)	08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34	08:29		
	16:23	19	14:47 (8)	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:16		
3	08:52		14:30 (8)	08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:38	07:36	08:30		
	16:24	17	14:47 (8)	17:18	18:13	20:12	21:07	21:56	22:08	21:29	20:21	19:07	16:58	16:16		
4	08:52		14:31 (8)	08:17	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38	08:32		
	16:26	15	14:46 (8)	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15		
5	08:51		14:33 (8)	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40	08:33		
	16:27	12	14:45 (8)	17:22	18:17	20:15	21:11	21:58	22:06	21:26	20:17	19:03	16:54	16:15		
6	08:51		14:35 (8)	08:13	07:12	06:57	05:49	05:06	05:10	05:55	06:49	07:43	07:42	08:35		14:21 (8)
	16:28	9	14:44 (8)	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14	9	14:30 (8)
7	08:50			08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44	08:36		14:19 (8)
	16:30			17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:13	12	14:31 (8)
8	08:50			08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37		14:19 (8)
	16:31			17:28	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48	16:13	15	14:34 (8)
9	08:49			08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:49	07:48	08:39		14:18 (8)
	16:32			17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46	16:13	17	14:35 (8)
10	08:49			08:05	07:03	06:47	05:42	05:04	05:14	06:02	06:56	07:50	07:50	08:40		14:17 (8)
	16:34			17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:12	19	14:36 (8)
11	08:48			08:03	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52	08:41		14:18 (8)
	16:35			17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:12	20	14:38 (8)
12	08:47			08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42		14:18 (8)
	16:37			17:36	18:31	20:28	21:23	22:05	22:01	21:11	19:59	18:46	16:41	16:12	21	14:39 (8)
13	08:46			07:59	06:56	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:56	08:43		14:17 (8)
	16:39			17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12	22	14:39 (8)
14	08:45			07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57	08:44		14:17 (8)
	16:40			17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38	16:12	23	14:40 (8)
15	08:45			07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59	08:45		14:18 (8)
	16:42			17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36	16:12	23	14:41 (8)
16	08:44			07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01	08:46		14:18 (8)
	16:44			17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16:12	24	14:42 (8)
17	08:43			07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03	08:47		14:18 (8)
	16:45			17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:33	16:12	25	14:43 (8)
18	08:41			07:49	06:43	06:28	05:28	05:02	05:24	06:16	07:11	08:05	08:05	08:48		14:18 (8)
	16:47			17:48	18:42	20:39	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:12	25	14:43 (8)
19	08:40			07:47	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07	08:48		14:18 (8)
	16:49			17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13	25	14:43 (8)
20	08:39			07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49		14:19 (8)
	16:51			17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29	16:13	25	14:44 (8)
21	08:38			07:42	06:36	06:21	05:24	05:02	05:29	06:21	07:16	08:11	08:10	08:50		14:19 (8)
	16:52			17:54	18:48	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:13	25	14:44 (8)
22	08:37			07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50		14:20 (8)
	16:54			17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14	25	14:45 (8)
23	08:35			07:38	06:31	06:17	05:21	05:02	05:32	06:24	07:20	08:15	08:14	08:51		14:20 (8)
	16:56			17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	16:14	25	14:45 (8)
24	08:34			07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16	08:51		14:20 (8)
	16:58			18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24	16:15	25	14:45 (8)
25	08:33			07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51		14:22 (8)
	17:00			18:02	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	16:16	25	14:47 (8)
26	08:31			07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:52		14:22 (8)
	17:02			18:04	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22	16:16	25	14:47 (8)
27	08:30			07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21	08:52		14:23 (8)
	17:04			18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17	24	14:47 (8)
28	08:28			07:26	06:19	06:06	05:14	05:04	05:40	06:33	07:28	07:25	08:23	08:52		14:23 (8)
	17:06			18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18	24	14:47 (8)
29	08:27				07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52		14:24 (8)
	17:08				20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19	23	14:47 (8)
30	08:25				07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26	08:52		14:25 (8)
	17:10				20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20	22	14:47 (8)
31	08:23				07:11		05:11		05:44	06:39		07:30		08:52		14:26 (8)
	17:12				20:06		21:52		21:35	20:29		17:04		16:21	22	14:48 (8)
Potential sun hours	250			273	367	420	494	510	513	460	382	328	259	233		
Total, worst case		92													570	
Sun reduction		0.16													0.12	
Oper. time red.		1.00													1.00	
Wind dir. red.		0.66													0.66	
Total reduction		0.11													0.08	
Total, real		10													45	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** AR - H046

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February			March			April		May	June
1	08:52		10:44 (2)	08:22		08:50 (4)	07:24		07:49 (1)	07:09		06:00	05:10
	16:23	37	11:21 (2)	17:14	18	09:08 (3)	18:10	27	08:16 (1)	20:08		21:04	21:54
2	08:52		10:44 (2)	08:20		08:48 (4)	07:22		07:47 (1)	07:07		05:58	05:09
	16:24	36	11:20 (2)	17:16	21	09:09 (3)	18:12	30	08:17 (1)	20:10		21:06	21:55
3	08:52		10:46 (2)	08:19		08:46 (4)	07:20		07:44 (1)	07:04		05:56	05:09
	16:25	35	11:21 (2)	17:18	23	09:09 (3)	18:14	33	08:17 (1)	20:12		21:07	21:56
4	08:52		10:46 (2)	08:17		08:44 (4)	07:17		07:42 (1)	07:02		05:54	05:08
	16:26	34	11:20 (2)	17:20	25	09:09 (3)	18:16	36	08:18 (1)	20:14		21:09	21:57
5	08:51		10:47 (2)	08:15		08:42 (4)	07:15		07:39 (1)	07:00		05:52	05:07
	16:27	34	11:21 (2)	17:22	27	09:09 (3)	18:17	39	08:18 (1)	20:16		21:11	21:58
6	08:51		10:48 (2)	08:13		08:40 (4)	07:13		07:37 (1)	06:57		05:50	05:06
	16:29	32	11:20 (2)	17:24	29	09:09 (3)	18:19	41	08:18 (1)	20:18		21:13	22:00
7	08:51		10:50 (2)	08:11		08:39 (4)	07:10		07:35 (1)	06:55		05:48	05:06
	16:30	30	11:20 (2)	17:26	30	09:09 (3)	18:21	44	08:19 (1)	20:19		21:15	22:01
8	08:50		10:51 (2)	08:09		08:39 (4)	07:08		07:33 (1)	06:52		05:46	05:05
	16:31	29	11:20 (2)	17:28	29	09:08 (3)	18:23	45	08:18 (1)	20:21		21:16	22:01
9	08:50		10:52 (2)	08:08		08:40 (4)	07:06		07:33 (1)	06:50		05:44	05:04
	16:33	27	11:19 (2)	17:30	28	09:08 (3)	18:25	46	08:19 (1)	20:23		21:18	22:02
10	08:49		10:53 (2)	08:06		08:41 (4)	07:03		07:32 (1)	06:47		05:42	05:04
	16:34	25	11:18 (2)	17:32	26	09:07 (3)	18:27	46	08:18 (1)	20:25		21:20	22:03
11	08:48		10:55 (2)	08:04		08:43 (4)	07:01		07:33 (1)	06:45		05:40	05:03
	16:36	22	11:17 (2)	17:34	24	09:07 (3)	18:29	45	08:18 (1)	20:27		21:22	22:04
12	08:47		10:57 (2)	08:02		08:45 (3)	06:58		07:32 (1)	06:43		05:39	05:03
	16:37	19	11:16 (2)	17:36	20	09:05 (3)	18:31	45	08:17 (1)	20:29		21:23	22:05
13	08:47		10:59 (2)	08:00		08:47 (3)	06:56		07:33 (1)	06:40		05:37	05:03
	16:39	15	11:14 (2)	17:38	17	09:04 (3)	18:33	43	08:16 (1)	20:31		21:25	22:06
14	08:46		11:03 (2)	07:58		08:49 (3)	06:53		07:32 (1)	06:38		05:35	05:02
	16:41	8	11:11 (2)	17:40	13	09:02 (3)	18:35	43	08:15 (1)	20:32		21:27	22:06
15	08:45			07:55		08:53 (3)	06:51		07:33 (1)	06:36		05:33	05:02
	16:42			17:42	3	08:56 (3)	18:37	42	08:15 (1)	20:34		21:29	22:07
16	08:44			07:53			06:49		07:33 (1)	06:33		05:32	05:02
	16:44			17:44			18:38	40	08:13 (1)	20:36		21:30	22:07
17	08:43			07:51			06:46		07:34 (1)	06:31		05:30	05:02
	16:46			17:46			18:40	38	08:12 (1)	20:38		21:32	22:08
18	08:42			07:49			06:44		07:34 (1)	06:29		05:28	05:02
	16:47			17:48			18:42	36	08:10 (1)	20:40		21:34	22:08
19	08:41			07:47			06:41		07:36 (1)	06:26		05:27	05:02
	16:49			17:50			18:44	33	08:09 (1)	20:42		21:35	22:09
20	08:39			07:45			06:39		07:38 (1)	06:24		05:25	05:02
	16:51			17:52			18:46	29	08:07 (1)	20:44		21:37	22:09
21	08:38			07:43			06:36		07:39 (1)	06:22		05:24	05:02
	16:53			17:54			18:48	25	08:04 (1)	20:45		21:38	22:09
22	08:37			07:40			06:34		07:41 (1)	06:20		05:22	05:02
	16:55			17:56			18:50	21	08:02 (1)	20:47		21:40	22:09
23	08:36			07:38		08:03 (1)	06:31		07:44 (1)	06:17		05:21	05:03
	16:56			17:58	1	08:04 (1)	18:52	13	07:57 (1)	20:49		21:41	22:10
24	08:34			07:36		08:01 (1)	06:29			06:15		05:20	05:03
	16:58			18:00	7	08:08 (1)	18:53			20:51		21:43	22:10
25	08:33			07:34		07:59 (1)	06:26			06:13		05:18	05:03
	17:00			18:02	12	08:11 (1)	18:55			20:53		21:44	22:10
26	08:32		09:01 (3)	07:31		07:56 (1)	06:24			06:11		05:17	05:04
	17:02	2	09:03 (3)	18:04	16	08:12 (1)	18:57			20:55		21:46	22:10
27	08:30		08:59 (3)	07:29		07:54 (1)	06:22			06:08		05:16	05:04
	17:04	5	09:04 (3)	18:06	20	08:14 (1)	18:59			20:56		21:47	22:10
28	08:29		08:57 (3)	07:27		07:52 (1)	06:19			06:06		05:15	05:05
	17:06	8	09:05 (3)	18:08	23	08:15 (1)	19:01			20:58		21:49	22:09
29	08:27		08:55 (4)				07:17			06:04		05:14	05:05
	17:08	11	09:06 (3)				20:03			21:00		21:50	22:09
30	08:25		08:54 (4)				07:14			06:02		05:12	05:06
	17:10	13	09:07 (3)				20:05			21:02		21:51	22:09
31	08:24		08:52 (4)				07:12					05:11	
	17:12	16	09:08 (3)				20:06					21:53	
Potential sun hours	250			273			367			420		494	510
Total, worst case		438			412			840					
Sun reduction		0.16			0.19			0.22					
Oper. time red.		1.00			1.00			1.00					
Wind dir. red.		0.63			0.60			0.63					
Total reduction		0.10			0.12			0.14					
Total, real		44			49			116					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** AR - H046

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August		September			October			November			December		
1	05:06		05:46		06:41			07:34		08:12 (1)	07:33		08:11 (4)	08:28		10:37 (2)
	22:09		21:33		20:27			19:13	44	08:56 (1)	17:02	26	08:37 (3)	16:18	22	10:59 (2)
2	05:07		05:48		06:43			07:36		08:11 (1)	07:35		08:10 (4)	08:29		10:36 (2)
	22:08		21:31		20:24			19:10	45	08:56 (1)	17:00	28	08:38 (3)	16:17	25	11:01 (2)
3	05:08		05:50		06:44			07:38		08:10 (1)	07:36		08:09 (4)	08:31		10:36 (2)
	22:08		21:30		20:22			19:08	46	08:56 (1)	16:58	29	08:38 (3)	16:16	27	11:03 (2)
4	05:09		05:52		06:46			07:40		08:10 (1)	07:38		08:08 (4)	08:32		10:35 (2)
	22:07		21:28		20:19			19:05	45	08:55 (1)	16:56	30	08:38 (3)	16:16	29	11:04 (2)
5	05:10		05:53		06:48			07:42		08:10 (1)	07:40		08:10 (4)	08:34		10:35 (2)
	22:07		21:26		20:17			19:03	45	08:55 (1)	16:54	29	08:39 (3)	16:15	30	11:05 (2)
6	05:11		05:55		06:50			07:43		08:10 (1)	07:42		08:13 (4)	08:35		10:34 (2)
	22:06		21:24		20:14			19:01	45	08:55 (1)	16:52	27	08:40 (3)	16:14	32	11:06 (2)
7	05:12		05:57		06:52			07:45		08:12 (1)	07:44		08:15 (4)	08:36		10:35 (2)
	22:05		21:22		20:12			18:58	43	08:55 (1)	16:50	25	08:40 (3)	16:14	33	11:08 (2)
8	05:13		05:58		06:53			07:47		08:14 (1)	07:46		08:17 (4)	08:38		10:34 (2)
	22:05		21:20		20:10			18:56	40	08:54 (1)	16:49	23	08:40 (3)	16:13	34	11:08 (2)
9	05:14		06:00		06:55			07:49		08:16 (1)	07:48		08:19 (4)	08:39		10:34 (2)
	22:04		21:18		20:07			18:53	37	08:53 (1)	16:47	20	08:39 (3)	16:13	35	11:09 (2)
10	05:15		06:02		06:57			07:51		08:17 (1)	07:50		08:21 (4)	08:40		10:35 (2)
	22:03		21:16		20:05			18:51	35	08:52 (1)	16:45	18	08:39 (3)	16:13	35	11:10 (2)
11	05:16		06:04		06:59			07:53		08:19 (1)	07:52		08:23 (4)	08:41		10:34 (2)
	22:02		21:14		20:02			18:49	32	08:51 (1)	16:43	16	08:39 (3)	16:13	37	11:11 (2)
12	05:17		06:05		07:00			07:54		08:21 (1)	07:54		08:25 (4)	08:42		10:34 (2)
	22:01		21:12		20:00			18:46	29	08:50 (1)	16:42	13	08:38 (3)	16:12	38	11:12 (2)
13	05:18		06:07		07:02			07:56		08:23 (1)	07:56		08:27 (4)	08:43		10:34 (2)
	22:00		21:10		19:57			18:44	25	08:48 (1)	16:40	11	08:38 (3)	16:12	38	11:12 (2)
14	05:19		06:09		07:04			07:58		08:25 (1)	07:58		08:30 (3)	08:44		10:35 (2)
	21:59		21:08		19:55			18:41	22	08:47 (1)	16:38	8	08:38 (3)	16:12	38	11:13 (2)
15	05:21		06:11		07:06			08:00		08:27 (1)	08:00		08:32 (3)	08:45		10:35 (2)
	21:58		21:05		19:52			18:39	18	08:45 (1)	16:37	5	08:37 (3)	16:12	39	11:14 (2)
16	05:22		06:12		07:07			08:02		08:29 (1)	08:02		08:34 (3)	08:46		10:35 (2)
	21:57		21:03		19:50			18:37	14	08:43 (1)	16:35	2	08:36 (3)	16:12	39	11:14 (2)
17	05:23		06:14		07:09			08:04		08:31 (1)	08:03			08:47		10:36 (2)
	21:56		21:01		19:47			18:34	10	08:41 (1)	16:34			16:13	39	11:15 (2)
18	05:25		06:16		07:11			08:06		08:33 (1)	08:05			08:48		10:36 (2)
	21:55		20:59		19:45			18:32	5	08:38 (1)	16:32			16:13	40	11:16 (2)
19	05:26		06:18		07:13			08:08			08:07			08:49		10:36 (2)
	21:53		20:57		19:42			18:30			16:31			16:13	40	11:16 (2)
20	05:28		06:20		07:15		08:32 (1)	08:09			08:09			08:49		10:37 (2)
	21:52		20:54		19:40	10	08:42 (1)	18:28			16:30			16:13	40	11:17 (2)
21	05:29		06:21		07:16		08:28 (1)	08:11			08:11			08:50		10:37 (2)
	21:51		20:52		19:37	19	08:47 (1)	18:25			16:28			16:14	40	11:17 (2)
22	05:31		06:23		07:18		08:24 (1)	08:13			08:13			08:50		10:38 (2)
	21:49		20:50		19:35	24	08:48 (1)	18:23			16:27			16:14	40	11:18 (2)
23	05:32		06:25		07:20		08:22 (1)	08:15			08:14			08:51		10:38 (2)
	21:48		20:48		19:32	28	08:50 (1)	18:21			16:26			16:15	40	11:18 (2)
24	05:34		06:27		07:22		08:20 (1)	08:17			08:16			08:51		10:39 (2)
	21:46		20:45		19:30	32	08:52 (1)	18:19			16:25			16:15	40	11:19 (2)
25	05:35		06:28		07:23		08:19 (1)	07:19			08:18			08:52		10:39 (2)
	21:45		20:43		19:27	34	08:53 (1)	17:17			16:23			16:16	40	11:19 (2)
26	05:37		06:30		07:25		08:16 (1)	07:21			08:20			08:52		10:40 (2)
	21:43		20:41		19:25	38	08:54 (1)	17:14			16:22			16:17	39	11:19 (2)
27	05:38		06:32		07:27		08:15 (1)	07:23		08:22 (3)	08:21			08:52		10:40 (2)
	21:42		20:38		19:23	39	08:54 (1)	17:12	7	08:29 (3)	16:21			16:17	39	11:19 (2)
28	05:40		06:34		07:29		08:14 (1)	07:25		08:18 (3)	08:23		10:44 (2)	08:52		10:41 (2)
	21:40		20:36		19:20	41	08:55 (1)	17:10	14	08:32 (3)	16:20	6	10:50 (2)	16:18	39	11:20 (2)
29	05:42		06:36		07:31		08:13 (1)	07:27		08:16 (3)	08:25		10:41 (2)	08:52		10:41 (2)
	21:38		20:34		19:18	43	08:56 (1)	17:08	18	08:34 (3)	16:19	14	10:55 (2)	16:19	39	11:20 (2)
30	05:43		06:37		07:32		08:13 (1)	07:29		08:14 (3)	08:26		10:39 (2)	08:53		10:42 (2)
	21:37		20:31		19:15	43	08:56 (1)	17:06	21	08:35 (3)	16:18	19	10:58 (2)	16:20	38	11:20 (2)
31	05:45		06:39					07:31		08:12 (4)				08:53		10:43 (2)
	21:35		20:29					17:04	24	08:36 (3)				16:21	38	11:21 (2)
Potential sun hours	512		460		382			328			259			233		
Total, worst case						351			664			349			1122	
Sun reduction						0.25			0.23			0.20			0.12	
Oper. time red.						1.00			1.00			1.00			1.00	
Wind dir. red.						0.63			0.62			0.60			0.63	
Total reduction						0.16			0.14			0.12			0.08	
Total, real						55			94			41			85	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** AS - H047

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52 16:23	08:22 17:14	07:24 18:10	07:09 20:08	06:00 21:04 13	06:26 (3) 06:39 (3)	05:11 21:54	05:07 22:09 5	05:40 (2) 05:45 (2)	05:47 21:33	06:41 20:27	07:34 19:13	07:33 17:02	08:28 16:18
2	08:52 16:24	08:20 17:16	07:22 18:12	07:07 20:10	05:58 21:06 15	06:24 (3) 06:39 (3)	05:10 21:55	05:07 22:08 4	05:40 (2) 05:44 (2)	05:48 21:31 9	06:43 06:41 (3)	07:36 20:24	07:35 19:10	08:29 17:00	16:17
3	08:52 16:25	08:19 17:18	07:20 18:14	07:04 20:12	05:56 21:07 17	06:22 (3) 06:39 (3)	05:09 21:56	05:08 22:08 3	05:41 (2) 05:44 (2)	05:50 21:30 13	06:30 (3) 06:43 (3)	06:44 20:22	07:38 19:08	07:36 16:58	08:31 16:16
4	08:52 16:26	08:17 17:20	07:17 18:16	07:02 20:14	05:54 21:09 18	06:20 (3) 06:38 (3)	05:08 21:57	05:09 22:07 2	05:42 (2) 05:44 (2)	05:52 21:28 16	06:28 (3) 06:44 (3)	06:46 20:19	07:40 19:05	07:38 16:56	08:32 16:16
5	08:51 16:27	08:15 17:22	07:15 18:18	07:00 20:16	05:52 21:11 19	06:18 (3) 06:37 (3)	05:07 21:58	05:10 22:07 1	05:43 (2) 05:44 (2)	05:53 21:26 18	06:27 (3) 06:45 (3)	06:48 20:17	07:42 19:03	07:40 16:54	08:34 16:15
6	08:51 16:29	08:13 17:24	07:13 18:19	06:57 20:18	05:50 21:13 21	06:16 (3) 06:37 (3)	05:06 21:59	05:11 22:06		05:55 21:24 20	06:26 (3) 06:46 (3)	06:50 20:14	07:43 19:01	07:42 16:52	08:35 16:14
7	08:51 16:30	08:11 17:26	07:10 18:21	06:55 20:19	05:48 21:15 19	06:17 (3) 06:36 (3)	05:06 22:00	05:12 22:05		05:57 21:22 20	06:27 (3) 06:47 (3)	06:52 20:12	07:45 18:58	07:44 16:51	08:36 16:14
8	08:50 16:31	08:09 17:28	07:08 18:23	06:52 20:21	05:46 21:16 17	06:18 (3) 06:35 (3)	05:05 22:01 2	05:37 (2) 05:39 (2)	05:13 22:05	05:58 21:20 19	06:28 (3) 06:47 (3)	06:53 20:10	07:47 18:56	07:46 16:49	08:38 16:14
9	08:49 16:33	08:08 17:30	07:06 18:25	06:50 20:23	05:44 21:18 14	06:19 (3) 06:33 (3)	05:05 22:02 3	05:36 (2) 05:39 (2)	05:14 22:04	06:00 21:18 18	06:30 (3) 06:48 (3)	06:55 20:07	07:49 18:53	07:48 16:47	08:39 16:13
10	08:49 16:34	08:06 17:32	07:03 18:27	06:47 20:25	05:42 21:20 11	06:20 (3) 06:31 (3)	05:04 22:03 4	05:36 (2) 05:40 (2)	05:15 22:03	06:02 21:16 16	06:31 (3) 06:47 (3)	06:57 20:05	07:51 18:51	07:50 16:45	08:40 16:13
11	08:48 16:36	08:04 17:34	07:01 18:29	06:45 20:27	05:40 21:22 6	06:23 (3) 06:29 (3)	05:04 22:04 5	05:36 (2) 05:41 (2)	05:16 22:02	06:04 21:14 15	06:33 (3) 06:48 (3)	06:59 20:02	07:53 18:49	07:52 16:43	08:41 16:13
12	08:47 16:37	08:02 17:36	06:58 18:31	06:43 20:29	05:39 21:23	05:03 22:05 6	05:35 (2) 05:41 (2)	05:17 22:01		06:05 21:12 13	06:35 (3) 06:48 (3)	07:00 20:00	07:54 18:46	07:54 16:42	08:42 16:13
13	08:47 16:39	08:00 17:38	06:56 18:33	06:40 20:31	05:37 21:25	05:03 22:05 6	05:35 (2) 05:41 (2)	05:18 22:00		06:07 21:10 11	06:36 (3) 06:47 (3)	07:02 19:57	07:56 18:44	07:56 16:40	08:43 16:12
14	08:46 16:41	07:58 17:40	06:53 18:35	06:38 20:32	05:35 21:27	05:03 22:06 7	05:35 (2) 05:42 (2)	05:20 21:59		06:09 21:08 9	06:38 (3) 06:47 (3)	07:04 19:55	07:58 18:41	07:58 16:38	08:44 16:12
15	08:45 16:42	07:55 17:42	06:51 18:37	06:36 20:34	05:33 21:29	05:02 22:07 7	05:35 (2) 05:42 (2)	05:21 21:58		06:11 21:05 7	06:40 (3) 06:47 (3)	07:06 19:52	08:00 18:39	08:00 16:37	08:45 16:12
16	08:44 16:44	07:53 17:44	06:49 18:39	06:33 20:36	05:32 21:30	05:02 22:07 8	05:35 (2) 05:43 (2)	05:22 21:57		06:13 21:03 5	06:41 (3) 06:46 (3)	07:07 19:50	08:02 18:37	08:01 16:35	08:46 16:12
17	08:43 16:46	07:51 17:46	06:46 18:40	06:31 20:38	05:30 21:32	05:02 22:08 8	05:35 (2) 05:43 (2)	05:24 21:56		06:14 21:01 2	06:43 (3) 06:45 (3)	07:09 19:47	08:04 18:35	08:03 16:34	08:47 16:13
18	08:42 16:47	07:49 17:48	06:44 18:42	06:29 20:40	05:29 21:33	05:02 22:08 9	05:35 (2) 05:44 (2)	05:25 21:55		06:16 20:59		07:11 19:45	08:06 18:32	08:05 16:32	08:48 16:13
19	08:41 16:49	07:47 17:50	06:41 18:44	06:26 20:42	05:27 21:35	05:02 22:09 9	05:35 (2) 05:44 (2)	05:26 21:53		06:18 20:57		07:13 19:42	08:08 18:30	08:07 16:31	08:48 16:13
20	08:39 16:51	07:45 17:52	06:39 18:46	06:24 20:44	05:25 21:37	05:02 22:09 9	05:35 (2) 05:44 (2)	05:28 21:52		06:20 20:54		07:15 19:40	08:09 18:28	08:09 16:30	08:49 16:13
21	08:38 16:53	07:43 17:54	06:36 18:48	06:22 20:45	05:24 21:38	05:02 22:09 9	05:35 (2) 05:44 (2)	05:29 21:51		06:21 20:52		07:16 19:37	08:11 18:25	08:11 16:28	08:50 16:14
22	08:37 16:55	07:40 17:56	06:34 18:50	06:20 20:47	05:23 21:40	05:02 22:09 9	05:35 (2) 05:44 (2)	05:31 21:49		06:23 20:50		07:18 19:35	08:13 18:23	08:13 16:27	08:50 16:14
23	08:36 16:57	07:38 17:58	06:31 18:52	06:17 20:49	05:21 21:41	05:03 22:09 9	05:36 (2) 05:45 (2)	05:32 21:48		06:25 20:48		07:20 19:32	08:15 18:21	08:14 16:26	08:51 16:15
24	08:34 16:58	07:36 18:00	06:29 18:53	06:15 20:51	05:20 21:43	05:03 22:10 9	05:36 (2) 05:45 (2)	05:34 21:46		06:27 20:45		07:22 19:30	08:17 18:19	08:16 16:25	08:51 16:15
25	08:33 17:00	07:34 18:02	06:26 18:55	06:13 20:53	05:18 21:44	05:03 22:10 8	05:36 (2) 05:44 (2)	05:35 21:45		06:28 20:43		07:23 19:28	07:19 17:17	08:18 16:23	08:52 16:16
26	08:31 17:02	07:31 18:04	06:24 18:57	06:11 20:55 3	06:36 (3) 05:17 06:39 (3) 21:46	05:04 22:10 8	05:37 (2) 05:45 (2)	05:37 21:43		06:30 20:41		07:25 19:25	07:21 17:15	08:19 16:22	08:52 16:17
27	08:30 17:04	07:29 18:06	06:22 18:59	06:09 20:56 5	06:34 (3) 05:16 06:39 (3) 21:47	05:04 22:10 8	05:37 (2) 05:45 (2)	05:38 21:42		06:32 20:38		07:27 19:23	07:23 17:12	08:21 16:21	08:52 16:18
28	08:28 17:06	07:27 18:08	06:19 19:01	06:06 20:58 7	06:32 (3) 05:15 06:39 (3) 21:49	05:05 22:09 7	05:38 (2) 05:45 (2)	05:40 21:40		06:34 20:36		07:29 19:20	07:25 17:10	08:23 16:20	08:52 16:18
29	08:27 17:08		07:17 20:03	06:04 21:00 10	06:30 (3) 05:14 06:40 (3) 21:50	05:05 22:09 7	05:38 (2) 05:45 (2)	05:42 21:38		06:36 20:34		07:31 19:18	07:27 17:08	08:24 16:19	08:52 16:19
30	08:25 17:10		07:14 20:05	06:02 21:02 12	06:28 (3) 05:13 06:40 (3) 21:51	05:06 22:09 6	05:39 (2) 05:45 (2)	05:43 21:37		06:37 20:31		07:32 19:15	07:29 17:06	08:26 16:19	08:52 16:20
31	08:24 17:12		07:12 20:06		05:12 21:53			05:45 21:35		06:39 20:29			07:31 17:04		08:52 16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case				37	170	163	15	211				
Sun reduction				0.31	0.31	0.26	0.22	0.26				
Oper. time red.				1.00	1.00	1.00	1.00	1.00				
Wind dir. red.				0.65	0.65	0.65	0.65	0.65				
Total reduction				0.20	0.20	0.17	0.15	0.17				
Total, real				7	35	27	2	35				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** AT - H048

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52 16:23	08:22 17:14	07:24 18:10	07:09 20:08	06:00 21:04 (3) 06:42 (3) 06:45 (3)	05:11 21:54 40	05:41 (2) 06:21 (2)	05:07 22:09 47	05:40 (1) 06:27 (2)	05:47 21:33 2	06:17 (2) 06:19 (2)	06:41 20:27	07:34 19:13	07:33 17:02	08:28 16:18
2	08:52 16:24	08:20 17:16	07:22 18:12	07:07 20:10	05:58 21:06	05:10 21:55 41	05:40 (2) 06:21 (2)	05:07 22:08 47	05:40 (1) 06:27 (2)	05:48 21:31		06:43 20:24	07:36 19:10	07:35 17:00	08:29 16:17
3	08:52 16:25	08:19 17:18	07:20 18:14	07:04 20:12	05:56 21:07	05:09 21:56 42	05:40 (2) 06:22 (2)	05:08 22:08 46	05:41 (1) 06:27 (2)	05:50 21:30		06:44 20:22	07:38 19:08	07:36 16:58	08:31 16:16
4	08:52 16:26	08:17 17:20	07:17 18:16	07:02 20:14	05:54 21:09	05:08 21:57 42	05:39 (2) 06:21 (2)	05:09 22:07 46	05:42 (1) 06:28 (2)	05:52 21:28		06:46 20:19	07:40 19:05	07:38 16:56	08:32 16:16
5	08:51 16:27	08:15 17:22	07:15 18:18	07:00 20:16	05:52 21:11	05:07 21:58 43	05:38 (2) 06:21 (2)	05:10 22:07 45	05:43 (1) 06:28 (2)	05:53 21:26		06:48 20:17	07:42 19:03	07:40 16:54	08:34 16:15
6	08:51 16:29	08:13 17:24	07:13 18:19	06:57 20:18	05:50 21:13	05:06 21:59 44	05:38 (2) 06:22 (2)	05:11 22:06 44	05:44 (1) 06:28 (2)	05:55 21:24		06:50 20:14	07:43 19:01	07:42 16:52	08:35 16:14
7	08:51 16:30	08:11 17:26	07:10 18:21	06:55 20:19	05:48 21:15	05:06 22:00 45	05:37 (1) 06:22 (2)	05:12 22:05 44	05:45 (2) 06:29 (2)	05:57 21:22		06:52 20:12	07:45 18:58	07:44 16:51	08:36 16:14
8	08:50 16:31	08:09 17:28	07:08 18:23	06:52 20:21	05:46 21:16	05:05 22:01 45	05:37 (1) 06:22 (2)	05:13 22:05 43	05:46 (2) 06:29 (2)	05:58 21:20		06:53 20:10	07:47 18:56	07:46 16:49	08:38 16:14
9	08:49 16:33	08:08 17:30	07:06 18:25	06:50 20:23	05:44 21:18	05:05 22:02 46	05:36 (1) 06:22 (2)	05:14 22:04 42	05:47 (2) 06:29 (2)	06:00 21:18		06:55 20:07	07:49 18:53	07:48 16:47	08:39 16:13
10	08:49 16:34	08:06 17:32	07:03 18:27	06:47 20:25	05:42 21:20	05:04 22:03 47	05:36 (1) 06:23 (2)	05:15 22:03 41	05:48 (2) 06:29 (2)	06:02 21:16		06:57 20:05	07:51 18:51	07:50 16:45	08:40 16:13
11	08:48 16:36	08:04 17:34	07:01 18:29	06:45 20:27	05:40 21:22	05:04 22:04 47	05:36 (1) 06:23 (2)	05:16 22:02 40	05:49 (2) 06:29 (2)	06:04 21:14		06:59 20:02	07:53 18:49	07:52 16:43	08:41 16:13
12	08:47 16:37	08:02 17:36	06:58 18:31	06:43 20:29	05:39 21:23 3 06:06 (2) 06:09 (2)	05:03 22:05 48	05:35 (1) 06:23 (2)	05:17 22:01 39	05:50 (2) 06:29 (2)	06:05 21:12 6	06:49 (3) 06:55 (3)	07:00 20:00	07:54 18:46	07:54 16:42	08:42 16:13
13	08:47 16:39	08:00 17:38	06:56 18:33	06:40 20:31	05:37 21:25 6 06:04 (2) 06:10 (2)	05:03 22:05 48	05:35 (1) 06:23 (2)	05:18 22:00 38	05:51 (2) 06:29 (2)	06:07 21:10 12	06:45 (3) 06:57 (3)	07:02 19:57	07:56 18:44	07:56 16:40	08:43 16:12
14	08:46 16:41	07:58 17:40	06:53 18:35	06:38 20:32	05:35 21:27 9 06:03 (2) 06:12 (2)	05:03 22:06 48	05:35 (1) 06:23 (2)	05:20 21:59 37	05:52 (2) 06:29 (2)	06:09 21:08 16	06:43 (3) 06:59 (3)	07:04 19:55	07:58 18:41	07:58 16:38	08:44 16:12
15	08:45 16:42	07:55 17:42	06:51 18:37	06:36 20:34	05:33 21:29 12 06:01 (2) 06:13 (2)	05:02 22:07 49	05:35 (1) 06:24 (2)	05:21 21:58 36	05:53 (2) 06:29 (2)	06:11 21:05 18	06:42 (3) 07:00 (3)	07:06 19:52	08:00 18:39	08:00 16:37	08:45 16:12
16	08:44 16:44	07:53 17:44	06:49 18:39	06:33 20:36	05:32 21:30 14 06:00 (2) 06:14 (2)	05:02 22:07 49	05:35 (1) 06:24 (2)	05:22 21:57 34	05:54 (2) 06:28 (2)	06:13 21:03 20	06:41 (3) 07:01 (3)	07:07 19:50	08:02 18:37	08:02 16:35	08:46 16:12
17	08:43 16:46	07:51 17:46	06:46 18:40	06:31 20:38	05:30 21:32 16 05:58 (2) 06:14 (2)	05:02 22:08 49	05:35 (1) 06:24 (2)	05:24 21:56 33	05:56 (2) 06:29 (2)	06:14 21:01 18	06:43 (3) 07:01 (3)	07:09 19:47	08:04 18:35	08:03 16:34	08:47 16:13
18	08:42 16:47	07:49 17:48	06:44 18:42	06:29 20:40 3 06:53 (3) 06:56 (3)	05:29 21:33 19 05:57 (2) 06:16 (2)	05:02 22:08 49	05:35 (1) 06:24 (2)	05:25 21:55 32	05:57 (2) 06:29 (2)	06:16 20:59 17	06:45 (3) 07:02 (3)	07:11 19:45	08:06 18:32	08:05 16:32	08:48 16:13
19	08:41 16:49	07:47 17:50	06:41 18:44	06:26 20:42 6 06:51 (3) 06:57 (3)	05:27 21:35 21 05:56 (2) 06:17 (2)	05:02 22:09 49	05:35 (1) 06:24 (2)	05:26 21:53 30	05:58 (2) 06:28 (2)	06:18 20:57 16	06:46 (3) 07:02 (3)	07:13 19:42	08:08 18:30	08:07 16:31	08:49 16:13
20	08:39 16:51	07:45 17:52	06:39 18:46	06:24 20:44 8 06:49 (3) 06:57 (3)	05:25 21:37 23 05:54 (2) 06:17 (2)	05:02 22:09 49	05:35 (1) 06:24 (2)	05:28 21:52 29	06:00 (2) 06:29 (2)	06:20 20:54 14	06:48 (3) 07:02 (3)	07:15 19:40	08:09 18:28	08:09 16:30	08:49 16:13
21	08:38 16:53	07:43 17:54	06:36 18:48	06:22 20:45 10 06:47 (3) 06:57 (3)	05:24 21:38 24 05:53 (2) 06:17 (2)	05:02 22:09 49	05:35 (1) 06:24 (2)	05:29 21:51 27	06:01 (2) 06:28 (2)	06:21 20:52 12	06:50 (3) 07:02 (3)	07:16 19:37	08:11 18:25	08:11 16:28	08:50 16:14
22	08:37 16:55	07:40 17:56	06:34 18:50	06:20 20:47 12 06:44 (3) 06:56 (3)	05:23 21:40 26 05:52 (2) 06:18 (2)	05:02 22:09 49	05:35 (1) 06:24 (2)	05:31 21:49 25	06:02 (2) 06:27 (2)	06:23 20:50 10	06:51 (3) 07:01 (3)	07:18 19:35	08:13 18:23	08:13 16:27	08:50 16:14
23	08:36 16:57	07:38 17:58	06:31 18:52	06:17 20:49 14 06:42 (3) 06:56 (3)	05:21 21:41 28 05:50 (2) 06:18 (2)	05:03 22:10 49	05:36 (1) 06:25 (2)	05:32 21:48 24	06:04 (2) 06:28 (2)	06:25 20:48 8	06:53 (3) 07:01 (3)	07:20 19:32	08:15 18:21	08:14 16:26	08:51 16:15
24	08:34 16:58	07:36 18:00	06:29 18:53	06:15 20:51 16 06:40 (3) 06:56 (3)	05:20 21:43 30 05:49 (2) 06:19 (2)	05:03 22:10 49	05:36 (1) 06:25 (2)	05:34 21:46 22	06:05 (2) 06:27 (2)	06:27 20:45 5	06:55 (3) 07:00 (3)	07:22 19:30	08:17 18:19	08:16 16:25	08:51 16:15
25	08:33 17:00	07:34 18:02	06:26 18:55	06:13 20:53 17 06:38 (3) 06:55 (3)	05:18 21:44 31 05:48 (2) 06:19 (2)	05:03 22:10 49	05:36 (1) 06:25 (2)	05:35 21:45 20	06:07 (2) 06:27 (2)	06:28 20:43 3	06:56 (3) 06:59 (3)	07:23 19:28	07:19 17:17	08:18 16:23	08:52 16:16
26	08:31 17:02	07:31 18:04	06:24 18:57	06:11 20:55 19 06:36 (3) 06:55 (3)	05:17 21:46 32 05:47 (2) 06:19 (2)	05:04 22:10 49	05:37 (1) 06:26 (2)	05:37 21:43 18	06:08 (2) 06:26 (2)	06:30 20:41		07:25 19:25	07:21 17:15	08:20 16:22	08:52 16:17
27	08:30 17:04	07:29 18:06	06:22 18:59	06:09 20:56 20 06:34 06:54 (3)	05:16 21:47 34 05:46 (2) 06:20 (2)	05:04 22:10 49	05:37 (1) 06:26 (2)	05:38 21:42 16	06:09 (2) 06:25 (2)	06:32 20:38		07:27 19:23	07:23 17:12	08:21 16:21	08:52 16:18
28	08:28 17:06	07:27 18:08	06:19 19:01	06:06 20:58 18 06:35 06:53 (3)	05:15 21:49 35 05:45 (2) 06:20 (2)	05:05 22:09 48	05:38 (1) 06:26 (2)	05:40 21:40 13	06:11 (2) 06:24 (2)	06:34 20:36		07:29 19:20	07:25 17:10	08:23 16:20	08:52 16:18
29	08:27 17:08		07:17 20:03	06:04 21:00 15 06:36 06:51 (3)	05:14 21:50 36 05:44 (2) 06:20 (2)	05:05 22:09 48	05:38 (1) 06:26 (2)	05:42 21:38 11	06:12 (2) 06:23 (2)	06:36 20:34		07:31 19:18	07:27 17:08	08:24 16:19	08:52 16:19
30	08:25 17:10		07:14 20:05	06:02 21:02 11 06:38 06:49 (3)	05:13 21:51 38 05:43 (2) 06:21 (2)	05:06 22:09 48	05:39 (1) 06:27 (2)	05:43 21:37 8	06:14 (2) 06:22 (2)	06:37 20:31		07:32 19:15	07:29 17:06	08:26 16:19	08:52 16:20
31	08:24 17:12		07:12 20:06		05:12 21:53 39 05:42 (2) 06:21 (2)		05:45 21:35 5	06:16 (2) 06:21 (2)	06:39 20:29				07:31 17:04		08:52 16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case				169	479	1407	982	177				
Sun reduction				0.31	0.31	0.26	0.22	0.26				
Oper. time red.				1.00	1.00	1.00	1.00	1.00				
Wind dir. red.				0.65	0.64	0.64	0.64	0.65				
Total reduction				0.20	0.20	0.17	0.14	0.17				
Total, real				34	96	233	140	29				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** AU - H049

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February	March	April	May	June	July	August	September	October	November			December		
1	08:52		15:21 (8)	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:40	07:34	07:32			08:27		15:07 (8)
	16:22	23	15:44 (8)	17:13	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02			16:17	33	15:40 (8)
2	08:52		15:22 (8)	08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34			08:29		15:08 (8)
	16:23	23	15:45 (8)	17:15	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00			16:16	32	15:40 (8)
3	08:52		15:22 (8)	08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:38	07:36			08:30		15:08 (8)
	16:24	25	15:47 (8)	17:17	18:13	20:12	21:07	21:56	22:08	21:29	20:21	19:07	16:58			16:16	31	15:39 (8)
4	08:52		15:22 (8)	08:16	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38			08:32		15:08 (8)
	16:26	26	15:48 (8)	17:19	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56			16:15	31	15:39 (8)
5	08:51		15:23 (8)	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40			08:33		15:08 (8)
	16:27	27	15:50 (8)	17:21	18:17	20:15	21:11	21:58	22:06	21:25	20:17	19:03	16:54			16:14	29	15:37 (8)
6	08:51		15:23 (8)	08:13	07:12	06:57	05:49	05:06	05:10	05:55	06:49	07:43	07:42			08:35		15:09 (8)
	16:28	28	15:51 (8)	17:23	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52			16:14	28	15:37 (8)
7	08:50		15:23 (8)	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44			08:36		15:09 (8)
	16:30	29	15:52 (8)	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50			16:13	27	15:36 (8)
8	08:50		15:24 (8)	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46			08:37		15:10 (8)
	16:31	30	15:54 (8)	17:28	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48			16:13	26	15:36 (8)
9	08:49		15:25 (8)	08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48			08:39		15:11 (8)
	16:32	31	15:56 (8)	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46			16:13	24	15:35 (8)
10	08:49		15:25 (8)	08:05	07:03	06:47	05:42	05:03	05:14	06:02	06:56	07:50	07:50			08:40		15:11 (8)
	16:34	32	15:57 (8)	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45			16:12	24	15:35 (8)
11	08:48		15:25 (8)	08:03	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52			08:41		15:12 (8)
	16:35	33	15:58 (8)	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43			16:12	23	15:35 (8)
12	08:47		15:26 (8)	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54			08:42		15:12 (8)
	16:37	32	15:58 (8)	17:36	18:31	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41			16:12	23	15:35 (8)
13	08:46		15:26 (8)	07:59	06:56	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:56			08:43		15:13 (8)
	16:39	33	15:59 (8)	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40			16:12	21	15:34 (8)
14	08:45		15:27 (8)	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57			08:44		15:13 (8)
	16:40	32	15:59 (8)	17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38			16:12	21	15:34 (8)
15	08:45		15:27 (8)	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59		15:15 (8)	08:45		15:14 (8)
	16:42	32	15:59 (8)	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36	9	15:24 (8)	16:12	20	15:34 (8)
16	08:44		15:28 (8)	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01		15:12 (8)	08:46		15:15 (8)
	16:44	32	16:00 (8)	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	15	15:27 (8)	16:12	19	15:34 (8)
17	08:43		15:28 (8)	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03		15:10 (8)	08:47		15:15 (8)
	16:45	31	15:59 (8)	17:46	18:40	20:38	21:32	22:07	21:56	21:01	19:47	18:34	16:33	19	15:29 (8)	16:12	20	15:35 (8)
18	08:41		15:29 (8)	07:49	06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05	08:05		15:09 (8)	08:48		15:15 (8)
	16:47	30	15:59 (8)	17:48	18:42	20:39	21:33	22:08	21:54	20:59	19:44	18:32	16:32	21	15:30 (8)	16:12	19	15:34 (8)
19	08:40		15:30 (8)	07:47	06:41	06:26	05:26	05:02	05:26	06:17	07:12	08:07	08:07		15:09 (8)	08:48		15:16 (8)
	16:49	29	15:59 (8)	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	24	15:33 (8)	16:13	18	15:34 (8)
20	08:39		15:30 (8)	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09		15:08 (8)	08:49		15:17 (8)
	16:51	28	15:58 (8)	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29	26	15:34 (8)	16:13	18	15:35 (8)
21	08:38		15:32 (8)	07:42	06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11	08:10		15:08 (8)	08:50		15:17 (8)
	16:52	27	15:59 (8)	17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	27	15:35 (8)	16:13	18	15:35 (8)
22	08:37		15:33 (8)	07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12		15:07 (8)	08:50		15:18 (8)
	16:54	26	15:59 (8)	17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	28	15:35 (8)	16:14	18	15:36 (8)
23	08:35		15:34 (8)	07:38	06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15	08:14		15:06 (8)	08:51		15:18 (8)
	16:56	24	15:58 (8)	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	29	15:35 (8)	16:14	18	15:36 (8)
24	08:34		15:36 (8)	07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16		15:06 (8)	08:51		15:18 (8)
	16:58	21	15:57 (8)	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24	30	15:36 (8)	16:15	18	15:36 (8)
25	08:33		15:37 (8)	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17		15:06 (8)	08:51		15:19 (8)
	17:00	19	15:56 (8)	18:02	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	31	15:37 (8)	16:16	19	15:38 (8)
26	08:31		15:39 (8)	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19		15:06 (8)	08:52		15:19 (8)
	17:02	15	15:54 (8)	18:03	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22	32	15:38 (8)	16:16	19	15:38 (8)
27	08:30		15:43 (8)	07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21		15:07 (8)	08:52		15:19 (8)
	17:04	9	15:52 (8)	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	31	15:38 (8)	16:17	20	15:39 (8)
28	08:28			07:26	06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24	08:23		15:07 (8)	08:52		15:20 (8)
	17:06			18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	32	15:39 (8)	16:18	20	15:40 (8)
29	08:27				07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24		15:07 (8)	08:52		15:20 (8)
	17:08				20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	33	15:40 (8)	16:19	21	15:41 (8)
30	08:25				07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26		15:07 (8)	08:52		15:21 (8)
	17:10				20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	32	15:39 (8)	16:20	21	15:42 (8)
31	08:23				07:11		05:11		05:44	06:39		07:30				08:52		15:21 (8)
	17:12				20:06		21:52		21:35	20:29		17:04				16:21	22	15:43 (8)
Potential sun hours	250			273	367	420	494	510	513	460	382	328	259			233		
Total, worst case		727												419			701	
Sun reduction		0.16												0.20			0.12	
Oper. time red.		1.00												1.00			1.00	
Wind dir. red.		0.65												0.65			0.65	
Total reduction		0.11												0.13			0.08	
Total, real		77												54			55	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** AV - H050

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April			May			June		
1	08:52	08:22	07:24	07:09			06:00		06:25 (11)	05:10		06:16 (11)
	16:22	17:14	18:09	20:08			21:03	11	06:36 (11)	21:54	23	06:39 (11)
2	08:52	08:20	07:22	07:07			05:58		06:24 (10)	05:09		06:17 (11)
	16:23	17:16	18:11	20:10			21:05	14	06:38 (11)	21:55	21	06:38 (11)
3	08:52	08:18	07:19	07:04			05:56		06:22 (10)	05:08		06:17 (11)
	16:25	17:18	18:13	20:12			21:07	18	06:40 (11)	21:56	20	06:37 (11)
4	08:51	08:17	07:17	07:02			05:54		06:20 (10)	05:08		06:19 (11)
	16:26	17:20	18:15	20:14			21:09	21	06:41 (11)	21:57	18	06:37 (11)
5	08:51	08:15	07:15	06:59			05:52		06:18 (10)	05:07		06:20 (11)
	16:27	17:22	18:17	20:15			21:11	23	06:41 (11)	21:58	16	06:36 (11)
6	08:51	08:13	07:12	06:57			05:50		06:16 (10)	05:06		06:20 (11)
	16:28	17:24	18:19	20:17			21:13	26	06:42 (11)	21:59	15	06:35 (11)
7	08:50	08:11	07:10	06:54			05:48		06:14 (10)	05:05		06:22 (11)
	16:30	17:26	18:21	20:19			21:14	28	06:42 (11)	22:00	12	06:34 (11)
8	08:50	08:09	07:08	06:52			05:46		06:12 (10)	05:05		06:23 (11)
	16:31	17:28	18:23	20:21			21:16	30	06:42 (11)	22:01	10	06:33 (11)
9	08:49	08:07	07:05	06:50			05:44		06:11 (10)	05:04		06:25 (11)
	16:33	17:30	18:25	20:23			21:18	33	06:44 (11)	22:02	6	06:31 (11)
10	08:49	08:05	07:03	06:47			05:42		06:09 (10)	05:04		
	16:34	17:32	18:27	20:25			21:20	35	06:44 (11)	22:03		
11	08:48	08:03	07:00	06:45			05:40		06:07 (10)	05:03		
	16:36	17:34	18:29	20:27			21:21	37	06:44 (11)	22:04		
12	08:47	08:01	06:58	06:42			05:38		06:06 (10)	05:03		
	16:37	17:36	18:31	20:28			21:23	38	06:44 (11)	22:04		
13	08:46	07:59	06:56	06:40			05:37		06:06 (10)	05:02		
	16:39	17:38	18:33	20:30			21:25	38	06:44 (11)	22:05		
14	08:45	07:57	06:53	06:38			05:35		06:07 (10)	05:02		
	16:40	17:40	18:34	20:32			21:27	38	06:45 (11)	22:06		
15	08:45	07:55	06:51	06:35			05:33		06:07 (10)	05:02		
	16:42	17:42	18:36	20:34			21:28	37	06:44 (11)	22:06		
16	08:44	07:53	06:48	06:33			05:31		06:07 (10)	05:02		
	16:44	17:44	18:38	20:36			21:30	37	06:44 (11)	22:07		
17	08:43	07:51	06:46	06:31			05:30		06:08 (11)	05:02		
	16:45	17:46	18:40	20:38			21:32	36	06:44 (11)	22:07		
18	08:41	07:49	06:43	06:28			05:28		06:09 (11)	05:02		
	16:47	17:48	18:42	20:40			21:33	35	06:44 (11)	22:08		
19	08:40	07:47	06:41	06:26			05:27		06:08 (11)	05:02		
	16:49	17:50	18:44	20:41			21:35	36	06:44 (11)	22:08		
20	08:39	07:44	06:38	06:24			05:25		06:09 (11)	05:02		
	16:51	17:52	18:46	20:43			21:36	35	06:44 (11)	22:09		
21	08:38	07:42	06:36	06:21			05:24		06:10 (11)	05:02		
	16:53	17:54	18:48	20:45			21:38	34	06:44 (11)	22:09		
22	08:37	07:40	06:34	06:19			05:22		06:09 (11)	05:02		
	16:54	17:56	18:49	20:47			21:40	34	06:43 (11)	22:09		
23	08:35	07:38	06:31	06:17			05:21		06:10 (11)	05:02		
	16:56	17:58	18:51	20:49			21:41	33	06:43 (11)	22:09		
24	08:34	07:36	06:29	06:15			05:19		06:11 (11)	05:03		
	16:58	18:00	18:53	20:51			21:43	32	06:43 (11)	22:09		
25	08:33	07:33	06:26	06:13			05:18		06:11 (11)	05:03		
	17:00	18:02	18:55	20:52			21:44	31	06:42 (11)	22:09		
26	08:31	07:31	06:24	06:10			05:17		06:12 (11)	05:03		
	17:02	18:04	18:57	20:54			21:45	30	06:42 (11)	22:09		
27	08:30	07:29	06:21	06:08			05:16		06:13 (11)	05:04		
	17:04	18:06	18:59	20:56			21:47	29	06:42 (11)	22:09		
28	08:28	07:26	06:19	06:06			05:14		06:13 (11)	05:04		
	17:06	18:08	19:01	20:58			21:48	28	06:41 (11)	22:09		
29	08:27		07:16	06:04			05:13		06:14 (11)	05:05		
	17:08		20:02	21:00			21:50	27	06:41 (11)	22:09		
30	08:25		07:14	06:02		06:27 (11)	05:12		06:15 (11)	05:06		
	17:10		20:04	21:02	6	06:33 (11)	21:51	25	06:40 (11)	22:09		
31	08:23		07:11				05:11		06:15 (11)			
	17:12		20:06				21:52	24	06:39 (11)			
Potential sun hours	250	273	367	420			494			510		
Total, worst case					6			933			141	
Sun reduction					0.31			0.31			0.26	
Oper. time red.					1.00			1.00			1.00	
Wind dir. red.					0.65			0.65			0.65	
Total reduction					0.20			0.20			0.17	
Total, real					1			190			24	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** AV - H050

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July			August			September	October	November	December
1	05:06			05:46		06:17 (10)	06:41	07:34	07:32	08:27
	22:08			21:33	38	06:55 (11)	20:26	19:12	17:02	16:17
2	05:07			05:48		06:18 (10)	06:42	07:36	07:34	08:29
	22:08			21:31	36	06:54 (11)	20:24	19:10	17:00	16:17
3	05:08		06:32 (11)	05:50		06:20 (10)	06:44	07:38	07:36	08:30
	22:07	4	06:36 (11)	21:29	34	06:54 (11)	20:21	19:08	16:58	16:16
4	05:09		06:30 (11)	05:51		06:21 (10)	06:46	07:39	07:38	08:32
	22:07	8	06:38 (11)	21:27	32	06:53 (11)	20:19	19:05	16:56	16:15
5	05:09		06:28 (11)	05:53		06:23 (10)	06:48	07:41	07:40	08:33
	22:06	11	06:39 (11)	21:25	30	06:53 (11)	20:17	19:03	16:54	16:15
6	05:10		06:27 (11)	05:55		06:25 (10)	06:49	07:43	07:42	08:35
	22:06	13	06:40 (11)	21:24	27	06:52 (11)	20:14	19:00	16:52	16:14
7	05:11		06:26 (11)	05:56		06:26 (10)	06:51	07:45	07:44	08:36
	22:05	16	06:42 (11)	21:22	25	06:51 (11)	20:12	18:58	16:50	16:14
8	05:12		06:26 (11)	05:58		06:28 (10)	06:53	07:47	07:46	08:37
	22:04	17	06:43 (11)	21:20	22	06:50 (11)	20:09	18:55	16:48	16:13
9	05:13		06:25 (11)	06:00		06:30 (10)	06:55	07:49	07:48	08:38
	22:04	19	06:44 (11)	21:18	20	06:50 (11)	20:07	18:53	16:47	16:13
10	05:15		06:24 (11)	06:02		06:31 (10)	06:57	07:50	07:50	08:40
	22:03	21	06:45 (11)	21:16	17	06:48 (11)	20:04	18:51	16:45	16:13
11	05:16		06:24 (11)	06:03		06:33 (10)	06:58	07:52	07:52	08:41
	22:02	22	06:46 (11)	21:14	13	06:46 (11)	20:02	18:48	16:43	16:12
12	05:17		06:23 (11)	06:05		06:34 (11)	07:00	07:54	07:54	08:42
	22:01	24	06:47 (11)	21:11	10	06:44 (11)	19:59	18:46	16:41	16:12
13	05:18		06:24 (11)	06:07		06:36 (11)	07:02	07:56	07:56	08:43
	22:00	24	06:48 (11)	21:09	5	06:41 (11)	19:57	18:44	16:40	16:12
14	05:19		06:23 (11)	06:09			07:04	07:58	07:57	08:44
	21:59	26	06:49 (11)	21:07			19:54	18:41	16:38	16:12
15	05:21		06:22 (11)	06:10			07:05	08:00	07:59	08:45
	21:58	27	06:49 (11)	21:05			19:52	18:39	16:37	16:12
16	05:22		06:22 (11)	06:12			07:07	08:02	08:01	08:46
	21:57	28	06:50 (11)	21:03			19:50	18:37	16:35	16:12
17	05:23		06:21 (11)	06:14			07:09	08:03	08:03	08:47
	21:56	29	06:50 (11)	21:01			19:47	18:34	16:34	16:12
18	05:25		06:21 (11)	06:16			07:11	08:05	08:05	08:47
	21:54	31	06:52 (11)	20:59			19:45	18:32	16:32	16:12
19	05:26		06:21 (11)	06:18			07:12	08:07	08:07	08:48
	21:53	31	06:52 (11)	20:56			19:42	18:30	16:31	16:13
20	05:27		06:20 (11)	06:19			07:14	08:09	08:09	08:49
	21:52	32	06:52 (11)	20:54			19:40	18:27	16:29	16:13
21	05:29		06:20 (11)	06:21			07:16	08:11	08:10	08:49
	21:50	33	06:53 (11)	20:52			19:37	18:25	16:28	16:14
22	05:30		06:20 (11)	06:23			07:18	08:13	08:12	08:50
	21:49	33	06:53 (11)	20:50			19:35	18:23	16:27	16:14
23	05:32		06:19 (11)	06:25			07:20	08:15	08:14	08:51
	21:48	34	06:53 (11)	20:47			19:32	18:21	16:25	16:15
24	05:33		06:19 (11)	06:26			07:21	08:17	08:16	08:51
	21:46	35	06:54 (11)	20:45			19:30	18:19	16:24	16:15
25	05:35		06:19 (11)	06:28			07:23	07:19	08:17	08:51
	21:45	35	06:54 (11)	20:43			19:27	17:16	16:23	16:16
26	05:36		06:19 (11)	06:30			07:25	07:21	08:19	08:52
	21:43	36	06:55 (11)	20:40			19:25	17:14	16:22	16:16
27	05:38		06:19 (10)	06:32			07:27	07:23	08:21	08:52
	21:41	35	06:54 (11)	20:38			19:22	17:12	16:21	16:17
28	05:40		06:18 (10)	06:33			07:29	07:25	08:23	08:52
	21:40	37	06:55 (11)	20:36			19:20	17:10	16:20	16:18
29	05:41		06:17 (10)	06:35			07:30	07:26	08:24	08:52
	21:38	38	06:55 (11)	20:33			19:17	17:08	16:19	16:19
30	05:43		06:17 (10)	06:37			07:32	07:28	08:26	08:52
	21:36	38	06:55 (11)	20:31			19:15	17:06	16:18	16:20
31	05:45		06:16 (10)	06:39				07:30		08:52
	21:35	38	06:54 (11)	20:29				17:04		16:21
Potential sun hours	512			460			382	328	259	233
Total, worst case		775			309					
Sun reduction		0.22			0.26					
Oper. time red.		1.00			1.00					
Wind dir. red.		0.65			0.65					
Total reduction		0.15			0.17					
Total, real		113			51					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** AW - H052

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April		May		June	July	August		September		October	November	December
1	08:52	08:22	07:24	07:09		06:00	19:42 (7)	05:10	05:06	05:46		06:41	19:38 (6)	07:34	07:32	08:27
	16:22	17:14	18:10	20:08		21:04	24 20:06 (7)	21:54	22:08	21:33		20:26	20 19:58 (7)	19:12	17:02	16:18
2	08:52	08:20	07:22	07:07		05:58	19:44 (7)	05:09	05:07	05:48		06:42	19:39 (6)	07:36	07:34	08:29
	16:24	17:16	18:11	20:10		21:05	20 20:04 (7)	21:55	22:08	21:31		20:24	17 19:56 (7)	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04		05:56	19:45 (7)	05:08	05:08	05:50		06:44	19:38 (6)	07:38	07:36	08:30
	16:25	17:18	18:13	20:12		21:07	17 20:02 (7)	21:56	22:07	21:29		20:21	15 19:53 (7)	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02		05:54	19:48 (7)	05:08	05:09	05:51		06:46	19:39 (6)	07:39	07:38	08:32
	16:26	17:20	18:15	20:14		21:09	11 19:59 (7)	21:57	22:07	21:27		20:19	12 19:51 (6)	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	19:47 (6)	05:52		05:07	05:10	05:53		06:48	19:40 (6)	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	1 19:48 (6)	21:11		21:58	22:06	21:26		20:17	9 19:49 (6)	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	19:45 (6)	05:50		05:06	05:11	05:55		06:50	19:41 (6)	07:43	07:42	08:35
	16:28	17:24	18:19	20:17	5 19:50 (6)	21:13		21:59	22:06	21:24		20:14	6 19:47 (6)	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	19:43 (6)	05:48		05:05	05:11	05:57		06:51	19:42 (6)	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	9 19:52 (6)	21:14		22:00	22:05	21:22		20:12	1 19:43 (6)	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	19:42 (6)	05:46		05:05	05:12	05:58		06:53		07:47	07:46	08:37
	16:31	17:28	18:23	20:21	12 19:54 (6)	21:16		22:01	22:04	21:20		20:09		18:55	16:49	16:13
9	08:49	08:07	07:05	06:50	19:41 (6)	05:44		05:04	05:14	06:00	19:57 (7)	06:55		07:49	07:48	08:39
	16:33	17:30	18:25	20:23	15 19:56 (7)	21:18		22:02	22:04	21:18	12 20:09 (7)	20:07		18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	19:40 (6)	05:42		05:04	05:15	06:02	19:53 (7)	06:57		07:50	07:50	08:40
	16:34	17:32	18:27	20:25	17 19:57 (7)	21:20		22:03	22:03	21:16	18 20:11 (7)	20:04		18:51	16:45	16:13
11	08:48	08:03	07:00	06:45	19:39 (6)	05:40		05:03	05:16	06:04	19:52 (7)	06:58		07:52	07:52	08:41
	16:36	17:34	18:29	20:27	20 19:59 (7)	21:21		22:04	22:02	21:14	21 20:13 (7)	20:02		18:48	16:43	16:12
12	08:47	08:01	06:58	06:43	19:39 (6)	05:38		05:03	05:17	06:05	19:50 (7)	07:00		07:54	07:54	08:42
	16:37	17:36	18:31	20:28	22 20:01 (7)	21:23		22:04	22:01	21:12	25 20:15 (7)	19:59		18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	19:38 (6)	05:37		05:03	05:18	06:07	19:48 (7)	07:02		07:56	07:56	08:43
	16:39	17:38	18:33	20:30	24 20:02 (7)	21:25		22:05	22:00	21:09	27 20:15 (7)	19:57		18:44	16:40	16:12
14	08:45	07:57	06:53	06:38	19:39 (6)	05:35		05:02	05:19	06:09	19:47 (7)	07:04		07:58	07:57	08:44
	16:40	17:40	18:34	20:32	25 20:04 (7)	21:27		22:06	21:59	21:07	29 20:16 (7)	19:55		18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	19:39 (6)	05:33		05:02	05:21	06:11	19:45 (7)	07:05		08:00	07:59	08:45
	16:42	17:42	18:36	20:34	27 20:06 (7)	21:28		22:06	21:58	21:05	31 20:16 (7)	19:52		18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	19:38 (6)	05:32		05:02	05:22	06:12	19:45 (7)	07:07		08:02	08:01	08:46
	16:44	17:44	18:38	20:36	29 20:07 (7)	21:30		22:07	21:57	21:03	32 20:17 (7)	19:50		18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	19:38 (7)	05:30		05:02	05:23	06:14	19:44 (7)	07:09		08:04	08:03	08:47
	16:46	17:46	18:40	20:38	31 20:09 (7)	21:32		22:07	21:56	21:01	34 20:18 (7)	19:47		18:34	16:34	16:12
18	08:42	07:49	06:43	06:28	19:38 (7)	05:28		05:02	05:25	06:16	19:43 (7)	07:11		08:05	08:05	08:48
	16:47	17:48	18:42	20:40	33 20:11 (7)	21:33		22:08	21:54	20:59	35 20:18 (7)	19:45		18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	19:38 (7)	05:27		05:02	05:26	06:18	19:43 (7)	07:13		08:07	08:07	08:48
	16:49	17:50	18:44	20:41	35 20:13 (7)	21:35		22:08	21:53	20:56	35 20:18 (7)	19:42		18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	19:37 (7)	05:25		05:02	05:28	06:19	19:42 (7)	07:14		08:09	08:09	08:49
	16:51	17:52	18:46	20:43	36 20:13 (7)	21:36		22:09	21:52	20:54	37 20:19 (7)	19:40		18:27	16:29	16:13
21	08:38	07:42	06:36	06:22	19:37 (7)	05:24		05:02	05:29	06:21	19:41 (7)	07:16		08:11	08:10	08:50
	16:53	17:54	18:48	20:45	36 20:13 (7)	21:38		22:09	21:50	20:52	37 20:18 (7)	19:37		18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	19:37 (7)	05:22		05:02	05:30	06:23	19:41 (7)	07:18		08:13	08:12	08:50
	16:54	17:56	18:50	20:47	36 20:13 (7)	21:40		22:09	21:49	20:50	37 20:18 (7)	19:35		18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	19:37 (7)	05:21		05:02	05:32	06:25	19:41 (7)	07:20		08:15	08:14	08:51
	16:56	17:58	18:51	20:49	36 20:13 (7)	21:41		22:09	21:48	20:47	37 20:18 (7)	19:32		18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	19:37 (7)	05:20		05:03	05:33	06:26	19:41 (7)	07:21		08:17	08:16	08:51
	16:58	18:00	18:53	20:51	36 20:13 (7)	21:43		22:09	21:46	20:45	36 20:17 (7)	19:30		18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	19:37 (7)	05:18		05:03	05:35	06:28	19:41 (7)	07:23		07:19	08:18	08:51
	17:00	18:02	18:55	20:52	35 20:12 (7)	21:44		22:09	21:45	20:43	33 20:14 (7)	19:27		17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	19:38 (7)	05:17		05:04	05:37	06:30	19:41 (7)	07:25		07:21	08:19	08:52
	17:02	18:04	18:57	20:54	33 20:11 (7)	21:46		22:09	21:43	20:40	31 20:12 (7)	19:25		17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	19:38 (7)	05:16		05:04	05:38	06:32	19:41 (6)	07:27		07:23	08:21	08:52
	17:04	18:06	18:59	20:56	33 20:11 (7)	21:47		22:09	21:41	20:38	29 20:10 (7)	19:22		17:12	16:21	16:17
28	08:28	07:27	06:19	06:06	19:39 (7)	05:15		05:05	05:40	06:34	19:40 (6)	07:29		07:25	08:23	08:52
	17:06	18:08	19:01	20:58	31 20:10 (7)	21:48		22:09	21:40	20:36	27 20:07 (7)	19:20		17:10	16:20	16:18
29	08:27		07:16	06:04	19:40 (7)	05:13		05:05	05:41	06:35	19:39 (6)	07:30		07:27	08:24	08:52
	17:08		20:03	21:00	29 20:09 (7)	21:50		22:09	21:38	20:33	26 20:05 (7)	19:17		17:08	16:19	16:19
30	08:25		07:14	06:02	19:41 (7)	05:12		05:06	05:43	06:37	19:39 (6)	07:32		07:28	08:26	08:52
	17:10		20:04	21:02	26 20:07 (7)	21:51		22:09	21:36	20:31	24 20:03 (7)	19:15		17:06	16:18	16:20
31	08:23		07:12			05:11			05:45	06:39	19:38 (6)			07:30		08:52
	17:12		20:06			21:52			21:35	20:29	22 20:00 (7)			17:04		16:21
Potential sun hours	250	273	367	420		494		510	512	460		382		328	259	233
Total, worst case				672		72				675		80				
Sun reduction				0.31		0.31				0.26		0.25				
Oper. time red.				1.00		1.00				1.00		1.00				
Wind dir. red.				0.63		0.63				0.63		0.63				
Total reduction				0.19		0.20				0.16		0.16				
Total, real				130		14				109		13				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** AX - H053

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February			March	April	May	June
1	08:52		15:01 (11)	08:22		16:20 (9)	07:24	07:09	06:00	05:10
	16:22	22	15:23 (11)	17:13	22	16:42 (9)	18:09	20:08	21:03	21:53
2	08:52		15:02 (11)	08:20		16:20 (9)	07:22	07:06	05:57	05:09
	16:23	21	15:23 (11)	17:15	24	16:44 (9)	18:11	20:10	21:05	21:55
3	08:52		15:04 (11)	08:18		16:20 (9)	07:19	07:04	05:55	05:08
	16:24	20	15:24 (11)	17:17	26	16:46 (9)	18:13	20:12	21:07	21:56
4	08:51		15:04 (11)	08:16		16:20 (9)	07:17	07:02	05:53	05:07
	16:26	19	15:23 (11)	17:19	28	16:48 (9)	18:15	20:13	21:09	21:57
5	08:51		15:05 (11)	08:15		16:21 (9)	07:15	06:59	05:51	05:07
	16:27	18	15:23 (11)	17:21	29	16:50 (9)	18:17	20:15	21:11	21:58
6	08:51		15:06 (11)	08:13		16:21 (9)	07:12	06:57	05:49	05:06
	16:28	17	15:23 (11)	17:23	31	16:52 (9)	18:19	20:17	21:12	21:59
7	08:50		15:07 (11)	08:11		16:21 (9)	07:10	06:54	05:47	05:05
	16:30	15	15:22 (11)	17:25	31	16:52 (9)	18:21	20:19	21:14	22:00
8	08:50		15:09 (11)	08:09		16:22 (9)	07:08	06:52	05:46	05:05
	16:31	13	15:22 (11)	17:27	30	16:52 (9)	18:23	20:21	21:16	22:01
9	08:49		15:11 (11)	08:07		16:23 (9)	07:05	06:49	05:44	05:04
	16:32	10	15:21 (11)	17:30	28	16:51 (9)	18:25	20:23	21:18	22:02
10	08:49		15:13 (11)	08:05		16:24 (9)	07:03	06:47	05:42	05:03
	16:34	7	15:20 (11)	17:32	27	16:51 (9)	18:27	20:25	21:20	22:03
11	08:48			08:03		16:25 (9)	07:00	06:45	05:40	05:03
	16:35			17:34	25	16:50 (9)	18:29	20:26	21:21	22:04
12	08:47			08:01		16:26 (9)	06:58	06:42	05:38	05:03
	16:37			17:36	23	16:49 (9)	18:31	20:28	21:23	22:04
13	08:46			07:59		16:27 (9)	06:55	06:40	05:36	05:02
	16:39			17:38	20	16:47 (9)	18:32	20:30	21:25	22:05
14	08:45			07:57		16:29 (9)	06:53	06:38	05:35	05:02
	16:40			17:40	17	17:10 (8)	18:34	20:32	21:26	22:06
15	08:44			07:55		16:33 (9)	06:51	06:35	05:33	05:02
	16:42			17:42	12	17:12 (8)	18:36	20:34	21:28	22:06
16	08:44			07:53		17:08 (8)	06:48	06:33	05:31	05:02
	16:44			17:44	7	17:15 (8)	18:38	20:36	21:30	22:07
17	08:42			07:51		17:07 (8)	06:46	06:31	05:30	05:02
	16:45			17:46	10	17:17 (8)	18:40	20:38	21:32	22:07
18	08:41			07:49		17:06 (8)	06:43	06:28	05:28	05:01
	16:47			17:48	12	17:18 (8)	18:42	20:39	21:33	22:08
19	08:40			07:47		17:07 (8)	06:41	06:26	05:26	05:01
	16:49			17:50	14	17:21 (8)	18:44	20:41	21:35	22:08
20	08:39			07:44		17:07 (8)	06:38	06:24	05:25	05:02
	16:51			17:52	16	17:23 (8)	18:46	20:43	21:36	22:09
21	08:38			07:42		17:07 (8)	06:36	06:21	05:23	05:02
	16:52			17:54	19	17:26 (8)	18:47	20:45	21:38	22:09
22	08:37			07:40		17:07 (8)	06:33	06:19	05:22	05:02
	16:54			17:56	20	17:27 (8)	18:49	20:47	21:39	22:09
23	08:35			07:38		17:08 (8)	06:31	06:17	05:21	05:02
	16:56			17:58	20	17:28 (8)	18:51	20:49	21:41	22:09
24	08:34		16:23 (9)	07:35		17:10 (8)	06:29	06:15	05:19	05:02
	16:58	1	16:24 (9)	18:00	17	17:27 (8)	18:53	20:51	21:43	22:09
25	08:33		16:23 (9)	07:33		17:10 (8)	06:26	06:12	05:18	05:03
	17:00	3	16:26 (9)	18:01	15	17:25 (8)	18:55	20:52	21:44	22:09
26	08:31		16:22 (9)	07:31		17:13 (8)	06:24	06:10	05:17	05:03
	17:02	6	16:28 (9)	18:03	10	17:23 (8)	18:57	20:54	21:45	22:09
27	08:30		16:22 (9)	07:29			06:21	06:08	05:15	05:04
	17:04	9	16:31 (9)	18:05			18:59	20:56	21:47	22:09
28	08:28		16:21 (9)	07:26			06:19	06:06	05:14	05:04
	17:06	12	16:33 (9)	18:07			19:00	20:58	21:48	22:09
29	08:27		16:21 (9)				07:16	06:04	05:13	05:05
	17:08	14	16:35 (9)				20:02	21:00	21:50	22:09
30	08:25		16:20 (9)				07:14	06:02	05:12	05:05
	17:10	17	16:37 (9)				20:04	21:02	21:51	22:09
31	08:23		16:21 (9)				07:11		05:11	
	17:11	19	16:40 (9)				20:06		21:52	
Potential sun hours	250			273			367	420	494	510
Total, worst case		243			533					
Sun reduction		0.16			0.19					
Oper. time red.		1.00			1.00					
Wind dir. red.		0.65			0.64					
Total reduction		0.10			0.13					
Total, real		25			67					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** AX - H053

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August		September		October			November			December		
1	05:06		05:46		06:40		07:34			07:32		15:53 (9)	08:27		
	22:08		21:33		20:26		19:12			17:02	27	16:20 (9)	16:17		
2	05:07		05:48		06:42		07:36			07:34		15:52 (9)	08:29		14:56 (11)
	22:08		21:31		20:24		19:10			17:00	29	16:21 (9)	16:16	7	15:03 (11)
3	05:08		05:49		06:44		07:37			07:36		15:52 (9)	08:30		14:54 (11)
	22:07		21:29		20:21		19:07			16:58	29	16:21 (9)	16:16	10	15:04 (11)
4	05:08		05:51		06:46		07:39			07:38		15:51 (9)	08:32		14:53 (11)
	22:07		21:27		20:19		19:05			16:56	31	16:22 (9)	16:15	13	15:06 (11)
5	05:09		05:53		06:48		07:41			07:40		15:51 (9)	08:33		14:52 (11)
	22:06		21:25		20:16		19:03			16:54	31	16:22 (9)	16:14	15	15:07 (11)
6	05:10		05:55		06:49		07:43			07:42		15:50 (9)	08:35		14:52 (11)
	22:06		21:24		20:14		19:00			16:52	30	16:20 (9)	16:14	17	15:09 (11)
7	05:11		05:56		06:51		07:45			07:44		15:50 (9)	08:36		14:52 (11)
	22:05		21:22		20:12		18:58			16:50	28	16:18 (9)	16:13	18	15:10 (11)
8	05:12		05:58		06:53		07:47			07:46		15:50 (9)	08:37		14:52 (11)
	22:04		21:20		20:09		18:55			16:48	26	16:16 (9)	16:13	19	15:11 (11)
9	05:13		06:00		06:55		07:48			07:48		15:51 (9)	08:38		14:52 (11)
	22:04		21:18		20:07		18:53			16:46	23	16:14 (9)	16:13	20	15:12 (11)
10	05:14		06:01		06:56		07:50			07:50		15:51 (9)	08:40		14:51 (11)
	22:03		21:16		20:04		18:50			16:45	21	16:12 (9)	16:12	21	15:12 (11)
11	05:15		06:03		06:58		07:52			07:52		15:52 (9)	08:41		14:52 (11)
	22:02		21:13		20:02		18:48			16:43	18	16:10 (9)	16:12	22	15:14 (11)
12	05:17		06:05		07:00		07:54			07:54		15:52 (9)	08:42		14:52 (11)
	22:01		21:11		19:59		18:46			16:41	17	16:09 (9)	16:12	22	15:14 (11)
13	05:18		06:07		07:02		07:56			07:55		15:52 (9)	08:43		14:52 (11)
	22:00		21:09		19:57		18:43			16:40	15	16:07 (9)	16:12	23	15:15 (11)
14	05:19		06:08		07:03		07:58			07:57		15:53 (9)	08:44		14:53 (11)
	21:59		21:07		19:54		18:41			16:38	12	16:05 (9)	16:12	22	15:15 (11)
15	05:20		06:10		07:05		08:00		17:49 (8)	07:59		15:54 (9)	08:45		14:53 (11)
	21:58		21:05		19:52		18:39	3	17:52 (8)	16:36	9	16:03 (9)	16:12	23	15:16 (11)
16	05:22		06:12		07:07		08:01		17:44 (8)	08:01		15:55 (9)	08:46		14:53 (11)
	21:57		21:03		19:49		18:36	12	17:56 (8)	16:35	6	16:01 (9)	16:12	24	15:17 (11)
17	05:23		06:14		07:09		08:03		17:42 (8)	08:03		15:56 (9)	08:47		14:53 (11)
	21:56		21:01		19:47		18:34	16	17:58 (8)	16:33	3	15:59 (9)	16:12	24	15:17 (11)
18	05:24		06:16		07:11		08:05		17:40 (8)	08:05		15:57 (9)	08:47		14:54 (11)
	21:54		20:59		19:44		18:32	19	17:59 (8)	16:32	1	15:58 (9)	16:12	23	15:17 (11)
19	05:26		06:17		07:12		08:07		17:39 (8)	08:07			08:48		14:54 (11)
	21:53		20:56		19:42		18:30	21	18:00 (8)	16:31			16:13	24	15:18 (11)
20	05:27		06:19		07:14		08:09		17:38 (8)	08:09			08:49		14:55 (11)
	21:52		20:54		19:39		18:27	20	17:58 (8)	16:29			16:13	24	15:19 (11)
21	05:29		06:21		07:16		08:11		17:38 (8)	08:10			08:49		14:55 (11)
	21:50		20:52		19:37		18:25	17	17:55 (8)	16:28			16:13	24	15:19 (11)
22	05:30		06:23		07:18		08:13		17:37 (8)	08:12			08:50		14:56 (11)
	21:49		20:50		19:35		18:23	16	17:53 (8)	16:27			16:14	24	15:20 (11)
23	05:32		06:24		07:19		08:15		17:37 (8)	08:14			08:50		14:56 (11)
	21:48		20:47		19:32		18:21	14	17:51 (8)	16:25			16:14	24	15:20 (11)
24	05:33		06:26		07:21		08:17		17:37 (8)	08:16			08:51		14:56 (11)
	21:46		20:45		19:30		18:18	11	17:48 (8)	16:24			16:15	24	15:20 (11)
25	05:35		06:28		07:23		07:19		16:37 (8)	08:17			08:51		14:57 (11)
	21:45		20:43		19:27		17:16	9	16:46 (8)	16:23			16:16	24	15:21 (11)
26	05:36		06:30		07:25		07:21		16:37 (8)	08:19			08:52		14:58 (11)
	21:43		20:40		19:25		17:14	6	16:43 (8)	16:22			16:16	23	15:21 (11)
27	05:38		06:32		07:27		07:23		16:01 (9)	08:21			08:52		14:58 (11)
	21:41		20:38		19:22		17:12	14	16:41 (8)	16:21			16:17	24	15:22 (11)
28	05:39		06:33		07:28		07:24		15:58 (9)	08:22			08:52		14:59 (11)
	21:40		20:36		19:20		17:10	18	16:39 (8)	16:20			16:18	23	15:22 (11)
29	05:41		06:35		07:30		07:26		15:56 (9)	08:24			08:52		14:59 (11)
	21:38		20:33		19:17		17:08	20	16:16 (9)	16:19			16:19	23	15:22 (11)
30	05:43		06:37		07:32		07:28		15:54 (9)	08:26			08:52		15:00 (11)
	21:36		20:31		19:15		17:06	24	16:18 (9)	16:18			16:20	23	15:23 (11)
31	05:44		06:39				07:30		15:54 (9)				08:52		15:01 (11)
	21:35		20:29				17:04	26	16:20 (9)				16:21	22	15:23 (11)
Potential sun hours	513		460		382		328			259			233		
Total, worst case								266			356			629	
Sun reduction								0.23			0.20			0.12	
Oper. time red.								1.00			1.00			1.00	
Wind dir. red.								0.65			0.64			0.65	
Total reduction								0.15			0.13			0.08	
Total, real								39			45			49	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** AY - H054

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April			May			June		
1	08:52	08:22	07:24	07:09			06:00		06:28 (11)	05:10		
	16:22	17:14	18:09	20:08			21:03	28	06:56 (11)	21:54		
2	08:52	08:20	07:22	07:07			05:58		06:27 (11)	05:09		
	16:23	17:16	18:11	20:10			21:05	28	06:55 (11)	21:55		
3	08:52	08:18	07:19	07:04			05:56		06:28 (11)	05:08		
	16:25	17:18	18:13	20:12			21:07	27	06:55 (11)	21:56		
4	08:51	08:17	07:17	07:02			05:54		06:28 (11)	05:08		
	16:26	17:20	18:15	20:14			21:09	26	06:54 (11)	21:57		
5	08:51	08:15	07:15	06:59			05:52		06:28 (11)	05:07		
	16:27	17:22	18:17	20:15			21:11	26	06:54 (11)	21:58		
6	08:51	08:13	07:12	06:57			05:50		06:28 (11)	05:06		
	16:28	17:24	18:19	20:17			21:13	25	06:53 (11)	21:59		
7	08:50	08:11	07:10	06:54			05:48		06:29 (11)	05:05		
	16:30	17:26	18:21	20:19			21:14	23	06:52 (11)	22:00		
8	08:50	08:09	07:08	06:52			05:46		06:30 (11)	05:05		05:36 (9)
	16:31	17:28	18:23	20:21			21:16	21	06:51 (11)	22:01	1	05:37 (9)
9	08:49	08:07	07:05	06:50			05:44		06:31 (11)	05:04		05:36 (9)
	16:33	17:30	18:25	20:23			21:18	19	06:50 (11)	22:02	2	05:38 (9)
10	08:49	08:05	07:03	06:47			05:42		06:32 (11)	05:04		05:36 (9)
	16:34	17:32	18:27	20:25			21:20	16	06:48 (11)	22:03	3	05:39 (9)
11	08:48	08:03	07:00	06:45			05:40		06:34 (11)	05:03		05:35 (9)
	16:36	17:34	18:29	20:27			21:21	12	06:46 (11)	22:04	3	05:38 (9)
12	08:47	08:01	06:58	06:42			05:38		06:37 (11)	05:03		05:35 (9)
	16:37	17:36	18:31	20:28			21:23	6	06:43 (11)	22:04	4	05:39 (9)
13	08:46	07:59	06:56	06:40			05:37			05:03		05:35 (9)
	16:39	17:38	18:33	20:30			21:25			22:05	5	05:40 (9)
14	08:45	07:57	06:53	06:38			05:35			05:02		05:35 (9)
	16:40	17:40	18:34	20:32			21:27			22:06	5	05:40 (9)
15	08:45	07:55	06:51	06:35			05:33			05:02		05:35 (9)
	16:42	17:42	18:36	20:34			21:28			22:06	6	05:41 (9)
16	08:44	07:53	06:48	06:33			05:31			05:02		05:34 (9)
	16:44	17:44	18:38	20:36			21:30			22:07	6	05:40 (9)
17	08:43	07:51	06:46	06:31			05:30			05:02		05:34 (9)
	16:45	17:46	18:40	20:38			21:32			22:07	6	05:40 (9)
18	08:41	07:49	06:43	06:28			05:28			05:02		05:34 (9)
	16:47	17:48	18:42	20:40			21:33			22:08	7	05:41 (9)
19	08:40	07:47	06:41	06:26			05:27			05:02		05:35 (9)
	16:49	17:50	18:44	20:41			21:35			22:08	7	05:42 (9)
20	08:39	07:44	06:38	06:24			05:25			05:02		05:35 (9)
	16:51	17:52	18:46	20:43			21:36			22:09	7	05:42 (9)
21	08:38	07:42	06:36	06:22		06:46 (11)	05:24			05:02		05:35 (9)
	16:53	17:54	18:48	20:45	4	06:50 (11)	21:38			22:09	7	05:42 (9)
22	08:37	07:40	06:34	06:19		06:44 (11)	05:22			05:02		05:35 (9)
	16:54	17:56	18:49	20:47	8	06:52 (11)	21:40			22:09	7	05:42 (9)
23	08:35	07:38	06:31	06:17		06:42 (11)	05:21			05:02		05:35 (9)
	16:56	17:58	18:51	20:49	11	06:53 (11)	21:41			22:09	7	05:42 (9)
24	08:34	07:36	06:29	06:15		06:40 (11)	05:19			05:03		05:36 (9)
	16:58	18:00	18:53	20:51	14	06:54 (11)	21:43			22:09	7	05:43 (9)
25	08:33	07:33	06:26	06:13		06:38 (11)	05:18			05:03		05:36 (9)
	17:00	18:02	18:55	20:52	17	06:55 (11)	21:44			22:09	7	05:43 (9)
26	08:31	07:31	06:24	06:10		06:36 (11)	05:17			05:03		05:37 (9)
	17:02	18:04	18:57	20:54	19	06:55 (11)	21:46			22:09	6	05:43 (9)
27	08:30	07:29	06:21	06:08		06:34 (11)	05:16			05:04		05:37 (9)
	17:04	18:06	18:59	20:56	22	06:56 (11)	21:47			22:09	6	05:43 (9)
28	08:28	07:26	06:19	06:06		06:31 (11)	05:14			05:04		05:38 (9)
	17:06	18:08	19:01	20:58	24	06:55 (11)	21:48			22:09	5	05:43 (9)
29	08:27		07:16	06:04		06:29 (11)	05:13			05:05		05:38 (9)
	17:08		20:02	21:00	26	06:55 (11)	21:50			22:09	5	05:43 (9)
30	08:25		07:14	06:02		06:27 (11)	05:12			05:06		05:39 (9)
	17:10		20:04	21:02	28	06:55 (11)	21:51			22:09	4	05:43 (9)
31	08:23		07:11				05:11					
	17:12		20:06				21:52					
Potential sun hours	250	273	367	420			494			510		
Total, worst case					173			257			123	
Sun reduction					0.31			0.31			0.26	
Oper. time red.					1.00			1.00			1.00	
Wind dir. red.					0.65			0.65			0.65	
Total reduction					0.20			0.20			0.17	
Total, real					34			52			21	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** AY - H054

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July			August			September	October	November	December
1	05:06		05:39 (9)	05:46		06:46 (11)	06:41	07:34	07:32	08:27
	22:08	4	05:43 (9)	21:33	9	06:55 (11)	20:26	19:12	17:02	16:17
2	05:07		05:40 (9)	05:48		06:43 (11)	06:42	07:36	07:34	08:29
	22:08	3	05:43 (9)	21:31	14	06:57 (11)	20:24	19:10	17:00	16:17
3	05:08		05:41 (9)	05:50		06:42 (11)	06:44	07:38	07:36	08:30
	22:07	2	05:43 (9)	21:29	17	06:59 (11)	20:21	19:08	16:58	16:16
4	05:09		05:42 (9)	05:51		06:40 (11)	06:46	07:39	07:38	08:32
	22:07	1	05:43 (9)	21:27	20	07:00 (11)	20:19	19:05	16:56	16:15
5	05:09			05:53		06:40 (11)	06:48	07:41	07:40	08:33
	22:06			21:26	21	07:01 (11)	20:17	19:03	16:54	16:15
6	05:10			05:55		06:39 (11)	06:49	07:43	07:42	08:35
	22:06			21:24	23	07:02 (11)	20:14	19:00	16:52	16:14
7	05:11			05:56		06:38 (11)	06:51	07:45	07:44	08:36
	22:05			21:22	24	07:02 (11)	20:12	18:58	16:50	16:14
8	05:12			05:58		06:37 (11)	06:53	07:47	07:46	08:37
	22:04			21:20	26	07:03 (11)	20:09	18:55	16:48	16:13
9	05:13			06:00		06:37 (11)	06:55	07:49	07:48	08:39
	22:04			21:18	27	07:04 (11)	20:07	18:53	16:47	16:13
10	05:15			06:02		06:36 (11)	06:57	07:50	07:50	08:40
	22:03			21:16	28	07:04 (11)	20:04	18:51	16:45	16:13
11	05:16			06:03		06:36 (11)	06:58	07:52	07:52	08:41
	22:02			21:14	28	07:04 (11)	20:02	18:48	16:43	16:12
12	05:17			06:05		06:35 (11)	07:00	07:54	07:54	08:42
	22:01			21:11	28	07:03 (11)	19:59	18:46	16:41	16:12
13	05:18			06:07		06:36 (11)	07:02	07:56	07:56	08:43
	22:00			21:09	28	07:04 (11)	19:57	18:44	16:40	16:12
14	05:19			06:09		06:38 (11)	07:04	07:58	07:57	08:44
	21:59			21:07	26	07:04 (11)	19:54	18:41	16:38	16:12
15	05:21			06:10		06:39 (11)	07:05	08:00	07:59	08:45
	21:58			21:05	24	07:03 (11)	19:52	18:39	16:37	16:12
16	05:22			06:12		06:41 (11)	07:07	08:02	08:01	08:46
	21:57			21:03	21	07:02 (11)	19:50	18:37	16:35	16:12
17	05:23			06:14		06:43 (11)	07:09	08:03	08:03	08:47
	21:56			21:01	19	07:02 (11)	19:47	18:34	16:34	16:12
18	05:25			06:16		06:44 (11)	07:11	08:05	08:05	08:47
	21:54			20:59	16	07:00 (11)	19:45	18:32	16:32	16:13
19	05:26			06:18		06:46 (11)	07:12	08:07	08:07	08:48
	21:53			20:56	14	07:00 (11)	19:42	18:30	16:31	16:13
20	05:27			06:19		06:48 (11)	07:14	08:09	08:09	08:49
	21:52			20:54	11	06:59 (11)	19:40	18:27	16:29	16:13
21	05:29			06:21		06:49 (11)	07:16	08:11	08:10	08:49
	21:50			20:52	7	06:56 (11)	19:37	18:25	16:28	16:14
22	05:30			06:23		06:51 (11)	07:18	08:13	08:12	08:50
	21:49			20:50	3	06:54 (11)	19:35	18:23	16:27	16:14
23	05:32			06:25			07:20	08:15	08:14	08:51
	21:48			20:47			19:32	18:21	16:25	16:15
24	05:33			06:26			07:21	08:17	08:16	08:51
	21:46			20:45			19:30	18:19	16:24	16:15
25	05:35			06:28			07:23	07:19	08:18	08:51
	21:45			20:43			19:27	17:16	16:23	16:16
26	05:36			06:30			07:25	07:21	08:19	08:52
	21:43			20:40			19:25	17:14	16:22	16:16
27	05:38			06:32			07:27	07:23	08:21	08:52
	21:41			20:38			19:22	17:12	16:21	16:17
28	05:40			06:34			07:29	07:25	08:23	08:52
	21:40			20:36			19:20	17:10	16:20	16:18
29	05:41			06:35			07:30	07:26	08:24	08:52
	21:38			20:33			19:17	17:08	16:19	16:19
30	05:43			06:37			07:32	07:28	08:26	08:52
	21:36			20:31			19:15	17:06	16:18	16:20
31	05:45			06:39				07:30		08:52
	21:35			20:29				17:04		16:21
Potential sun hours	512			460			382	328	259	233
Total, worst case		10			434					
Sun reduction		0.22			0.26					
Oper. time red.		1.00			1.00					
Wind dir. red.		0.65			0.65					
Total reduction		0.14			0.17					
Total, real		1			72					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** AZ - H055

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March			April			May			June
1	08:52	08:22	07:24			07:09		07:33 (6)	06:00		06:26 (5)	05:10
	16:23	17:14	18:10			20:08	9	07:42 (6)	21:04	37	07:03 (5)	21:54
2	08:52	08:20	07:22			07:07		07:31 (6)	05:58		06:25 (5)	05:10
	16:24	17:16	18:12			20:10	13	07:44 (6)	21:06	37	07:02 (5)	21:55
3	08:52	08:19	07:20			07:04		07:28 (6)	05:56		06:25 (5)	05:09
	16:25	17:18	18:14			20:12	16	07:44 (6)	21:07	37	07:02 (5)	21:56
4	08:52	08:17	07:17			07:02		07:26 (6)	05:54		06:25 (5)	05:08
	16:26	17:20	18:16			20:14	18	07:44 (6)	21:09	37	07:02 (5)	21:57
5	08:51	08:15	07:15			06:59		07:23 (6)	05:52		06:25 (5)	05:07
	16:27	17:22	18:17			20:16	21	07:44 (6)	21:11	36	07:01 (5)	21:58
6	08:51	08:13	07:13			06:57		07:21 (6)	05:50		06:25 (5)	05:06
	16:29	17:24	18:19			20:18	23	07:44 (6)	21:13	35	07:00 (5)	21:59
7	08:50	08:11	07:10			06:55		07:18 (6)	05:48		06:26 (5)	05:06
	16:30	17:26	18:21			20:19	25	07:43 (6)	21:15	35	07:01 (5)	22:00
8	08:50	08:09	07:08			06:52		07:16 (6)	05:46		06:27 (5)	05:05
	16:31	17:28	18:23			20:21	27	07:43 (6)	21:16	33	07:00 (5)	22:01
9	08:49	08:07	07:05			06:50		07:16 (6)	05:44		06:27 (5)	05:04
	16:33	17:30	18:25			20:23	27	07:43 (6)	21:18	32	06:59 (5)	22:02
10	08:49	08:05	07:03			06:47		07:15 (6)	05:42		06:27 (5)	05:04
	16:34	17:32	18:27			20:25	27	07:42 (6)	21:20	31	06:58 (5)	22:03
11	08:48	08:04	07:01			06:45		07:16 (6)	05:40		06:29 (5)	05:04
	16:36	17:34	18:29			20:27	25	07:41 (6)	21:22	29	06:58 (5)	22:04
12	08:47	08:02	06:58			06:43		07:17 (6)	05:39		06:29 (5)	05:03
	16:37	17:36	18:31			20:29	23	07:40 (6)	21:23	27	06:56 (5)	22:05
13	08:47	07:59	06:56			06:40		07:17 (6)	05:37		06:30 (5)	05:03
	16:39	17:38	18:33			20:30	21	07:38 (6)	21:25	25	06:55 (5)	22:05
14	08:46	07:57	06:53			06:38		07:19 (6)	05:35		06:32 (5)	05:03
	16:41	17:40	18:35			20:32	17	07:36 (6)	21:27	22	06:54 (5)	22:06
15	08:45	07:55	06:51			06:36		07:21 (6)	05:33		06:33 (5)	05:02
	16:42	17:42	18:37			20:34	13	07:34 (6)	21:28	19	06:52 (5)	22:07
16	08:44	07:53	06:49			06:33		07:24 (6)	05:32		06:35 (5)	05:02
	16:44	17:44	18:38			20:36	7	07:31 (6)	21:30	16	06:51 (5)	22:07
17	08:43	07:51	06:46			06:31			05:30		06:37 (5)	05:02
	16:46	17:46	18:40			20:38			21:32	11	06:48 (5)	22:08
18	08:42	07:49	06:44			06:29			05:29			05:02
	16:47	17:48	18:42			20:40			21:33			22:08
19	08:41	07:47	06:41			06:26		06:51 (5)	05:27			05:02
	16:49	17:50	18:44			20:42	4	06:55 (5)	21:35			22:08
20	08:39	07:45	06:39			06:24		06:49 (5)	05:25			05:02
	16:51	17:52	18:46			20:43	8	06:57 (5)	21:37			22:09
21	08:38	07:42	06:36			06:22		06:46 (5)	05:24			05:02
	16:53	17:54	18:48			20:45	12	06:58 (5)	21:38			22:09
22	08:37	07:40	06:34			06:20		06:44 (5)	05:22			05:02
	16:55	17:56	18:50			20:47	15	06:59 (5)	21:40			22:09
23	08:36	07:38	06:31			06:17		06:42 (5)	05:21			05:03
	16:57	17:58	18:52			20:49	18	07:00 (5)	21:41			22:09
24	08:34	07:36	06:29			06:15		06:40 (5)	05:20			05:03
	16:58	18:00	18:53			20:51	21	07:01 (5)	21:43			22:09
25	08:33	07:34	06:26			06:13		06:38 (5)	05:18			05:03
	17:00	18:02	18:55			20:53	24	07:02 (5)	21:44			22:10
26	08:31	07:31	06:24			06:11		06:36 (5)	05:17			05:04
	17:02	18:04	18:57			20:55	26	07:02 (5)	21:46			22:10
27	08:30	07:29	06:22			06:08		06:34 (5)	05:16			05:04
	17:04	18:06	18:59			20:56	28	07:02 (5)	21:47			22:09
28	08:28	07:27	06:19			06:06		06:32 (5)	05:15			05:05
	17:06	18:08	19:01			20:58	31	07:03 (5)	21:49			22:09
29	08:27		07:17			06:04		06:30 (5)	05:14			05:05
	17:08		20:03			21:00	33	07:03 (5)	21:50			22:09
30	08:25		07:14		07:38 (6)	06:02		06:28 (5)	05:13			05:06
	17:10		20:05	2	07:40 (6)	21:02	35	07:03 (5)	21:51			22:09
31	08:24		07:12		07:35 (6)				05:11			
	17:12		20:06	6	07:41 (6)				21:52			
Potential sun hours	250	273	367			420			494			510
Total, worst case				8			567			499		
Sun reduction				0.22			0.31			0.31		
Oper. time red.				1.00			1.00			1.00		
Wind dir. red.				0.65			0.65			0.65		
Total reduction				0.14			0.20			0.20		
Total, real				1			113			102		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** AZ - H055

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July			August			September			October	November	December
1	05:07			05:46		06:39 (5)	06:41		07:15 (6)	07:34	07:33	08:28
	22:08			21:33	28	07:07 (5)	20:26	25	07:40 (6)	19:13	17:02	16:18
2	05:07			05:48		06:39 (5)	06:43		07:14 (6)	07:36	07:34	08:29
	22:08			21:31	29	07:08 (5)	20:24	27	07:41 (6)	19:10	17:00	16:17
3	05:08			05:50		06:37 (5)	06:44		07:14 (6)	07:38	07:36	08:31
	22:08			21:29	32	07:09 (5)	20:22	27	07:41 (6)	19:08	16:58	16:16
4	05:09			05:52		06:37 (5)	06:46		07:13 (6)	07:40	07:38	08:32
	22:07			21:28	33	07:10 (5)	20:19	27	07:40 (6)	19:05	16:56	16:16
5	05:10			05:53		06:36 (5)	06:48		07:15 (6)	07:41	07:40	08:33
	22:07			21:26	33	07:09 (5)	20:17	25	07:40 (6)	19:03	16:54	16:15
6	05:11			05:55		06:36 (5)	06:50		07:17 (6)	07:43	07:42	08:35
	22:06			21:24	34	07:10 (5)	20:14	23	07:40 (6)	19:00	16:52	16:14
7	05:12			05:57		06:36 (5)	06:51		07:18 (6)	07:45	07:44	08:36
	22:05			21:22	35	07:11 (5)	20:12	21	07:39 (6)	18:58	16:50	16:14
8	05:13			05:58		06:35 (5)	06:53		07:20 (6)	07:47	07:46	08:37
	22:05			21:20	36	07:11 (5)	20:09	18	07:38 (6)	18:56	16:49	16:14
9	05:14			06:00		06:35 (5)	06:55		07:22 (6)	07:49	07:48	08:39
	22:04			21:18	36	07:11 (5)	20:07	16	07:38 (6)	18:53	16:47	16:13
10	05:15			06:02		06:34 (5)	06:57		07:24 (6)	07:51	07:50	08:40
	22:03			21:16	37	07:11 (5)	20:05	13	07:37 (6)	18:51	16:45	16:13
11	05:16			06:04		06:34 (5)	06:59		07:25 (6)	07:52	07:52	08:41
	22:02			21:14	37	07:11 (5)	20:02	10	07:35 (6)	18:48	16:43	16:13
12	05:17			06:05		06:35 (5)	07:00		07:27 (6)	07:54	07:54	08:42
	22:01			21:12	36	07:11 (5)	20:00	6	07:33 (6)	18:46	16:42	16:12
13	05:18			06:07		06:36 (5)	07:02		07:29 (6)	07:56	07:56	08:43
	22:00			21:10	34	07:10 (5)	19:57	2	07:31 (6)	18:44	16:40	16:12
14	05:20			06:09		06:38 (5)	07:04			07:58	07:58	08:44
	21:59			21:07	32	07:10 (5)	19:55			18:41	16:38	16:12
15	05:21			06:11		06:40 (5)	07:06			08:00	08:00	08:45
	21:58			21:05	30	07:10 (5)	19:52			18:39	16:37	16:12
16	05:22			06:12		06:41 (5)	07:07			08:02	08:01	08:46
	21:57			21:03	28	07:09 (5)	19:50			18:37	16:35	16:12
17	05:23			06:14		06:43 (5)	07:09			08:04	08:03	08:47
	21:56			21:01	26	07:09 (5)	19:47			18:34	16:34	16:13
18	05:25			06:16		06:45 (5)	07:11			08:06	08:05	08:48
	21:55			20:59	23	07:08 (5)	19:45			18:32	16:32	16:13
19	05:26			06:18		06:46 (5)	07:13			08:07	08:07	08:48
	21:53			20:57	20	07:06 (5)	19:42			18:30	16:31	16:13
20	05:28			06:20		06:48 (5)	07:14			08:09	08:09	08:49
	21:52			20:54	18	07:06 (5)	19:40			18:28	16:30	16:13
21	05:29			06:21		06:50 (5)	07:16			08:11	08:11	08:50
	21:51			20:52	15	07:05 (5)	19:37			18:25	16:28	16:14
22	05:31			06:23		06:51 (5)	07:18			08:13	08:12	08:50
	21:49			20:50	11	07:02 (5)	19:35			18:23	16:27	16:14
23	05:32			06:25		06:53 (5)	07:20			08:15	08:14	08:51
	21:48			20:48	8	07:01 (5)	19:32			18:21	16:26	16:15
24	05:34			06:27		06:55 (5)	07:22			08:17	08:16	08:51
	21:46			20:45	3	06:58 (5)	19:30			18:19	16:25	16:15
25	05:35			06:28			07:23			07:19	08:18	08:52
	21:45			20:43			19:27			17:17	16:23	16:16
26	05:37		06:49 (5)	06:30			07:25			07:21	08:19	08:52
	21:43	8	06:57 (5)	20:41			19:25			17:14	16:22	16:17
27	05:38		06:46 (5)	06:32		07:26 (6)	07:27			07:23	08:21	08:52
	21:42	14	07:00 (5)	20:38	7	07:33 (6)	19:22			17:12	16:21	16:18
28	05:40		06:44 (5)	06:34		07:21 (6)	07:29			07:25	08:23	08:52
	21:40	18	07:02 (5)	20:36	14	07:35 (6)	19:20			17:10	16:20	16:18
29	05:42		06:42 (5)	06:36		07:19 (6)	07:31			07:27	08:24	08:52
	21:38	21	07:03 (5)	20:34	18	07:37 (6)	19:18			17:08	16:19	16:19
30	05:43		06:41 (5)	06:37		07:18 (6)	07:32			07:29	08:26	08:52
	21:37	24	07:05 (5)	20:31	21	07:39 (6)	19:15			17:06	16:19	16:20
31	05:45		06:40 (5)	06:39		07:16 (6)				07:31		08:52
	21:35	26	07:06 (5)	20:29	23	07:39 (6)				17:04		16:21
Potential sun hours	512			460			382			328	259	233
Total, worst case		111			737			240				
Sun reduction		0.22			0.26			0.25				
Oper. time red.		1.00			1.00			1.00				
Wind dir. red.		0.65			0.65			0.65				
Total reduction		0.15			0.17			0.16				
Total, real		16			122			39				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** BA - H056

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May		June	July		August		September	October	November	December
1	08:52	08:22	07:24	07:09	06:00		05:11	05:07		05:47		06:17 (3)	06:41	07:34	07:33	08:28
	16:23	17:14	18:10	20:08	21:04		21:54	22:09		21:33	16	06:33 (3)	20:27	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58		05:10	05:07		05:48		06:19 (3)	06:43	07:36	07:35	08:29
	16:24	17:16	18:12	20:10	21:06		21:55	22:08		21:31	15	06:34 (3)	20:24	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04	05:56		05:09	05:08		05:50		06:20 (3)	06:44	07:38	07:36	08:31
	16:25	17:18	18:14	20:12	21:07		21:56	22:08		21:30	13	06:33 (3)	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	06:20 (3)	05:08	05:09		05:52		06:22 (3)	06:46	07:40	07:38	08:32
	16:26	17:20	18:16	20:14	21:09	2 06:22 (3)	21:57	22:07		21:28	11	06:33 (3)	20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	07:00	05:52	06:18 (3)	05:07	05:10		05:53		06:23 (3)	06:48	07:42	07:40	08:34
	16:27	17:22	18:18	20:16	21:11	4 06:22 (3)	21:58	22:07		21:26	10	06:33 (3)	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	06:16 (3)	05:06	05:11		05:55		06:25 (3)	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:18	21:13	6 06:22 (3)	21:59	22:06		21:24	8	06:33 (3)	20:14	19:01	16:52	16:14
7	08:51	08:11	07:10	06:55	05:48	06:15 (3)	05:06	05:12		05:57		06:27 (3)	06:52	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:15	8 06:23 (3)	22:00	22:05		21:22	6	06:33 (3)	20:12	18:58	16:51	16:14
8	08:50	08:09	07:08	06:52	05:46	06:13 (3)	05:05	05:13		05:58		06:28 (3)	06:53	07:47	07:46	08:38
	16:31	17:28	18:23	20:21	21:16	10 06:23 (3)	22:01	22:05		21:20	4	06:32 (3)	20:10	18:56	16:49	16:14
9	08:49	08:07	07:06	06:50	05:44	06:11 (3)	05:05	05:14		06:00		06:30 (3)	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	12 06:23 (3)	22:02	22:04		21:18	1	06:31 (3)	20:07	18:53	16:47	16:13
10	08:49	08:06	07:03	06:47	05:42	06:09 (3)	05:04	05:15		06:02			06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	14 06:23 (3)	22:03	22:03		21:16			20:05	18:51	16:45	16:13
11	08:48	08:04	07:01	06:45	05:40	06:08 (3)	05:04	05:16		06:04			06:59	07:53	07:52	08:41
	16:36	17:34	18:29	20:27	21:22	15 06:23 (3)	22:04	22:02		21:14			20:02	18:49	16:43	16:13
12	08:47	08:02	06:58	06:43	05:39	06:06 (3)	05:03	05:17		06:05			07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	17 06:23 (3)	22:05	22:01		21:12			20:00	18:46	16:42	16:13
13	08:47	08:00	06:56	06:40	05:37	06:04 (3)	05:03	05:18		06:07			07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:31	21:25	18 06:22 (3)	22:05	22:00		21:10			19:57	18:44	16:40	16:12
14	08:46	07:58	06:53	06:38	05:35	06:03 (3)	05:03	05:20		06:09			07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	19 06:22 (3)	22:06	21:59		21:08			19:55	18:41	16:39	16:12
15	08:45	07:55	06:51	06:36	05:33	06:01 (3)	05:02	05:21		06:11			07:06	08:00	08:00	08:45
	16:42	17:42	18:37	20:34	21:29	20 06:21 (3)	22:07	21:58		21:05			19:52	18:39	16:37	16:12
16	08:44	07:53	06:49	06:33	05:32	06:00 (3)	05:02	05:22		06:13			07:07	08:02	08:01	08:46
	16:44	17:44	18:39	20:36	21:30	21 06:21 (3)	22:07	21:57		21:03			19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	06:01 (3)	05:02	05:24		06:14			07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	19 06:20 (3)	22:08	21:56		21:01			19:47	18:35	16:34	16:13
18	08:42	07:49	06:44	06:29	05:29	06:02 (3)	05:02	05:25		06:16			07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	17 06:19 (3)	22:08	21:55		20:59			19:45	18:32	16:32	16:13
19	08:41	07:47	06:41	06:26	05:27	06:04 (3)	05:02	05:26		06:18			07:13	08:08	08:07	08:48
	16:49	17:50	18:44	20:42	21:35	14 06:18 (3)	22:09	21:53		20:57			19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	06:04 (3)	05:02	05:28		06:20			07:15	08:09	08:09	08:49
	16:51	17:52	18:46	20:44	21:37	12 06:16 (3)	22:09	21:52		20:54			19:40	18:28	16:30	16:13
21	08:38	07:43	06:36	06:22	05:24	06:06 (3)	05:02	05:29		06:21			07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	9 06:15 (3)	22:09	21:51		20:52			19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:20	05:23		05:02	05:31	06:18 (3)	06:23			07:18	08:13	08:13	08:50
	16:55	17:56	18:50	20:47	21:40		22:09	21:49	5 06:23 (3)	20:50			19:35	18:23	16:27	16:14
23	08:36	07:38	06:31	06:17	05:21		05:03	05:32	06:16 (3)	06:25			07:20	08:15	08:14	08:51
	16:57	17:58	18:52	20:49	21:41		22:09	21:48	10 06:26 (3)	20:48			19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20		05:03	05:34	06:14 (3)	06:27			07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43		22:10	21:46	13 06:27 (3)	20:45			19:30	18:19	16:25	16:15
25	08:33	07:34	06:26	06:13	05:18		05:03	05:35	06:13 (3)	06:28			07:23	07:19	08:18	08:52
	17:00	18:02	18:55	20:53	21:44		22:10	21:45	16 06:29 (3)	20:43			19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17		05:04	05:37	06:12 (3)	06:30			07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:55	21:46		22:10	21:43	18 06:30 (3)	20:41			19:25	17:15	16:22	16:17
27	08:30	07:29	06:22	06:09	05:16		05:04	05:38	06:11 (3)	06:32			07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47		22:09	21:42	19 06:30 (3)	20:38			19:23	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	05:15		05:05	05:40	06:11 (3)	06:34			07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:49		22:09	21:40	21 06:32 (3)	20:36			19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	05:14		05:05	05:42	06:12 (3)	06:36			07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50		22:09	21:38	20 06:32 (3)	20:34			19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	05:13		05:06	05:43	06:14 (3)	06:37			07:32	07:29	08:26	08:52
	17:10		20:05	21:02	21:51		22:09	21:37	19 06:33 (3)	20:31			19:15	17:06	16:19	16:20
31	08:24		07:12		05:12			05:45	06:16 (3)	06:39				07:31		08:52
	17:12		20:06		21:53			21:35	17 06:33 (3)	20:29				17:04		16:21
Potential sun hours	250	273	367	420	494		510	512		460		382	328	259	233	
Total, worst case						237			158		84					
Sun reduction						0.31			0.22		0.26					
Oper. time red.						1.00			1.00		1.00					
Wind dir. red.						0.65			0.65		0.65					
Total reduction						0.20			0.14		0.17					
Total, real						48			23		14					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** BB - H058

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:16
3	08:52	08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:38	07:36	08:30
	16:24	17:18	18:13	20:12	21:07	21:56	22:08	21:29	20:21	19:07	16:58	16:16
4	08:52	08:17	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11	21:58	22:06	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:49	05:06	05:10	05:55	06:49	07:43	07:42	08:35
	16:28	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:49	07:48	08:39
	16:32	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:14	06:02	06:56	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:12
11	08:48	08:03	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52	08:41
	16:35	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23	22:05	22:01	21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:56	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36	16:12
16	08:44	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:33	16:12
18	08:42	07:49	06:43	06:28	05:28	05:02	05:24	06:16	07:11	08:05	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:12
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:24	05:02	05:29	06:21	07:16	08:11	08:10	08:50
	16:52	17:54	18:48	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:13
22	08:37	07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	16:14
24	08:34	07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24	16:15
25	08:33	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	05:04	05:40	06:33	07:28	07:25	08:23	08:52
	17:06	18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11		05:44	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	513	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** BC - H059

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52 16:22	08:22 17:14	07:24 18:10	07:09 20:08 18	18:56 (7) 19:14 (7) 21:04	06:00 21:54	05:10	05:06 22:08	05:46 21:33	06:41 20:26	07:34 19:12 3	18:41 (7) 18:44 (7) 17:02	07:32 16:18	08:27
2	08:52 16:23	08:20 17:16	07:22 18:11	07:07 20:10 11	18:58 (7) 19:09 (7) 21:05	05:09 21:55	05:07 22:08	05:48 21:31	06:42 20:24	07:36 19:10			07:34 17:00	08:29 16:17
3	08:52 16:25	08:18 17:18	07:20 18:13	07:04 20:12	05:56 21:07	05:08 21:56	05:08 22:08	05:50 21:29	06:44 20:21	07:38 19:08			07:36 16:58	08:30 16:16
4	08:52 16:26	08:17 17:20	07:17 18:15	07:02 20:14	05:54 21:09	05:08 21:57	05:09 22:07	05:51 21:27	06:46 20:19	07:39 19:05			07:38 16:56	08:32 16:15
5	08:51 16:27	08:15 17:22	07:15 18:17	06:59 20:15	05:52 21:11	05:07 21:58	05:10 22:06	05:53 21:26	06:48 20:17	07:41 19:03			07:40 16:54	08:33 16:15
6	08:51 16:28	08:13 17:24	07:12 18:19	06:57 20:17	05:50 21:13	05:06 21:59	05:10 22:06	05:55 21:24	06:50 20:14	07:43 19:00			07:42 16:52	08:35 16:14
7	08:50 16:30	08:11 17:26	07:10 18:21	06:54 20:19	05:48 21:14	05:05 22:00	05:11 22:05	05:57 21:22	06:51 20:12	07:45 18:58			07:44 16:50	08:36 16:14
8	08:50 16:31	08:09 17:28	07:08 18:23	06:52 20:21	05:46 21:16	05:05 22:01	05:12 22:04	05:58 21:20	06:53 20:09	07:47 18:55			07:46 16:48	08:37 16:13
9	08:49 16:33	08:07 17:30	07:05 18:25	06:50 20:23	05:44 21:18	05:04 22:02	05:14 22:04	06:00 21:18	06:55 20:07	07:49 18:53			07:48 16:47	08:39 16:13
10	08:49 16:34	08:05 17:32	07:03 18:27	06:47 20:25	05:42 21:20	05:04 22:03	05:15 22:03	06:02 21:16	06:57 20:04 10	18:52 (7) 19:02 (7) 07:50 18:51			07:50 16:45	08:40 16:13
11	08:48 16:36	08:03 17:34	07:00 18:29	06:45 20:27	05:40 21:21	05:03 22:04	05:16 22:02	06:03 21:14	06:58 20:02 17	18:48 (7) 19:05 (7) 07:52 18:48			07:52 16:43	08:41 16:12
12	08:47 16:37	08:01 17:36	06:58 18:31	06:42 20:28	05:38 21:23	05:03 22:05	05:17 22:01	06:05 21:12	07:00 19:59 25	18:46 (7) 19:11 (6) 07:54 18:46			07:54 16:42	08:42 16:12
13	08:46 16:39	07:59 17:38	06:56 18:33 5	18:01 (7) 18:06 (7) 06:40 20:30	05:37 21:25	05:03 22:05	05:18 22:00	06:07 21:09	07:02 19:57 30	18:43 (7) 19:13 (6) 07:56 18:44			07:56 16:40	08:43 16:12
14	08:45 16:40	07:57 17:40	06:53 18:34 10	17:58 (7) 18:08 (7) 06:38 20:32	05:35 21:27	05:02 22:06	05:19 21:59	06:09 21:07	07:04 19:55 33	18:42 (7) 19:15 (6) 07:58 18:41			07:57 16:38	08:44 16:12
15	08:45 16:42	07:55 17:42	06:51 18:36 13	17:57 (7) 18:10 (7) 06:35 20:34	05:33 21:28	05:02 22:06	05:21 21:58	06:11 21:05	07:05 19:52 36	18:40 (7) 19:16 (6) 08:00 18:39			07:59 16:37	08:45 16:12
16	08:44 16:44	07:53 17:44	06:48 18:38 16	17:55 (7) 18:11 (7) 06:33 20:36	05:32 21:30	05:02 22:07	05:22 21:57	06:12 21:03	07:07 19:50 38	18:39 (7) 19:17 (6) 08:02 18:37			08:01 16:35	08:46 16:12
17	08:43 16:46	07:51 17:46	06:46 18:40 20	17:54 (7) 18:14 (7) 06:31 20:38	05:30 21:32	05:02 22:07	05:23 21:56	06:14 21:01	07:09 19:47 39	18:38 (7) 19:17 (6) 08:04 18:34			08:03 16:34	08:47 16:12
18	08:42 16:47	07:49 17:48	06:43 18:42 23	17:52 (7) 18:15 (7) 06:28 20:40	05:28 21:33	05:02 22:08	05:25 21:54	06:16 20:59	07:11 19:45 39	18:37 (7) 19:16 (6) 08:05 18:32			08:05 16:32	08:48 16:13
19	08:40 16:49	07:47 17:50	06:41 18:44 26	17:52 (7) 18:18 (7) 06:26 20:41	05:27 21:35	05:02 22:08	05:26 21:53	06:18 20:56	07:13 19:42 38	18:36 (7) 19:14 (6) 08:07 18:30			08:07 16:31	08:48 16:13
20	08:39 16:51	07:45 17:52	06:39 18:46 29	17:50 (7) 18:19 (7) 06:24 20:43	05:25 21:36	05:02 22:09	05:27 21:52	06:19 20:54	07:14 19:40 36	18:36 (7) 19:12 (6) 08:09 18:27			08:09 16:29	08:49 16:13
21	08:38 16:53	07:42 17:54	06:36 18:48 31	17:50 (7) 18:21 (7) 06:22 20:45	05:24 21:38	05:02 22:09	05:29 21:50	06:21 20:52	07:16 19:37 34	18:35 (7) 19:09 (7) 08:11 18:25			08:10 16:28	08:50 16:14
22	08:37 16:54	07:40 17:56	06:34 18:50 34	17:49 (7) 18:23 (7) 06:19 20:47	05:22 21:40	05:02 22:09	05:30 21:49	06:23 20:50	07:18 19:35 31	18:35 (7) 19:06 (7) 08:13 18:23			08:12 16:27	08:50 16:14
23	08:35 16:56	07:38 17:58	06:31 18:51 35	17:50 (7) 18:25 (7) 06:17 20:49	05:21 21:41	05:02 22:09	05:32 21:48	06:25 20:47	07:20 19:32 29	18:35 (7) 19:04 (7) 08:15 18:21			08:14 16:26	08:51 16:15
24	08:34 16:58	07:36 18:00	06:29 18:53 37	17:49 (7) 18:26 (6) 06:15 20:51	05:20 21:43	05:03 22:09	05:33 21:46	06:26 20:45	07:21 19:30 27	18:35 (7) 19:02 (7) 08:17 18:19			08:16 16:24	08:51 16:15
25	08:33 17:00	07:33 18:02	06:26 18:55 40	17:49 (7) 18:29 (6) 06:13 20:52	05:18 21:44	05:03 22:09	05:35 21:45	06:28 20:43	07:23 19:27 24	18:35 (7) 18:59 (7) 07:19 17:16			08:18 16:23	08:51 16:16
26	08:31 17:02	07:31 18:04	06:24 18:57 39	17:49 (7) 18:28 (6) 06:10 20:54	05:17 21:46	05:03 22:09	05:37 21:43	06:30 20:40	07:25 19:25 21	18:35 (7) 18:56 (7) 07:21 17:14			08:19 16:22	08:52 16:17
27	08:30 17:04	07:29 18:06	06:21 18:59 38	17:50 (7) 18:28 (6) 06:08 20:56	05:16 21:47	05:04 22:09	05:38 21:41	06:32 20:38	07:27 19:22 18	18:36 (7) 18:54 (7) 07:23 17:12			08:21 16:21	08:52 16:17
28	08:28 17:06	07:27 18:08	06:19 19:01 36	17:51 (7) 18:27 (6) 06:06 20:58	05:15 21:48	05:04 22:09	05:40 21:40	06:34 20:36	07:29 19:20 15	18:37 (7) 18:52 (7) 07:25 17:10			08:23 16:20	08:52 16:18
29	08:27 17:08		07:16 20:03 34	18:51 (7) 19:25 (6) 06:04 21:00	05:13 21:50	05:05 22:09	05:41 21:38	06:35 20:33	07:30 19:17 11	18:38 (7) 18:49 (7) 07:27 17:08			08:24 16:19	08:52 16:19
30	08:25 17:10		07:14 20:04 31	18:52 (7) 19:23 (6) 06:02 21:02	05:12 21:51	05:06 22:09	05:43 21:36	06:37 20:31	07:32 19:15 7	18:40 (7) 18:47 (7) 07:28 17:06			08:26 16:18	08:52 16:20
31	08:23 17:12		07:12 20:06 26	18:53 (7) 19:19 (6)	05:11 21:52		05:45 21:35	06:39 20:29		07:30 17:04				08:52 16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case			523	29					558	3		
Sun reduction			0.22	0.31					0.25	0.23		
Oper. time red.			1.00	1.00					1.00	1.00		
Wind dir. red.			0.65	0.64					0.65	0.64		
Total reduction			0.14	0.20					0.16	0.15		
Total, real			74	6					90	0		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** BD - H060

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April		May		June		July		August		September	October	November	December
1	08:52	08:22	07:24	07:09		06:00	06:26 (3)	05:11		05:07	05:40 (2)	05:47		06:41	07:34	07:33	08:28
	16:23	17:14	18:10	20:08		21:04	13 06:39 (3)	21:54		22:09	11 05:51 (2)	21:33		20:27	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07		05:58	06:24 (3)	05:10		05:07	05:40 (2)	05:48		06:43	07:36	07:35	08:29
	16:24	17:16	18:12	20:10		21:06	15 06:39 (3)	21:55		22:08	10 05:50 (2)	21:31		20:24	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04		05:56	06:22 (3)	05:09	05:40 (2)	05:08	05:41 (2)	05:50	06:32 (3)	06:44	07:38	07:36	08:31
	16:25	17:18	18:14	20:12		21:07	16 06:38 (3)	21:56	1 05:41 (2)	22:08	9 05:50 (2)	21:30	8 06:40 (3)	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02		05:54	06:20 (3)	05:08	05:39 (2)	05:09	05:42 (2)	05:52	06:30 (3)	06:46	07:40	07:38	08:32
	16:26	17:20	18:16	20:14		21:09	17 06:37 (3)	21:57	3 05:42 (2)	22:07	8 05:50 (2)	21:28	13 06:43 (3)	20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	07:00		05:52	06:18 (3)	05:07	05:38 (2)	05:10	05:43 (2)	05:53	06:28 (3)	06:48	07:42	07:40	08:34
	16:27	17:22	18:18	20:16		21:11	18 06:36 (3)	21:58	4 05:42 (2)	22:07	7 05:50 (2)	21:26	16 06:44 (3)	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57		05:50	06:16 (3)	05:06	05:38 (2)	05:11	05:44 (2)	05:55	06:27 (3)	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:18		21:13	19 06:35 (3)	21:59	5 05:43 (2)	22:06	6 05:50 (2)	21:24	18 06:45 (3)	20:14	19:01	16:52	16:14
7	08:51	08:11	07:10	06:55		05:48	06:18 (3)	05:06	05:37 (2)	05:12	05:45 (2)	05:57	06:27 (3)	06:52	07:45	07:44	08:36
	16:30	17:26	18:21	20:19		21:15	17 06:35 (3)	22:00	6 05:43 (2)	22:05	5 05:50 (2)	21:22	19 06:46 (3)	20:12	18:58	16:51	16:14
8	08:50	08:09	07:08	06:52		05:46	06:19 (3)	05:05	05:37 (2)	05:13	05:46 (2)	05:58	06:28 (3)	06:53	07:47	07:46	08:38
	16:31	17:28	18:23	20:21		21:16	15 06:34 (3)	22:01	8 05:45 (2)	22:05	3 05:49 (2)	21:20	18 06:46 (3)	20:10	18:56	16:49	16:14
9	08:49	08:08	07:06	06:50		05:44	06:20 (3)	05:05	05:36 (2)	05:14	05:47 (2)	06:00	06:30 (3)	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23		21:18	12 06:32 (3)	22:02	9 05:45 (2)	22:04	2 05:49 (2)	21:18	17 06:47 (3)	20:07	18:53	16:47	16:13
10	08:49	08:06	07:03	06:47		05:42	06:22 (3)	05:04	05:36 (2)	05:15		06:02	06:31 (3)	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25		21:20	7 06:29 (3)	22:03	9 05:45 (2)	22:03		21:16	16 06:47 (3)	20:05	18:51	16:45	16:13
11	08:48	08:04	07:01	06:45		05:40		05:04	05:36 (2)	05:16		06:04	06:33 (3)	06:59	07:53	07:52	08:41
	16:36	17:34	18:29	20:27		21:22		22:04	10 05:46 (2)	22:02		21:14	14 06:47 (3)	20:02	18:49	16:43	16:13
12	08:47	08:02	06:58	06:43		05:39		05:03	05:35 (2)	05:17		06:05	06:35 (3)	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29		21:23		22:05	11 05:46 (2)	22:01		21:12	12 06:47 (3)	20:00	18:46	16:42	16:13
13	08:47	08:00	06:56	06:40		05:37		05:03	05:35 (2)	05:18		06:07	06:36 (3)	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:31		21:25		22:05	12 05:47 (2)	22:00		21:10	11 06:47 (3)	19:57	18:44	16:40	16:12
14	08:46	07:58	06:53	06:38		05:35		05:03	05:35 (2)	05:20		06:09	06:38 (3)	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32		21:27		22:06	12 05:47 (2)	21:59		21:08	9 06:47 (3)	19:55	18:41	16:39	16:12
15	08:45	07:55	06:51	06:36		05:33		05:02	05:35 (2)	05:21		06:11	06:40 (3)	07:06	08:00	08:00	08:45
	16:42	17:42	18:37	20:34		21:29		22:07	13 05:48 (2)	21:58		21:05	6 06:46 (3)	19:52	18:39	16:37	16:12
16	08:44	07:53	06:49	06:33		05:32		05:02	05:35 (2)	05:22		06:13	06:41 (3)	07:07	08:02	08:01	08:46
	16:44	17:44	18:39	20:36		21:30		22:07	13 05:48 (2)	21:57		21:03	4 06:45 (3)	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31		05:30		05:02	05:35 (2)	05:24		06:14	06:43 (3)	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38		21:32		22:08	13 05:48 (2)	21:56		21:01	2 06:45 (3)	19:47	18:35	16:34	16:13
18	08:42	07:49	06:44	06:29		05:29		05:02	05:35 (2)	05:25		06:16		07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40		21:33		22:08	14 05:49 (2)	21:55		20:59		19:45	18:32	16:32	16:13
19	08:41	07:47	06:41	06:26		05:27		05:02	05:35 (2)	05:26		06:18		07:13	08:08	08:07	08:48
	16:49	17:50	18:44	20:42		21:35		22:09	14 05:49 (2)	21:53		20:57		19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24		05:25		05:02	05:35 (2)	05:28		06:20		07:15	08:09	08:09	08:49
	16:51	17:52	18:46	20:44		21:37		22:09	14 05:49 (2)	21:52		20:54		19:40	18:28	16:30	16:13
21	08:38	07:43	06:36	06:22		05:24		05:02	05:35 (2)	05:29		06:21		07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45		21:38		22:09	14 05:49 (2)	21:51		20:52		19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:20		05:23		05:02	05:35 (2)	05:31		06:23		07:18	08:13	08:13	08:50
	16:55	17:56	18:50	20:47		21:40		22:09	14 05:49 (2)	21:49		20:50		19:35	18:23	16:27	16:14
23	08:36	07:38	06:31	06:17		05:21		05:03	05:36 (2)	05:32		06:25		07:20	08:15	08:14	08:51
	16:57	17:58	18:52	20:49		21:41		22:09	14 05:50 (2)	21:48		20:48		19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15		05:20		05:03	05:36 (2)	05:34		06:27		07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51		21:43		22:10	14 05:50 (2)	21:46		20:45		19:30	18:19	16:25	16:15
25	08:33	07:34	06:26	06:13		05:18		05:03	05:36 (2)	05:35		06:28		07:23	07:19	08:18	08:52
	17:00	18:02	18:55	20:53		21:44		22:10	14 05:50 (2)	21:45		20:43		19:28	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	06:36 (3)	05:17		05:04	05:37 (2)	05:37		06:30		07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:55	2 06:38 (3)	21:46		22:10	13 05:50 (2)	21:43		20:41		19:25	17:15	16:22	16:17
27	08:30	07:29	06:22	06:09	06:34 (3)	05:16		05:04	05:37 (2)	05:38		06:32		07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	5 06:39 (3)	21:47		22:10	13 05:50 (2)	21:42		20:38		19:23	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	06:32 (3)	05:15		05:05	05:38 (2)	05:40		06:34		07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	7 06:39 (3)	21:49		22:09	12 05:50 (2)	21:40		20:36		19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	06:30 (3)	05:14		05:05	05:38 (2)	05:42		06:36		07:31	07:27	08:24	08:52
	17:08		20:03	21:00	9 06:39 (3)	21:50		22:09	12 05:50 (2)	21:38		20:34		19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	06:28 (3)	05:13		05:06	05:39 (2)	05:43		06:37		07:32	07:29	08:26	08:52
	17:10		20:05	21:02	11 06:39 (3)	21:51		22:09	11 05:50 (2)	21:37		20:31		19:15	17:06	16:19	16:20
31	08:24		07:12			05:12				05:45		06:39			07:31		08:52
	17:12		20:06			21:53				21:35		20:29			17:04		16:21
Potential sun hours	250	273	367	420		494		510		512		460		382	328	259	233
Total, worst case				34		149		302		61		183					
Sun reduction				0.31		0.31		0.26		0.22		0.26					
Oper. time red.				1.00		1.00		1.00		1.00		1.00					
Wind dir. red.				0.65		0.65		0.65		0.65		0.65					
Total reduction				0.20		0.20		0.17		0.14		0.17					
Total, real				7		30		51		9		30					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** BE - H061

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February	March	April	May	June	July	August	September	October	November			December		
1	08:52		15:28 (8)	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:40	07:34	07:32			08:27		15:13 (8)
	16:22	16	15:44 (8)	17:13	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02			16:17	28	15:41 (8)
2	08:52		15:28 (8)	08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34			08:29		15:14 (8)
	16:23	17	15:45 (8)	17:15	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00			16:16	26	15:40 (8)
3	08:52		15:29 (8)	08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:38	07:36			08:30		15:14 (8)
	16:24	18	15:47 (8)	17:17	18:13	20:12	21:07	21:56	22:08	21:29	20:21	19:07	16:58			16:16	25	15:39 (8)
4	08:52		15:29 (8)	08:16	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38			08:32		15:15 (8)
	16:26	19	15:48 (8)	17:19	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56			16:15	24	15:39 (8)
5	08:51		15:30 (8)	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40			08:33		15:15 (8)
	16:27	20	15:50 (8)	17:21	18:17	20:15	21:11	21:58	22:06	21:25	20:17	19:03	16:54			16:14	22	15:37 (8)
6	08:51		15:30 (8)	08:13	07:12	06:57	05:49	05:06	05:10	05:55	06:49	07:43	07:42			08:35		15:16 (8)
	16:28	21	15:51 (8)	17:23	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52			16:14	21	15:37 (8)
7	08:50		15:30 (8)	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44			08:36		15:16 (8)
	16:30	22	15:52 (8)	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50			16:13	20	15:36 (8)
8	08:50		15:31 (8)	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46			08:37		15:17 (8)
	16:31	23	15:54 (8)	17:28	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48			16:13	19	15:36 (8)
9	08:49		15:31 (8)	08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48			08:39		15:17 (8)
	16:32	25	15:56 (8)	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46			16:13	18	15:35 (8)
10	08:49		15:31 (8)	08:05	07:03	06:47	05:42	05:03	05:14	06:02	06:56	07:50	07:50			08:40		15:17 (8)
	16:34	26	15:57 (8)	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45			16:12	18	15:35 (8)
11	08:48		15:31 (8)	08:03	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52			08:41		15:19 (8)
	16:35	28	15:59 (8)	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43			16:12	16	15:35 (8)
12	08:47		15:32 (8)	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54			08:42		15:19 (8)
	16:37	29	16:01 (8)	17:36	18:31	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41			16:12	16	15:35 (8)
13	08:46		15:32 (8)	07:59	06:56	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:56			08:43		15:20 (8)
	16:39	30	16:02 (8)	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40			16:12	14	15:34 (8)
14	08:45		15:33 (8)	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57		15:22 (8)	08:44		15:20 (8)
	16:40	31	16:04 (8)	17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38	5	15:27 (8)	16:12	14	15:34 (8)
15	08:45		15:33 (8)	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59		15:18 (8)	08:45		15:21 (8)
	16:42	31	16:04 (8)	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36	13	15:31 (8)	16:12	13	15:34 (8)
16	08:44		15:34 (8)	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01		15:16 (8)	08:46		15:21 (8)
	16:44	31	16:05 (8)	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	17	15:33 (8)	16:12	13	15:34 (8)
17	08:43		15:34 (8)	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03		15:15 (8)	08:47		15:22 (8)
	16:45	30	16:04 (8)	17:46	18:40	20:38	21:32	22:07	21:56	21:01	19:47	18:34	16:33	20	15:35 (8)	16:12	13	15:35 (8)
18	08:41		15:35 (8)	07:49	06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05	08:05		15:14 (8)	08:48		15:22 (8)
	16:47	29	16:04 (8)	17:48	18:42	20:39	21:33	22:08	21:54	20:59	19:44	18:32	16:32	22	15:36 (8)	16:12	12	15:34 (8)
19	08:40		15:36 (8)	07:47	06:41	06:26	05:26	05:01	05:26	06:17	07:12	08:07	08:07		15:14 (8)	08:48		15:23 (8)
	16:49	29	16:05 (8)	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	24	15:38 (8)	16:13	11	15:34 (8)
20	08:39		15:36 (8)	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09		15:14 (8)	08:49		15:24 (8)
	16:51	28	16:04 (8)	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29	25	15:39 (8)	16:13	11	15:35 (8)
21	08:38		15:37 (8)	07:42	06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11	08:10		15:13 (8)	08:50		15:23 (8)
	16:52	27	16:04 (8)	17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	27	15:40 (8)	16:13	12	15:35 (8)
22	08:37		15:39 (8)	07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12		15:13 (8)	08:50		15:24 (8)
	16:54	25	16:04 (8)	17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	28	15:41 (8)	16:14	12	15:36 (8)
23	08:35		15:39 (8)	07:38	06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15	08:14		15:12 (8)	08:51		15:24 (8)
	16:56	24	16:03 (8)	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	29	15:41 (8)	16:14	12	15:36 (8)
24	08:34		15:41 (8)	07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16		15:12 (8)	08:51		15:25 (8)
	16:58	22	16:03 (8)	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24	29	15:41 (8)	16:15	11	15:36 (8)
25	08:33		15:42 (8)	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17		15:12 (8)	08:51		15:26 (8)
	17:00	20	16:02 (8)	18:02	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	30	15:42 (8)	16:16	12	15:38 (8)
26	08:31		15:44 (8)	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19		15:12 (8)	08:52		15:26 (8)
	17:02	16	16:00 (8)	18:03	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22	31	15:43 (8)	16:16	12	15:38 (8)
27	08:30		15:47 (8)	07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21		15:12 (8)	08:52		15:26 (8)
	17:04	12	15:59 (8)	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	31	15:43 (8)	16:17	13	15:39 (8)
28	08:28		15:50 (8)	07:26	06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24	08:23		15:13 (8)	08:52		15:27 (8)
	17:06	5	15:55 (8)	18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	31	15:44 (8)	16:18	13	15:40 (8)
29	08:27				07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24		15:13 (8)	08:52		15:27 (8)
	17:08				20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	31	15:44 (8)	16:19	14	15:41 (8)
30	08:25				07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26		15:13 (8)	08:52		15:27 (8)
	17:10				20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	29	15:42 (8)	16:20	15	15:42 (8)
31	08:23				07:11		05:11		05:44	06:39		07:30				08:52		15:28 (8)
	17:12				20:06		21:52		21:35	20:29		17:04				16:21	15	15:43 (8)
Potential sun hours	250			273	367	420	494	510	513	460	382	328	259			233		
Total, worst case		654												422			495	
Sun reduction		0.16												0.20			0.12	
Oper. time red.		1.00												1.00			1.00	
Wind dir. red.		0.65												0.65			0.65	
Total reduction		0.11												0.13			0.08	
Total, real		69												54			39	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** BF - H062

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April		May		June	July		August		September	October	November	December
1	08:52	08:22	07:24	07:09		06:00		06:26 (3)	05:11	05:07		05:47		06:25 (3)	06:41	07:34	07:33	08:28
	16:23	17:14	18:10	20:08		21:04	8	06:34 (3)	21:54	22:09		21:33	13	06:38 (3)	20:27	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07		05:58		06:24 (3)	05:10	05:07		05:48		06:24 (3)	06:43	07:36	07:35	08:29
	16:24	17:16	18:12	20:10		21:06	10	06:34 (3)	21:55	22:08		21:31	16	06:40 (3)	20:24	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04		05:56		06:22 (3)	05:09	05:08		05:50		06:22 (3)	06:44	07:38	07:36	08:31
	16:25	17:18	18:14	20:12		21:07	12	06:34 (3)	21:56	22:08		21:30	18	06:40 (3)	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02		05:54		06:20 (3)	05:08	05:09		05:52		06:22 (3)	06:46	07:40	07:38	08:32
	16:26	17:20	18:16	20:14		21:09	14	06:34 (3)	21:57	22:07		21:28	19	06:41 (3)	20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	07:00		05:52		06:18 (3)	05:07	05:10		05:53		06:23 (3)	06:48	07:42	07:40	08:34
	16:27	17:22	18:18	20:16		21:11	15	06:33 (3)	21:58	22:07		21:26	19	06:42 (3)	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57		05:50		06:16 (3)	05:06	05:11		05:55		06:25 (3)	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:18		21:13	17	06:33 (3)	21:59	22:06		21:24	17	06:42 (3)	20:14	19:01	16:52	16:14
7	08:51	08:11	07:10	06:55		05:48		06:15 (3)	05:06	05:12		05:57		06:27 (3)	06:52	07:45	07:44	08:36
	16:30	17:26	18:21	20:19		21:15	18	06:33 (3)	22:00	22:05		21:22	16	06:43 (3)	20:12	18:58	16:51	16:14
8	08:50	08:09	07:08	06:52		05:46		06:13 (3)	05:05	05:13		05:58		06:28 (3)	06:53	07:47	07:46	08:38
	16:31	17:28	18:23	20:21		21:16	19	06:32 (3)	22:01	22:05		21:20	15	06:43 (3)	20:10	18:56	16:49	16:14
9	08:49	08:08	07:06	06:50		05:44		06:11 (3)	05:05	05:14		06:00		06:30 (3)	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23		21:18	20	06:31 (3)	22:02	22:04		21:18	13	06:43 (3)	20:07	18:53	16:47	16:13
10	08:49	08:06	07:03	06:47		05:42		06:12 (3)	05:04	05:15		06:02		06:31 (3)	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25		21:20	18	06:30 (3)	22:03	22:03		21:16	11	06:42 (3)	20:05	18:51	16:45	16:13
11	08:48	08:04	07:01	06:45		05:40		06:14 (3)	05:04	05:16		06:04		06:33 (3)	06:59	07:53	07:52	08:41
	16:36	17:34	18:29	20:27		21:22	15	06:29 (3)	22:04	22:02		21:14	9	06:42 (3)	20:02	18:49	16:43	16:13
12	08:47	08:02	06:58	06:43		05:39		06:15 (3)	05:03	05:17		06:05		06:35 (3)	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29		21:23	12	06:27 (3)	22:05	22:01		21:12	7	06:42 (3)	20:00	18:46	16:42	16:13
13	08:47	08:00	06:56	06:40		05:37		06:17 (3)	05:03	05:18		06:07		06:36 (3)	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:31		21:25	7	06:24 (3)	22:05	22:00		21:10	5	06:41 (3)	19:57	18:44	16:40	16:12
14	08:46	07:58	06:53	06:38		05:35			05:03	05:20		06:09		06:38 (3)	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32		21:27			22:06	21:59		21:08	3	06:41 (3)	19:55	18:41	16:39	16:12
15	08:45	07:55	06:51	06:36		05:33			05:02	05:21		06:11			07:06	08:00	08:00	08:45
	16:42	17:42	18:37	20:34		21:29			22:07	21:58		21:05			19:52	18:39	16:37	16:12
16	08:44	07:53	06:49	06:33		05:32			05:02	05:22		06:13			07:07	08:02	08:01	08:46
	16:44	17:44	18:39	20:36		21:30			22:07	21:57		21:03			19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31		05:30			05:02	05:24		06:14			07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38		21:32			22:08	21:56		21:01			19:47	18:35	16:34	16:13
18	08:42	07:49	06:44	06:29		05:29			05:02	05:25		06:16			07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40		21:33			22:08	21:55		20:59			19:45	18:32	16:32	16:13
19	08:41	07:47	06:41	06:26		05:27			05:02	05:26		06:18			07:13	08:08	08:07	08:48
	16:49	17:50	18:44	20:42		21:35			22:09	21:53		20:57			19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24		05:25			05:02	05:28		06:20			07:15	08:09	08:09	08:49
	16:51	17:52	18:46	20:44		21:37			22:09	21:52		20:54			19:40	18:28	16:30	16:13
21	08:38	07:43	06:36	06:22		05:24			05:02	05:29		06:21			07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45		21:38			22:09	21:51		20:52			19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:20		05:23			05:02	05:31		06:23			07:18	08:13	08:13	08:50
	16:55	17:56	18:50	20:47		21:40			22:09	21:49		20:50			19:35	18:23	16:27	16:14
23	08:36	07:38	06:31	06:17		05:21			05:03	05:32		06:25			07:20	08:15	08:14	08:51
	16:57	17:58	18:52	20:49		21:41			22:09	21:48		20:48			19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15		05:20			05:03	05:34		06:27			07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51		21:43			22:10	21:46		20:45			19:30	18:19	16:25	16:15
25	08:33	07:34	06:26	06:13		05:18			05:03	05:35		06:28			07:23	07:19	08:18	08:52
	17:00	18:02	18:55	20:53		21:44			22:10	21:45		20:43			19:28	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11		05:17			05:04	05:37		06:30			07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:55		21:46			22:10	21:43		20:41			19:25	17:15	16:22	16:17
27	08:30	07:29	06:22	06:09		05:16			05:04	05:38		06:32			07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56		21:47			22:09	21:42		20:38			19:23	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	06:32 (3)	05:15			05:05	05:40		06:34			07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	1 06:33 (3)	21:49			22:09	21:40		20:36			19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	06:30 (3)	05:14			05:05	05:42		06:36			07:31	07:27	08:24	08:52
	17:08		20:03	21:00	3 06:33 (3)	21:50			22:09	21:38		20:34			19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	06:28 (3)	05:13			05:06	05:43	06:31 (3)	06:37			07:32	07:29	08:26	08:52
	17:10		20:05	21:02	6 06:34 (3)	21:51			22:09	21:37	1 06:32 (3)	20:31			19:15	17:06	16:19	16:20
31	08:24		07:12			05:12				05:45	06:27 (3)	06:39				07:31		08:52
	17:12		20:06			21:53				21:35	10 06:37 (3)	20:29				17:04		16:21
Potential sun hours	250	273	367	420		494		510	512		460		382	328	259	233		
Total, worst case				10		185			11		181							
Sun reduction				0.31		0.31			0.22		0.26							
Oper. time red.				1.00		1.00			1.00		1.00							
Wind dir. red.				0.65		0.65			0.65		0.65							
Total reduction				0.20		0.20			0.15		0.17							
Total, real				2		38			2		30							

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** BG - H063

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:10	20:08	21:04	21:54	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:07	05:58	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	05:08	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12	21:07	21:56	22:08	21:29	20:21	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52	05:07	05:09	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	21:58	22:07	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50	05:06	05:10	05:55	06:50	07:43	07:42	08:35
	16:28	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:50	05:44	05:04	05:13	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:00	06:45	05:40	05:03	05:16	06:03	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23	22:05	22:01	21:12	19:59	18:46	16:41	16:12
13	08:46	07:59	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	22:00	21:09	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:58	08:44
	16:40	17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	05:33	05:02	05:21	06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:07	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	08:47
	16:45	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:34	16:12
18	08:42	07:49	06:43	06:28	05:28	05:02	05:25	06:16	07:11	08:05	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:37	22:09	21:52	20:54	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:19	05:03	05:33	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	21:44	22:09	21:45	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:22	17:12	16:21	16:17
28	08:28	07:27	06:19	06:06	05:14	05:04	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:37	20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** BH - H064

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February	March	April	May	June	July	August	September	October	November			December		
1	08:52		14:52 (8)	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:40	07:34	07:32			08:27		14:44 (8)
	16:22	30	15:22 (8)	17:14	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02			16:17	19	15:03 (8)
2	08:52		14:53 (8)	08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34			08:29		14:44 (8)
	16:23	29	15:22 (8)	17:15	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00			16:16	21	15:05 (8)
3	08:52		14:55 (8)	08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:38	07:36			08:30		14:43 (8)
	16:24	28	15:23 (8)	17:17	18:13	20:12	21:07	21:56	22:08	21:29	20:21	19:07	16:58			16:16	23	15:06 (8)
4	08:52		14:55 (8)	08:17	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38			08:32		14:43 (8)
	16:26	27	15:22 (8)	17:19	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56			16:15	24	15:07 (8)
5	08:51		14:56 (8)	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40			08:33		14:42 (8)
	16:27	27	15:23 (8)	17:21	18:17	20:15	21:11	21:58	22:06	21:26	20:17	19:03	16:54			16:15	25	15:07 (8)
6	08:51		14:57 (8)	08:13	07:12	06:57	05:49	05:06	05:10	05:55	06:49	07:43	07:42			08:35		14:43 (8)
	16:28	26	15:23 (8)	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52			16:14	26	15:09 (8)
7	08:50		14:57 (8)	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44			08:36		14:42 (8)
	16:30	25	15:22 (8)	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50			16:13	27	15:09 (8)
8	08:50		14:59 (8)	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46			08:37		14:43 (8)
	16:31	24	15:23 (8)	17:28	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48			16:13	28	15:11 (8)
9	08:49		15:00 (8)	08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:49	07:48			08:39		14:43 (8)
	16:32	23	15:23 (8)	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46			16:13	28	15:11 (8)
10	08:49		15:01 (8)	08:05	07:03	06:47	05:42	05:03	05:14	06:02	06:56	07:50	07:50			08:40		14:43 (8)
	16:34	21	15:22 (8)	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45			16:12	28	15:11 (8)
11	08:48		15:02 (8)	08:03	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52			08:41		14:44 (8)
	16:35	19	15:21 (8)	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43			16:12	29	15:13 (8)
12	08:47		15:04 (8)	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54			08:42		14:44 (8)
	16:37	17	15:21 (8)	17:36	18:31	20:28	21:23	22:05	22:01	21:11	19:59	18:46	16:41			16:12	29	15:13 (8)
13	08:46		15:05 (8)	07:59	06:56	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:56			08:43		14:44 (8)
	16:39	15	15:20 (8)	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40			16:12	30	15:14 (8)
14	08:45		15:08 (8)	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57			08:44		14:44 (8)
	16:40	10	15:18 (8)	17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38			16:12	30	15:14 (8)
15	08:45		15:12 (8)	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59			08:45		14:44 (8)
	16:42	3	15:15 (8)	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36			16:12	31	15:15 (8)
16	08:44			07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01			08:46		14:45 (8)
	16:44			17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35			16:12	31	15:16 (8)
17	08:43			07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03			08:47		14:45 (8)
	16:45			17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:33			16:12	31	15:16 (8)
18	08:41			07:49	06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05	08:05			08:48		14:45 (8)
	16:47			17:48	18:42	20:39	21:33	22:08	21:54	20:59	19:44	18:32	16:32			16:12	31	15:16 (8)
19	08:40			07:47	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07			08:48		14:46 (8)
	16:49			17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31			16:13	31	15:17 (8)
20	08:39			07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09			08:49		14:47 (8)
	16:51			17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29			16:13	31	15:18 (8)
21	08:38			07:42	06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11	08:10			08:50		14:46 (8)
	16:52			17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28			16:13	32	15:18 (8)
22	08:37			07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12			08:50		14:47 (8)
	16:54			17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27			16:14	32	15:19 (8)
23	08:35			07:38	06:31	06:17	05:21	05:02	05:32	06:24	07:20	08:15	08:14			08:51		14:48 (8)
	16:56			17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25			16:14	31	15:19 (8)
24	08:34			07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16			08:51		14:48 (8)
	16:58			18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24			16:15	31	15:19 (8)
25	08:33			07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:18			08:51		14:49 (8)
	17:00			18:02	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23			16:16	31	15:20 (8)
26	08:31			07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19			08:52		14:49 (8)
	17:02			18:03	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22			16:16	31	15:20 (8)
27	08:30			07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21		14:52 (8)	08:52		14:50 (8)
	17:04			18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	1	14:53 (8)	16:17	31	15:21 (8)
28	08:28			07:26	06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24	08:23		14:48 (8)	08:52		14:50 (8)
	17:06			18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	10	14:58 (8)	16:18	31	15:21 (8)
29	08:27				07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24		14:47 (8)	08:52		14:51 (8)
	17:08				20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	14	15:01 (8)	16:19	30	15:21 (8)
30	08:25				07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26		14:45 (8)	08:52		14:52 (8)
	17:10				20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	17	15:02 (8)	16:20	30	15:22 (8)
31	08:23				07:11		05:11		05:44	06:39		07:30				08:52		14:52 (8)
	17:12				20:06		21:52		21:35	20:29		17:04				16:21	30	15:22 (8)
Potential sun hours	250			273	367	420	494	510	513	460	382	328	259			233		
Total, worst case		324												42			893	
Sun reduction		0.16												0.20			0.12	
Oper. time red.		1.00												1.00			1.00	
Wind dir. red.		0.65												0.65			0.65	
Total reduction		0.10												0.13			0.08	
Total, real		34												5			69	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** BI - H065

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March		April			May			June		
1	08:52		08:22		07:24		07:09			06:00		06:26 (2)	05:11		05:41 (1)
	16:23		17:14		18:10		20:08			21:04	29	06:55 (2)	21:54	19	06:00 (1)
2	08:52		08:20		07:22		07:07			05:58		06:24 (2)	05:10		05:40 (1)
	16:24		17:16		18:12		20:10			21:06	31	06:55 (2)	21:55	20	06:00 (1)
3	08:52		08:19		07:20		07:04			05:56		06:22 (2)	05:09		05:40 (1)
	16:25		17:18		18:14		20:12			21:07	33	06:55 (2)	21:56	20	06:00 (1)
4	08:52		08:17		07:17		07:02			05:54		06:20 (2)	05:08		05:39 (1)
	16:26		17:20		18:16		20:14			21:09	35	06:55 (2)	21:57	21	06:00 (1)
5	08:51		08:15		07:15		07:00			05:52		06:18 (2)	05:07		05:39 (1)
	16:27		17:22		18:18		20:16			21:11	37	06:55 (2)	21:58	20	05:59 (1)
6	08:51		08:13		07:13		06:57			05:50		06:16 (2)	05:06		05:41 (1)
	16:29		17:24		18:19		20:18			21:13	38	06:54 (2)	21:59	18	05:59 (1)
7	08:51		08:11		07:10		06:55			05:48		06:15 (2)	05:06		05:41 (1)
	16:30		17:26		18:21		20:19			21:15	40	06:55 (2)	22:00	18	05:59 (1)
8	08:50		08:09		07:08		06:52			05:46		06:13 (2)	05:05		05:42 (1)
	16:31		17:28		18:23		20:21			21:16	42	06:55 (2)	22:01	17	05:59 (1)
9	08:50		08:08		07:06		06:50		07:14 (3)	05:44		06:13 (2)	05:05		05:42 (1)
	16:33		17:30		18:25		20:23	2	07:16 (3)	21:18	41	06:54 (2)	22:02	16	05:58 (1)
10	08:49		08:06		07:03		06:48		07:11 (3)	05:42		06:13 (2)	05:04		05:43 (1)
	16:34		17:32		18:27		20:25	4	07:15 (3)	21:20	40	06:53 (2)	22:03	15	05:58 (1)
11	08:48		08:04		07:01		06:45		07:09 (3)	05:40		06:14 (2)	05:04		05:44 (1)
	16:36		17:34		18:29		20:27	7	07:16 (3)	21:22	39	06:53 (2)	22:04	14	05:58 (1)
12	08:47		08:02		06:58		06:43		07:07 (3)	05:39		06:14 (2)	05:03		05:44 (1)
	16:37		17:36		18:31		20:29	9	07:16 (3)	21:23	39	06:53 (2)	22:05	13	05:57 (1)
13	08:47		08:00		06:56		06:40		07:04 (3)	05:37		06:14 (2)	05:03		05:44 (1)
	16:39		17:38		18:33		20:31	11	07:15 (3)	21:25	38	06:52 (2)	22:05	13	05:57 (1)
14	08:46		07:58		06:53		06:38		07:02 (3)	05:35		06:15 (2)	05:03		05:45 (1)
	16:41		17:40		18:35		20:32	13	07:15 (3)	21:27	37	06:52 (2)	22:06	12	05:57 (1)
15	08:45		07:55		06:51		06:36		07:00 (3)	05:33		06:16 (2)	05:02		05:46 (1)
	16:42		17:42		18:37		20:34	14	07:14 (3)	21:29	35	06:51 (2)	22:07	11	05:57 (1)
16	08:44		07:53		06:49		06:33		06:58 (3)	05:32		06:17 (2)	05:02		05:47 (1)
	16:44		17:44		18:39		20:36	16	07:14 (3)	21:30	33	06:50 (2)	22:07	10	05:57 (1)
17	08:43		07:51		06:46		06:31		06:55 (3)	05:30		06:17 (2)	05:02		05:47 (1)
	16:46		17:46		18:40		20:38	17	07:12 (3)	21:32	32	06:49 (2)	22:08	10	05:57 (1)
18	08:42		07:49		06:44		06:29		06:55 (3)	05:29		05:57 (1)	05:02		05:48 (1)
	16:47		17:48		18:42		20:40	15	07:10 (3)	21:34	33	06:49 (2)	22:08	9	05:57 (1)
19	08:41		07:47		06:41		06:26		06:57 (3)	05:27		05:56 (1)	05:02		05:48 (1)
	16:49		17:50		18:44		20:42	11	07:08 (3)	21:35	32	06:48 (2)	22:09	9	05:57 (1)
20	08:39		07:45		06:39		06:24		07:01 (3)	05:25		05:54 (1)	05:02		05:48 (1)
	16:51		17:52		18:46		20:44	3	07:04 (3)	21:37	32	06:46 (2)	22:09	9	05:57 (1)
21	08:38		07:43		06:36		06:22		06:47 (2)	05:24		05:53 (1)	05:02		05:48 (1)
	16:53		17:54		18:48		20:45	2	06:49 (2)	21:38	30	06:45 (2)	22:09	9	05:57 (1)
22	08:37		07:40		06:34		06:20		06:44 (2)	05:23		05:52 (1)	05:02		05:48 (1)
	16:55		17:56		18:50		20:47	5	06:49 (2)	21:40	30	06:44 (2)	22:09	9	05:57 (1)
23	08:36		07:38		06:31		06:17		06:42 (2)	05:21		05:50 (1)	05:03		05:49 (1)
	16:57		17:58		18:52		20:49	9	06:51 (2)	21:41	28	06:42 (2)	22:10	9	05:58 (1)
24	08:34		07:36		06:29		06:15		06:40 (2)	05:20		05:49 (1)	05:03		05:49 (1)
	16:58		18:00		18:53		20:51	12	06:52 (2)	21:43	26	06:41 (2)	22:10	9	05:58 (1)
25	08:33		07:34		06:26		06:13		06:38 (2)	05:18		05:48 (1)	05:03		05:48 (1)
	17:00		18:02		18:55		20:53	15	06:53 (2)	21:44	22	06:38 (2)	22:10	10	05:58 (1)
26	08:32		07:31		06:24		06:11		06:36 (2)	05:17		05:47 (1)	05:04		05:49 (1)
	17:02		18:04		18:57		20:55	18	06:54 (2)	21:46	14	06:01 (1)	22:10	10	05:59 (1)
27	08:30		07:29		06:22		06:09		06:34 (2)	05:16		05:46 (1)	05:04		05:48 (1)
	17:04		18:06		18:59		20:56	20	06:54 (2)	21:47	15	06:01 (1)	22:10	11	05:59 (1)
28	08:29		07:27		06:19		06:06		06:32 (2)	05:15		05:45 (1)	05:05		05:49 (1)
	17:06		18:08		19:01		20:58	23	06:55 (2)	21:49	16	06:01 (1)	22:09	11	06:00 (1)
29	08:27				07:17		06:04		06:30 (2)	05:14		05:44 (1)	05:05		05:48 (1)
	17:08				20:03		21:00	25	06:55 (2)	21:50	17	06:01 (1)	22:09	12	06:00 (1)
30	08:25				07:14		06:02		06:28 (2)	05:13		05:43 (1)	05:06		05:48 (1)
	17:10				20:05		21:02	27	06:55 (2)	21:51	18	06:01 (1)	22:09	13	06:01 (1)
31	08:24				07:12					05:12		05:42 (1)			
	17:12				20:06					21:53	18	06:00 (1)			
Potential sun hours	250		273		367		420			494			510		
Total, worst case								278			950			397	
Sun reduction								0.31			0.31			0.26	
Oper. time red.								1.00			1.00			1.00	
Wind dir. red.								0.65			0.65			0.64	
Total reduction								0.20			0.20			0.16	
Total, real								55			193			65	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** BI - H065

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August		September		October	November	December
1	05:07		05:48 (1)	05:47		06:24 (2)	06:41	07:08 (3)	07:34	07:33	08:28
	22:09	14	06:02 (1)	21:33	39	07:03 (2)	20:27	7	07:15 (3)	19:13	17:02	16:18
2	05:07		05:47 (1)	05:48		06:24 (2)	06:43		07:10 (3)	07:36	07:35	08:29
	22:08	15	06:02 (1)	21:31	40	07:04 (2)	20:24	4	07:14 (3)	19:10	17:00	16:17
3	05:08		05:47 (1)	05:50		06:23 (2)	06:44		07:12 (3)	07:38	07:37	08:31
	22:08	16	06:03 (1)	21:30	41	07:04 (2)	20:22	2	07:14 (3)	19:08	16:58	16:16
4	05:09		05:47 (1)	05:52		06:23 (2)	06:46			07:40	07:38	08:32
	22:07	17	06:04 (1)	21:28	41	07:04 (2)	20:19			19:05	16:56	16:16
5	05:10		05:47 (1)	05:53		06:23 (2)	06:48			07:42	07:40	08:34
	22:07	18	06:05 (1)	21:26	41	07:04 (2)	20:17			19:03	16:54	16:15
6	05:11		05:47 (1)	05:55		06:25 (2)	06:50			07:43	07:42	08:35
	22:06	19	06:06 (1)	21:24	40	07:05 (2)	20:14			19:01	16:52	16:14
7	05:12		05:47 (1)	05:57		06:27 (2)	06:52			07:45	07:44	08:36
	22:05	19	06:06 (1)	21:22	38	07:05 (2)	20:12			18:58	16:51	16:14
8	05:13		05:47 (1)	05:58		06:28 (2)	06:53			07:47	07:46	08:38
	22:05	20	06:07 (1)	21:20	36	07:04 (2)	20:10			18:56	16:49	16:14
9	05:14		05:47 (1)	06:00		06:30 (2)	06:55			07:49	07:48	08:39
	22:04	20	06:07 (1)	21:18	35	07:05 (2)	20:07			18:53	16:47	16:13
10	05:15		05:48 (1)	06:02		06:31 (2)	06:57			07:51	07:50	08:40
	22:03	20	06:08 (1)	21:16	33	07:04 (2)	20:05			18:51	16:45	16:13
11	05:16		05:49 (1)	06:04		06:33 (2)	06:59			07:53	07:52	08:41
	22:02	19	06:08 (1)	21:14	31	07:04 (2)	20:02			18:49	16:43	16:13
12	05:17		05:50 (1)	06:05		06:35 (2)	07:00			07:54	07:54	08:42
	22:01	19	06:09 (1)	21:12	29	07:04 (2)	20:00			18:46	16:42	16:13
13	05:18		05:51 (1)	06:07		06:36 (2)	07:02			07:56	07:56	08:43
	22:00	18	06:09 (1)	21:10	27	07:03 (2)	19:57			18:44	16:40	16:12
14	05:20		05:52 (1)	06:09		06:38 (2)	07:04			07:58	07:58	08:44
	21:59	17	06:09 (1)	21:08	24	07:02 (2)	19:55			18:41	16:39	16:12
15	05:21		05:53 (1)	06:11		06:40 (2)	07:06			08:00	08:00	08:45
	21:58	16	06:09 (1)	21:05	22	07:02 (2)	19:52			18:39	16:37	16:12
16	05:22		05:54 (1)	06:13		06:41 (2)	07:07			08:02	08:02	08:46
	21:57	15	06:09 (1)	21:03	20	07:01 (2)	19:50			18:37	16:35	16:12
17	05:24		05:56 (1)	06:14		06:43 (2)	07:09			08:04	08:03	08:47
	21:56	14	06:10 (1)	21:01	17	07:00 (2)	19:47			18:35	16:34	16:13
18	05:25		05:57 (1)	06:16		06:45 (2)	07:11			08:06	08:05	08:48
	21:55	17	06:45 (2)	20:59	14	06:59 (2)	19:45			18:32	16:32	16:13
19	05:26		05:58 (1)	06:18		06:46 (2)	07:13			08:08	08:07	08:49
	21:53	24	06:49 (2)	20:57	11	06:57 (2)	19:42			18:30	16:31	16:13
20	05:28		06:00 (1)	06:20		06:48 (2)	07:15			08:09	08:09	08:49
	21:52	27	06:52 (2)	20:54	8	06:56 (2)	19:40			18:28	16:30	16:13
21	05:29		06:01 (1)	06:21		06:50 (2)	07:16			08:11	08:11	08:50
	21:51	29	06:53 (2)	20:52	5	06:55 (2)	19:37			18:25	16:28	16:14
22	05:31		06:02 (1)	06:23		06:51 (2)	07:18			08:13	08:13	08:50
	21:49	30	06:54 (2)	20:50	1	06:52 (2)	19:35			18:23	16:27	16:14
23	05:32		06:04 (1)	06:25		07:04 (3)	07:20			08:15	08:14	08:51
	21:48	32	06:56 (2)	20:48	5	07:09 (3)	19:32			18:21	16:26	16:15
24	05:34		06:05 (1)	06:27		07:01 (3)	07:22			08:17	08:16	08:51
	21:46	32	06:57 (2)	20:45	11	07:12 (3)	19:30			18:19	16:25	16:15
25	05:35		06:07 (1)	06:28		06:58 (3)	07:23			07:19	08:18	08:52
	21:45	32	06:59 (2)	20:43	15	07:13 (3)	19:28			17:17	16:23	16:16
26	05:37		06:08 (1)	06:30		06:58 (3)	07:25			07:21	08:20	08:52
	21:43	32	06:59 (2)	20:41	17	07:15 (3)	19:25			17:15	16:22	16:17
27	05:38		06:27 (2)	06:32		07:00 (3)	07:27			07:23	08:21	08:52
	21:42	33	07:00 (2)	20:38	16	07:16 (3)	19:23			17:12	16:21	16:18
28	05:40		06:27 (2)	06:34		07:01 (3)	07:29			07:25	08:23	08:52
	21:40	34	07:01 (2)	20:36	14	07:15 (3)	19:20			17:10	16:20	16:18
29	05:42		06:26 (2)	06:36		07:03 (3)	07:31			07:27	08:24	08:52
	21:38	35	07:01 (2)	20:34	13	07:16 (3)	19:18			17:08	16:19	16:19
30	05:43		06:25 (2)	06:37		07:05 (3)	07:32			07:29	08:26	08:53
	21:37	37	07:02 (2)	20:31	11	07:16 (3)	19:15			17:06	16:19	16:20
31	05:45		06:25 (2)	06:39		07:07 (3)				07:31		08:53
	21:35	38	07:03 (2)	20:29	9	07:16 (3)				17:04		16:21
Potential sun hours	512			460			382			328	259	233
Total, worst case		728			704			13				
Sun reduction		0.22			0.26			0.25				
Oper. time red.		1.00			1.00			1.00				
Wind dir. red.		0.64			0.65			0.64				
Total reduction		0.14			0.17			0.16				
Total, real		105			117			2				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** BJ - H066

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:10	20:08	21:04	21:54	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:07	05:58	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	05:08	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12	21:07	21:56	22:08	21:29	20:21	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52	05:07	05:09	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	21:58	22:07	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50	05:06	05:10	05:55	06:50	07:43	07:42	08:35
	16:28	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:50	05:44	05:04	05:13	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:00	06:45	05:40	05:03	05:16	06:03	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23	22:05	22:01	21:12	19:59	18:46	16:41	16:12
13	08:46	07:59	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	22:00	21:09	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:58	08:44
	16:40	17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	05:33	05:02	05:21	06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:07	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	08:47
	16:45	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:34	16:12
18	08:42	07:49	06:43	06:28	05:28	05:02	05:25	06:16	07:11	08:05	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:37	22:09	21:52	20:54	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:19	05:03	05:33	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	21:44	22:09	21:45	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:22	17:12	16:21	16:17
28	08:28	07:27	06:19	06:06	05:14	05:04	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:37	20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** BK - H067

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March		April			May			June		
1	08:52		08:22		07:24		07:09			06:00		06:28 (5)	05:10		
	16:23		17:14		18:10		20:08			21:04	29	06:57 (5)	21:54		
2	08:52		08:20		07:22		07:07		07:31 (6)	05:58		06:28 (5)	05:10		
	16:24		17:16		18:12		20:10	3	07:34 (6)	21:06	28	06:56 (5)	21:55		
3	08:52		08:19		07:20		07:04		07:28 (6)	05:56		06:29 (5)	05:09		
	16:25		17:18		18:14		20:12	6	07:34 (6)	21:07	26	06:55 (5)	21:56		
4	08:52		08:17		07:17		07:02		07:26 (6)	05:54		06:29 (5)	05:08		
	16:26		17:20		18:16		20:14	9	07:35 (6)	21:09	25	06:54 (5)	21:57		
5	08:51		08:15		07:15		07:00		07:23 (6)	05:52		06:30 (5)	05:07		
	16:27		17:22		18:17		20:16	12	07:35 (6)	21:11	23	06:53 (5)	21:58		
6	08:51		08:13		07:13		06:57		07:21 (6)	05:50		06:31 (5)	05:06		
	16:29		17:24		18:19		20:18	14	07:35 (6)	21:13	20	06:51 (5)	21:59		
7	08:51		08:11		07:10		06:55		07:19 (6)	05:48		06:33 (5)	05:06		
	16:30		17:26		18:21		20:19	16	07:35 (6)	21:15	17	06:50 (5)	22:00		
8	08:50		08:09		07:08		06:52		07:16 (6)	05:46		06:35 (5)	05:05		05:37 (4)
	16:31		17:28		18:23		20:21	18	07:34 (6)	21:16	13	06:48 (5)	22:01	1	05:38 (4)
9	08:49		08:07		07:05		06:50		07:14 (6)	05:44		06:38 (5)	05:04		05:36 (4)
	16:33		17:30		18:25		20:23	20	07:34 (6)	21:18	6	06:44 (5)	22:02	2	05:38 (4)
10	08:49		08:05		07:03		06:47		07:11 (6)	05:42			05:04		05:36 (4)
	16:34		17:32		18:27		20:25	22	07:33 (6)	21:20			22:03	3	05:39 (4)
11	08:48		08:04		07:01		06:45		07:11 (6)	05:40			05:04		05:36 (4)
	16:36		17:34		18:29		20:27	21	07:32 (6)	21:22			22:04	4	05:40 (4)
12	08:47		08:02		06:58		06:43		07:12 (6)	05:39			05:03		05:35 (4)
	16:37		17:36		18:31		20:29	19	07:31 (6)	21:23			22:05	4	05:39 (4)
13	08:47		07:59		06:56		06:40		07:12 (6)	05:37			05:03		05:35 (4)
	16:39		17:38		18:33		20:30	17	07:29 (6)	21:25			22:05	5	05:40 (4)
14	08:46		07:57		06:53		06:38		07:14 (6)	05:35			05:03		05:35 (4)
	16:41		17:40		18:35		20:32	13	07:27 (6)	21:27			22:06	6	05:41 (4)
15	08:45		07:55		06:51		06:36		07:18 (6)	05:33			05:02		05:35 (4)
	16:42		17:42		18:37		20:34	5	07:23 (6)	21:28			22:07	6	05:41 (4)
16	08:44		07:53		06:49		06:33			05:32			05:02		05:35 (4)
	16:44		17:44		18:38		20:36			21:30			22:07	6	05:41 (4)
17	08:43		07:51		06:46		06:31			05:30			05:02		05:35 (4)
	16:46		17:46		18:40		20:38			21:32			22:08	7	05:42 (4)
18	08:42		07:49		06:44		06:29		06:53 (5)	05:29			05:02		05:35 (4)
	16:47		17:48		18:42		20:40	1	06:54 (5)	21:33			22:08	7	05:42 (4)
19	08:41		07:47		06:41		06:26		06:51 (5)	05:27			05:02		05:35 (4)
	16:49		17:50		18:44		20:42	4	06:55 (5)	21:35			22:08	7	05:42 (4)
20	08:39		07:45		06:39		06:24		06:49 (5)	05:25			05:02		05:35 (4)
	16:51		17:52		18:46		20:43	8	06:57 (5)	21:37			22:09	7	05:42 (4)
21	08:38		07:43		06:36		06:22		06:46 (5)	05:24			05:02		05:35 (4)
	16:53		17:54		18:48		20:45	10	06:56 (5)	21:38			22:09	7	05:42 (4)
22	08:37		07:40		06:34		06:20		06:44 (5)	05:23			05:02		05:35 (4)
	16:55		17:56		18:50		20:47	13	06:57 (5)	21:40			22:09	7	05:42 (4)
23	08:36		07:38		06:31		06:17		06:42 (5)	05:21			05:03		05:36 (4)
	16:57		17:58		18:52		20:49	16	06:58 (5)	21:41			22:09	7	05:43 (4)
24	08:34		07:36		06:29		06:15		06:40 (5)	05:20			05:03		05:36 (4)
	16:58		18:00		18:53		20:51	18	06:58 (5)	21:43			22:10	7	05:43 (4)
25	08:33		07:34		06:26		06:13		06:38 (5)	05:18			05:03		05:36 (4)
	17:00		18:02		18:55		20:53	20	06:58 (5)	21:44			22:10	7	05:43 (4)
26	08:31		07:31		06:24		06:11		06:36 (5)	05:17			05:04		05:37 (4)
	17:02		18:04		18:57		20:55	22	06:58 (5)	21:46			22:10	7	05:44 (4)
27	08:30		07:29		06:22		06:08		06:34 (5)	05:16			05:04		05:37 (4)
	17:04		18:06		18:59		20:56	24	06:58 (5)	21:47			22:09	6	05:43 (4)
28	08:28		07:27		06:19		06:06		06:32 (5)	05:15			05:05		05:38 (4)
	17:06		18:08		19:01		20:58	26	06:58 (5)	21:49			22:09	6	05:44 (4)
29	08:27				07:17		06:04		06:30 (5)	05:14			05:05		05:38 (4)
	17:08				20:03		21:00	28	06:58 (5)	21:50			22:09	5	05:43 (4)
30	08:25				07:14		06:02		06:28 (5)	05:13			05:06		05:39 (4)
	17:10				20:05		21:02	29	06:57 (5)	21:51			22:09	5	05:44 (4)
31	08:24				07:12					05:11					
	17:12				20:06					21:52					
Potential sun hours	250		273		367		420			494			510		
Total, worst case								414			187			129	
Sun reduction								0.31			0.31			0.26	
Oper. time red.								1.00			1.00			1.00	
Wind dir. red.								0.65			0.65			0.65	
Total reduction								0.20			0.20			0.17	
Total, real								82			38			22	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** BK - H067

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July			August			September			October	November	December
1	05:07		05:40 (4)	05:47			06:41		07:10 (6)	07:34	07:33	08:28
	22:08	4	05:44 (4)	21:33			20:26	21	07:31 (6)	19:13	17:02	16:18
2	05:07		05:40 (4)	05:48			06:43		07:10 (6)	07:36	07:34	08:29
	22:08	3	05:43 (4)	21:31			20:24	22	07:32 (6)	19:10	17:00	16:17
3	05:08		05:41 (4)	05:50			06:44		07:12 (6)	07:38	07:36	08:31
	22:08	3	05:44 (4)	21:29			20:22	20	07:32 (6)	19:08	16:58	16:16
4	05:09		05:42 (4)	05:52		06:47 (5)	06:46		07:13 (6)	07:40	07:38	08:32
	22:07	2	05:44 (4)	21:28	9	06:56 (5)	20:19	18	07:31 (6)	19:05	16:56	16:16
5	05:10		05:43 (4)	05:53		06:44 (5)	06:48		07:15 (6)	07:41	07:40	08:33
	22:07	1	05:44 (4)	21:26	14	06:58 (5)	20:17	16	07:31 (6)	19:03	16:54	16:15
6	05:11			05:55		06:42 (5)	06:50		07:17 (6)	07:43	07:42	08:35
	22:06			21:24	18	07:00 (5)	20:14	14	07:31 (6)	19:00	16:52	16:14
7	05:12			05:57		06:41 (5)	06:52		07:18 (6)	07:45	07:44	08:36
	22:05			21:22	21	07:02 (5)	20:12	12	07:30 (6)	18:58	16:51	16:14
8	05:13			05:58		06:39 (5)	06:53		07:20 (6)	07:47	07:46	08:37
	22:05			21:20	23	07:02 (5)	20:09	9	07:29 (6)	18:56	16:49	16:14
9	05:14			06:00		06:39 (5)	06:55		07:22 (6)	07:49	07:48	08:39
	22:04			21:18	25	07:04 (5)	20:07	7	07:29 (6)	18:53	16:47	16:13
10	05:15			06:02		06:37 (5)	06:57		07:24 (6)	07:51	07:50	08:40
	22:03			21:16	27	07:04 (5)	20:05	3	07:27 (6)	18:51	16:45	16:13
11	05:16			06:04		06:37 (5)	06:59			07:53	07:52	08:41
	22:02			21:14	27	07:04 (5)	20:02			18:49	16:43	16:13
12	05:17			06:05		06:36 (5)	07:00			07:54	07:54	08:42
	22:01			21:12	29	07:05 (5)	20:00			18:46	16:42	16:12
13	05:18			06:07		06:36 (5)	07:02			07:56	07:56	08:43
	22:00			21:10	29	07:05 (5)	19:57			18:44	16:40	16:12
14	05:20			06:09		06:38 (5)	07:04			07:58	07:58	08:44
	21:59			21:07	27	07:05 (5)	19:55			18:41	16:38	16:12
15	05:21			06:11		06:40 (5)	07:06			08:00	08:00	08:45
	21:58			21:05	26	07:06 (5)	19:52			18:39	16:37	16:12
16	05:22			06:12		06:41 (5)	07:07			08:02	08:01	08:46
	21:57			21:03	24	07:05 (5)	19:50			18:37	16:35	16:12
17	05:23			06:14		06:43 (5)	07:09			08:04	08:03	08:47
	21:56			21:01	22	07:05 (5)	19:47			18:34	16:34	16:13
18	05:25			06:16		06:45 (5)	07:11			08:06	08:05	08:48
	21:55			20:59	20	07:05 (5)	19:45			18:32	16:32	16:13
19	05:26			06:18		06:46 (5)	07:13			08:07	08:07	08:48
	21:53			20:57	18	07:04 (5)	19:42			18:30	16:31	16:13
20	05:28			06:20		06:48 (5)	07:14			08:09	08:09	08:49
	21:52			20:54	15	07:03 (5)	19:40			18:28	16:30	16:13
21	05:29			06:21		06:50 (5)	07:16			08:11	08:11	08:50
	21:51			20:52	13	07:03 (5)	19:37			18:25	16:28	16:14
22	05:31			06:23		06:51 (5)	07:18			08:13	08:12	08:50
	21:49			20:50	10	07:01 (5)	19:35			18:23	16:27	16:14
23	05:32			06:25		06:53 (5)	07:20			08:15	08:14	08:51
	21:48			20:48	7	07:00 (5)	19:32			18:21	16:26	16:15
24	05:34			06:27		06:55 (5)	07:22			08:17	08:16	08:51
	21:46			20:45	4	06:59 (5)	19:30			18:19	16:25	16:15
25	05:35			06:28			07:23			07:19	08:18	08:52
	21:45			20:43			19:27			17:17	16:23	16:16
26	05:37			06:30			07:25			07:21	08:19	08:52
	21:43			20:41			19:25			17:14	16:22	16:17
27	05:38			06:32			07:27			07:23	08:21	08:52
	21:42			20:38			19:23			17:12	16:21	16:18
28	05:40			06:34		07:19 (6)	07:29			07:25	08:23	08:52
	21:40			20:36	5	07:24 (6)	19:20			17:10	16:20	16:18
29	05:42			06:36		07:15 (6)	07:31			07:27	08:24	08:52
	21:38			20:34	13	07:28 (6)	19:18			17:08	16:19	16:19
30	05:43			06:37		07:13 (6)	07:32			07:29	08:26	08:52
	21:37			20:31	17	07:30 (6)	19:15			17:06	16:19	16:20
31	05:45			06:39		07:12 (6)				07:31		08:52
	21:35			20:29	19	07:31 (6)				17:04		16:21
Potential sun hours	512			460			382			328	259	233
Total, worst case		13			462			142				
Sun reduction		0.22			0.26			0.25				
Oper. time red.		1.00			1.00			1.00				
Wind dir. red.		0.65			0.65			0.64				
Total reduction		0.14			0.17			0.16				
Total, real		2			77			23				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** BL - H068

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May		June		July		August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00		05:10		05:06		05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:10	20:08	21:03		21:54	22	21:19 (6)	22:08	26	21:30 (6)	21:33	20:26	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58		05:09		20:57 (6)	05:07		21:03 (6)	05:48	06:42	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:05		21:55	23	21:20 (6)	22:08	27	21:30 (6)	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56		05:09		20:58 (6)	05:08		21:03 (6)	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12	21:07		21:56	24	21:22 (6)	22:07	27	21:30 (6)	21:29	20:21	19:08	16:58	16:16
4	08:51	08:17	07:17	07:02	05:54		05:08		20:57 (6)	05:09		21:04 (6)	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14	21:09		21:57	25	21:22 (6)	22:07	27	21:31 (6)	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52		05:07		20:57 (6)	05:10		21:04 (6)	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11		21:58	26	21:23 (6)	22:06	27	21:31 (6)	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50		05:06		20:58 (6)	05:11		21:04 (6)	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:17	21:13		21:59	26	21:24 (6)	22:06	27	21:31 (6)	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:55	05:48		05:06		20:58 (6)	05:12		21:04 (6)	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14		22:00	27	21:25 (6)	22:05	25	21:29 (6)	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46		05:05		20:59 (6)	05:13		21:04 (6)	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16		22:01	27	21:26 (6)	22:04	25	21:29 (6)	21:20	20:09	18:56	16:49	16:13
9	08:49	08:07	07:05	06:50	05:44		05:04		20:58 (6)	05:14		21:04 (6)	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18		22:02	27	21:25 (6)	22:04	24	21:28 (6)	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42		05:04		20:59 (6)	05:15		21:04 (6)	06:02	06:57	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20		22:03	27	21:26 (6)	22:03	24	21:28 (6)	21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:01	06:45	05:40		05:03		20:58 (6)	05:16		21:04 (6)	06:04	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21		22:04	27	21:25 (6)	22:02	23	21:27 (6)	21:14	20:02	18:48	16:43	16:13
12	08:47	08:01	06:58	06:43	05:38		05:03		20:59 (6)	05:17		21:05 (6)	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23		22:04	27	21:26 (6)	22:01	22	21:27 (6)	21:12	19:59	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	05:37		05:03		21:00 (6)	05:18		21:05 (6)	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25		22:05	26	21:26 (6)	22:00	21	21:26 (6)	21:09	19:57	18:44	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35		05:02		21:00 (6)	05:19		21:06 (6)	06:09	07:04	07:58	07:57	08:44
	16:41	17:40	18:35	20:32	21:27		22:06	26	21:26 (6)	21:59	19	21:25 (6)	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	05:33		05:02		21:00 (6)	05:21		21:06 (6)	06:11	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28		22:06	27	21:27 (6)	21:58	18	21:24 (6)	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32		05:02		21:01 (6)	05:22		21:06 (6)	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30		22:07	26	21:27 (6)	21:57	16	21:22 (6)	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30		05:02		21:01 (6)	05:23		21:06 (6)	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32		22:07	26	21:27 (6)	21:56	15	21:21 (6)	21:01	19:47	18:34	16:34	16:12
18	08:41	07:49	06:43	06:28	05:28		05:02		21:01 (6)	05:25		21:07 (6)	06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:40	21:33		22:08	26	21:27 (6)	21:54	14	21:21 (6)	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	21:01 (6)	05:02		21:01 (6)	05:26		21:07 (6)	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	1 21:02 (6)	22:08	26	21:27 (6)	21:53	12	21:19 (6)	20:56	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	21:00 (6)	05:02		21:01 (6)	05:28		21:07 (6)	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	4 21:04 (6)	22:09	26	21:27 (6)	21:52	11	21:18 (6)	20:54	19:40	18:28	16:29	16:13
21	08:38	07:42	06:36	06:22	05:24	21:00 (6)	05:02		21:02 (6)	05:29		21:09 (6)	06:21	07:16	08:11	08:10	08:49
	16:53	17:54	18:48	20:45	21:38	5 21:05 (6)	22:09	25	21:27 (6)	21:50	8	21:17 (6)	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	20:58 (6)	05:02		21:02 (6)	05:30		21:09 (6)	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	8 21:06 (6)	22:09	25	21:27 (6)	21:49	7	21:16 (6)	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	20:58 (6)	05:02		21:02 (6)	05:32		21:10 (6)	06:25	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41	10 21:08 (6)	22:09	26	21:28 (6)	21:48	5	21:15 (6)	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	20:58 (6)	05:03		21:02 (6)	05:33		21:11 (6)	06:27	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	11 21:09 (6)	22:09	26	21:28 (6)	21:46	2	21:13 (6)	20:45	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18	20:58 (6)	05:03		21:02 (6)	05:35			06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:52	21:44	13 21:11 (6)	22:09	26	21:28 (6)	21:45			20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	20:57 (6)	05:04		21:03 (6)	05:37			06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	15 21:12 (6)	22:09	26	21:29 (6)	21:43			20:40	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	20:57 (6)	05:04		21:03 (6)	05:38			06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	16 21:13 (6)	22:09	26	21:29 (6)	21:41			20:38	19:22	17:12	16:21	16:17
28	08:28	07:27	06:19	06:06	05:15	20:57 (6)	05:05		21:03 (6)	05:40			06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	18 21:15 (6)	22:09	26	21:29 (6)	21:40			20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	20:57 (6)	05:05		21:03 (6)	05:41			06:35	07:30	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	19 21:16 (6)	22:09	26	21:29 (6)	21:38			20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	20:57 (6)	05:06		21:03 (6)	05:43			06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	20 21:17 (6)	22:09	27	21:30 (6)	21:36			20:31	19:15	17:06	16:18	16:20
31	08:23		07:12		05:11	20:57 (6)				05:45			06:39		07:30		08:52
	17:12		20:06		21:52	21 21:18 (6)				21:35			20:29		17:04		16:21
Potential sun hours	250	273	367	420	494		510			512		460	382	328	259	233	
Total, worst case						161		776		452							
Sun reduction						0.31		0.26		0.22							
Oper. time red.						1.00		1.00		1.00							
Wind dir. red.						0.60		0.60		0.60							
Total reduction						0.19		0.16		0.13							
Total, real						30		121		61							

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** BM - H070

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March	April	May	June	July	August	September	October		November		December
1	08:52		08:22		08:58 (3)	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34		07:33	08:02 (1)	08:28
	16:22		17:14	18	09:16 (3)	18:10	20:08	21:04	21:54	22:09	21:33	20:27	19:13		17:02	12 08:14 (1)	16:18
2	08:52		08:20		08:59 (3)	07:22	07:07	05:58	05:09	05:07	05:48	06:43	07:36		07:35	08:04 (1)	08:29
	16:24		17:16	16	09:15 (3)	18:12	20:10	21:06	21:55	22:08	21:31	20:24	19:10		17:00	9 08:13 (1)	16:17
3	08:52		08:19		09:01 (3)	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38		07:37	08:06 (1)	08:31
	16:25		17:18	12	09:13 (3)	18:14	20:12	21:07	21:56	22:08	21:30	20:22	19:08		16:58	6 08:12 (1)	16:16
4	08:52		08:17		09:03 (3)	07:17	07:02	05:54	05:08	05:09	05:52	06:46	07:40		07:38	08:08 (1)	08:32
	16:26		17:20	8	09:11 (3)	18:16	20:14	21:09	21:57	22:07	21:28	20:19	19:05		16:56	2 08:10 (1)	16:16
5	08:52		08:15			07:15	07:00	05:52	05:07	05:10	05:53	06:48	07:42		07:40		08:34
	16:27		17:22			18:18	20:16	21:11	21:58	22:07	21:26	20:17	19:03		16:54		16:15
6	08:51		08:13			07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43		07:42		08:35
	16:29		17:24			18:19	20:18	21:13	22:00	22:06	21:24	20:14	19:01		16:52		16:14
7	08:51		08:11		08:38 (1)	07:10	06:55	05:48	05:06	05:12	05:57	06:52	07:45		07:44	08:34 (3)	08:36
	16:30		17:26	2	08:40 (1)	18:21	20:19	21:15	22:01	22:06	21:22	20:12	18:58		16:50	8 08:42 (3)	16:14
8	08:50		08:09		08:36 (1)	07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47		07:46	08:31 (3)	08:38
	16:31		17:28	6	08:42 (1)	18:23	20:21	21:16	22:01	22:05	21:20	20:10	18:56		16:49	13 08:44 (3)	16:13
9	08:50		08:08		08:34 (1)	07:06	06:50	05:44	05:04	05:14	06:00	06:55	07:49		07:48	08:30 (3)	08:39
	16:33		17:30	10	08:44 (1)	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53		16:47	16 08:46 (3)	16:13
10	08:49		08:06		08:32 (1)	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51		07:50	08:29 (3)	08:40
	16:34		17:32	13	08:45 (1)	18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51		16:45	18 08:47 (3)	16:13
11	08:48		08:04		08:30 (1)	07:01	06:45	05:40	05:03	05:16	06:04	06:59	07:53		07:52	08:28 (3)	08:41
	16:36		17:34	16	08:46 (1)	18:29	20:27	21:22	22:04	22:02	21:14	20:02	18:49		16:43	20 08:48 (3)	16:13
12	08:47		08:02		08:28 (1)	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54		07:54	08:27 (3)	08:42
	16:37		17:36	19	08:47 (1)	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46		16:42	21 08:48 (3)	16:12
13	08:47		08:00		08:26 (1)	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	08:59 (1)	07:56	08:27 (3)	08:43
	16:39		17:38	21	08:47 (1)	18:33	20:31	21:25	22:06	22:00	21:10	19:57	18:44	7 09:06 (1)	16:40	22 08:49 (3)	16:12
14	08:46		07:58		08:24 (1)	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	08:55 (1)	07:58	08:30 (3)	08:44
	16:41		17:40	24	08:48 (1)	18:35	20:32	21:27	22:06	21:59	21:08	19:55	18:41	15 09:10 (1)	16:38	20 08:50 (3)	16:12
15	08:45		07:55		08:21 (1)	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00	08:52 (1)	08:00	08:32 (3)	08:45
	16:42		17:42	27	08:48 (1)	18:37	20:34	21:29	22:07	21:58	21:05	19:52	18:39	20 09:12 (1)	16:37	19 08:51 (3)	16:12
16	08:44		07:53		08:19 (1)	06:49	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:50 (1)	08:02	08:34 (3)	08:46
	16:44		17:44	29	08:48 (1)	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	24 09:14 (1)	16:35	17 08:51 (3)	16:12
17	08:43		07:51		08:17 (1)	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:49 (1)	08:03	08:36 (3)	08:47
	16:46		17:46	31	08:48 (1)	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	26 09:15 (1)	16:34	15 08:51 (3)	16:13
18	08:42	09:13 (3)	07:49		08:15 (1)	06:44	06:29	05:28	05:02	05:25	06:16	07:11	08:06	08:47 (1)	08:05	08:38 (3)	08:48
	16:47	1 09:14 (3)	17:48	34	08:49 (1)	18:42	20:40	21:34	22:08	21:55	20:59	19:45	18:32	29 09:16 (1)	16:32	13 08:51 (3)	16:13
19	08:41	09:11 (3)	07:47		08:15 (1)	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:08	08:46 (1)	08:07	08:40 (3)	08:49
	16:49	3 09:14 (3)	17:50	34	08:49 (1)	18:44	20:42	21:35	22:09	21:53	20:57	19:42	18:30	31 09:17 (1)	16:31	11 08:51 (3)	16:13
20	08:40	09:10 (3)	07:45		08:14 (1)	06:39	06:24	05:25	05:02	05:28	06:20	07:15	08:09	08:46 (1)	08:09	08:42 (3)	08:49
	16:51	5 09:15 (3)	17:52	33	08:47 (1)	18:46	20:44	21:37	22:09	21:52	20:54	19:40	18:28	31 09:17 (1)	16:30	9 08:51 (3)	16:13
21	08:38	09:08 (3)	07:43		08:15 (1)	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:45 (1)	08:11	08:44 (3)	08:50
	16:53	7 09:15 (3)	17:54	32	08:47 (1)	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	33 09:18 (1)	16:28	7 08:51 (3)	16:14
22	08:37	09:07 (3)	07:40		08:15 (1)	06:34	06:20	05:22	05:02	05:31	06:23	07:18	08:13	08:44 (1)	08:13	08:46 (3)	08:50
	16:55	9 09:16 (3)	17:56	32	08:47 (1)	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	34 09:18 (1)	16:27	5 08:51 (3)	16:14
23	08:36	09:05 (3)	07:38		08:15 (1)	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:44 (1)	08:14	08:48 (3)	08:51
	16:56	11 09:16 (3)	17:58	30	08:45 (1)	18:52	20:49	21:41	22:10	21:48	20:48	19:32	18:21	34 09:18 (1)	16:26	3 08:51 (3)	16:15
24	08:34	09:04 (3)	07:36		08:17 (1)	06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:45 (1)	08:16	08:50 (3)	08:51
	16:58	13 09:17 (3)	18:00	28	08:45 (1)	18:53	20:51	21:43	22:10	21:46	20:45	19:30	18:19	33 09:18 (1)	16:25	1 08:51 (3)	16:15
25	08:33	09:02 (3)	07:34		08:18 (1)	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	07:47 (1)	08:18		08:52
	17:00	15 09:17 (3)	18:02	26	08:44 (1)	18:55	20:53	21:44	22:10	21:45	20:43	19:27	17:17	31 08:18 (1)	16:23		16:16
26	08:32	09:01 (3)	07:31		08:19 (1)	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	07:49 (1)	08:20		08:52
	17:02	17 09:18 (3)	18:04	22	08:41 (1)	18:57	20:55	21:46	22:10	21:43	20:41	19:25	17:14	28 08:17 (1)	16:22		16:17
27	08:30	08:59 (3)	07:29		08:21 (1)	06:22	06:08	05:16	05:04	05:38	06:32	07:27	07:23	07:52 (1)	08:21		08:52
	17:04	19 09:18 (3)	18:06	18	08:39 (1)	18:59	20:56	21:47	22:10	21:42	20:38	19:23	17:12	26 08:18 (1)	16:21		16:17
28	08:29	08:57 (3)	07:27		08:24 (1)	06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	07:54 (1)	08:23		08:52
	17:06	21 09:18 (3)	18:08	12	08:36 (1)	19:01	20:58	21:49	22:09	21:40	20:36	19:20	17:10	24 08:18 (1)	16:20		16:18
29	08:27	08:55 (3)				07:17	06:04	05:14	05:05	05:42	06:36	07:31	07:27	07:56 (1)	08:25		08:53
	17:08	22 09:17 (3)				20:03	21:00	21:50	22:09	21:38	20:34	19:18	17:08	21 08:17 (1)	16:19		16:19
30	08:25	08:56 (3)				07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:29	07:58 (1)	08:26		08:53
	17:10	22 09:18 (3)				20:05	21:02	21:51	22:09	21:37	20:31	19:15	17:06	18 08:16 (1)	16:18		16:20
31	08:24	08:57 (3)				07:12		05:11		05:45	06:39		07:31	08:00 (1)			08:53
	17:12	20 09:17 (3)				20:06		21:53		21:35	20:29		17:04	15 08:15 (1)			16:21
Potential sun hours	250		273		367	420	494	510	512	460	382	328		259		233	
Total, worst case		185		553									480		267		
Sun reduction		0.16		0.19									0.23		0.20		
Oper. time red.		1.00		1.00									1.00		1.00		
Wind dir. red.		0.61		0.61									0.61		0.61		
Total reduction		0.10		0.12									0.14		0.12		
Total, real		18		66									67		32		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** BN - H071

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April		May		June		July		August		September	October	November	December
1	08:52	08:22	07:24	07:09		06:00	06:38 (3)	05:11		05:41 (2)	05:07	05:40 (1)	05:47	06:17 (2)	06:41	07:34	07:33	08:28
	16:23	17:14	18:10	20:08		21:04	3 06:41 (3)	21:54	36	06:17 (2)	22:09	43 06:23 (2)	21:33	2 06:19 (2)	20:27	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07		05:58		05:10		05:40 (2)	05:07	05:40 (1)	05:48		06:43	07:36	07:35	08:29
	16:24	17:16	18:12	20:10		21:06		21:55	37	06:17 (2)	22:08	43 06:23 (2)	21:31		20:24	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04		05:56		05:09		05:40 (2)	05:08	05:41 (1)	05:50		06:44	07:38	07:36	08:31
	16:25	17:18	18:14	20:12		21:07		21:56	38	06:18 (2)	22:08	42 06:23 (2)	21:30		20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02		05:54		05:08		05:39 (1)	05:09	05:42 (1)	05:52		06:46	07:40	07:38	08:32
	16:26	17:20	18:16	20:14		21:09		21:57	39	06:18 (2)	22:07	42 06:24 (2)	21:28		20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	07:00		05:52		05:07		05:38 (1)	05:10	05:43 (1)	05:53		06:48	07:42	07:40	08:34
	16:27	17:22	18:18	20:16		21:11		21:58	40	06:18 (2)	22:07	41 06:24 (2)	21:26		20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57		05:50		05:06		05:38 (1)	05:11	05:44 (1)	05:55		06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:18		21:13		21:59	40	06:18 (2)	22:06	40 06:24 (2)	21:24		20:14	19:01	16:52	16:14
7	08:51	08:11	07:10	06:55		05:48		05:06		05:37 (1)	05:12	05:45 (1)	05:57		06:52	07:45	07:44	08:36
	16:30	17:26	18:21	20:19		21:15		22:00	41	06:18 (2)	22:05	40 06:25 (2)	21:22		20:12	18:58	16:51	16:14
8	08:50	08:09	07:08	06:52		05:46		05:05		05:37 (1)	05:13	05:46 (1)	05:58		06:53	07:47	07:46	08:38
	16:31	17:28	18:23	20:21		21:16		22:01	41	06:18 (2)	22:05	39 06:25 (2)	21:20		20:10	18:56	16:49	16:14
9	08:49	08:08	07:06	06:50		05:44		05:05		05:36 (1)	05:14	05:47 (2)	06:00		06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23		21:18		22:02	42	06:18 (2)	22:04	38 06:25 (2)	21:18		20:07	18:53	16:47	16:13
10	08:49	08:06	07:03	06:48		05:42		05:04		05:36 (1)	05:15	05:48 (2)	06:02		06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25		21:20		22:03	42	06:18 (2)	22:03	38 06:26 (2)	21:16		20:05	18:51	16:45	16:13
11	08:48	08:04	07:01	06:45		05:40	06:08 (2)	05:04		05:36 (1)	05:16	05:49 (2)	06:04		06:59	07:53	07:52	08:41
	16:36	17:34	18:29	20:27		21:22	1 06:09 (2)	22:04	43	06:19 (2)	22:02	37 06:26 (2)	21:14		20:02	18:49	16:43	16:13
12	08:47	08:02	06:58	06:43		05:39	06:06 (2)	05:03		05:35 (1)	05:17	05:50 (2)	06:05	06:45 (3)	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29		21:23	4 06:10 (2)	22:05	43	06:18 (2)	22:01	36 06:26 (2)	21:12	6 06:51 (3)	20:00	18:46	16:42	16:13
13	08:47	08:00	06:56	06:40		05:37	06:04 (2)	05:03		05:35 (1)	05:18	05:51 (2)	06:07	06:42 (3)	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:31		21:25	6 06:10 (2)	22:05	44	06:19 (2)	22:00	35 06:26 (2)	21:10	11 06:53 (3)	19:57	18:44	16:40	16:12
14	08:46	07:58	06:53	06:38		05:35	06:03 (2)	05:03		05:35 (1)	05:20	05:52 (2)	06:09	06:40 (3)	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32		21:27	9 06:12 (2)	22:06	44	06:19 (2)	21:59	34 06:26 (2)	21:08	15 06:55 (3)	19:55	18:41	16:39	16:12
15	08:45	07:55	06:51	06:36		05:33	06:01 (2)	05:02		05:35 (1)	05:21	05:53 (2)	06:11	06:40 (3)	07:06	08:00	08:00	08:45
	16:42	17:42	18:37	20:34		21:29	11 06:12 (2)	22:07	44	06:19 (2)	21:58	33 06:26 (2)	21:05	17 06:57 (3)	19:52	18:39	16:37	16:12
16	08:44	07:53	06:49	06:33		05:32	06:00 (2)	05:02		05:35 (1)	05:22	05:54 (2)	06:13	06:41 (3)	07:07	08:02	08:02	08:46
	16:44	17:44	18:39	20:36		21:30	13 06:13 (2)	22:07	44	06:19 (2)	21:57	32 06:26 (2)	21:03	16 06:57 (3)	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31		05:30	05:58 (2)	05:02		05:35 (1)	05:24	05:56 (2)	06:14	06:43 (3)	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38		21:32	15 06:13 (2)	22:08	44	06:19 (2)	21:56	31 06:27 (2)	21:01	14 06:57 (3)	19:47	18:35	16:34	16:13
18	08:42	07:49	06:44	06:29		05:29	05:57 (2)	05:02		05:35 (1)	05:25	05:57 (2)	06:16	06:45 (3)	07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40		21:33	17 06:14 (2)	22:08	45	06:20 (2)	21:55	29 06:26 (2)	20:59	13 06:58 (3)	19:45	18:32	16:32	16:13
19	08:41	07:47	06:41	06:26	06:51 (3)	05:27	05:56 (2)	05:02		05:35 (1)	05:26	05:58 (2)	06:18	06:46 (3)	07:13	08:08	08:07	08:49
	16:49	17:50	18:44	20:42	1 06:52 (3)	21:35	19 06:15 (2)	22:09	45	06:20 (2)	21:53	28 06:26 (2)	20:57	11 06:57 (3)	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	06:49 (3)	05:25	05:54 (2)	05:02		05:35 (1)	05:28	06:00 (2)	06:20	06:48 (3)	07:15	08:09	08:09	08:49
	16:51	17:52	18:46	20:44	4 06:53 (3)	21:37	21 06:15 (2)	22:09	45	06:20 (2)	21:52	27 06:27 (2)	20:54	10 06:58 (3)	19:40	18:28	16:30	16:13
21	08:38	07:43	06:36	06:22	06:47 (3)	05:24	05:53 (2)	05:02		05:35 (1)	05:29	06:01 (2)	06:21	06:50 (3)	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	6 06:53 (3)	21:38	23 06:16 (2)	22:09	45	06:20 (2)	21:51	25 06:26 (2)	20:52	8 06:58 (3)	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:20	06:44 (3)	05:23	05:52 (2)	05:02		05:35 (1)	05:31	06:02 (2)	06:23	06:51 (3)	07:18	08:13	08:13	08:50
	16:55	17:56	18:50	20:47	8 06:52 (3)	21:40	24 06:16 (2)	22:09	45	06:20 (2)	21:49	24 06:26 (2)	20:50	6 06:57 (3)	19:35	18:23	16:27	16:14
23	08:36	07:38	06:31	06:17	06:42 (3)	05:21	05:50 (2)	05:03		05:36 (1)	05:32	06:04 (2)	06:25	06:53 (3)	07:20	08:15	08:14	08:51
	16:57	17:58	18:52	20:49	10 06:52 (3)	21:41	26 06:16 (2)	22:10	45	06:21 (2)	21:48	22 06:26 (2)	20:48	3 06:56 (3)	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	06:40 (3)	05:20	05:49 (2)	05:03		05:36 (1)	05:34	06:05 (2)	06:27	06:55 (3)	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	12 06:52 (3)	21:43	27 06:16 (2)	22:10	45	06:21 (2)	21:46	20 06:25 (2)	20:45	1 06:56 (3)	19:30	18:19	16:25	16:15
25	08:33	07:34	06:26	06:13	06:38 (3)	05:18	05:48 (2)	05:03		05:36 (1)	05:35	06:07 (2)	06:28		07:23	07:19	08:18	08:52
	17:00	18:02	18:55	20:53	13 06:51 (3)	21:44	29 06:17 (2)	22:10	45	06:21 (2)	21:45	18 06:25 (2)	20:43		19:28	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	06:36 (3)	05:17	05:47 (2)	05:04		05:37 (1)	05:37	06:08 (2)	06:30		07:25	07:21	08:20	08:52
	17:02	18:04	18:57	20:55	15 06:51 (3)	21:46	30 06:17 (2)	22:10	44	06:21 (2)	21:43	16 06:24 (2)	20:41		19:25	17:15	16:22	16:17
27	08:30	07:29	06:22	06:09	06:34 (3)	05:16	05:46 (2)	05:04		05:37 (1)	05:38	06:09 (2)	06:32		07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	16 06:50 (3)	21:47	31 06:17 (2)	22:10	44	06:21 (2)	21:42	14 06:23 (2)	20:38		19:23	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	06:32 (3)	05:15	05:45 (2)	05:05		05:38 (1)	05:40	06:11 (2)	06:34		07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	17 06:49 (3)	21:49	32 06:17 (2)	22:09	44	06:22 (2)	21:40	12 06:23 (2)	20:36		19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	06:33 (3)	05:14	05:44 (2)	05:05		05:38 (1)	05:42	06:12 (2)	06:36		07:31	07:27	08:24	08:52
	17:08		20:03	21:00	14 06:47 (3)	21:50	33 06:17 (2)	22:09	44	06:22 (2)	21:38	10 06:22 (2)	20:34		19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	06:35 (3)	05:13	05:43 (2)	05:06		05:39 (1)	05:43	06:14 (2)	06:37		07:32	07:29	08:26	08:53
	17:10		20:05	21:02	10 06:45 (3)	21:51	34 06:17 (2)	22:09	43	06:22 (2)	21:37	8 06:22 (2)	20:31		19:15	17:06	16:19	16:20
31	08:24		07:12			05:12	05:42 (2)				05:45	06:16 (2)	06:39			07:31		08:52
	17:12		20:06			21:53	35 06:17 (2)				21:35	5 06:21 (2)	20:29			17:04		16:21
Potential sun hours	250	273	367	420		494		510			512		460		382	328	259	233
Total, worst case					126		443		1281		902		133					
Sun reduction					0.31		0.31		0.26		0.22		0.26					
Oper. time red.					1.00		1.00		1.00		1.00		1.00					
Wind dir. red.					0.65		0.64		0.64		0.64		0.65					
Total reduction					0.20		0.20		0.17		0.14		0.17					
Total, real					25		89		212		129		22					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** BO - H072

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:11	05:07	05:47	06:17 (1)	06:41	07:08 (2)	07:34	07:33	08:28
	16:23	17:14	18:10	20:08	21:04	21:54	22:09	21:33	19 06:36 (1)	20:27	29 07:37 (2)	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	07:31 (2) 05:58	06:24 (1) 05:10	05:07	05:48	06:19 (1)	06:43	07:10 (2)	07:36	07:35	08:29
	16:24	17:16	18:12	20:10	1 07:32 (2) 21:06	3 06:27 (1) 21:55	22:08	21:31	18 06:37 (1)	20:24	27 07:37 (2)	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04	07:28 (2) 05:56	06:22 (1) 05:09	05:08	05:50	06:20 (1)	06:44	07:12 (2)	07:38	07:37	08:31
	16:25	17:18	18:14	20:12	5 07:33 (2) 21:07	5 06:27 (1) 21:56	22:08	21:30	17 06:37 (1)	20:22	24 07:36 (2)	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	07:26 (2) 05:54	06:20 (1) 05:08	05:09	05:52	06:22 (1)	06:46	07:13 (2)	07:40	07:38	08:32
	16:26	17:20	18:16	20:14	9 07:35 (2) 21:09	7 06:27 (1) 21:57	22:07	21:28	16 06:38 (1)	20:19	22 07:35 (2)	19:05	16:56	16:16
5	08:51	08:15	07:15	07:00	07:23 (2) 05:52	06:18 (1) 05:07	05:10	05:53	06:23 (1)	06:48	07:15 (2)	07:42	07:40	08:34
	16:27	17:22	18:18	20:16	12 07:35 (2) 21:11	10 06:28 (1) 21:58	22:07	21:26	14 06:37 (1)	20:17	19 07:34 (2)	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	07:21 (2) 05:50	06:16 (1) 05:06	05:11	05:55	06:25 (1)	06:50	07:17 (2)	07:43	07:42	08:35
	16:29	17:24	18:19	20:18	16 07:37 (2) 21:13	11 06:27 (1) 22:00	22:06	21:24	13 06:38 (1)	20:14	16 07:33 (2)	19:01	16:52	16:14
7	08:51	08:11	07:10	06:55	07:19 (2) 05:48	06:15 (1) 05:06	05:12	05:57	06:27 (1)	06:52	07:18 (2)	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	19 07:38 (2) 21:15	13 06:28 (1) 22:01	22:05	21:22	11 06:38 (1)	20:12	13 07:31 (2)	18:58	16:51	16:14
8	08:50	08:09	07:08	06:52	07:16 (2) 05:46	06:13 (1) 05:05	05:13	05:58	06:28 (1)	06:53	07:20 (2)	07:47	07:46	08:38
	16:31	17:28	18:23	20:21	21 07:37 (2) 21:16	15 06:28 (1) 22:01	22:05	21:20	9 06:37 (1)	20:10	9 07:29 (2)	18:56	16:49	16:14
9	08:50	08:08	07:06	06:50	07:14 (2) 05:44	06:11 (1) 05:04	05:14	06:00	06:30 (1)	06:55	07:22 (2)	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	24 07:38 (2) 21:18	16 06:27 (1) 22:02	22:04	21:18	7 06:37 (1)	20:07	6 07:28 (2)	18:53	16:47	16:13
10	08:49	08:06	07:03	06:48	07:11 (2) 05:42	06:09 (1) 05:04	05:15	06:02	06:31 (1)	06:57	07:24 (2)	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	27 07:38 (2) 21:20	18 06:27 (1) 22:03	22:03	21:16	5 06:36 (1)	20:05	1 07:25 (2)	18:51	16:45	16:13
11	08:48	08:04	07:01	06:45	07:09 (2) 05:40	06:08 (1) 05:04	05:16	06:04	06:33 (1)	06:59		07:53	07:52	08:41
	16:36	17:34	18:29	20:27	29 07:38 (2) 21:22	19 06:27 (1) 22:04	22:02	21:14	2 06:35 (1)	20:02		18:49	16:43	16:13
12	08:47	08:02	06:58	06:43	07:07 (2) 05:39	06:06 (1) 05:03	05:17	06:05		07:00		07:54	07:54	08:42
	16:37	17:36	18:31	20:29	31 07:38 (2) 21:23	20 06:26 (1) 22:05	22:01	21:12		20:00		18:46	16:42	16:13
13	08:47	08:00	06:56	06:40	07:04 (2) 05:37	06:05 (1) 05:03	05:18	06:07		07:02		07:56	07:56	08:43
	16:39	17:38	18:33	20:31	33 07:37 (2) 21:25	20 06:25 (1) 22:05	22:00	21:10		19:57		18:44	16:40	16:12
14	08:46	07:58	06:53	06:38	07:02 (2) 05:35	06:06 (1) 05:03	05:20	06:09		07:04		07:58	07:58	08:44
	16:41	17:40	18:35	20:32	35 07:37 (2) 21:27	19 06:25 (1) 22:06	21:59	21:08		19:55		18:41	16:39	16:12
15	08:45	07:55	06:51	06:36	07:00 (2) 05:33	06:07 (1) 05:02	05:21	06:11		07:06		08:00	08:00	08:45
	16:42	17:42	18:37	20:34	37 07:37 (2) 21:29	16 06:23 (1) 22:07	21:58	21:05		19:52		18:39	16:37	16:12
16	08:44	07:53	06:49	06:33	07:00 (2) 05:32	06:09 (1) 05:02	05:22	06:13		07:07		08:02	08:02	08:46
	16:44	17:44	18:39	20:36	37 07:37 (2) 21:30	13 06:22 (1) 22:07	21:57	21:03		19:50		18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	06:59 (2) 05:30	06:10 (1) 05:02	05:24	06:14	07:16 (2)	07:09		08:04	08:03	08:47
	16:46	17:46	18:40	20:38	36 07:35 (2) 21:32	10 06:20 (1) 22:08	21:56	21:01	12 07:28 (2)	19:47		18:35	16:34	16:13
18	08:42	07:49	06:44	06:29	07:00 (2) 05:29	06:13 (1) 05:02	05:25	06:16	07:13 (2)	07:11		08:06	08:05	08:48
	16:47	17:48	18:42	20:40	35 07:35 (2) 21:34	5 06:18 (1) 22:08	21:55	20:59	18 07:31 (2)	19:45		18:32	16:32	16:13
19	08:41	07:47	06:41	06:26	07:00 (2) 05:27	05:02	05:26	06:18	07:10 (2)	07:13		08:08	08:07	08:49
	16:49	17:50	18:44	20:42	34 07:34 (2) 21:35	22:09	21:53	20:57	22 07:32 (2)	19:42		18:30	16:31	16:13
20	08:40	07:45	06:39	06:24	07:01 (2) 05:25	05:02	05:28	06:20	07:09 (2)	07:15		08:09	08:09	08:49
	16:51	17:52	18:46	20:44	32 07:33 (2) 21:37	22:09	21:52	20:54	25 07:34 (2)	19:40		18:28	16:30	16:13
21	08:38	07:43	06:36	06:22	07:02 (2) 05:24	05:02	05:29	06:21	07:08 (2)	07:16		08:11	08:11	08:50
	16:53	17:54	18:48	20:45	30 07:32 (2) 21:38	22:09	21:51	20:52	28 07:36 (2)	19:37		18:25	16:28	16:14
22	08:37	07:40	06:34	06:20	07:02 (2) 05:23	05:02	05:31	06:23	07:06 (2)	07:18		08:13	08:13	08:50
	16:55	17:56	18:50	20:47	28 07:30 (2) 21:40	22:09	21:49	20:50	30 07:36 (2)	19:35		18:23	16:27	16:14
23	08:36	07:38	06:31	06:17	07:03 (2) 05:21	05:03	05:32	06:25	07:05 (2)	07:20		08:15	08:14	08:51
	16:57	17:58	18:52	20:49	25 07:28 (2) 21:41	22:10	21:48	20:48	32 07:37 (2)	19:32		18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	07:05 (2) 05:20	05:03	05:34	06:27	07:04 (2)	07:22		08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21 07:26 (2) 21:43	22:10	21:46	20:45	34 07:38 (2)	19:30		18:19	16:25	16:15
25	08:33	07:34	06:26	06:13	07:07 (2) 05:18	05:03	05:35	06:28	07:02 (2)	07:23		07:19	08:18	08:52
	17:00	18:02	18:55	20:53	17 07:24 (2) 21:44	22:10	21:45	20:43	36 07:38 (2)	19:28		17:17	16:23	16:16
26	08:32	07:31	06:24	06:11	07:10 (2) 05:17	05:04	05:37	06:22 (1) 06:30	07:02 (2)	07:25		07:21	08:20	08:52
	17:02	18:04	18:57	20:55	11 07:21 (2) 21:46	22:10	21:43	8 06:30 (1) 20:41	36 07:38 (2)	19:25		17:15	16:22	16:17
27	08:30	07:29	06:22	06:09	05:16	05:04	05:38	06:19 (1) 06:32	07:02 (2)	07:27		07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:10	21:42	12 06:31 (1) 20:38	37 07:39 (2)	19:23		17:12	16:21	16:18
28	08:29	07:27	06:19	06:06	05:15	05:05	05:40	06:19 (1) 06:34	07:01 (2)	07:29		07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:49	22:09	21:40	14 06:33 (1) 20:36	37 07:38 (2)	19:20		17:10	16:20	16:18
29	08:27		07:17	06:04	05:14	05:05	05:42	06:17 (1) 06:36	07:03 (2)	07:31		07:27	08:25	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	17 06:34 (1) 20:34	35 07:38 (2)	19:18		17:08	16:19	16:19
30	08:25		07:14	06:02	05:13	05:06	05:43	06:16 (1) 06:37	07:05 (2)	07:32		07:29	08:26	08:53
	17:10		20:05	21:02	21:51	22:09	21:37	19 06:35 (1) 20:31	33 07:38 (2)	19:15		17:06	16:19	16:20
31	08:24		07:12		05:12		05:45	06:16 (1) 06:39	07:07 (2)			07:31		08:53
	17:12		20:06		21:53		21:35	20 06:36 (1) 20:29	31 07:38 (2)			17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case				605	220		90	577	166			
Sun reduction				0.31	0.31		0.22	0.26	0.25			
Oper. time red.				1.00	1.00		1.00	1.00	1.00			
Wind dir. red.				0.64	0.65		0.65	0.64	0.64			
Total reduction				0.20	0.20		0.15	0.17	0.16			
Total, real				119	45		13	95	27			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** BP - H073

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April		May		June	July	August		September		October	November	December
1	08:52	08:22	07:24	07:09		06:00		06:47 (2)	05:11	05:07	05:47		06:41	07:08 (2)	07:34	07:33	08:28
	16:23	17:14	18:10	20:08		21:04	24	07:11 (2)	21:54	22:09	21:33		20:27	8 07:16 (2)	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07		05:58		06:49 (2)	05:10	05:07	05:48		06:43	07:10 (2)	07:36	07:35	08:29
	16:24	17:16	18:12	20:10		21:06	20	07:09 (2)	21:55	22:08	21:31		20:24	4 07:14 (2)	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04		05:56		06:51 (2)	05:09	05:08	05:50		06:44		07:38	07:37	08:31
	16:25	17:18	18:14	20:12		21:07	15	07:06 (2)	21:56	22:08	21:30		20:22		19:08	16:58	16:16
4	08:52	08:17	07:17	07:02		05:54		06:54 (2)	05:08	05:09	05:52		06:46		07:40	07:38	08:32
	16:26	17:20	18:16	20:14		21:09	9	07:03 (2)	21:57	22:07	21:28		20:19		19:05	16:56	16:16
5	08:51	08:15	07:15	07:00		05:52			05:07	05:10	05:53		06:48		07:42	07:40	08:34
	16:27	17:22	18:18	20:16		21:11			21:58	22:07	21:26		20:17		19:03	16:54	16:15
6	08:51	08:13	07:13	06:57		05:50			05:06	05:11	05:55		06:50		07:43	07:42	08:35
	16:29	17:24	18:19	20:18		21:13			21:59	22:06	21:24		20:14		19:01	16:52	16:14
7	08:51	08:11	07:10	06:55		05:48			05:06	05:12	05:57		06:52		07:45	07:44	08:36
	16:30	17:26	18:21	20:19		21:15			22:00	22:05	21:22		20:12		18:58	16:51	16:14
8	08:50	08:09	07:08	06:52		05:46			05:05	05:13	05:58		06:53		07:47	07:46	08:38
	16:31	17:28	18:23	20:21		21:16			22:01	22:05	21:20		20:10		18:56	16:49	16:14
9	08:50	08:08	07:06	06:50		05:44			05:05	05:14	06:00	07:02 (2)	06:55		07:49	07:48	08:39
	16:33	17:30	18:25	20:23		21:18			22:02	22:04	21:18	12 07:14 (2)	20:07		18:53	16:47	16:13
10	08:49	08:06	07:03	06:48	07:11 (2)	05:42			05:04	05:15	06:02	06:58 (2)	06:57		07:51	07:50	08:40
	16:34	17:32	18:27	20:25	4 07:15 (2)	21:20			22:03	22:03	21:16	18 07:16 (2)	20:05		18:51	16:45	16:13
11	08:48	08:04	07:01	06:45	07:09 (2)	05:40			05:04	05:16	06:04	06:57 (2)	06:59		07:53	07:52	08:41
	16:36	17:34	18:29	20:27	8 07:17 (2)	21:22			22:04	22:02	21:14	21 07:18 (2)	20:02		18:49	16:43	16:13
12	08:47	08:02	06:58	06:43	07:07 (2)	05:39			05:03	05:17	06:05	06:55 (2)	07:00		07:54	07:54	08:42
	16:37	17:36	18:31	20:29	11 07:18 (2)	21:23			22:05	22:01	21:12	25 07:20 (2)	20:00		18:46	16:42	16:13
13	08:47	08:00	06:56	06:40	07:04 (2)	05:37			05:03	05:18	06:07	06:53 (2)	07:02		07:56	07:56	08:43
	16:39	17:38	18:33	20:31	14 07:18 (2)	21:25			22:05	22:00	21:10	27 07:20 (2)	19:57		18:44	16:40	16:12
14	08:46	07:58	06:53	06:38	07:02 (2)	05:35			05:03	05:20	06:09	06:52 (2)	07:04		07:58	07:58	08:44
	16:41	17:40	18:35	20:32	17 07:19 (2)	21:27			22:06	21:59	21:08	30 07:22 (2)	19:55		18:41	16:39	16:12
15	08:45	07:55	06:51	06:36	07:00 (2)	05:33			05:02	05:21	06:11	06:52 (2)	07:06		08:00	08:00	08:45
	16:42	17:42	18:37	20:34	20 07:20 (2)	21:29			22:07	21:58	21:05	31 07:23 (2)	19:52		18:39	16:37	16:12
16	08:44	07:53	06:49	06:33	06:58 (2)	05:32			05:02	05:22	06:13	06:50 (2)	07:07		08:02	08:02	08:46
	16:44	17:44	18:39	20:36	22 07:20 (2)	21:30			22:07	21:57	21:03	33 07:23 (2)	19:50		18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	06:55 (2)	05:30			05:02	05:24	06:14	06:49 (2)	07:09		08:04	08:03	08:47
	16:46	17:46	18:40	20:38	25 07:20 (2)	21:32			22:08	21:56	21:01	35 07:24 (2)	19:47		18:35	16:34	16:13
18	08:42	07:49	06:44	06:29	06:53 (2)	05:29			05:02	05:25	06:16	06:49 (2)	07:11		08:06	08:05	08:48
	16:47	17:48	18:42	20:40	27 07:20 (2)	21:34			22:08	21:55	20:59	35 07:24 (2)	19:45		18:32	16:32	16:13
19	08:41	07:47	06:41	06:26	06:51 (2)	05:27			05:02	05:26	06:18	06:48 (2)	07:13		08:08	08:07	08:49
	16:49	17:50	18:44	20:42	29 07:20 (2)	21:35			22:09	21:53	20:57	36 07:24 (2)	19:42		18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	06:49 (2)	05:25			05:02	05:28	06:20	06:48 (2)	07:15		08:09	08:09	08:49
	16:51	17:52	18:46	20:44	31 07:20 (2)	21:37			22:09	21:52	20:54	36 07:24 (2)	19:40		18:28	16:30	16:13
21	08:38	07:43	06:36	06:22	06:47 (2)	05:24			05:02	05:29	06:21	06:50 (2)	07:16		08:11	08:11	08:50
	16:53	17:54	18:48	20:45	33 07:20 (2)	21:38			22:09	21:51	20:52	35 07:25 (2)	19:37		18:25	16:28	16:14
22	08:37	07:40	06:34	06:20	06:44 (2)	05:23			05:02	05:31	06:23	06:51 (2)	07:18		08:13	08:13	08:50
	16:55	17:56	18:50	20:47	35 07:19 (2)	21:40			22:09	21:49	20:50	33 07:24 (2)	19:35		18:23	16:27	16:14
23	08:36	07:38	06:31	06:17	06:42 (2)	05:21			05:03	05:32	06:25	06:53 (2)	07:20		08:15	08:14	08:51
	16:57	17:58	18:52	20:49	37 07:19 (2)	21:41			22:10	21:48	20:48	31 07:24 (2)	19:32		18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	06:42 (2)	05:20			05:03	05:34	06:27	06:55 (2)	07:22		08:17	08:16	08:51
	16:58	18:00	18:53	20:51	36 07:18 (2)	21:43			22:10	21:46	20:45	29 07:24 (2)	19:30		18:19	16:25	16:15
25	08:33	07:34	06:26	06:13	06:42 (2)	05:18			05:03	05:35	06:28	06:56 (2)	07:23		07:19	08:18	08:52
	17:00	18:02	18:55	20:53	36 07:18 (2)	21:44			22:10	21:45	20:43	27 07:23 (2)	19:28		17:17	16:23	16:16
26	08:32	07:31	06:24	06:11	06:43 (2)	05:17			05:04	05:37	06:30	06:58 (2)	07:25		07:21	08:20	08:52
	17:02	18:04	18:57	20:55	34 07:17 (2)	21:46			22:10	21:43	20:41	25 07:23 (2)	19:25		17:15	16:22	16:17
27	08:30	07:29	06:22	06:09	06:44 (2)	05:16			05:04	05:38	06:32	07:00 (2)	07:27		07:23	08:21	08:52
	17:04	18:06	18:59	20:56	32 07:16 (2)	21:47			22:10	21:42	20:38	22 07:22 (2)	19:23		17:12	16:21	16:18
28	08:29	07:27	06:19	06:06	06:44 (2)	05:15			05:05	05:40	06:34	07:01 (2)	07:29		07:25	08:23	08:52
	17:06	18:08	19:01	20:58	31 07:15 (2)	21:49			22:09	21:40	20:36	20 07:21 (2)	19:20		17:10	16:20	16:18
29	08:27		07:17	06:04	06:45 (2)	05:14			05:05	05:42	06:36	07:03 (2)	07:31		07:27	08:24	08:52
	17:08		20:03	21:00	29 07:14 (2)	21:50			22:09	21:38	20:34	17 07:20 (2)	19:18		17:08	16:19	16:19
30	08:25		07:14	06:02	06:46 (2)	05:13			05:06	05:43	06:37	07:05 (2)	07:32		07:29	08:26	08:53
	17:10		20:05	21:02	26 07:12 (2)	21:51			22:09	21:37	20:31	14 07:19 (2)	19:15		17:06	16:19	16:20
31	08:24		07:12			05:12				05:45	06:39	07:07 (2)			07:31		08:53
	17:12		20:06			21:53				21:35	20:29	11 07:18 (2)			17:04		16:21
Potential sun hours	250	273	367	420		494		510	512	460		382		328	259	233
Total, worst case				537		68				603		12				
Sun reduction				0.31		0.31				0.26		0.25				
Oper. time red.				1.00		1.00				1.00		1.00				
Wind dir. red.				0.64		0.64				0.64		0.64				
Total reduction				0.20		0.20				0.16		0.16				
Total, real				106		14				99		2				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** BQ - H074

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June		July		August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10		05:06		05:39 (10)	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:09	20:08	21:03	21:53		22:08	7	05:46 (10)	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:07	05:58	05:09		05:07		05:40 (10)	05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05	21:55		22:08	6	05:46 (10)	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:19	07:04	05:56	05:08		05:08		05:41 (10)	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12	21:07	21:56		22:07	5	05:46 (10)	21:29	20:21	19:08	16:58	16:16
4	08:51	08:16	07:17	07:02	05:54	05:08		05:09		05:42 (10)	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57		22:07	5	05:47 (10)	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52	05:07	05:38 (10)	05:09		05:42 (10)	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11	21:58	1 05:39 (10)	22:06	4	05:46 (10)	21:25	20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50	05:06	05:38 (10)	05:10		05:43 (10)	05:55	06:49	07:43	07:42	08:35
	16:28	17:24	18:19	20:17	21:12	21:59	2 05:40 (10)	22:06	3	05:46 (10)	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48	05:05	05:37 (10)	05:11		05:44 (10)	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	3 05:40 (10)	22:05	2	05:46 (10)	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:36 (10)	05:12		05:45 (10)	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	4 05:40 (10)	22:04	1	05:46 (10)	21:20	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:50	05:44	05:04	05:36 (10)	05:13			06:00	06:55	07:49	07:48	08:38
	16:33	17:30	18:25	20:23	21:18	22:02	5 05:41 (10)	22:04			21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:36 (10)	05:15			06:02	06:57	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	6 05:42 (10)	22:03			21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:00	06:45	05:40	05:03	05:35 (10)	05:16			06:03	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21	22:04	6 05:41 (10)	22:02			21:14	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	05:35 (10)	05:17			06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23	22:04	7 05:42 (10)	22:01			21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:56	06:40	05:37	05:02	05:35 (10)	05:18			06:07	07:02	07:56	07:55	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	8 05:43 (10)	22:00			21:09	19:57	18:44	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	05:02	05:35 (10)	05:19			06:09	07:04	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:27	22:06	8 05:43 (10)	21:59			21:07	19:54	18:41	16:38	16:12
15	08:44	07:55	06:51	06:35	05:33	05:02	05:35 (10)	05:21			06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	8 05:43 (10)	21:58			21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:31	05:02	05:34 (10)	05:22			06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	9 05:43 (10)	21:57			21:03	19:49	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:34 (10)	05:23			06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:32	22:07	9 05:43 (10)	21:56			21:01	19:47	18:34	16:34	16:12
18	08:41	07:49	06:43	06:28	05:28	05:02	05:34 (10)	05:25			06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:39	21:33	22:08	9 05:43 (10)	21:54			20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	05:02	05:35 (10)	05:26			06:18	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	9 05:44 (10)	21:53			20:56	19:42	18:30	16:31	16:13
20	08:39	07:44	06:38	06:24	05:25	05:02	05:35 (10)	05:27			06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:09	9 05:44 (10)	21:52			20:54	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:24	05:02	05:35 (10)	05:29			06:21	07:16	08:11	08:10	08:49
	16:53	17:54	18:48	20:45	21:38	22:09	10 05:45 (10)	21:50			20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	05:02	05:35 (10)	05:30			06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:40	22:09	10 05:45 (10)	21:49			20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	05:35 (10)	05:32			06:25	07:20	08:15	08:14	08:50
	16:56	17:58	18:51	20:49	21:41	22:09	9 05:44 (10)	21:48			20:47	19:32	18:21	16:25	16:15
24	08:34	07:36	06:29	06:15	05:19	05:03	05:36 (10)	05:33			06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	9 05:45 (10)	21:46			20:45	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:36 (10)	05:35			06:28	07:23	07:19	08:17	08:51
	17:00	18:02	18:55	20:52	21:44	22:09	9 05:45 (10)	21:45			20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	05:37 (10)	05:36			06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:45	22:09	9 05:46 (10)	21:43			20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:16	05:04	05:37 (10)	05:38			06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	9 05:46 (10)	21:41			20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	05:04	05:38 (10)	05:40			06:33	07:29	07:24	08:23	08:52
	17:06	18:07	19:01	20:58	21:48	22:09	8 05:46 (10)	21:40			20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	05:05	05:38 (10)	05:41			06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:50	22:09	8 05:46 (10)	21:38			20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:06	05:39 (10)	05:43			06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	7 05:46 (10)	21:36			20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11			05:45			06:39		07:30		08:52
	17:12		20:06		21:52			21:35			20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510		512		460	382	328	259	233
Total, worst case						191		33						
Sun reduction						0.26		0.22						
Oper. time red.						1.00		1.00						
Wind dir. red.						0.65		0.65						
Total reduction						0.17		0.14						
Total, real						32		5						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** BR - H075

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June		July		August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10		05:06		05:39 (10)	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:09	20:08	21:03	21:53		22:08	8	05:47 (10)	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:07	05:58	05:09		05:07		05:40 (10)	05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05	21:55		22:08	7	05:47 (10)	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:19	07:04	05:56	05:08		05:39 (10)	05:08	05:41 (10)	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12	21:07	21:56	1	05:40 (10)	22:07	05:48 (10)	21:29	20:21	19:08	16:58	16:16
4	08:51	08:16	07:17	07:02	05:54	05:08		05:39 (10)	05:09	05:42 (10)	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	2	05:41 (10)	22:07	05:48 (10)	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52	05:07		05:38 (10)	05:09	05:42 (10)	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11	21:58	3	05:41 (10)	22:06	05:47 (10)	21:25	20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50	05:06		05:38 (10)	05:10	05:43 (10)	05:55	06:49	07:43	07:42	08:35
	16:28	17:24	18:19	20:17	21:12	21:59	4	05:42 (10)	22:06	05:47 (10)	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48	05:05		05:37 (10)	05:11	05:44 (10)	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	5	05:42 (10)	22:05	05:47 (10)	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05		05:36 (10)	05:12	05:45 (10)	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	6	05:42 (10)	22:04	05:47 (10)	21:20	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:50	05:44	05:04		05:36 (10)	05:13	05:46 (10)	06:00	06:55	07:49	07:48	08:38
	16:33	17:30	18:25	20:23	21:18	22:02	6	05:42 (10)	22:04	05:47 (10)	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04		05:36 (10)	05:15		06:02	06:57	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	7	05:43 (10)	22:03		21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:00	06:45	05:40	05:03		05:35 (10)	05:16		06:03	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21	22:04	8	05:43 (10)	22:02		21:14	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03		05:35 (10)	05:17		06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23	22:04	8	05:43 (10)	22:01		21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:56	06:40	05:37	05:03		05:35 (10)	05:18		06:07	07:02	07:56	07:55	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	9	05:44 (10)	22:00		21:09	19:57	18:44	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	05:02		05:35 (10)	05:19		06:09	07:04	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:27	22:06	9	05:44 (10)	21:59		21:07	19:54	18:41	16:38	16:12
15	08:44	07:55	06:51	06:35	05:33	05:02		05:35 (10)	05:21		06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	10	05:45 (10)	21:58		21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:31	05:02		05:34 (10)	05:22		06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	10	05:44 (10)	21:57		21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02		05:34 (10)	05:23		06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:32	22:07	10	05:44 (10)	21:56		21:01	19:47	18:34	16:34	16:12
18	08:41	07:49	06:43	06:28	05:28	05:02		05:34 (10)	05:25		06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:39	21:33	22:08	11	05:45 (10)	21:54		20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	05:02		05:35 (10)	05:26		06:18	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	11	05:46 (10)	21:53		20:56	19:42	18:30	16:31	16:13
20	08:39	07:44	06:38	06:24	05:25	05:02		05:35 (10)	05:27		06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:09	11	05:46 (10)	21:52		20:54	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:24	05:02		05:35 (10)	05:29		06:21	07:16	08:11	08:10	08:49
	16:53	17:54	18:48	20:45	21:38	22:09	11	05:46 (10)	21:50		20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	05:02		05:35 (10)	05:30		06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:40	22:09	11	05:46 (10)	21:49		20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02		05:35 (10)	05:32		06:25	07:20	08:15	08:14	08:50
	16:56	17:58	18:51	20:49	21:41	22:09	11	05:46 (10)	21:48		20:47	19:32	18:21	16:25	16:15
24	08:34	07:36	06:29	06:15	05:19	05:03		05:36 (10)	05:33		06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	11	05:47 (10)	21:46		20:45	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03		05:36 (10)	05:35		06:28	07:23	07:19	08:17	08:51
	17:00	18:02	18:55	20:52	21:44	22:09	10	05:46 (10)	21:45		20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03		05:37 (10)	05:36		06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:45	22:09	10	05:47 (10)	21:43		20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:16	05:04		05:37 (10)	05:38		06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	10	05:47 (10)	21:41		20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	05:04		05:38 (10)	05:40		06:33	07:29	07:24	08:23	08:52
	17:06	18:07	19:01	20:58	21:48	22:09	9	05:47 (10)	21:40		20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	05:05		05:38 (10)	05:41		06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:50	22:09	9	05:47 (10)	21:38		20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:06		05:39 (10)	05:43		06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	9	05:48 (10)	21:36		20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11				05:45		06:39		07:30		08:52
	17:12		20:06		21:52				21:35		20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510			512		460	382	328	259	233
Total, worst case							232			43					
Sun reduction							0.26			0.22					
Oper. time red.							1.00			1.00					
Wind dir. red.							0.64			0.64					
Total reduction							0.17			0.14					
Total, real							39			6					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** BS - H076

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	06:26 (5)	05:10	05:07	05:47	06:25 (5)	06:41	07:08 (6)	07:34	07:33	08:28
	16:23	17:14	18:10	20:08	21:04 17	06:43 (5)	21:54	22:08	21:33 26	06:51 (5)	20:26 14	07:22 (6)	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	06:24 (5)	05:10	05:07	05:48	06:24 (5)	06:43	07:10 (6)	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:06 19	06:43 (5)	21:55	22:08	21:31 28	06:52 (5)	20:24 12	07:22 (6)	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04	05:56	06:22 (5)	05:09	05:08	05:50	06:23 (5)	06:44	07:12 (6)	07:38	07:36	08:31
	16:25	17:18	18:14	20:12	21:07 21	06:43 (5)	21:56	22:08	21:29 29	06:52 (5)	20:22 9	07:21 (6)	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	06:20 (5)	05:08	05:09	05:52	06:23 (5)	06:46	07:13 (6)	07:40	07:38	08:32
	16:26	17:20	18:16	20:14	21:09 23	06:43 (5)	21:57	22:07	21:28 30	06:53 (5)	20:19 6	07:19 (6)	19:05	16:56	16:16
5	08:51	08:15	07:15	07:00	05:52	06:18 (5)	05:07	05:10	05:53	06:23 (5)	06:48	07:15 (6)	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11 25	06:43 (5)	21:58	22:07	21:26 29	06:52 (5)	20:17 3	07:18 (6)	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	06:16 (5)	05:06	05:11	05:55	06:25 (5)	06:50		07:43	07:42	08:35
	16:29	17:24	18:19	20:18	21:13 27	06:43 (5)	21:59	22:06	21:24 28	06:53 (5)	20:14		19:00	16:52	16:14
7	08:51	08:11	07:10	06:55	07:19 (6) 05:48	06:15 (5)	05:06	05:12	05:57	06:27 (5)	06:52		07:45	07:44	08:36
	16:30	17:26	18:21	20:19 3	07:22 (6) 21:15 28	06:43 (5)	22:00	22:05	21:22 26	06:53 (5)	20:12		18:58	16:51	16:14
8	08:50	08:09	07:08	06:52	07:16 (6) 05:46	06:13 (5)	05:05	05:13	05:58	06:28 (5)	06:53		07:47	07:46	08:37
	16:31	17:28	18:23	20:21 6	07:22 (6) 21:16 30	06:43 (5)	22:01	22:05	21:20 25	06:53 (5)	20:09		18:56	16:49	16:14
9	08:49	08:07	07:05	06:50	07:14 (6) 05:44	06:13 (5)	05:04	05:14	06:00	06:30 (5)	06:55		07:49	07:48	08:39
	16:33	17:30	18:25	20:23 9	07:23 (6) 21:18 29	06:42 (5)	22:02	22:04	21:18 23	06:53 (5)	20:07		18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	07:11 (6) 05:42	06:13 (5)	05:04	05:15	06:02	06:31 (5)	06:57		07:51	07:50	08:40
	16:34	17:32	18:27	20:25 12	07:23 (6) 21:20 28	06:41 (5)	22:03	22:03	21:16 21	06:52 (5)	20:05		18:51	16:45	16:13
11	08:48	08:04	07:01	06:45	07:09 (6) 05:40	06:14 (5)	05:04	05:16	06:04	06:33 (5)	06:59		07:53	07:52	08:41
	16:36	17:34	18:29	20:27 14	07:23 (6) 21:22 27	06:41 (5)	22:04	22:02	21:14 19	06:52 (5)	20:02		18:49	16:43	16:13
12	08:47	08:02	06:58	06:43	07:07 (6) 05:39	06:14 (5)	05:03	05:17	06:05	06:35 (5)	07:00		07:54	07:54	08:42
	16:37	17:36	18:31	20:29 16	07:23 (6) 21:23 26	06:40 (5)	22:05	22:01	21:12 17	06:52 (5)	20:00		18:46	16:42	16:12
13	08:47	07:59	06:56	06:40	07:04 (6) 05:37	06:15 (5)	05:03	05:18	06:07	06:36 (5)	07:02		07:56	07:56	08:43
	16:39	17:38	18:33	20:30 18	07:22 (6) 21:25 24	06:39 (5)	22:05	22:00	21:10 14	06:50 (5)	19:57		18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	07:02 (6) 05:35	06:16 (5)	05:03	05:20	06:09	06:38 (5)	07:04		07:58	07:58	08:44
	16:41	17:40	18:35	20:32 20	07:22 (6) 21:27 23	06:39 (5)	22:06	21:59	21:07 12	06:50 (5)	19:55		18:41	16:38	16:12
15	08:45	07:55	06:51	06:36	07:00 (6) 05:33	06:17 (5)	05:02	05:21	06:11	06:40 (5)	07:06		08:00	08:00	08:45
	16:42	17:42	18:37	20:34 22	07:22 (6) 21:28 20	06:37 (5)	22:07	21:58	21:05 9	06:49 (5)	19:52		18:39	16:37	16:12
16	08:44	07:53	06:49	06:33	06:59 (6) 05:32	06:18 (5)	05:02	05:22	06:12	06:41 (5)	07:07		08:02	08:01	08:46
	16:44	17:44	18:38	20:36 22	07:21 (6) 21:30 18	06:36 (5)	22:07	21:57	21:03 6	06:47 (5)	19:50		18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	06:59 (6) 05:30	06:19 (5)	05:02	05:23	06:14	06:43 (5)	07:09		08:04	08:03	08:47
	16:46	17:46	18:40	20:38 20	07:19 (6) 21:32 15	06:34 (5)	22:08	21:56	21:01 3	06:46 (5)	19:47		18:34	16:34	16:13
18	08:42	07:49	06:44	06:29	07:00 (6) 05:29	06:22 (5)	05:02	05:25	06:16		07:11		08:06	08:05	08:48
	16:47	17:48	18:42	20:40 18	07:18 (6) 21:33 11	06:33 (5)	22:08	21:55	20:59		19:45		18:32	16:32	16:13
19	08:41	07:47	06:41	06:26	07:01 (6) 05:27	06:25 (5)	05:02	05:26	06:18		07:13		08:07	08:07	08:48
	16:49	17:50	18:44	20:42 16	07:17 (6) 21:35 4	06:29 (5)	22:08	21:53	20:57		19:42		18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	07:03 (6) 05:25		05:02	05:28	06:20		07:14		08:09	08:09	08:49
	16:51	17:52	18:46	20:43 11	07:14 (6) 21:37		22:09	21:52	20:54		19:40		18:28	16:30	16:13
21	08:38	07:43	06:36	06:22	05:24		05:02	05:29	06:21		07:16		08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38		22:09	21:51	20:52		19:37		18:25	16:28	16:14
22	08:37	07:40	06:34	06:20	05:23		05:02	05:31	06:23	07:11 (6)	07:18		08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40		22:09	21:49	20:50 3	07:14 (6)	19:35		18:23	16:27	16:14
23	08:36	07:38	06:31	06:17	05:21		05:03	05:32	06:25	07:07 (6)	07:20		08:15	08:14	08:51
	16:57	17:58	18:52	20:49	21:41		22:09	21:48	20:48 12	07:19 (6)	19:32		18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20		05:03	05:34	06:27	07:05 (6)	07:22		08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43		22:09	21:46	20:45 16	07:21 (6)	19:30		18:19	16:25	16:15
25	08:33	07:34	06:26	06:13	06:38 (5) 05:18		05:03	05:35	06:34 (5) 06:28	07:03 (6)	07:23		07:19	08:18	08:52
	17:00	18:02	18:55	20:53 1	06:39 (5) 21:44		22:10	21:45 8	06:42 (5) 20:43 18	07:21 (6)	19:27		17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	06:36 (5) 05:17		05:04	05:37	06:31 (5) 06:30	07:02 (6)	07:25		07:21	08:19	08:52
	17:02	18:04	18:57	20:55 4	06:40 (5) 21:46		22:10	21:43 13	06:44 (5) 20:41 20	07:22 (6)	19:25		17:14	16:22	16:17
27	08:30	07:29	06:22	06:08	06:34 (5) 05:16		05:04	05:38	06:29 (5) 06:32	07:01 (6)	07:27		07:23	08:21	08:52
	17:04	18:06	18:59	20:56 7	06:41 (5) 21:47		22:09	21:42 17	06:46 (5) 20:38 22	07:23 (6)	19:23		17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	06:32 (5) 05:15		05:05	05:40	06:28 (5) 06:34	07:01 (6)	07:29		07:25	08:23	08:52
	17:06	18:08	19:01	20:58 10	06:42 (5) 21:49		22:09	21:40 19	06:47 (5) 20:36 22	07:23 (6)	19:20		17:10	16:20	16:18
29	08:27		07:17	06:04	06:30 (5) 05:14		05:05	05:42	06:27 (5) 06:36	07:03 (6)	07:31		07:27	08:24	08:52
	17:08		20:03	21:00 13	06:43 (5) 21:50		22:09	21:38 21	06:48 (5) 20:34 20	07:23 (6)	19:18		17:08	16:19	16:19
30	08:25		07:14	06:02	06:28 (5) 05:13		05:06	05:43	06:26 (5) 06:37	07:05 (6)	07:32		07:29	08:26	08:52
	17:10		20:05	21:02 15	06:43 (5) 21:51		22:09	21:37 24	06:50 (5) 20:31 18	07:23 (6)	19:15		17:06	16:19	16:20
31	08:24		07:12		05:11			05:45	06:25 (5) 06:39	07:07 (6)			07:31		08:52
	17:12		20:06		21:52			21:35 25	06:50 (5) 20:29 16	07:23 (6)			17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382		328	259	233		
Total, worst case				257	415		127	512	44						
Sun reduction				0.31	0.31		0.22	0.26	0.25						
Oper. time red.				1.00	1.00		1.00	1.00	1.00						
Wind dir. red.				0.64	0.65		0.65	0.65	0.64						
Total reduction				0.20	0.20		0.15	0.17	0.16						
Total, real				51	85		18	85	7						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** BT - H077

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52 16:23	08:22 17:14	07:24 18:10	07:09 20:08	06:00 21:04 15	06:26 (5) 06:41 (5)	05:10 21:54	05:07 22:08	06:22 (5) 06:51 (5)	06:41 20:26 14	07:08 (6) 07:22 (6)	07:34 19:13	07:33 17:02	08:28 16:18
2	08:52 16:24	08:20 17:16	07:22 18:12	07:07 20:10	05:58 21:06 18	06:24 (5) 06:42 (5)	05:10 21:55	05:07 22:08	06:22 (5) 06:52 (5)	06:43 20:24 11	07:10 (6) 07:21 (6)	07:36 19:10	07:34 17:00	08:29 16:17
3	08:52 16:25	08:19 17:18	07:20 18:14	07:04 20:12	05:56 21:07 20	06:22 (5) 06:42 (5)	05:09 21:56	05:08 22:08	06:21 (5) 06:51 (5)	06:44 20:22 8	07:12 (6) 07:20 (6)	07:38 19:08	07:36 16:58	08:31 16:16
4	08:52 16:26	08:17 17:20	07:17 18:16	07:02 20:14	05:54 21:09 22	06:20 (5) 06:42 (5)	05:08 21:57	05:09 22:07	06:22 (5) 06:52 (5)	06:46 20:19 5	07:13 (6) 07:18 (6)	07:40 19:05	07:38 16:56	08:32 16:16
5	08:51 16:27	08:15 17:22	07:15 18:17	07:00 20:16	05:52 21:11 24	06:18 (5) 06:42 (5)	05:07 21:58	05:10 22:07	06:23 (5) 06:51 (5)	06:48 20:17 2	07:15 (6) 07:17 (6)	07:41 19:03	07:40 16:54	08:33 16:15
6	08:51 16:29	08:13 17:24	07:13 18:19	06:57 20:18	05:50 21:13 26	06:16 (5) 06:42 (5)	05:06 21:59	05:11 22:06	06:25 (5) 06:52 (5)	06:50 20:14		07:43 19:00	07:42 16:52	08:35 16:14
7	08:50 16:30	08:11 17:26	07:10 18:21	06:55 20:19 2	07:19 (6) 05:48 07:21 (6) 21:15 27	06:15 (5) 06:42 (5)	05:06 22:00	05:12 22:05	06:27 (5) 06:52 (5)	06:51 20:12		07:45 18:58	07:44 16:51	08:36 16:14
8	08:50 16:31	08:09 17:28	07:08 18:23	06:52 20:21 5	07:16 (6) 05:46 07:21 (6) 21:16 29	06:13 (5) 06:42 (5)	05:05 22:01	05:13 22:05	06:28 (5) 06:51 (5)	06:53 20:09		07:47 18:56	07:46 16:49	08:37 16:14
9	08:49 16:33	08:07 17:30	07:05 18:25	06:50 20:23 8	07:14 (6) 05:44 07:22 (6) 21:18 30	06:11 (5) 06:41 (5)	05:04 22:02	05:14 22:04	06:30 (5) 06:51 (5)	06:55 20:07		07:49 18:53	07:48 16:47	08:39 16:13
10	08:49 16:34	08:05 17:32	07:03 18:27	06:47 20:25 11	07:11 (6) 05:42 07:22 (6) 21:20 31	06:10 (5) 06:41 (5)	05:04 22:03	05:15 22:03	06:31 (5) 06:50 (5)	06:57 20:05		07:51 18:51	07:50 16:45	08:40 16:13
11	08:48 16:36	08:04 17:34	07:01 18:29	06:45 20:27 14	07:09 (6) 05:40 07:23 (6) 21:22 30	06:11 (5) 06:41 (5)	05:04 22:04	05:16 22:02	06:33 (5) 06:50 (5)	06:59 20:02		07:53 18:49	07:52 16:43	08:41 16:13
12	08:47 16:37	08:02 17:36	06:58 18:31	06:43 20:29 16	07:07 (6) 05:39 07:23 (6) 21:23 29	06:11 (5) 06:40 (5)	05:03 22:05	05:17 22:01	06:35 (5) 06:50 (5)	07:00 20:00		07:54 18:46	07:54 16:42	08:42 16:12
13	08:47 16:39	07:59 17:38	06:56 18:33	06:40 20:30 18	07:04 (6) 05:37 07:22 (6) 21:25 28	06:11 (5) 06:39 (5)	05:03 22:05	05:18 22:00	06:36 (5) 06:48 (5)	07:02 19:57		07:56 18:44	07:56 16:40	08:43 16:12
14	08:46 16:41	07:57 17:40	06:53 18:35	06:38 20:32 20	07:02 (6) 05:35 07:22 (6) 21:27 26	06:13 (5) 06:39 (5)	05:03 22:06	05:20 21:59	06:38 (5) 07:04	07:04 19:55		07:58 18:41	07:58 16:38	08:44 16:12
15	08:45 16:42	07:55 17:42	06:51 18:37	06:36 20:34 22	07:00 (6) 05:33 07:22 (6) 21:28 25	06:13 (5) 06:38 (5)	05:02 22:07	05:21 21:58	06:40 (5) 06:47 (5)	07:06 19:52		08:00 18:39	08:00 16:37	08:45 16:12
16	08:44 16:44	07:53 17:44	06:49 18:38	06:33 20:36 23	06:58 (6) 05:32 07:21 (6) 21:30 24	06:14 (5) 06:38 (5)	05:02 22:07	05:22 21:57	06:41 (5) 06:45 (5)	07:07 19:50		08:02 18:37	08:01 16:35	08:46 16:12
17	08:43 16:46	07:51 17:46	06:46 18:40	06:31 20:38 22	06:58 (6) 05:30 07:20 (6) 21:32 21	06:15 (5) 06:36 (5)	05:02 22:08	05:23 21:56	06:14 21:01	07:09 19:47		08:04 18:34	08:03 16:34	08:47 16:13
18	08:42 16:47	07:49 17:48	06:44 18:42	06:29 20:40 21	06:58 (6) 05:29 07:19 (6) 21:33 19	06:16 (5) 06:35 (5)	05:02 22:08	05:25 21:55	06:16 20:59	07:11 19:45		08:06 18:32	08:05 16:32	08:48 16:13
19	08:41 16:49	07:47 17:50	06:41 18:44	06:26 20:42 18	07:00 (6) 05:27 07:18 (6) 21:35 16	06:17 (5) 06:33 (5)	05:02 22:08	05:26 21:53	06:18 20:57	07:13 19:42		08:07 18:30	08:07 16:31	08:48 16:13
20	08:39 16:51	07:45 17:52	06:39 18:46	06:24 20:43 15	07:01 (6) 05:25 07:16 (6) 21:37 13	06:19 (5) 06:32 (5)	05:02 22:09	05:28 21:52	06:20 20:54	07:14 19:40		08:09 18:28	08:09 16:30	08:49 16:13
21	08:38 16:53	07:43 17:54	06:36 18:48	06:22 20:45 10	07:02 (6) 05:24 07:12 (6) 21:38 8	06:22 (5) 06:30 (5)	05:02 22:09	05:29 21:51	06:21 20:52	07:16 19:37		08:11 18:25	08:11 16:28	08:50 16:14
22	08:37 16:55	07:40 17:56	06:34 18:50	06:20 20:47	05:23 21:40	05:02 22:09	05:31 21:49 5	06:33 (5) 06:38 (5)	06:23 20:50 11	07:07 (6) 07:18 (6)	07:18 19:35	08:13 18:23	08:12 16:27	08:50 16:14
23	08:36 16:57	07:38 17:58	06:31 18:52	06:17 20:49	05:21 21:41	05:03 22:09	05:32 21:48 11	06:31 (5) 06:42 (5)	06:25 20:48 15	07:05 (6) 07:20 (6)	07:20 19:32	08:15 18:21	08:14 16:26	08:51 16:15
24	08:34 16:58	07:36 18:00	06:29 18:53	06:15 20:51	05:20 21:43	05:03 22:09	05:34 21:46 15	06:28 (5) 06:43 (5)	06:27 20:45 18	07:03 (6) 07:21 (6)	07:22 19:30	08:17 18:19	08:16 16:25	08:51 16:15
25	08:33 17:00	07:34 18:02	06:26 18:55	06:13 20:53	05:18 21:44	05:03 22:10	05:35 21:45 17	06:28 (5) 06:45 (5)	06:28 20:43 21	07:01 (6) 07:22 (6)	07:23 19:27	07:19 17:17	08:18 16:23	08:52 16:16
26	08:31 17:02	07:31 18:04	06:24 18:57	06:11 20:55 1	06:36 (5) 05:17 06:37 (5) 21:46	05:04 22:10	05:37 21:43 20	06:26 (5) 06:46 (5)	06:30 20:41 23	07:00 (6) 07:23 (6)	07:25 19:25	07:21 17:14	08:19 16:22	08:52 16:17
27	08:30 17:04	07:29 18:06	06:22 18:59	06:08 20:56 4	06:34 (5) 05:16 06:38 (5) 21:47	05:04 22:09	05:38 21:42 22	06:25 (5) 06:47 (5)	06:32 20:38 23	07:00 (6) 07:23 (6)	07:27 19:23	07:23 17:12	08:21 16:21	08:52 16:18
28	08:28 17:06	07:27 18:08	06:19 19:01	06:06 20:58 8	06:32 (5) 05:15 06:40 (5) 21:49	05:05 22:09	05:40 21:40 24	06:24 (5) 06:48 (5)	06:34 20:36 22	07:01 (6) 07:23 (6)	07:29 19:20	07:25 17:10	08:23 16:20	08:52 16:18
29	08:27 17:08		07:17 20:03	06:04 21:00 10	06:30 (5) 05:14 06:40 (5) 21:50	05:05 22:09	05:42 21:38 26	06:23 (5) 06:49 (5)	06:36 20:34 20	07:03 (6) 07:23 (6)	07:31 19:18	07:27 17:08	08:24 16:19	08:52 16:19
30	08:25 17:10		07:14 20:05	06:02 21:02 13	06:28 (5) 05:13 06:41 (5) 21:51	05:06 22:09	05:43 21:37 27	06:23 (5) 06:50 (5)	06:37 20:31 18	07:05 (6) 07:23 (6)	07:32 19:15	07:29 17:06	08:26 16:19	08:52 16:20
31	08:24 17:12		07:12 20:06		05:11 21:52		05:45 21:35 28	06:22 (5) 06:50 (5)	06:39 20:29 16	07:07 (6) 07:23 (6)		07:31 17:04		08:52 16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case				261	481		195	514	40			
Sun reduction				0.31	0.31		0.22	0.26	0.25			
Oper. time red.				1.00	1.00		1.00	1.00	1.00			
Wind dir. red.				0.64	0.65		0.65	0.65	0.64			
Total reduction				0.20	0.20		0.15	0.17	0.16			
Total, real				51	98		28	85	6			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** BU - H078

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March	April	May		June	
1	08:52		08:22		16:36 (7)	07:24	07:09	06:00	05:10	05:47 (8)
	16:22		17:14	6	16:42 (7)	18:10	20:08	21:04	21:54	23 06:10 (8)
2	08:52		08:20		16:35 (7)	07:22	07:07	05:58	05:09	05:47 (8)
	16:23		17:16	9	16:44 (7)	18:11	20:10	21:05	21:55	22 06:09 (8)
3	08:52		08:18		16:34 (7)	07:20	07:04	05:56	05:08	05:48 (8)
	16:25		17:18	12	16:46 (7)	18:13	20:12	21:07	21:56	21 06:09 (8)
4	08:52		08:17		16:34 (7)	07:17	07:02	05:54	05:08	05:49 (8)
	16:26		17:20	14	16:48 (7)	18:15	20:14	21:09	21:57	20 06:09 (8)
5	08:51		08:15		16:34 (7)	07:15	06:59	05:52	05:07	05:49 (8)
	16:27		17:22	16	16:50 (7)	18:17	20:15	21:11	21:58	20 06:09 (8)
6	08:51		08:13		16:34 (7)	07:12	06:57	05:50	05:06	05:50 (8)
	16:28		17:24	19	16:53 (7)	18:19	20:17	21:13	21:59	19 06:09 (8)
7	08:50		08:11		16:34 (7)	07:10	06:54	05:48	05:05	05:50 (8)
	16:30		17:26	21	16:55 (7)	18:21	20:19	21:14	22:00	18 06:08 (8)
8	08:50		08:09		16:34 (7)	07:08	06:52	05:46	05:05	05:51 (8)
	16:31		17:28	23	16:57 (7)	18:23	20:21	21:16	22:01	17 06:08 (8)
9	08:49		08:07		16:35 (7)	07:05	06:50	05:44	05:04	05:51 (8)
	16:33		17:30	23	16:58 (7)	18:25	20:23	21:18	22:02	17 06:08 (8)
10	08:49		08:05		16:36 (7)	07:03	06:47	05:42	05:04	05:52 (8)
	16:34		17:32	22	16:58 (7)	18:27	20:25	21:20	22:03	16 06:08 (8)
11	08:48		08:03		16:36 (7)	07:00	06:45	05:40	05:03	05:52 (8)
	16:36		17:34	21	16:57 (7)	18:29	20:27	21:21	22:04	15 06:07 (8)
12	08:47		08:01		16:38 (7)	06:58	06:42	05:38	05:03	05:53 (8)
	16:37		17:36	18	16:56 (7)	18:31	20:28	21:23	22:05	14 06:07 (8)
13	08:46		07:59		16:39 (7)	06:56	06:40	05:37	06:04 (8)	05:03 05:54 (8)
	16:39		17:38	16	16:55 (7)	18:33	20:30	21:25	2 06:06 (8)	22:05 13 06:07 (8)
14	08:46		07:57		16:40 (7)	06:53	06:38	05:35	06:03 (8)	05:02 05:55 (8)
	16:40		17:40	12	16:52 (7)	18:34	20:32	21:27	4 06:07 (8)	22:06 12 06:07 (8)
15	08:45		07:55		16:44 (7)	06:51	06:35	05:33	06:01 (8)	05:02 05:56 (8)
	16:42		17:42	5	16:49 (7)	18:36	20:34	21:28	6 06:07 (8)	22:06 11 06:07 (8)
16	08:44		07:53			06:48	06:33	05:32	06:00 (8)	05:02 05:55 (8)
	16:44		17:44			18:38	20:36	21:30	9 06:09 (8)	22:07 11 06:06 (8)
17	08:43		07:51			06:46	06:31	05:30	05:58 (8)	05:02 05:56 (8)
	16:45		17:46			18:40	20:38	21:32	11 06:09 (8)	22:08 9 06:05 (8)
18	08:42		07:49			06:43	06:28	05:28	05:57 (8)	05:02 05:57 (8)
	16:47		17:48			18:42	20:40	21:33	12 06:09 (8)	22:08 9 06:06 (8)
19	08:40		07:47			06:41	06:26	05:27	05:55 (8)	05:02 05:58 (8)
	16:49		17:50			18:44	20:41	21:35	14 06:09 (8)	22:08 8 06:06 (8)
20	08:39		07:45			06:39	06:24	05:25	05:54 (8)	05:02 05:58 (8)
	16:51		17:52			18:46	20:43	21:36	16 06:10 (8)	22:09 8 06:06 (8)
21	08:38		07:42			06:36	06:22	05:24	05:53 (8)	05:02 05:58 (8)
	16:53		17:54			18:48	20:45	21:38	17 06:10 (8)	22:09 8 06:06 (8)
22	08:37		07:40			06:34	06:19	05:22	05:51 (8)	05:02 05:58 (8)
	16:54		17:56			18:49	20:47	21:40	19 06:10 (8)	22:09 8 06:06 (8)
23	08:35		07:38			06:31	06:17	05:21	05:50 (8)	05:02 05:58 (8)
	16:56		17:58			18:51	20:49	21:41	20 06:10 (8)	22:09 8 06:06 (8)
24	08:34		07:36			06:29	06:15	05:19	05:49 (8)	05:03 05:59 (8)
	16:58		18:00			18:53	20:51	21:43	21 06:10 (8)	22:09 8 06:07 (8)
25	08:33		07:33			06:26	06:13	05:18	05:48 (8)	05:03 05:58 (8)
	17:00		18:02			18:55	20:53	21:44	22 06:10 (8)	22:09 9 06:07 (8)
26	08:31		07:31			06:24	06:10	05:17	05:47 (8)	05:03 05:59 (8)
	17:02		18:04			18:57	20:54	21:46	24 06:11 (8)	22:09 9 06:08 (8)
27	08:30		07:29			06:21	06:08	05:16	05:46 (8)	05:04 05:58 (8)
	17:04		18:06			18:59	20:56	21:47	25 06:11 (8)	22:09 11 06:09 (8)
28	08:28		07:27			06:19	06:06	05:14	05:46 (8)	05:04 05:58 (8)
	17:06		18:08			19:01	20:58	21:48	25 06:11 (8)	22:09 12 06:10 (8)
29	08:27					07:16	06:04	05:13	05:46 (8)	05:05 05:57 (8)
	17:08					20:03	21:00	21:50	24 06:10 (8)	22:09 13 06:10 (8)
30	08:25					07:14	06:02	05:12	05:46 (8)	05:06 05:58 (8)
	17:10					20:04	21:02	21:51	24 06:10 (8)	22:09 13 06:11 (8)
31	08:23	16:36 (7)				07:11		05:11	05:47 (8)	
	17:12	4 16:40 (7)				20:06		21:52	23 06:10 (8)	
Potential sun hours	250		273			367	420	494		510
Total, worst case		4		237					318	402
Sun reduction		0.16		0.19					0.31	0.26
Oper. time red.		1.00		1.00					1.00	1.00
Wind dir. red.		0.64		0.64					0.64	0.64
Total reduction		0.10		0.12					0.20	0.17
Total, real		0		29					64	67

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** BU - H078

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July			August			September			October			November			December		
1	05:06		05:57 (8)	05:46		06:41			07:34			07:32		16:05 (7)	08:27		
	22:08	14	06:11 (8)	21:33		20:26			19:12			17:02	22	16:27 (7)	16:17		
2	05:07		05:57 (8)	05:48		06:42			07:36			07:34		16:04 (7)	08:29		
	22:08	15	06:12 (8)	21:31		20:24			19:10			17:00	24	16:28 (7)	16:17		
3	05:08		05:57 (8)	05:50		06:44			07:38			07:36		16:04 (7)	08:30		
	22:08	16	06:13 (8)	21:29		20:21			19:08			16:58	22	16:26 (7)	16:16		
4	05:09		05:57 (8)	05:51		06:46			07:39			07:38		16:04 (7)	08:32		
	22:07	16	06:13 (8)	21:27		20:19			19:05			16:56	20	16:24 (7)	16:15		
5	05:10		05:57 (8)	05:53		06:48			07:41			07:40		16:04 (7)	08:33		
	22:06	17	06:14 (8)	21:26		20:17			19:03			16:54	18	16:22 (7)	16:15		
6	05:10		05:56 (8)	05:55		06:50			07:43			07:42		16:04 (7)	08:35		
	22:06	18	06:14 (8)	21:24		20:14			19:00			16:52	16	16:20 (7)	16:14		
7	05:11		05:55 (8)	05:56		06:51			07:45			07:44		16:04 (7)	08:36		
	22:05	20	06:15 (8)	21:22		20:12			18:58			16:50	14	16:18 (7)	16:14		
8	05:12		05:55 (8)	05:58		06:53			07:47			07:46		16:05 (7)	08:37		
	22:05	20	06:15 (8)	21:20		20:09			18:55			16:48	12	16:17 (7)	16:13		
9	05:13		05:55 (8)	06:00		06:55			07:49			07:48		16:06 (7)	08:39		
	22:04	21	06:16 (8)	21:18		20:07			18:53			16:47	9	16:15 (7)	16:13		
10	05:15		05:55 (8)	06:02		06:57			07:50			07:50		16:06 (7)	08:40		
	22:03	21	06:16 (8)	21:16		20:04			18:51			16:45	7	16:13 (7)	16:13		
11	05:16		05:55 (8)	06:03		06:58			07:52			07:52		16:07 (7)	08:41		
	22:02	22	06:17 (8)	21:14		20:02			18:48			16:43	4	16:11 (7)	16:12		
12	05:17		05:54 (8)	06:05		07:00			07:54			07:54		16:08 (7)	08:42		
	22:01	23	06:17 (8)	21:12		19:59			18:46			16:41	1	16:09 (7)	16:12		
13	05:18		05:55 (8)	06:07		07:02			07:56			07:56			08:43		
	22:00	24	06:19 (8)	21:09		19:57			18:44			16:40			16:12		
14	05:19		05:55 (8)	06:09		07:04			07:58			07:57			08:44		
	21:59	24	06:19 (8)	21:07		19:55			18:41			16:38			16:12		
15	05:21		05:54 (8)	06:10		07:05			08:00			07:59			08:45		
	21:58	25	06:19 (8)	21:05		19:52			18:39			16:37			16:12		
16	05:22		05:54 (8)	06:12		07:07			08:02			08:01			08:46		
	21:57	25	06:19 (8)	21:03		19:50			18:37			16:35			16:12		
17	05:23		05:55 (8)	06:14		07:09			08:04			08:03			08:47		
	21:56	24	06:19 (8)	21:01		19:47			18:34			16:34			16:12		
18	05:25		05:57 (8)	06:16		07:11			08:05			08:05			08:48		
	21:54	23	06:20 (8)	20:59		19:45			18:32			16:32			16:13		
19	05:26		05:58 (8)	06:18		07:13			08:07			08:07			08:48		
	21:53	22	06:20 (8)	20:56		19:42			18:30			16:31			16:13		
20	05:27		05:59 (8)	06:19		07:14			08:09			08:09			08:49		
	21:52	21	06:20 (8)	20:54		19:40			18:27			16:29			16:13		
21	05:29		06:01 (8)	06:21		07:16			08:11			08:10			08:50		
	21:51	19	06:20 (8)	20:52		19:37			18:25			16:28			16:14		
22	05:30		06:02 (8)	06:23		07:18			08:13			08:12			08:50		
	21:49	18	06:20 (8)	20:50		19:35			18:23			16:27			16:14		
23	05:32		06:03 (8)	06:25		07:20			08:15			08:14			08:51		
	21:48	17	06:20 (8)	20:47		19:32			18:21			16:26			16:15		
24	05:33		06:05 (8)	06:26		07:21			08:17			08:16			08:51		
	21:46	15	06:20 (8)	20:45		19:30			18:19			16:24			16:15		
25	05:35		06:06 (8)	06:28		07:23			07:19			08:18			08:51		
	21:45	13	06:19 (8)	20:43		19:27			17:16			16:23			16:16		
26	05:37		06:08 (8)	06:30		07:25			07:21			08:19			08:52		
	21:43	12	06:20 (8)	20:40		19:25			17:14			16:22			16:17		
27	05:38		06:09 (8)	06:32		07:27			07:23			16:12 (7)	08:21			08:52		
	21:41	10	06:19 (8)	20:38		19:22			17:12		8	16:20 (7)	16:21			16:17		
28	05:40		06:11 (8)	06:34		07:29			07:25			16:09 (7)	08:23			08:52		
	21:40	8	06:19 (8)	20:36		19:20			17:10		13	16:22 (7)	16:20			16:18		
29	05:41		06:12 (8)	06:35		07:30			07:27			16:07 (7)	08:24			08:52		
	21:38	5	06:17 (8)	20:33		19:17			17:08		17	16:24 (7)	16:19			16:19		
30	05:43		06:14 (8)	06:37		07:32			07:28			16:07 (7)	08:26			08:52		
	21:36	3	06:17 (8)	20:31		19:15			17:06		19	16:26 (7)	16:18			16:20		
31	05:45			06:39					07:30			16:06 (7)				08:52		
	21:35			20:29					17:04		21	16:27 (7)				16:21		
Potential sun hours	512			460		382			328				259			233		
Total, worst case		531								78				169				
Sun reduction		0.22								0.23				0.20				
Oper. time red.		1.00								1.00				1.00				
Wind dir. red.		0.64								0.64				0.64				
Total reduction		0.14								0.14				0.13				
Total, real		76								11				21				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** BV - H079

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March			April			May			June	
1	08:52		08:22		07:24			07:09			07:33 (2)		06:00		06:26 (1)	05:11
	16:23		17:14		18:10			20:08	5		07:38 (2)		21:04	5	06:31 (1)	21:54
2	08:52		08:20		07:22			07:07			07:31 (2)		05:58		06:24 (1)	05:10
	16:24		17:16		18:12			20:10	9		07:40 (2)		21:06	8	06:32 (1)	21:55
3	08:52		08:19		07:20			07:04			07:28 (2)		05:56		06:22 (1)	05:09
	16:25		17:18		18:14			20:12	12		07:40 (2)		21:07	10	06:32 (1)	21:56
4	08:52		08:17		07:17			07:02			07:26 (2)		05:54		06:20 (1)	05:08
	16:26		17:20		18:16			20:14	16		07:42 (2)		21:09	12	06:32 (1)	21:57
5	08:51		08:15		07:15			07:00			07:23 (2)		05:52		06:18 (1)	05:07
	16:27		17:22		18:18			20:16	18		07:41 (2)		21:11	13	06:31 (1)	21:58
6	08:51		08:13		07:13			06:57			07:21 (2)		05:50		06:16 (1)	05:06
	16:29		17:24		18:19			20:18	21		07:42 (2)		21:13	15	06:31 (1)	22:00
7	08:51		08:11		07:10			06:55			07:19 (2)		05:48		06:15 (1)	05:06
	16:30		17:26		18:21			20:19	24		07:43 (2)		21:15	16	06:31 (1)	22:01
8	08:50		08:09		07:08			06:52			07:16 (2)		05:46		06:13 (1)	05:05
	16:31		17:28		18:23			20:21	26		07:42 (2)		21:16	18	06:31 (1)	22:01
9	08:50		08:08		07:06			06:50			07:14 (2)		05:44		06:11 (1)	05:04
	16:33		17:30		18:25			20:23	29		07:43 (2)		21:18	19	06:30 (1)	22:02
10	08:49		08:06		07:03			06:48			07:11 (2)		05:42		06:09 (1)	05:04
	16:34		17:32		18:27			20:25	31		07:42 (2)		21:20	20	06:29 (1)	22:03
11	08:48		08:04		07:01			06:45			07:09 (2)		05:40		06:11 (1)	05:04
	16:36		17:34		18:29			20:27	33		07:42 (2)		21:22	18	06:29 (1)	22:04
12	08:47		08:02		06:58			06:43			07:07 (2)		05:39		06:11 (1)	05:03
	16:37		17:36		18:31			20:29	35		07:42 (2)		21:23	16	06:27 (1)	22:05
13	08:47		08:00		06:56			06:40			07:05 (2)		05:37		06:12 (1)	05:03
	16:39		17:38		18:33			20:31	35		07:40 (2)		21:25	14	06:26 (1)	22:06
14	08:46		07:58		06:53			06:38			07:05 (2)		05:35		06:14 (1)	05:03
	16:41		17:40		18:35			20:32	35		07:40 (2)		21:27	10	06:24 (1)	22:06
15	08:45		07:55		06:51			06:36			07:06 (2)		05:33		06:17 (1)	05:02
	16:42		17:42		18:37			20:34	34		07:40 (2)		21:29	4	06:21 (1)	22:07
16	08:44		07:53		06:49			06:33			07:06 (2)		05:32			05:02
	16:44		17:44		18:39			20:36	33		07:39 (2)		21:30			22:07
17	08:43		07:51		06:46			06:31			07:06 (2)		05:30			05:02
	16:46		17:46		18:40			20:38	31		07:37 (2)		21:32			22:08
18	08:42		07:49		06:44			06:29			07:07 (2)		05:29			05:02
	16:47		17:48		18:42			20:40	29		07:36 (2)		21:34			22:08
19	08:41		07:47		06:41			06:26			07:08 (2)		05:27			05:02
	16:49		17:50		18:44			20:42	27		07:35 (2)		21:35			22:09
20	08:40		07:45		06:39			06:24			07:09 (2)		05:25			05:02
	16:51		17:52		18:46			20:44	24		07:33 (2)		21:37			22:09
21	08:38		07:43		06:36			06:22			07:11 (2)		05:24			05:02
	16:53		17:54		18:48			20:45	20		07:31 (2)		21:38			22:09
22	08:37		07:40		06:34			06:20			07:13 (2)		05:23			05:02
	16:55		17:56		18:50			20:47	15		07:28 (2)		21:40			22:09
23	08:36		07:38		06:31			06:17			07:17 (2)		05:21			05:03
	16:57		17:58		18:52			20:49	7		07:24 (2)		21:41			22:10
24	08:34		07:36		06:29			06:15					05:20			05:03
	16:58		18:00		18:53			20:51					21:43			22:10
25	08:33		07:34		06:26			06:13					05:18			05:03
	17:00		18:02		18:55			20:53					21:44			22:10
26	08:32		07:31		06:24			06:11					05:17			05:04
	17:02		18:04		18:57			20:55					21:46			22:10
27	08:30		07:29		06:22			06:09					05:16			05:04
	17:04		18:06		18:59			20:56					21:47			22:10
28	08:29		07:27		06:19			06:06					05:15			05:05
	17:06		18:08		19:01			20:58					21:49			22:09
29	08:27				07:17			06:04					05:14			05:05
	17:08				20:03			21:00					21:50			22:09
30	08:25				07:14			06:02			06:28 (1)		05:13			05:06
	17:10				20:05			21:02	3		06:31 (1)		21:51			22:09
31	08:24				07:12		07:35 (2)						05:12			
	17:12				20:06	1	07:36 (2)						21:53			
Potential sun hours	250		273		367			420					494			510
Total, worst case						1			552					198		
Sun reduction						0.22			0.31					0.31		
Oper. time red.						1.00			1.00					1.00		
Wind dir. red.						0.64			0.64					0.65		
Total reduction						0.14			0.20					0.20		
Total, real						0			109					40		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** BV - H079

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July			August			September			October	November	December
1	05:07			05:47		06:21 (1)	06:41		07:08 (2)	07:34	07:33	08:28
	22:09			21:33	17	06:38 (1)	20:27	33	07:41 (2)	19:13	17:02	16:18
2	05:07			05:48		06:21 (1)	06:43		07:10 (2)	07:36	07:35	08:29
	22:08			21:31	18	06:39 (1)	20:24	31	07:41 (2)	19:10	17:00	16:17
3	05:08			05:50		06:20 (1)	06:44		07:12 (2)	07:38	07:37	08:31
	22:08			21:30	20	06:40 (1)	20:22	29	07:41 (2)	19:08	16:58	16:16
4	05:09			05:52		06:22 (1)	06:46		07:13 (2)	07:40	07:38	08:32
	22:07			21:28	19	06:41 (1)	20:19	26	07:39 (2)	19:05	16:56	16:16
5	05:10			05:53		06:23 (1)	06:48		07:15 (2)	07:42	07:40	08:34
	22:07			21:26	17	06:40 (1)	20:17	24	07:39 (2)	19:03	16:54	16:15
6	05:11			05:55		06:25 (1)	06:50		07:17 (2)	07:43	07:42	08:35
	22:06			21:24	16	06:41 (1)	20:14	21	07:38 (2)	19:01	16:52	16:14
7	05:12			05:57		06:27 (1)	06:52		07:18 (2)	07:45	07:44	08:36
	22:05			21:22	14	06:41 (1)	20:12	19	07:37 (2)	18:58	16:51	16:14
8	05:13			05:58		06:28 (1)	06:53		07:20 (2)	07:47	07:46	08:38
	22:05			21:20	13	06:41 (1)	20:10	16	07:36 (2)	18:56	16:49	16:14
9	05:14			06:00		06:30 (1)	06:55		07:22 (2)	07:49	07:48	08:39
	22:04			21:18	11	06:41 (1)	20:07	13	07:35 (2)	18:53	16:47	16:13
10	05:15			06:02		06:31 (1)	06:57		07:24 (2)	07:51	07:50	08:40
	22:03			21:16	9	06:40 (1)	20:05	9	07:33 (2)	18:51	16:45	16:13
11	05:16			06:04		06:33 (1)	06:59		07:25 (2)	07:53	07:52	08:41
	22:02			21:14	7	06:40 (1)	20:02	6	07:31 (2)	18:49	16:43	16:13
12	05:17			06:05		06:35 (1)	07:00		07:27 (2)	07:54	07:54	08:42
	22:01			21:12	5	06:40 (1)	20:00	1	07:28 (2)	18:46	16:42	16:13
13	05:18			06:07		06:36 (1)	07:02			07:56	07:56	08:43
	22:00			21:10	2	06:38 (1)	19:57			18:44	16:40	16:12
14	05:20			06:09			07:04			07:58	07:58	08:44
	21:59			21:08			19:55			18:42	16:39	16:12
15	05:21			06:11			07:06			08:00	08:00	08:45
	21:58			21:05			19:52			18:39	16:37	16:12
16	05:22			06:13			07:07			08:02	08:02	08:46
	21:57			21:03			19:50			18:37	16:35	16:12
17	05:24			06:14			07:09			08:04	08:03	08:47
	21:56			21:01			19:47			18:35	16:34	16:13
18	05:25			06:16			07:11			08:06	08:05	08:48
	21:55			20:59			19:45			18:32	16:32	16:13
19	05:26			06:18			07:13			08:08	08:07	08:49
	21:53			20:57			19:42			18:30	16:31	16:13
20	05:28			06:20		07:21 (2)	07:15			08:09	08:09	08:49
	21:52			20:54	9	07:30 (2)	19:40			18:28	16:30	16:13
21	05:29			06:21		07:18 (2)	07:16			08:11	08:11	08:50
	21:51			20:52	16	07:34 (2)	19:37			18:25	16:28	16:14
22	05:31			06:23		07:15 (2)	07:18			08:13	08:13	08:50
	21:49			20:50	20	07:35 (2)	19:35			18:23	16:27	16:14
23	05:32			06:25		07:13 (2)	07:20			08:15	08:14	08:51
	21:48			20:48	24	07:37 (2)	19:32			18:21	16:26	16:15
24	05:34			06:27		07:12 (2)	07:22			08:17	08:16	08:51
	21:46			20:45	27	07:39 (2)	19:30			18:19	16:25	16:15
25	05:35			06:28		07:10 (2)	07:23			07:19	08:18	08:52
	21:45			20:43	29	07:39 (2)	19:28			17:17	16:23	16:16
26	05:37			06:30		07:09 (2)	07:25			07:21	08:20	08:52
	21:43			20:41	31	07:40 (2)	19:25			17:15	16:22	16:17
27	05:38			06:32		07:08 (2)	07:27			07:23	08:21	08:52
	21:42			20:38	33	07:41 (2)	19:23			17:12	16:21	16:18
28	05:40			06:34		07:07 (2)	07:29			07:25	08:23	08:52
	21:40			20:36	35	07:42 (2)	19:20			17:10	16:20	16:18
29	05:42		06:26 (1)	06:36		07:06 (2)	07:31			07:27	08:25	08:52
	21:38	7	06:33 (1)	20:34	35	07:41 (2)	19:18			17:08	16:19	16:19
30	05:43		06:24 (1)	06:37		07:05 (2)	07:32			07:29	08:26	08:53
	21:37	12	06:36 (1)	20:31	36	07:41 (2)	19:15			17:06	16:19	16:20
31	05:45		06:23 (1)	06:39		07:07 (2)				07:31		08:53
	21:35	14	06:37 (1)	20:29	35	07:42 (2)				17:04		16:21
Potential sun hours	512			460			382			328	259	233
Total, worst case		33			498			228				
Sun reduction		0.22			0.26			0.25				
Oper. time red.		1.00			1.00			1.00				
Wind dir. red.		0.65			0.65			0.64				
Total reduction		0.15			0.17			0.16				
Total, real		5			82			37				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** BW - H081

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February	March	April	May	June	July	August	September	October	November			December		
1	08:52		15:36 (8)	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:40	07:34	07:32			08:27		15:22 (8)
	16:22	8	15:44 (8)	17:13	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02			16:17	19	15:41 (8)
2	08:52		15:37 (8)	08:20	07:22	07:06	05:57	05:09	05:07	05:48	06:42	07:36	07:34			08:29		15:22 (8)
	16:23	8	15:45 (8)	17:15	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00			16:16	18	15:40 (8)
3	08:52		15:37 (8)	08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:37	07:36			08:30		15:22 (8)
	16:24	10	15:47 (8)	17:17	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58			16:16	17	15:39 (8)
4	08:51		15:37 (8)	08:16	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38			08:32		15:23 (8)
	16:26	11	15:48 (8)	17:19	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56			16:15	16	15:39 (8)
5	08:51		15:38 (8)	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40			08:33		15:23 (8)
	16:27	12	15:50 (8)	17:21	18:17	20:15	21:11	21:58	22:06	21:25	20:17	19:03	16:54			16:14	14	15:37 (8)
6	08:51		15:38 (8)	08:13	07:12	06:57	05:49	05:06	05:10	05:55	06:49	07:43	07:42			08:35		15:24 (8)
	16:28	13	15:51 (8)	17:23	18:19	20:17	21:12	21:59	22:06	21:24	20:14	19:00	16:52			16:14	13	15:37 (8)
7	08:50		15:38 (8)	08:11	07:10	06:54	05:47	05:05	05:11	05:56	06:51	07:45	07:44			08:36		15:24 (8)
	16:30	14	15:52 (8)	17:25	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50			16:13	12	15:36 (8)
8	08:50		15:39 (8)	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46			08:37		15:25 (8)
	16:31	15	15:54 (8)	17:28	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48			16:13	11	15:36 (8)
9	08:49		15:39 (8)	08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48			08:39		15:26 (8)
	16:32	17	15:56 (8)	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46			16:13	9	15:35 (8)
10	08:49		15:39 (8)	08:05	07:03	06:47	05:42	05:03	05:14	06:01	06:56	07:50	07:50			08:40		15:26 (8)
	16:34	18	15:57 (8)	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45			16:12	9	15:35 (8)
11	08:48		15:39 (8)	08:03	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52			08:41		15:27 (8)
	16:35	20	15:59 (8)	17:34	18:29	20:26	21:21	22:04	22:02	21:14	20:02	18:48	16:43			16:12	8	15:35 (8)
12	08:47		15:40 (8)	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54			08:42		15:28 (8)
	16:37	21	16:01 (8)	17:36	18:31	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41			16:12	7	15:35 (8)
13	08:46		15:40 (8)	07:59	06:55	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:56			08:43		15:28 (8)
	16:39	22	16:02 (8)	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40			16:12	6	15:34 (8)
14	08:45		15:41 (8)	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57			08:44		15:29 (8)
	16:40	23	16:04 (8)	17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38			16:12	5	15:34 (8)
15	08:45		15:41 (8)	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59		15:28 (8)	08:45		15:29 (8)
	16:42	25	16:06 (8)	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36	6	15:34 (8)	16:12	5	15:34 (8)
16	08:44		15:42 (8)	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01		15:25 (8)	08:46		15:30 (8)
	16:44	26	16:08 (8)	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	12	15:37 (8)	16:12	4	15:34 (8)
17	08:43		15:42 (8)	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03		15:24 (8)	08:47		15:31 (8)
	16:45	27	16:09 (8)	17:46	18:40	20:38	21:32	22:07	21:56	21:01	19:47	18:34	16:33	15	15:39 (8)	16:12	4	15:35 (8)
18	08:41		15:43 (8)	07:49	06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05	08:05		15:22 (8)	08:48		15:31 (8)
	16:47	26	16:09 (8)	17:48	18:42	20:39	21:33	22:08	21:54	20:59	19:44	18:32	16:32	19	15:41 (8)	16:12	3	15:34 (8)
19	08:40		15:44 (8)	07:47	06:41	06:26	05:26	05:01	05:26	06:17	07:12	08:07	08:07		15:22 (8)	08:48		15:31 (8)
	16:49	25	16:09 (8)	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	21	15:43 (8)	16:13	3	15:34 (8)
20	08:39		15:44 (8)	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09		15:22 (8)	08:49		15:32 (8)
	16:51	25	16:09 (8)	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29	22	15:44 (8)	16:13	3	15:35 (8)
21	08:38		15:45 (8)	07:42	06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11	08:10		15:21 (8)	08:50		15:32 (8)
	16:52	24	16:09 (8)	17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	24	15:45 (8)	16:13	3	15:35 (8)
22	08:37		15:47 (8)	07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12		15:21 (8)	08:50		15:33 (8)
	16:54	22	16:09 (8)	17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	25	15:46 (8)	16:14	3	15:36 (8)
23	08:35		15:47 (8)	07:38	06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15	08:14		15:20 (8)	08:51		15:33 (8)
	16:56	21	16:08 (8)	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	25	15:45 (8)	16:14	3	15:36 (8)
24	08:34		15:49 (8)	07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16		15:20 (8)	08:51		15:33 (8)
	16:58	19	16:08 (8)	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24	26	15:46 (8)	16:15	3	15:36 (8)
25	08:33		15:51 (8)	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17		15:20 (8)	08:51		15:34 (8)
	17:00	15	16:06 (8)	18:02	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	27	15:47 (8)	16:16	4	15:38 (8)
26	08:31		15:52 (8)	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19		15:20 (8)	08:52		15:35 (8)
	17:02	12	16:04 (8)	18:03	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22	26	15:46 (8)	16:16	3	15:38 (8)
27	08:30		15:57 (8)	07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21		15:20 (8)	08:52		15:35 (8)
	17:04	5	16:02 (8)	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	25	15:45 (8)	16:17	4	15:39 (8)
28	08:28			07:26	06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24	08:23		15:21 (8)	08:52		15:35 (8)
	17:06			18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	23	15:44 (8)	16:18	5	15:40 (8)
29	08:27				07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24		15:21 (8)	08:52		15:36 (8)
	17:08				20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	23	15:44 (8)	16:19	5	15:41 (8)
30	08:25				07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26		15:21 (8)	08:52		15:36 (8)
	17:10				20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	21	15:42 (8)	16:20	6	15:42 (8)
31	08:23				07:11		05:11		05:44	06:39		07:30				08:52		15:37 (8)
	17:12				20:06		21:52		21:35	20:29		17:04				16:21	6	15:43 (8)
Potential sun hours	250			273	367	420	494	510	513	460	382	328	259			233		
Total, worst case		484												340			231	
Sun reduction		0.16												0.20			0.12	
Oper. time red.		1.00												1.00			1.00	
Wind dir. red.		0.65												0.65			0.65	
Total reduction		0.11												0.13			0.08	
Total, real		51												44			18	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:

Carrigeen Renewable Energy Development

Licensed user:

Jennings O'Donovan

Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** BX - H083

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May		June		July		August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00		05:10		20:54 (6)	05:06	21:03 (6)	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:10	20:08	21:03		21:54	24	21:18 (6)	22:08	19	21:22 (6)	21:33	20:26	19:12	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58		05:09		20:54 (6)	05:07	21:02 (6)	05:48	06:42	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:05		21:55	24	21:18 (6)	22:08	20	21:22 (6)	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56		05:09		20:55 (6)	05:08	21:02 (6)	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12	21:07		21:56	23	21:18 (6)	22:07	20	21:22 (6)	21:29	20:21	19:08	16:58	16:16
4	08:51	08:17	07:17	07:02	05:54		05:08		20:55 (6)	05:09	21:02 (6)	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14	21:09		21:57	23	21:18 (6)	22:07	21	21:23 (6)	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52		05:07		20:55 (6)	05:10	21:02 (6)	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11		21:58	23	21:18 (6)	22:06	22	21:24 (6)	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50		05:06		20:56 (6)	05:11	21:01 (6)	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:17	21:13		21:59	22	21:18 (6)	22:06	22	21:23 (6)	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48		05:06		20:56 (6)	05:12	21:01 (6)	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14		22:00	22	21:18 (6)	22:05	23	21:24 (6)	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46		05:05		20:57 (6)	05:13	21:01 (6)	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16		22:01	21	21:18 (6)	22:04	23	21:24 (6)	21:20	20:09	18:55	16:49	16:13
9	08:49	08:07	07:05	06:50	05:44		05:04		20:57 (6)	05:14	21:01 (6)	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18		22:02	20	21:17 (6)	22:04	24	21:25 (6)	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42		05:04		20:58 (6)	05:15	21:01 (6)	06:02	06:57	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20		22:03	20	21:18 (6)	22:03	24	21:25 (6)	21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:00	06:45	05:40		05:03		20:57 (6)	05:16	21:01 (6)	06:04	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21		22:04	20	21:17 (6)	22:02	24	21:25 (6)	21:14	20:02	18:48	16:43	16:13
12	08:47	08:01	06:58	06:43	05:38		05:03		20:58 (6)	05:17	21:02 (6)	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23		22:04	19	21:17 (6)	22:01	25	21:27 (6)	21:12	19:59	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	05:37		05:03		20:59 (6)	05:18	21:02 (6)	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25		22:05	18	21:17 (6)	22:00	24	21:26 (6)	21:09	19:57	18:44	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35		05:02		20:59 (6)	05:19	21:02 (6)	06:09	07:04	07:58	07:57	08:44
	16:40	17:40	18:35	20:32	21:27		22:06	19	21:18 (6)	21:59	23	21:25 (6)	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	05:33		05:02		21:00 (6)	05:21	21:02 (6)	06:11	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28		22:06	18	21:18 (6)	21:58	22	21:24 (6)	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32	20:56 (6)	05:02		21:00 (6)	05:22	21:01 (6)	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	2 20:58 (6)	22:07	18	21:18 (6)	21:57	21	21:22 (6)	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	20:55 (6)	05:02		21:01 (6)	05:23	21:01 (6)	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	4 20:59 (6)	22:07	17	21:18 (6)	21:56	20	21:21 (6)	21:01	19:47	18:34	16:34	16:12
18	08:41	07:49	06:43	06:28	05:28	20:54 (6)	05:02		21:01 (6)	05:25	21:02 (6)	06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:40	21:33	7 21:01 (6)	22:08	17	21:18 (6)	21:54	19	21:21 (6)	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	20:53 (6)	05:02		21:01 (6)	05:26	21:02 (6)	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	9 21:02 (6)	22:08	17	21:18 (6)	21:53	17	21:19 (6)	20:56	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	20:53 (6)	05:02		21:02 (6)	05:28	21:02 (6)	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	11 21:04 (6)	22:09	16	21:18 (6)	21:52	16	21:18 (6)	20:54	19:40	18:28	16:29	16:13
21	08:38	07:42	06:36	06:22	05:24	20:53 (6)	05:02		21:02 (6)	05:29	21:03 (6)	06:21	07:16	08:11	08:10	08:49
	16:53	17:54	18:48	20:45	21:38	12 21:05 (6)	22:09	16	21:18 (6)	21:50	14	21:17 (6)	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	20:52 (6)	05:02		21:02 (6)	05:30	21:03 (6)	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	14 21:06 (6)	22:09	16	21:18 (6)	21:49	13	21:16 (6)	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	20:52 (6)	05:02		21:02 (6)	05:32	21:04 (6)	06:25	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41	16 21:08 (6)	22:09	17	21:19 (6)	21:48	11	21:15 (6)	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	20:52 (6)	05:03		21:02 (6)	05:33	21:04 (6)	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	17 21:09 (6)	22:09	17	21:19 (6)	21:46	9	21:13 (6)	20:45	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18	20:53 (6)	05:03		21:02 (6)	05:35	21:04 (6)	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:52	21:44	18 21:11 (6)	22:09	17	21:19 (6)	21:45	8	21:12 (6)	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	20:53 (6)	05:04		21:03 (6)	05:37	21:05 (6)	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:45	19 21:12 (6)	22:09	17	21:20 (6)	21:43	6	21:11 (6)	20:40	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	20:53 (6)	05:04		21:02 (6)	05:38	21:05 (6)	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	20 21:13 (6)	22:09	18	21:20 (6)	21:41	4	21:09 (6)	20:38	19:22	17:12	16:21	16:17
28	08:28	07:27	06:19	06:06	05:15	20:53 (6)	05:05		21:03 (6)	05:40	21:07 (6)	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	22 21:15 (6)	22:09	18	21:21 (6)	21:40	1	21:08 (6)	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	20:53 (6)	05:05		21:02 (6)	05:41		06:35	07:30	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	23 21:16 (6)	22:09	18	21:20 (6)	21:38		20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	20:53 (6)	05:06		21:02 (6)	05:43		06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	24 21:17 (6)	22:09	19	21:21 (6)	21:36		20:31	19:15	17:06	16:18	16:20
31	08:23		07:12		05:11	20:53 (6)				05:45		06:39		07:30		08:52
	17:12		20:06		21:52	25 21:18 (6)				21:35		20:29		17:04		16:21
Potential sun hours	250	273	367	420	494		510			512		460	382	328	259	233
Total, worst case						243		574		495						
Sun reduction						0.31		0.26		0.22						
Oper. time red.						1.00		1.00		1.00						
Wind dir. red.						0.61		0.61		0.61						
Total reduction						0.19		0.16		0.14						
Total, real						46		90		67						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** BY - H084

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February			March	April	May	June
1	08:52		15:28 (10)	08:22		16:17 (11)	07:24	07:09	06:00	05:10
	16:22	16	15:44 (10)	17:13	8	16:25 (11)	18:09	20:08	21:03	21:53
2	08:52		15:29 (10)	08:20			07:22	07:06	05:57	05:09
	16:23	17	15:46 (10)	17:15			18:11	20:10	21:05	21:55
3	08:52		15:30 (10)	08:18			07:19	07:04	05:55	05:08
	16:24	17	15:47 (10)	17:17			18:13	20:12	21:07	21:56
4	08:51		15:30 (10)	08:16			07:17	07:02	05:53	05:07
	16:26	18	15:48 (10)	17:19			18:15	20:13	21:09	21:57
5	08:51		15:30 (10)	08:15			07:15	06:59	05:51	05:07
	16:27	20	15:50 (10)	17:21			18:17	20:15	21:11	21:58
6	08:51		15:30 (10)	08:13			07:12	06:57	05:49	05:06
	16:28	21	15:51 (10)	17:23			18:19	20:17	21:12	21:59
7	08:50		15:30 (10)	08:11			07:10	06:54	05:47	05:05
	16:29	22	15:52 (10)	17:25			18:21	20:19	21:14	22:00
8	08:50		15:31 (10)	08:09			07:08	06:52	05:46	05:05
	16:31	23	15:54 (10)	17:27			18:23	20:21	21:16	22:01
9	08:49		15:32 (10)	08:07			07:05	06:49	05:44	05:04
	16:32	24	15:56 (10)	17:29			18:25	20:23	21:18	22:02
10	08:48		15:32 (10)	08:05			07:03	06:47	05:42	05:03
	16:34	25	15:57 (10)	17:31			18:27	20:25	21:20	22:03
11	08:48		15:32 (10)	08:03			07:00	06:45	05:40	05:03
	16:35	27	15:59 (10)	17:34			18:29	20:26	21:21	22:04
12	08:47		15:33 (10)	08:01			06:58	06:42	05:38	05:03
	16:37	28	16:01 (10)	17:36			18:30	20:28	21:23	22:04
13	08:46		15:33 (10)	07:59			06:55	06:40	05:36	05:02
	16:39	29	16:02 (10)	17:38			18:32	20:30	21:25	22:05
14	08:45		15:34 (10)	07:57			06:53	06:38	05:35	05:02
	16:40	30	16:04 (10)	17:40			18:34	20:32	21:26	22:06
15	08:44		15:34 (10)	07:55			06:51	06:35	05:33	05:02
	16:42	32	16:06 (10)	17:42			18:36	20:34	21:28	22:06
16	08:43		15:35 (10)	07:53		17:13 (9)	06:48	06:33	05:31	05:02
	16:43	33	16:08 (11)	17:44	2	17:15 (9)	18:38	20:36	21:30	22:07
17	08:42		15:35 (10)	07:51		17:13 (9)	06:46	06:30	05:30	05:01
	16:45	35	16:10 (11)	17:46	4	17:17 (9)	18:40	20:38	21:31	22:07
18	08:41		15:36 (10)	07:49		17:12 (9)	06:43	06:28	05:28	05:01
	16:47	36	16:12 (11)	17:48	6	17:18 (9)	18:42	20:39	21:33	22:08
19	08:40		15:37 (10)	07:47		17:12 (9)	06:41	06:26	05:26	05:01
	16:49	37	16:14 (11)	17:50	9	17:21 (9)	18:44	20:41	21:35	22:08
20	08:39		15:37 (10)	07:44		17:12 (9)	06:38	06:24	05:25	05:02
	16:51	39	16:16 (11)	17:52	11	17:23 (9)	18:46	20:43	21:36	22:09
21	08:38		15:38 (10)	07:42		17:12 (9)	06:36	06:21	05:23	05:02
	16:52	40	16:18 (11)	17:54	14	17:26 (9)	18:47	20:45	21:38	22:09
22	08:37		15:39 (10)	07:40		17:11 (9)	06:33	06:19	05:22	05:02
	16:54	39	16:19 (11)	17:56	16	17:27 (9)	18:49	20:47	21:39	22:09
23	08:35		15:40 (10)	07:38		17:12 (9)	06:31	06:17	05:21	05:02
	16:56	41	16:22 (11)	17:58	17	17:29 (9)	18:51	20:49	21:41	22:09
24	08:34		15:41 (10)	07:35		17:13 (9)	06:28	06:15	05:19	05:02
	16:58	41	16:24 (11)	17:59	19	17:32 (9)	18:53	20:50	21:42	22:09
25	08:33		15:43 (10)	07:33		17:13 (9)	06:26	06:12	05:18	05:03
	17:00	39	16:26 (11)	18:01	19	17:32 (9)	18:55	20:52	21:44	22:09
26	08:31		15:45 (10)	07:31		17:15 (9)	06:24	06:10	05:17	05:03
	17:02	37	16:28 (11)	18:03	16	17:31 (9)	18:57	20:54	21:45	22:09
27	08:30		15:48 (10)	07:29		17:16 (9)	06:21	06:08	05:15	05:04
	17:04	35	16:31 (11)	18:05	12	17:28 (9)	18:59	20:56	21:47	22:09
28	08:28		15:50 (10)	07:26		17:22 (9)	06:19	06:06	05:14	05:04
	17:06	28	16:30 (11)	18:07	2	17:24 (9)	19:00	20:58	21:48	22:09
29	08:27		16:11 (11)				07:16	06:04	05:13	05:05
	17:08	18	16:29 (11)				20:02	21:00	21:50	22:09
30	08:25		16:12 (11)				07:14	06:02	05:12	05:05
	17:09	16	16:28 (11)				20:04	21:02	21:51	22:09
31	08:23		16:14 (11)				07:11		05:11	
	17:11	12	16:26 (11)				20:06		21:52	
Potential sun hours	250			273			367	420	494	510
Total, worst case		875			155					
Sun reduction		0.16			0.19					
Oper. time red.		1.00			1.00					
Wind dir. red.		0.65			0.65					
Total reduction		0.11			0.13					
Total, real		92			20					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** BY - H084

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August		September		October			November			December		
1	05:06		05:46		06:40		07:34			07:32			08:27		15:14 (10)
	22:08		21:33		20:26		19:12			17:02			16:17	27	15:41 (10)
2	05:07		05:48		06:42		07:36			07:34			08:29		15:15 (10)
	22:08		21:31		20:24		19:10			17:00			16:16	26	15:41 (10)
3	05:08		05:49		06:44		07:37			07:36			08:30		15:15 (10)
	22:07		21:29		20:21		19:07			16:58			16:16	24	15:39 (10)
4	05:08		05:51		06:46		07:39			07:38			08:32		15:16 (10)
	22:07		21:27		20:19		19:05			16:56			16:15	23	15:39 (10)
5	05:09		05:53		06:48		07:41			07:40			08:33		15:15 (10)
	22:06		21:25		20:16		19:02			16:54			16:14	22	15:37 (10)
6	05:10		05:55		06:49		07:43			07:42			08:35		15:16 (10)
	22:06		21:23		20:14		19:00			16:52			16:14	21	15:37 (10)
7	05:11		05:56		06:51		07:45			07:44			08:36		15:16 (10)
	22:05		21:22		20:12		18:58			16:50			16:13	20	15:36 (10)
8	05:12		05:58		06:53		07:47			07:46			08:37		15:18 (10)
	22:04		21:20		20:09		18:55			16:48			16:13	18	15:36 (10)
9	05:13		06:00		06:55		07:48			07:48			08:38		15:18 (10)
	22:04		21:18		20:07		18:53			16:46			16:13	17	15:35 (10)
10	05:14		06:01		06:56		07:50			07:50		15:48 (11)	08:40		15:18 (10)
	22:03		21:16		20:04		18:50			16:45	8	15:56 (11)	16:12	17	15:35 (10)
11	05:15		06:03		06:58		07:52			07:52		15:46 (11)	08:41		15:18 (10)
	22:02		21:13		20:02		18:48			16:43	12	15:58 (11)	16:12	16	15:34 (10)
12	05:17		06:05		07:00		07:54			07:54		15:44 (11)	08:42		15:20 (10)
	22:01		21:11		19:59		18:46			16:41	16	16:00 (11)	16:12	15	15:35 (10)
13	05:18		06:07		07:02		07:56			07:55		15:43 (11)	08:43		15:20 (10)
	22:00		21:09		19:57		18:43			16:40	18	16:01 (11)	16:12	14	15:34 (10)
14	05:19		06:08		07:03		07:58		17:52 (9)	07:57		15:22 (10)	08:44		15:21 (10)
	21:59		21:07		19:54		18:41	8	18:00 (9)	16:38	29	16:02 (11)	16:12	13	15:34 (10)
15	05:20		06:10		07:05		08:00		17:49 (9)	07:59		15:19 (10)	08:45		15:21 (10)
	21:58		21:05		19:52		18:39	13	18:02 (9)	16:36	36	16:03 (11)	16:12	13	15:34 (10)
16	05:22		06:12		07:07		08:01		17:47 (9)	08:01		15:18 (10)	08:46		15:22 (10)
	21:57		21:03		19:49		18:36	17	18:04 (9)	16:35	37	16:01 (11)	16:12	12	15:34 (10)
17	05:23		06:14		07:09		08:03		17:45 (9)	08:03		15:16 (10)	08:47		15:22 (10)
	21:56		21:01		19:47		18:34	20	18:05 (9)	16:33	39	15:59 (11)	16:12	12	15:34 (10)
18	05:24		06:16		07:11		08:05		17:44 (9)	08:05		15:15 (10)	08:47		15:22 (10)
	21:54		20:58		19:44		18:32	18	18:02 (9)	16:32	41	15:58 (11)	16:12	12	15:34 (10)
19	05:26		06:17		07:12		08:07		17:43 (9)	08:07		15:14 (10)	08:48		15:23 (10)
	21:53		20:56		19:42		18:29	17	18:00 (9)	16:30	41	15:56 (11)	16:13	12	15:35 (10)
20	05:27		06:19		07:14		08:09		17:43 (9)	08:09		15:14 (10)	08:49		15:24 (10)
	21:52		20:54		19:39		18:27	15	17:58 (9)	16:29	40	15:55 (11)	16:13	11	15:35 (10)
21	05:29		06:21		07:16		08:11		17:42 (9)	08:10		15:13 (10)	08:49		15:24 (10)
	21:50		20:52		19:37		18:25	13	17:55 (9)	16:28	40	15:53 (11)	16:13	11	15:35 (10)
22	05:30		06:23		07:18		08:13		17:42 (9)	08:12		15:13 (10)	08:50		15:25 (10)
	21:49		20:50		19:34		18:23	11	17:53 (9)	16:27	39	15:52 (11)	16:14	11	15:36 (10)
23	05:32		06:24		07:19		08:15		17:42 (9)	08:14		15:13 (10)	08:50		15:25 (10)
	21:48		20:47		19:32		18:21	9	17:51 (9)	16:25	37	15:50 (11)	16:14	11	15:36 (10)
24	05:33		06:26		07:21		08:17		17:42 (9)	08:16		15:13 (10)	08:51		15:25 (10)
	21:46		20:45		19:30		18:18	6	17:48 (9)	16:24	36	15:49 (11)	16:15	11	15:36 (10)
25	05:35		06:28		07:23		07:19		16:42 (9)	08:17		15:13 (10)	08:51		15:26 (10)
	21:45		20:43		19:27		17:16	4	16:46 (9)	16:23	35	15:48 (11)	16:16	12	15:38 (10)
26	05:36		06:30		07:25		07:21			08:19		15:13 (10)	08:52		15:27 (10)
	21:43		20:40		19:25		17:14			16:22	34	15:47 (11)	16:16	11	15:38 (10)
27	05:38		06:32		07:27		07:22			08:21		15:13 (10)	08:52		15:27 (10)
	21:41		20:38		19:22		17:12			16:21	32	15:45 (10)	16:17	12	15:39 (10)
28	05:39		06:33		07:28		07:24			08:22		15:14 (10)	08:52		15:27 (10)
	21:40		20:36		19:20		17:10			16:20	31	15:45 (10)	16:18	13	15:40 (10)
29	05:41		06:35		07:30		07:26			08:24		15:14 (10)	08:52		15:28 (10)
	21:38		20:33		19:17		17:08			16:19	30	15:44 (10)	16:19	13	15:41 (10)
30	05:43		06:37		07:32		07:28			08:26		15:14 (10)	08:52		15:28 (10)
	21:36		20:31		19:15		17:06			16:18	28	15:42 (10)	16:20	14	15:42 (10)
31	05:44		06:39				07:30						08:52		15:29 (10)
	21:35		20:28				17:04						16:21	14	15:43 (10)
Potential sun hours	513		460		382		328			259			233		
Total, worst case								151			659			478	
Sun reduction								0.23			0.20			0.12	
Oper. time red.								1.00			1.00			1.00	
Wind dir. red.								0.65			0.65			0.65	
Total reduction								0.15			0.13			0.08	
Total, real								22			85			37	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** BZ - H085

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March	April	May	June	July	August	September	October	November		December
1	08:52		08:22	16:02 (1)	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:33		08:28
	16:22		17:14	29 16:31 (1)	18:10	20:08	21:04	21:54	22:09	21:33	20:26	19:13	17:02		16:18
2	08:52		08:20	16:03 (1)	07:22	07:07	05:58	05:09	05:07	05:48	06:43	07:36	07:34		08:29
	16:23		17:16	28 16:31 (1)	18:12	20:10	21:06	21:55	22:08	21:31	20:24	19:10	17:00		16:17
3	08:52		08:19	16:04 (1)	07:20	07:04	05:56	05:08	05:08	05:50	06:44	07:38	07:36	15:45 (1)	08:31
	16:25		17:18	26 16:30 (1)	18:14	20:12	21:07	21:56	22:08	21:29	20:22	19:08	16:58	5 15:50 (1)	16:16
4	08:52		08:17	16:05 (1)	07:17	07:02	05:54	05:08	05:09	05:51	06:46	07:40	07:38	15:40 (1)	08:32
	16:26		17:20	24 16:29 (1)	18:15	20:14	21:09	21:57	22:07	21:28	20:19	19:05	16:56	14 15:54 (1)	16:15
5	08:51		08:15	16:07 (1)	07:15	06:59	05:52	05:07	05:10	05:53	06:48	07:41	07:40	15:38 (1)	08:33
	16:27		17:22	21 16:28 (1)	18:17	20:16	21:11	21:58	22:07	21:26	20:17	19:03	16:54	18 15:56 (1)	16:15
6	08:51		08:13	16:09 (1)	07:13	06:57	05:50	05:06	05:10	05:55	06:50	07:43	07:42	15:37 (1)	08:35
	16:28		17:24	17 16:26 (1)	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	21 15:58 (1)	16:14
7	08:51		08:11	16:11 (1)	07:10	06:55	05:48	05:05	05:11	05:57	06:51	07:45	07:44	15:36 (1)	08:36
	16:30		17:26	13 16:24 (1)	18:21	20:19	21:15	22:00	22:05	21:22	20:12	18:58	16:50	24 16:00 (1)	16:14
8	08:50		08:09		07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	15:35 (1)	08:38
	16:31		17:28		18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:56	16:49	26 16:01 (1)	16:13
9	08:49		08:07		07:05	06:50	05:44	05:04	05:14	06:00	06:55	07:49	07:48	15:34 (1)	08:39
	16:33		17:30		18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	27 16:01 (1)	16:13
10	08:49		08:05		07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51	07:50	15:33 (1)	08:40
	16:34		17:32		18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51	16:45	29 16:02 (1)	16:13
11	08:48		08:04		07:01	06:45	05:40	05:03	05:16	06:04	06:58	07:52	07:52	15:33 (1)	08:41
	16:36		17:34		18:29	20:27	21:22	22:04	22:02	21:14	20:02	18:48	16:43	30 16:03 (1)	16:12
12	08:47	15:59 (1)	08:02		06:58	06:43	05:38	05:03	05:17	06:05	07:00	07:54	07:54	15:32 (1)	08:42
	16:37	2 16:01 (1)	17:36		18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	31 16:03 (1)	16:12
13	08:47	15:59 (1)	07:59		06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	15:32 (1)	08:43
	16:39	3 16:02 (1)	17:38		18:33	20:30	21:25	22:05	22:00	21:10	19:57	18:44	16:40	31 16:03 (1)	16:12
14	08:46	15:59 (1)	07:57		06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:58	15:32 (1)	08:44
	16:40	5 16:04 (1)	17:40		18:35	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38	32 16:04 (1)	16:12
15	08:45	15:59 (1)	07:55		06:51	06:35	05:33	05:02	05:21	06:11	07:06	08:00	08:00	15:33 (1)	08:45
	16:42	7 16:06 (1)	17:42		18:36	20:34	21:28	22:07	21:58	21:05	19:52	18:39	16:37	31 16:04 (1)	16:12
16	08:44	15:59 (1)	07:53		06:48	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:01	15:33 (1)	08:46
	16:44	9 16:08 (1)	17:44		18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	29 16:02 (1)	16:12
17	08:43	15:59 (1)	07:51		06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	15:33 (1)	08:47
	16:46	12 16:11 (1)	17:46		18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:34	27 16:00 (1)	16:12
18	08:42	15:58 (1)	07:49		06:44	06:29	05:28	05:02	05:25	06:16	07:11	08:06	08:05	15:33 (1)	08:48
	16:47	14 16:12 (1)	17:48		18:42	20:40	21:33	22:08	21:55	20:59	19:45	18:32	16:32	26 15:59 (1)	16:13
19	08:41	15:58 (1)	07:47		06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07	15:33 (1)	08:48
	16:49	16 16:14 (1)	17:50		18:44	20:42	21:35	22:09	21:53	20:57	19:42	18:30	16:31	24 15:57 (1)	16:13
20	08:39	15:59 (1)	07:45		06:39	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	15:34 (1)	08:49
	16:51	18 16:17 (1)	17:52		18:46	20:43	21:37	22:09	21:52	20:54	19:40	18:28	16:29	22 15:56 (1)	16:13
21	08:38	15:58 (1)	07:42		06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	15:34 (1)	08:50
	16:53	20 16:18 (1)	17:54		18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	20 15:54 (1)	16:14
22	08:37	15:59 (1)	07:40		06:34	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	15:35 (1)	08:50
	16:54	22 16:21 (1)	17:56		18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	18 15:53 (1)	16:14
23	08:36	15:58 (1)	07:38		06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15	08:14	15:35 (1)	08:51
	16:56	24 16:22 (1)	17:58		18:51	20:49	21:41	22:09	21:48	20:48	19:32	18:21	16:26	16 15:51 (1)	16:15
24	08:34	15:59 (1)	07:36		06:29	06:15	05:20	05:03	05:33	06:27	07:22	08:17	08:16	15:36 (1)	08:51
	16:58	26 16:25 (1)	18:00		18:53	20:51	21:43	22:10	21:46	20:45	19:30	18:19	16:24	14 15:50 (1)	16:15
25	08:33	15:59 (1)	07:34		06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	15:37 (1)	08:52
	17:00	27 16:26 (1)	18:02		18:55	20:53	21:44	22:10	21:45	20:43	19:27	17:17	16:23	12 15:49 (1)	16:16
26	08:31	16:00 (1)	07:31		06:24	06:11	05:17	05:03	05:37	06:30	07:25	07:21	08:19	15:37 (1)	08:52
	17:02	29 16:29 (1)	18:04		18:57	20:55	21:46	22:10	21:43	20:41	19:25	17:14	16:22	10 15:47 (1)	16:17
27	08:30	16:00 (1)	07:29		06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	15:38 (1)	08:52
	17:04	31 16:31 (1)	18:06		18:59	20:56	21:47	22:09	21:42	20:38	19:22	17:12	16:21	7 15:45 (1)	16:17
28	08:28	16:00 (1)	07:27		06:19	06:06	05:15	05:04	05:40	06:34	07:29	07:25	08:23	15:39 (1)	08:52
	17:06	32 16:32 (1)	18:08		19:01	20:58	21:49	22:09	21:40	20:36	19:20	17:10	16:20	6 15:45 (1)	16:18
29	08:27	16:00 (1)			07:17	06:04	05:13	05:05	05:41	06:35	07:31	07:27	08:24	15:40 (1)	08:52
	17:08	32 16:32 (1)			20:03	21:00	21:50	22:09	21:38	20:34	19:17	17:08	16:19	4 15:44 (1)	16:19
30	08:25	16:01 (1)			07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:29	08:26	15:41 (1)	08:52
	17:10	31 16:32 (1)			20:04	21:02	21:51	22:09	21:37	20:31	19:15	17:06	16:18	2 15:43 (1)	16:20
31	08:24	16:02 (1)			07:12		05:11		05:45	06:39		07:31			08:52
	17:12	30 16:32 (1)			20:06		21:53		21:35	20:29		17:04			16:21
Potential sun hours	250		273		367	420	494	510	513	460	382	328	259		233
Total, worst case		390		158										556	
Sun reduction		0.16		0.19										0.20	
Oper. time red.		1.00		1.00										1.00	
Wind dir. red.		0.65		0.65										0.65	
Total reduction		0.10		0.13										0.13	
Total, real		41		20										71	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** CA - H086

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	19:19 (11)	06:00	05:10	05:06	05:46	06:40	19:46 (10)	07:34	07:32	08:27
	16:22	17:13	18:09	20:08 18	19:37 (11)	21:03	21:53	22:08	21:33	20:26 12	19:58 (10)	19:12	17:02	16:17
2	08:52	08:20	07:22	07:06	19:19 (11)	05:57	05:09	05:07	05:48	06:42	19:46 (10)	07:36	07:34	08:29
	16:23	17:15	18:11	20:10 16	19:35 (11)	21:05	21:55	22:08	21:31	20:24 9	19:55 (10)	19:10	17:00	16:16
3	08:52	08:18	07:19	07:04	19:21 (11)	05:55	05:08	05:08	05:49	06:44	19:48 (10)	07:37	07:36	08:30
	16:24	17:17	18:13	20:12 12	19:33 (11)	21:07	21:56	22:07	21:29	20:21 5	19:53 (10)	19:07	16:58	16:16
4	08:51	08:16	07:17	07:01	19:25 (11)	05:53	05:07	05:08	05:51	06:46	19:49 (10)	07:39	07:38	08:32
	16:26	17:19	18:15	20:13 2	19:27 (11)	21:09	21:57	22:07	21:27	20:19 2	19:51 (10)	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59		05:51	05:07	05:09	05:53	06:48		07:41	07:40	08:33
	16:27	17:21	18:17	20:15		21:11	21:58	22:06	21:25	20:16		19:02	16:54	16:14
6	08:51	08:13	07:12	06:57		05:49	05:06	05:10	05:55	06:49		07:43	07:42	08:34
	16:28	17:23	18:19	20:17		21:12	21:59	22:06	21:23	20:14		19:00	16:52	16:14
7	08:50	08:11	07:10	06:54		05:47	05:05	05:11	05:56	06:51		07:45	07:44	08:36
	16:30	17:25	18:21	20:19		21:14	22:00	22:05	21:21	20:12		18:58	16:50	16:13
8	08:50	08:09	07:07	06:52	19:52 (10)	05:46	05:05	05:12	05:58	06:53		07:47	07:46	08:37
	16:31	17:27	18:23	20:21 2	19:54 (10)	21:16	22:01	22:04	21:19	20:09		18:55	16:48	16:13
9	08:49	08:07	07:05	06:49	19:50 (10)	05:44	05:04	05:13	06:00	06:55	19:15 (11)	07:48	07:48	08:38
	16:32	17:29	18:25	20:23 5	19:55 (10)	21:18	22:02	22:04	21:17	20:07 11	19:26 (11)	18:53	16:46	16:13
10	08:48	08:05	07:03	06:47	19:48 (10)	05:42	05:03	05:14	06:01	06:56	19:13 (11)	07:50	07:50	08:40
	16:34	17:32	18:27	20:25 9	19:57 (10)	21:19	22:03	22:03	21:15	20:04 15	19:28 (11)	18:50	16:45	16:12
11	08:48	08:03	07:00	06:45	19:47 (10)	05:40	05:03	05:15	06:03	06:58	19:11 (11)	07:52	07:52	08:41
	16:35	17:34	18:29	20:26 12	19:59 (10)	21:21	22:04	22:02	21:13	20:02 18	19:29 (11)	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	19:46 (10)	05:38	05:03	05:17	06:05	07:00	19:10 (11)	07:54	07:53	08:42
	16:37	17:36	18:30	20:28 14	20:00 (10)	21:23	22:04	22:01	21:11	19:59 20	19:30 (11)	18:46	16:41	16:12
13	08:46	07:59	06:55	06:40	19:45 (10)	05:36	05:02	05:18	06:07	07:02	19:08 (11)	07:56	07:55	08:43
	16:39	17:38	18:32	20:30 17	20:02 (10)	21:25	22:05	22:00	21:09	19:57 21	19:29 (11)	18:43	16:40	16:12
14	08:45	07:57	06:53	06:38	19:44 (10)	05:35	05:02	05:19	06:08	07:03	19:08 (11)	07:58	07:57	08:44
	16:40	17:40	18:34	20:32 20	20:04 (10)	21:26	22:06	21:59	21:07	19:54 18	19:26 (11)	18:41	16:38	16:12
15	08:44	07:55	06:51	06:35	19:43 (10)	05:33	05:02	05:20	06:10 20:00 (10)	07:05	19:08 (11)	08:00	07:59	08:45
	16:42	17:42	18:36	20:34 22	20:05 (10)	21:28	22:06	21:58	21:05 7	20:07 (10) 19:52 16	19:24 (11)	18:39	16:36	16:12
16	08:43	07:53	06:48	06:33	19:43 (10)	05:31	05:02	05:22	06:12	19:57 (10) 07:07	19:07 (11)	08:01	08:01	08:46
	16:44	17:44	18:38	20:36 24	20:07 (10)	21:30	22:07	21:57	21:03 14	20:11 (10) 19:49 14	19:21 (11)	18:36	16:35	16:12
17	08:42	07:51	06:46	06:30	19:43 (10)	05:30	05:02	05:23	06:14	19:55 (10) 07:09	19:07 (11)	08:03	08:03	08:47
	16:45	17:46	18:40	20:38 26	20:09 (10)	21:31	22:07	21:55	21:01 18	20:13 (10) 19:47 12	19:19 (11)	18:34	16:33	16:12
18	08:41	07:49	06:43	06:28	19:43 (10)	05:28	05:01	05:24	06:16	19:52 (10) 07:11	19:07 (11)	08:05	08:05	08:47
	16:47	17:48	18:42	20:39 28	20:11 (10)	21:33	22:08	21:54	20:58 22	20:14 (10) 19:44 9	19:16 (11)	18:32	16:32	16:12
19	08:40	07:46	06:41	06:26	19:42 (10)	05:26	05:01	05:26	06:17	19:51 (10) 07:12	19:08 (11)	08:07	08:07	08:48
	16:49	17:50	18:44	20:41 30	20:12 (10)	21:35	22:08	21:53	20:56 24	20:15 (10) 19:42 6	19:14 (11)	18:29	16:31	16:13
20	08:39	07:44	06:38	06:24	19:43 (10)	05:25	05:02	05:27	06:19	19:50 (10) 07:14	19:08 (11)	08:09	08:08	08:49
	16:51	17:52	18:46	20:43 29	20:12 (10)	21:36	22:08	21:52	20:54 26	20:16 (10) 19:39 3	19:11 (11)	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	19:43 (10)	05:23	05:02	05:29	06:21	19:48 (10) 07:16		08:11	08:10	08:49
	16:52	17:54	18:47	20:45 29	20:12 (10)	21:38	22:09	21:50	20:52 28	20:16 (10) 19:37		18:25	16:28	16:13
22	08:37	07:40	06:33	06:19	19:44 (10)	05:22	05:02	05:30	06:23	19:48 (10) 07:18		08:13	08:12	08:50
	16:54	17:56	18:49	20:47 27	20:11 (10)	21:39	22:09	21:49	20:49 29	20:17 (10) 19:34		18:23	16:27	16:14
23	08:35	07:38	06:31 18:23 (11)	06:17	19:45 (10)	05:21	05:02	05:32	06:24	19:47 (10) 07:19		08:15	08:14	08:50
	16:56	17:57	18:51 2 18:25 (11)	20:49 25	20:10 (10)	21:41	22:09	21:47	20:47 30	20:17 (10) 19:32		18:21	16:25	16:14
24	08:34	07:35	06:28 18:21 (11)	06:15	19:46 (10)	05:19	05:02	05:33	06:26	19:46 (10) 07:21		08:17	08:16	08:51
	16:58	17:59	18:53 5 18:26 (11)	20:50 23	20:09 (10)	21:42	22:09	21:46	20:45 30	20:16 (10) 19:30		18:18	16:24	16:15
25	08:32	07:33	06:26 18:20 (11)	06:12	19:46 (10)	05:18	05:03	05:35	06:28	19:46 (10) 07:23		07:19	08:17	08:51
	17:00	18:01	18:55 9 18:29 (11)	20:52 21	20:07 (10)	21:44	22:09	21:44	20:43 28	20:14 (10) 19:27		17:16	16:23	16:16
26	08:31	07:31	06:24 18:18 (11)	06:10	19:48 (10)	05:17	05:03	05:36	06:30	19:46 (10) 07:25		07:20	08:19	08:51
	17:02	18:03	18:57 12 18:30 (11)	20:54 17	20:05 (10)	21:45	22:09	21:43	20:40 26	20:12 (10) 19:25		17:14	16:22	16:16
27	08:30	07:29	06:21 18:18 (11)	06:08	19:50 (10)	05:15	05:04	05:38	06:32	19:45 (10) 07:27		07:22	08:21	08:52
	17:04	18:05	18:59 14 18:32 (11)	20:56 12	20:02 (10)	21:47	22:09	21:41	20:38 24	20:09 (10) 19:22		17:12	16:21	16:17
28	08:28	07:26	06:19 18:17 (11)	06:06	19:55 (10)	05:14	05:04	05:39	06:33	19:45 (10) 07:28		07:24	08:22	08:52
	17:06	18:07	19:00 16 18:33 (11)	20:58 2	19:57 (10)	21:48	22:09	21:40	20:36 22	20:07 (10) 19:20		17:10	16:20	16:18
29	08:26		07:16 19:17 (11)	06:04		05:13	05:05	05:41	06:35	19:45 (10) 07:30		07:26	08:24	08:52
	17:08		20:02 19 19:36 (11)	21:00		21:50	22:09	21:38	20:33 20	20:05 (10) 19:17		17:08	16:19	16:19
30	08:25		07:14 19:17 (11)	06:02		05:12	05:05	05:43	06:37	19:45 (10) 07:32		07:28	08:26	08:52
	17:10		20:04 20 19:37 (11)	21:01		21:51	22:08	21:36	20:31 17	20:02 (10) 19:15		17:06	16:18	16:20
31	08:23		07:11 19:18 (11)			05:11		05:44	06:39	19:45 (10)		07:30		08:52
	17:11		20:06 20 19:38 (11)			21:52		21:35	20:28 15	20:00 (10)		17:04		16:21
Potential sun hours	250	273	367	420		494	510	512	460	382		328	259	233
Total, worst case			117	442					380	191				
Sun reduction			0.22	0.31					0.26	0.25				
Oper. time red.			1.00	1.00					1.00	1.00				
Wind dir. red.			0.65	0.63					0.63	0.64				
Total reduction			0.14	0.19					0.16	0.16				
Total, real			17	85					61	31				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** CB - H087

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:07	05:47	06:17 (5)	06:41	07:08 (6)	07:34	07:33	08:28
	16:23	17:14	18:10	20:08	21:04	21:54	22:08	21:33	06:42 (5)	20:26	07:12 (6)	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	06:24 (5)	05:10	05:07	05:48	06:19 (5)	06:43	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:06	4 06:28 (5)	21:55	22:08	21:31	24 06:43 (5)	20:24	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04	05:56	06:22 (5)	05:09	05:08	05:50	06:20 (5)	06:44	07:38	07:36	08:31
	16:25	17:18	18:14	20:12	21:07	7 06:29 (5)	21:56	22:08	21:29	22 06:42 (5)	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	06:20 (5)	05:08	05:09	05:52	06:22 (5)	06:46	07:40	07:38	08:32
	16:26	17:20	18:16	20:14	21:09	9 06:29 (5)	21:57	22:07	21:28	20 06:42 (5)	20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	07:00	05:52	06:18 (5)	05:07	05:10	05:53	06:23 (5)	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	12 06:30 (5)	21:58	22:07	21:26	18 06:41 (5)	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	06:16 (5)	05:06	05:11	05:55	06:25 (5)	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:18	21:13	14 06:30 (5)	21:59	22:06	21:24	16 06:41 (5)	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:55	05:48	06:15 (5)	05:06	05:12	05:57	06:27 (5)	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:15	17 06:32 (5)	22:00	22:05	21:22	14 06:41 (5)	20:12	18:58	16:51	16:14
8	08:50	08:09	07:08	06:52	05:46	06:13 (5)	05:05	05:13	05:58	06:28 (5)	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	19 06:32 (5)	22:01	22:05	21:20	11 06:39 (5)	20:09	18:56	16:49	16:14
9	08:49	08:07	07:05	06:50	05:44	06:11 (5)	05:04	05:14	06:00	06:30 (5)	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	21 06:32 (5)	22:02	22:04	21:18	9 06:39 (5)	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	06:09 (5)	05:04	05:15	06:02	06:31 (5)	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	23 06:32 (5)	22:03	22:03	21:16	6 06:37 (5)	20:05	18:51	16:45	16:13
11	08:48	08:04	07:01	06:45	07:09 (6) 05:40	06:08 (5)	05:04	05:16	06:04	06:33 (5)	06:59	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	4 07:13 (6) 21:22	24 06:32 (5)	22:04	22:02	21:14	3 06:36 (5)	20:02	18:49	16:43	16:13
12	08:47	08:02	06:58	06:43	07:07 (6) 05:39	06:06 (5)	05:03	05:17	06:05		07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	7 07:14 (6) 21:23	26 06:32 (5)	22:05	22:01	21:12		20:00	18:46	16:42	16:12
13	08:47	07:59	06:56	06:40	07:04 (6) 05:37	06:04 (5)	05:03	05:18	06:21 (5)	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	10 07:14 (6) 21:25	28 06:32 (5)	22:05	22:00	9 06:30 (5)	21:10	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	07:02 (6) 05:35	06:03 (5)	05:03	05:20	06:19 (5)	06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	12 07:14 (6) 21:27	29 06:32 (5)	22:06	21:59	12 06:31 (5)	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:36	07:00 (6) 05:33	06:01 (5)	05:02	05:21	06:18 (5)	06:11	07:06	08:00	08:00	08:45
	16:42	17:42	18:37	20:34	15 07:15 (6) 21:28	31 06:32 (5)	22:07	21:58	15 06:33 (5)	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:49	06:33	06:58 (6) 05:32	06:01 (5)	05:02	05:22	06:17 (5)	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	17 07:15 (6) 21:30	31 06:32 (5)	22:07	21:57	17 06:34 (5)	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	06:55 (6) 05:30	06:00 (5)	05:02	05:23	06:17 (5)	06:14	07:04 (6)	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	19 07:14 (6) 21:32	31 06:31 (5)	22:08	21:56	19 06:36 (5)	21:01	5 07:09 (6)	19:47	18:34	16:34	16:13
18	08:42	07:49	06:44	06:29	06:53 (6) 05:29	06:01 (5)	05:02	05:25	06:16 (5)	06:16	07:00 (6)	07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40	21 07:14 (6) 21:33	30 06:31 (5)	22:08	21:55	21 06:37 (5)	20:59	13 07:13 (6)	19:45	18:32	16:32	16:13
19	08:41	07:47	06:41	06:26	06:51 (6) 05:27	06:01 (5)	05:02	05:26	06:15 (5)	06:18	06:58 (6)	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:42	23 07:14 (6) 21:35	29 06:30 (5)	22:08	21:53	22 06:37 (5)	20:57	16 07:14 (6)	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	06:49 (6) 05:25	06:02 (5)	05:02	05:28	06:15 (5)	06:20	06:56 (6)	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	24 07:13 (6) 21:37	28 06:30 (5)	22:09	21:52	24 06:39 (5)	20:54	19 07:15 (6)	19:40	18:28	16:30	16:13
21	08:38	07:43	06:36	06:22	06:49 (6) 05:24	06:03 (5)	05:02	05:29	06:14 (5)	06:21	06:55 (6)	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	23 07:12 (6) 21:38	27 06:30 (5)	22:09	21:51	25 06:39 (5)	20:52	21 07:16 (6)	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:20	06:50 (6) 05:23	06:04 (5)	05:02	05:31	06:13 (5)	06:23	06:54 (6)	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21 07:11 (6) 21:40	26 06:30 (5)	22:09	21:49	26 06:39 (5)	20:50	22 07:16 (6)	19:35	18:23	16:27	16:14
23	08:36	07:38	06:31	06:17	06:51 (6) 05:21	06:04 (5)	05:03	05:32	06:13 (5)	06:25	06:53 (6)	07:20	08:15	08:14	08:51
	16:57	17:58	18:52	20:49	18 07:09 (6) 21:41	24 06:28 (5)	22:09	21:48	28 06:41 (5)	20:48	24 07:17 (6)	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	06:52 (6) 05:20	06:05 (5)	05:03	05:34	06:12 (5)	06:27	06:55 (6)	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	16 07:08 (6) 21:43	23 06:28 (5)	22:09	21:46	29 06:41 (5)	20:45	23 07:18 (6)	19:30	18:19	16:25	16:15
25	08:33	07:34	06:26	06:13	06:54 (6) 05:18	06:06 (5)	05:03	05:35	06:12 (5)	06:28	06:56 (6)	07:23	07:19	08:18	08:52
	17:00	18:02	18:55	20:53	12 07:06 (6) 21:44	21 06:27 (5)	22:10	21:45	30 06:42 (5)	20:43	21 07:17 (6)	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	06:59 (6) 05:17	06:07 (5)	05:04	05:37	06:11 (5)	06:30	06:58 (6)	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:55	2 07:01 (6) 21:46	20 06:27 (5)	22:09	21:43	31 06:42 (5)	20:41	19 07:17 (6)	19:25	17:14	16:22	16:17
27	08:30	07:29	06:22	06:08	05:16	06:08 (5)	05:04	05:38	06:11 (5)	06:32	07:00 (6)	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	18 06:26 (5)	22:09	21:42	31 06:42 (5)	20:38	17 07:17 (6)	19:23	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	05:15	06:09 (5)	05:05	05:40	06:11 (5)	06:34	07:01 (6)	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:49	16 06:25 (5)	22:09	21:40	31 06:42 (5)	20:36	15 07:16 (6)	19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	05:14	06:10 (5)	05:05	05:42	06:12 (5)	06:36	07:03 (6)	07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	14 06:24 (5)	22:09	21:38	30 06:42 (5)	20:34	12 07:15 (6)	19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	05:13	06:12 (5)	05:06	05:43	06:14 (5)	06:37	07:05 (6)	07:32	07:29	08:26	08:52
	17:10		20:05	21:02	21:51	10 06:22 (5)	22:09	21:37	29 06:43 (5)	20:31	10 07:15 (6)	19:15	17:06	16:19	16:20
31	08:24		07:12		05:11	06:14 (5)		05:45	06:15 (5)	06:39	07:07 (6)		07:31		08:52
	17:12		20:06		21:52	6 06:20 (5)		21:35	27 06:42 (5)	20:29	7 07:14 (6)		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case				244	618		456	412	4			
Sun reduction				0.31	0.31		0.22	0.26	0.25			
Oper. time red.				1.00	1.00		1.00	1.00	1.00			
Wind dir. red.				0.64	0.65		0.65	0.64	0.64			
Total reduction				0.20	0.20		0.15	0.17	0.16			
Total, real				48	126		66	68	1			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** CC - H089

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:07	05:46	06:41	07:34	07:32	08:27
	16:23	17:14	18:10	20:08	21:04	21:54	22:08	21:33	20:26	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:10	05:07	05:48	06:43	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:14	20:12	21:07	21:56	22:08	21:29	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:52	06:46	07:40	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:28	20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	06:59	05:52	05:07	05:10	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	21:58	22:07	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:55	05:48	05:06	05:12	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:56	16:49	16:14
9	08:49	08:07	07:05	06:50	05:44	05:04	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51	16:45	16:13
11	08:48	08:03	07:01	06:45	05:40	05:04	05:16	06:04	06:59	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:13
12	08:47	08:01	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	22:00	21:10	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:03	05:20	06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00	07:59	08:45
	16:42	17:42	18:37	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:34	16:13
18	08:42	07:49	06:44	06:29	05:28	05:02	05:25	06:16	07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:42	21:35	22:08	21:53	20:57	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:28	06:20	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:37	22:09	21:52	20:54	19:40	18:28	16:30	16:13
21	08:38	07:42	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	05:02	05:31	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:14	08:51
	16:57	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:19	16:25	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	21:44	22:09	21:45	20:43	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:41	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:22	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	05:14	05:05	05:42	06:35	07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:34	19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	05:13	05:06	05:43	06:37	07:32	07:29	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:37	20:31	19:15	17:06	16:19	16:20
31	08:24		07:12		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** CD - H090

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May		June		July		August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00		05:10		05:06		05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:10	20:08	21:03		21:54	23	21:19 (6)	22:08	20 21:25 (6)	21:33	20:26	19:12	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58		05:09		20:57 (6)	05:07	21:05 (6)	05:48	06:42	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:05		21:55	23	21:20 (6)	22:08	19 21:24 (6)	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56		05:09		20:58 (6)	05:08	21:05 (6)	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12	21:07		21:56	23	21:21 (6)	22:07	20 21:25 (6)	21:29	20:21	19:08	16:58	16:16
4	08:51	08:17	07:17	07:02	05:54		05:08		20:58 (6)	05:09	21:05 (6)	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14	21:09		21:57	22	21:20 (6)	22:07	21 21:26 (6)	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52		05:07		20:58 (6)	05:10	21:05 (6)	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11		21:58	22	21:20 (6)	22:06	21 21:26 (6)	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50		05:06		20:59 (6)	05:11	21:04 (6)	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:17	21:13		21:59	22	21:21 (6)	22:06	22 21:26 (6)	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48		05:06		20:59 (6)	05:12	21:04 (6)	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14		22:00	21	21:20 (6)	22:05	22 21:26 (6)	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46		05:05		20:59 (6)	05:13	21:04 (6)	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16		22:01	21	21:20 (6)	22:04	23 21:27 (6)	21:20	20:09	18:55	16:49	16:13
9	08:49	08:07	07:05	06:50	05:44		05:04		20:59 (6)	05:14	21:04 (6)	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18		22:02	21	21:20 (6)	22:04	23 21:27 (6)	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42		05:04		21:00 (6)	05:15	21:04 (6)	06:02	06:57	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20		22:03	20	21:20 (6)	22:03	23 21:27 (6)	21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:00	06:45	05:40		05:03		21:00 (6)	05:16	21:04 (6)	06:04	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21		22:04	19	21:19 (6)	22:02	23 21:27 (6)	21:14	20:02	18:48	16:43	16:13
12	08:47	08:01	06:58	06:43	05:38		05:03		21:01 (6)	05:17	21:05 (6)	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23		22:04	19	21:20 (6)	22:01	22 21:27 (6)	21:12	19:59	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	05:37		05:03		21:01 (6)	05:18	21:05 (6)	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25		22:05	19	21:20 (6)	22:00	21 21:26 (6)	21:09	19:57	18:44	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35		05:02		21:02 (6)	05:19	21:05 (6)	06:09	07:04	07:58	07:57	08:44
	16:40	17:40	18:35	20:32	21:27		22:06	18	21:20 (6)	21:59	20 21:25 (6)	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	05:33		05:02		21:02 (6)	05:21	21:05 (6)	06:11	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28		22:06	18	21:20 (6)	21:58	19 21:24 (6)	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32		05:02		21:03 (6)	05:22	21:04 (6)	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30		22:07	17	21:20 (6)	21:57	18 21:22 (6)	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	20:58 (6)	05:02		21:03 (6)	05:23	21:04 (6)	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	1 20:59 (6)	22:07	18	21:21 (6)	21:56	17 21:21 (6)	21:01	19:47	18:34	16:34	16:12
18	08:41	07:49	06:43	06:28	05:28	20:58 (6)	05:02		21:04 (6)	05:25	21:05 (6)	06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:40	21:33	3 21:01 (6)	22:08	17	21:21 (6)	21:54	16 21:21 (6)	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	20:57 (6)	05:02		21:04 (6)	05:26	21:05 (6)	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	5 21:02 (6)	22:08	17	21:21 (6)	21:53	14 21:19 (6)	20:56	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	20:57 (6)	05:02		21:04 (6)	05:28	21:05 (6)	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	7 21:04 (6)	22:09	17	21:21 (6)	21:52	13 21:18 (6)	20:54	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:22	05:24	20:56 (6)	05:02		21:04 (6)	05:29	21:06 (6)	06:21	07:16	08:11	08:10	08:49
	16:53	17:54	18:48	20:45	21:38	9 21:05 (6)	22:09	17	21:21 (6)	21:50	11 21:17 (6)	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	20:55 (6)	05:02		21:04 (6)	05:30	21:06 (6)	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	11 21:06 (6)	22:09	17	21:21 (6)	21:49	10 21:16 (6)	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	20:55 (6)	05:02		21:05 (6)	05:32	21:07 (6)	06:25	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41	13 21:08 (6)	22:09	17	21:22 (6)	21:48	8 21:15 (6)	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	20:56 (6)	05:03		21:05 (6)	05:33	21:07 (6)	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	13 21:09 (6)	22:09	17	21:22 (6)	21:46	6 21:13 (6)	20:45	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18	20:56 (6)	05:03		21:04 (6)	05:35	21:07 (6)	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:52	21:44	15 21:11 (6)	22:09	18	21:22 (6)	21:45	5 21:12 (6)	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	20:56 (6)	05:04		21:05 (6)	05:37	21:09 (6)	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:45	16 21:12 (6)	22:09	17	21:22 (6)	21:43	2 21:11 (6)	20:40	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	20:56 (6)	05:04		21:05 (6)	05:38		06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	17 21:13 (6)	22:09	17	21:22 (6)	21:41		20:38	19:22	17:12	16:21	16:17
28	08:28	07:27	06:19	06:06	05:15	20:56 (6)	05:05		21:05 (6)	05:40		06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	19 21:15 (6)	22:09	18	21:23 (6)	21:40		20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	20:56 (6)	05:05		21:05 (6)	05:41		06:35	07:30	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	20 21:16 (6)	22:09	18	21:23 (6)	21:38		20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	20:56 (6)	05:06		21:05 (6)	05:43		06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	21 21:17 (6)	22:09	19	21:24 (6)	21:36		20:31	19:15	17:06	16:18	16:20
31	08:23		07:12		05:11	20:56 (6)				05:45		06:39		07:30		08:52
	17:12		20:06		21:52	22 21:18 (6)				21:35		20:29		17:04		16:21
Potential sun hours	250	273	367	420	494		510			512		460	382	328	259	233
Total, worst case						192		572		439						
Sun reduction						0.31		0.26		0.22						
Oper. time red.						1.00		1.00		1.00						
Wind dir. red.						0.60		0.60		0.60						
Total reduction						0.19		0.16		0.14						
Total, real						36		89		59						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** CE - H091

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:07	05:46	06:41	07:34	07:32	08:27
	16:23	17:14	18:10	20:08	21:04	21:54	22:08	21:33	20:26	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:10	05:07	05:48	06:43	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:14	20:12	21:07	21:56	22:08	21:29	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:52	06:46	07:40	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:28	20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	06:59	05:52	05:07	05:10	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	21:58	22:06	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:55	05:48	05:06	05:12	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:56	16:49	16:14
9	08:49	08:07	07:05	06:50	05:44	05:04	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51	16:45	16:13
11	08:48	08:03	07:01	06:45	05:40	05:04	05:16	06:04	06:59	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:13
12	08:47	08:01	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	22:00	21:10	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:03	05:20	06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:34	16:13
18	08:42	07:49	06:44	06:29	05:28	05:02	05:25	06:16	07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:42	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:28	06:20	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:37	22:09	21:52	20:54	19:40	18:28	16:30	16:13
21	08:38	07:42	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	05:02	05:31	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:14	08:51
	16:57	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:19	16:25	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	21:44	22:09	21:45	20:43	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:41	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:22	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	05:14	05:05	05:42	06:35	07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:34	19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:29	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:37	20:31	19:15	17:06	16:19	16:20
31	08:24		07:12		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** CF - H093

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52 16:23	08:22 17:14	07:24 18:10	07:09 20:08	06:00 21:04 (12)	06:42 (6) 06:54 (6)	05:11 21:54 (27)	05:50 (5) 06:17 (5)	05:07 22:08 (18)	06:01 (5) 06:19 (5)	05:47 21:33 (9)	06:17 (5) 06:26 (5)	06:41 20:26	07:34 19:13	07:33 17:02	08:28 16:18
2	08:52 16:24	08:20 17:16	07:22 18:12	07:07 20:10	05:58 21:06 (4)	06:46 (6) 06:50 (6)	05:10 21:55 (26)	05:51 (5) 06:17 (5)	05:07 22:08 (19)	06:00 (5) 06:19 (5)	05:48 21:31 (6)	06:19 (5) 06:25 (5)	06:43 20:24	07:36 19:10	07:34 17:00	08:29 16:17
3	08:52 16:25	08:19 17:18	07:20 18:14	07:04 20:12	05:56 21:07		05:09 21:56 (25)	05:52 (5) 06:17 (5)	05:08 22:08 (20)	06:00 (5) 06:20 (5)	05:50 21:29 (4)	06:20 (5) 06:24 (5)	06:44 20:22	07:38 19:08	07:36 16:58	08:31 16:16
4	08:52 16:26	08:17 17:20	07:17 18:16	07:02 20:14	05:54 21:09		05:08 21:57 (25)	05:52 (5) 06:17 (5)	05:09 22:07 (21)	06:00 (5) 06:21 (5)	05:52 21:28 (1)	06:22 (5) 06:23 (5)	06:46 20:19	07:40 19:05	07:38 16:56	08:32 16:16
5	08:51 16:27	08:15 17:22	07:15 18:17	07:00 20:16	05:52 21:11		05:07 21:58 (24)	05:52 (5) 06:16 (5)	05:10 22:07 (22)	06:00 (5) 06:22 (5)	05:53 21:26		06:48 20:17	07:41 19:03	07:40 16:54	08:33 16:15
6	08:51 16:29	08:13 17:24	07:13 18:19	06:57 20:18	05:50 21:13		05:06 21:59 (22)	05:54 (5) 06:16 (5)	05:11 22:06 (23)	06:00 (5) 06:23 (5)	05:55 21:24		06:50 20:14	07:43 19:00	07:42 16:52	08:35 16:14
7	08:50 16:30	08:11 17:26	07:10 18:21	06:55 20:19	05:48 21:15		05:06 22:00 (22)	05:54 (5) 06:16 (5)	05:12 22:05 (23)	06:00 (5) 06:23 (5)	05:57 21:22		06:51 20:12	07:45 18:58	07:44 16:51	08:36 16:14
8	08:50 16:31	08:09 17:28	07:08 18:23	06:52 20:21	05:46 21:16		05:05 22:01 (21)	05:55 (5) 06:16 (5)	05:13 22:05 (24)	06:00 (5) 06:24 (5)	05:58 21:20		06:53 20:09	07:47 18:56	07:46 16:49	08:37 16:14
9	08:49 16:33	08:07 17:30	07:05 18:25	06:50 20:23	05:44 21:18 (2)	06:11 (5) 06:13 (5)	05:04 22:02 (20)	05:55 (5) 06:15 (5)	05:14 22:04 (25)	05:59 (5) 06:24 (5)	06:00 21:18		06:55 20:07	07:49 18:53	07:48 16:47	08:39 16:13
10	08:49 16:34	08:05 17:32	07:03 18:27	06:47 20:25	05:42 21:20 (5)	06:09 (5) 06:14 (5)	05:04 22:03 (19)	05:56 (5) 06:15 (5)	05:15 22:03 (26)	05:59 (5) 06:25 (5)	06:02 21:16		06:57 20:05	07:51 18:51	07:50 16:45	08:40 16:13
11	08:48 16:36	08:04 17:34	07:01 18:29	06:45 20:27	05:40 21:22 (7)	06:08 (5) 06:15 (5)	05:04 22:04 (18)	05:57 (5) 06:15 (5)	05:16 22:02 (26)	05:59 (5) 06:25 (5)	06:04 21:14 (7)	06:53 (6) 07:00 (6)	06:59 20:02	07:52 18:49	07:52 16:43	08:41 16:13
12	08:47 16:37	08:02 17:36	06:58 18:31	06:43 20:29	05:39 21:23 (10)	06:06 (5) 06:16 (5)	05:03 22:05 (17)	05:57 (5) 06:14 (5)	05:17 22:01 (27)	05:59 (5) 06:26 (5)	06:05 21:12 (13)	06:50 (6) 07:03 (6)	07:00 20:00	07:54 18:46	07:54 16:42	08:42 16:12
13	08:47 16:39	07:59 17:38	06:56 18:33	06:40 20:30	05:37 21:25 (12)	06:04 (5) 06:16 (5)	05:03 22:05 (17)	05:57 (5) 06:14 (5)	05:18 22:00 (28)	05:58 (5) 06:26 (5)	06:07 21:10 (17)	06:47 (6) 07:04 (6)	07:02 19:57	07:56 18:44	07:56 16:40	08:43 16:12
14	08:46 16:41	07:57 17:40	06:53 18:35	06:38 20:32	05:35 21:27 (14)	06:03 (5) 06:17 (5)	05:03 22:06 (17)	05:58 (5) 06:15 (5)	05:20 21:59 (28)	05:58 (5) 06:26 (5)	06:09 21:07 (19)	06:46 (6) 07:05 (6)	07:04 19:55	07:58 18:41	07:58 16:38	08:44 16:12
15	08:45 16:42	07:55 17:42	06:51 18:37	06:36 20:34	05:33 21:28 (16)	06:01 (5) 06:17 (5)	05:02 22:07 (16)	05:59 (5) 06:15 (5)	05:21 21:58 (29)	05:58 (5) 06:27 (5)	06:11 21:05 (20)	06:46 (6) 07:06 (6)	07:06 19:52	08:00 18:39	08:00 16:37	08:45 16:12
16	08:44 16:44	07:53 17:44	06:49 18:38	06:33 20:36 (2)	06:58 (6) 07:00 (6)	05:32 21:30 (18)	06:00 (5) 06:18 (5)	05:02 22:07 (16)	05:22 21:57 (30)	05:59 (5) 06:15 (5)	05:22 21:03 (22)	06:44 (6) 07:06 (6)	07:07 19:50	08:02 18:37	08:01 16:35	08:46 16:12
17	08:43 16:46	07:51 17:46	06:46 18:40	06:31 20:38 (5)	06:55 (6) 07:00 (6)	05:30 21:32 (20)	05:58 (5) 06:18 (5)	05:02 22:08 (14)	06:00 (5) 06:14 (5)	05:23 21:56 (30)	05:58 (5) 06:28 (5)	06:14 21:01 (24)	07:09 19:47	08:04 18:34	08:03 16:34	08:47 16:13
18	08:42 16:47	07:49 17:48	06:44 18:42	06:29 20:40 (8)	06:53 (6) 07:01 (6)	05:29 21:33 (21)	05:57 (5) 06:18 (5)	05:02 22:08 (14)	06:00 (5) 06:14 (5)	05:25 21:55 (30)	05:58 (5) 06:28 (5)	06:16 20:59 (23)	07:11 19:45	08:06 18:32	08:05 16:32	08:48 16:13
19	08:41 16:49	07:47 17:50	06:41 18:44	06:26 20:42 (11)	06:51 (6) 07:02 (6)	05:27 21:35 (23)	05:55 (5) 06:18 (5)	05:02 22:08 (14)	06:00 (5) 06:14 (5)	05:26 21:53 (30)	05:58 (5) 06:28 (5)	06:18 20:57 (21)	07:13 19:42	08:07 18:30	08:07 16:31	08:48 16:13
20	08:39 16:51	07:45 17:52	06:39 18:46	06:24 20:43 (13)	06:49 (6) 07:02 (6)	05:25 21:37 (24)	05:54 (5) 06:18 (5)	05:02 22:09 (13)	06:01 (5) 06:14 (5)	05:28 21:52 (29)	06:00 (5) 06:29 (5)	06:20 20:54 (19)	06:48 (6) 07:07 (6)	07:14 19:40	08:09 18:28	08:49 16:30	16:13
21	08:38 16:53	07:42 17:54	06:36 18:48	06:22 20:45 (15)	06:46 (6) 07:01 (6)	05:24 21:38 (26)	05:53 (5) 06:19 (5)	05:02 22:09 (13)	06:01 (5) 06:14 (5)	05:29 21:51 (28)	06:01 (5) 06:29 (5)	06:21 20:52 (17)	06:50 (6) 07:07 (6)	07:16 19:37	08:11 18:25	08:11 16:28	08:50 16:14
22	08:37 16:55	07:40 17:56	06:34 18:50	06:20 20:47 (18)	06:44 (6) 07:02 (6)	05:23 21:40 (27)	05:52 (5) 06:19 (5)	05:02 22:09 (13)	06:01 (5) 06:14 (5)	05:31 21:49 (26)	06:02 (5) 06:28 (5)	06:23 20:50 (15)	06:51 (6) 07:06 (6)	07:18 19:35	08:13 18:23	08:12 16:27	08:50 16:14
23	08:36 16:57	07:38 17:58	06:31 18:52	06:17 20:49 (20)	06:42 (6) 07:02 (6)	05:21 21:41 (28)	05:50 (5) 06:18 (5)	05:03 22:09 (13)	06:02 (5) 06:15 (5)	05:32 21:48 (25)	06:04 (5) 06:29 (5)	06:25 20:48 (13)	06:53 (6) 07:06 (6)	07:20 19:32	08:15 18:21	08:14 16:26	08:51 16:15
24	08:34 16:58	07:36 18:00	06:29 18:53	06:15 20:51 (21)	06:40 (6) 07:01 (6)	05:20 21:43 (29)	05:49 (5) 06:18 (5)	05:03 22:09 (14)	06:01 (5) 06:15 (5)	05:34 21:46 (24)	06:05 (5) 06:29 (5)	06:27 20:45 (10)	06:55 (6) 07:05 (6)	07:22 19:30	08:17 18:19	08:16 16:25	08:51 16:15
25	08:33 17:00	07:34 18:02	06:26 18:55	06:13 20:53 (23)	06:38 (6) 07:01 (6)	05:18 21:44 (30)	05:48 (5) 06:18 (5)	05:03 22:10 (14)	06:01 (5) 06:15 (5)	05:35 21:45 (22)	06:07 (5) 06:29 (5)	06:28 20:43 (8)	06:56 (6) 07:04 (6)	07:23 19:27	08:19 17:17	08:18 16:23	08:52 16:16
26	08:31 17:02	07:31 18:04	06:24 18:57	06:11 20:55 (23)	06:37 (6) 07:00 (6)	05:17 21:46 (30)	05:48 (5) 06:18 (5)	05:04 22:09 (16)	06:01 (5) 06:17 (5)	05:37 21:43 (21)	06:08 (5) 06:29 (5)	06:30 20:41 (5)	06:58 (6) 07:03 (6)	07:25 19:25	07:21 17:14	08:19 16:22	08:52 16:17
27	08:30 17:04	07:29 18:06	06:22 18:59	06:08 20:56 (23)	06:37 (6) 07:00 (6)	05:16 21:47 (29)	05:49 (5) 06:18 (5)	05:04 22:09 (16)	06:01 (5) 06:17 (5)	05:38 21:42 (19)	06:09 (5) 06:28 (5)	06:32 20:38 (2)	07:00 (6) 07:02 (6)	07:27 19:23	07:23 17:12	08:21 16:21	08:52 16:18
28	08:28 17:06	07:27 18:08	06:19 19:01	06:06 20:58 (21)	06:38 (6) 06:59 (6)	05:15 21:48 (29)	05:49 (5) 06:18 (5)	05:05 22:09 (17)	06:01 (5) 06:18 (5)	05:40 21:40 (17)	06:11 (5) 06:28 (5)	06:34 20:36		07:29 19:20	07:25 17:10	08:23 16:20	08:52 16:18
29	08:27 17:08		07:17 20:03	06:04 21:00 (18)	06:39 (6) 06:57 (6)	05:14 21:50 (29)	05:49 (5) 06:18 (5)	05:05 22:09 (16)	06:01 (5) 06:17 (5)	05:42 21:38 (15)	06:12 (5) 06:27 (5)	06:36 20:34		07:31 19:18	07:27 17:08	08:24 16:19	08:52 16:19
30	08:25 17:10		07:14 20:05	06:02 21:02 (16)	06:40 (6) 06:56 (6)	05:13 21:51 (28)	05:50 (5) 06:18 (5)	05:06 22:09 (17)	06:01 (5) 06:18 (5)	05:43 21:37 (13)	06:14 (5) 06:27 (5)	06:37 20:31		07:32 19:15	07:29 17:06	08:26 16:19	08:52 16:20
31	08:24 17:12		07:12 20:06		05:11 21:52 (28)	05:50 (5) 06:18 (5)			05:45 21:35 (11)	06:15 (5) 06:26 (5)	06:39 20:29			07:31 17:04			08:52 16:21
Potential sun hours	250	273	367	420	494		510		512		460		382	328	259	233	
Total, worst case				237	501		536		729		275						
Sun reduction				0.31	0.31		0.26		0.22		0.26						
Oper. time red.				1.00	1.00		1.00		1.00		1.00						
Wind dir. red.				0.65	0.64		0.64		0.64		0.65						
Total reduction				0.20	0.20		0.17		0.14		0.17						
Total, real				47	101		89		105		46						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** CG - H094

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	21:16 (11)	05:06	21:18 (11)	05:46	06:40	07:34	07:32	08:27
	16:22	17:14	18:09	20:08	21:03	21:53	21:19 (11)	22:08	21:32 (11)	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:06	05:58	05:09	21:15 (11)	05:07	21:18 (11)	05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05	21:55	21:20 (11)	22:08	21:32 (11)	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:19	07:04	05:55	05:08	21:15 (11)	05:08	21:19 (11)	05:49	06:44	07:37	07:36	08:30
	16:24	17:18	18:13	20:12	21:07	21:56	21:21 (11)	22:07	21:32 (11)	21:29	20:21	19:07	16:58	16:16
4	08:51	08:16	07:17	07:02	05:53	05:07	21:15 (11)	05:08	21:20 (11)	05:51	06:46	07:39	07:38	08:32
	16:26	17:19	18:15	20:13	21:09	21:57	21:22 (11)	22:07	21:32 (11)	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:51	05:07	21:14 (11)	05:09	21:19 (11)	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11	21:58	21:23 (11)	22:06	21:30 (11)	21:25	20:16	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:49	05:06	21:14 (11)	05:10	21:20 (11)	05:55	06:49	07:43	07:42	08:34
	16:28	17:24	18:19	20:17	21:12	21:59	21:23 (11)	22:06	21:30 (11)	21:23	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48	05:05	21:14 (11)	05:11	21:20 (11)	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	21:25 (11)	22:05	21:30 (11)	21:21	20:12	18:58	16:50	16:14
8	08:50	08:09	07:07	06:52	05:46	05:05	21:13 (11)	05:12	21:21 (11)	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	21:25 (11)	22:04	21:29 (11)	21:19	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:49	05:44	05:04	21:14 (11)	05:13	21:22 (11)	06:00	06:55	07:48	07:48	08:38
	16:32	17:30	18:25	20:23	21:18	22:02	21:26 (11)	22:04	21:28 (11)	21:17	20:07	18:53	16:46	16:13
10	08:48	08:05	07:03	06:47	05:42	05:04	21:14 (11)	05:14	21:22 (11)	06:02	06:56	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:19	22:03	21:28 (11)	22:03	21:28 (11)	21:15	20:04	18:50	16:45	16:12
11	08:48	08:03	07:00	06:45	05:40	05:03	21:14 (11)	05:16	21:23 (11)	06:03	06:58	07:52	07:52	08:41
	16:35	17:34	18:29	20:26	21:21	22:04	21:28 (11)	22:02	21:27 (11)	21:13	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	21:14 (11)	05:17	21:24 (11)	06:05	07:00	07:54	07:53	08:42
	16:37	17:36	18:30	20:28	21:23	22:04	21:29 (11)	22:01	21:26 (11)	21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:55	06:40	05:36	05:02	21:14 (11)	05:18		06:07	07:02	07:56	07:55	08:43
	16:39	17:38	18:32	20:30	21:25	22:05	21:29 (11)	22:00		21:09	19:57	18:43	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	05:02	21:14 (11)	05:19		06:09	07:03	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:26	22:06	21:30 (11)	21:59		21:07	19:54	18:41	16:38	16:12
15	08:44	07:55	06:51	06:35	05:33	05:02	21:14 (11)	05:20		06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:30 (11)	21:58		21:05	19:52	18:39	16:36	16:12
16	08:43	07:53	06:48	06:33	05:31	05:02	21:14 (11)	05:22		06:12	07:07	08:01	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:30 (11)	21:57		21:03	19:49	18:36	16:35	16:12
17	08:42	07:51	06:46	06:31	05:30	05:02	21:14 (11)	05:23		06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:31	22:07	21:31 (11)	21:55		21:01	19:47	18:34	16:33	16:12
18	08:41	07:49	06:43	06:28	05:28	05:02	21:14 (11)	05:24		06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:39	21:33	22:08	21:31 (11)	21:54		20:58	19:44	18:32	16:32	16:12
19	08:40	07:46	06:41	06:26	05:27	05:02	21:14 (11)	05:26		06:17	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:32 (11)	21:53		20:56	19:42	18:30	16:31	16:13
20	08:39	07:44	06:38	06:24	05:25	05:02	21:15 (11)	05:27		06:19	07:14	08:09	08:08	08:49
	16:51	17:52	18:46	20:43	21:36	22:08	21:33 (11)	21:52		20:54	19:39	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:24	05:02	21:15 (11)	05:29		06:21	07:16	08:11	08:10	08:49
	16:52	17:54	18:47	20:45	21:38	22:09	21:33 (11)	21:50		20:52	19:37	18:25	16:28	16:13
22	08:37	07:40	06:33	06:19	05:22	05:02	21:15 (11)	05:30		06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:39	22:09	21:33 (11)	21:49		20:49	19:34	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	21:15 (11)	05:32		06:24	07:19	08:15	08:14	08:50
	16:56	17:58	18:51	20:49	21:41	22:09	21:33 (11)	21:47		20:47	19:32	18:21	16:25	16:14
24	08:34	07:35	06:28	06:15	05:19	05:03	21:16 (11)	05:33		06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:50	21:42	22:09	21:33 (11)	21:46		20:45	19:30	18:18	16:24	16:15
25	08:32	07:33	06:26	06:12	05:18	05:03	21:16 (11)	05:35		06:28	07:23	07:19	08:17	08:51
	17:00	18:01	18:55	20:52	21:44	22:09	21:33 (11)	21:44		20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	21:16 (11)	05:36		06:30	07:25	07:21	08:19	08:51
	17:02	18:03	18:57	20:54	21:45	22:09	21:33 (11)	21:43		20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:16	05:04	21:17 (11)	05:38		06:32	07:27	07:22	08:21	08:52
	17:04	18:05	18:59	20:56	21:47	22:09	21:33 (11)	21:41		20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	05:04	21:17 (11)	05:40		06:33	07:28	07:24	08:22	08:52
	17:06	18:07	19:00	20:58	21:48	22:09	21:33 (11)	21:40		20:36	19:20	17:10	16:20	16:18
29	08:26		07:16	06:04	05:13	05:05	21:17 (11)	05:41		06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:49	22:09	21:33 (11)	21:38		20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:05	21:18 (11)	05:43		06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:01	21:51	22:08	21:33 (11)	21:36		20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11	21:17 (11)		05:44		06:39		07:30		08:52
	17:12		20:06		21:52	1 21:18 (11)		21:35		20:28		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case					1	418	110					
Sun reduction					0.31	0.26	0.22					
Oper. time red.					1.00	1.00	1.00					
Wind dir. red.					0.60	0.60	0.60					
Total reduction					0.19	0.16	0.13					
Total, real					0	65	15					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** CH - H095

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February			March		April	May	June
1	08:53	09:39 (2)	08:22			07:24	07:49 (1)	07:09	06:00	05:10
	16:23 32	10:11 (2)	17:14			18:10 28	08:17 (1)	20:08	21:04	21:54
2	08:52	09:39 (2)	08:20			07:22	07:49 (1)	07:07	05:58	05:09
	16:24 32	10:11 (2)	17:16			18:12 28	08:17 (1)	20:10	21:06	21:55
3	08:52	09:40 (2)	08:19			07:20	07:49 (1)	07:04	05:56	05:09
	16:25 32	10:12 (2)	17:18			18:14 26	08:15 (1)	20:12	21:07	21:56
4	08:52	09:41 (2)	08:17			07:17	07:50 (1)	07:02	05:54	05:08
	16:26 31	10:12 (2)	17:20			18:16 24	08:14 (1)	20:14	21:09	21:57
5	08:52	09:42 (2)	08:15			07:15	07:51 (1)	07:00	05:52	05:07
	16:27 30	10:12 (2)	17:22			18:18 23	08:14 (1)	20:16	21:11	21:58
6	08:51	09:42 (2)	08:13			07:13	07:52 (1)	06:57	05:50	05:06
	16:29 30	10:12 (2)	17:24			18:19 19	08:11 (1)	20:18	21:13	22:00
7	08:51	09:43 (2)	08:11			07:10	07:54 (1)	06:55	05:48	05:06
	16:30 30	10:13 (2)	17:26			18:21 15	08:09 (1)	20:19	21:15	22:01
8	08:50	09:44 (2)	08:09			07:08	07:56 (1)	06:52	05:46	05:05
	16:31 29	10:13 (2)	17:28			18:23 9	08:05 (1)	20:21	21:16	22:02
9	08:50	09:44 (2)	08:08			07:06		06:50	05:44	05:04
	16:33 28	10:12 (2)	17:30			18:25		20:23	21:18	22:02
10	08:49	09:45 (2)	08:06			07:03		06:47	05:42	05:04
	16:34 27	10:12 (2)	17:32			18:27		20:25	21:20	22:03
11	08:48	09:46 (2)	08:04			07:01		06:45	05:40	05:03
	16:36 26	10:12 (2)	17:34			18:29		20:27	21:22	22:04
12	08:47	09:47 (2)	08:02			06:58		06:43	05:39	05:03
	16:37 25	10:12 (2)	17:36			18:31		20:29	21:23	22:05
13	08:47	09:48 (2)	08:00			06:56		06:40	05:37	05:03
	16:39 23	10:11 (2)	17:38			18:33		20:31	21:25	22:06
14	08:46	09:49 (2)	07:58			06:53		06:38	05:35	05:02
	16:41 22	10:11 (2)	17:40			18:35		20:32	21:27	22:06
15	08:45	09:50 (2)	07:55			06:51		06:36	05:33	05:02
	16:42 20	10:10 (2)	17:42			18:37		20:34	21:29	22:07
16	08:44	09:52 (2)	07:53			06:49		06:33	05:32	05:02
	16:44 18	10:10 (2)	17:44			18:39		20:36	21:30	22:07
17	08:43	09:54 (2)	07:51			06:46		06:31	05:30	05:02
	16:46 15	10:09 (2)	17:46			18:40		20:38	21:32	22:08
18	08:42	09:57 (2)	07:49			06:44		06:29	05:28	05:02
	16:47 10	10:07 (2)	17:48			18:42		20:40	21:34	22:08
19	08:41		07:47			06:41		06:26	05:27	05:02
	16:49		17:50			18:44		20:42	21:35	22:09
20	08:40		07:45		08:10 (1)	06:39		06:24	05:25	05:02
	16:51		17:52	4	08:14 (1)	18:46		20:44	21:37	22:09
21	08:38		07:43		08:08 (1)	06:36		06:22	05:24	05:02
	16:53		17:54	7	08:15 (1)	18:48		20:45	21:38	22:09
22	08:37		07:40		08:06 (1)	06:34		06:20	05:22	05:02
	16:55		17:56	10	08:16 (1)	18:50		20:47	21:40	22:09
23	08:36		07:38		08:03 (1)	06:31		06:17	05:21	05:03
	16:57		17:58	13	08:16 (1)	18:52		20:49	21:41	22:10
24	08:34		07:36		08:01 (1)	06:29		06:15	05:20	05:03
	16:58		18:00	16	08:17 (1)	18:53		20:51	21:43	22:10
25	08:33		07:34		07:59 (1)	06:26		06:13	05:18	05:03
	17:00		18:02	19	08:18 (1)	18:55		20:53	21:44	22:10
26	08:32		07:31		07:56 (1)	06:24		06:11	05:17	05:04
	17:02		18:04	21	08:17 (1)	18:57		20:55	21:46	22:10
27	08:30		07:29		07:54 (1)	06:22		06:08	05:16	05:04
	17:04		18:06	24	08:18 (1)	18:59		20:56	21:47	22:10
28	08:29		07:27		07:52 (1)	06:19		06:06	05:15	05:05
	17:06		18:08	26	08:18 (1)	19:01		20:58	21:49	22:09
29	08:27					07:17		06:04	05:14	05:05
	17:08					20:03		21:00	21:50	22:09
30	08:25					07:14		06:02	05:12	05:06
	17:10					20:05		21:02	21:51	22:09
31	08:24					07:12			05:11	
	17:12					20:06			21:53	
Potential sun hours	250		273			367		420	494	510
Total, worst case	460		140			172				
Sun reduction	0.16		0.19			0.22				
Oper. time red.	1.00		1.00			1.00				
Wind dir. red.	0.61		0.63			0.63				
Total reduction	0.10		0.12			0.14				
Total, real	45		17			24				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** CH - H095

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August		September		October			November			December		
1	05:06		05:46		06:41		07:34			07:33			08:28		09:28 (2)
	22:09		21:33		20:27		19:13			17:02			16:18	26	09:54 (2)
2	05:07		05:48		06:43		07:36			07:35			08:29		09:28 (2)
	22:08		21:31		20:24		19:10			17:00			16:17	27	09:55 (2)
3	05:08		05:50		06:44		07:38			07:37			08:31		09:28 (2)
	22:08		21:30		20:22		19:08			16:58			16:16	28	09:56 (2)
4	05:09		05:52		06:46		07:40			07:38			08:32		09:28 (2)
	22:07		21:28		20:19		19:05			16:56			16:16	29	09:57 (2)
5	05:10		05:53		06:48		07:42			07:40			08:34		09:28 (2)
	22:07		21:26		20:17		19:03			16:54			16:15	30	09:58 (2)
6	05:11		05:55		06:50		07:43		08:31 (1)	07:42			08:35		09:28 (2)
	22:06		21:24		20:14		19:01	13	08:44 (1)	16:52			16:14	30	09:58 (2)
7	05:12		05:57		06:52		07:45		08:29 (1)	07:44			08:36		09:29 (2)
	22:06		21:22		20:12		18:58	17	08:46 (1)	16:50			16:14	30	09:59 (2)
8	05:13		05:58		06:53		07:47		08:27 (1)	07:46			08:38		09:28 (2)
	22:05		21:20		20:10		18:56	21	08:48 (1)	16:49			16:13	31	09:59 (2)
9	05:14		06:00		06:55		07:49		08:25 (1)	07:48			08:39		09:28 (2)
	22:04		21:18		20:07		18:53	24	08:49 (1)	16:47			16:13	32	10:00 (2)
10	05:15		06:02		06:57		07:51		08:23 (1)	07:50			08:40		09:29 (2)
	22:03		21:16		20:05		18:51	26	08:49 (1)	16:45			16:13	32	10:01 (2)
11	05:16		06:04		06:59		07:53		08:22 (1)	07:52			08:41		09:29 (2)
	22:02		21:14		20:02		18:49	27	08:49 (1)	16:43			16:13	32	10:01 (2)
12	05:17		06:05		07:00		07:54		08:22 (1)	07:54			08:42		09:30 (2)
	22:01		21:12		20:00		18:46	28	08:50 (1)	16:42			16:12	32	10:02 (2)
13	05:18		06:07		07:02		07:56		08:23 (1)	07:56			08:43		09:30 (2)
	22:00		21:10		19:57		18:44	27	08:50 (1)	16:40			16:12	32	10:02 (2)
14	05:20		06:09		07:04		07:58		08:25 (1)	07:58			08:44		09:30 (2)
	21:59		21:08		19:55		18:41	25	08:50 (1)	16:38			16:12	33	10:03 (2)
15	05:21		06:11		07:06		08:00		08:27 (1)	08:00			08:45		09:31 (2)
	21:58		21:05		19:52		18:39	23	08:50 (1)	16:37			16:12	32	10:03 (2)
16	05:22		06:12		07:07		08:02		08:29 (1)	08:02			08:46		09:31 (2)
	21:57		21:03		19:50		18:37	20	08:49 (1)	16:35			16:12	33	10:04 (2)
17	05:23		06:14		07:09		08:04		08:31 (1)	08:03			08:47		09:32 (2)
	21:56		21:01		19:47		18:35	18	08:49 (1)	16:34			16:13	33	10:05 (2)
18	05:25		06:16		07:11		08:06		08:33 (1)	08:05			08:48		09:32 (2)
	21:55		20:59		19:45		18:32	15	08:48 (1)	16:32			16:13	33	10:05 (2)
19	05:26		06:18		07:13		08:08		08:35 (1)	08:07			08:49		09:32 (2)
	21:53		20:57		19:42		18:30	12	08:47 (1)	16:31			16:13	33	10:05 (2)
20	05:28		06:20		07:15		08:09		08:37 (1)	08:09			08:49		09:33 (2)
	21:52		20:54		19:40		18:28	9	08:46 (1)	16:30			16:13	33	10:06 (2)
21	05:29		06:21		07:16		08:11		08:39 (1)	08:11			08:50		09:33 (2)
	21:51		20:52		19:37		18:25	6	08:45 (1)	16:28			16:14	33	10:06 (2)
22	05:31		06:23		07:18		08:13		08:41 (1)	08:13			08:50		09:34 (2)
	21:49		20:50		19:35		18:23	3	08:44 (1)	16:27			16:14	33	10:07 (2)
23	05:32		06:25		07:20		08:15			08:14			08:51		09:34 (2)
	21:48		20:48		19:32		18:21			16:26			16:15	33	10:07 (2)
24	05:34		06:27		07:22		08:17			08:16		09:34 (2)	08:51		09:35 (2)
	21:46		20:45		19:30		18:19			16:25	10	09:44 (2)	16:15	33	10:08 (2)
25	05:35		06:28		07:23		07:19			08:18		09:32 (2)	08:52		09:35 (2)
	21:45		20:43		19:28		17:17			16:23	15	09:47 (2)	16:16	33	10:08 (2)
26	05:37		06:30		07:25		07:21			08:20		09:31 (2)	08:52		09:36 (2)
	21:43		20:41		19:25		17:14			16:22	18	09:49 (2)	16:17	33	10:09 (2)
27	05:38		06:32		07:27		07:23			08:21		09:30 (2)	08:52		09:36 (2)
	21:42		20:38		19:23		17:12			16:21	19	09:49 (2)	16:17	33	10:09 (2)
28	05:40		06:34		07:29		07:25			08:23		09:29 (2)	08:52		09:36 (2)
	21:40		20:36		19:20		17:10			16:20	22	09:51 (2)	16:18	33	10:09 (2)
29	05:42		06:36		07:31		07:27			08:25		09:29 (2)	08:53		09:37 (2)
	21:38		20:34		19:18		17:08			16:19	23	09:52 (2)	16:19	33	10:10 (2)
30	05:43		06:37		07:32		07:29			08:26		09:29 (2)	08:53		09:38 (2)
	21:37		20:31		19:15		17:06			16:18	25	09:54 (2)	16:20	32	10:10 (2)
31	05:45		06:39				07:31						08:53		09:38 (2)
	21:35		20:29				17:04						16:21	33	10:11 (2)
Potential sun hours	512		460		382		328			259			233		
Total, worst case								314			132			983	
Sun reduction								0.23			0.20			0.12	
Oper. time red.								1.00			1.00			1.00	
Wind dir. red.								0.63			0.61			0.61	
Total reduction								0.14			0.12			0.07	
Total, real								45			16			72	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** CI - H096

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March	April	May	June	July	August	September	October	November		December
1	08:52		08:22		16:19 (1)	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:33	15:54 (1)	08:28
	16:22		17:14	23	16:42 (1)	18:10	20:08	21:04	21:54	22:09	21:33	20:26	19:13	17:02	16:17 (1)	16:18
2	08:52		08:20		16:19 (1)	07:22	07:07	05:58	05:09	05:07	05:48	06:43	07:36	07:34	15:52 (1)	08:29
	16:23		17:16	25	16:44 (1)	18:12	20:10	21:06	21:55	22:08	21:31	20:24	19:10	17:00	16:18 (1)	16:17
3	08:52		08:19		16:19 (1)	07:20	07:04	05:56	05:08	05:08	05:50	06:44	07:38	07:36	15:52 (1)	08:31
	16:25		17:18	27	16:46 (1)	18:14	20:12	21:07	21:56	22:08	21:29	20:22	19:08	16:58	16:18 (1)	16:16
4	08:52		08:17		16:20 (1)	07:17	07:02	05:54	05:08	05:09	05:51	06:46	07:40	07:38	15:51 (1)	08:32
	16:26		17:20	28	16:48 (1)	18:15	20:14	21:09	21:57	22:07	21:28	20:19	19:05	16:56	16:19 (1)	16:15
5	08:51		08:15		16:20 (1)	07:15	06:59	05:52	05:07	05:10	05:53	06:48	07:41	07:40	15:50 (1)	08:33
	16:27		17:22	30	16:50 (1)	18:17	20:16	21:11	21:58	22:07	21:26	20:17	19:03	16:54	16:19 (1)	16:15
6	08:51		08:13		16:21 (1)	07:13	06:57	05:50	05:06	05:10	05:55	06:50	07:43	07:42	15:51 (1)	08:35
	16:28		17:24	28	16:49 (1)	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:20 (1)	16:14
7	08:51		08:11		16:21 (1)	07:10	06:55	05:48	05:05	05:11	05:57	06:51	07:45	07:44	15:50 (1)	08:36
	16:30		17:26	28	16:49 (1)	18:21	20:19	21:15	22:00	22:05	21:22	20:12	18:58	16:50	16:19 (1)	16:14
8	08:50		08:09		16:22 (1)	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	15:50 (1)	08:38
	16:31		17:28	26	16:48 (1)	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:56	16:49	16:17 (1)	16:13
9	08:49		08:07		16:23 (1)	07:05	06:50	05:44	05:04	05:14	06:00	06:55	07:49	07:48	15:50 (1)	08:39
	16:33		17:30	25	16:48 (1)	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:14 (1)	16:13
10	08:49		08:05		16:24 (1)	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51	07:50	15:50 (1)	08:40
	16:34		17:32	23	16:47 (1)	18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51	16:45	16:12 (1)	16:13
11	08:48		08:03		16:26 (1)	07:01	06:45	05:40	05:03	05:16	06:04	06:58	07:52	07:52	15:50 (1)	08:41
	16:36		17:34	20	16:46 (1)	18:29	20:27	21:22	22:04	22:02	21:14	20:02	18:48	16:43	16:10 (1)	16:12
12	08:47		08:01		16:28 (1)	06:58	06:43	05:38	05:03	05:17	06:05	07:00	07:54	07:54	15:51 (1)	08:42
	16:37		17:36	16	16:44 (1)	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:09 (1)	16:12
13	08:47		07:59		16:31 (1)	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	15:51 (1)	08:43
	16:39		17:38	11	16:42 (1)	18:33	20:30	21:25	22:05	22:00	21:10	19:57	18:44	16:40	16:07 (1)	16:12
14	08:46		07:57			06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:58	15:52 (1)	08:44
	16:40		17:40			18:35	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38	16:05 (1)	16:12
15	08:45		07:55			06:51	06:35	05:33	05:02	05:21	06:11	07:06	08:00	08:00	15:53 (1)	08:45
	16:42		17:42			18:36	20:34	21:28	22:07	21:58	21:05	19:52	18:39	16:37	16:04 (1)	16:12
16	08:44		07:53			06:48	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:01	15:54 (1)	08:46
	16:44		17:44			18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:02 (1)	16:12
17	08:43		07:51			06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	15:55 (1)	08:47
	16:46		17:46			18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:34	16:00 (1)	16:12
18	08:42		07:49			06:44	06:29	05:28	05:02	05:25	06:16	07:11	08:06	08:05	15:56 (1)	08:48
	16:47		17:48			18:42	20:40	21:33	22:08	21:55	20:59	19:45	18:32	16:32	15:59 (1)	16:13
19	08:41		07:47			06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07		08:48
	16:49		17:50			18:44	20:42	21:35	22:09	21:53	20:57	19:42	18:30	16:31		16:13
20	08:39		07:45			06:39	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09		08:49
	16:51		17:52			18:46	20:43	21:37	22:09	21:52	20:54	19:40	18:28	16:29		16:13
21	08:38		07:42			06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11		08:50
	16:53		17:54			18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28		16:14
22	08:37		07:40			06:34	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12		08:50
	16:54		17:56			18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27		16:14
23	08:36		07:38			06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15	08:14		08:51
	16:56		17:58			18:51	20:49	21:41	22:09	21:48	20:48	19:32	18:21	16:26		16:15
24	08:34	16:22 (1)	07:36			06:29	06:15	05:20	05:03	05:33	06:27	07:22	08:17	08:16		08:51
	16:58	3 16:25 (1)	18:00			18:53	20:51	21:43	22:10	21:46	20:45	19:30	18:19	16:24		16:15
25	08:33	16:21 (1)	07:34			06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18		08:52
	17:00	5 16:26 (1)	18:02			18:55	20:53	21:44	22:10	21:45	20:43	19:27	17:16	16:23		16:16
26	08:31	16:21 (1)	07:31			06:24	06:11	05:17	05:03	05:37	06:30	07:25	07:21	08:19		08:52
	17:02	8 16:29 (1)	18:04			18:57	20:55	21:46	22:10	21:43	20:41	19:25	17:14	16:22		16:17
27	08:30	16:20 (1)	07:29			06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21		08:52
	17:04	11 16:31 (1)	18:06			18:59	20:56	21:47	22:09	21:42	20:38	19:22	17:12	16:21		16:17
28	08:28	16:20 (1)	07:27			06:19	06:06	05:15	05:04	05:40	06:34	07:29	07:25	08:23		08:52
	17:06	13 16:33 (1)	18:08			19:01	20:58	21:49	22:09	21:40	20:36	19:20	17:10	16:20		16:18
29	08:27	16:19 (1)				07:16	06:04	05:13	05:05	05:41	06:35	07:31	07:27	16:00 (1)	08:24	08:52
	17:08	16 16:35 (1)				20:03	21:00	21:50	22:09	21:38	20:34	19:17	17:08	12 16:12 (1)	16:19	16:19
30	08:25	16:20 (1)				07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:29	15:57 (1)	08:26	08:52
	17:10	18 16:38 (1)				20:04	21:02	21:51	22:09	21:37	20:31	19:15	17:06	17 16:14 (1)	16:18	16:20
31	08:24	16:20 (1)				07:12		05:11		05:45	06:39		07:31	15:55 (1)		08:52
	17:12	20 16:40 (1)				20:06		21:53		21:35	20:29		17:04	21 16:16 (1)		16:21
Potential sun hours	250		273			367	420	494	510	513	460	382	328		259	233
Total, worst case		94		310										50	357	
Sun reduction		0.16		0.19										0.23	0.20	
Oper. time red.		1.00		1.00										1.00	1.00	
Wind dir. red.		0.64		0.64										0.64	0.64	
Total reduction		0.10		0.13										0.15	0.13	
Total, real		10		39										7	45	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** CJ - H097

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June		July		August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:11		05:07		05:47	06:41	07:34	07:33	08:28
	16:23	17:14	18:10	20:08	21:04	21:54		22:09	4	05:44 (3)	21:33	20:27	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:10		05:07		05:40 (3)	05:48	06:43	07:36	07:35	08:29
	16:24	17:16	18:12	20:10	21:06	21:55		22:08	3	05:43 (3)	21:31	20:24	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04	05:56	05:09		05:08		05:41 (3)	05:50	06:44	07:38	07:36	08:31
	16:25	17:18	18:14	20:12	21:07	21:56		22:08	2	05:43 (3)	21:30	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08		05:09		05:42 (3)	05:52	06:46	07:40	07:38	08:32
	16:26	17:20	18:16	20:14	21:09	21:57		22:07	2	05:44 (3)	21:28	20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	07:00	05:52	05:07		05:10		05:43 (3)	05:53	06:48	07:42	07:40	08:34
	16:27	17:22	18:18	20:16	21:11	21:58		22:07	1	05:44 (3)	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06		05:11			05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:18	21:13	21:59		22:06			21:24	20:14	19:01	16:52	16:14
7	08:51	08:11	07:10	06:55	05:48	05:06		05:12			05:57	06:52	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:15	22:00	1	05:38 (3)		22:05	21:22	20:12	18:58	16:51	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05		05:37 (3)		05:13	05:58	06:53	07:47	07:46	08:38
	16:31	17:28	18:23	20:21	21:16	22:01	1	05:38 (3)		22:05	21:20	20:10	18:56	16:49	16:14
9	08:49	08:07	07:06	06:50	05:44	05:05		05:36 (3)		05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	2	05:38 (3)		22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:06	07:03	06:47	05:42	05:04		05:36 (3)		05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	3	05:39 (3)		22:03	21:16	20:05	18:51	16:45	16:13
11	08:48	08:04	07:01	06:45	05:40	05:04		05:36 (3)		05:16	06:04	06:59	07:53	07:52	08:41
	16:36	17:34	18:29	20:27	21:22	22:04	3	05:39 (3)		22:02	21:14	20:02	18:49	16:43	16:13
12	08:47	08:02	06:58	06:43	05:39	05:03		05:35 (3)		05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	4	05:39 (3)		22:01	21:12	20:00	18:46	16:42	16:13
13	08:47	08:00	06:56	06:40	05:37	05:03		05:35 (3)		05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:31	21:25	22:05	5	05:40 (3)		22:00	21:10	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:03		05:35 (3)		05:20	06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	5	05:40 (3)		21:59	21:08	19:55	18:41	16:39	16:12
15	08:45	07:55	06:51	06:36	05:33	05:02		05:35 (3)		05:21	06:11	07:06	08:00	08:00	08:45
	16:42	17:42	18:37	20:34	21:28	22:07	5	05:40 (3)		21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:49	06:33	05:32	05:02		05:35 (3)		05:22	06:13	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	6	05:41 (3)		21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02		05:35 (3)		05:24	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	6	05:41 (3)		21:56	21:01	19:47	18:35	16:34	16:13
18	08:42	07:49	06:44	06:29	05:29	05:02		05:35 (3)		05:25	06:16	07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	6	05:41 (3)		21:55	20:59	19:45	18:32	16:32	16:13
19	08:41	07:47	06:41	06:26	05:27	05:02		05:35 (3)		05:26	06:18	07:13	08:08	08:07	08:48
	16:49	17:50	18:44	20:42	21:35	22:09	6	05:41 (3)		21:53	20:57	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02		05:35 (3)		05:28	06:20	07:15	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:37	22:09	6	05:41 (3)		21:52	20:54	19:40	18:28	16:30	16:13
21	08:38	07:43	06:36	06:22	05:24	05:02		05:35 (3)		05:29	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	6	05:41 (3)		21:51	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:20	05:23	05:02		05:35 (3)		05:31	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	6	05:41 (3)		21:49	20:50	19:35	18:23	16:27	16:14
23	08:36	07:38	06:31	06:17	05:21	05:03		05:36 (3)		05:32	06:25	07:20	08:15	08:14	08:51
	16:57	17:58	18:52	20:49	21:41	22:09	6	05:42 (3)		21:48	20:48	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03		05:36 (3)		05:34	06:27	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:10	6	05:42 (3)		21:46	20:45	19:30	18:19	16:25	16:15
25	08:33	07:34	06:26	06:13	05:18	05:03		05:36 (3)		05:35	06:28	07:23	07:19	08:18	08:52
	17:00	18:02	18:55	20:53	21:44	22:10	6	05:42 (3)		21:45	20:43	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04		05:37 (3)		05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:55	21:46	22:10	6	05:43 (3)		21:43	20:41	19:25	17:15	16:22	16:17
27	08:30	07:29	06:22	06:09	05:16	05:04		05:37 (3)		05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	5	05:42 (3)		21:42	20:38	19:23	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	05:15	05:05		05:38 (3)		05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:49	22:09	5	05:43 (3)		21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	05:14	05:05		05:38 (3)		05:42	06:36	07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	5	05:43 (3)		21:38	20:34	19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	05:13	05:06		05:39 (3)		05:43	06:37	07:32	07:29	08:26	08:52
	17:10		20:05	21:02	21:51	22:09	4	05:43 (3)		21:37	20:31	19:15	17:06	16:19	16:20
31	08:24		07:12		05:12					05:45	06:39		07:31		08:52
	17:12		20:06		21:53					21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510		512		460	382	328	259	233
Total, worst case							114		12					
Sun reduction							0.26		0.22					
Oper. time red.							1.00		1.00					
Wind dir. red.							0.65		0.65					
Total reduction							0.17		0.14					
Total, real							19		2					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** CK - H098

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March		April	May	June
1	08:53		08:22		08:50 (2)		07:09	06:00	05:10
	16:23		17:14	6	08:56 (2)		20:08	21:04	21:54
2	08:52		08:20		08:48 (2)		07:07	05:58	05:10
	16:24		17:16	9	08:57 (2)		20:10	21:06	21:55
3	08:52		08:19		08:46 (2)		07:04	05:56	05:09
	16:25		17:18	12	08:58 (2)		20:12	21:07	21:56
4	08:52		08:17		08:44 (2)		07:02	05:54	05:08
	16:26		17:20	15	08:59 (2)		20:14	21:09	21:57
5	08:52		08:15		08:42 (2)		07:00	05:52	05:07
	16:27		17:22	18	09:00 (2)		20:16	21:11	21:58
6	08:51		08:13		08:40 (2)		06:57	05:50	05:06
	16:29		17:24	20	09:00 (2)		20:18	21:13	22:00
7	08:51		08:11		08:38 (2)		06:55	05:48	05:06
	16:30		17:26	23	09:01 (2)		20:19	21:15	22:01
8	08:50		08:09		08:36 (2)		06:52	05:46	05:05
	16:31		17:28	25	09:01 (2)		20:21	21:16	22:02
9	08:50		08:08		08:34 (2)		06:50	05:44	05:04
	16:33		17:30	27	09:01 (2)		20:23	21:18	22:02
10	08:49		08:06		08:32 (2)		06:47	05:42	05:04
	16:34		17:32	30	09:02 (2)		20:25	21:20	22:03
11	08:48		08:04		08:30 (2)		06:45	05:40	05:03
	16:36		17:34	32	09:02 (2)		20:27	21:22	22:04
12	08:47		08:02		08:30 (2)		06:43	05:39	05:03
	16:37		17:36	32	09:02 (2)		20:29	21:23	22:05
13	08:47		08:00		08:30 (2)		06:40	05:37	05:03
	16:39		17:38	31	09:01 (2)		20:31	21:25	22:06
14	08:46		07:58		08:31 (2)		06:38	05:35	05:02
	16:41		17:40	30	09:01 (2)		20:32	21:27	22:06
15	08:45		07:55		08:31 (2)		06:36	05:33	05:02
	16:42		17:42	29	09:00 (2)		20:34	21:29	22:07
16	08:44		07:53		08:32 (2)		07:12 (1)	06:33	05:32	05:02
	16:44		17:44	27	08:59 (2)		18:39	1	07:13 (1)	20:36	21:30	22:07
17	08:43		07:51		08:33 (2)		06:46		07:10 (1)	06:31	05:30	05:02
	16:46		17:46	25	08:58 (2)		18:40	4	07:14 (1)	20:38	21:32	22:08
18	08:42		07:49		08:35 (2)		06:44		07:08 (1)	06:29	05:29	05:02
	16:47		17:48	22	08:57 (2)		18:42	8	07:16 (1)	20:40	21:34	22:08
19	08:41		07:47		08:36 (2)		06:41		07:05 (1)	06:26	05:27	05:02
	16:49		17:50	19	08:55 (2)		18:44	10	07:15 (1)	20:42	21:35	22:09
20	08:40		07:45		08:38 (2)		06:39		07:03 (1)	06:24	05:25	05:02
	16:51		17:52	14	08:52 (2)		18:46	13	07:16 (1)	20:44	21:37	22:09
21	08:38		07:43		08:43 (2)		06:36		07:00 (1)	06:22	05:24	05:02
	16:53		17:54	4	08:47 (2)		18:48	15	07:15 (1)	20:45	21:38	22:09
22	08:37		07:40				06:34		06:58 (1)	06:20	05:22	05:02
	16:55		17:56				18:50	18	07:16 (1)	20:47	21:40	22:09
23	08:36		07:38				06:31		06:55 (1)	06:17	05:21	05:03
	16:57		17:58				18:52	20	07:15 (1)	20:49	21:41	22:10
24	08:34		07:36				06:29		06:53 (1)	06:15	05:20	05:03
	16:58		18:00				18:53	21	07:14 (1)	20:51	21:43	22:10
25	08:33		07:34				06:26		06:50 (1)	06:13	05:18	05:03
	17:00		18:02				18:55	23	07:13 (1)	20:53	21:44	22:10
26	08:32		07:31				06:24		06:51 (1)	06:11	05:17	05:04
	17:02		18:04				18:57	21	07:12 (1)	20:55	21:46	22:10
27	08:30		07:29				06:22		06:52 (1)	06:09	05:16	05:04
	17:04		18:06				18:59	18	07:10 (1)	20:56	21:47	22:10
28	08:29		07:27				06:19		06:54 (1)	06:06	05:15	05:05
	17:06		18:08				19:01	14	07:08 (1)	20:58	21:49	22:09
29	08:27						07:17		07:56 (1)	06:04	05:14	05:05
	17:08						20:03	9	08:05 (1)	21:00	21:50	22:09
30	08:25						07:14			06:02	05:12	05:06
	17:10						20:05			21:02	21:51	22:09
31	08:24	08:52 (2)					07:12				05:11	
	17:12	3 08:55 (2)					20:06				21:53	
Potential sun hours	250		273		367		420	494	510
Total, worst case	3		450		195				
Sun reduction	0.16		0.19		0.22				
Oper. time red.	1.00		1.00		1.00				
Wind dir. red.	0.60		0.60		0.64				
Total reduction	0.10		0.12		0.14				
Total, real	0		53		27				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** CK - H098

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July	August	September		October		November		December
1	05:07	05:47	06:41		07:34		07:33	08:02 (2)	08:28
	22:09	21:33	20:27		19:13		17:02 29	08:31 (2)	16:18
2	05:07	05:48	06:43		07:36		07:35	08:04 (2)	08:29
	22:08	21:31	20:24		19:10		17:00 27	08:31 (2)	16:17
3	05:08	05:50	06:44		07:38		07:37	08:06 (2)	08:31
	22:08	21:30	20:22		19:08		16:58 25	08:31 (2)	16:16
4	05:09	05:52	06:46		07:40		07:38	08:08 (2)	08:32
	22:07	21:28	20:19		19:05		16:56 22	08:30 (2)	16:16
5	05:10	05:53	06:48		07:42		07:40	08:11 (2)	08:34
	22:07	21:26	20:17		19:03		16:54 20	08:31 (2)	16:15
6	05:11	05:55	06:50		07:43		07:42	08:13 (2)	08:35
	22:06	21:24	20:14		19:01		16:52 17	08:30 (2)	16:14
7	05:12	05:57	06:52		07:45		07:44	08:15 (2)	08:36
	22:06	21:22	20:12		18:58		16:51 15	08:30 (2)	16:14
8	05:13	05:58	06:53		07:47		07:46	08:17 (2)	08:38
	22:05	21:20	20:10		18:56		16:49 12	08:29 (2)	16:14
9	05:14	06:00	06:55		07:49		07:48	08:19 (2)	08:39
	22:04	21:18	20:07		18:53		16:47 9	08:28 (2)	16:13
10	05:15	06:02	06:57		07:51		07:50	08:21 (2)	08:40
	22:03	21:16	20:05		18:51		16:45 6	08:27 (2)	16:13
11	05:16	06:04	06:59		07:53		07:52	08:23 (2)	08:41
	22:02	21:14	20:02		18:49		16:43 3	08:26 (2)	16:13
12	05:17	06:05	07:00		07:54		07:54		08:42
	22:01	21:12	20:00		18:46		16:42		16:12
13	05:18	06:07	07:02		07:56		07:56		08:43
	22:00	21:10	19:57		18:44		16:40		16:12
14	05:20	06:09	07:04	07:47 (1)	07:58		07:58		08:44
	21:59	21:08	19:55 7	07:54 (1)	18:41		16:38		16:12
15	05:21	06:11	07:06	07:43 (1)	08:00		08:00		08:45
	21:58	21:05	19:52 14	07:57 (1)	18:39		16:37		16:12
16	05:22	06:12	07:07	07:42 (1)	08:02		08:02		08:46
	21:57	21:03	19:50 17	07:59 (1)	18:37		16:35		16:12
17	05:23	06:14	07:09	07:40 (1)	08:04		08:03		08:47
	21:56	21:01	19:47 20	08:00 (1)	18:35		16:34		16:13
18	05:25	06:16	07:11	07:38 (1)	08:06		08:05		08:48
	21:55	20:59	19:45 22	08:00 (1)	18:32		16:32		16:13
19	05:26	06:18	07:13	07:39 (1)	08:08		08:07		08:49
	21:53	20:57	19:42 22	08:01 (1)	18:30		16:31		16:13
20	05:28	06:20	07:15	07:41 (1)	08:09		08:09		08:49
	21:52	20:54	19:40 20	08:01 (1)	18:28		16:30		16:13
21	05:29	06:21	07:16	07:43 (1)	08:11	09:11 (2)	08:11		08:50
	21:51	20:52	19:37 18	08:01 (1)	18:25 9	09:20 (2)	16:28		16:14
22	05:31	06:23	07:18	07:44 (1)	08:13	09:08 (2)	08:13		08:50
	21:49	20:50	19:35 16	08:00 (1)	18:23 15	09:23 (2)	16:27		16:14
23	05:32	06:25	07:20	07:46 (1)	08:15	09:05 (2)	08:14		08:51
	21:48	20:48	19:32 14	08:00 (1)	18:21 20	09:25 (2)	16:26		16:15
24	05:34	06:27	07:22	07:48 (1)	08:17	09:04 (2)	08:16		08:51
	21:46	20:45	19:30 11	07:59 (1)	18:19 23	09:27 (2)	16:25		16:15
25	05:35	06:28	07:23	07:50 (1)	07:19	08:02 (2)	08:18		08:52
	21:45	20:43	19:28 8	07:58 (1)	17:17 26	08:28 (2)	16:23		16:16
26	05:37	06:30	07:25	07:52 (1)	07:21	08:01 (2)	08:20		08:52
	21:43	20:41	19:25 5	07:57 (1)	17:15 28	08:29 (2)	16:22		16:17
27	05:38	06:32	07:27	07:53 (1)	07:23	08:01 (2)	08:21		08:52
	21:42	20:38	19:23 2	07:55 (1)	17:12 29	08:30 (2)	16:21		16:18
28	05:40	06:34	07:29		07:25	08:00 (2)	08:23		08:52
	21:40	20:36	19:20		17:10 31	08:31 (2)	16:20		16:18
29	05:42	06:36	07:31		07:27	08:00 (2)	08:25		08:53
	21:38	20:34	19:18		17:08 31	08:31 (2)	16:19		16:19
30	05:43	06:37	07:32		07:29	07:59 (2)	08:26		08:53
	21:37	20:31	19:15		17:06 32	08:31 (2)	16:19		16:20
31	05:45	06:39			07:31	08:00 (2)			08:53
	21:35	20:29			17:04 31	08:31 (2)			16:21
Potential sun hours	512	460	382		328		259		233
Total, worst case			196		275		185		
Sun reduction			0.25		0.23		0.20		
Oper. time red.			1.00		1.00		1.00		
Wind dir. red.			0.64		0.60		0.60		
Total reduction			0.16		0.14		0.12		
Total, real			32		38		22		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** CL - H099

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March		April	May	June
1	08:53		08:22	09:06 (2)	07:24		07:09	06:00	05:10
	16:23		17:14	27 09:33 (2)	18:10		20:08	21:04	21:54
2	08:52		08:20	09:07 (2)	07:22		07:07	05:58	05:10
	16:24		17:16	25 09:32 (2)	18:12		20:10	21:06	21:55
3	08:52		08:19	09:09 (2)	07:20		07:04	05:56	05:09
	16:25		17:18	22 09:31 (2)	18:14		20:12	21:07	21:56
4	08:52		08:17	09:10 (2)	07:17		07:02	05:54	05:08
	16:26		17:20	20 09:30 (2)	18:16		20:14	21:09	21:57
5	08:52		08:15	09:12 (2)	07:15		07:40 (1)	07:00	05:52	05:07
	16:27		17:22	16 09:28 (2)	18:18	2	07:42 (1)	20:16	21:11	21:59
6	08:51		08:13	09:15 (2)	07:13		07:37 (1)	06:57	05:50	05:06
	16:29		17:24	10 09:25 (2)	18:19	5	07:42 (1)	20:18	21:13	22:00
7	08:51		08:11		07:10		07:35 (1)	06:55	05:48	05:06
	16:30		17:26		18:21	9	07:44 (1)	20:19	21:15	22:01
8	08:50		08:09		07:08		07:32 (1)	06:52	05:46	05:05
	16:31		17:28		18:23	12	07:44 (1)	20:21	21:16	22:02
9	08:50	09:22 (2)	08:08		07:06		07:30 (1)	06:50	05:44	05:04
	16:33	2 09:24 (2)	17:30		18:25	14	07:44 (1)	20:23	21:18	22:02
10	08:49	09:21 (2)	08:06		07:03		07:27 (1)	06:47	05:42	05:04
	16:34	4 09:25 (2)	17:32		18:27	17	07:44 (1)	20:25	21:20	22:03
11	08:48	09:20 (2)	08:04		07:01		07:25 (1)	06:45	05:40	05:03
	16:36	6 09:26 (2)	17:34		18:29	19	07:44 (1)	20:27	21:22	22:04
12	08:47	09:19 (2)	08:02		06:58		07:22 (1)	06:43	05:39	05:03
	16:37	7 09:26 (2)	17:36		18:31	21	07:43 (1)	20:29	21:23	22:05
13	08:47	09:18 (2)	08:00		06:56		07:20 (1)	06:40	05:37	05:03
	16:39	9 09:27 (2)	17:38		18:33	23	07:43 (1)	20:31	21:25	22:06
14	08:46	09:17 (2)	07:58		06:53		07:17 (1)	06:38	05:35	05:02
	16:41	11 09:28 (2)	17:40		18:35	25	07:42 (1)	20:32	21:27	22:06
15	08:45	09:16 (2)	07:55		06:51		07:18 (1)	06:36	05:33	05:02
	16:42	13 09:29 (2)	17:42		18:37	23	07:41 (1)	20:34	21:29	22:07
16	08:44	09:15 (2)	07:53		06:49		07:19 (1)	06:33	05:32	05:02
	16:44	15 09:30 (2)	17:44		18:39	20	07:39 (1)	20:36	21:30	22:07
17	08:43	09:14 (2)	07:51		06:46		07:20 (1)	06:31	05:30	05:02
	16:46	17 09:31 (2)	17:46		18:40	18	07:38 (1)	20:38	21:32	22:08
18	08:42	09:13 (2)	07:49		06:44		07:22 (1)	06:29	05:28	05:02
	16:47	19 09:32 (2)	17:48		18:42	14	07:36 (1)	20:40	21:34	22:08
19	08:41	09:11 (2)	07:47		06:41		07:25 (1)	06:26	05:27	05:02
	16:49	21 09:32 (2)	17:50		18:44	7	07:32 (1)	20:42	21:35	22:09
20	08:40	09:10 (2)	07:45		06:39			06:24	05:25	05:02
	16:51	23 09:33 (2)	17:52		18:46			20:44	21:37	22:09
21	08:38	09:08 (2)	07:43		06:36			06:22	05:24	05:02
	16:53	25 09:33 (2)	17:54		18:48			20:45	21:38	22:09
22	08:37	09:07 (2)	07:40		06:34			06:20	05:22	05:02
	16:55	27 09:34 (2)	17:56		18:50			20:47	21:40	22:09
23	08:36	09:05 (2)	07:38		06:31			06:17	05:21	05:03
	16:57	29 09:34 (2)	17:58		18:52			20:49	21:41	22:10
24	08:34	09:04 (2)	07:36		06:29			06:15	05:20	05:03
	16:58	31 09:35 (2)	18:00		18:53			20:51	21:43	22:10
25	08:33	09:02 (2)	07:34		06:26			06:13	05:18	05:03
	17:00	32 09:34 (2)	18:02		18:55			20:53	21:44	22:10
26	08:32	09:03 (2)	07:31		06:24			06:11	05:17	05:04
	17:02	32 09:35 (2)	18:04		18:57			20:55	21:46	22:10
27	08:30	09:03 (2)	07:29		06:22			06:08	05:16	05:04
	17:04	32 09:35 (2)	18:06		18:59			20:56	21:47	22:10
28	08:29	09:03 (2)	07:27		06:19			06:06	05:15	05:05
	17:06	31 09:34 (2)	18:08		19:01			20:58	21:49	22:09
29	08:27	09:05 (2)			07:17			06:04	05:14	05:05
	17:08	30 09:35 (2)			20:03			21:00	21:50	22:09
30	08:25	09:05 (2)			07:14			06:02	05:12	05:06
	17:10	29 09:34 (2)			20:05			21:02	21:51	22:09
31	08:24	09:06 (2)			07:12				05:11	
	17:12	28 09:34 (2)			20:06				21:53	
Potential sun hours	250		273		367		420	494	510	
Total, worst case	473		120		229					
Sun reduction	0.16		0.19		0.22					
Oper. time red.	1.00		1.00		1.00					
Wind dir. red.	0.61		0.61		0.63					
Total reduction	0.10		0.12		0.14					
Total, real	47		14		32					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** CL - H099

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July	August	September			October			November			December		
1	05:07	05:47	06:41			07:34		08:01 (1)	07:33			08:28		09:02 (2)
	22:09	21:33	20:27			19:13	22	08:23 (1)	17:02			16:18	6	09:08 (2)
2	05:07	05:48	06:43			07:36		08:02 (1)	07:35			08:29		09:04 (2)
	22:08	21:31	20:24			19:10	20	08:22 (1)	17:00			16:17	4	09:08 (2)
3	05:08	05:50	06:44			07:38		08:04 (1)	07:37			08:31		09:06 (2)
	22:08	21:30	20:22			19:08	18	08:22 (1)	16:58			16:16	2	09:08 (2)
4	05:09	05:52	06:46			07:40		08:06 (1)	07:38			08:32		
	22:07	21:28	20:19			19:05	16	08:22 (1)	16:56			16:16		
5	05:10	05:53	06:48			07:42		08:08 (1)	07:40		08:45 (2)	08:34		
	22:07	21:26	20:17			19:03	13	08:21 (1)	16:54	11	08:56 (2)	16:15		
6	05:11	05:55	06:50			07:43		08:10 (1)	07:42		08:43 (2)	08:35		
	22:06	21:24	20:14			19:01	10	08:20 (1)	16:52	16	08:59 (2)	16:14		
7	05:12	05:57	06:52			07:45		08:12 (1)	07:44		08:41 (2)	08:36		
	22:06	21:22	20:12			18:58	7	08:19 (1)	16:51	20	09:01 (2)	16:14		
8	05:13	05:58	06:53			07:47		08:14 (1)	07:46		08:39 (2)	08:38		
	22:05	21:20	20:10			18:56	4	08:18 (1)	16:49	23	09:02 (2)	16:14		
9	05:14	06:00	06:55			07:49			07:48		08:38 (2)	08:39		
	22:04	21:18	20:07			18:53			16:47	25	09:03 (2)	16:13		
10	05:15	06:02	06:57			07:51			07:50		08:37 (2)	08:40		
	22:03	21:16	20:05			18:51			16:45	27	09:04 (2)	16:13		
11	05:16	06:04	06:59			07:53			07:52		08:37 (2)	08:41		
	22:02	21:14	20:02			18:49			16:43	28	09:05 (2)	16:13		
12	05:17	06:05	07:00			07:54			07:54		08:36 (2)	08:42		
	22:01	21:12	20:00			18:46			16:42	29	09:05 (2)	16:12		
13	05:18	06:07	07:02			07:56			07:56		08:36 (2)	08:43		
	22:00	21:10	19:57			18:44			16:40	30	09:06 (2)	16:12		
14	05:20	06:09	07:04			07:58			07:58		08:36 (2)	08:44		
	21:59	21:08	19:55			18:41			16:38	31	09:07 (2)	16:12		
15	05:21	06:11	07:06			08:00			08:00		08:36 (2)	08:45		
	21:58	21:05	19:52			18:39			16:37	32	09:08 (2)	16:12		
16	05:22	06:12	07:07			08:02			08:02		08:36 (2)	08:46		
	21:57	21:03	19:50			18:37			16:35	32	09:08 (2)	16:12		
17	05:23	06:14	07:09			08:04			08:03		08:36 (2)	08:47		
	21:56	21:01	19:47			18:35			16:34	32	09:08 (2)	16:13		
18	05:25	06:16	07:11			08:06			08:05		08:38 (2)	08:48		
	21:55	20:59	19:45			18:32			16:32	30	09:08 (2)	16:13		
19	05:26	06:18	07:13			08:08			08:07		08:40 (2)	08:49		
	21:53	20:57	19:42			18:30			16:31	29	09:09 (2)	16:13		
20	05:28	06:20	07:15			08:09			08:09		08:42 (2)	08:49		
	21:52	20:54	19:40			18:28			16:30	27	09:09 (2)	16:13		
21	05:29	06:21	07:16			08:11			08:11		08:44 (2)	08:50		
	21:51	20:52	19:37			18:25			16:28	25	09:09 (2)	16:14		
22	05:31	06:23	07:18			08:13			08:13		08:46 (2)	08:50		
	21:49	20:50	19:35			18:23			16:27	23	09:09 (2)	16:14		
23	05:32	06:25	07:20			08:15			08:14		08:48 (2)	08:51		
	21:48	20:48	19:32			18:21			16:26	21	09:09 (2)	16:15		
24	05:34	06:27	07:22			08:17			08:16		08:50 (2)	08:51		
	21:46	20:45	19:30			18:19			16:25	19	09:09 (2)	16:15		
25	05:35	06:28	07:23		08:06 (1)	07:19			08:18		08:52 (2)	08:52		
	21:45	20:43	19:28	12	08:18 (1)	17:17			16:23	17	09:09 (2)	16:16		
26	05:37	06:30	07:25		08:03 (1)	07:21			08:20		08:54 (2)	08:52		
	21:43	20:41	19:25	17	08:20 (1)	17:15			16:22	15	09:09 (2)	16:17		
27	05:38	06:32	07:27		08:01 (1)	07:23			08:21		08:55 (2)	08:52		
	21:42	20:38	19:23	20	08:21 (1)	17:12			16:21	13	09:08 (2)	16:18		
28	05:40	06:34	07:29		07:59 (1)	07:25			08:23		08:57 (2)	08:52		
	21:40	20:36	19:20	23	08:22 (1)	17:10			16:20	11	09:08 (2)	16:18		
29	05:42	06:36	07:31		07:58 (1)	07:27			08:25		08:59 (2)	08:53		
	21:38	20:34	19:18	24	08:22 (1)	17:08			16:19	10	09:09 (2)	16:19		
30	05:43	06:37	07:32		07:59 (1)	07:29			08:26		09:01 (2)	08:53		
	21:37	20:31	19:15	24	08:23 (1)	17:06			16:19	8	09:09 (2)	16:20		
31	05:45	06:39				07:31						08:53		
	21:35	20:29				17:04						16:21		
Potential sun hours	512	460	382			328			259			233		
Total, worst case			120			110			584			12		
Sun reduction			0.25			0.23			0.20			0.12		
Oper. time red.			1.00			1.00			1.00			1.00		
Wind dir. red.			0.63			0.63			0.61			0.61		
Total reduction			0.16			0.14			0.12			0.07		
Total, real			19			16			70			1		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** CM - H100

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February		March	April	May	June	July	August	September	October			November		December
1	08:52	08:22		16:40 (10)	07:24	07:09	06:00	05:10	05:06	05:46	06:40	07:34			07:32	16:10 (10)	08:27
	16:22	17:13	2	16:42 (10)	18:09	20:08	21:03	21:53	22:08	21:33	20:26	19:12			17:02	21	16:31 (10)	16:17
2	08:52	08:20		16:40 (10)	07:22	07:06	05:57	05:09	05:07	05:48	06:42	07:36			07:34		16:09 (10)	08:29
	16:23	17:15	4	16:44 (10)	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10			17:00	20	16:29 (10)	16:16
3	08:52	08:18		16:39 (10)	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:37			07:36		16:09 (10)	08:30
	16:24	17:17	7	16:46 (10)	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07			16:58	17	16:26 (10)	16:16
4	08:51	08:16		16:39 (10)	07:17	07:01	05:53	05:07	05:08	05:51	06:46	07:39			07:38		16:09 (10)	08:32
	16:26	17:19	9	16:48 (10)	18:15	20:13	21:09	21:57	22:07	21:27	20:19	19:05			16:56	15	16:24 (10)	16:15
5	08:51	08:15		16:39 (10)	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41			07:40		16:09 (10)	08:33
	16:27	17:21	11	16:50 (10)	18:17	20:15	21:11	21:58	22:06	21:25	20:16	19:02			16:54	13	16:22 (10)	16:14
6	08:51	08:13		16:39 (10)	07:12	06:57	05:49	05:06	05:10	05:54	06:49	07:43			07:42		16:09 (10)	08:35
	16:28	17:23	14	16:53 (10)	18:19	20:17	21:12	21:59	22:06	21:23	20:14	19:00			16:52	11	16:20 (10)	16:14
7	08:50	08:11		16:39 (10)	07:10	06:54	05:47	05:05	05:11	05:56	06:51	07:45			07:44		16:09 (10)	08:36
	16:29	17:25	16	16:55 (10)	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58			16:50	9	16:18 (10)	16:13
8	08:50	08:09		16:39 (10)	07:07	06:52	05:46	05:04	05:12	05:58	06:53	07:47			07:46		16:09 (10)	08:37
	16:31	17:27	18	16:57 (10)	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55			16:48	7	16:16 (10)	16:13
9	08:49	08:07		16:40 (10)	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48			07:48		16:11 (10)	08:38
	16:32	17:29	19	16:59 (10)	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53			16:46	4	16:15 (10)	16:13
10	08:48	08:05		16:40 (10)	07:03	06:47	05:42	05:03	05:14	06:01	06:56	07:50			07:50		16:11 (10)	08:40
	16:34	17:31	22	17:02 (10)	18:27	20:25	21:20	22:03	22:03	21:15	20:04	18:50			16:45	1	16:12 (10)	16:12
11	08:48	08:03		16:41 (10)	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52			07:52			08:41
	16:35	17:33	23	17:04 (10)	18:29	20:26	21:21	22:04	22:02	21:13	20:02	18:48			16:43			16:12
12	08:47	08:01		16:41 (10)	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54			07:53			08:42
	16:37	17:36	25	17:06 (10)	18:30	20:28	21:23	22:04	22:01	21:11	19:59	18:46			16:41			16:12
13	08:46	07:59		16:41 (10)	06:55	06:40	05:36	05:02	05:18	06:07	07:02	07:56			07:55			08:43
	16:38	17:38	25	17:06 (10)	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43			16:40			16:12
14	08:45	07:57		16:43 (10)	06:53	06:37	05:35	05:02	05:19	06:08	07:03	07:58			07:57			08:44
	16:40	17:40	22	17:05 (10)	18:34	20:32	21:26	22:06	21:59	21:07	19:54	18:41			16:38			16:12
15	08:44	07:55		16:44 (10)	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00			07:59			08:45
	16:42	17:42	20	17:04 (10)	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39			16:36			16:12
16	08:43	07:53		16:47 (10)	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:01			08:01			08:46
	16:43	17:44	15	17:02 (10)	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36			16:35			16:12
17	08:42	07:51		16:50 (10)	06:46	06:30	05:30	05:01	05:23	06:14	07:09	08:03			08:03			08:47
	16:45	17:46	9	16:59 (10)	18:40	20:38	21:31	22:07	21:56	21:01	19:47	18:34			16:33			16:12
18	08:41	07:49			06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05			08:05			08:47
	16:47	17:48			18:42	20:39	21:33	22:08	21:54	20:58	19:44	18:32			16:32			16:12
19	08:40	07:46			06:41	06:26	05:26	05:01	05:26	06:17	07:12	08:07			08:07			08:48
	16:49	17:50			18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:29			16:30			16:13
20	08:39	07:44			06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09			08:08			08:49
	16:51	17:52			18:46	20:43	21:36	22:09	21:52	20:54	19:39	18:27			16:29			16:13
21	08:38	07:42			06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11			08:10			08:49
	16:52	17:54			18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25			16:28			16:13
22	08:37	07:40			06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13			08:12			08:50
	16:54	17:56			18:49	20:47	21:39	22:09	21:49	20:49	19:34	18:23			16:26			16:14
23	08:35	07:38			06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15			08:14			08:50
	16:56	17:57			18:51	20:49	21:41	22:09	21:47	20:47	19:32	18:21			16:25			16:14
24	08:34	07:35			06:28	06:15	05:19	05:02	05:33	06:26	07:21	08:17			08:16			08:51
	16:58	17:59			18:53	20:50	21:42	22:09	21:46	20:45	19:30	18:18			16:24			16:15
25	08:33	07:33			06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19		16:18 (10)	08:17			08:51
	17:00	18:01			18:55	20:52	21:44	22:09	21:44	20:43	19:27	17:16	12	16:30 (10)	16:23			16:16
26	08:31	07:31			06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21		16:15 (10)	08:19			08:52
	17:02	18:03			18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	17	16:32 (10)	16:22			16:16
27	08:30	07:29			06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:22		16:13 (10)	08:21			08:52
	17:04	18:05			18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	21	16:34 (10)	16:21			16:17
28	08:28	07:26			06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24		16:12 (10)	08:22			08:52
	17:06	18:07			19:00	20:58	21:48	22:09	21:40	20:36	19:20	17:10	23	16:35 (10)	16:20			16:18
29	08:27				07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26		16:11 (10)	08:24			08:52
	17:08				20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	25	16:36 (10)	16:19			16:19
30	08:25				07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28		16:10 (10)	08:26			08:52
	17:09				20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	24	16:34 (10)	16:18			16:20
31	08:23				07:11		05:11		05:44	06:39		07:30		16:09 (10)				08:52
	17:11				20:06		21:52		21:35	20:28		17:04	23	16:32 (10)				16:21
Potential sun hours	250	273		367	420	494	510	512	460	382	328				259		233	
Total, worst case			261										145			118		
Sun reduction			0.19										0.23			0.20		
Oper. time red.			1.00										1.00			1.00		
Wind dir. red.			0.64										0.64			0.64		
Total reduction			0.12										0.14			0.13		
Total, real			32										21			15		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** CN - H101

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	21:13 (11) 05:06	21:16 (11) 05:46	06:40	07:34	07:32	08:27
	16:22	17:14	18:09	20:08	21:03	21:53 6	21:19 (11) 22:08 16	21:32 (11) 21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:06	05:58	05:09	21:13 (11) 05:07	21:17 (11) 05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05	21:55 7	21:20 (11) 22:08 15	21:32 (11) 21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:19	07:04	05:55	05:08	21:12 (11) 05:08	21:17 (11) 05:49	06:44	07:37	07:36	08:30
	16:24	17:17	18:13	20:12	21:07	21:56 9	21:21 (11) 22:07 15	21:32 (11) 21:29	20:21	19:07	16:58	16:16
4	08:51	08:16	07:17	07:02	05:53	05:07	21:13 (11) 05:08	21:18 (11) 05:51	06:46	07:39	07:38	08:32
	16:26	17:19	18:15	20:13	21:09	21:57 9	21:22 (11) 22:07 14	21:32 (11) 21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:51	05:07	21:12 (11) 05:09	21:17 (11) 05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11	21:58 11	21:23 (11) 22:06 13	21:30 (11) 21:25	20:16	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:49	05:06	21:12 (11) 05:10	21:18 (11) 05:55	06:49	07:43	07:42	08:34
	16:28	17:24	18:19	20:17	21:12	21:59 11	21:23 (11) 22:06 12	21:30 (11) 21:23	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48	05:05	21:12 (11) 05:11	21:18 (11) 05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00 13	21:25 (11) 22:05 12	21:30 (11) 21:21	20:12	18:58	16:50	16:14
8	08:50	08:09	07:07	06:52	05:46	05:05	21:12 (11) 05:12	21:19 (11) 05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01 13	21:25 (11) 22:04 10	21:29 (11) 21:19	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:49	05:44	05:04	21:12 (11) 05:13	21:19 (11) 06:00	06:55	07:48	07:48	08:38
	16:32	17:30	18:25	20:23	21:18	22:02 14	21:26 (11) 22:04 9	21:28 (11) 21:17	20:07	18:53	16:46	16:13
10	08:48	08:05	07:03	06:47	05:42	05:04	21:13 (11) 05:14	21:20 (11) 06:02	06:56	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:19	22:03 15	21:28 (11) 22:03 8	21:28 (11) 21:15	20:04	18:50	16:45	16:12
11	08:48	08:03	07:00	06:45	05:40	05:03	21:12 (11) 05:16	21:21 (11) 06:03	06:58	07:52	07:52	08:41
	16:35	17:34	18:29	20:26	21:21	22:04 16	21:28 (11) 22:02 6	21:27 (11) 21:13	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	21:12 (11) 05:17	21:21 (11) 06:05	07:00	07:54	07:53	08:42
	16:37	17:36	18:30	20:28	21:23	22:04 17	21:29 (11) 22:01 5	21:26 (11) 21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:55	06:40	05:36	05:02	21:13 (11) 05:18	21:22 (11) 06:07	07:02	07:56	07:55	08:43
	16:39	17:38	18:32	20:30	21:25	22:05 16	21:29 (11) 22:00 3	21:25 (11) 21:09	19:57	18:43	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	05:02	21:13 (11) 05:19	21:24 (11) 06:09	07:03	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:26	22:06 17	21:30 (11) 21:59 1	21:25 (11) 21:07	19:54	18:41	16:38	16:12
15	08:44	07:55	06:51	06:35	05:33	05:02	21:12 (11) 05:20	06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06 18	21:30 (11) 21:58	21:05	19:52	18:39	16:36	16:12
16	08:43	07:53	06:48	06:33	05:31	05:02	21:12 (11) 05:22	06:12	07:07	08:01	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07 18	21:30 (11) 21:57	21:03	19:49	18:36	16:35	16:12
17	08:42	07:51	06:46	06:31	05:30	05:02	21:13 (11) 05:23	06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:31	22:07 18	21:31 (11) 21:55	21:01	19:47	18:34	16:33	16:12
18	08:41	07:49	06:43	06:28	05:28	05:02	21:13 (11) 05:24	06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:39	21:33	22:08 18	21:31 (11) 21:54	20:58	19:44	18:32	16:32	16:12
19	08:40	07:46	06:41	06:26	05:27	05:02	21:13 (11) 05:26	06:17	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08 19	21:32 (11) 21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:44	06:38	06:24	05:25	05:02	21:14 (11) 05:27	06:19	07:14	08:09	08:08	08:49
	16:51	17:52	18:46	20:43	21:36	22:08 19	21:33 (11) 21:52	20:54	19:39	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:24	05:02	21:14 (11) 05:29	06:21	07:16	08:11	08:10	08:49
	16:52	17:54	18:47	20:45	21:38	22:09 19	21:33 (11) 21:50	20:52	19:37	18:25	16:28	16:13
22	08:37	07:40	06:33	06:19	05:22	05:02	21:14 (11) 05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:39	22:09 19	21:33 (11) 21:49	20:49	19:34	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	21:14 (11) 05:32	06:24	07:19	08:15	08:14	08:50
	16:56	17:58	18:51	20:49	21:41	22:09 19	21:33 (11) 21:47	20:47	19:32	18:21	16:25	16:14
24	08:34	07:35	06:28	06:15	05:19	05:03	21:15 (11) 05:33	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:50	21:42	22:09 18	21:33 (11) 21:46	20:45	19:30	18:18	16:24	16:15
25	08:32	07:33	06:26	06:12	05:18	05:03	21:15 (11) 05:35	06:28	07:23	07:19	08:17	08:51
	17:00	18:01	18:55	20:52	21:44	22:09 18	21:33 (11) 21:44	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	21:15 (11) 05:36	06:30	07:25	07:21	08:19	08:51
	17:02	18:03	18:57	20:54	21:45	22:09 18	21:33 (11) 21:43	20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:16	05:04	21:15 (11) 05:38	06:32	07:27	07:22	08:21	08:52
	17:04	18:05	18:59	20:56	21:47	22:09 18	21:33 (11) 21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	05:04	21:15 (11) 05:40	06:33	07:28	07:24	08:22	08:52
	17:06	18:07	19:00	20:58	21:48	22:09 18	21:33 (11) 21:40	20:36	19:20	17:10	16:20	16:18
29	08:26		07:16	06:04	05:13 21:14 (11)	05:05	21:16 (11) 05:41	06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:49 1 21:15 (11)	22:09 17	21:33 (11) 21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12 21:15 (11)	05:05	21:16 (11) 05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:01	21:51 2 21:17 (11)	22:08 17	21:33 (11) 21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11 21:14 (11)		05:44	06:39		07:30		08:52
	17:12		20:06		21:52 4 21:18 (11)		21:35	20:28		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case					7	465	139					
Sun reduction					0.31	0.26	0.22					
Oper. time red.					1.00	1.00	1.00					
Wind dir. red.					0.60	0.60	0.60					
Total reduction					0.19	0.16	0.13					
Total, real					1	72	19					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** CO - H102

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:07	05:46	06:41	07:34	07:32	08:27
	16:23	17:14	18:10	20:08	21:04	21:54	22:08	21:33	20:26	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:10	05:07	05:48	06:43	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:14	20:12	21:07	21:56	22:08	21:29	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:52	06:46	07:40	07:38	08:32
	16:26	17:20	18:16	20:14	21:09	21:57	22:07	21:28	20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	06:59	05:52	05:07	05:10	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	21:58	22:07	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:55	05:48	05:06	05:12	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:56	16:49	16:14
9	08:49	08:07	07:05	06:50	05:44	05:04	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51	16:45	16:13
11	08:48	08:03	07:01	06:45	05:40	05:04	05:16	06:04	06:59	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:13
12	08:47	08:01	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	22:00	21:10	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:03	05:20	06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00	07:59	08:45
	16:42	17:42	18:37	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:34	16:13
18	08:42	07:49	06:44	06:29	05:28	05:02	05:25	06:16	07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:42	21:35	22:08	21:53	20:57	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:28	06:20	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:37	22:09	21:52	20:54	19:40	18:28	16:30	16:13
21	08:38	07:42	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	05:02	05:31	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:14	08:51
	16:57	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:19	16:25	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	21:44	22:09	21:45	20:43	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:41	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:22	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	05:14	05:05	05:42	06:35	07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:34	19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	05:13	05:06	05:43	06:37	07:32	07:29	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:37	20:31	19:15	17:06	16:19	16:20
31	08:24		07:12		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** CP - H103

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February	March	April	May	June	July	August	September	October	November			December		
1	08:52		15:25 (1)	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:33			08:28		15:11 (1)
	16:22	20	15:45 (1)	17:14	18:10	20:08	21:04	21:54	22:09	21:33	20:26	19:13	17:02			16:18	30	15:41 (1)
2	08:52		15:25 (1)	08:20	07:22	07:07	05:58	05:09	05:07	05:48	06:43	07:36	07:34			08:29		15:12 (1)
	16:23	20	15:45 (1)	17:16	18:12	20:10	21:06	21:55	22:08	21:31	20:24	19:10	17:00			16:17	29	15:41 (1)
3	08:52		15:26 (1)	08:19	07:20	07:04	05:56	05:08	05:08	05:50	06:44	07:38	07:36			08:31		15:12 (1)
	16:25	21	15:47 (1)	17:18	18:14	20:12	21:07	21:56	22:08	21:30	20:22	19:08	16:58			16:16	28	15:40 (1)
4	08:52		15:26 (1)	08:17	07:17	07:02	05:54	05:08	05:09	05:51	06:46	07:40	07:38			08:32		15:12 (1)
	16:26	22	15:48 (1)	17:20	18:15	20:14	21:09	21:57	22:07	21:28	20:19	19:05	16:56			16:15	27	15:39 (1)
5	08:51		15:27 (1)	08:15	07:15	06:59	05:52	05:07	05:10	05:53	06:48	07:41	07:40			08:34		15:13 (1)
	16:27	23	15:50 (1)	17:22	18:17	20:16	21:11	21:58	22:07	21:26	20:17	19:03	16:54			16:15	25	15:38 (1)
6	08:51		15:27 (1)	08:13	07:13	06:57	05:50	05:06	05:10	05:55	06:50	07:43	07:42			08:35		15:13 (1)
	16:28	24	15:51 (1)	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52			16:14	24	15:37 (1)
7	08:51		15:28 (1)	08:11	07:10	06:55	05:48	05:05	05:11	05:57	06:51	07:45	07:44			08:36		15:14 (1)
	16:30	25	15:53 (1)	17:26	18:21	20:19	21:15	22:00	22:05	21:22	20:12	18:58	16:50			16:14	23	15:37 (1)
8	08:50		15:28 (1)	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46			08:38		15:14 (1)
	16:31	26	15:54 (1)	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:56	16:49			16:13	22	15:36 (1)
9	08:49		15:28 (1)	08:07	07:05	06:50	05:44	05:04	05:14	06:00	06:55	07:49	07:48			08:39		15:14 (1)
	16:33	28	15:56 (1)	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47			16:13	21	15:35 (1)
10	08:49		15:29 (1)	08:05	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51	07:50			08:40		15:15 (1)
	16:34	28	15:57 (1)	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51	16:45			16:13	21	15:36 (1)
11	08:48		15:29 (1)	08:04	07:01	06:45	05:40	05:03	05:16	06:04	06:58	07:52	07:52			08:41		15:16 (1)
	16:36	30	15:59 (1)	17:34	18:29	20:27	21:22	22:04	22:02	21:14	20:02	18:48	16:43			16:12	19	15:35 (1)
12	08:47		15:30 (1)	08:02	06:58	06:43	05:38	05:03	05:17	06:05	07:00	07:54	07:54			08:42		15:16 (1)
	16:37	29	15:59 (1)	17:36	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42			16:12	19	15:35 (1)
13	08:47		15:30 (1)	07:59	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56			08:43		15:16 (1)
	16:39	29	15:59 (1)	17:38	18:33	20:30	21:25	22:05	22:00	21:10	19:57	18:44	16:40			16:12	18	15:34 (1)
14	08:46		15:31 (1)	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:58			08:44		15:17 (1)
	16:40	29	16:00 (1)	17:40	18:35	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38			16:12	17	15:34 (1)
15	08:45		15:32 (1)	07:55	06:51	06:35	05:33	05:02	05:21	06:11	07:06	08:00	08:00			08:45		15:17 (1)
	16:42	28	16:00 (1)	17:42	18:36	20:34	21:28	22:07	21:58	21:05	19:52	18:39	16:37			16:12	17	15:34 (1)
16	08:44		15:33 (1)	07:53	06:48	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:01			08:46		15:18 (1)
	16:44	27	16:00 (1)	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35			16:12	16	15:34 (1)
17	08:43		15:34 (1)	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03		15:21 (1)	08:47		15:19 (1)
	16:46	26	16:00 (1)	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:34	4	15:25 (1)	16:12	16	15:35 (1)
18	08:42		15:34 (1)	07:49	06:44	06:29	05:28	05:02	05:25	06:16	07:11	08:06	08:05		15:17 (1)	08:48		15:19 (1)
	16:47	25	15:59 (1)	17:48	18:42	20:40	21:33	22:08	21:55	20:59	19:45	18:32	16:32	12	15:29 (1)	16:13	16	15:35 (1)
19	08:41		15:35 (1)	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07		15:15 (1)	08:48		15:19 (1)
	16:49	24	15:59 (1)	17:50	18:44	20:42	21:35	22:09	21:53	20:57	19:42	18:30	16:31	16	15:31 (1)	16:13	16	15:35 (1)
20	08:39		15:37 (1)	07:45	06:39	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09		15:14 (1)	08:49		15:20 (1)
	16:51	22	15:59 (1)	17:52	18:46	20:43	21:37	22:09	21:52	20:54	19:40	18:28	16:29	19	15:33 (1)	16:13	15	15:35 (1)
21	08:38		15:37 (1)	07:42	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11		15:13 (1)	08:50		15:20 (1)
	16:53	21	15:58 (1)	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	21	15:34 (1)	16:14	15	15:35 (1)
22	08:37		15:39 (1)	07:40	06:34	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12		15:13 (1)	08:50		15:21 (1)
	16:54	19	15:58 (1)	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	22	15:35 (1)	16:14	15	15:36 (1)
23	08:36		15:40 (1)	07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15	08:14		15:12 (1)	08:51		15:21 (1)
	16:56	16	15:56 (1)	17:58	18:51	20:49	21:41	22:09	21:48	20:48	19:32	18:21	16:26	24	15:36 (1)	16:15	15	15:36 (1)
24	08:34		15:43 (1)	07:36	06:29	06:15	05:20	05:03	05:33	06:27	07:22	08:17	08:16		15:12 (1)	08:51		15:22 (1)
	16:58	12	15:55 (1)	18:00	18:53	20:51	21:43	22:10	21:46	20:45	19:30	18:19	16:24	25	15:37 (1)	16:15	15	15:37 (1)
25	08:33		15:47 (1)	07:34	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18		15:12 (1)	08:52		15:22 (1)
	17:00	4	15:51 (1)	18:02	18:55	20:53	21:44	22:10	21:45	20:43	19:27	17:16	16:23	26	15:38 (1)	16:16	16	15:38 (1)
26	08:31			07:31	06:24	06:11	05:17	05:03	05:37	06:30	07:25	07:21	08:19		15:11 (1)	08:52		15:22 (1)
	17:02			18:04	18:57	20:55	21:46	22:10	21:43	20:41	19:25	17:14	16:22	27	15:38 (1)	16:17	16	15:38 (1)
27	08:30			07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21		15:11 (1)	08:52		15:23 (1)
	17:04			18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:22	17:12	16:21	28	15:39 (1)	16:17	16	15:39 (1)
28	08:28			07:27	06:19	06:06	05:15	05:04	05:40	06:34	07:29	07:25	08:23		15:11 (1)	08:52		15:23 (1)
	17:06			18:08	19:01	20:58	21:49	22:09	21:40	20:36	19:20	17:10	16:20	29	15:40 (1)	16:18	17	15:40 (1)
29	08:27				07:17	06:04	05:13	05:05	05:41	06:35	07:31	07:27	08:24		15:11 (1)	08:52		15:24 (1)
	17:08				20:03	21:00	21:50	22:09	21:38	20:34	19:17	17:08	16:19	30	15:41 (1)	16:19	17	15:41 (1)
30	08:25				07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:29	08:26		15:12 (1)	08:52		15:24 (1)
	17:10				20:04	21:02	21:51	22:09	21:37	20:31	19:15	17:06	16:18	29	15:41 (1)	16:20	18	15:42 (1)
31	08:24				07:12		05:11		05:45	06:39		07:31				08:52		15:25 (1)
	17:12				20:06		21:53		21:35	20:29		17:04				16:21	18	15:43 (1)
Potential sun hours	250			273	367	420	494	510	513	460	382	328	259			233		
Total, worst case		578												312			597	
Sun reduction		0.16												0.20			0.12	
Oper. time red.		1.00												1.00			1.00	
Wind dir. red.		0.65												0.65			0.65	
Total reduction		0.11												0.13			0.08	
Total, real		61												40			47	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** CQ - H104

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52 16:23	08:22 17:14	07:24 18:10	07:09 20:08 29	07:36 (2) 08:05 (2)	06:00 21:04	05:11 21:54	05:07 22:09	05:47 21:33	06:41 20:27	07:34 19:13	07:33 17:02	08:28 16:18
2	08:52 16:24	08:20 17:16	07:22 18:12	07:07 20:10 27	07:37 (2) 08:04 (2)	05:58 21:06	05:10 21:55	05:07 22:08	05:48 21:31	06:43 20:24	07:36 19:10	07:35 17:00	08:29 16:17
3	08:52 16:25	08:19 17:18	07:20 18:14	07:04 20:12 25	07:37 (2) 08:02 (2)	05:56 21:07	05:09 21:56	05:08 22:08	05:50 21:30	06:44 20:22	07:38 19:08	07:37 16:58	08:31 16:16
4	08:52 16:26	08:17 17:20	07:17 18:16	07:02 20:14 22	07:39 (2) 08:01 (2)	05:54 21:09	05:08 21:57	05:09 22:07	05:52 21:28	06:46 20:19	07:40 19:05	07:38 16:56	08:32 16:16
5	08:51 16:27	08:15 17:22	07:15 18:18	07:00 20:16 19	07:39 (2) 07:58 (2)	05:52 21:11	05:07 21:58	05:10 22:07	05:53 21:26	06:48 20:17 4	07:43 (2) 07:47 (2)	07:42 19:03	08:34 16:54	16:15
6	08:51 16:29	08:13 17:24	07:13 18:19	06:57 20:18 14	07:42 (2) 07:56 (2)	05:50 21:13	05:06 22:00	05:11 22:06	05:55 21:24	06:50 20:14 14	07:38 (2) 07:52 (2)	07:43 19:01	07:42 16:52	08:35 16:14
7	08:51 16:30	08:11 17:26	07:10 18:21	06:55 20:19 6	07:46 (2) 07:52 (2)	05:48 21:15	05:06 22:01	05:12 22:06	05:57 21:22	06:52 20:12 18	07:35 (2) 07:53 (2)	07:45 18:58	07:44 16:51	08:36 16:14
8	08:50 16:31	08:09 17:28	07:08 18:23	06:52 20:21		05:46 21:16	05:05 22:01	05:13 22:05	05:58 21:20	06:53 20:10 22	07:33 (2) 07:55 (2)	07:47 18:56	07:46 16:49	08:38 16:14
9	08:50 16:33	08:08 17:30	07:06 18:25	06:50 20:23		05:44 21:18	05:05 22:02	05:14 22:04	06:00 21:18	06:55 20:07 25	07:31 (2) 07:56 (2)	07:49 18:53	07:48 16:47	08:39 16:13
10	08:49 16:34	08:06 17:32	07:03 18:27	06:48 20:25		05:42 21:20	05:04 22:03	05:15 22:03	06:02 21:16	06:57 20:05 27	07:30 (2) 07:57 (2)	07:51 18:51	07:50 16:45	08:40 16:13
11	08:48 16:36	08:04 17:34	07:01 18:29	06:45 20:27		05:40 21:22	05:04 22:04	05:16 22:02	06:04 21:14	06:59 20:02 29	07:28 (2) 07:57 (2)	07:53 18:49	07:52 16:43	08:41 16:13
12	08:47 16:37	08:02 17:36	06:58 18:31	06:43 20:29		05:39 21:23	05:03 22:05	05:17 22:01	06:05 21:12	07:00 20:00 30	07:28 (2) 07:58 (2)	07:54 18:46	07:54 16:42	08:42 16:13
13	08:47 16:39	08:00 17:38	06:56 18:33	06:40 20:31		05:37 21:25	05:03 22:06	05:18 22:00	06:07 21:10 9	06:45 (1) 06:54 (1)	07:02 19:57 29	07:29 (2) 07:58 (2)	07:56 18:44	07:56 16:40	08:43 16:12
14	08:46 16:41	07:58 17:40	06:53 18:35	06:38 20:32		05:35 21:27	05:03 22:06	05:20 21:59	06:09 21:08 13	06:43 (1) 06:56 (1)	07:04 19:55 27	07:30 (2) 07:57 (2)	07:58 18:42	07:58 16:39	08:44 16:12
15	08:45 16:42	07:55 17:42	06:51 18:37	06:36 20:34		05:33 21:29	05:02 22:07	05:21 21:58	06:11 21:05 16	06:42 (1) 06:58 (1)	07:06 19:52 25	07:32 (2) 07:57 (2)	08:00 18:39	08:00 16:37	08:45 16:12
16	08:44 16:44	07:53 17:44	06:49 18:39	06:33 20:36		05:32 21:30	05:02 22:07	05:22 21:57	06:13 21:03 17	06:41 (1) 06:58 (1)	07:07 19:50 23	07:34 (2) 07:57 (2)	08:02 18:37	08:02 16:35	08:46 16:12
17	08:43 16:46	07:51 17:46	06:46 18:40	06:31 20:38		05:30 21:32	05:02 22:08	05:24 21:56	06:14 21:01 16	06:43 (1) 06:59 (1)	07:09 19:47 21	07:36 (2) 07:57 (2)	08:04 18:35	08:03 16:34	08:47 16:13
18	08:42 16:47	07:49 17:48	06:44 18:42	06:29 20:40		05:29 21:34	05:02 22:08	05:25 21:55	06:16 20:59 15	06:45 (1) 07:00 (1)	07:11 19:45 18	07:37 (2) 07:55 (2)	08:06 18:32	08:05 16:32	08:48 16:13
19	08:41 16:49	07:47 17:50	06:41 18:44	06:26 20:42 3	06:51 (1) 06:54 (1)	05:27 21:35	05:02 22:09	05:26 21:53	06:18 20:57 13	06:46 (1) 06:59 (1)	07:13 19:42 16	07:39 (2) 07:55 (2)	08:08 18:30	08:07 16:31	08:49 16:13
20	08:40 16:51	07:45 17:52	06:39 18:46 2	07:03 (2) 07:05 (2) 20:44 5	06:24 06:49 (1) 06:54 (1)	05:25 21:37	05:02 22:09	05:28 21:52	06:20 20:54 11	06:48 (1) 06:59 (1)	07:15 19:40 13	07:41 (2) 07:54 (2)	08:09 18:28	08:09 16:30	08:49 16:13
21	08:38 16:53	07:43 17:54	06:36 18:48 5	07:00 (2) 07:05 (2) 20:45 8	06:22 06:47 (1) 06:55 (1)	05:24 21:38	05:02 22:09	05:29 21:51	06:21 20:52 10	06:50 (1) 07:00 (1)	07:16 19:37 10	07:43 (2) 07:53 (2)	08:11 18:25	08:11 16:28	08:50 16:14
22	08:37 16:55	07:40 17:56	06:34 18:50 9	06:58 (2) 07:07 (2) 20:47 10	06:20 06:44 (1) 06:54 (1)	05:23 21:40	05:02 22:09	05:31 21:49	06:23 20:50 7	06:51 (1) 06:58 (1)	07:18 19:35 6	07:44 (2) 07:50 (2)	08:13 18:23	08:13 16:27	08:50 16:14
23	08:36 16:57	07:38 17:58	06:31 18:52 12	06:55 (2) 07:07 (2) 20:49 12	06:17 06:42 (1) 06:54 (1)	05:21 21:41	05:03 22:10	05:32 21:48	06:25 20:48 5	06:53 (1) 06:58 (1)	07:20 19:32 3	07:46 (2) 07:49 (2)	08:15 18:21	08:14 16:26	08:51 16:15
24	08:34 16:58	07:36 18:00	06:29 18:53 15	06:53 (2) 07:08 (2) 20:51 13	06:15 06:40 (1) 06:53 (1)	05:20 21:43	05:03 22:10	05:34 21:46	06:27 20:45 3	06:55 (1) 06:58 (1)	07:22 19:30		08:17 18:19	08:16 16:25	08:51 16:15
25	08:33 17:00	07:34 18:02	06:27 18:55 18	06:50 (2) 07:08 (2) 20:53 15	06:13 06:38 (1) 06:53 (1)	05:18 21:44	05:03 22:10	05:35 21:45	06:28 20:43		07:23 19:28		07:19 17:17	08:18 16:23	08:52 16:16
26	08:32 17:02	07:31 18:04	06:24 18:57 20	06:48 (2) 07:08 (2) 20:55 16	06:11 06:36 (1) 06:52 (1)	05:17 21:46	05:04 22:10	05:37 21:43	06:30 20:41		07:25 19:25		07:21 17:15	08:20 16:22	08:52 16:17
27	08:30 17:04	07:29 18:06	06:22 18:59 23	06:45 (2) 07:08 (2) 20:56 17	06:09 06:34 (1) 06:51 (1)	05:16 21:47	05:04 22:10	05:38 21:42	06:32 20:38		07:27 19:23		07:23 17:12	08:21 16:21	08:52 16:18
28	08:29 17:06	07:27 18:08	06:19 19:01 25	06:43 (2) 07:08 (2) 20:58 15	06:06 06:35 (1) 06:50 (1)	05:15 21:49	05:05 22:09	05:40 21:40	06:34 20:36		07:29 19:20		07:25 17:10	08:23 16:20	08:52 16:18
29	08:27 17:08		07:17 20:03 27	07:40 (2) 08:07 (2) 21:00 12	06:04 06:36 (1) 06:48 (1)	05:14 21:50	05:05 22:09	05:42 21:38	06:36 20:34		07:31 19:18		07:27 17:08	08:25 16:19	08:53 16:19
30	08:25 17:10		07:14 20:05 29	07:38 (2) 08:07 (2) 21:02 8	06:02 06:38 (1) 06:46 (1)	05:13 21:51	05:06 22:09	05:43 21:37	06:37 20:31		07:32 19:15		07:29 17:06	08:26 16:19	08:53 16:20
31	08:24 17:12		07:12 20:06 30	07:35 (2) 08:05 (2)		05:12 21:53		05:45 21:35	06:39 20:29				07:31 17:04		08:53 16:21
Potential sun hours	250	273	367	420		494	510	512	460	382		328	259	233	
Total, worst case			215	276					135	360					
Sun reduction			0.22	0.31					0.26	0.25					
Oper. time red.			1.00	1.00					1.00	1.00					
Wind dir. red.			0.65	0.65					0.65	0.65					
Total reduction			0.14	0.20					0.17	0.16					
Total, real			30	55					22	58					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** CR - H105

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:16
3	08:52	08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:38	07:36	08:30
	16:24	17:18	18:13	20:12	21:07	21:56	22:08	21:29	20:21	19:07	16:58	16:16
4	08:52	08:17	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11	21:58	22:07	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:49	05:06	05:10	05:55	06:49	07:43	07:42	08:35
	16:28	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:13
8	08:50	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:49	07:48	08:39
	16:32	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46	16:13
10	08:49	08:05	07:03	06:47	05:42	05:03	05:14	06:02	06:56	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:12
11	08:48	08:03	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52	08:41
	16:35	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23	22:05	22:01	21:12	19:59	18:46	16:41	16:12
13	08:46	07:59	06:56	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:07	21:58	21:05	19:52	18:39	16:36	16:12
16	08:44	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:33	16:12
18	08:42	07:49	06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:12
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11	08:10	08:50
	16:52	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:13
22	08:37	07:40	06:34	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	16:14
24	08:34	07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24	16:15
25	08:33	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:25	08:23	08:52
	17:06	18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11		05:44	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	513	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** CS - H106

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June		July		August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:11		05:07		05:40 (3)	05:47	06:41	07:34	07:33	08:28
	16:23	17:14	18:10	20:08	21:04	21:54		22:09	4	05:44 (3)	21:33	20:27	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:10		05:07		05:40 (3)	05:48	06:43	07:36	07:35	08:29
	16:24	17:16	18:12	20:10	21:06	21:55		22:08	4	05:44 (3)	21:31	20:24	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04	05:56	05:09		05:08		05:41 (3)	05:50	06:44	07:38	07:36	08:31
	16:25	17:18	18:14	20:12	21:07	21:56		22:08	3	05:44 (3)	21:30	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08		05:09		05:42 (3)	05:52	06:46	07:40	07:38	08:32
	16:26	17:20	18:16	20:14	21:09	21:57		22:07	2	05:44 (3)	21:28	20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	07:00	05:52	05:07		05:10		05:43 (3)	05:53	06:48	07:42	07:40	08:34
	16:27	17:22	18:18	20:16	21:11	21:58		22:07	1	05:44 (3)	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06		05:11		05:44 (3)	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:18	21:13	21:59		22:06	1	05:45 (3)	21:24	20:14	19:01	16:52	16:14
7	08:51	08:11	07:10	06:55	05:48	05:06	05:37 (3)	05:12			05:57	06:52	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:15	22:00	1	05:38 (3)	22:05		21:22	20:12	18:58	16:51	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05		05:37 (3)	05:13		05:59	06:53	07:47	07:46	08:38
	16:31	17:28	18:23	20:21	21:16	22:01	2	05:39 (3)	22:05		21:20	20:10	18:56	16:49	16:14
9	08:49	08:07	07:06	06:50	05:44	05:05		05:36 (3)	05:14		06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	3	05:39 (3)	22:04		21:18	20:07	18:53	16:47	16:13
10	08:49	08:06	07:03	06:47	05:42	05:04		05:36 (3)	05:15		06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	3	05:39 (3)	22:03		21:16	20:05	18:51	16:45	16:13
11	08:48	08:04	07:01	06:45	05:40	05:04		05:36 (3)	05:16		06:04	06:59	07:53	07:52	08:41
	16:36	17:34	18:29	20:27	21:22	22:04	4	05:40 (3)	22:02		21:14	20:02	18:49	16:43	16:13
12	08:47	08:02	06:58	06:43	05:39	05:03		05:35 (3)	05:17		06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	4	05:39 (3)	22:01		21:12	20:00	18:46	16:42	16:13
13	08:47	08:00	06:56	06:40	05:37	05:03		05:35 (3)	05:18		06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:31	21:25	22:05	5	05:40 (3)	22:00		21:10	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:03		05:35 (3)	05:20		06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	5	05:40 (3)	21:59		21:08	19:55	18:41	16:39	16:12
15	08:45	07:55	06:51	06:36	05:33	05:02		05:35 (3)	05:21		06:11	07:06	08:00	08:00	08:45
	16:42	17:42	18:37	20:34	21:28	22:07	6	05:41 (3)	21:58		21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:49	06:33	05:32	05:02		05:35 (3)	05:22		06:13	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	6	05:41 (3)	21:57		21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02		05:35 (3)	05:24		06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	6	05:41 (3)	21:56		21:01	19:47	18:35	16:34	16:13
18	08:42	07:49	06:44	06:29	05:29	05:02		05:35 (3)	05:25		06:16	07:11	08:06	08:05	08:48
	16:48	17:48	18:42	20:40	21:33	22:08	6	05:41 (3)	21:55		20:59	19:45	18:32	16:32	16:13
19	08:41	07:47	06:41	06:26	05:27	05:02		05:35 (3)	05:26		06:18	07:13	08:08	08:07	08:48
	16:49	17:50	18:44	20:42	21:35	22:09	7	05:42 (3)	21:53		20:57	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02		05:35 (3)	05:28		06:20	07:15	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:37	22:09	7	05:42 (3)	21:52		20:54	19:40	18:28	16:30	16:13
21	08:38	07:43	06:36	06:22	05:24	05:02		05:35 (3)	05:29		06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	7	05:42 (3)	21:51		20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:20	05:23	05:02		05:35 (3)	05:31		06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	7	05:42 (3)	21:49		20:50	19:35	18:23	16:27	16:14
23	08:36	07:38	06:31	06:17	05:21	05:03		05:36 (3)	05:32		06:25	07:20	08:15	08:14	08:51
	16:57	17:58	18:52	20:49	21:41	22:09	7	05:43 (3)	21:48		20:48	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03		05:36 (3)	05:34		06:27	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:10	6	05:42 (3)	21:46		20:45	19:30	18:19	16:25	16:15
25	08:33	07:34	06:26	06:13	05:18	05:03		05:36 (3)	05:35		06:28	07:23	07:19	08:18	08:52
	17:00	18:02	18:55	20:53	21:44	22:10	6	05:42 (3)	21:45		20:43	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04		05:37 (3)	05:37		06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:55	21:46	22:10	6	05:43 (3)	21:43		20:41	19:25	17:15	16:22	16:17
27	08:30	07:29	06:22	06:09	05:16	05:04		05:37 (3)	05:38		06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	6	05:43 (3)	21:42		20:38	19:23	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	05:15	05:05		05:38 (3)	05:40		06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:49	22:09	5	05:43 (3)	21:40		20:36	19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	05:14	05:05		05:38 (3)	05:42		06:36	07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	5	05:43 (3)	21:38		20:34	19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	05:13	05:06		05:39 (3)	05:43		06:37	07:32	07:29	08:26	08:52
	17:10		20:05	21:02	21:51	22:09	5	05:44 (3)	21:37		20:31	19:15	17:06	16:19	16:20
31	08:24		07:12		05:12				05:45		06:39		07:31		08:52
	17:12		20:06		21:53				21:35		20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510			512		460	382	328	259	233
Total, worst case						125			15						
Sun reduction						0.26			0.22						
Oper. time red.						1.00			1.00						
Wind dir. red.						0.65			0.65						
Total reduction						0.17			0.14						
Total, real						21			2						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** CT - H107

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52 16:23	08:22 17:14	07:24 18:10	07:09 20:08	06:00 21:04	05:11 21:54	05:07 22:09	05:47 21:33	06:41 20:27	07:34 19:13	07:33 17:02	08:28 16:18
2	08:52 16:24	08:20 17:16	07:22 18:12	07:07 20:10	05:58 21:06	05:10 21:55	05:07 22:08	05:48 21:31	06:43 20:24	07:36 19:10	07:35 17:00	08:29 16:17
3	08:52 16:25	08:19 17:18	07:20 18:14	07:04 20:12	05:56 21:07	05:09 21:56	05:08 22:08	05:50 21:30	06:44 20:22	07:38 19:08	07:37 16:58	08:31 16:16
4	08:52 16:26	08:17 17:20	07:17 18:16	07:02 20:14	05:54 21:09	05:08 21:57	05:09 22:07	05:52 21:28	06:46 20:19	07:40 19:05	07:38 16:56	08:32 16:16
5	08:52 16:27	08:15 17:22	07:15 18:18	07:00 20:16	05:52 21:11	05:07 21:58	05:10 22:07	05:53 21:26	06:48 20:17	07:42 19:03	07:40 16:54	08:34 16:15
6	08:51 16:29	08:13 17:24	07:13 18:19	06:57 20:18	05:50 21:13	05:06 22:00	05:11 22:06	05:55 21:24	06:50 20:14	07:43 19:01	07:42 16:52	08:35 16:14
7	08:51 16:30	08:11 17:26	07:10 18:21	06:55 20:19	05:48 21:15	05:06 22:01	05:12 22:06	05:57 21:22	06:52 20:12	07:45 18:58	07:44 16:51	08:36 16:14
8	08:50 16:31	08:09 17:28	07:08 18:23	06:52 20:21	05:46 21:16	05:05 22:01	05:13 22:05	05:58 21:20	06:53 20:10	07:47 18:56	07:46 16:49	08:38 16:14
9	08:50 16:33	08:08 17:30	07:06 18:25	06:50 20:23	05:44 21:18	05:04 22:02	05:14 22:04	06:00 21:18	06:55 20:07	07:49 18:53	07:48 16:47	08:39 16:13
10	08:49 16:34	08:06 17:32	07:03 18:27	06:48 20:25	05:42 21:20	05:04 22:03	05:15 22:03	06:02 21:16	06:57 20:05	07:51 18:51	07:50 16:45	08:40 16:13
11	08:48 16:36	08:04 17:34	07:01 18:29	06:45 20:27	05:40 21:22	05:04 22:04	05:16 22:02	06:04 21:14	06:59 20:02	07:53 18:49	07:52 16:43	08:41 16:13
12	08:47 16:37	08:02 17:36	06:58 18:31 3	07:22 (2) 07:25 (2)	06:43 20:29 1	07:07 (1) 07:08 (1)	05:39 21:23	05:03 22:05	05:17 22:01	06:05 21:12	07:00 20:00	07:54 18:46	07:54 16:42	08:42 16:13
13	08:47 16:39	08:00 17:38	06:56 18:33 7	07:20 (2) 07:27 (2)	06:40 20:31 4	07:04 (1) 07:08 (1)	05:37 21:25	05:03 22:06	05:18 22:00	06:07 21:10	07:02 19:57	07:56 18:44	07:56 16:40	08:43 16:12
14	08:46 16:41	07:58 17:40	06:53 18:35 10	07:17 (2) 07:27 (2)	06:38 20:32 7	07:02 (1) 07:09 (1)	05:35 21:27	05:03 22:06	05:20 21:59	06:09 21:08	07:04 19:55 8	07:56 (2) 08:04 (2)	07:58 18:42	07:58 16:39	08:44 16:12
15	08:45 16:42	07:55 17:42	06:51 18:37 13	07:15 (2) 07:28 (2)	06:36 20:34 9	07:00 (1) 07:09 (1)	05:33 21:29	05:02 22:07	05:21 21:58	06:11 21:05	07:06 19:52 15	07:52 (2) 08:07 (2)	08:00 18:39	08:00 16:37	08:45 16:12
16	08:44 16:44	07:53 17:44	06:49 18:39 16	07:13 (2) 07:29 (2)	06:33 20:36 11	06:58 (1) 07:09 (1)	05:32 21:30	05:02 22:07	05:22 21:57	06:13 21:03	07:07 19:50 20	07:50 (2) 08:10 (2)	08:02 18:37	08:02 16:35	08:46 16:12
17	08:43 16:46	07:51 17:46	06:46 18:40 19	07:10 (2) 07:29 (2)	06:31 20:38 13	06:55 (1) 07:08 (1)	05:30 21:32	05:02 22:08	05:24 21:56	06:14 21:01	07:09 19:47 23	07:48 (2) 08:11 (2)	08:04 18:35	08:03 16:34	08:47 16:13
18	08:42 16:47	07:49 17:48	06:44 18:42 21	07:08 (2) 07:29 (2)	06:29 20:40 15	06:53 (1) 07:08 (1)	05:29 21:34	05:02 22:08	05:25 21:55	06:16 20:59	07:11 19:45 25	07:46 (2) 08:11 (2)	08:06 18:32	08:05 16:32	08:48 16:13
19	08:41 16:49	07:47 17:50	06:41 18:44 24	07:05 (2) 07:29 (2)	06:26 20:42 16	06:51 (1) 07:07 (1)	05:27 21:35	05:02 22:09	05:26 21:53	06:18 20:57 4	06:59 (1) 07:03 (1)	07:13 19:42 27	07:45 (2) 08:12 (2)	08:08 18:30	08:07 16:31	08:49 16:13
20	08:40 16:51	07:45 17:52	06:39 18:46 26	07:03 (2) 07:29 (2)	06:24 20:44 17	06:49 (1) 07:06 (1)	05:25 21:37	05:02 22:09	05:28 21:52	06:20 20:54 11	06:56 (1) 07:07 (1)	07:15 19:40 29	07:44 (2) 08:13 (2)	08:09 18:28	08:09 16:30	08:49 16:13
21	08:38 16:53	07:43 17:54	06:36 18:48 28	07:00 (2) 07:28 (2)	06:22 20:45 17	06:48 (1) 07:05 (1)	05:24 21:38	05:02 22:09	05:29 21:51	06:21 20:52 15	06:54 (1) 07:09 (1)	07:16 19:37 30	07:43 (2) 08:13 (2)	08:11 18:25	08:11 16:28	08:50 16:14
22	08:37 16:55	07:40 17:56	06:34 18:50 30	06:58 (2) 07:28 (2)	06:20 20:47 14	06:49 (1) 07:03 (1)	05:23 21:40	05:02 22:09	05:31 21:49	06:23 20:50 17	06:52 (1) 07:09 (1)	07:18 19:35 29	07:44 (2) 08:13 (2)	08:13 18:23	08:13 16:27	08:50 16:14
23	08:36 16:57	07:38 17:58	06:31 18:52 29	06:57 (2) 07:26 (2)	06:17 20:49 11	06:50 (1) 07:01 (1)	05:21 21:41	05:03 22:10	05:32 21:48	06:25 20:48 17	06:53 (1) 07:10 (1)	07:20 19:32 27	07:46 (2) 08:13 (2)	08:15 18:21	08:14 16:26	08:51 16:15
24	08:34 16:58	07:36 18:00	06:29 18:53 28	06:58 (2) 07:26 (2)	06:15 20:51		05:20 21:43	05:03 22:10	05:34 21:46	06:27 20:45 16	06:55 (1) 07:11 (1)	07:22 19:30 24	07:48 (2) 08:12 (2)	08:17 18:19	08:16 16:25	08:51 16:15
25	08:33 17:00	07:34 18:02	06:27 18:55 26	06:58 (2) 07:24 (2)	06:13 20:53		05:18 21:44	05:03 22:10	05:35 21:45	06:28 20:43 14	06:56 (1) 07:10 (1)	07:23 19:28 22	07:50 (2) 08:12 (2)	07:19 17:17	08:18 16:23	08:52 16:16
26	08:32 17:02	07:31 18:04	06:24 18:57 24	06:59 (2) 07:23 (2)	06:11 20:55		05:17 21:46	05:04 22:10	05:37 21:43	06:30 20:41 13	06:58 (1) 07:11 (1)	07:25 19:25 20	07:52 (2) 08:12 (2)	07:21 17:15	08:20 16:22	08:52 16:17
27	08:30 17:04	07:29 18:06	06:22 18:59 21	07:00 (2) 07:21 (2)	06:09 20:56		05:16 21:47	05:04 22:10	05:38 21:42	06:32 20:38 11	07:00 (1) 07:11 (1)	07:27 19:23 17	07:53 (2) 08:10 (2)	07:23 17:12	08:21 16:21	08:52 16:18
28	08:29 17:06	07:27 18:08	06:19 19:01 17	07:02 (2) 07:19 (2)	06:06 20:58		05:15 21:49	05:05 22:09	05:40 21:40	06:34 20:36 9	07:02 (1) 07:11 (1)	07:29 19:20 14	07:55 (2) 08:09 (2)	07:25 17:10	08:23 16:20	08:52 16:18
29	08:27 17:08		07:17 20:03 9	08:05 (2) 08:14 (2)	06:04 21:00		05:14 21:50	05:05 22:09	05:42 21:38	06:36 20:34 6	07:03 (1) 07:09 (1)	07:31 19:18 11	07:57 (2) 08:08 (2)	07:27 17:08	08:25 16:19	08:53 16:19
30	08:25 17:10		07:14 20:05		06:02 21:02		05:13 21:51	05:06 22:09	05:43 21:37	06:37 20:31 4	07:05 (1) 07:09 (1)	07:32 19:15 8	07:59 (2) 08:07 (2)	07:29 17:06	08:26 16:19	08:53 16:20
31	08:24 17:12		07:12 20:06				05:11 21:53		05:45 21:35	06:39 20:29 1	07:07 (1) 07:08 (1)			07:31 17:04		08:53 16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case			351	135				138	349	4		
Sun reduction			0.22	0.31				0.26	0.25	0.23		
Oper. time red.			1.00	1.00				1.00	1.00	1.00		
Wind dir. red.			0.64	0.64				0.64	0.64	0.64		
Total reduction			0.14	0.20				0.16	0.16	0.14		
Total, real			49	27				23	56	1		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** CU - H108

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:11	06:10 (2)	05:07	05:47	06:17 (2)	06:41	07:34	07:33	08:28
	16:23	17:14	18:10	20:08	21:04	21:54	2 06:12 (2)	22:09	21:33	20 06:37 (2)	20:27	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:10		05:07	05:48	06:19 (2)	06:43	07:36	07:35	08:29
	16:24	17:16	18:12	20:10	21:06	21:55		22:08	21:31	18 06:37 (2)	20:24	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04	05:56	06:22 (2) 05:09		05:08	05:50	06:20 (2)	06:44	07:38	07:37	08:31
	16:25	17:18	18:14	20:12	21:07	1 06:23 (2) 21:56		22:08	21:30	16 06:36 (2)	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	06:20 (2) 05:08		05:09	05:52	06:22 (2)	06:46	07:40	07:38	08:32
	16:26	17:20	18:16	20:14	21:09	4 06:24 (2) 21:57		22:07	21:28	14 06:36 (2)	20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	07:00	05:52	06:18 (2) 05:07		05:10	05:53	06:23 (2)	06:48	07:42	07:40	08:34
	16:27	17:22	18:18	20:16	21:11	6 06:24 (2) 21:58		22:07	21:26	12 06:35 (2)	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	06:16 (2) 05:06		05:11	05:55	06:25 (2)	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:18	21:13	9 06:25 (2) 21:59		22:06	21:24	10 06:35 (2)	20:14	19:01	16:52	16:14
7	08:51	08:11	07:10	06:55	05:48	06:15 (2) 05:06		05:12	05:57	06:27 (2)	06:52	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:15	11 06:26 (2) 22:00		22:05	21:22	8 06:35 (2)	20:12	18:58	16:51	16:14
8	08:50	08:09	07:08	06:52	05:46	06:13 (2) 05:05		05:13	05:59	06:28 (2)	06:53	07:47	07:46	08:38
	16:31	17:28	18:23	20:21	21:16	13 06:26 (2) 22:01		22:05	21:20	6 06:34 (2)	20:10	18:56	16:49	16:14
9	08:50	08:08	07:06	06:50	05:44	06:11 (2) 05:05		05:14	06:00	06:30 (2)	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	15 06:26 (2) 22:02		22:04	21:18	3 06:33 (2)	20:07	18:53	16:47	16:13
10	08:49	08:06	07:03	06:48	05:42	06:09 (2) 05:04		05:15	06:02		06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	17 06:26 (2) 22:03		22:03	21:16		20:05	18:51	16:45	16:13
11	08:48	08:04	07:01	06:45	05:40	06:08 (2) 05:04		05:16	06:04		06:59	07:53	07:52	08:41
	16:36	17:34	18:29	20:27	21:22	19 06:27 (2) 22:04		22:02	21:14		20:02	18:49	16:43	16:13
12	08:47	08:02	06:58	06:43	05:39	06:06 (2) 05:03		05:17 06:16 (2)	06:05		07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	20 06:26 (2) 22:05		22:01 7 06:23 (2)	21:12		20:00	18:46	16:42	16:13
13	08:47	08:00	06:56	06:40	05:37	06:04 (2) 05:03		05:18 06:14 (2)	06:07		07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:31	21:25	22 06:26 (2) 22:05		22:00 11 06:25 (2)	21:10		19:57	18:44	16:40	16:12
14	08:46	07:58	06:53	06:38	05:35	06:03 (2) 05:03		05:20 06:13 (2)	06:09		07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	24 06:27 (2) 22:06		21:59 14 06:27 (2)	21:08		19:55	18:42	16:39	16:12
15	08:45	07:55	06:51	06:36	05:33	06:01 (2) 05:02		05:21 06:11 (2)	06:11		07:06	08:00	08:00	08:45
	16:42	17:42	18:37	20:34	21:29	25 06:26 (2) 22:07		21:58 17 06:28 (2)	21:05		19:52	18:39	16:37	16:12
16	08:44	07:53	06:49	06:33	05:32	06:00 (2) 05:02		05:22 06:10 (2)	06:13		07:07	08:02	08:02	08:46
	16:44	17:44	18:39	20:36	21:30	26 06:26 (2) 22:07		21:57 19 06:29 (2)	21:03		19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:58 (2) 05:02		05:24 06:10 (2)	06:14		07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	27 06:25 (2) 22:08		21:56 21 06:31 (2)	21:01		19:47	18:35	16:34	16:13
18	08:42	07:49	06:44	06:29	05:29	05:57 (2) 05:02		05:25 06:09 (2)	06:16		07:11	08:06	08:05	08:48
	16:48	17:48	18:42	20:40	21:34	29 06:26 (2) 22:08		21:55 22 06:31 (2)	20:59		19:45	18:32	16:32	16:13
19	08:41	07:47	06:41	06:26	05:27	05:56 (2) 05:02		05:26 06:08 (2)	06:18		07:13	08:08	08:07	08:49
	16:49	17:50	18:44	20:42	21:35	30 06:26 (2) 22:09		21:53 24 06:32 (2)	20:57		19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:56 (2) 05:02		05:28 06:08 (2)	06:20		07:15	08:09	08:09	08:49
	16:51	17:52	18:46	20:44	21:37	29 06:25 (2) 22:09		21:52 25 06:33 (2)	20:54		19:40	18:28	16:30	16:13
21	08:38	07:43	06:36	06:22	05:24	05:57 (2) 05:02		05:29 06:07 (2)	06:21		07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	28 06:25 (2) 22:09		21:51 27 06:34 (2)	20:52		19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:20	05:23	05:57 (2) 05:02		05:31 06:07 (2)	06:23		07:18	08:13	08:13	08:50
	16:55	17:56	18:50	20:47	21:40	27 06:24 (2) 22:09		21:49 27 06:34 (2)	20:50		19:35	18:23	16:27	16:14
23	08:36	07:38	06:31	06:17	05:21	05:57 (2) 05:03		05:32 06:07 (2)	06:25		07:20	08:15	08:14	08:51
	16:57	17:58	18:52	20:49	21:41	26 06:23 (2) 22:10		21:48 28 06:35 (2)	20:48		19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:58 (2) 05:03		05:34 06:06 (2)	06:27		07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	25 06:23 (2) 22:10		21:46 29 06:35 (2)	20:45		19:30	18:19	16:25	16:15
25	08:33	07:34	06:27	06:13	05:18	05:59 (2) 05:03		05:35 06:07 (2)	06:28		07:23	07:19	08:18	08:52
	17:00	18:02	18:55	20:53	21:44	23 06:22 (2) 22:10		21:45 29 06:36 (2)	20:43		19:28	17:17	16:24	16:16
26	08:32	07:31	06:24	06:11	05:17	06:00 (2) 05:04		05:37 06:08 (2)	06:30		07:25	07:21	08:20	08:52
	17:02	18:04	18:57	20:55	21:46	21 06:21 (2) 22:10		21:43 28 06:36 (2)	20:41		19:25	17:15	16:22	16:17
27	08:30	07:29	06:22	06:09	05:16	06:01 (2) 05:04		05:38 06:10 (2)	06:32		07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	20 06:21 (2) 22:10		21:42 27 06:37 (2)	20:38		19:23	17:12	16:21	16:18
28	08:29	07:27	06:19	06:06	05:15	06:02 (2) 05:05		05:40 06:11 (2)	06:34		07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:49	18 06:20 (2) 22:09		21:40 26 06:37 (2)	20:36		19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	05:14	06:04 (2) 05:05		05:42 06:12 (2)	06:36		07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	15 06:19 (2) 22:09		21:38 24 06:36 (2)	20:34		19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	05:13	06:05 (2) 05:06		05:43 06:14 (2)	06:37		07:32	07:29	08:26	08:53
	17:10		20:05	21:02	21:51	12 06:17 (2) 22:09		21:37 23 06:37 (2)	20:31		19:15	17:06	16:19	16:20
31	08:24		07:12		05:12	06:07 (2)		05:45 06:16 (2)	06:39			07:31		08:53
	17:12		20:06		21:53	9 06:16 (2)		21:35 21 06:37 (2)	20:29			17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382		328		259	233
Total, worst case					551	2	449	107						
Sun reduction					0.31	0.26	0.22	0.26						
Oper. time red.					1.00	1.00	1.00	1.00						
Wind dir. red.					0.65	0.65	0.65	0.65						
Total reduction					0.20	0.17	0.14	0.17						
Total, real					112	0	65	18						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** CV - H110

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May		June		July		August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00		05:10		20:49 (11)	05:06	21:00 (11)	05:46	06:40	07:34	07:32	08:27
	16:22	17:14	18:09	20:08	21:03		21:53	22	21:11 (11)	22:08	21:12 (11)	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:06	05:58		05:09		20:49 (11)	05:07	20:59 (11)	05:48	06:42	07:36	07:34	08:29
	16:23	17:15	18:11	20:10	21:05		21:55	21	21:10 (11)	22:08	21:13 (11)	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:19	07:04	05:55		05:08		20:50 (11)	05:08	20:59 (11)	05:49	06:44	07:37	07:36	08:30
	16:24	17:17	18:13	20:12	21:07		21:56	20	21:10 (11)	22:07	21:14 (11)	21:29	20:21	19:07	16:58	16:16
4	08:51	08:16	07:17	07:02	05:53		05:07		20:51 (11)	05:08	20:59 (11)	05:51	06:46	07:39	07:38	08:32
	16:26	17:19	18:15	20:13	21:09		21:57	19	21:10 (11)	22:07	21:14 (11)	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:51		05:07		20:51 (11)	05:09	20:58 (11)	05:53	06:48	07:41	07:40	08:33
	16:27	17:21	18:17	20:15	21:11		21:58	19	21:10 (11)	22:06	21:14 (11)	21:25	20:16	19:02	16:54	16:15
6	08:51	08:13	07:12	06:57	05:49		05:06		20:51 (11)	05:10	20:58 (11)	05:55	06:49	07:43	07:42	08:34
	16:28	17:23	18:19	20:17	21:12		21:59	18	21:09 (11)	22:06	21:15 (11)	21:23	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48		05:05		20:53 (11)	05:11	20:58 (11)	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14		22:00	16	21:09 (11)	22:05	21:16 (11)	21:21	20:12	18:58	16:50	16:14
8	08:50	08:09	07:07	06:52	05:46		05:05		20:53 (11)	05:12	20:58 (11)	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16		22:01	15	21:08 (11)	22:04	21:16 (11)	21:19	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:49	05:44		05:04		20:54 (11)	05:13	20:57 (11)	06:00	06:55	07:48	07:48	08:38
	16:32	17:30	18:25	20:23	21:18		22:02	14	21:08 (11)	22:03	21:17 (11)	21:17	20:07	18:53	16:46	16:13
10	08:48	08:05	07:03	06:47	05:42		05:04		20:55 (11)	05:14	20:57 (11)	06:02	06:56	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:19		22:03	14	21:09 (11)	22:03	21:17 (11)	21:15	20:04	18:50	16:45	16:12
11	08:48	08:03	07:00	06:45	05:40		05:03		20:55 (11)	05:16	20:57 (11)	06:03	06:58	07:52	07:52	08:41
	16:35	17:34	18:29	20:26	21:21		22:04	13	21:08 (11)	22:02	21:18 (11)	21:13	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38		05:03		20:56 (11)	05:17	20:56 (11)	06:05	07:00	07:54	07:53	08:42
	16:37	17:36	18:30	20:28	21:23		22:04	12	21:08 (11)	22:01	21:18 (11)	21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:55	06:40	05:36	20:50 (11)	05:02		20:57 (11)	05:18	20:56 (11)	06:07	07:02	07:56	07:55	08:43
	16:39	17:38	18:32	20:30	21:25	3 20:53 (11)	22:05	10	21:07 (11)	22:00	21:19 (11)	21:09	19:57	18:43	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	20:49 (11)	05:02		20:58 (11)	05:19	20:57 (11)	06:09	07:03	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:26	5 20:54 (11)	22:06	9	21:07 (11)	21:59	21:20 (11)	21:07	19:54	18:41	16:38	16:12
15	08:44	07:55	06:51	06:35	05:33	20:48 (11)	05:02		20:58 (11)	05:20	20:56 (11)	06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	8 20:56 (11)	22:06	8	21:06 (11)	21:58	21:20 (11)	21:05	19:52	18:39	16:36	16:12
16	08:43	07:53	06:48	06:33	05:31	20:47 (11)	05:02		20:59 (11)	05:22	20:56 (11)	06:12	07:07	08:01	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	10 20:57 (11)	22:07	7	21:06 (11)	21:57	21:20 (11)	21:03	19:49	18:36	16:35	16:12
17	08:42	07:51	06:46	06:31	05:30	20:47 (11)	05:02		20:59 (11)	05:23	20:56 (11)	06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:31	12 20:59 (11)	22:07	7	21:06 (11)	21:55	21:20 (11)	21:01	19:47	18:34	16:33	16:12
18	08:41	07:49	06:43	06:28	05:28	20:46 (11)	05:02		21:00 (11)	05:24	20:56 (11)	06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:39	21:33	14 21:00 (11)	22:08	5	21:05 (11)	21:54	21:20 (11)	20:58	19:44	18:32	16:32	16:12
19	08:40	07:46	06:41	06:26	05:27	20:46 (11)	05:02		21:01 (11)	05:26	20:56 (11)	06:17	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	16 21:02 (11)	22:08	4	21:05 (11)	21:53	21:20 (11)	20:56	19:42	18:30	16:31	16:13
20	08:39	07:44	06:38	06:24	05:25	20:47 (11)	05:02		21:02 (11)	05:27	20:56 (11)	06:19	07:14	08:09	08:08	08:49
	16:51	17:52	18:46	20:43	21:36	17 21:04 (11)	22:08	4	21:06 (11)	21:52	21:18 (11)	20:54	19:39	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:24	20:46 (11)	05:02		21:02 (11)	05:29	20:56 (11)	06:21	07:16	08:11	08:10	08:49
	16:52	17:54	18:47	20:45	21:38	18 21:04 (11)	22:09	4	21:06 (11)	21:50	21:16 (11)	20:52	19:37	18:25	16:28	16:13
22	08:37	07:40	06:33	06:19	05:22	20:46 (11)	05:02		21:02 (11)	05:30	20:56 (11)	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:39	20 21:06 (11)	22:09	4	21:06 (11)	21:49	21:16 (11)	20:49	19:34	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	20:46 (11)	05:02		21:02 (11)	05:32	20:56 (11)	06:24	07:19	08:15	08:14	08:50
	16:56	17:58	18:51	20:49	21:41	22 21:08 (11)	22:09	4	21:06 (11)	21:47	21:14 (11)	20:47	19:32	18:21	16:25	16:14
24	08:34	07:35	06:28	06:15	05:19	20:47 (11)	05:02		21:02 (11)	05:33	20:57 (11)	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:50	21:42	22 21:09 (11)	22:09	5	21:07 (11)	21:46	21:13 (11)	20:45	19:30	18:18	16:24	16:15
25	08:32	07:33	06:26	06:12	05:18	20:47 (11)	05:03		21:02 (11)	05:35	20:57 (11)	06:28	07:23	07:19	08:17	08:51
	17:00	18:01	18:55	20:52	21:44	24 21:11 (11)	22:09	6	21:08 (11)	21:44	21:12 (11)	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	20:46 (11)	05:03		21:01 (11)	05:36	20:58 (11)	06:30	07:25	07:20	08:19	08:51
	17:02	18:03	18:57	20:54	21:45	25 21:11 (11)	22:09	7	21:08 (11)	21:43	21:11 (11)	20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:15	20:46 (11)	05:04		21:01 (11)	05:38	20:58 (11)	06:32	07:27	07:22	08:21	08:52
	17:04	18:05	18:59	20:56	21:47	25 21:11 (11)	22:09	8	21:09 (11)	21:41	21:09 (11)	20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	20:47 (11)	05:04		21:00 (11)	05:40	20:59 (11)	06:33	07:28	07:24	08:22	08:52
	17:06	18:07	19:00	20:58	21:48	24 21:11 (11)	22:09	9	21:09 (11)	21:40	21:08 (11)	20:36	19:20	17:10	16:20	16:18
29	08:26		07:16	06:04	05:13	20:47 (11)	05:05		21:00 (11)	05:41	20:59 (11)	06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:49	23 21:10 (11)	22:09	10	21:10 (11)	21:38	21:06 (11)	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	20:47 (11)	05:05		21:01 (11)	05:43	21:00 (11)	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:01	21:51	23 21:10 (11)	22:08	11	21:12 (11)	21:36	21:05 (11)	20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11	20:49 (11)				05:44	21:01 (11)	06:39		07:30		08:52
	17:12		20:06		21:52	22 21:11 (11)				21:35	2 21:03 (11)	20:28		17:04		16:21
Potential sun hours	250	273	367	420	494		510		512		460	382	328	259	233	
Total, worst case						333		325		532						
Sun reduction						0.31		0.26		0.22						
Oper. time red.						1.00		1.00		1.00						
Wind dir. red.						0.61		0.61		0.61						
Total reduction						0.19		0.16		0.14						
Total, real						64		51		73						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** CW - H111

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:40	07:34	07:32	08:27
	16:22	17:14	18:09	20:08	21:03	21:53	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:19	07:04	05:56	05:08	05:08	05:49	06:44	07:37	07:36	08:30
	16:24	17:18	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58	16:16
4	08:51	08:16	07:17	07:02	05:53	05:07	05:09	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:13	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11	21:58	22:06	21:25	20:16	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50	05:06	05:10	05:55	06:49	07:43	07:42	08:34
	16:28	17:24	18:19	20:17	21:12	21:59	22:06	21:23	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:21	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48	08:38
	16:32	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:48	08:05	07:03	06:47	05:42	05:04	05:14	06:02	06:56	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:19	22:03	22:03	21:15	20:04	18:51	16:45	16:13
11	08:48	08:03	07:00	06:45	05:40	05:03	05:16	06:03	06:58	07:52	07:52	08:41
	16:35	17:34	18:29	20:26	21:21	22:04	22:02	21:13	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:53	08:42
	16:37	17:36	18:31	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:55	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:55	08:43
	16:39	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:03	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:26	22:06	21:59	21:07	19:54	18:41	16:38	16:12
15	08:44	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:43	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:01	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16:12
17	08:42	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:31	22:07	21:55	21:01	19:47	18:34	16:33	16:12
18	08:41	07:49	06:43	06:28	05:28	05:02	05:24	06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:39	21:33	22:08	21:54	20:58	19:44	18:32	16:32	16:12
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:08	08:49
	16:51	17:52	18:46	20:43	21:36	22:08	21:52	20:54	19:39	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:24	05:02	05:29	06:21	07:16	08:11	08:10	08:49
	16:52	17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:13
22	08:37	07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:39	22:09	21:49	20:49	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:19	08:15	08:14	08:50
	16:56	17:58	18:51	20:49	21:41	22:09	21:47	20:47	19:32	18:21	16:25	16:14
24	08:34	07:35	06:29	06:15	05:19	05:03	05:33	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:50	21:42	22:09	21:46	20:45	19:30	18:18	16:24	16:15
25	08:32	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17	08:51
	17:00	18:02	18:55	20:52	21:44	22:09	21:44	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:51
	17:02	18:03	18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:22	08:21	08:52
	17:04	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	05:04	05:40	06:33	07:28	07:24	08:22	08:52
	17:06	18:07	19:00	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:26		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:01	21:51	22:08	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11		05:44	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:28		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:

Carrigeen Renewable Energy Development

Licensed user:

Jennings O'Donovan

Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** CX - H112

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:07	05:46	06:41	07:34	07:32	08:27
	16:23	17:14	18:10	20:08	21:04	21:54	22:08	21:33	20:26	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:10	05:07	05:48	06:43	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:14	20:12	21:07	21:56	22:08	21:29	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:52	06:46	07:40	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:28	20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	06:59	05:52	05:07	05:10	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	21:58	22:06	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:55	05:48	05:06	05:12	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:56	16:49	16:14
9	08:49	08:07	07:05	06:50	05:44	05:04	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51	16:45	16:13
11	08:48	08:03	07:01	06:45	05:40	05:04	05:16	06:04	06:59	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:13
12	08:47	08:01	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	22:00	21:10	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:03	05:20	06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00	07:59	08:45
	16:42	17:42	18:37	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:34	16:13
18	08:42	07:49	06:44	06:29	05:29	05:02	05:25	06:16	07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:42	21:35	22:08	21:53	20:57	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:28	06:20	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:37	22:09	21:52	20:54	19:40	18:28	16:30	16:13
21	08:38	07:42	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	05:02	05:31	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:14	08:51
	16:57	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:19	16:25	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	21:44	22:09	21:45	20:43	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:41	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:22	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	05:14	05:05	05:42	06:35	07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:34	19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	05:13	05:06	05:43	06:37	07:32	07:29	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:37	20:31	19:15	17:06	16:19	16:20
31	08:24		07:12		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** CY - H113

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February		March	April	May	June	July	August	September	October		November		December	
1	08:53	08:22		07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34		07:33		08:02 (1)	08:28	
	16:23	17:14		18:10	20:08	21:04	21:54	22:09	21:33	20:27	19:13		17:02	12	08:14 (1)	16:18	
2	08:52	08:20		07:22	07:07	05:58	05:09	05:07	05:48	06:43	07:36		07:35		08:04 (1)	08:29	
	16:24	17:16		18:12	20:10	21:06	21:55	22:08	21:31	20:24	19:10		17:00	9	08:13 (1)	16:17	
3	08:52	08:19		07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38		07:37		08:06 (1)	08:31	
	16:25	17:18		18:14	20:12	21:07	21:56	22:08	21:30	20:22	19:08		16:58	7	08:13 (1)	16:16	
4	08:52	08:17		07:17	07:02	05:54	05:08	05:09	05:52	06:46	07:40		07:38		08:08 (1)	08:32	
	16:26	17:20		18:16	20:14	21:09	21:57	22:07	21:28	20:19	19:05		16:56	3	08:11 (1)	16:16	
5	08:52	08:15		07:15	07:00	05:52	05:07	05:10	05:53	06:48	07:42		07:40			08:34	
	16:27	17:22		18:18	20:16	21:11	21:59	22:07	21:26	20:17	19:03		16:54			16:15	
6	08:51	08:13	08:40 (1)	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43		07:42			08:35	
	16:29	17:24	1 08:41 (1)	18:19	20:18	21:13	22:00	22:06	21:24	20:14	19:01		16:52			16:14	
7	08:51	08:11	08:38 (1)	07:10	06:55	05:48	05:06	05:12	05:57	06:52	07:45		07:44			08:36	
	16:30	17:26	4 08:42 (1)	18:21	20:19	21:15	22:01	22:06	21:22	20:12	18:58		16:50			16:14	
8	08:50	08:09	08:36 (1)	07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47		07:46			08:38	
	16:31	17:28	7 08:43 (1)	18:23	20:21	21:16	22:02	22:05	21:20	20:10	18:56		16:49			16:13	
9	08:50	08:08	08:34 (1)	07:06	06:50	05:44	05:04	05:14	06:00	06:55	07:49		07:48			08:39	
	16:33	17:30	10 08:44 (1)	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53		16:47			16:13	
10	08:49	08:06	08:32 (1)	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51		07:50			08:40	
	16:34	17:32	13 08:45 (1)	18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51		16:45			16:13	
11	08:48	08:04	08:30 (1)	07:01	06:45	05:40	05:03	05:16	06:04	06:59	07:53		07:52			08:41	
	16:36	17:34	15 08:45 (1)	18:29	20:27	21:22	22:04	22:02	21:14	20:02	18:49		16:43			16:13	
12	08:47	08:02	08:28 (1)	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54		07:54			08:42	
	16:37	17:36	18 08:46 (1)	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46		16:42			16:12	
13	08:47	08:00	08:26 (1)	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56		07:56			08:43	
	16:39	17:38	20 08:46 (1)	18:33	20:31	21:25	22:06	22:00	21:10	19:57	18:44		16:40			16:12	
14	08:46	07:58	08:24 (1)	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58		07:58			08:44	
	16:41	17:40	22 08:46 (1)	18:35	20:32	21:27	22:06	21:59	21:08	19:55	18:41		16:38			16:12	
15	08:45	07:55	08:21 (1)	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00		08:00			08:45	10:05 (2)
	16:42	17:42	24 08:45 (1)	18:37	20:34	21:29	22:07	21:58	21:05	19:52	18:39		16:37			16:12	4 10:09 (2)
16	08:44	07:53	08:19 (1)	06:49	06:33	05:32	05:02	05:22	06:12	07:07	08:02		08:02			08:46	10:04 (2)
	16:44	17:44	26 08:45 (1)	18:39	20:36	21:30	22:07	21:57	21:03	19:50	18:37		16:35			16:12	7 10:11 (2)
17	08:43	07:51	08:19 (1)	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04		08:03			08:47	10:04 (2)
	16:46	17:46	26 08:45 (1)	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:35		16:34			16:13	8 10:12 (2)
18	08:42	07:49	08:20 (1)	06:44	06:29	05:28	05:02	05:25	06:16	07:11	08:06		08:05			08:48	10:05 (2)
	16:47	17:48	25 08:45 (1)	18:42	20:40	21:34	22:08	21:55	20:59	19:45	18:32		16:32			16:13	8 10:13 (2)
19	08:41	07:47	08:21 (1)	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:08	08:57 (1)	08:07			08:49	10:04 (2)
	16:49	17:50	23 08:44 (1)	18:44	20:42	21:35	22:09	21:53	20:57	19:42	18:30	10 09:07 (1)	16:31			16:13	9 10:13 (2)
20	08:40	07:45	08:21 (1)	06:39	06:24	05:25	05:02	05:28	06:20	07:15	08:09	08:54 (1)	08:09			08:49	10:05 (2)
	16:51	17:52	21 08:42 (1)	18:46	20:44	21:37	22:09	21:52	20:54	19:40	18:28	16 09:10 (1)	16:30			16:13	10 10:15 (2)
21	08:38	07:43	08:23 (1)	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:52 (1)	08:11			08:50	10:04 (2)
	16:53	17:54	18 08:41 (1)	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	19 09:11 (1)	16:28			16:14	11 10:15 (2)
22	08:37	07:40	08:25 (1)	06:34	06:20	05:22	05:02	05:31	06:23	07:18	08:13	08:51 (1)	08:13			08:50	10:05 (2)
	16:55	17:56	14 08:39 (1)	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	22 09:13 (1)	16:27			16:14	11 10:16 (2)
23	08:36	07:38	08:28 (1)	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:50 (1)	08:14			08:51	10:05 (2)
	16:56	17:58	6 08:34 (1)	18:52	20:49	21:41	22:10	21:48	20:48	19:32	18:21	24 09:14 (1)	16:26			16:15	11 10:16 (2)
24	08:34	07:36		06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:49 (1)	08:16			08:51	10:07 (2)
	16:58	18:00		18:53	20:51	21:43	22:10	21:46	20:45	19:30	18:19	25 09:14 (1)	16:25			16:15	10 10:17 (2)
25	08:33	07:34		06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	07:48 (1)	08:18			08:52	10:07 (2)
	17:00	18:02		18:55	20:53	21:44	22:10	21:45	20:43	19:28	17:17	27 08:15 (1)	16:23			16:16	9 10:16 (2)
26	08:32	07:31		06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	07:49 (1)	08:20			08:52	10:08 (2)
	17:02	18:04		18:57	20:55	21:46	22:10	21:43	20:41	19:25	17:14	26 08:15 (1)	16:22			16:17	8 10:16 (2)
27	08:30	07:29		06:22	06:08	05:16	05:04	05:38	06:32	07:27	07:23	07:52 (1)	08:21			08:52	10:09 (2)
	17:04	18:06		18:59	20:56	21:47	22:10	21:42	20:38	19:23	17:12	24 08:16 (1)	16:21			16:17	7 10:16 (2)
28	08:29	07:27		06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	07:54 (1)	08:23			08:52	10:10 (2)
	17:06	18:08		19:01	20:58	21:49	22:09	21:40	20:36	19:20	17:10	22 08:16 (1)	16:20			16:18	6 10:16 (2)
29	08:27			07:17	06:04	05:14	05:05	05:42	06:36	07:31	07:27	07:56 (1)	08:25			08:53	
	17:08			20:03	21:00	21:50	22:09	21:38	20:34	19:18	17:08	20 08:16 (1)	16:19			16:19	
30	08:25			07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:29	07:58 (1)	08:26			08:53	
	17:10			20:05	21:02	21:51	22:09	21:37	20:31	19:15	17:06	17 08:15 (1)	16:18			16:20	
31	08:24			07:12		05:11		05:45	06:39		07:31	08:00 (1)				08:53	
	17:12			20:06		21:53		21:35	20:29		17:04	15 08:15 (1)				16:21	
Potential sun hours	250	273		367	420	494	510	512	460	382	328		259			233	
Total, worst case			293									267		31			119
Sun reduction			0.19									0.23		0.20			0.12
Oper. time red.			1.00									1.00		1.00			1.00
Wind dir. red.			0.61									0.61		0.61			0.61
Total reduction			0.12									0.14		0.12			0.07
Total, real			35									37		4			9

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** CZ - H114

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May		June		July		August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00		05:10		21:07 (7)	05:06	21:12 (7)	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:10	20:08	21:03		21:53	12	21:19 (7)	22:08	21	21:33 (7)	21:33	20:26	19:12	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58		05:09		21:07 (7)	05:07	21:12 (7)	05:48	06:42	07:36	07:34	08:29
	16:24	17:16	18:11	20:10	21:05		21:55	13	21:20 (7)	22:08	20	21:32 (7)	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56		05:09		21:07 (7)	05:08	21:12 (7)	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12	21:07		21:56	15	21:22 (7)	22:07	20	21:32 (7)	21:29	20:21	19:08	16:58	16:16
4	08:51	08:17	07:17	07:02	05:54		05:08		21:07 (7)	05:09	21:13 (7)	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14	21:09		21:57	15	21:22 (7)	22:07	19	21:32 (7)	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52		05:07		21:07 (7)	05:10	21:13 (7)	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11		21:58	16	21:23 (7)	22:06	18	21:31 (7)	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50		05:06		21:07 (7)	05:11	21:13 (7)	05:55	06:50	07:43	07:42	08:35
	16:28	17:24	18:19	20:17	21:13		21:59	17	21:24 (7)	22:06	17	21:30 (7)	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48		05:06		21:07 (7)	05:12	21:13 (7)	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14		22:00	18	21:25 (7)	22:05	16	21:29 (7)	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46		05:05		21:07 (7)	05:13	21:13 (7)	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16		22:01	19	21:26 (7)	22:04	16	21:29 (7)	21:20	20:09	18:55	16:49	16:13
9	08:49	08:07	07:05	06:50	05:44		05:04		21:07 (7)	05:14	21:14 (7)	06:00	06:55	07:49	07:48	08:38
	16:33	17:30	18:25	20:23	21:18		22:02	19	21:26 (7)	22:04	14	21:28 (7)	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42		05:04		21:08 (7)	05:15	21:14 (7)	06:02	06:57	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20		22:03	19	21:27 (7)	22:03	14	21:28 (7)	21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:00	06:45	05:40		05:03		21:07 (7)	05:16	21:14 (7)	06:04	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21		22:04	21	21:28 (7)	22:02	13	21:27 (7)	21:14	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:43	05:38		05:03		21:07 (7)	05:17	21:15 (7)	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23		22:04	22	21:29 (7)	22:01	12	21:27 (7)	21:12	19:59	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	05:37		05:03		21:08 (7)	05:18	21:16 (7)	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25		22:05	21	21:29 (7)	22:00	10	21:26 (7)	21:09	19:57	18:44	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35		05:02		21:08 (7)	05:19	21:16 (7)	06:09	07:04	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:27		22:06	22	21:30 (7)	21:59	9	21:25 (7)	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	05:33		05:02		21:09 (7)	05:21	21:17 (7)	06:11	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28		22:06	22	21:31 (7)	21:58	7	21:24 (7)	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32		05:02		21:09 (7)	05:22	21:17 (7)	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30		22:07	22	21:31 (7)	21:57	5	21:22 (7)	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30		05:02		21:09 (7)	05:23	21:17 (7)	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32		22:07	23	21:32 (7)	21:56	4	21:21 (7)	21:01	19:47	18:34	16:34	16:12
18	08:41	07:49	06:43	06:28	05:28		05:02		21:09 (7)	05:25	21:19 (7)	06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:40	21:33		22:08	23	21:32 (7)	21:54	2	21:21 (7)	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27		05:02		21:09 (7)	05:26		06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35		22:08	24	21:33 (7)	21:53		20:56	19:42	18:30	16:31	16:13
20	08:39	07:44	06:39	06:24	05:25		05:02		21:10 (7)	05:28		06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36		22:09	23	21:33 (7)	21:52		20:54	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:22	05:24		05:02		21:10 (7)	05:29		06:21	07:16	08:11	08:10	08:49
	16:53	17:54	18:48	20:45	21:38		22:09	23	21:33 (7)	21:50		20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22		05:02		21:10 (7)	05:30		06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:49	20:47	21:40		22:09	23	21:33 (7)	21:49		20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21		05:02		21:10 (7)	05:32		06:25	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41		22:09	24	21:34 (7)	21:48		20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20		05:03		21:10 (7)	05:33		06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43		22:09	23	21:33 (7)	21:46		20:45	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18	21:10 (7)	05:03		21:10 (7)	05:35		06:28	07:23	07:19	08:17	08:51
	17:00	18:02	18:55	20:52	21:44	1 21:11 (7)	22:09	23	21:33 (7)	21:45		20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	21:09 (7)	05:04		21:11 (7)	05:37		06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:45	3 21:12 (7)	22:09	23	21:34 (7)	21:43		20:40	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	21:09 (7)	05:04		21:11 (7)	05:38		06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	4 21:13 (7)	22:09	22	21:33 (7)	21:41		20:38	19:22	17:12	16:21	16:17
28	08:28	07:27	06:19	06:06	05:15	21:08 (7)	05:05		21:11 (7)	05:40		06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	7 21:15 (7)	22:09	22	21:33 (7)	21:40		20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	21:08 (7)	05:05		21:11 (7)	05:41		06:35	07:30	07:26	08:24	08:52
	17:08		20:03	21:00	21:50	8 21:16 (7)	22:09	22	21:33 (7)	21:38		20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	21:08 (7)	05:06		21:12 (7)	05:43		06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	9 21:17 (7)	22:09	21	21:33 (7)	21:36		20:31	19:15	17:06	16:18	16:20
31	08:23		07:12		05:11	21:07 (7)				05:45		06:39		07:30		08:52
	17:12		20:06		21:52	11 21:18 (7)				21:35		20:29		17:04		16:21
Potential sun hours	250	273	367	420	494		510			512		460	382	328	259	233
Total, worst case						43		612		237						
Sun reduction						0.31		0.26		0.22						
Oper. time red.						1.00		1.00		1.00						
Wind dir. red.						0.60		0.60		0.60						
Total reduction						0.19		0.16		0.13						
Total, real						8		95		32						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** DA - H115

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March		April	May	June	July	August	September		October		November	December
1	08:52	08:22	07:24		07:09	06:00	05:11	05:07	05:47	06:41		07:34	08:01 (2)	07:33	08:28
	16:23	17:14	18:10		20:08	21:04	21:54	22:09	21:33	20:27		19:13	8 08:09 (2)	17:02	16:18
2	08:52	08:20	07:22		07:07	05:58	05:10	05:07	05:48	06:43		07:36	08:02 (2)	07:35	08:29
	16:24	17:16	18:12		20:10	21:06	21:55	22:08	21:31	20:24		19:10	5 08:07 (2)	17:00	16:17
3	08:52	08:19	07:20		07:04	05:56	05:09	05:08	05:50	06:44		07:38	08:04 (2)	07:37	08:31
	16:25	17:18	18:14		20:12	21:07	21:56	22:08	21:30	20:22		19:08	1 08:05 (2)	16:58	16:16
4	08:52	08:17	07:17		07:02	05:54	05:08	05:09	05:52	06:46		07:40		07:38	08:32
	16:26	17:20	18:16		20:14	21:09	21:57	22:07	21:28	20:19		19:05		16:56	16:16
5	08:52	08:15	07:15		07:00	05:52	05:07	05:10	05:53	06:48		07:42		07:40	08:34
	16:27	17:22	18:18		20:16	21:11	21:58	22:07	21:26	20:17		19:03		16:54	16:15
6	08:51	08:13	07:13		06:57	05:50	05:06	05:11	05:55	06:50		07:43		07:42	08:35
	16:29	17:24	18:19		20:18	21:13	22:00	22:06	21:24	20:14		19:01		16:52	16:14
7	08:51	08:11	07:10		06:55	05:48	05:06	05:12	05:57	06:52		07:45		07:44	08:36
	16:30	17:26	18:21		20:19	21:15	22:01	22:06	21:22	20:12		18:58		16:51	16:14
8	08:50	08:09	07:08		06:52	05:46	05:05	05:13	05:58	06:53		07:47		07:46	08:38
	16:31	17:28	18:23		20:21	21:16	22:01	22:05	21:20	20:10		18:56		16:49	16:14
9	08:50	08:08	07:06		06:50	05:44	05:04	05:14	06:00	06:55		07:49		07:48	08:39
	16:33	17:30	18:25		20:23	21:18	22:02	22:04	21:18	20:07		18:53		16:47	16:13
10	08:49	08:06	07:03		06:48	05:42	05:04	05:15	06:02	06:57		07:51		07:50	08:40
	16:34	17:32	18:27		20:25	21:20	22:03	22:03	21:16	20:05		18:51		16:45	16:13
11	08:48	08:04	07:01	07:25 (2)	06:45	05:40	05:04	05:16	06:04	06:59		07:53		07:52	08:41
	16:36	17:34	18:29	3 07:28 (2)	20:27	21:22	22:04	22:02	21:14	20:02		18:49		16:43	16:13
12	08:47	08:02	06:58	07:22 (2)	06:43	05:39	05:03	05:17	06:05	07:00		07:54		07:54	08:42
	16:37	17:36	18:31	7 07:29 (2)	20:29	21:23	22:05	22:01	21:12	20:00		18:46		16:42	16:13
13	08:47	08:00	06:56	07:20 (2)	06:40	05:37	05:03	05:18	06:07	07:02		07:56		07:56	08:43
	16:39	17:38	18:33	10 07:30 (2)	20:31	21:25	22:06	22:00	21:10	19:57		18:44		16:40	16:12
14	08:46	07:58	06:53	07:17 (2)	06:38	05:35	05:03	05:20	06:09	07:04		07:58		07:58	08:44
	16:41	17:40	18:35	13 07:30 (2)	20:32	21:27	22:06	21:59	21:08	19:55		18:42		16:39	16:12
15	08:45	07:55	06:51	07:15 (2)	06:36	05:33	05:02	05:21	06:11	07:06		08:00		08:00	08:45
	16:42	17:42	18:37	16 07:31 (2)	20:34	21:29	22:07	21:58	21:05	19:52		18:39		16:37	16:12
16	08:44	07:53	06:49	07:13 (2)	06:33	05:32	05:02	05:22	06:13	07:07		08:02		08:02	08:46
	16:44	17:44	18:39	19 07:32 (2)	20:36	21:30	22:07	21:57	21:03	19:50		18:37		16:35	16:12
17	08:43	07:51	06:46	07:10 (2)	06:31	05:30	05:02	05:24	06:14	07:09	07:56 (2)	08:04		08:03	08:47
	16:46	17:46	18:40	21 07:31 (2)	20:38	21:32	22:08	21:56	21:01	19:47	12 08:08 (2)	18:35		16:34	16:13
18	08:42	07:49	06:44	07:08 (2)	06:29	05:29	05:02	05:25	06:16	07:11	07:52 (2)	08:06		08:05	08:48
	16:47	17:48	18:42	23 07:31 (2)	20:40	21:34	22:08	21:55	20:59	19:45	17 08:09 (2)	18:32		16:32	16:13
19	08:41	07:47	06:41	07:05 (2)	06:26	05:27	05:02	05:26	06:18	07:13	07:50 (2)	08:08		08:07	08:49
	16:49	17:50	18:44	25 07:30 (2)	20:42	21:35	22:09	21:53	20:57	19:42	21 08:11 (2)	18:30		16:31	16:13
20	08:40	07:45	06:39	07:03 (2)	06:24	05:25	05:02	05:28	06:20	07:15	07:49 (2)	08:09		08:09	08:49
	16:51	17:52	18:46	27 07:30 (2)	20:44	21:37	22:09	21:52	20:54	19:40	23 08:12 (2)	18:28		16:30	16:13
21	08:38	07:43	06:36	07:01 (2)	06:22	05:24	05:02	05:29	06:21	07:16	07:48 (2)	08:11		08:11	08:50
	16:53	17:54	18:48	28 07:29 (2)	20:45	21:38	22:09	21:51	20:52	19:37	25 08:13 (2)	18:25		16:28	16:14
22	08:37	07:40	06:34	07:02 (2)	06:20	05:23	05:02	05:31	06:23	07:18	07:46 (2)	08:13		08:13	08:50
	16:55	17:56	18:50	26 07:28 (2)	20:47	21:40	22:09	21:49	20:50	19:35	27 08:13 (2)	18:23		16:27	16:14
23	08:36	07:38	06:31	07:02 (2)	06:17	05:21	05:03	05:32	06:25	07:20	07:46 (2)	08:15		08:14	08:51
	16:57	17:58	18:52	24 07:26 (2)	20:49	21:41	22:10	21:48	20:48	19:32	27 08:13 (2)	18:21		16:26	16:15
24	08:34	07:36	06:29	07:04 (2)	06:15	05:20	05:03	05:34	06:27	07:22	07:48 (2)	08:17		08:16	08:51
	16:58	18:00	18:54	21 07:25 (2)	20:51	21:43	22:10	21:46	20:45	19:30	26 08:14 (2)	18:19		16:25	16:15
25	08:33	07:34	06:27	07:04 (2)	06:13	05:18	05:03	05:35	06:28	07:23	07:50 (2)	07:19		08:18	08:52
	17:00	18:02	18:55	18 07:22 (2)	20:53	21:44	22:10	21:45	20:43	19:28	24 08:14 (2)	17:17		16:23	16:16
26	08:32	07:31	06:24	07:07 (2)	06:11	05:17	05:04	05:37	06:30	07:25	07:52 (2)	07:21		08:20	08:52
	17:02	18:04	18:57	13 07:20 (2)	20:55	21:46	22:10	21:43	20:41	19:25	22 08:14 (2)	17:15		16:22	16:17
27	08:30	07:29	06:22		06:09	05:16	05:04	05:38	06:32	07:27	07:53 (2)	07:23		08:21	08:52
	17:04	18:06	18:59		20:56	21:47	22:10	21:42	20:38	19:23	19 08:12 (2)	17:12		16:21	16:18
28	08:29	07:27	06:19		06:06	05:15	05:05	05:40	06:34	07:29	07:55 (2)	07:25		08:23	08:52
	17:06	18:08	19:01		20:58	21:49	22:09	21:40	20:36	19:20	17 08:12 (2)	17:10		16:20	16:18
29	08:27		07:17		06:04	05:14	05:05	05:42	06:36	07:31	07:57 (2)	07:27		08:25	08:53
	17:08		20:03		21:00	21:50	22:09	21:38	20:34	19:18	14 08:11 (2)	17:08		16:19	16:19
30	08:25		07:14		06:02	05:13	05:06	05:43	06:37	07:32	07:59 (2)	07:29		08:26	08:53
	17:10		20:05		21:02	21:51	22:09	21:37	20:31	19:15	11 08:10 (2)	17:06		16:19	16:20
31	08:24		07:12			05:12		05:45	06:39			07:31			08:53
	17:12		20:07			21:53		21:35	20:29			17:04			16:21
Potential sun hours	250	273	367		420	494	510	512	460	382		328		259	233
Total, worst case				294							285		14		
Sun reduction				0.22							0.25		0.23		
Oper. time red.				1.00							1.00		1.00		
Wind dir. red.				0.64							0.64		0.64		
Total reduction				0.14							0.16		0.14		
Total, real				41							46		2		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** DB - H116

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	07:33 (2)	06:00	05:11	05:07	05:47	06:41	07:08 (2)	07:34	07:33	08:28
	16:23	17:14	18:10	20:08	4 07:37 (2)	21:04	21:54	22:09	21:33	20:27	27 07:35 (2)	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	07:31 (2)	05:58	05:10	05:07	05:48	06:43	07:10 (2)	07:36	07:35	08:29
	16:24	17:16	18:12	20:10	7 07:38 (2)	21:06	21:55	22:08	21:31	20:24	26 07:36 (2)	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04	07:28 (2)	05:56	05:09	05:08	05:50	06:44	07:12 (2)	07:38	07:37	08:31
	16:25	17:18	18:14	20:12	10 07:38 (2)	21:07	21:56	22:08	21:30	20:22	24 07:36 (2)	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	07:26 (2)	05:54	05:08	05:09	05:52	06:46	07:13 (2)	07:40	07:38	08:32
	16:26	17:20	18:16	20:14	13 07:39 (2)	21:09	21:57	22:07	21:28	20:19	22 07:35 (2)	19:05	16:56	16:16
5	08:51	08:15	07:15	07:00	07:23 (2)	05:52	05:07	05:10	05:53	06:48	07:15 (2)	07:42	07:40	08:34
	16:27	17:22	18:18	20:16	16 07:39 (2)	21:11	21:58	22:07	21:26	20:17	20 07:35 (2)	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	07:21 (2)	05:50	05:06	05:11	05:55	06:50	07:17 (2)	07:43	07:42	08:35
	16:29	17:24	18:19	20:18	18 07:39 (2)	21:13	22:00	22:06	21:24	20:14	18 07:35 (2)	19:01	16:52	16:14
7	08:51	08:11	07:10	06:55	07:19 (2)	05:48	05:06	05:12	05:57	06:52	07:18 (2)	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	20 07:39 (2)	21:15	22:01	22:06	21:22	20:12	16 07:34 (2)	18:58	16:51	16:14
8	08:50	08:09	07:08	06:52	07:16 (2)	05:46	05:05	05:13	05:59	06:53	07:20 (2)	07:47	07:46	08:38
	16:31	17:28	18:23	20:21	22 07:38 (2)	21:16	22:01	22:05	21:20	20:10	13 07:33 (2)	18:56	16:49	16:14
9	08:50	08:08	07:06	06:50	07:14 (2)	05:44	05:05	05:14	06:00	06:55	07:22 (2)	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	24 07:38 (2)	21:18	22:02	22:04	21:18	20:07	11 07:33 (2)	18:53	16:47	16:13
10	08:49	08:06	07:03	06:48	07:11 (2)	05:42	05:04	05:15	06:02	06:57	07:24 (2)	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	26 07:37 (2)	21:20	22:03	22:03	21:16	20:05	8 07:32 (2)	18:51	16:45	16:13
11	08:48	08:04	07:01	06:45	07:09 (2)	05:40	05:04	05:16	06:04	06:59	07:25 (2)	07:53	07:52	08:41
	16:36	17:34	18:29	20:27	27 07:36 (2)	21:22	22:04	22:02	21:14	20:02	5 07:30 (2)	18:49	16:43	16:13
12	08:47	08:02	06:58	06:43	07:10 (2)	05:39	05:03	05:17	06:05	07:00	07:27 (2)	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	25 07:35 (2)	21:23	22:05	22:01	21:12	20:00	1 07:28 (2)	18:46	16:42	16:13
13	08:47	08:00	06:56	06:40	07:11 (2)	05:37	05:03	05:18	06:07	07:02		07:56	07:56	08:43
	16:39	17:38	18:33	20:31	23 07:34 (2)	21:25	22:06	22:00	21:10	19:57		18:44	16:40	16:12
14	08:46	07:58	06:53	06:38	07:11 (2)	05:35	05:03	05:20	06:09	07:04		07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21 07:32 (2)	21:27	22:06	21:59	21:08	19:55		18:42	16:39	16:12
15	08:45	07:55	06:51	06:36	07:13 (2)	05:33	05:02	05:21	06:11	07:06		08:00	08:00	08:45
	16:42	17:42	18:37	20:34	17 07:30 (2)	21:29	22:07	21:58	21:05	19:52		18:39	16:37	16:12
16	08:44	07:53	06:49	06:33	07:15 (2)	05:32	05:02	05:22	06:13	07:07		08:02	08:02	08:46
	16:44	17:44	18:39	20:36	13 07:28 (2)	21:30	22:07	21:57	21:03	19:50		18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	07:18 (2)	05:30	05:02	05:24	06:14	07:09		08:04	08:03	08:47
	16:46	17:46	18:40	20:38	5 07:23 (2)	21:32	22:08	21:56	21:01	19:47		18:35	16:34	16:13
18	08:42	07:49	06:44	06:29		05:29	05:02	05:25	06:16	07:11		08:06	08:05	08:48
	16:48	17:48	18:42	20:40		21:34	22:08	21:55	20:59	19:45		18:32	16:32	16:13
19	08:41	07:47	06:41	06:26		05:27	05:02	05:26	06:18	07:13		08:08	08:07	08:49
	16:49	17:50	18:44	20:42		21:35	22:09	21:53	20:57	19:42		18:30	16:31	16:13
20	08:40	07:45	06:39	06:24		05:25	05:02	05:28	06:20	07:15		08:09	08:09	08:49
	16:51	17:52	18:46	20:44		21:37	22:09	21:52	20:54	19:40		18:28	16:30	16:13
21	08:38	07:43	06:36	06:22		05:24	05:02	05:29	06:21	07:16		08:11	08:11	08:50
	16:53	17:54	18:48	20:45		21:38	22:09	21:51	20:52	19:37		18:25	16:28	16:14
22	08:37	07:40	06:34	06:20		05:23	05:02	05:31	06:23	07:18		08:13	08:13	08:50
	16:55	17:56	18:50	20:47		21:40	22:09	21:49	20:50	19:35		18:23	16:27	16:14
23	08:36	07:38	06:31	06:17		05:21	05:03	05:32	06:25	07:20		08:15	08:14	08:51
	16:57	17:58	18:52	20:49		21:41	22:10	21:48	20:48	19:32		18:21	16:26	16:15
24	08:34	07:36	06:29	06:15		05:20	05:03	05:34	06:27	07:22		08:17	08:16	08:51
	16:58	18:00	18:54	20:51		21:43	22:10	21:46	20:45	19:30		18:19	16:25	16:15
25	08:33	07:34	06:27	06:13		05:18	05:03	05:35	06:29	07:23		07:19	08:18	08:52
	17:00	18:02	18:55	20:53		21:44	22:10	21:45	20:43	19:28		17:17	16:23	16:16
26	08:32	07:31	06:24	06:11		05:17	05:04	05:37	06:30	07:20 (2)	07:25		07:21	08:20	08:52
	17:02	18:04	18:57	20:55		21:46	22:10	21:43	20:41	6 07:26 (2)	19:25		17:15	16:22	16:17
27	08:30	07:29	06:22	06:09		05:16	05:04	05:38	06:32	07:16 (2)	07:27		07:23	08:21	08:52
	17:04	18:06	18:59	20:56		21:47	22:10	21:42	20:38	14 07:30 (2)	19:23		17:12	16:21	16:18
28	08:29	07:27	06:19	06:06		05:15	05:05	05:40	06:34	07:14 (2)	07:29		07:25	08:23	08:52
	17:06	18:08	19:01	20:58		21:49	22:09	21:40	20:36	18 07:32 (2)	19:20		17:10	16:20	16:18
29	08:27		07:17	06:04		05:14	05:05	05:42	06:36	07:12 (2)	07:31		07:27	08:25	08:52
	17:08		20:03	21:00		21:50	22:09	21:38	20:34	21 07:33 (2)	19:18		17:08	16:19	16:19
30	08:25		07:14	06:02		05:13	05:06	05:43	06:37	07:11 (2)	07:32		07:29	08:26	08:53
	17:10		20:05	21:02		21:51	22:09	21:37	20:31	23 07:34 (2)	19:15		17:06	16:19	16:20
31	08:24		07:12	07:35 (2)		05:12		05:45	06:39	07:10 (2)			07:31		08:53
	17:12		20:07	1 07:36 (2)		21:53		21:35	20:29	25 07:35 (2)			17:04		16:21
Potential sun hours	250	273	367	420		494	510	512	460		382		328	259	233
Total, worst case			1	291					107		191				
Sun reduction			0.22	0.31					0.26		0.25				
Oper. time red.			1.00	1.00					1.00		1.00				
Wind dir. red.			0.64	0.64					0.64		0.64				
Total reduction			0.14	0.20					0.17		0.16				
Total, real			0	58					18		31				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** DC - H117

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March	April	May	June	July	August	September	October		November		December
1	08:52		08:22		16:32 (10)	07:24	07:09	05:59	05:10	05:06	05:46	06:40	07:34		07:32		16:07 (10)	08:27
	16:22		17:13	10	16:42 (10)	18:09	20:08	21:03	21:53	22:08	21:33	20:26	19:12		17:02	18	16:25 (10)	16:17
2	08:52		08:20		16:32 (10)	07:22	07:06	05:57	05:09	05:07	05:48	06:42	07:36		07:34		16:05 (10)	08:29
	16:23		17:15	12	16:44 (10)	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10		17:00	21	16:26 (10)	16:16
3	08:52		08:18		16:32 (10)	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:37		07:36		16:04 (10)	08:30
	16:24		17:17	14	16:46 (10)	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07		16:58	22	16:26 (10)	16:16
4	08:51		08:16		16:32 (10)	07:17	07:01	05:53	05:07	05:08	05:51	06:46	07:39		07:38		16:03 (10)	08:32
	16:26		17:19	16	16:48 (10)	18:15	20:13	21:09	21:57	22:07	21:27	20:19	19:05		16:56	21	16:24 (10)	16:15
5	08:51		08:15		16:32 (10)	07:15	06:59	05:51	05:07	05:09	05:53	06:47	07:41		07:40		16:03 (10)	08:33
	16:27		17:21	18	16:50 (10)	18:17	20:15	21:11	21:58	22:06	21:25	20:16	19:02		16:54	19	16:22 (10)	16:14
6	08:51		08:13		16:33 (10)	07:12	06:57	05:49	05:06	05:10	05:54	06:49	07:43		07:42		16:02 (10)	08:35
	16:28		17:23	19	16:52 (10)	18:19	20:17	21:12	21:59	22:06	21:23	20:14	19:00		16:52	18	16:20 (10)	16:14
7	08:50		08:11		16:34 (10)	07:10	06:54	05:47	05:05	05:11	05:56	06:51	07:45		07:44		16:02 (10)	08:36
	16:29		17:25	21	16:55 (10)	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58		16:50	16	16:18 (10)	16:13
8	08:50		08:09		16:35 (10)	07:07	06:52	05:46	05:04	05:12	05:58	06:53	07:47		07:46		16:02 (10)	08:37
	16:31		17:27	22	16:57 (10)	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55		16:48	14	16:16 (10)	16:13
9	08:49		08:07		16:36 (10)	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48		07:48		16:02 (10)	08:38
	16:32		17:29	20	16:56 (10)	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53		16:46	12	16:14 (10)	16:13
10	08:48		08:05		16:37 (10)	07:03	06:47	05:42	05:03	05:14	06:01	06:56	07:50		07:50		16:02 (10)	08:40
	16:34		17:31	18	16:55 (10)	18:27	20:25	21:20	22:03	22:03	21:15	20:04	18:50		16:45	10	16:12 (10)	16:12
11	08:48		08:03		16:39 (10)	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52		07:52		16:03 (10)	08:41
	16:35		17:33	14	16:53 (10)	18:29	20:26	21:21	22:04	22:02	21:13	20:02	18:48		16:43	7	16:10 (10)	16:12
12	08:47		08:01		16:42 (10)	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54		07:53		16:03 (10)	08:42
	16:37		17:36	7	16:49 (10)	18:30	20:28	21:23	22:04	22:01	21:11	19:59	18:46		16:41	6	16:09 (10)	16:12
13	08:46		07:59			06:55	06:40	05:36	05:02	05:18	06:07	07:02	07:56		07:55		16:03 (10)	08:43
	16:38		17:38			18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43		16:40	4	16:07 (10)	16:12
14	08:45		07:57			06:53	06:37	05:35	05:02	05:19	06:08	07:03	07:58		07:57		16:04 (10)	08:44
	16:40		17:40			18:34	20:32	21:26	22:06	21:59	21:07	19:54	18:41		16:38	1	16:05 (10)	16:12
15	08:44		07:55			06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00		07:59			08:45
	16:42		17:42			18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39		16:36			16:12
16	08:43		07:53			06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:01		08:01			08:46
	16:43		17:44			18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36		16:35			16:12
17	08:42		07:51			06:46	06:30	05:30	05:01	05:23	06:14	07:09	08:03		08:03			08:47
	16:45		17:46			18:40	20:38	21:31	22:07	21:56	21:01	19:47	18:34		16:33			16:12
18	08:41		07:49			06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05		08:05			08:47
	16:47		17:48			18:42	20:39	21:33	22:08	21:54	20:58	19:44	18:32		16:32			16:12
19	08:40		07:46			06:41	06:26	05:26	05:01	05:26	06:17	07:12	08:07		08:07			08:48
	16:49		17:50			18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:29		16:30			16:13
20	08:39		07:44			06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09		08:08			08:49
	16:50		17:52			18:46	20:43	21:36	22:09	21:52	20:54	19:39	18:27		16:29			16:13
21	08:38		07:42			06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11		08:10			08:49
	16:52		17:54			18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25		16:28			16:13
22	08:37		07:40			06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13		08:12			08:50
	16:54		17:56			18:49	20:47	21:39	22:09	21:49	20:49	19:34	18:23		16:26			16:14
23	08:35		07:38			06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15		08:14			08:50
	16:56		17:57			18:51	20:49	21:41	22:09	21:47	20:47	19:32	18:21		16:25			16:14
24	08:34		07:35			06:28	06:15	05:19	05:02	05:33	06:26	07:21	08:17		08:16			08:51
	16:58		17:59			18:53	20:50	21:42	22:09	21:46	20:45	19:30	18:18		16:24			16:15
25	08:33		07:33			06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19		08:17			08:51
	17:00		18:01			18:55	20:52	21:44	22:09	21:44	20:43	19:27	17:16		16:23			16:16
26	08:31		07:31			06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21		08:19			08:52
	17:02		18:03			18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14		16:22			16:16
27	08:30		07:29			06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:22		08:21			08:52
	17:04		18:05			18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12		16:21			16:17
28	08:28	16:32 (10)	07:26			06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24		08:22			08:52
	17:06	1 16:33 (10)	18:07			19:00	20:58	21:48	22:09	21:40	20:36	19:20	17:10		16:20			16:18
29	08:27	16:31 (10)				07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26		08:24			08:52
	17:08	4 16:35 (10)				20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08		16:19			16:19
30	08:25	16:31 (10)				07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	16:10 (10)	08:26			08:52
	17:09	6 16:37 (10)				20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	10 16:20 (10)	16:18			16:20
31	08:23	16:31 (10)				07:11		05:11		05:44	06:39		07:30	16:08 (10)				08:52
	17:11	8 16:39 (10)				20:06		21:52		21:35	20:28		17:04	14 16:22 (10)				16:21
Potential sun hours	250		273			367	420	494	510	513	460	382	328		259			233
Total, worst case		19		191										24		189		
Sun reduction		0.16		0.19										0.23		0.20		
Oper. time red.		1.00		1.00										1.00		1.00		
Wind dir. red.		0.64		0.64										0.64		0.64		
Total reduction		0.10		0.12										0.14		0.13		
Total, real		2		24										3		24		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** DD - H118

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February		March	April	May	June	July	August	September	October		November		December
1	08:52	08:22		16:40 (10)	07:24	07:09	05:59	05:10	05:06	05:46	06:40	07:34		07:32	16:11 (10)	08:27
	16:22	17:13	2	16:42 (10)	18:09	20:08	21:03	21:53	22:08	21:33	20:26	19:12		17:02	20 16:31 (10)	16:17
2	08:52	08:20		16:40 (10)	07:22	07:06	05:57	05:09	05:07	05:48	06:42	07:36		07:34	16:11 (10)	08:29
	16:23	17:15	4	16:44 (10)	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10		17:00	18 16:29 (10)	16:16
3	08:52	08:18		16:40 (10)	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:37		07:36	16:10 (10)	08:30
	16:24	17:17	6	16:46 (10)	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07		16:58	16 16:26 (10)	16:16
4	08:51	08:16		16:40 (10)	07:17	07:01	05:53	05:07	05:08	05:51	06:46	07:39		07:38	16:10 (10)	08:32
	16:26	17:19	8	16:48 (10)	18:15	20:13	21:09	21:57	22:07	21:27	20:19	19:05		16:56	14 16:24 (10)	16:15
5	08:51	08:15		16:40 (10)	07:15	06:59	05:51	05:07	05:09	05:53	06:47	07:41		07:40	16:09 (10)	08:33
	16:27	17:21	10	16:50 (10)	18:17	20:15	21:11	21:58	22:06	21:25	20:16	19:02		16:54	13 16:22 (10)	16:14
6	08:51	08:13		16:40 (10)	07:12	06:57	05:49	05:06	05:10	05:54	06:49	07:43		07:42	16:09 (10)	08:35
	16:28	17:23	12	16:52 (10)	18:19	20:17	21:12	21:59	22:06	21:23	20:14	19:00		16:52	11 16:20 (10)	16:14
7	08:50	08:11		16:40 (10)	07:10	06:54	05:47	05:05	05:11	05:56	06:51	07:45		07:44	16:09 (10)	08:36
	16:29	17:25	15	16:55 (10)	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58		16:50	9 16:18 (10)	16:13
8	08:50	08:09		16:40 (10)	07:07	06:52	05:46	05:04	05:12	05:58	06:53	07:47		07:46	16:10 (10)	08:37
	16:31	17:27	17	16:57 (10)	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55		16:48	6 16:16 (10)	16:13
9	08:49	08:07		16:41 (10)	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48		07:48	16:11 (10)	08:38
	16:32	17:29	18	16:59 (10)	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53		16:46	3 16:14 (10)	16:13
10	08:48	08:05		16:42 (10)	07:03	06:47	05:42	05:03	05:14	06:01	06:56	07:50		07:50	16:11 (10)	08:40
	16:34	17:31	20	17:02 (10)	18:27	20:25	21:20	22:03	22:03	21:15	20:04	18:50		16:45	1 16:12 (10)	16:12
11	08:48	08:03		16:43 (10)	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52		07:52		08:41
	16:35	17:33	21	17:04 (10)	18:29	20:26	21:21	22:04	22:02	21:13	20:02	18:48		16:43		16:12
12	08:47	08:01		16:43 (10)	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54		07:53		08:42
	16:37	17:36	20	17:03 (10)	18:30	20:28	21:23	22:04	22:01	21:11	19:59	18:46		16:41		16:12
13	08:46	07:59		16:45 (10)	06:55	06:40	05:36	05:02	05:18	06:07	07:02	07:56		07:55		08:43
	16:38	17:38	17	17:02 (10)	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43		16:40		16:12
14	08:45	07:57		16:47 (10)	06:53	06:37	05:35	05:02	05:19	06:08	07:03	07:58		07:57		08:44
	16:40	17:40	13	17:00 (10)	18:34	20:32	21:26	22:06	21:59	21:07	19:54	18:41		16:38		16:12
15	08:44	07:55		16:50 (10)	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00		07:59		08:45
	16:42	17:42	7	16:57 (10)	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39		16:36		16:12
16	08:43	07:53			06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:01		08:01		08:46
	16:43	17:44			18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36		16:35		16:12
17	08:42	07:51			06:46	06:30	05:30	05:01	05:23	06:14	07:09	08:03		08:03		08:47
	16:45	17:46			18:40	20:38	21:31	22:07	21:56	21:01	19:47	18:34		16:33		16:12
18	08:41	07:49			06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05		08:05		08:47
	16:47	17:48			18:42	20:39	21:33	22:08	21:54	20:58	19:44	18:32		16:32		16:12
19	08:40	07:46			06:41	06:26	05:26	05:01	05:26	06:17	07:12	08:07		08:07		08:48
	16:49	17:50			18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:29		16:30		16:13
20	08:39	07:44			06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09		08:08		08:49
	16:50	17:52			18:46	20:43	21:36	22:09	21:52	20:54	19:39	18:27		16:29		16:13
21	08:38	07:42			06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11		08:10		08:49
	16:52	17:54			18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25		16:28		16:13
22	08:37	07:40			06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13		08:12		08:50
	16:54	17:56			18:49	20:47	21:39	22:09	21:49	20:49	19:34	18:23		16:26		16:14
23	08:35	07:38			06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15		08:14		08:50
	16:56	17:57			18:51	20:49	21:41	22:09	21:47	20:47	19:32	18:21		16:25		16:14
24	08:34	07:35			06:28	06:15	05:19	05:02	05:33	06:26	07:21	08:17		08:16		08:51
	16:58	17:59			18:53	20:50	21:42	22:09	21:46	20:45	19:29	18:18		16:24		16:15
25	08:33	07:33			06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19		08:17		08:51
	17:00	18:01			18:55	20:52	21:44	22:09	21:44	20:43	19:27	17:16		16:23		16:16
26	08:31	07:31			06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21		08:19		08:52
	17:02	18:03			18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14		16:22		16:16
27	08:30	07:29			06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:22	16:19 (10)	08:21		08:52
	17:04	18:05			18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	9 16:28 (10)	16:21		08:17
28	08:28	07:26			06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24	16:16 (10)	08:22		08:52
	17:06	18:07			19:00	20:58	21:48	22:09	21:40	20:36	19:20	17:10	14 16:30 (10)	16:20		16:18
29	08:27				07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	16:14 (10)	08:24		08:52
	17:08				20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	18 16:32 (10)	16:19		16:19
30	08:25				07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	16:12 (10)	08:26		08:52
	17:09				20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	21 16:33 (10)	16:18		16:20
31	08:23				07:11		05:11		05:44	06:39		07:30	16:11 (10)			08:52
	17:11				20:06		21:52		21:35	20:28		17:04	21 16:32 (10)			16:21
Potential sun hours	250	273		367	420	494	510	512	460	382	328		259		233
Total, worst case			190									83		111	
Sun reduction			0.19									0.23		0.20	
Oper. time red.			1.00									1.00		1.00	
Wind dir. red.			0.64									0.64		0.64	
Total reduction			0.12									0.14		0.13	
Total, real			24									12		14	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** DE - H119

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February	March	April	May	June	July	August	September	October	November			December		
1	08:52	15:04 (9)	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:40	07:34	07:32			08:27		15:38 (8)
	16:22	4 15:08 (9)	17:13	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02			16:17	3	15:41 (8)
2	08:52		08:20	07:22	07:06	05:57	05:09	05:07	05:48	06:42	07:36	07:34			08:29		15:39 (8)
	16:23		17:15	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00			16:16	1	15:40 (8)
3	08:52		08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:37	07:36			08:30		
	16:24		17:17	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58			16:16		
4	08:51		08:16	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38			08:32		
	16:26		17:19	18:15	20:13	21:09	21:57	22:07	21:27	20:19	19:05	16:56			16:15		
5	08:51		08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40			08:33		
	16:27		17:21	18:17	20:15	21:11	21:58	22:06	21:25	20:16	19:03	16:54			16:14		
6	08:51		08:13	07:12	06:57	05:49	05:06	05:10	05:55	06:49	07:43	07:42			08:35		
	16:28		17:23	18:19	20:17	21:12	21:59	22:06	21:24	20:14	19:00	16:52			16:14		
7	08:50		08:11	07:10	06:54	05:47	05:05	05:11	05:56	06:51	07:45	07:44			08:36		
	16:30		17:25	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50			16:13		
8	08:50		08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46			08:37		
	16:31		17:27	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48			16:13		
9	08:49		08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48			08:39		
	16:32		17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46			16:13		
10	08:49	15:56 (8)	08:05	07:03	06:47	05:42	05:03	05:14	06:01	06:56	07:50	07:50			08:40		
	16:34	1 15:57 (8)	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:50	16:45			16:12		
11	08:48	15:56 (8)	08:03	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52			08:41		14:55 (9)
	16:35	3 15:59 (8)	17:34	18:29	20:26	21:21	22:04	22:02	21:14	20:02	18:48	16:43			16:12	3	14:58 (9)
12	08:47	15:56 (8)	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54			08:42		14:54 (9)
	16:37	5 16:01 (8)	17:36	18:31	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41			16:12	7	15:01 (9)
13	08:46	15:57 (8)	07:59	06:55	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:55			08:43		14:53 (9)
	16:39	5 16:02 (8)	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40			16:12	9	15:02 (9)
14	08:45	15:57 (8)	07:57	06:53	06:38	05:35	05:02	05:19	06:08	07:03	07:58	07:57		15:42 (8)	08:44		14:53 (9)
	16:40	7 16:04 (8)	17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38	6	15:48 (8)	16:12	10	15:03 (9)
15	08:45	15:57 (8)	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59		15:39 (8)	08:45		14:53 (9)
	16:42	9 16:06 (8)	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36	11	15:50 (8)	16:12	11	15:04 (9)
16	08:44	15:58 (8)	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01		15:38 (8)	08:46		14:53 (9)
	16:43	10 16:08 (8)	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	14	15:52 (8)	16:12	12	15:05 (9)
17	08:43	15:57 (8)	07:51	06:46	06:31	05:30	05:01	05:23	06:14	07:09	08:03	08:03		15:37 (8)	08:47		14:53 (9)
	16:45	12 16:09 (8)	17:46	18:40	20:38	21:32	22:07	21:56	21:01	19:47	18:34	16:33	16	15:53 (8)	16:12	13	15:06 (9)
18	08:41	15:58 (8)	07:49	06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05	08:05		15:36 (8)	08:47		14:52 (9)
	16:47	14 16:12 (8)	17:48	18:42	20:39	21:33	22:08	21:54	20:59	19:44	18:32	16:32	18	15:54 (8)	16:12	14	15:06 (9)
19	08:40	15:59 (8)	07:47	06:41	06:26	05:26	05:01	05:26	06:17	07:12	08:07	08:07		15:36 (8)	08:48		14:53 (9)
	16:49	15 16:14 (8)	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	20	15:56 (8)	16:13	14	15:07 (9)
20	08:39	15:59 (8)	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09		15:36 (8)	08:49		14:54 (9)
	16:51	16 16:15 (8)	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:39	18:27	16:29	19	15:55 (8)	16:13	14	15:08 (9)
21	08:38	16:00 (8)	07:42	06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11	08:10		15:36 (8)	08:49		14:53 (9)
	16:52	18 16:18 (8)	17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	18	15:54 (8)	16:13	15	15:08 (9)
22	08:37	16:01 (8)	07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12		15:36 (8)	08:50		14:54 (9)
	16:54	19 16:20 (8)	17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	17	15:53 (8)	16:14	15	15:09 (9)
23	08:35	16:01 (8)	07:38	06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15	08:14		15:35 (8)	08:51		14:54 (9)
	16:56	20 16:21 (8)	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	15	15:50 (8)	16:14	15	15:09 (9)
24	08:34	16:02 (8)	07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16		15:35 (8)	08:51		14:55 (9)
	16:58	18 16:20 (8)	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24	14	15:49 (8)	16:15	14	15:09 (9)
25	08:33	16:04 (8)	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17		15:36 (8)	08:51		14:56 (9)
	17:00	16 16:20 (8)	18:01	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	12	15:48 (8)	16:16	14	15:10 (9)
26	08:31	16:05 (8)	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19		15:36 (8)	08:52		14:57 (9)
	17:02	14 16:19 (8)	18:03	18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	16:22	10	15:46 (8)	16:16	13	15:10 (9)
27	08:30	16:08 (8)	07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21		15:36 (8)	08:52		14:57 (9)
	17:04	10 16:18 (8)	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	9	15:45 (8)	16:17	13	15:10 (9)
28	08:28	16:10 (8)	07:26	06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24	08:23		15:37 (8)	08:52		14:58 (9)
	17:06	5 16:15 (8)	18:07	19:00	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	7	15:44 (8)	16:18	12	15:10 (9)
29	08:27			07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24		15:38 (8)	08:52		14:59 (9)
	17:08			20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	6	15:44 (8)	16:19	11	15:10 (9)
30	08:25			07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26		15:38 (8)	08:52		15:00 (9)
	17:10			20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	4	15:42 (8)	16:20	10	15:10 (9)
31	08:23			07:11		05:11		05:44	06:39		07:30				08:52		15:02 (9)
	17:11			20:06		21:52		21:35	20:29		17:04				16:21	8	15:10 (9)
Potential sun hours	250		273	367	420	494	510	513	460	382	328	259			233		
Total, worst case		221											216			251	
Sun reduction		0.16											0.20			0.12	
Oper. time red.		1.00											1.00			1.00	
Wind dir. red.		0.65											0.65			0.65	
Total reduction		0.11											0.13			0.08	
Total, real		23											28			19	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** DF - H120

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March		April	May	June	July	August	September		October		November	December
1	08:52	08:22	07:24		07:09	06:00	05:11	05:07	05:47	06:41		07:34		08:01 (2)	07:33	08:28
	16:23	17:14	18:10		20:08	21:04	21:54	22:09	21:33	20:27		19:13	15	08:16 (2)	17:02	16:18
2	08:52	08:20	07:22		07:07	05:58	05:10	05:07	05:48	06:43		07:36		08:02 (2)	07:35	08:29
	16:24	17:16	18:12		20:10	21:06	21:55	22:08	21:31	20:24		19:10	12	08:14 (2)	17:00	16:17
3	08:52	08:19	07:20		07:04	05:56	05:09	05:08	05:50	06:44		07:38		08:04 (2)	07:37	08:31
	16:25	17:18	18:14		20:12	21:07	21:56	22:08	21:30	20:22		19:08	9	08:13 (2)	16:58	16:16
4	08:52	08:17	07:17		07:02	05:54	05:08	05:09	05:52	06:46		07:40		08:06 (2)	07:38	08:32
	16:26	17:20	18:16		20:14	21:09	21:57	22:07	21:28	20:19		19:05	6	08:12 (2)	16:56	16:16
5	08:52	08:15	07:15		07:00	05:52	05:07	05:10	05:53	06:48		07:42		08:08 (2)	07:40	08:34
	16:27	17:22	18:18		20:16	21:11	21:58	22:07	21:26	20:17		19:03	2	08:10 (2)	16:54	16:15
6	08:51	08:13	07:13		06:57	05:50	05:06	05:11	05:55	06:50		07:43			07:42	08:35
	16:29	17:24	18:19		20:18	21:13	22:00	22:06	21:24	20:14		19:01			16:52	16:14
7	08:51	08:11	07:10		06:55	05:48	05:06	05:12	05:57	06:52		07:45			07:44	08:36
	16:30	17:26	18:21		20:19	21:15	22:01	22:06	21:22	20:12		18:58			16:51	16:14
8	08:50	08:09	07:08		06:52	05:46	05:05	05:13	05:58	06:53		07:47			07:46	08:38
	16:31	17:28	18:23		20:21	21:16	22:01	22:05	21:20	20:10		18:56			16:49	16:14
9	08:50	08:08	07:06	07:30 (2)	06:50	05:44	05:04	05:14	06:00	06:55		07:49			07:48	08:39
	16:33	17:30	18:25	4 07:34 (2)	20:23	21:18	22:02	22:04	21:18	20:07		18:53			16:47	16:13
10	08:49	08:06	07:03	07:27 (2)	06:48	05:42	05:04	05:15	06:02	06:57		07:51			07:50	08:40
	16:34	17:32	18:27	8 07:35 (2)	20:25	21:20	22:03	22:03	21:16	20:05		18:51			16:45	16:13
11	08:48	08:04	07:01	07:25 (2)	06:45	05:40	05:04	05:16	06:04	06:59		07:53			07:52	08:41
	16:36	17:34	18:29	11 07:36 (2)	20:27	21:22	22:04	22:02	21:14	20:02		18:49			16:43	16:13
12	08:47	08:02	06:58	07:22 (2)	06:43	05:39	05:03	05:17	06:05	07:00		07:54			07:54	08:42
	16:37	17:36	18:31	14 07:36 (2)	20:29	21:23	22:05	22:01	21:12	20:00		18:46			16:42	16:13
13	08:47	08:00	06:56	07:20 (2)	06:40	05:37	05:03	05:18	06:07	07:02		07:56			07:56	08:43
	16:39	17:38	18:33	16 07:36 (2)	20:31	21:25	22:06	22:00	21:10	19:57		18:44			16:40	16:12
14	08:46	07:58	06:53	07:17 (2)	06:38	05:35	05:03	05:20	06:09	07:04		07:58			07:58	08:44
	16:41	17:40	18:35	19 07:36 (2)	20:32	21:27	22:06	21:59	21:08	19:55		18:42			16:39	16:12
15	08:45	07:55	06:51	07:15 (2)	06:36	05:33	05:02	05:21	06:11	07:06		08:00			08:00	08:45
	16:42	17:42	18:37	21 07:36 (2)	20:34	21:29	22:07	21:58	21:05	19:52		18:39			16:37	16:12
16	08:44	07:53	06:49	07:13 (2)	06:33	05:32	05:02	05:22	06:13	07:07		08:02			08:02	08:46
	16:44	17:44	18:39	23 07:36 (2)	20:36	21:30	22:07	21:57	21:03	19:50		18:37			16:35	16:12
17	08:43	07:51	06:46	07:10 (2)	06:31	05:30	05:02	05:24	06:14	07:09		08:04			08:03	08:47
	16:46	17:46	18:40	25 07:35 (2)	20:38	21:32	22:08	21:56	21:01	19:47		18:35			16:34	16:13
18	08:42	07:49	06:44	07:08 (2)	06:29	05:29	05:02	05:25	06:16	07:11		08:06			08:05	08:48
	16:47	17:48	18:42	27 07:35 (2)	20:40	21:34	22:08	21:55	20:59	19:45		18:32			16:32	16:13
19	08:41	07:47	06:41	07:08 (2)	06:26	05:27	05:02	05:26	06:18	07:13		08:08			08:07	08:49
	16:49	17:50	18:44	25 07:33 (2)	20:42	21:35	22:09	21:53	20:57	19:42		18:30			16:31	16:13
20	08:40	07:45	06:39	07:09 (2)	06:24	05:25	05:02	05:28	06:20	07:15	08:00 (2)	08:10			08:09	08:49
	16:51	17:52	18:46	23 07:32 (2)	20:44	21:37	22:09	21:52	20:54	19:40	11 08:11 (2)	18:28			16:30	16:13
21	08:38	07:43	06:36	07:09 (2)	06:22	05:24	05:02	05:29	06:21	07:16	07:57 (2)	08:11			08:11	08:50
	16:53	17:54	18:48	21 07:30 (2)	20:45	21:38	22:09	21:51	20:52	19:37	17 08:14 (2)	18:25			16:28	16:14
22	08:37	07:40	06:34	07:11 (2)	06:20	05:23	05:02	05:31	06:23	07:18	07:54 (2)	08:13			08:13	08:50
	16:55	17:56	18:50	18 07:29 (2)	20:47	21:40	22:09	21:49	20:50	19:35	20 08:14 (2)	18:23			16:27	16:14
23	08:36	07:38	06:31	07:13 (2)	06:17	05:21	05:03	05:32	06:25	07:20	07:53 (2)	08:15			08:14	08:51
	16:57	17:58	18:52	12 07:25 (2)	20:49	21:41	22:10	21:48	20:48	19:32	23 08:16 (2)	18:21			16:26	16:15
24	08:34	07:36	06:29		06:15	05:20	05:03	05:34	06:27	07:22	07:52 (2)	08:17			08:16	08:51
	16:58	18:00	18:54		20:51	21:43	22:10	21:46	20:45	19:30	25 08:17 (2)	18:19			16:25	16:15
25	08:33	07:34	06:27		06:13	05:18	05:03	05:35	06:28	07:23	07:51 (2)	07:19			08:18	08:52
	17:00	18:02	18:55		20:53	21:44	22:10	21:45	20:43	19:28	26 08:17 (2)	17:17			16:23	16:16
26	08:32	07:31	06:24		06:11	05:17	05:04	05:37	06:30	07:25	07:52 (2)	07:21			08:20	08:52
	17:02	18:04	18:57		20:55	21:46	22:10	21:43	20:41	19:25	26 08:18 (2)	17:15			16:22	16:17
27	08:30	07:29	06:22		06:09	05:16	05:04	05:38	06:32	07:27	07:53 (2)	07:23			08:21	08:52
	17:04	18:06	18:59		20:56	21:47	22:10	21:42	20:38	19:23	24 08:17 (2)	17:12			16:21	16:18
28	08:29	07:27	06:19		06:06	05:15	05:05	05:40	06:34	07:29	07:55 (2)	07:25			08:23	08:52
	17:06	18:08	19:01		20:58	21:49	22:09	21:40	20:36	19:20	22 08:17 (2)	17:10			16:20	16:18
29	08:27		07:17		06:04	05:14	05:05	05:42	06:36	07:31	07:57 (2)	07:27			08:25	08:53
	17:08		20:03		21:00	21:50	22:09	21:38	20:34	19:18	20 08:17 (2)	17:08			16:19	16:19
30	08:25		07:14		06:02	05:13	05:06	05:43	06:37	07:32	07:59 (2)	07:29			08:26	08:53
	17:10		20:05		21:02	21:51	22:09	21:37	20:31	19:15	17 08:16 (2)	17:06			16:19	16:20
31	08:24		07:12			05:12		05:45	06:39			07:31				08:53
	17:12		20:07			21:53		21:35	20:29			17:04				16:21
Potential sun hours	250	273	367		420	494	510	512	460	382		328		259	233	
Total, worst case				267							231		44			
Sun reduction				0.22							0.25		0.23			
Oper. time red.				1.00							1.00		1.00			
Wind dir. red.				0.63							0.63		0.63			
Total reduction				0.14							0.16		0.14			
Total, real				37							37		6			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** DG - H123

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	17:31 (7)	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:10	11 17:42 (7)	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	17:30 (7)	07:07	05:58	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	14 17:44 (7)	20:10	21:05	21:55	22:08	21:31	20:24	19:10	11 18:24 (7)	17:00	16:17
3	08:52	08:18	07:20	17:29 (7)	07:04	05:56	05:08	05:08	05:50	06:44	07:38	18:10 (7)	07:36	08:30
	16:25	17:18	18:13	17 17:46 (7)	20:12	21:07	21:56	22:08	21:29	20:21	19:08	16 18:26 (7)	16:58	16:16
4	08:52	08:17	07:17	17:29 (7)	07:02	05:54	05:08	05:09	05:51	06:46	07:39	18:08 (7)	07:38	08:32
	16:26	17:20	18:15	19 17:48 (7)	20:14	21:09	21:57	22:07	21:27	20:19	19:05	19 18:27 (7)	16:56	16:15
5	08:51	08:15	07:15	17:29 (7)	06:59	05:52	05:07	05:10	05:53	06:48	07:41	18:07 (7)	07:40	08:33
	16:27	17:22	18:17	21 17:50 (7)	20:15	21:11	21:58	22:06	21:26	20:17	19:03	21 18:28 (7)	16:54	16:15
6	08:51	08:13	07:12	17:29 (7)	06:57	05:50	05:06	05:10	05:55	06:50	07:43	18:06 (7)	07:42	08:35
	16:28	17:24	18:19	23 17:52 (7)	20:17	21:13	21:59	22:06	21:24	20:14	19:00	23 18:29 (7)	16:52	16:14
7	08:50	08:11	07:10	17:29 (7)	06:54	05:48	05:05	05:11	05:56	06:51	07:45	18:04 (7)	07:44	08:36
	16:30	17:26	18:21	23 17:52 (7)	20:19	21:14	22:00	22:05	21:22	20:12	18:58	24 18:28 (7)	16:50	16:14
8	08:50	08:09	07:08	17:30 (7)	06:52	05:46	05:05	05:12	05:58	06:53	07:47	18:04 (7)	07:46	08:37
	16:31	17:28	18:23	22 17:52 (7)	20:21	21:16	22:01	22:04	21:20	20:09	18:55	22 18:26 (7)	16:48	16:13
9	08:49	08:07	07:05	17:30 (7)	06:50	05:44	05:04	05:13	06:00	06:55	07:49	18:04 (7)	07:48	08:39
	16:33	17:30	18:25	20 17:50 (7)	20:23	21:18	22:02	22:04	21:18	20:07	18:53	20 18:24 (7)	16:47	16:13
10	08:49	08:05	07:03	17:31 (7)	06:47	05:42	05:04	05:15	06:02	06:57	07:50	18:03 (7)	07:50	08:40
	16:34	17:32	18:27	18 17:49 (7)	20:25	21:20	22:03	22:03	21:16	20:04	18:51	18 18:21 (7)	16:45	16:13
11	08:48	08:03	07:00	17:34 (7)	06:45	05:40	05:03	05:16	06:03	06:58	07:52	18:04 (7)	07:52	08:41
	16:36	17:34	18:29	13 17:47 (7)	20:27	21:21	22:04	22:02	21:14	20:02	18:48	15 18:19 (7)	16:43	16:12
12	08:47	08:01	06:58	17:36 (7)	06:42	05:38	05:03	05:17	06:05	07:00	07:54	18:04 (7)	07:54	08:42
	16:37	17:36	18:31	7 17:43 (7)	20:28	21:23	22:04	22:01	21:12	19:59	18:46	13 18:17 (7)	16:42	16:12
13	08:46	07:59	06:56		06:40	05:37	05:03	05:18	06:07	07:02	07:56	18:04 (7)	07:56	08:43
	16:39	17:38	18:33		20:30	21:25	22:05	22:00	21:09	19:57	18:44	10 18:14 (7)	16:40	16:12
14	08:45	07:57	06:53		06:38	05:35	05:02	05:19	06:09	07:04	07:58	18:05 (7)	07:57	08:44
	16:40	17:40	18:34		20:32	21:27	22:06	21:59	21:07	19:55	18:41	7 18:12 (7)	16:38	16:12
15	08:45	07:55	06:51		06:35	05:33	05:02	05:21	06:10	07:05	08:00	18:06 (7)	07:59	08:45
	16:42	17:42	18:36		20:34	21:28	22:06	21:58	21:05	19:52	18:39	4 18:10 (7)	16:37	16:12
16	08:44	07:53	06:48		06:33	05:32	05:02	05:22	06:12	07:07	08:02		08:01	08:46
	16:44	17:44	18:38		20:36	21:30	22:07	21:57	21:03	19:50	18:37		16:35	16:12
17	08:43	07:51	06:46		06:31	05:30	05:02	05:23	06:14	07:09	08:04		08:03	08:47
	16:45	17:46	18:40		20:38	21:32	22:07	21:56	21:01	19:47	18:34		16:34	16:12
18	08:42	07:49	06:43		06:28	05:28	05:02	05:25	06:16	07:11	08:05		08:05	08:48
	16:47	17:48	18:42		20:40	21:33	22:08	21:54	20:59	19:45	18:32		16:32	16:13
19	08:40	07:47	06:41		06:26	05:27	05:02	05:26	06:18	07:13	08:07		08:07	08:48
	16:49	17:50	18:44		20:41	21:35	22:08	21:53	20:56	19:42	18:30		16:31	16:13
20	08:39	07:45	06:39		06:24	05:25	05:02	05:27	06:19	07:14	08:09		08:09	08:49
	16:51	17:52	18:46		20:43	21:36	22:09	21:52	20:54	19:40	18:27		16:29	16:13
21	08:38	07:42	06:36		06:22	05:24	05:02	05:29	06:21	07:16	08:11		08:10	08:50
	16:53	17:54	18:48		20:45	21:38	22:09	21:50	20:52	19:37	18:25		16:28	16:14
22	08:37	07:40	06:34		06:19	05:22	05:02	05:30	06:23	07:18	08:13		08:12	08:50
	16:54	17:56	18:49		20:47	21:40	22:09	21:49	20:50	19:35	18:23		16:27	16:14
23	08:35	07:38	06:31		06:17	05:21	05:02	05:32	06:25	07:20	08:15		08:14	08:51
	16:56	17:58	18:51		20:49	21:41	22:09	21:48	20:47	19:32	18:21		16:26	16:15
24	08:34	07:36	06:29		06:15	05:19	05:03	05:33	06:26	07:21	08:17		08:16	08:51
	16:58	18:00	18:53		20:51	21:43	22:09	21:46	20:45	19:30	18:19		16:24	16:15
25	08:33	07:33	06:26		06:13	05:18	05:03	05:35	06:28	07:23	07:19		08:18	08:51
	17:00	18:02	18:55		20:52	21:44	22:09	21:45	20:43	19:27	17:16		16:23	16:16
26	08:31	07:31	17:35 (7) 06:24		06:10	05:17	05:03	05:37	06:30	07:25	07:21		08:19	08:52
	17:02	18:04	1 17:36 (7) 18:57		20:54	21:46	22:09	21:43	20:40	19:25	17:14		16:22	16:17
27	08:30	07:29	17:34 (7) 06:21		06:08	05:16	05:04	05:38	06:32	07:27	07:23		08:21	08:52
	17:04	18:06	4 17:38 (7) 18:59		20:56	21:47	22:09	21:41	20:38	19:22	17:12		16:21	16:17
28	08:28	07:27	17:32 (7) 06:19		06:06	05:14	05:04	05:40	06:34	07:29	07:25		08:23	08:52
	17:06	18:08	8 17:40 (7) 19:01		20:58	21:48	22:09	21:40	20:36	19:20	17:10		16:20	16:18
29	08:27		07:16		06:04	05:13	05:05	05:41	06:35	07:30	07:27		08:24	08:52
	17:08		20:02		21:00	21:50	22:09	21:38	20:33	19:17	17:08		16:19	16:19
30	08:25		07:14		06:02	05:12	05:06	05:43	06:37	07:32	07:28		08:26	08:52
	17:10		20:04		21:02	21:51	22:09	21:36	20:31	19:15	17:06		16:18	16:20
31	08:23		07:11			05:11		05:45	06:39		07:30			08:52
	17:12		20:06			21:52		21:35	20:29		17:04			16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328		259	233
Total, worst case		13	208							223			
Sun reduction		0.19	0.22							0.23			
Oper. time red.		1.00	1.00							1.00			
Wind dir. red.		0.65	0.65							0.65			
Total reduction		0.13	0.14							0.15			
Total, real		2	30							33			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** DH - H124

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February	March	April	May	June	July	August	September	October	November		December		
1	08:52	15:04 (9)	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:40	07:34	07:32		08:27		
	16:22	11 15:15 (9)	17:13	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02		16:17		
2	08:52	15:06 (9)	08:20	07:22	07:06	05:57	05:09	05:07	05:48	06:42	07:36	07:34		08:29		
	16:23	8 15:14 (9)	17:15	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00		16:16		
3	08:52	15:09 (9)	08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:37	07:36		08:30		
	16:24	5 15:14 (9)	17:17	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58		16:16		
4	08:51		08:16	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38		08:32		
	16:26		17:19	18:15	20:13	21:09	21:57	22:07	21:27	20:19	19:05	16:56		16:15		
5	08:51		08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40		08:33		
	16:27		17:21	18:17	20:15	21:11	21:58	22:06	21:25	20:16	19:03	16:54		16:14		
6	08:51		08:13	07:12	06:57	05:49	05:06	05:10	05:55	06:49	07:43	07:42		08:35		
	16:28		17:23	18:19	20:17	21:12	21:59	22:06	21:24	20:14	19:00	16:52		16:14		
7	08:50		08:11	07:10	06:54	05:47	05:05	05:11	05:56	06:51	07:45	07:44		08:36		
	16:29		17:25	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50		16:13		
8	08:50		08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46		08:37		
	16:31		17:27	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48		16:13		
9	08:49		08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48		08:39		14:57 (9)
	16:32		17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46		16:13	4	15:01 (9)
10	08:49		08:05	07:03	06:47	05:42	05:03	05:14	06:01	06:56	07:50	07:50		08:40		14:55 (9)
	16:34		17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:50	16:45		16:12	8	15:03 (9)
11	08:48		08:03	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52		08:41		14:55 (9)
	16:35		17:34	18:29	20:26	21:21	22:04	22:02	21:14	20:02	18:48	16:43		16:12	11	15:06 (9)
12	08:47	15:59 (8)	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54		08:42		14:55 (9)
	16:37	2 16:01 (8)	17:36	18:31	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41		16:12	12	15:07 (9)
13	08:46	15:59 (8)	07:59	06:55	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:55		08:43		14:55 (9)
	16:39	3 16:02 (8)	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40		16:12	13	15:08 (9)
14	08:45	15:59 (8)	07:57	06:53	06:38	05:35	05:02	05:19	06:08	07:03	07:58	07:57	15:42 (8)	08:44		14:54 (9)
	16:40	5 16:04 (8)	17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38	10 15:52 (8)	16:12	15	15:09 (9)
15	08:45	16:00 (8)	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59	15:40 (8)	08:45		14:55 (9)
	16:42	6 16:06 (8)	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36	14 15:54 (8)	16:12	15	15:10 (9)
16	08:44	16:00 (8)	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01	15:39 (8)	08:46		14:55 (9)
	16:43	8 16:08 (8)	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16 15:55 (8)	16:12	15	15:10 (9)
17	08:43	16:00 (8)	07:51	06:46	06:31	05:30	05:01	05:23	06:14	07:09	08:03	08:03	15:38 (8)	08:47		14:55 (9)
	16:45	9 16:09 (8)	17:46	18:40	20:38	21:32	22:07	21:56	21:01	19:47	18:34	16:33	18 15:56 (8)	16:12	16	15:11 (9)
18	08:41	16:00 (8)	07:49	06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05	08:05	15:38 (8)	08:47		14:55 (9)
	16:47	12 16:12 (8)	17:48	18:42	20:39	21:33	22:08	21:54	20:59	19:44	18:32	16:32	19 15:57 (8)	16:12	16	15:11 (9)
19	08:40	16:01 (8)	07:47	06:41	06:26	05:26	05:01	05:26	06:17	07:12	08:07	08:07	15:38 (8)	08:48		14:55 (9)
	16:49	13 16:14 (8)	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:30	19 15:57 (8)	16:13	17	15:12 (9)
20	08:39	16:01 (8)	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	15:38 (8)	08:49		14:56 (9)
	16:51	14 16:15 (8)	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:39	18:27	16:29	17 15:55 (8)	16:13	17	15:13 (9)
21	08:38	16:02 (8)	07:42	06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11	08:10	15:38 (8)	08:49		14:56 (9)
	16:52	16 16:18 (8)	17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16 15:54 (8)	16:13	17	15:13 (9)
22	08:37	16:03 (8)	07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	15:38 (8)	08:50		14:57 (9)
	16:54	17 16:20 (8)	17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	15 15:53 (8)	16:14	17	15:14 (9)
23	08:35	16:03 (8)	07:38	06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15	08:14	15:37 (8)	08:51		14:57 (9)
	16:56	19 16:22 (8)	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	13 15:50 (8)	16:14	17	15:14 (9)
24	08:34	16:04 (8)	07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16	15:37 (8)	08:51		14:57 (9)
	16:58	19 16:23 (8)	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24	12 15:49 (8)	16:15	17	15:14 (9)
25	08:33	16:05 (8)	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17	15:38 (8)	08:51		14:58 (9)
	17:00	18 16:23 (8)	18:01	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	10 15:48 (8)	16:16	17	15:15 (9)
26	08:31	16:06 (8)	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	15:38 (8)	08:52		14:59 (9)
	17:02	16 16:22 (8)	18:03	18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	16:22	8 15:46 (8)	16:16	16	15:15 (9)
27	08:30	16:09 (8)	07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21	15:39 (8)	08:52		14:59 (9)
	17:04	13 16:22 (8)	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	6 15:45 (8)	16:17	16	15:15 (9)
28	08:28	16:11 (8)	07:26	06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24	08:23	15:40 (8)	08:52		15:00 (9)
	17:06	9 16:20 (8)	18:07	19:00	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	4 15:44 (8)	16:18	16	15:16 (9)
29	08:27			07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	15:40 (8)	08:52		15:01 (9)
	17:08			20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	4 15:44 (8)	16:19	15	15:16 (9)
30	08:25			07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26	15:40 (8)	08:52		15:02 (9)
	17:10			20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	2 15:42 (8)	16:20	14	15:16 (9)
31	08:23			07:11		05:11		05:44	06:39		07:30			08:52		15:03 (9)
	17:11			20:06		21:52		21:35	20:29		17:04			16:21	13	15:16 (9)
Potential sun hours	250		273	367	420	494	510	513	460	382	328	259		233		
Total, worst case		223											203		334	
Sun reduction		0.16											0.20		0.12	
Oper. time red.		1.00											1.00		1.00	
Wind dir. red.		0.65											0.65		0.65	
Total reduction		0.11											0.13		0.08	
Total, real		23											26		26	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** DI - H125

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March		April	May	June	July	August	September		October		November	December
1	08:52	08:22	07:24		07:09	06:00	05:10	05:06	05:46	06:41		07:34		07:32	08:27
	16:22	17:14	18:10		20:08	21:03	21:54	22:08	21:33	20:26		19:12	24	18:44 (7)	17:02	16:17
2	08:52	08:20	07:22		07:07	05:58	05:09	05:07	05:48	06:42		07:36		18:19 (7)	07:34	08:29
	16:23	17:16	18:11		20:10	21:05	21:55	22:08	21:31	20:24		19:10	22	18:41 (7)	17:00	16:17
3	08:52	08:18	07:20		07:04	05:56	05:08	05:08	05:50	06:44		07:38		18:19 (7)	07:36	08:30
	16:25	17:18	18:13		20:12	21:07	21:56	22:07	21:29	20:21		19:08	20	18:39 (7)	16:58	16:16
4	08:52	08:17	07:17		07:02	05:54	05:08	05:09	05:51	06:46		07:39		18:19 (7)	07:38	08:32
	16:26	17:20	18:15		20:14	21:09	21:57	22:07	21:27	20:19		19:05	18	18:37 (7)	16:56	16:15
5	08:51	08:15	07:15	17:46 (7)	06:59	05:52	05:07	05:10	05:53	06:48		07:41		18:19 (7)	07:40	08:33
	16:27	17:22	18:17	4 17:50 (7)	20:15	21:11	21:58	22:06	21:26	20:17		19:03	15	18:34 (7)	16:54	16:15
6	08:51	08:13	07:12	17:45 (7)	06:57	05:50	05:06	05:10	05:55	06:50		07:43		18:20 (7)	07:42	08:35
	16:28	17:24	18:19	7 17:52 (7)	20:17	21:13	21:59	22:06	21:24	20:14		19:00	12	18:32 (7)	16:52	16:14
7	08:50	08:11	07:10	17:43 (7)	06:54	05:48	05:05	05:11	05:56	06:51		07:45		18:19 (7)	07:44	08:36
	16:30	17:26	18:21	11 17:54 (7)	20:19	21:14	22:00	22:05	21:22	20:12		18:58	10	18:29 (7)	16:50	16:14
8	08:50	08:09	07:08	17:42 (7)	06:52	05:46	05:05	05:12	05:58	06:53		07:47		18:20 (7)	07:46	08:37
	16:31	17:28	18:23	14 17:56 (7)	20:21	21:16	22:01	22:04	21:20	20:09		18:55	6	18:26 (7)	16:48	16:13
9	08:49	08:07	07:05	17:41 (7)	06:50	05:44	05:04	05:13	06:00	06:55		07:49		18:21 (7)	07:48	08:39
	16:33	17:30	18:25	17 17:58 (7)	20:23	21:18	22:02	22:04	21:18	20:07		18:53	3	18:24 (7)	16:47	16:13
10	08:49	08:05	07:03	17:41 (7)	06:47	05:42	05:04	05:15	06:02	06:57		07:50			07:50	08:40
	16:34	17:32	18:27	19 18:00 (7)	20:25	21:20	22:03	22:03	21:16	20:04		18:51			16:45	16:13
11	08:48	08:03	07:00	17:41 (7)	06:45	05:40	05:03	05:16	06:03	06:58		07:52			07:52	08:41
	16:36	17:34	18:29	21 18:02 (7)	20:27	21:21	22:04	22:02	21:14	20:02		18:48			16:43	16:12
12	08:47	08:01	06:58	17:41 (7)	06:42	05:38	05:03	05:17	06:05	07:00		07:54			07:54	08:42
	16:37	17:36	18:31	23 18:04 (7)	20:28	21:23	22:04	22:01	21:12	19:59		18:46			16:42	16:12
13	08:46	07:59	06:56	17:41 (7)	06:40	05:37	05:03	05:18	06:07	07:02		07:56			07:56	08:43
	16:39	17:38	18:33	25 18:06 (7)	20:30	21:25	22:05	22:00	21:09	19:57		18:44			16:40	16:12
14	08:45	07:57	06:53	17:41 (7)	06:38	05:35	05:02	05:19	06:09	07:04		07:58			07:57	08:44
	16:40	17:40	18:34	23 18:04 (7)	20:32	21:27	22:06	21:59	21:07	19:55		18:41			16:38	16:12
15	08:45	07:55	06:51	17:42 (7)	06:35	05:33	05:02	05:21	06:10	07:05		08:00			07:59	08:45
	16:42	17:42	18:36	22 18:04 (7)	20:34	21:28	22:06	21:58	21:05	19:52		18:39			16:37	16:12
16	08:44	07:53	06:48	17:43 (7)	06:33	05:32	05:02	05:22	06:12	07:07		08:02			08:01	08:46
	16:44	17:44	18:38	19 18:02 (7)	20:36	21:30	22:07	21:57	21:03	19:50		18:37			16:35	16:12
17	08:43	07:51	06:46	17:45 (7)	06:31	05:30	05:02	05:23	06:14	07:09		08:04			08:03	08:47
	16:45	17:46	18:40	15 18:00 (7)	20:38	21:32	22:07	21:56	21:01	19:47		18:34			16:34	16:12
18	08:41	07:49	06:43	17:47 (7)	06:28	05:28	05:02	05:25	06:16	07:11		08:05			08:05	08:48
	16:47	17:48	18:42	10 17:57 (7)	20:40	21:33	22:08	21:54	20:59	19:45		18:32			16:32	16:13
19	08:40	07:47	06:41		06:26	05:27	05:02	05:26	06:18	07:13		08:07			08:07	08:48
	16:49	17:50	18:44		20:41	21:35	22:08	21:53	20:56	19:42		18:30			16:31	16:13
20	08:39	07:45	06:39		06:24	05:25	05:02	05:27	06:19	07:14		08:09			08:09	08:49
	16:51	17:52	18:46		20:43	21:36	22:09	21:52	20:54	19:40		18:27			16:29	16:13
21	08:38	07:42	06:36		06:22	05:24	05:02	05:29	06:21	07:16		08:11			08:10	08:50
	16:53	17:54	18:48		20:45	21:38	22:09	21:50	20:52	19:37		18:25			16:28	16:14
22	08:37	07:40	06:34		06:19	05:22	05:02	05:30	06:23	07:18		08:13			08:12	08:50
	16:54	17:56	18:49		20:47	21:40	22:09	21:49	20:50	19:35		18:23			16:27	16:14
23	08:35	07:38	06:31		06:17	05:21	05:02	05:32	06:25	07:20		08:15			08:14	08:51
	16:56	17:58	18:51		20:49	21:41	22:09	21:48	20:47	19:32		18:21			16:26	16:15
24	08:34	07:36	06:29		06:15	05:20	05:03	05:33	06:26	07:21		08:17			08:16	08:51
	16:58	18:00	18:53		20:51	21:43	22:09	21:46	20:45	19:30		18:19			16:24	16:15
25	08:33	07:33	06:26		06:13	05:18	05:03	05:35	06:28	07:23	18:31 (7)	07:19			08:18	08:51
	17:00	18:02	18:55		20:52	21:44	22:09	21:45	20:43	19:27	7 18:38 (7)	17:16			16:23	16:16
26	08:31	07:31	06:24		06:10	05:17	05:03	05:37	06:30	07:25	18:27 (7)	07:21			08:19	08:52
	17:02	18:04	18:57		20:54	21:46	22:09	21:43	20:40	19:25	14 18:41 (7)	17:14			16:22	16:17
27	08:30	07:29	06:21		06:08	05:16	05:04	05:38	06:32	07:27	18:25 (7)	07:23			08:21	08:52
	17:04	18:06	18:59		20:56	21:47	22:09	21:41	20:38	19:22	18 18:43 (7)	17:12			16:21	16:17
28	08:28	07:27	06:19		06:06	05:15	05:04	05:40	06:34	07:29	18:24 (7)	07:25			08:23	08:52
	17:06	18:08	19:01		20:58	21:48	22:09	21:40	20:36	19:20	20 18:44 (7)	17:10			16:20	16:18
29	08:27		07:16		06:04	05:13	05:05	05:41	06:35	07:30	18:22 (7)	07:26			08:24	08:52
	17:08		20:02		21:00	21:50	22:09	21:38	20:33	19:17	23 18:45 (7)	17:08			16:19	16:19
30	08:25		07:14		06:02	05:12	05:06	05:43	06:37	07:32	18:20 (7)	07:28			08:26	08:52
	17:10		20:04		21:02	21:51	22:09	21:36	20:31	19:15	24 18:44 (7)	17:06			16:18	16:20
31	08:23		07:11			05:11		05:45	06:39			07:30				08:52
	17:12		20:06			21:52		21:35	20:29			17:04				16:21
Potential sun hours	250	273	367		420	494	510	512	460	382		328		259	233
Total, worst case				230							106		130		
Sun reduction				0.22							0.25		0.23		
Oper. time red.				1.00							1.00		1.00		
Wind dir. red.				0.64							0.64		0.64		
Total reduction				0.14							0.16		0.15		
Total, real				32							17		19		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** DJ - H126

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:40	07:34	07:32	08:27
	16:22	17:14	18:09	20:08	21:03	21:53	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:37	07:36	08:30
	16:24	17:18	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58	16:16
4	08:51	08:16	07:17	07:02	05:53	05:07	05:09	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:13	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11	21:58	22:06	21:25	20:16	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50	05:06	05:10	05:55	06:49	07:43	07:42	08:34
	16:28	17:24	18:19	20:17	21:12	21:59	22:06	21:23	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:21	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:04	21:19	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48	08:38
	16:32	17:30	18:25	20:23	21:18	22:02	22:04	21:17	20:07	18:53	16:47	16:13
10	08:48	08:05	07:03	06:47	05:42	05:04	05:14	06:02	06:56	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:19	22:03	22:03	21:15	20:04	18:51	16:45	16:12
11	08:48	08:03	07:00	06:45	05:40	05:03	05:16	06:03	06:58	07:52	07:52	08:41
	16:35	17:34	18:29	20:26	21:21	22:04	22:02	21:13	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:53	08:42
	16:37	17:36	18:31	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:55	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:55	08:43
	16:39	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:03	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:26	22:06	21:59	21:07	19:54	18:41	16:38	16:12
15	08:44	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:43	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:01	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16:12
17	08:42	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:31	22:07	21:55	21:01	19:47	18:34	16:33	16:12
18	08:41	07:49	06:43	06:28	05:28	05:02	05:24	06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:39	21:33	22:08	21:54	20:58	19:44	18:32	16:32	16:12
19	08:40	07:46	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:08	08:49
	16:51	17:52	18:46	20:43	21:36	22:08	21:52	20:54	19:39	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:24	05:02	05:29	06:21	07:16	08:11	08:10	08:49
	16:52	17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:13
22	08:37	07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:39	22:09	21:49	20:49	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15	08:14	08:50
	16:56	17:58	18:51	20:49	21:41	22:09	21:47	20:47	19:32	18:21	16:25	16:14
24	08:34	07:35	06:29	06:15	05:19	05:03	05:33	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:50	21:42	22:09	21:46	20:45	19:30	18:18	16:24	16:15
25	08:32	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17	08:51
	17:00	18:02	18:55	20:52	21:44	22:09	21:44	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:51
	17:02	18:03	18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:22	08:21	08:52
	17:04	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	05:04	05:40	06:33	07:28	07:24	08:22	08:52
	17:06	18:07	19:00	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:26		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:49	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:01	21:51	22:08	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11		05:44	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:28		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** DK - H128

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:40	07:34	07:32	08:27
	16:22	17:14	18:09	20:08	21:03	21:53	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:37	07:36	08:30
	16:24	17:18	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58	16:16
4	08:51	08:16	07:17	07:02	05:53	05:07	05:09	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:13	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11	21:58	22:06	21:25	20:16	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50	05:06	05:10	05:55	06:49	07:43	07:42	08:34
	16:28	17:24	18:19	20:17	21:12	21:59	22:06	21:23	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:21	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:04	21:19	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48	08:38
	16:32	17:30	18:25	20:23	21:18	22:02	22:04	21:17	20:07	18:53	16:47	16:13
10	08:48	08:05	07:03	06:47	05:42	05:04	05:14	06:02	06:56	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:19	22:03	22:03	21:15	20:04	18:50	16:45	16:12
11	08:48	08:03	07:00	06:45	05:40	05:03	05:16	06:03	06:58	07:52	07:52	08:41
	16:35	17:34	18:29	20:26	21:21	22:04	22:02	21:13	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:53	08:42
	16:37	17:36	18:31	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:55	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:55	08:43
	16:39	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:03	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:26	22:06	21:59	21:07	19:54	18:41	16:38	16:12
15	08:44	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:43	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:01	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16:12
17	08:42	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:31	22:07	21:55	21:01	19:47	18:34	16:33	16:12
18	08:41	07:49	06:43	06:28	05:28	05:02	05:24	06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:39	21:33	22:08	21:54	20:58	19:44	18:32	16:32	16:12
19	08:40	07:46	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:08	08:49
	16:51	17:52	18:46	20:43	21:36	22:08	21:52	20:54	19:39	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:24	05:02	05:29	06:21	07:16	08:11	08:10	08:49
	16:52	17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:13
22	08:37	07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:39	22:09	21:49	20:49	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15	08:14	08:50
	16:56	17:58	18:51	20:49	21:41	22:09	21:47	20:47	19:32	18:21	16:25	16:14
24	08:34	07:35	06:29	06:15	05:19	05:03	05:33	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:50	21:42	22:09	21:46	20:45	19:30	18:18	16:24	16:15
25	08:32	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17	08:51
	17:00	18:02	18:55	20:52	21:44	22:09	21:44	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:51
	17:02	18:03	18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:22	08:21	08:52
	17:04	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	05:04	05:40	06:33	07:28	07:24	08:22	08:52
	17:06	18:07	19:00	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:26		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:49	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:01	21:51	22:08	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11		05:44	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:28		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** DL - H129

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	17:24 (10)	07:09	05:59	05:10	05:06	05:46	06:40	07:34	07:32	08:27
	16:22	17:13	18:09	18 17:42 (10)	20:08	21:03	21:53	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	17:24 (10)	07:06	05:57	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:15	18:11	20 17:44 (10)	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:16
3	08:52	08:18	07:19	17:25 (10)	07:04	05:55	05:08	05:08	05:49	06:44	07:37	07:36	08:30
	16:24	17:17	18:13	21 17:46 (10)	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58	16:16
4	08:51	08:16	07:17	17:25 (10)	07:01	05:53	05:07	05:08	05:51	06:46	07:39	07:38	08:32
	16:26	17:19	18:15	21 17:46 (10)	20:13	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	17:26 (10)	06:59	05:51	05:07	05:09	05:53	06:47	07:41	07:40	08:33
	16:27	17:21	18:17	20 17:46 (10)	20:15	21:11	21:58	22:06	21:25	20:16	19:02	16:54	16:14
6	08:51	08:13	07:12	17:28 (10)	06:57	05:49	05:06	05:10	05:54	06:49	07:43	18:07 (10)	07:42	08:34
	16:28	17:23	18:19	16 17:44 (10)	20:17	21:12	21:59	22:06	21:23	20:14	19:00	8 18:15 (10)	16:52	16:14
7	08:50	08:11	07:10	17:30 (10)	06:54	05:47	05:05	05:11	05:56	06:51	07:45	18:04 (10)	07:44	08:36
	16:29	17:25	18:21	11 17:41 (10)	20:19	21:14	22:00	22:05	21:21	20:12	18:58	14 18:18 (10)	16:50	16:13
8	08:50	08:09	07:07		06:52	05:46	05:04	05:12	05:58	06:53	07:47	18:02 (10)	07:46	08:37
	16:31	17:27	18:23		20:21	21:16	22:01	22:04	21:20	20:09	18:55	18 18:20 (10)	16:48	16:13
9	08:49	08:07	07:05		06:49	05:44	05:04	05:13	06:00	06:55	07:48	18:00 (10)	07:48	08:38
	16:32	17:29	18:25		20:23	21:18	22:02	22:04	21:17	20:07	18:53	21 18:21 (10)	16:46	16:13
10	08:48	08:05	07:03		06:47	05:42	05:03	05:14	06:01	06:56	07:50	17:59 (10)	07:50	08:40
	16:34	17:31	18:27		20:25	21:19	22:03	22:03	21:15	20:04	18:50	22 18:21 (10)	16:45	16:12
11	08:48	08:03	07:00		06:45	05:40	05:03	05:15	06:03	06:58	07:52	17:58 (10)	07:52	08:41
	16:35	17:33	18:29		20:26	21:21	22:04	22:02	21:13	20:02	18:48	21 18:19 (10)	16:43	16:12
12	08:47	08:01	06:58		06:42	05:38	05:03	05:17	06:05	07:00	07:54	17:58 (10)	07:53	08:42
	16:37	17:35	18:30		20:28	21:23	22:04	22:01	21:11	19:59	18:46	19 18:17 (10)	16:41	16:12
13	08:46	07:59	06:55		06:40	05:36	05:02	05:18	06:07	07:02	07:56	17:57 (10)	07:55	08:43
	16:38	17:38	18:32		20:30	21:25	22:05	22:00	21:09	19:57	18:43	17 18:14 (10)	16:40	16:12
14	08:45	07:57	06:53		06:37	05:35	05:02	05:19	06:08	07:03	07:58	17:57 (10)	07:57	08:44
	16:40	17:40	18:34		20:32	21:26	22:06	21:59	21:07	19:54	18:41	15 18:12 (10)	16:38	16:12
15	08:44	07:55	06:51		06:35	05:33	05:02	05:20	06:10	07:05	08:00	17:57 (10)	07:59	08:45
	16:42	17:42	18:36		20:34	21:28	22:06	21:58	21:05	19:52	18:39	13 18:10 (10)	16:36	16:12
16	08:43	07:53	06:48		06:33	05:31	05:02	05:22	06:12	07:07	08:01	17:57 (10)	08:01	08:46
	16:43	17:44	18:38		20:36	21:30	22:07	21:57	21:03	19:49	18:36	10 18:07 (10)	16:35	16:12
17	08:42	07:51	06:46		06:30	05:30	05:01	05:23	06:14	07:09	08:03	17:57 (10)	08:03	08:47
	16:45	17:46	18:40		20:38	21:31	22:07	21:55	21:01	19:47	18:34	8 18:05 (10)	16:33	16:12
18	08:41	07:49	06:43		06:28	05:28	05:01	05:24	06:16	07:10	08:05	17:58 (10)	08:05	08:47
	16:47	17:48	18:42		20:39	21:33	22:08	21:54	20:58	19:44	18:32	4 18:02 (10)	16:32	16:12
19	08:40	07:46	06:41		06:26	05:26	05:01	05:26	06:17	07:12	08:07	17:59 (10)	08:07	08:48
	16:49	17:50	18:44		20:41	21:35	22:08	21:53	20:56	19:42	18:29	1 18:00 (10)	16:30	16:13
20	08:39	07:44	06:38		06:24	05:25	05:02	05:27	06:19	07:14	08:09		08:08	08:49
	16:50	17:52	18:46		20:43	21:36	22:08	21:52	20:54	19:39	18:27		16:29	16:13
21	08:38	07:42	06:36		06:21	05:23	05:02	05:29	06:21	07:16	08:11		08:10	08:49
	16:52	17:54	18:47		20:45	21:38	22:09	21:50	20:52	19:37	18:25		16:28	16:13
22	08:37	07:40	06:33		06:19	05:22	05:02	05:30	06:23	07:18	08:13		08:12	08:50
	16:54	17:55	18:49		20:47	21:39	22:09	21:49	20:49	19:34	18:23		16:26	16:14
23	08:35	07:38	17:27 (10) 06:31		06:17	05:21	05:02	05:32	06:24	07:19	08:15		08:14	08:50
	16:56	17:57	2 17:29 (10) 18:51		20:49	21:41	22:09	21:47	20:47	19:32	18:21		16:25	16:14
24	08:34	07:35	17:26 (10) 06:28		06:15	05:19	05:02	05:33	06:26	07:21	08:17		08:16	08:51
	16:58	17:59	6 17:32 (10) 18:53		20:50	21:42	22:09	21:46	20:45	19:29	18:18		16:24	16:15
25	08:32	07:33	17:25 (10) 06:26		06:12	05:18	05:03	05:35	06:28	07:23	07:19		08:17	08:51
	17:00	18:01	8 17:33 (10) 18:55		20:52	21:44	22:09	21:44	20:43	19:27	17:16		16:23	16:16
26	08:31	07:31	17:25 (10) 06:24		06:10	05:17	05:03	05:36	06:30	07:25	07:20		08:19	08:51
	17:02	18:03	11 17:36 (10) 18:57		20:54	21:45	22:09	21:43	20:40	19:25	17:14		16:22	16:16
27	08:30	07:29	17:24 (10) 06:21		06:08	05:15	05:04	05:38	06:32	07:27	07:22		08:21	08:52
	17:04	18:05	13 17:37 (10) 18:59		20:56	21:47	22:09	21:41	20:38	19:22	17:12		16:21	16:17
28	08:28	07:26	17:24 (10) 06:19		06:06	05:14	05:04	05:39	06:33	07:28	07:24		08:22	08:52
	17:06	18:07	16 17:40 (10) 19:00		20:58	21:48	22:09	21:40	20:36	19:20	17:10		16:20	16:18
29	08:26		07:16		06:04	05:13	05:05	05:41	06:35	07:30	07:26		08:24	08:52
	17:08		20:02		21:00	21:50	22:09	21:38	20:33	19:17	17:08		16:19	16:19
30	08:25		07:14		06:02	05:12	05:05	05:43	06:37	07:32	07:28		08:26	08:52
	17:09		20:04		21:01	21:51	22:08	21:36	20:31	19:15	17:06		16:18	16:20
31	08:23		07:11			05:11		05:44	06:39		07:30			08:52
	17:11		20:06			21:52		21:35	20:28		17:04			16:21
Potential sun hours	250	273	367		420	494	510	512	460	382	328		259	233
Total, worst case		56	127								191			
Sun reduction		0.19	0.22								0.23			
Oper. time red.		1.00	1.00								1.00			
Wind dir. red.		0.65	0.65								0.65			
Total reduction		0.13	0.14								0.15			
Total, real		7	18								28			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** DM - H130

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March		April	May	June	July	August	September		October	November	December
1	08:52	08:22	07:24		07:09	06:00	05:10	05:06	05:46	06:41		07:34	07:32	08:27
	16:22	17:14	18:10		20:08	21:03	21:54	22:08	21:33	20:26		19:12	17:02	16:17
2	08:52	08:20	07:22		07:07	05:58	05:09	05:07	05:48	06:42		07:36	07:34	08:29
	16:23	17:16	18:11		20:10	21:05	21:55	22:08	21:31	20:24		19:10	17:00	16:17
3	08:52	08:18	07:20		07:04	05:56	05:08	05:08	05:50	06:44		07:38	07:36	08:30
	16:25	17:18	18:13		20:12	21:07	21:56	22:07	21:29	20:21		19:08	16:58	16:16
4	08:52	08:17	07:17		07:02	05:54	05:08	05:09	05:51	06:46		07:39	07:38	08:32
	16:26	17:20	18:15		20:14	21:09	21:57	22:07	21:27	20:19		19:05	16:56	16:15
5	08:51	08:15	07:15		06:59	05:52	05:07	05:10	05:53	06:48		07:41	07:40	08:33
	16:27	17:22	18:17		20:15	21:11	21:58	22:06	21:26	20:17		19:03	16:54	16:15
6	08:51	08:13	07:12		06:57	05:50	05:06	05:10	05:55	06:50		07:43	07:42	08:35
	16:28	17:24	18:19		20:17	21:13	21:59	22:06	21:24	20:14		19:00	16:52	16:14
7	08:50	08:11	07:10		06:54	05:48	05:05	05:11	05:57	06:51		07:45	07:44	08:36
	16:30	17:26	18:21		20:19	21:14	22:00	22:05	21:22	20:12		18:58	16:50	16:14
8	08:50	08:09	07:08		06:52	05:46	05:05	05:12	05:58	06:53		07:47	07:46	08:37
	16:31	17:28	18:23		20:21	21:16	22:01	22:04	21:20	20:09		18:55	16:48	16:13
9	08:49	08:07	07:05		06:50	05:44	05:04	05:13	06:00	06:55		07:49	07:48	08:39
	16:33	17:30	18:25		20:23	21:18	22:02	22:04	21:18	20:07		18:53	16:47	16:13
10	08:49	08:05	07:03		06:47	05:42	05:04	05:15	06:02	06:57		07:50	07:50	08:40
	16:34	17:32	18:27		20:25	21:20	22:03	22:03	21:16	20:04		18:51	16:45	16:13
11	08:48	08:03	07:00		06:45	05:40	05:03	05:16	06:03	06:58		07:52	07:52	08:41
	16:36	17:34	18:29		20:27	21:21	22:04	22:02	21:14	20:02		18:48	16:43	16:12
12	08:47	08:01	06:58		06:42	05:38	05:03	05:17	06:05	07:00		07:54	07:54	08:42
	16:37	17:36	18:31		20:28	21:23	22:04	22:01	21:12	19:59		18:46	16:42	16:12
13	08:46	07:59	06:56		06:40	05:37	05:03	05:18	06:07	07:02		07:56	07:56	08:43
	16:39	17:38	18:33		20:30	21:25	22:05	22:00	21:09	19:57		18:44	16:40	16:12
14	08:45	07:57	06:53		06:38	05:35	05:02	05:19	06:09	07:04		07:58	07:57	08:44
	16:40	17:40	18:34		20:32	21:27	22:06	21:59	21:07	19:55		18:41	16:38	16:12
15	08:45	07:55	06:51		18:08 (7)	06:35	05:33	05:02	05:21	06:10	07:05	18:58 (7)	08:00	07:59	08:45
	16:42	17:42	18:36	2	18:10 (7)	20:34	21:28	22:06	21:58	21:05	19:52	9	19:07 (7)	18:39	16:37	16:12
16	08:44	07:53	06:48		18:06 (7)	06:33	05:32	05:02	05:22	06:12	07:07		18:55 (7)	08:02	08:01	08:46
	16:44	17:44	18:38	5	18:11 (7)	20:36	21:30	22:07	21:57	21:03	19:50	14	19:09 (7)	18:37	16:35	16:12
17	08:43	07:51	06:46		18:05 (7)	06:31	05:30	05:02	05:23	06:14	07:09		18:52 (7)	08:04	08:03	08:47
	16:45	17:46	18:40	9	18:14 (7)	20:38	21:32	22:07	21:56	21:01	19:47	18	19:10 (7)	18:34	16:34	16:12
18	08:41	07:49	06:43		18:03 (7)	06:28	05:28	05:02	05:25	06:16	07:11		18:51 (7)	08:05	08:05	08:47
	16:47	17:48	18:42	12	18:15 (7)	20:40	21:33	22:08	21:54	20:59	19:45	20	19:11 (7)	18:32	16:32	16:13
19	08:40	07:47	06:41		18:03 (7)	06:26	05:27	05:02	05:26	06:18	07:13		18:50 (7)	08:07	08:07	08:48
	16:49	17:50	18:44	15	18:18 (7)	20:41	21:35	22:08	21:53	20:56	19:42	22	19:12 (7)	18:30	16:31	16:13
20	08:39	07:44	06:39		18:02 (7)	06:24	05:25	05:02	05:27	06:19	07:14		18:49 (7)	08:09	08:09	08:49
	16:51	17:52	18:46	17	18:19 (7)	20:43	21:36	22:09	21:52	20:54	19:40	23	19:12 (7)	18:27	16:29	16:13
21	08:38	07:42	06:36		18:02 (7)	06:22	05:24	05:02	05:29	06:21	07:16		18:47 (7)	08:11	08:10	08:50
	16:53	17:54	18:48	19	18:21 (7)	20:45	21:38	22:09	21:50	20:52	19:37	22	19:09 (7)	18:25	16:28	16:14
22	08:37	07:40	06:34		18:02 (7)	06:19	05:22	05:02	05:30	06:23	07:18		18:47 (7)	08:13	08:12	08:50
	16:54	17:56	18:49	21	18:23 (7)	20:47	21:40	22:09	21:49	20:50	19:35	19	19:06 (7)	18:23	16:27	16:14
23	08:35	07:38	06:31		18:02 (7)	06:17	05:21	05:02	05:32	06:25	07:20		18:47 (7)	08:15	08:14	08:51
	16:56	17:58	18:51	23	18:25 (7)	20:49	21:41	22:09	21:48	20:47	19:32	17	19:04 (7)	18:21	16:26	16:15
24	08:34	07:36	06:29		18:02 (7)	06:15	05:20	05:03	05:33	06:26	07:21		18:47 (7)	08:17	08:16	08:51
	16:58	18:00	18:53	23	18:25 (7)	20:51	21:43	22:09	21:46	20:45	19:30	15	19:02 (7)	18:19	16:24	16:15
25	08:33	07:33	06:26		18:03 (7)	06:13	05:18	05:03	05:35	06:28	07:23		18:46 (7)	07:19	08:18	08:51
	17:00	18:02	18:55	21	18:24 (7)	20:52	21:44	22:09	21:45	20:43	19:27	13	18:59 (7)	17:16	16:23	16:16
26	08:31	07:31	06:24		18:03 (7)	06:10	05:17	05:03	05:37	06:30	07:25		18:46 (7)	07:21	08:19	08:52
	17:02	18:04	18:57	19	18:22 (7)	20:54	21:46	22:09	21:43	20:40	19:25	10	18:56 (7)	17:14	16:22	16:17
27	08:30	07:29	06:21		18:05 (7)	06:08	05:16	05:04	05:38	06:32	07:27		18:47 (7)	07:23	08:21	08:52
	17:04	18:06	18:59	15	18:20 (7)	20:56	21:47	22:09	21:41	20:38	19:22	7	18:54 (7)	17:12	16:21	16:17
28	08:28	07:26	06:19		18:08 (7)	06:06	05:15	05:04	05:40	06:34	07:29		18:48 (7)	07:25	08:23	08:52
	17:06	18:08	19:01	10	18:18 (7)	20:58	21:48	22:09	21:40	20:36	19:20	4	18:52 (7)	17:10	16:20	16:18
29	08:27		07:16			06:04	05:13	05:05	05:41	06:35	07:30			07:26	08:24	08:52
	17:08		20:02			21:00	21:50	22:09	21:38	20:33	19:17			17:08	16:19	16:19
30	08:25		07:14			06:02	05:12	05:06	05:43	06:37	07:32			07:28	08:26	08:52
	17:10		20:04			21:02	21:51	22:09	21:36	20:31	19:15			17:06	16:18	16:20
31	08:23		07:11				05:11		05:45	06:39				07:30		08:52
	17:12		20:06				21:52		21:35	20:29				17:04		16:21
Potential sun hours	250	273	367		420	494	510	512	460	382		328	259	233
Total, worst case				211							213			
Sun reduction				0.22							0.25			
Oper. time red.				1.00							1.00			
Wind dir. red.				0.65							0.65			
Total reduction				0.14							0.16			
Total, real				30							35			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** DN - H131

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February	March	April	May	June	July	August	September	October	November			December		
1	08:52		15:26 (9)	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:40	07:34	07:32			08:27		15:15 (9)
	16:22	18	15:44 (9)	17:13	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02			16:17	21	15:36 (9)
2	08:52		15:27 (9)	08:20	07:22	07:06	05:57	05:09	05:07	05:48	06:42	07:36	07:34			08:29		15:15 (9)
	16:23	18	15:45 (9)	17:15	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00			16:16	22	15:37 (9)
3	08:52		15:27 (9)	08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:37	07:36			08:30		15:14 (9)
	16:24	20	15:47 (9)	17:17	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58			16:16	23	15:37 (9)
4	08:51		15:27 (9)	08:16	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38			08:32		15:15 (9)
	16:26	21	15:48 (9)	17:19	18:15	20:13	21:09	21:57	22:07	21:27	20:19	19:05	16:56			16:15	23	15:38 (9)
5	08:51		15:29 (9)	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40			08:33		15:14 (9)
	16:27	21	15:50 (9)	17:21	18:17	20:15	21:11	21:58	22:06	21:25	20:16	19:03	16:54			16:14	23	15:37 (9)
6	08:51		15:29 (9)	08:13	07:12	06:57	05:49	05:06	05:10	05:55	06:49	07:43	07:42			08:35		15:15 (9)
	16:28	22	15:51 (9)	17:23	18:19	20:17	21:12	21:59	22:06	21:24	20:14	19:00	16:52			16:14	22	15:37 (9)
7	08:50		15:29 (9)	08:11	07:10	06:54	05:47	05:05	05:11	05:56	06:51	07:45	07:44			08:36		15:15 (9)
	16:29	23	15:52 (9)	17:25	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50			16:13	21	15:36 (9)
8	08:50		15:30 (9)	08:09	07:08	06:52	05:46	05:04	05:12	05:58	06:53	07:47	07:46			08:37		15:16 (9)
	16:31	24	15:54 (9)	17:27	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48			16:13	20	15:36 (9)
9	08:49		15:31 (9)	08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48			08:38		15:16 (9)
	16:32	23	15:54 (9)	17:29	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46			16:13	19	15:35 (9)
10	08:49		15:32 (9)	08:05	07:03	06:47	05:42	05:03	05:14	06:01	06:56	07:50	07:50			08:40		15:16 (9)
	16:34	22	15:54 (9)	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:50	16:45			16:12	19	15:35 (9)
11	08:48		15:32 (9)	08:03	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52			08:41		15:17 (9)
	16:35	22	15:54 (9)	17:34	18:29	20:26	21:21	22:04	22:02	21:14	20:02	18:48	16:43			16:12	18	15:35 (9)
12	08:47		15:33 (9)	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54			08:42		15:17 (9)
	16:37	20	15:53 (9)	17:36	18:31	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41			16:12	18	15:35 (9)
13	08:46		15:34 (9)	07:59	06:55	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:55			08:43		15:17 (9)
	16:39	19	15:53 (9)	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40			16:12	17	15:34 (9)
14	08:45		15:36 (9)	07:57	06:53	06:38	05:35	05:02	05:19	06:08	07:03	07:58	07:57			08:44		15:18 (9)
	16:40	17	15:53 (9)	17:40	18:34	20:32	21:26	22:06	21:59	21:07	19:54	18:41	16:38			16:12	16	15:34 (9)
15	08:45		15:37 (9)	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59			08:45		15:18 (9)
	16:42	15	15:52 (9)	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36			16:12	16	15:34 (9)
16	08:44		15:39 (9)	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:01	08:01			08:46		15:19 (9)
	16:43	13	15:52 (9)	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35			16:12	15	15:34 (9)
17	08:43		15:40 (9)	07:51	06:46	06:31	05:30	05:01	05:23	06:14	07:09	08:03	08:03			08:47		15:18 (9)
	16:45	10	15:50 (9)	17:46	18:40	20:38	21:32	22:07	21:56	21:01	19:47	18:34	16:33			16:12	16	15:34 (9)
18	08:41		15:45 (9)	07:49	06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05	08:05			08:47		15:19 (9)
	16:47	1	15:46 (9)	17:48	18:42	20:39	21:33	22:08	21:54	20:59	19:44	18:32	16:32			16:12	15	15:34 (9)
19	08:40			07:47	06:41	06:26	05:26	05:01	05:26	06:17	07:12	08:07	08:07			08:48		15:20 (9)
	16:49			17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:29	16:30			16:13	14	15:34 (9)
20	08:39			07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09			08:49		15:21 (9)
	16:51			17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:39	18:27	16:29			16:13	14	15:35 (9)
21	08:38			07:42	06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11	08:10			08:49		15:20 (9)
	16:52			17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28			16:13	15	15:35 (9)
22	08:37			07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12			08:50		15:21 (9)
	16:54			17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27			16:14	15	15:36 (9)
23	08:35			07:38	06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15	08:14			08:51		15:22 (9)
	16:56			17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25			16:14	14	15:36 (9)
24	08:34			07:35	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16			08:51		15:22 (9)
	16:58			17:59	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24			16:15	14	15:36 (9)
25	08:33			07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17		15:18 (9)	08:51		15:23 (9)
	17:00			18:01	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	10	15:28 (9)	16:16	15	15:38 (9)
26	08:31			07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19		15:17 (9)	08:52		15:23 (9)
	17:02			18:03	18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	16:22	13	15:30 (9)	16:16	15	15:38 (9)
27	08:30			07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21		15:16 (9)	08:52		15:24 (9)
	17:04			18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	15	15:31 (9)	16:17	15	15:39 (9)
28	08:28			07:26	06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24	08:23		15:16 (9)	08:52		15:24 (9)
	17:06			18:07	19:00	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	17	15:33 (9)	16:18	16	15:40 (9)
29	08:27				07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24		15:15 (9)	08:52		15:24 (9)
	17:08				20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	19	15:34 (9)	16:19	17	15:41 (9)
30	08:25				07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26		15:14 (9)	08:52		15:25 (9)
	17:09				20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	20	15:34 (9)	16:20	17	15:42 (9)
31	08:23				07:11		05:11		05:44	06:39		07:30				08:52		15:26 (9)
	17:11				20:06		21:52		21:35	20:29		17:04				16:21	17	15:43 (9)
Potential sun hours	250			273	367	420	494	510	513	460	382	328	259			233		
Total, worst case		329												94			542	
Sun reduction		0.16												0.20			0.12	
Oper. time red.		1.00												1.00			1.00	
Wind dir. red.		0.65												0.65			0.65	
Total reduction		0.11												0.13			0.08	
Total, real		35												12			42	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** DO - H132

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:07	05:47	06:41	07:34	07:32	08:27
	16:23	17:14	18:10	20:08	21:04	21:54	22:08	21:33	20:26	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:10	05:07	05:48	06:43	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:14	20:12	21:07	21:56	22:08	21:29	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:52	06:46	07:40	07:38	08:32
	16:26	17:20	18:16	20:14	21:09	21:57	22:07	21:28	20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	06:59	05:52	05:07	05:10	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	21:58	22:07	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:55	05:48	05:06	05:12	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:56	16:49	16:14
9	08:49	08:07	07:05	06:50	05:44	05:04	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51	16:45	16:13
11	08:48	08:03	07:01	06:45	05:40	05:04	05:16	06:04	06:59	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:13
12	08:47	08:01	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	22:00	21:10	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:03	05:20	06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00	07:59	08:45
	16:42	17:42	18:37	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:34	16:13
18	08:42	07:49	06:44	06:29	05:29	05:02	05:25	06:16	07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:42	21:35	22:08	21:53	20:57	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:28	06:20	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:37	22:09	21:52	20:54	19:40	18:28	16:30	16:13
21	08:38	07:42	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:23	05:02	05:31	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:14	08:51
	16:57	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:19	16:25	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	21:44	22:09	21:45	20:43	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:41	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:22	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	05:14	05:05	05:42	06:36	07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:34	19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	05:13	05:06	05:43	06:37	07:32	07:29	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:37	20:31	19:15	17:06	16:19	16:20
31	08:24		07:12		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** DP - H133

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:33	08:28
	16:22	17:14	18:10	20:08	21:04	21:54	22:09	21:33	20:26	19:13	17:02	16:17
2	08:52	08:20	07:22	07:07	05:58	05:09	05:07	05:48	06:43	07:36	07:34	08:29
	16:23	17:16	18:12	20:10	21:06	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04	05:56	05:08	05:08	05:50	06:44	07:38	07:36	08:31
	16:25	17:18	18:14	20:12	21:07	21:56	22:08	21:30	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:51	06:46	07:40	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:28	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52	05:07	05:10	05:53	06:48	07:41	07:40	08:34
	16:27	17:22	18:17	20:16	21:11	21:58	22:07	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:10	05:55	06:50	07:43	07:42	08:35
	16:28	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:51	08:11	07:10	06:55	05:48	05:05	05:11	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:15	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:38
	16:31	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:56	16:49	16:13
9	08:49	08:07	07:05	06:50	05:44	05:04	05:13	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51	16:45	16:13
11	08:48	08:04	07:01	06:45	05:40	05:03	05:16	06:04	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:22	22:04	22:02	21:14	20:02	18:48	16:43	16:12
12	08:47	08:02	06:58	06:43	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:12
13	08:47	07:59	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	22:00	21:10	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:58	08:44
	16:40	17:40	18:35	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	05:33	05:02	05:21	06:11	07:06	08:00	08:00	08:45
	16:42	17:42	18:36	20:34	21:28	22:07	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:34	16:12
18	08:42	07:49	06:44	06:28	05:28	05:02	05:25	06:16	07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:55	20:59	19:45	18:32	16:32	16:13
19	08:41	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:42	21:35	22:09	21:53	20:57	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:37	22:09	21:52	20:54	19:40	18:28	16:29	16:13
21	08:38	07:42	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:36	07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:48	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:33	06:27	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:10	21:46	20:45	19:30	18:19	16:24	16:15
25	08:33	07:34	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:52
	17:00	18:02	18:55	20:53	21:44	22:10	21:45	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:55	21:46	22:10	21:43	20:41	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:22	17:12	16:21	16:17
28	08:28	07:27	06:19	06:06	05:15	05:04	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:49	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	05:05	05:41	06:35	07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:34	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:29	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:37	20:31	19:15	17:06	16:18	16:20
31	08:24		07:12		05:11		05:45	06:39		07:31		08:52
	17:12		20:06		21:53		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	513	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** DQ - H135

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December		
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:40	07:34	07:32	08:27		
	16:22	17:13	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02	16:17		
2	08:52	08:20	07:22	07:06	05:57	05:09	05:07	05:48	06:42	07:36	07:34	08:29		
	16:23	17:15	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:16		
3	08:52	08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:37	07:36	08:30		
	16:24	17:17	18:13	20:12	21:07	21:56	22:08	21:29	20:21	19:07	16:58	16:16		
4	08:52	08:17	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38	08:32		
	16:26	17:19	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15		
5	08:51	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40	08:33		
	16:27	17:21	18:17	20:15	21:11	21:58	22:06	21:25	20:17	19:03	16:54	16:14		
6	08:51	08:13	07:12	06:57	05:49	05:06	05:10	05:55	06:49	07:43	07:42	08:35		
	16:28	17:23	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14		
7	08:50	08:11	07:10	06:54	05:47	05:05	05:11	05:56	06:51	07:45	07:44	08:36		
	16:30	17:25	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:13		
8	08:50	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37		
	16:31	17:27	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48	16:13		
9	08:49	08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48	08:39		
	16:32	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46	16:13		
10	08:49	08:05	07:03	06:47	05:42	05:03	05:14	06:01	06:56	07:50	07:50	08:40		
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:12		
11	08:48	08:03	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52	08:41		
	16:35	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:12		
12	08:47	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42		
	16:37	17:36	18:31	20:28	21:23	22:05	22:01	21:11	19:59	18:46	16:41	16:12		
13	08:46	07:59	06:56	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:56	08:43		
	16:39	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12		
14	08:45	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57	08:44		
	16:40	17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38	16:12		
15	08:45	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59	08:45		
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36	16:12		
16	08:44	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01	08:46		15:08 (8)
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16:12	3	15:11 (8)
17	08:43	07:51	06:46	06:31	05:30	05:01	05:23	06:14	07:09	08:03	08:03	08:47		15:07 (8)
	16:45	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:33	16:12	5	15:12 (8)
18	08:41	07:49	06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05	08:05	08:48		15:06 (8)
	16:47	17:48	18:42	20:39	21:33	22:08	21:54	20:59	19:44	18:32	16:32	16:12	7	15:13 (8)
19	08:40	07:47	06:41	06:26	05:26	05:01	05:26	06:17	07:12	08:07	08:07	08:48		15:07 (8)
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13	7	15:14 (8)
20	08:39	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49		15:07 (8)
	16:51	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29	16:13	8	15:15 (8)
21	08:38	07:42	06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11	08:10	08:50		15:07 (8)
	16:52	17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:13	8	15:15 (8)
22	08:37	07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50		15:08 (8)
	16:54	17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14	8	15:16 (8)
23	08:35	07:38	06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15	08:14	08:51		15:08 (8)
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	16:14	8	15:16 (8)
24	08:34	07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16	08:51		15:09 (8)
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24	16:15	7	15:16 (8)
25	08:33	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51		15:10 (8)
	17:00	18:01	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	16:16	7	15:17 (8)
26	08:31	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:52		15:11 (8)
	17:02	18:03	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22	16:16	6	15:17 (8)
27	08:30	07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21	08:52		15:12 (8)
	17:04	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17	4	15:16 (8)
28	08:28	07:26	06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24	08:23	08:52		
	17:06	18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18		
29	08:27		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52		
	17:08		20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19		
30	08:25		07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26	08:52		
	17:10		20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20		
31	08:23		07:11		05:11		05:44	06:39		07:30		08:52		
	17:11		20:06		21:52		21:35	20:29		17:04		16:21		
Potential sun hours	250	273	367	420	494	510	513	460	382	328	259	233		
Total, worst case												78		
Sun reduction												0.12		
Oper. time red.												1.00		
Wind dir. red.												0.65		
Total reduction												0.08		
Total, real												6		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** DR - H136

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:11	05:07	05:47	06:41	07:34	07:33	08:28
	16:23	17:14	18:10	20:08	21:04	21:54	22:09	21:33	20:27	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:10	05:07	05:48	06:43	07:36	07:35	08:29
	16:24	17:16	18:12	20:10	21:06	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38	07:36	08:31
	16:25	17:18	18:14	20:12	21:07	21:56	22:08	21:30	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:52	06:46	07:40	07:38	08:32
	16:26	17:20	18:16	20:14	21:09	21:57	22:07	21:28	20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	07:00	05:52	05:07	05:10	05:53	06:48	07:42	07:40	08:34
	16:27	17:22	18:18	20:16	21:11	21:58	22:07	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:18	21:13	21:59	22:06	21:24	20:14	19:01	16:52	16:14
7	08:51	08:11	07:10	06:55	05:48	05:06	05:12	05:57	06:52	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:15	22:00	22:05	21:22	20:12	18:58	16:51	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:13	05:59	06:53	07:47	07:46	08:38
	16:31	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:10	18:56	16:49	16:14
9	08:49	08:07	07:06	06:50	05:44	05:05	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:06	07:03	06:48	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51	16:45	16:13
11	08:48	08:04	07:01	06:45	05:41	05:04	05:16	06:04	06:59	07:53	07:52	08:41
	16:36	17:34	18:29	20:27	21:22	22:04	22:02	21:14	20:02	18:49	16:43	16:13
12	08:47	08:02	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:13
13	08:47	08:00	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:31	21:25	22:05	22:00	21:10	19:57	18:44	16:40	16:12
14	08:46	07:58	06:53	06:38	05:35	05:03	05:20	06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	21:59	21:08	19:55	18:42	16:39	16:12
15	08:45	07:55	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00	08:00	08:45
	16:42	17:42	18:37	20:34	21:28	22:07	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:49	06:33	05:32	05:02	05:22	06:13	07:07	08:02	08:01	08:46
	16:44	17:44	18:39	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:13
17	08:43	07:51	06:46	06:31	05:30	05:02	05:24	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:35	16:34	16:13
18	08:42	07:49	06:44	06:29	05:29	05:02	05:25	06:16	07:11	08:06	08:05	08:48
	16:48	17:48	18:42	20:40	21:33	22:08	21:55	20:59	19:45	18:32	16:32	16:13
19	08:41	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:08	08:07	08:48
	16:49	17:50	18:44	20:42	21:35	22:09	21:53	20:57	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:28	06:20	07:15	08:09	08:09	08:49
	16:51	17:52	18:46	20:44	21:37	22:09	21:52	20:54	19:40	18:28	16:30	16:13
21	08:38	07:43	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:20	05:23	05:02	05:31	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:36	07:38	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:14	08:51
	16:57	17:58	18:52	20:49	21:41	22:09	21:48	20:48	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:10	21:46	20:45	19:30	18:19	16:25	16:15
25	08:33	07:34	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:52
	17:00	18:02	18:55	20:53	21:44	22:10	21:45	20:43	19:28	17:17	16:24	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:55	21:46	22:10	21:43	20:41	19:25	17:15	16:22	16:17
27	08:30	07:29	06:22	06:09	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:23	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:49	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	05:14	05:05	05:42	06:36	07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:34	19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	05:13	05:06	05:43	06:37	07:32	07:29	08:26	08:52
	17:10		20:05	21:02	21:51	22:09	21:37	20:31	19:15	17:06	16:19	16:20
31	08:24		07:12		05:12		05:45	06:39		07:31		08:52
	17:12		20:06		21:53		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** DS - H137

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:11	05:07	05:47	06:41	07:34	07:32	08:27
	16:23	17:14	18:10	20:08	21:04	21:54	22:08	21:33	20:26	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:10	05:07	05:48	06:43	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:14	20:12	21:07	21:56	22:08	21:29	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:52	06:46	07:40	07:38	08:32
	16:26	17:20	18:16	20:14	21:09	21:57	22:07	21:28	20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	06:59	05:52	05:07	05:10	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	21:58	22:07	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:55	05:48	05:06	05:12	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:56	16:49	16:14
9	08:49	08:07	07:05	06:50	05:44	05:05	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51	16:45	16:13
11	08:48	08:03	07:01	06:45	05:40	05:04	05:16	06:04	06:59	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:13
12	08:47	08:01	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	22:00	21:10	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:03	05:20	06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00	07:59	08:45
	16:42	17:42	18:37	20:34	21:28	22:07	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:24	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:34	16:13
18	08:42	07:49	06:44	06:29	05:29	05:02	05:25	06:16	07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:42	21:35	22:08	21:53	20:57	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:28	06:20	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:37	22:09	21:52	20:54	19:40	18:28	16:30	16:13
21	08:38	07:42	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:23	05:02	05:31	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:14	08:51
	16:57	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:19	16:25	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	21:44	22:09	21:45	20:43	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:41	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:22	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	05:14	05:05	05:42	06:36	07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:34	19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	05:13	05:06	05:43	06:37	07:32	07:29	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:37	20:31	19:15	17:06	16:19	16:20
31	08:24		07:12		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** DT - H138

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June		July		August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:11		05:07		05:47	06:41	07:34	07:32	08:27
	16:23	17:14	18:10	20:08	21:04	21:54		22:08	4	05:44 (6)	21:33	20:26	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:10		05:07		05:40 (6)	05:48	06:43	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:05	21:55		22:08	3	05:43 (6)	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	05:09		05:08		05:41 (6)	05:50	06:44	07:38	07:36	08:31
	16:25	17:18	18:14	20:12	21:07	21:56		22:08	2	05:43 (6)	21:29	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08		05:09		05:42 (6)	05:52	06:46	07:40	07:38	08:32
	16:26	17:20	18:16	20:14	21:09	21:57		22:07	1	05:43 (6)	21:28	20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	06:59	05:52	05:07		05:10			05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	21:58		22:07			21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06		05:11			05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:18	21:13	21:59		22:06			21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:55	05:48	05:06		05:12			05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00		22:05			21:22	20:12	18:58	16:51	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05		05:13			05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01		22:05			21:20	20:09	18:56	16:49	16:14
9	08:49	08:07	07:05	06:50	05:44	05:05		05:36 (6)	05:14		06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	1	05:37 (6)	22:04		21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04		05:36 (6)	05:15		06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	2	05:38 (6)	22:03		21:16	20:05	18:51	16:45	16:13
11	08:48	08:03	07:01	06:45	05:40	05:04		05:36 (6)	05:16		06:04	06:59	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:22	22:04	3	05:39 (6)	22:02		21:14	20:02	18:49	16:43	16:13
12	08:47	08:01	06:58	06:43	05:39	05:03		05:35 (6)	05:17		06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	4	05:39 (6)	22:01		21:12	20:00	18:46	16:42	16:13
13	08:46	07:59	06:56	06:40	05:37	05:03		05:35 (6)	05:18		06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	5	05:40 (6)	22:00		21:10	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:03		05:35 (6)	05:20		06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	5	05:40 (6)	21:59		21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:36	05:33	05:02		05:35 (6)	05:21		06:11	07:06	08:00	08:00	08:45
	16:42	17:42	18:37	20:34	21:28	22:07	6	05:41 (6)	21:58		21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:49	06:33	05:32	05:02		05:35 (6)	05:22		06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	6	05:41 (6)	21:57		21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02		05:35 (6)	05:24		06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	7	05:42 (6)	21:56		21:01	19:47	18:34	16:34	16:13
18	08:42	07:49	06:44	06:29	05:29	05:02		05:35 (6)	05:25		06:16	07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	7	05:42 (6)	21:55		20:59	19:45	18:32	16:32	16:13
19	08:41	07:47	06:41	06:26	05:27	05:02		05:35 (6)	05:26		06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:42	21:35	22:08	7	05:42 (6)	21:53		20:57	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02		05:35 (6)	05:28		06:20	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:37	22:09	7	05:42 (6)	21:52		20:54	19:40	18:28	16:30	16:13
21	08:38	07:42	06:36	06:22	05:24	05:02		05:35 (6)	05:29		06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	7	05:42 (6)	21:51		20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:20	05:23	05:02		05:35 (6)	05:31		06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	7	05:42 (6)	21:49		20:50	19:35	18:23	16:27	16:14
23	08:36	07:38	06:31	06:17	05:21	05:03		05:36 (6)	05:32		06:25	07:20	08:15	08:14	08:51
	16:57	17:58	18:52	20:49	21:41	22:09	7	05:43 (6)	21:48		20:48	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03		05:36 (6)	05:34		06:27	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	7	05:43 (6)	21:46		20:45	19:30	18:19	16:25	16:15
25	08:33	07:34	06:26	06:13	05:18	05:03		05:36 (6)	05:35		06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	21:44	22:09	7	05:43 (6)	21:45		20:43	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04		05:37 (6)	05:37		06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	6	05:43 (6)	21:43		20:41	19:25	17:14	16:22	16:17
27	08:30	07:29	06:22	06:08	05:16	05:04		05:37 (6)	05:38		06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	6	05:43 (6)	21:42		20:38	19:22	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	05:15	05:05		05:38 (6)	05:40		06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	22:09	6	05:44 (6)	21:40		20:36	19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	05:14	05:05		05:38 (6)	05:42		06:36	07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	5	05:43 (6)	21:38		20:34	19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	05:13	05:06		05:39 (6)	05:43		06:37	07:32	07:29	08:26	08:52
	17:10		20:05	21:02	21:51	22:09	4	05:43 (6)	21:37		20:31	19:15	17:06	16:19	16:20
31	08:24		07:12		05:12				05:45		06:39		07:31		08:52
	17:12		20:06		21:52				21:35		20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510			512		460	382	328	259	233
Total, worst case						122			10						
Sun reduction						0.26			0.22						
Oper. time red.						1.00			1.00						
Wind dir. red.						0.65			0.65						
Total reduction						0.17			0.14						
Total, real						20			1						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** DU - H139

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March		April	May	June	July	August	September		October		November	December
1	08:53	08:22	07:25		07:09	06:00	05:11	05:07	05:47	06:41		07:34	08:01 (2)	07:33	08:28
	16:23	17:14	18:10		20:08	21:04	21:54	22:09	21:33	20:27		19:13	8 08:09 (2)	17:02	16:18
2	08:52	08:20	07:22		07:07	05:58	05:10	05:07	05:48	06:43		07:36	08:02 (2)	07:35	08:29
	16:24	17:16	18:12		20:10	21:06	21:55	22:08	21:31	20:24		19:10	4 08:06 (2)	17:00	16:17
3	08:52	08:19	07:20		07:04	05:56	05:09	05:08	05:50	06:44		07:38	08:04 (2)	07:37	08:31
	16:25	17:18	18:14		20:12	21:07	21:56	22:08	21:30	20:22		19:08	1 08:05 (2)	16:58	16:16
4	08:52	08:17	07:17		07:02	05:54	05:08	05:09	05:52	06:46		07:40		07:38	08:32
	16:26	17:20	18:16		20:14	21:09	21:57	22:07	21:28	20:19		19:05		16:56	16:16
5	08:52	08:15	07:15		07:00	05:52	05:07	05:10	05:53	06:48		07:42		07:40	08:34
	16:27	17:22	18:18		20:16	21:11	21:58	22:07	21:26	20:17		19:03		16:54	16:15
6	08:51	08:13	07:13		06:57	05:50	05:06	05:11	05:55	06:50		07:43		07:42	08:35
	16:29	17:24	18:20		20:18	21:13	22:00	22:06	21:24	20:14		19:01		16:52	16:14
7	08:51	08:11	07:10		06:55	05:48	05:06	05:12	05:57	06:52		07:45		07:44	08:36
	16:30	17:26	18:21		20:19	21:15	22:01	22:06	21:22	20:12		18:58		16:51	16:14
8	08:50	08:09	07:08		06:52	05:46	05:05	05:13	05:59	06:53		07:47		07:46	08:38
	16:31	17:28	18:23		20:21	21:16	22:02	22:05	21:20	20:10		18:56		16:49	16:14
9	08:50	08:08	07:06		06:50	05:44	05:05	05:14	06:00	06:55		07:49		07:48	08:39
	16:33	17:30	18:25		20:23	21:18	22:02	22:04	21:18	20:07		18:53		16:47	16:13
10	08:49	08:06	07:03		06:48	05:42	05:04	05:15	06:02	06:57		07:51		07:50	08:40
	16:34	17:32	18:27		20:25	21:20	22:03	22:03	21:16	20:05		18:51		16:45	16:13
11	08:48	08:04	07:01	07:25 (2)	06:45	05:40	05:04	05:16	06:04	06:59		07:53		07:52	08:41
	16:36	17:34	18:29	3 07:28 (2)	20:27	21:22	22:04	22:02	21:14	20:02		18:49		16:43	16:13
12	08:47	08:02	06:58	07:22 (2)	06:43	05:39	05:03	05:17	06:05	07:00		07:54		07:54	08:42
	16:37	17:36	18:31	6 07:28 (2)	20:29	21:23	22:05	22:01	21:12	20:00		18:46		16:42	16:13
13	08:47	08:00	06:56	07:20 (2)	06:40	05:37	05:03	05:18	06:07	07:02		07:56		07:56	08:43
	16:39	17:38	18:33	9 07:29 (2)	20:31	21:25	22:06	22:00	21:10	19:57		18:44		16:40	16:12
14	08:46	07:58	06:54	07:17 (2)	06:38	05:35	05:03	05:20	06:09	07:04		07:58		07:58	08:44
	16:41	17:40	18:35	12 07:29 (2)	20:32	21:27	22:06	21:59	21:08	19:55		18:42		16:39	16:12
15	08:45	07:55	06:51	07:15 (2)	06:36	05:33	05:02	05:21	06:11	07:06		08:00		08:00	08:45
	16:42	17:42	18:37	15 07:30 (2)	20:34	21:29	22:07	21:58	21:05	19:52		18:39		16:37	16:12
16	08:44	07:53	06:49	07:13 (2)	06:33	05:32	05:02	05:22	06:13	07:07		08:02		08:02	08:46
	16:44	17:44	18:39	17 07:30 (2)	20:36	21:30	22:07	21:57	21:03	19:50		18:37		16:35	16:12
17	08:43	07:51	06:46	07:10 (2)	06:31	05:30	05:02	05:24	06:14	07:09		08:04		08:03	08:47
	16:46	17:46	18:40	19 07:29 (2)	20:38	21:32	22:08	21:56	21:01	19:47		18:35		16:34	16:13
18	08:42	07:49	06:44	07:08 (2)	06:29	05:29	05:02	05:25	06:16	07:11		08:06		08:05	08:48
	16:47	17:48	18:42	21 07:29 (2)	20:40	21:34	22:08	21:55	20:59	19:45		18:32		16:32	16:13
19	08:41	07:47	06:41	07:05 (2)	06:26	05:27	05:02	05:26	06:18	07:13	07:56 (2)	08:08		08:07	08:49
	16:49	17:50	18:44	23 07:28 (2)	20:42	21:35	22:09	21:53	20:57	19:42	9 08:05 (2)	18:30		16:31	16:13
20	08:40	07:45	06:39	07:03 (2)	06:24	05:25	05:02	05:28	06:20	07:15	07:53 (2)	08:10		08:09	08:49
	16:51	17:52	18:46	24 07:27 (2)	20:44	21:37	22:09	21:52	20:54	19:40	15 08:08 (2)	18:28		16:30	16:13
21	08:38	07:43	06:36	07:04 (2)	06:22	05:24	05:02	05:29	06:21	07:16	07:51 (2)	08:11		08:11	08:50
	16:53	17:54	18:48	22 07:26 (2)	20:45	21:38	22:09	21:51	20:52	19:37	19 08:10 (2)	18:25		16:28	16:14
22	08:37	07:40	06:34	07:05 (2)	06:20	05:23	05:02	05:31	06:23	07:18	07:48 (2)	08:13		08:13	08:50
	16:55	17:56	18:50	19 07:24 (2)	20:47	21:40	22:09	21:49	20:50	19:35	22 08:10 (2)	18:23		16:27	16:14
23	08:36	07:38	06:31	07:06 (2)	06:17	05:21	05:03	05:32	06:25	07:20	07:47 (2)	08:15		08:14	08:51
	16:57	17:58	18:52	16 07:22 (2)	20:49	21:41	22:10	21:48	20:48	19:32	24 08:11 (2)	18:21		16:26	16:15
24	08:34	07:36	06:29	07:09 (2)	06:15	05:20	05:03	05:34	06:27	07:22	07:48 (2)	08:17		08:16	08:51
	16:58	18:00	18:54	10 07:19 (2)	20:51	21:43	22:10	21:46	20:45	19:30	23 08:11 (2)	18:19		16:25	16:15
25	08:33	07:34	06:27		06:13	05:18	05:03	05:35	06:29	07:24	07:50 (2)	07:19		08:18	08:52
	17:00	18:02	18:55		20:53	21:44	22:10	21:45	20:43	19:28	22 08:12 (2)	17:17		16:23	16:16
26	08:32	07:31	06:24		06:11	05:17	05:04	05:37	06:30	07:25	07:52 (2)	07:21		08:20	08:52
	17:02	18:04	18:57		20:55	21:46	22:10	21:43	20:41	19:25	20 08:12 (2)	17:15		16:22	16:17
27	08:30	07:29	06:22		06:09	05:16	05:04	05:38	06:32	07:27	07:53 (2)	07:23		08:21	08:52
	17:04	18:06	18:59		20:56	21:47	22:10	21:42	20:38	19:23	18 08:11 (2)	17:12		16:21	16:18
28	08:29	07:27	06:19		06:06	05:15	05:05	05:40	06:34	07:29	07:55 (2)	07:25		08:23	08:52
	17:06	18:08	19:01		20:58	21:49	22:09	21:40	20:36	19:20	16 08:11 (2)	17:10		16:20	16:18
29	08:27		07:17		06:04	05:14	05:05	05:42	06:36	07:31	07:57 (2)	07:27		08:25	08:53
	17:08		20:03		21:00	21:50	22:09	21:38	20:34	19:18	13 08:10 (2)	17:08		16:19	16:19
30	08:25		07:14		06:02	05:13	05:06	05:43	06:37	07:32	07:59 (2)	07:29		08:26	08:53
	17:10		20:05		21:02	21:51	22:09	21:37	20:31	19:15	10 08:09 (2)	17:06		16:19	16:20
31	08:24		07:12			05:12		05:45	06:39			07:31			08:53
	17:12		20:07			21:53		21:35	20:29			17:04			16:21
Potential sun hours	250	273	367		420	494	510	512	460	382		328		259	233
Total, worst case				216							211		13		
Sun reduction				0.22							0.25		0.23		
Oper. time red.				1.00							1.00		1.00		
Wind dir. red.				0.64							0.64		0.64		
Total reduction				0.14							0.16		0.14		
Total, real				30							34		2		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** DV - H140

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March	April	May	June	July	August	September	October		November		December		
1	08:53	09:55 (2)	08:22		07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34		07:33	08:02 (1)	08:28		
	16:23	12 10:07 (2)	17:14		18:10	20:08	21:04	21:54	22:09	21:33	20:27	19:13		17:02	8 08:10 (1)	16:18		
2	08:52	09:55 (2)	08:20		07:22	07:07	05:58	05:09	05:07	05:48	06:43	07:36		07:35	08:04 (1)	08:29		
	16:24	11 10:06 (2)	17:16		18:12	20:10	21:06	21:55	22:08	21:31	20:24	19:10		17:00	5 08:09 (1)	16:17		
3	08:52	09:57 (2)	08:19		07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38		07:37	08:06 (1)	08:31		
	16:25	9 10:06 (2)	17:18		18:14	20:12	21:07	21:56	22:08	21:30	20:22	19:08		16:58	3 08:09 (1)	16:16		
4	08:52	10:00 (2)	08:17		07:17	07:02	05:54	05:08	05:09	05:52	06:46	07:40		07:38		08:32		
	16:26	5 10:05 (2)	17:20		18:16	20:14	21:09	21:57	22:07	21:28	20:19	19:05		16:56		16:16		
5	08:52		08:15		07:15	07:00	05:52	05:07	05:10	05:53	06:48	07:42		07:40		08:34		
	16:27		17:22		18:18	20:16	21:11	21:59	22:07	21:26	20:17	19:03		16:54		16:15		
6	08:51		08:13		07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43		07:42		08:35		
	16:29		17:24		18:19	20:18	21:13	22:00	22:06	21:24	20:14	19:01		16:52		16:14		
7	08:51		08:11		07:10	06:55	05:48	05:06	05:12	05:57	06:52	07:45		07:44		08:36		
	16:30		17:26		18:21	20:19	21:15	22:01	22:06	21:22	20:12	18:58		16:50		16:14		
8	08:50		08:09	08:36 (1)	07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47		07:46		08:38		09:47 (2)
	16:31		17:28	3 08:39 (1)	18:23	20:21	21:16	22:02	22:05	21:20	20:10	18:56		16:49		16:13	4	09:51 (2)
9	08:50		08:08	08:34 (1)	07:06	06:50	05:44	05:04	05:14	06:00	06:55	07:49		07:48		08:39		09:46 (2)
	16:33		17:30	6 08:40 (1)	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53		16:47		16:13	7	09:53 (2)
10	08:49		08:06	08:32 (1)	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51		07:50		08:40		09:46 (2)
	16:34		17:32	9 08:41 (1)	18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51		16:45		16:13	10	09:56 (2)
11	08:48		08:04	08:30 (1)	07:01	06:45	05:40	05:03	05:16	06:04	06:59	07:53		07:52		08:41		09:45 (2)
	16:36		17:34	11 08:41 (1)	18:29	20:27	21:22	22:04	22:02	21:14	20:02	18:49		16:43		16:13	12	09:57 (2)
12	08:47		08:02	08:28 (1)	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54		07:54		08:42		09:45 (2)
	16:37		17:36	14 08:42 (1)	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46		16:42		16:12	13	09:58 (2)
13	08:47		08:00	08:26 (1)	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56		07:56		08:43		09:44 (2)
	16:39		17:38	16 08:42 (1)	18:33	20:31	21:25	22:06	22:00	21:10	19:57	18:44		16:40		16:12	15	09:59 (2)
14	08:46		07:58	08:24 (1)	06:53	06:38	05:35	05:02	05:20	06:09	07:04	07:58		07:58		08:44		09:44 (2)
	16:41		17:40	18 08:42 (1)	18:35	20:32	21:27	22:06	21:59	21:08	19:55	18:41		16:38		16:12	16	10:00 (2)
15	08:45		07:55	08:21 (1)	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00		08:00		08:45		09:45 (2)
	16:42		17:42	20 08:41 (1)	18:37	20:34	21:29	22:07	21:58	21:05	19:52	18:39		16:37		16:12	16	10:01 (2)
16	08:44		07:53	08:19 (1)	06:49	06:33	05:32	05:02	05:22	06:12	07:07	08:02		08:02		08:46		09:45 (2)
	16:44		17:44	22 08:41 (1)	18:39	20:36	21:30	22:07	21:57	21:03	19:50	18:37		16:35		16:12	16	10:01 (2)
17	08:43		07:51	08:18 (1)	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04		08:03		08:47		09:45 (2)
	16:46		17:46	23 08:41 (1)	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:35		16:34		16:13	17	10:02 (2)
18	08:42		07:49	08:19 (1)	06:44	06:29	05:28	05:02	05:25	06:16	07:11	08:06		08:05		08:48		09:46 (2)
	16:47		17:48	21 08:40 (1)	18:42	20:40	21:34	22:08	21:55	20:59	19:45	18:32		16:32		16:13	17	10:03 (2)
19	08:41		07:47	08:20 (1)	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:08		08:07		08:49		09:45 (2)
	16:49		17:50	19 08:39 (1)	18:44	20:42	21:35	22:09	21:54	20:57	19:42	18:30		16:31		16:13	18	10:03 (2)
20	08:40		07:45	08:21 (1)	06:39	06:24	05:25	05:02	05:28	06:20	07:15	08:09	08:56 (1)	08:09		08:49		09:46 (2)
	16:51		17:52	16 08:37 (1)	18:46	20:44	21:37	22:09	21:52	20:54	19:40	18:28	7 09:03 (1)	16:30		16:13	18	10:04 (2)
21	08:38		07:43	08:23 (1)	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:53 (1)	08:11		08:50		09:47 (2)
	16:53		17:54	12 08:35 (1)	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	13 09:06 (1)	16:28		16:14	18	10:05 (2)
22	08:37		07:40		06:34	06:20	05:22	05:02	05:31	06:23	07:18	08:13	08:51 (1)	08:13		08:50		09:47 (2)
	16:55		17:56		18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	17 09:08 (1)	16:27		16:14	18	10:05 (2)
23	08:36		07:38		06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:49 (1)	08:14		08:51		09:47 (2)
	16:57		17:58		18:52	20:49	21:41	22:10	21:48	20:48	19:32	18:21	20 09:09 (1)	16:26		16:15	18	10:05 (2)
24	08:34		07:36		06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:48 (1)	08:16		08:51		09:48 (2)
	16:58		18:00		18:53	20:51	21:43	22:10	21:46	20:45	19:30	18:19	22 09:10 (1)	16:25		16:15	18	10:06 (2)
25	08:33		07:34		06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	07:47 (1)	08:18		08:52		09:49 (2)
	17:00		18:02		18:55	20:53	21:44	22:10	21:45	20:43	19:28	17:17	23 08:10 (1)	16:23		16:16	17	10:06 (2)
26	08:32		07:31		06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	07:49 (1)	08:20		08:52		09:49 (2)
	17:02		18:04		18:57	20:55	21:46	22:10	21:43	20:41	19:25	17:14	22 08:11 (1)	16:22		16:17	17	10:06 (2)
27	08:30		07:29		06:22	06:08	05:16	05:04	05:38	06:32	07:27	07:23	07:52 (1)	08:21		08:52		09:50 (2)
	17:04		18:06		18:59	20:56	21:47	22:10	21:42	20:38	19:23	17:12	20 08:12 (1)	16:21		16:17	16	10:06 (2)
28	08:29		07:27		06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	07:54 (1)	08:23		08:52		09:50 (2)
	17:06		18:08		19:01	20:58	21:49	22:09	21:40	20:36	19:20	17:10	18 08:12 (1)	16:20		16:18	16	10:06 (2)
29	08:27				07:17	06:04	05:14	05:05	05:42	06:36	07:31	07:27	07:56 (1)	08:25		08:53		09:51 (2)
	17:08				20:03	21:00	21:50	22:09	21:38	20:34	19:18	17:08	16 08:12 (1)	16:19		16:19	16	10:07 (2)
30	08:25				07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:29	07:58 (1)	08:26		08:53		09:52 (2)
	17:10				20:05	21:02	21:51	22:09	21:37	20:31	19:15	17:06	13 08:11 (1)	16:18		16:20	15	10:07 (2)
31	08:24				07:12		05:11		05:45	06:39		07:31	08:00 (1)			08:53		09:53 (2)
	17:12				20:06		21:53		21:35	20:29		17:04	11 08:11 (1)			16:21	14	10:07 (2)
Potential sun hours	250		273		367	420	494	510	513	460	382	328		259		233		
Total, worst case		37		210									202		16		362	
Sun reduction		0.16		0.19									0.23		0.20		0.12	
Oper. time red.		1.00		1.00									1.00		1.00		1.00	
Wind dir. red.		0.61		0.61									0.61		0.61		0.61	
Total reduction		0.10		0.12									0.14		0.12		0.07	
Total, real		4		25									28		2		26	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** DW - H141

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:11	05:07	05:47	06:41	07:34	07:32	08:27
	16:23	17:14	18:10	20:08	21:04	21:54	22:08	21:33	20:26	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:10	05:07	05:48	06:43	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:14	20:12	21:07	21:56	22:08	21:29	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:52	06:46	07:40	07:38	08:32
	16:26	17:20	18:16	20:14	21:09	21:57	22:07	21:28	20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	06:59	05:52	05:07	05:10	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	21:58	22:07	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:55	05:48	05:06	05:12	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:56	16:49	16:14
9	08:49	08:07	07:05	06:50	05:44	05:04	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51	16:45	16:13
11	08:48	08:03	07:01	06:45	05:40	05:04	05:16	06:04	06:59	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:13
12	08:47	08:01	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	22:00	21:10	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:03	05:20	06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00	07:59	08:45
	16:42	17:42	18:37	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:34	16:13
18	08:42	07:49	06:44	06:29	05:29	05:02	05:25	06:16	07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:42	21:35	22:08	21:53	20:57	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:28	06:20	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:37	22:09	21:52	20:54	19:40	18:28	16:30	16:13
21	08:38	07:42	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:23	05:02	05:31	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:14	08:51
	16:57	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:19	16:25	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	21:44	22:09	21:45	20:43	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:41	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:22	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	05:14	05:05	05:42	06:36	07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:34	19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	05:13	05:06	05:43	06:37	07:32	07:29	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:37	20:31	19:15	17:06	16:19	16:20
31	08:24		07:12		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** DX - H142

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February	March	April	May	June	July	August	September	October	November		December		
1	08:52		08:22	07:24	07:09	05:59	05:10	05:06	05:46	06:40	07:34	07:32		08:27		15:38 (10)
	16:22		17:13	18:09	20:08	21:03	21:53	22:08	21:33	20:26	19:12	17:02		16:17	3	15:41 (10)
2	08:52		08:20	07:22	07:06	05:57	05:09	05:07	05:48	06:42	07:36	07:34		08:29		15:39 (10)
	16:23		17:15	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00		16:16	2	15:41 (10)
3	08:52		08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:37	07:36		08:30		
	16:24		17:17	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58		16:16		
4	08:51		08:16	07:17	07:01	05:53	05:07	05:08	05:51	06:46	07:39	07:38		08:32		
	16:26		17:19	18:15	20:13	21:09	21:57	22:07	21:27	20:19	19:05	16:56		16:15		
5	08:51		08:15	07:15	06:59	05:51	05:06	05:09	05:53	06:47	07:41	07:40		08:33		
	16:27		17:21	18:17	20:15	21:11	21:58	22:06	21:25	20:16	19:02	16:54		16:14		
6	08:51		08:13	07:12	06:57	05:49	05:06	05:10	05:54	06:49	07:43	07:42		08:35		
	16:28		17:23	18:19	20:17	21:12	21:59	22:06	21:23	20:14	19:00	16:52		16:14		
7	08:50		08:11	07:10	06:54	05:47	05:05	05:11	05:56	06:51	07:45	07:44		08:36		
	16:29		17:25	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50		16:13		
8	08:50		08:09	07:07	06:52	05:46	05:04	05:12	05:58	06:53	07:47	07:46		08:37		
	16:31		17:27	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48		16:13		
9	08:49		08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48		08:38		
	16:32		17:29	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46		16:13		
10	08:48	15:56 (10)	08:05	07:03	06:47	05:42	05:03	05:14	06:01	06:56	07:50	07:50		08:40		
	16:34	1 15:57 (10)	17:31	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:50	16:45		16:12		
11	08:48	15:56 (10)	08:03	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52		08:41		
	16:35	3 15:59 (10)	17:33	18:29	20:26	21:21	22:04	22:02	21:13	20:02	18:48	16:43		16:12		
12	08:47	15:56 (10)	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54		08:42		
	16:37	5 16:01 (10)	17:36	18:30	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41		16:12		
13	08:46	15:56 (10)	07:59	06:55	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:55		08:43		
	16:38	6 16:02 (10)	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40		16:12		
14	08:45	15:57 (10)	07:57	06:53	06:37	05:35	05:02	05:19	06:08	07:03	07:58	07:57	15:41 (10)	08:44		
	16:40	7 16:04 (10)	17:40	18:34	20:32	21:26	22:06	21:59	21:07	19:54	18:41	16:38	9 15:50 (10)	16:12		
15	08:44	15:57 (10)	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59	15:39 (10)	08:45		
	16:42	9 16:06 (10)	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36	14 15:53 (10)	16:12		
16	08:43	15:58 (10)	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:01	08:01	15:38 (10)	08:46		
	16:43	10 16:08 (10)	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16 15:54 (10)	16:12		
17	08:42	15:57 (10)	07:51	06:46	06:30	05:30	05:01	05:23	06:14	07:09	08:03	08:03	15:37 (10)	08:47		
	16:45	13 16:10 (10)	17:46	18:40	20:38	21:31	22:07	21:56	21:01	19:47	18:34	16:33	18 15:55 (10)	16:12		
18	08:41	15:58 (10)	07:49	06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05	08:05	15:36 (10)	08:47		
	16:47	14 16:12 (10)	17:48	18:42	20:39	21:33	22:08	21:54	20:58	19:44	18:32	16:32	20 15:56 (10)	16:12		
19	08:40	15:59 (10)	07:47	06:41	06:26	05:26	05:01	05:26	06:17	07:12	08:07	08:07	15:35 (10)	08:48		
	16:49	15 16:14 (10)	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:29	16:30	21 15:56 (10)	16:13		
20	08:39	15:59 (10)	07:44	06:38	06:24	05:25	05:01	05:27	06:19	07:14	08:09	08:09	15:35 (10)	08:49		
	16:50	16 16:15 (10)	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:39	18:27	16:29	20 15:55 (10)	16:13		
21	08:38	16:00 (10)	07:42	06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11	08:10	15:35 (10)	08:49		
	16:52	18 16:18 (10)	17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	18 15:53 (10)	16:13		
22	08:37	16:00 (10)	07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	15:35 (10)	08:50		
	16:54	19 16:19 (10)	17:56	18:49	20:47	21:39	22:09	21:49	20:49	19:34	18:23	16:26	17 15:52 (10)	16:14		
23	08:35	16:01 (10)	07:38	06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15	08:14	15:35 (10)	08:50		
	16:56	21 16:22 (10)	17:57	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	15 15:50 (10)	16:14		
24	08:34	16:02 (10)	07:35	06:28	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16	15:35 (10)	08:51		
	16:58	20 16:22 (10)	17:59	18:53	20:50	21:42	22:09	21:46	20:45	19:30	18:18	16:24	14 15:49 (10)	16:15		
25	08:33	16:04 (10)	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17	15:35 (10)	08:51		
	17:00	18 16:22 (10)	18:01	18:55	20:52	21:44	22:09	21:44	20:43	19:27	17:16	16:23	13 15:48 (10)	16:15		
26	08:31	16:05 (10)	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	15:36 (10)	08:52		
	17:02	16 16:21 (10)	18:03	18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	16:22	11 15:47 (10)	16:16		
27	08:30	16:07 (10)	07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:22	08:21	15:36 (10)	08:52		
	17:04	14 16:21 (10)	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	9 15:45 (10)	16:17		
28	08:28	16:09 (10)	07:26	06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24	08:22	15:37 (10)	08:52		
	17:06	9 16:18 (10)	18:07	19:00	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	7 15:44 (10)	16:18		
29	08:27			07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	15:37 (10)	08:52		
	17:08			20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	7 15:44 (10)	16:19		
30	08:25			07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26	15:37 (10)	08:52		
	17:09			20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	5 15:42 (10)	16:20		
31	08:23			07:11		05:11		05:44	06:39		07:30			08:52		
	17:11			20:06		21:52		21:35	20:28		17:04			16:21		
Potential sun hours	250		273	367	420	494	510	513	460	382	328	259		233		
Total, worst case		234											234			5
Sun reduction		0.16											0.20			0.12
Oper. time red.		1.00											1.00			1.00
Wind dir. red.		0.65											0.65			0.65
Total reduction		0.11											0.13			0.08
Total, real		25											30			0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** DY - H143

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February	March	April	May	June	July	August	September	October	November			December		
1	08:52		15:25 (9)	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:40	07:34	07:32			08:27		15:14 (9)
	16:22	19	15:44 (9)	17:13	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02			16:17	19	15:33 (9)
2	08:52		15:26 (9)	08:20	07:22	07:06	05:57	05:09	05:07	05:48	06:42	07:36	07:34			08:29		15:15 (9)
	16:23	19	15:45 (9)	17:15	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00			16:16	19	15:34 (9)
3	08:52		15:27 (9)	08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:37	07:36			08:30		15:14 (9)
	16:24	20	15:47 (9)	17:17	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58			16:16	20	15:34 (9)
4	08:51		15:27 (9)	08:16	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38			08:32		15:14 (9)
	16:26	21	15:48 (9)	17:19	18:15	20:13	21:09	21:57	22:07	21:27	20:19	19:05	16:56			16:15	21	15:35 (9)
5	08:51		15:28 (9)	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40			08:33		15:14 (9)
	16:27	22	15:50 (9)	17:21	18:17	20:15	21:11	21:58	22:06	21:25	20:16	19:03	16:54			16:14	22	15:36 (9)
6	08:51		15:28 (9)	08:13	07:12	06:57	05:49	05:06	05:10	05:55	06:49	07:43	07:42			08:35		15:14 (9)
	16:28	23	15:51 (9)	17:23	18:19	20:17	21:12	21:59	22:06	21:24	20:14	19:00	16:52			16:14	23	15:37 (9)
7	08:50		15:29 (9)	08:11	07:10	06:54	05:47	05:05	05:11	05:56	06:51	07:45	07:44			08:36		15:14 (9)
	16:29	21	15:50 (9)	17:25	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50			16:13	22	15:36 (9)
8	08:50		15:30 (9)	08:09	07:08	06:52	05:46	05:04	05:12	05:58	06:53	07:47	07:46			08:37		15:15 (9)
	16:31	21	15:51 (9)	17:27	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48			16:13	21	15:36 (9)
9	08:49		15:31 (9)	08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48			08:38		15:15 (9)
	16:32	20	15:51 (9)	17:29	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46			16:13	20	15:35 (9)
10	08:49		15:31 (9)	08:05	07:03	06:47	05:42	05:03	05:14	06:01	06:56	07:50	07:50			08:40		15:15 (9)
	16:34	20	15:51 (9)	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:50	16:45			16:12	20	15:35 (9)
11	08:48		15:32 (9)	08:03	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52			08:41		15:16 (9)
	16:35	19	15:51 (9)	17:34	18:29	20:26	21:21	22:04	22:02	21:14	20:02	18:48	16:43			16:12	19	15:35 (9)
12	08:47		15:33 (9)	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54			08:42		15:16 (9)
	16:37	17	15:50 (9)	17:36	18:30	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41			16:12	19	15:35 (9)
13	08:46		15:35 (9)	07:59	06:55	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:55			08:43		15:16 (9)
	16:38	15	15:50 (9)	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40			16:12	18	15:34 (9)
14	08:45		15:36 (9)	07:57	06:53	06:38	05:35	05:02	05:19	06:08	07:03	07:58	07:57			08:44		15:17 (9)
	16:40	13	15:49 (9)	17:40	18:34	20:32	21:26	22:06	21:59	21:07	19:54	18:41	16:38			16:12	17	15:34 (9)
15	08:45		15:38 (9)	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59			08:45		15:17 (9)
	16:42	10	15:48 (9)	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36			16:12	17	15:34 (9)
16	08:44		15:41 (9)	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:01	08:01			08:46		15:18 (9)
	16:43	5	15:46 (9)	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35			16:12	16	15:34 (9)
17	08:43			07:51	06:46	06:31	05:30	05:01	05:23	06:14	07:09	08:03	08:03			08:47		15:17 (9)
	16:45			17:46	18:40	20:38	21:32	22:07	21:56	21:01	19:47	18:34	16:33			16:12	17	15:34 (9)
18	08:41			07:49	06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05	08:05			08:47		15:18 (9)
	16:47			17:48	18:42	20:39	21:33	22:08	21:54	20:59	19:44	18:32	16:32			16:12	16	15:34 (9)
19	08:40			07:47	06:41	06:26	05:26	05:01	05:26	06:17	07:12	08:07	08:07			08:48		15:19 (9)
	16:49			17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:29	16:30			16:13	15	15:34 (9)
20	08:39			07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09			08:49		15:20 (9)
	16:51			17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:39	18:27	16:29			16:13	15	15:35 (9)
21	08:38			07:42	06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11	08:10			08:49		15:20 (9)
	16:52			17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28			16:13	15	15:35 (9)
22	08:37			07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12			08:50		15:21 (9)
	16:54			17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:26			16:14	15	15:36 (9)
23	08:35			07:38	06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15	08:14			08:51		15:21 (9)
	16:56			17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25			16:14	15	15:36 (9)
24	08:34			07:35	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16			08:51		15:21 (9)
	16:58			17:59	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24			16:15	15	15:36 (9)
25	08:33			07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17			08:51		15:22 (9)
	17:00			18:01	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23			16:16	16	15:38 (9)
26	08:31			07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19		15:20 (9)	08:52		15:22 (9)
	17:02			18:03	18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	16:22	4	15:24 (9)	16:16	16	15:38 (9)
27	08:30			07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21		15:17 (9)	08:52		15:23 (9)
	17:04			18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	10	15:27 (9)	16:17	16	15:39 (9)
28	08:28			07:26	06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24	08:23		15:16 (9)	08:52		15:23 (9)
	17:06			18:07	19:00	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	13	15:29 (9)	16:18	17	15:40 (9)
29	08:27				07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24		15:16 (9)	08:52		15:24 (9)
	17:08				20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	15	15:31 (9)	16:19	17	15:41 (9)
30	08:25				07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26		15:15 (9)	08:52		15:24 (9)
	17:09				20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16	15:31 (9)	16:20	18	15:42 (9)
31	08:23				07:11		05:11		05:44	06:39		07:30				08:52		15:25 (9)
	17:11				20:06		21:52		21:35	20:29		17:04				16:21	18	15:43 (9)
Potential sun hours	250			273	367	420	494	510	513	460	382	328	259			233		
Total, worst case		285												58			554	
Sun reduction		0.16												0.20			0.12	
Oper. time red.		1.00												1.00			1.00	
Wind dir. red.		0.65												0.65			0.65	
Total reduction		0.11												0.13			0.08	
Total, real		30												7			43	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** DZ - H144

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February		March		April	May	June	July	August	September	October		November	December
1	08:53	08:22		07:25	07:57 (2)	07:09	06:00	05:10	05:07	05:47	06:41	07:34		07:33	08:28
	16:23	17:14		18:10	19 08:16 (2)	20:08	21:04	21:54	22:09	21:33	20:27	19:13		17:02	16:18
2	08:52	08:20		07:22	07:59 (2)	07:07	05:58	05:10	05:07	05:48	06:43	07:36		07:35	08:29
	16:24	17:16		18:12	16 08:15 (2)	20:10	21:06	21:55	22:08	21:31	20:24	19:10		17:00	16:17
3	08:52	08:19		07:20	08:00 (2)	07:04	05:56	05:09	05:08	05:50	06:44	07:38		07:37	08:31
	16:25	17:18		18:14	12 08:12 (2)	20:12	21:07	21:56	22:08	21:30	20:22	19:08		16:58	16:16
4	08:52	08:17		07:17		07:02	05:54	05:08	05:09	05:52	06:46	07:40		07:39	08:32
	16:26	17:20		18:16		20:14	21:09	21:57	22:07	21:28	20:19	19:05		16:56	16:16
5	08:52	08:15		07:15		07:00	05:52	05:07	05:10	05:53	06:48	07:42		07:40	08:34
	16:27	17:22		18:18		20:16	21:11	21:59	22:07	21:26	20:17	19:03		16:54	16:15
6	08:51	08:13		07:13		06:57	05:50	05:06	05:11	05:55	06:50	07:43		07:42	08:35
	16:29	17:24		18:19		20:18	21:13	22:00	22:06	21:24	20:14	19:01		16:52	16:14
7	08:51	08:11		07:10		06:55	05:48	05:06	05:12	05:57	06:52	07:45		07:44	08:36
	16:30	17:26		18:21		20:19	21:15	22:01	22:06	21:22	20:12	18:58		16:51	16:14
8	08:50	08:09		07:08		06:52	05:46	05:05	05:13	05:58	06:53	07:47		07:46	08:38
	16:31	17:28		18:23		20:21	21:16	22:02	22:05	21:20	20:10	18:56		16:49	16:14
9	08:50	08:08		07:06		06:50	05:44	05:04	05:14	06:00	06:55	07:49		07:48	08:39
	16:33	17:30		18:25		20:23	21:18	22:02	22:04	21:18	20:07	18:53		16:47	16:13
10	08:49	08:06		07:03		06:48	05:42	05:04	05:15	06:02	06:57	07:51	08:38 (2)	07:50	08:40
	16:34	17:32		18:27		20:25	21:20	22:03	22:03	21:16	20:05	18:51	7 08:45 (2)	16:45	16:13
11	08:48	08:04		07:01		06:45	05:40	05:04	05:16	06:04	06:59	07:53	08:33 (2)	07:52	08:41
	16:36	17:34		18:29		20:27	21:22	22:04	22:02	21:14	20:02	18:49	14 08:47 (2)	16:43	16:13
12	08:47	08:02		06:58		06:43	05:39	05:03	05:17	06:05	07:00	07:54	08:31 (2)	07:54	08:42
	16:37	17:36		18:31		20:29	21:23	22:05	22:01	21:12	20:00	18:46	18 08:49 (2)	16:42	16:12
13	08:47	08:00		06:56		06:40	05:37	05:03	05:18	06:07	07:02	07:56	08:29 (2)	07:56	08:43
	16:39	17:38		18:33		20:31	21:25	22:06	22:00	21:10	19:57	18:44	21 08:50 (2)	16:40	16:12
14	08:46	07:58		06:53		06:38	05:35	05:03	05:20	06:09	07:04	07:58	08:28 (2)	07:58	08:44
	16:41	17:40		18:35		20:32	21:27	22:06	21:59	21:08	19:55	18:42	23 08:51 (2)	16:38	16:12
15	08:45	07:56		06:51		06:36	05:33	05:02	05:21	06:11	07:06	08:00	08:27 (2)	08:00	08:45
	16:42	17:42		18:37		20:34	21:29	22:07	21:58	21:05	19:52	18:39	24 08:51 (2)	16:37	16:12
16	08:44	07:53		06:49		06:33	05:32	05:02	05:22	06:13	07:07	08:02	08:29 (2)	08:02	08:46
	16:44	17:44		18:39		20:36	21:30	22:07	21:57	21:03	19:50	18:37	23 08:52 (2)	16:35	16:12
17	08:43	07:51	08:17 (2)	06:46		06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:31 (2)	08:03	08:47
	16:46	17:46	1 08:18 (2)	18:40		20:38	21:32	22:08	21:56	21:01	19:47	18:35	21 08:52 (2)	16:34	16:13
18	08:42	07:49	08:15 (2)	06:44		06:29	05:29	05:02	05:25	06:16	07:11	08:06	08:33 (2)	08:05	08:48
	16:47	17:48	4 08:19 (2)	18:42		20:40	21:34	22:08	21:55	20:59	19:45	18:32	19 08:52 (2)	16:32	16:13
19	08:41	07:47	08:13 (2)	06:41		06:26	05:27	05:02	05:26	06:18	07:13	08:08	08:35 (2)	08:07	08:49
	16:49	17:50	7 08:20 (2)	18:44		20:42	21:35	22:09	21:54	20:57	19:42	18:30	17 08:52 (2)	16:31	16:13
20	08:40	07:45	08:10 (2)	06:39		06:24	05:25	05:02	05:28	06:20	07:15	08:10	08:37 (2)	08:09	08:49
	16:51	17:52	10 08:20 (2)	18:46		20:44	21:37	22:09	21:52	20:54	19:40	18:28	14 08:51 (2)	16:30	16:13
21	08:38	07:43	08:08 (2)	06:36		06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:39 (2)	08:11	08:50
	16:53	17:54	13 08:21 (2)	18:48		20:45	21:38	22:09	21:51	20:52	19:37	18:25	12 08:51 (2)	16:28	16:14
22	08:37	07:40	08:06 (2)	06:34		06:20	05:23	05:02	05:31	06:23	07:18	08:13	08:41 (2)	08:13	08:50
	16:55	17:56	15 08:21 (2)	18:50		20:47	21:40	22:09	21:49	20:50	19:35	18:23	9 08:50 (2)	16:27	16:14
23	08:36	07:38	08:03 (2)	06:31		06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:43 (2)	08:14	08:51
	16:57	17:58	18 08:21 (2)	18:52		20:49	21:41	22:10	21:48	20:48	19:32	18:21	6 08:49 (2)	16:26	16:15
24	08:34	07:36	08:01 (2)	06:29		06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:45 (2)	08:16	08:51
	16:58	18:00	20 08:21 (2)	18:54		20:51	21:43	22:10	21:46	20:45	19:30	18:19	3 08:48 (2)	16:25	16:15
25	08:33	07:34	07:59 (2)	06:27		06:13	05:18	05:03	05:35	06:28	07:23	07:19		08:18	08:52
	17:00	18:02	22 08:21 (2)	18:55		20:53	21:44	22:10	21:45	20:43	19:28	17:17		16:23	16:16
26	08:32	07:31	07:56 (2)	06:24		06:11	05:17	05:04	05:37	06:30	07:25	07:21		08:20	08:52
	17:02	18:04	23 08:19 (2)	18:57		20:55	21:46	22:10	21:43	20:41	19:25	17:15		16:22	16:17
27	08:30	07:29	07:55 (2)	06:22		06:09	05:16	05:04	05:38	06:32	07:27	07:23		08:21	08:52
	17:04	18:06	24 08:19 (2)	18:59		20:56	21:47	22:10	21:42	20:38	19:23	17:12		16:21	16:18
28	08:29	07:27	07:56 (2)	06:19		06:06	05:15	05:05	05:40	06:34	07:29	07:25		08:23	08:52
	17:06	18:08	22 08:18 (2)	19:01		20:58	21:49	22:09	21:40	20:36	19:20	17:10		16:20	16:18
29	08:27			07:17		06:04	05:14	05:05	05:42	06:36	07:31	07:27		08:25	08:53
	17:08			20:03		21:00	21:50	22:09	21:38	20:34	19:18	17:08		16:19	16:19
30	08:25			07:14		06:02	05:13	05:06	05:43	06:37	07:32	07:29		08:26	08:53
	17:10			20:05		21:02	21:51	22:09	21:37	20:31	19:15	17:06		16:19	16:20
31	08:24			07:12			05:11		05:45	06:39		07:31			08:53
	17:12			20:07			21:53		21:35	20:29		17:04			16:21
Potential sun hours	250	273		367		420	494	510	512	460	382	328		259	233
Total, worst case			179		47								231		
Sun reduction			0.19		0.22								0.23		
Oper. time red.			1.00		1.00								1.00		
Wind dir. red.			0.62		0.62								0.62		
Total reduction			0.12		0.14								0.14		
Total, real			22		6								33		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** EA - H145

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:40	07:34	07:32	08:27
	16:22	17:13	18:09	20:08	21:03	21:53	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:06	05:57	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:15	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:16
3	08:52	08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:37	07:36	08:30
	16:24	17:17	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58	16:16
4	08:51	08:16	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38	08:32
	16:26	17:19	18:15	20:13	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40	08:33
	16:27	17:21	18:17	20:15	21:11	21:58	22:06	21:25	20:16	19:03	16:54	16:14
6	08:51	08:13	07:12	06:57	05:49	05:06	05:10	05:54	06:49	07:43	07:42	08:35
	16:28	17:23	18:19	20:17	21:12	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:47	05:05	05:11	05:56	06:51	07:45	07:44	08:36
	16:29	17:25	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:13
8	08:50	08:09	07:08	06:52	05:46	05:04	05:12	05:58	06:53	07:47	07:46	08:37
	16:31	17:27	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48	08:38
	16:32	17:29	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46	16:13
10	08:49	08:05	07:03	06:47	05:42	05:03	05:14	06:01	06:56	07:50	07:50	08:40
	16:34	17:31	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:50	16:45	16:12
11	08:48	08:03	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52	08:41
	16:35	17:34	18:29	20:26	21:21	22:04	22:02	21:13	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:30	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:55	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:55	08:43
	16:38	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	05:02	05:19	06:08	07:03	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:26	22:06	21:59	21:07	19:54	18:41	16:38	16:12
15	08:44	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36	16:12
16	08:44	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:01	08:01	08:46
	16:43	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16:12
17	08:43	07:51	06:46	06:30	05:30	05:01	05:23	06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:32	22:07	21:56	21:01	19:47	18:34	16:33	16:12
18	08:41	07:49	06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:39	21:33	22:08	21:54	20:59	19:44	18:32	16:32	16:12
19	08:40	07:47	06:41	06:26	05:26	05:01	05:26	06:17	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:29	16:30	16:13
20	08:39	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:39	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11	08:10	08:49
	16:52	17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:13
22	08:37	07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:26	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	16:14
24	08:34	07:35	06:28	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16	08:51
	16:58	17:59	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24	16:15
25	08:33	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17	08:51
	17:00	18:01	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:52
	17:02	18:03	18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24	08:23	08:52
	17:06	18:07	19:00	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26	08:52
	17:09		20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11		05:44	06:39		07:30		08:52
	17:11		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	513	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** EB - H146

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	17:27 (10)	07:09	05:59	05:10	05:06	05:46	06:40	07:34	07:32	08:27
	16:22	17:13	18:09	15 17:42 (10)	20:08	21:03	21:53	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	17:27 (10)	07:06	05:57	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:15	18:11	17 17:44 (10)	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:16
3	08:52	08:18	07:19	17:28 (10)	07:04	05:55	05:08	05:08	05:49	06:44	07:37	07:36	08:30
	16:24	17:17	18:13	18 17:46 (10)	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58	16:16
4	08:51	08:16	07:17	17:28 (10)	07:01	05:53	05:07	05:08	05:51	06:46	07:39	07:38	08:32
	16:26	17:19	18:15	18 17:46 (10)	20:13	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	17:30 (10)	06:59	05:51	05:07	05:09	05:53	06:47	07:41	07:40	08:33
	16:27	17:21	18:17	15 17:45 (10)	20:15	21:11	21:58	22:06	21:25	20:16	19:02	16:54	16:14
6	08:51	08:13	07:12	17:33 (10)	06:57	05:49	05:06	05:10	05:54	06:49	07:43	07:42	08:34
	16:28	17:23	18:19	9 17:42 (10)	20:17	21:12	21:59	22:06	21:23	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10		06:54	05:47	05:05	05:11	05:56	06:51	07:45	18:10 (10)	07:44	08:36
	16:29	17:25	18:21		20:19	21:14	22:00	22:05	21:21	20:12	18:58	5 18:15 (10)	16:50	16:13
8	08:50	08:09	07:07		06:52	05:46	05:04	05:12	05:58	06:53	07:47	18:06 (10)	07:46	08:37
	16:31	17:27	18:23		20:21	21:16	22:01	22:04	21:19	20:09	18:55	13 18:19 (10)	16:48	16:13
9	08:49	08:07	07:05		06:49	05:44	05:04	05:13	06:00	06:55	07:48	18:04 (10)	07:48	08:38
	16:32	17:29	18:25		20:23	21:18	22:02	22:04	21:17	20:07	18:53	16 18:20 (10)	16:46	16:13
10	08:48	08:05	07:03		06:47	05:42	05:03	05:14	06:01	06:56	07:50	18:02 (10)	07:50	08:40
	16:34	17:31	18:27		20:25	21:19	22:03	22:03	21:15	20:04	18:50	19 18:21 (10)	16:45	16:12
11	08:48	08:03	07:00		06:45	05:40	05:03	05:15	06:03	06:58	07:52	18:01 (10)	07:52	08:41
	16:35	17:33	18:29		20:26	21:21	22:04	22:02	21:13	20:02	18:48	18 18:19 (10)	16:43	16:12
12	08:47	08:01	06:58		06:42	05:38	05:03	05:17	06:05	07:00	07:54	18:00 (10)	07:53	08:42
	16:37	17:35	18:30		20:28	21:23	22:04	22:01	21:11	19:59	18:46	17 18:17 (10)	16:41	16:12
13	08:46	07:59	06:55		06:40	05:36	05:02	05:18	06:07	07:02	07:56	18:00 (10)	07:55	08:43
	16:38	17:38	18:32		20:30	21:25	22:05	22:00	21:09	19:57	18:43	14 18:14 (10)	16:40	16:12
14	08:45	07:57	06:53		06:37	05:35	05:02	05:19	06:08	07:03	07:58	17:59 (10)	07:57	08:44
	16:40	17:40	18:34		20:32	21:26	22:06	21:59	21:07	19:54	18:41	13 18:12 (10)	16:38	16:12
15	08:44	07:55	06:51		06:35	05:33	05:02	05:20	06:10	07:05	08:00	17:59 (10)	07:59	08:45
	16:42	17:42	18:36		20:34	21:28	22:06	21:58	21:05	19:52	18:39	11 18:10 (10)	16:36	16:12
16	08:43	07:53	06:48		06:33	05:31	05:02	05:22	06:12	07:07	08:01	17:59 (10)	08:01	08:46
	16:43	17:44	18:38		20:36	21:30	22:07	21:57	21:03	19:49	18:36	8 18:07 (10)	16:35	16:12
17	08:42	07:51	06:46		06:30	05:30	05:01	05:23	06:14	07:09	08:03	17:59 (10)	08:03	08:47
	16:45	17:46	18:40		20:37	21:31	22:07	21:55	21:01	19:47	18:34	6 18:05 (10)	16:33	16:12
18	08:41	07:49	06:43		06:28	05:28	05:01	05:24	06:16	07:10	08:05	18:00 (10)	08:05	08:47
	16:47	17:48	18:42		20:39	21:33	22:08	21:54	20:58	19:44	18:32	2 18:02 (10)	16:32	16:12
19	08:40	07:46	06:41		06:26	05:26	05:01	05:26	06:17	07:12	08:07		08:07	08:48
	16:49	17:50	18:44		20:41	21:35	22:08	21:53	20:56	19:42	18:29		16:30	16:13
20	08:39	07:44	06:38		06:24	05:25	05:02	05:27	06:19	07:14	08:09		08:08	08:49
	16:50	17:52	18:46		20:43	21:36	22:08	21:52	20:54	19:39	18:27		16:29	16:13
21	08:38	07:42	06:36		06:21	05:23	05:02	05:29	06:21	07:16	08:11		08:10	08:49
	16:52	17:54	18:47		20:45	21:38	22:09	21:50	20:52	19:37	18:25		16:28	16:13
22	08:37	07:40	06:33		06:19	05:22	05:02	05:30	06:23	07:18	08:13		08:12	08:50
	16:54	17:55	18:49		20:47	21:39	22:09	21:49	20:49	19:34	18:23		16:26	16:14
23	08:35	07:38	06:31		06:17	05:21	05:02	05:32	06:24	07:19	08:15		08:14	08:50
	16:56	17:57	18:51		20:49	21:41	22:09	21:47	20:47	19:32	18:21		16:25	16:14
24	08:34	07:35 17:28 (10)	06:28		06:15	05:19	05:02	05:33	06:26	07:21	08:17		08:16	08:51
	16:58	17:59 4 17:32 (10)	18:53		20:50	21:42	22:09	21:46	20:45	19:29	18:18		16:24	16:15
25	08:32	07:33 17:27 (10)	06:26		06:12	05:18	05:03	05:35	06:28	07:23	07:19		08:17	08:51
	17:00	18:01 6 17:33 (10)	18:55		20:52	21:44	22:09	21:44	20:43	19:27	17:16		16:23	16:16
26	08:31	07:31 17:27 (10)	06:24		06:10	05:17	05:03	05:36	06:30	07:25	07:20		08:19	08:51
	17:02	18:03 9 17:36 (10)	18:57		20:54	21:45	22:09	21:43	20:40	19:25	17:14		16:22	16:16
27	08:30	07:29 17:26 (10)	06:21		06:08	05:15	05:04	05:38	06:31	07:27	07:22		08:21	08:52
	17:04	18:05 11 17:37 (10)	18:59		20:56	21:47	22:09	21:41	20:38	19:22	17:12		16:21	16:17
28	08:28	07:26 17:26 (10)	06:19		06:06	05:14	05:04	05:39	06:33	07:28	07:24		08:22	08:52
	17:06	18:07 14 17:40 (10)	19:00		20:58	21:48	22:09	21:40	20:36	19:20	17:10		16:20	16:18
29	08:26		07:16		06:04	05:13	05:05	05:41	06:35	07:30	07:26		08:24	08:52
	17:08		20:02		21:00	21:50	22:09	21:38	20:33	19:17	17:08		16:19	16:19
30	08:25		07:14		06:02	05:12	05:05	05:43	06:37	07:32	07:28		08:26	08:52
	17:09		20:04		21:01	21:51	22:08	21:36	20:31	19:15	17:06		16:18	16:20
31	08:23		07:11			05:11		05:44	06:39		07:30			08:52
	17:11		20:06			21:52		21:35	20:28		17:04			16:21
Potential sun hours	250	273	367		420	494	510	512	460	382	328		259	233
Total, worst case		44		92								142		
Sun reduction		0.19		0.22								0.23		
Oper. time red.		1.00		1.00								1.00		
Wind dir. red.		0.65		0.65								0.65		
Total reduction		0.13		0.14								0.15		
Total, real		6		13								21		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** EC - H147

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March		April	May	June	July	August	September		October	November	December
1	08:53	08:22	07:25		07:09	06:00	05:11	05:07	05:47	06:41		07:34	07:33	08:28
	16:23	17:14	18:10		20:08	21:04	21:54	22:09	21:33	20:27		19:13	17:02	16:18
2	08:52	08:20	07:22		07:07	05:58	05:10	05:07	05:48	06:43		07:36	07:35	08:29
	16:24	17:16	18:12		20:10	21:06	21:55	22:08	21:31	20:24		19:10	17:00	16:17
3	08:52	08:19	07:20		07:04	05:56	05:09	05:08	05:50	06:44		07:38	07:37	08:31
	16:25	17:18	18:14		20:12	21:07	21:56	22:08	21:30	20:22		19:08	16:58	16:16
4	08:52	08:17	07:17		07:02	05:54	05:08	05:09	05:52	06:46		07:40	07:38	08:32
	16:26	17:20	18:16		20:14	21:09	21:57	22:07	21:28	20:19		19:05	16:56	16:16
5	08:52	08:15	07:15		07:00	05:52	05:07	05:10	05:53	06:48		07:42	07:40	08:34
	16:27	17:22	18:18		20:16	21:11	21:58	22:07	21:26	20:17		19:03	16:54	16:15
6	08:51	08:13	07:13		06:57	05:50	05:06	05:11	05:55	06:50		07:43	07:42	08:35
	16:29	17:24	18:20		20:18	21:13	22:00	22:06	21:24	20:14		19:01	16:52	16:14
7	08:51	08:11	07:10		06:55	05:48	05:06	05:12	05:57	06:52		07:45	07:44	08:36
	16:30	17:26	18:21		20:19	21:15	22:01	22:06	21:22	20:12		18:58	16:51	16:14
8	08:50	08:09	07:08		06:52	05:46	05:05	05:13	05:59	06:53		07:47	07:46	08:38
	16:31	17:28	18:23		20:21	21:16	22:02	22:05	21:20	20:10		18:56	16:49	16:14
9	08:50	08:08	07:06		06:50	05:44	05:05	05:14	06:00	06:55		07:49	07:48	08:39
	16:33	17:30	18:25		20:23	21:18	22:02	22:04	21:18	20:07		18:53	16:47	16:13
10	08:49	08:06	07:03		06:48	05:42	05:04	05:15	06:02	06:57		07:51	07:50	08:40
	16:34	17:32	18:27		20:25	21:20	22:03	22:03	21:16	20:05		18:51	16:45	16:13
11	08:48	08:04	07:01		06:45	05:40	05:04	05:16	06:04	06:59		07:53	07:52	08:41
	16:36	17:34	18:29		20:27	21:22	22:04	22:02	21:14	20:02		18:49	16:43	16:13
12	08:47	08:02	06:58		06:43	05:39	05:03	05:17	06:05	07:00		07:54	07:54	08:42
	16:37	17:36	18:31		20:29	21:23	22:05	22:01	21:12	20:00		18:46	16:42	16:13
13	08:47	08:00	06:56	07:20 (2)	06:40	05:37	05:03	05:18	06:07	07:02		07:56	07:56	08:43
	16:39	17:38	18:33	1 07:21 (2)	20:31	21:25	22:06	22:00	21:10	19:57		18:44	16:40	16:12
14	08:46	07:58	06:54	07:17 (2)	06:38	05:35	05:03	05:20	06:09	07:04		07:58	07:58	08:44
	16:41	17:40	18:35	4 07:21 (2)	20:32	21:27	22:06	21:59	21:08	19:55		18:42	16:39	16:12
15	08:45	07:55	06:51	07:15 (2)	06:36	05:33	05:02	05:21	06:11	07:06		08:00	08:00	08:45
	16:42	17:42	18:37	7 07:22 (2)	20:34	21:29	22:07	21:58	21:05	19:52		18:39	16:37	16:12
16	08:44	07:53	06:49	07:13 (2)	06:33	05:32	05:02	05:22	06:13	07:07		08:02	08:02	08:46
	16:44	17:44	18:39	10 07:23 (2)	20:36	21:30	22:07	21:57	21:03	19:50		18:37	16:35	16:12
17	08:43	07:51	06:46	07:10 (2)	06:31	05:30	05:02	05:24	06:14	07:09	07:51 (2)	08:04	08:03	08:47
	16:46	17:46	18:40	13 07:23 (2)	20:38	21:32	22:08	21:56	21:01	19:47	9 08:00 (2)	18:35	16:34	16:13
18	08:42	07:49	06:44	07:08 (2)	06:29	05:29	05:02	05:25	06:16	07:11	07:47 (2)	08:06	08:05	08:48
	16:48	17:48	18:42	15 07:23 (2)	20:40	21:34	22:08	21:55	20:59	19:45	15 08:02 (2)	18:32	16:32	16:13
19	08:41	07:47	06:41	07:05 (2)	06:26	05:27	05:02	05:26	06:18	07:13	07:45 (2)	08:08	08:07	08:49
	16:49	17:50	18:44	17 07:22 (2)	20:42	21:35	22:09	21:53	20:57	19:42	19 08:04 (2)	18:30	16:31	16:13
20	08:40	07:45	06:39	07:03 (2)	06:24	05:25	05:02	05:28	06:20	07:15	07:44 (2)	08:10	08:09	08:49
	16:51	17:52	18:46	19 07:22 (2)	20:44	21:37	22:09	21:52	20:54	19:40	21 08:05 (2)	18:28	16:30	16:13
21	08:38	07:43	06:36	07:00 (2)	06:22	05:24	05:02	05:29	06:21	07:16	07:43 (2)	08:11	08:11	08:50
	16:53	17:54	18:48	21 07:21 (2)	20:45	21:38	22:09	21:51	20:52	19:37	23 08:06 (2)	18:25	16:28	16:14
22	08:37	07:40	06:34	06:58 (2)	06:20	05:23	05:02	05:31	06:23	07:18	07:44 (2)	08:13	08:13	08:50
	16:55	17:56	18:50	23 07:21 (2)	20:47	21:40	22:09	21:49	20:50	19:35	22 08:06 (2)	18:23	16:27	16:14
23	08:36	07:38	06:31	06:57 (2)	06:17	05:21	05:03	05:32	06:25	07:20	07:46 (2)	08:15	08:14	08:51
	16:57	17:58	18:52	22 07:19 (2)	20:49	21:41	22:10	21:48	20:48	19:33	20 08:06 (2)	18:21	16:26	16:15
24	08:34	07:36	06:29	06:59 (2)	06:15	05:20	05:03	05:34	06:27	07:22	07:48 (2)	08:17	08:16	08:51
	16:58	18:00	18:54	19 07:18 (2)	20:51	21:43	22:10	21:46	20:45	19:30	18 08:06 (2)	18:19	16:25	16:15
25	08:33	07:34	06:27	06:59 (2)	06:13	05:18	05:03	05:35	06:29	07:24	07:50 (2)	07:19	08:18	08:52
	17:00	18:02	18:55	16 07:15 (2)	20:53	21:44	22:10	21:45	20:43	19:28	16 08:06 (2)	17:17	16:23	16:16
26	08:32	07:31	06:24	07:02 (2)	06:11	05:17	05:04	05:37	06:30	07:25	07:52 (2)	07:21	08:20	08:52
	17:02	18:04	18:57	11 07:13 (2)	20:55	21:46	22:10	21:43	20:41	19:25	14 08:06 (2)	17:15	16:22	16:17
27	08:30	07:29	06:22		06:09	05:16	05:04	05:38	06:32	07:27	07:53 (2)	07:23	08:21	08:52
	17:04	18:06	18:59		20:56	21:47	22:10	21:42	20:38	19:23	11 08:04 (2)	17:12	16:21	16:18
28	08:29	07:27	06:19		06:06	05:15	05:05	05:40	06:34	07:29	07:55 (2)	07:25	08:23	08:52
	17:06	18:08	19:01		20:58	21:49	22:09	21:40	20:36	19:20	9 08:04 (2)	17:10	16:20	16:18
29	08:27		07:17		06:04	05:14	05:05	05:42	06:36	07:31	07:57 (2)	07:27	08:25	08:53
	17:08		20:03		21:00	21:50	22:09	21:38	20:34	19:18	6 08:03 (2)	17:08	16:19	16:19
30	08:25		07:14		06:02	05:13	05:06	05:43	06:37	07:32	07:59 (2)	07:29	08:26	08:53
	17:10		20:05		21:02	21:51	22:09	21:37	20:31	19:15	2 08:01 (2)	17:06	16:19	16:20
31	08:24		07:12			05:12		05:45	06:39			07:31		08:53
	17:12		20:07			21:53		21:35	20:29			17:04		16:21
Potential sun hours	250	273	367		420	494	510	512	460	382		328	259	233
Total, worst case				198							205			
Sun reduction				0.22							0.25			
Oper. time red.				1.00							1.00			
Wind dir. red.				0.64							0.64			
Total reduction				0.14							0.16			
Total, real				28							33			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** ED - H148

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:40	07:34	07:32	08:27
	16:22	17:13	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:06	05:57	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:15	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:16
3	08:52	08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:37	07:36	08:30
	16:24	17:17	18:13	20:12	21:07	21:56	22:08	21:29	20:21	19:07	16:58	16:16
4	08:52	08:16	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38	08:32
	16:26	17:19	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40	08:33
	16:27	17:21	18:17	20:15	21:11	21:58	22:06	21:25	20:17	19:03	16:54	16:14
6	08:51	08:13	07:12	06:57	05:49	05:06	05:10	05:55	06:49	07:43	07:42	08:35
	16:28	17:23	18:19	20:17	21:12	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:47	05:05	05:11	05:56	06:51	07:45	07:44	08:36
	16:29	17:25	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:13
8	08:50	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37
	16:31	17:27	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48	08:39
	16:32	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46	16:13
10	08:49	08:05	07:03	06:47	05:42	05:03	05:14	06:01	06:56	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:50	16:45	16:12
11	08:48	08:03	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52	08:41
	16:35	17:34	18:29	20:26	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:55	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	05:02	05:19	06:08	07:03	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36	16:12
16	08:44	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:43	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:01	05:23	06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:32	22:07	21:56	21:01	19:47	18:34	16:33	16:12
18	08:41	07:49	06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05	08:05	08:48
	16:47	17:48	18:42	20:39	21:33	22:08	21:54	20:59	19:44	18:32	16:32	16:12
19	08:40	07:47	06:41	06:26	05:26	05:01	05:26	06:17	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:30	16:13
20	08:39	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:39	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11	08:10	08:50
	16:52	17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:13
22	08:37	07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	16:14
24	08:34	07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24	16:15
25	08:33	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17	08:51
	17:00	18:01	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:52
	17:02	18:03	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24	08:23	08:52
	17:06	18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11		05:44	06:39		07:30		08:52
	17:11		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	513	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** EE - H149

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March		April		May	June	July	August	September		October	November	December
1	08:52	08:22	07:24		07:09		19:26 (7)	06:00	05:10	05:06	05:46	06:41		07:34	07:32	08:27
	16:22	17:14	18:10		20:08	15	19:41 (7)	21:03	21:54	22:08	21:33	20:26		19:12	17:02	16:17
2	08:52	08:20	07:22		07:07		19:26 (7)	05:58	05:09	05:07	05:48	06:42		07:36	07:34	08:29
	16:23	17:16	18:11		20:10	17	19:43 (7)	21:05	21:55	22:08	21:31	20:24		19:10	17:00	16:17
3	08:52	08:18	07:20		07:04		19:26 (7)	05:56	05:08	05:08	05:50	06:44		07:38	07:36	08:30
	16:25	17:18	18:13		20:12	19	19:45 (7)	21:07	21:56	22:07	21:29	20:21		19:08	16:58	16:16
4	08:51	08:17	07:17		07:02		19:26 (7)	05:54	05:08	05:09	05:51	06:46	19:27 (7)	07:39	07:38	08:32
	16:26	17:20	18:15		20:14	20	19:46 (7)	21:09	21:57	22:07	21:27	20:19	11 19:38 (7)	19:05	16:56	16:15
5	08:51	08:15	07:15		06:59		19:26 (7)	05:52	05:07	05:10	05:53	06:48	19:25 (7)	07:41	07:40	08:33
	16:27	17:22	18:17		20:15	21	19:47 (7)	21:11	21:58	22:06	21:26	20:17	16 19:41 (7)	19:03	16:54	16:15
6	08:51	08:13	07:12		06:57		19:28 (7)	05:50	05:06	05:10	05:55	06:50	19:23 (7)	07:43	07:42	08:35
	16:28	17:24	18:19		20:17	18	19:46 (7)	21:13	21:59	22:06	21:24	20:14	18 19:41 (7)	19:00	16:52	16:14
7	08:50	08:11	07:10		06:54		19:28 (7)	05:48	05:05	05:11	05:57	06:51	19:22 (7)	07:45	07:44	08:36
	16:30	17:26	18:21		20:19	16	19:44 (7)	21:14	22:00	22:05	21:22	20:12	20 19:42 (7)	18:58	16:50	16:14
8	08:50	08:09	07:08		06:52		19:30 (7)	05:46	05:05	05:12	05:58	06:53	19:21 (7)	07:47	07:46	08:37
	16:31	17:28	18:23		20:21	11	19:41 (7)	21:16	22:01	22:04	21:20	20:09	20 19:41 (7)	18:55	16:48	16:13
9	08:49	08:07	07:05		06:50			05:44	05:04	05:14	06:00	06:55	19:20 (7)	07:49	07:48	08:39
	16:33	17:30	18:25		20:23			21:18	22:02	22:04	21:18	20:07	19 19:39 (7)	18:53	16:47	16:13
10	08:49	08:05	07:03		06:47			05:42	05:04	05:15	06:02	06:57	19:19 (7)	07:50	07:50	08:40
	16:34	17:32	18:27		20:25			21:20	22:03	22:03	21:16	20:04	17 19:36 (7)	18:51	16:45	16:13
11	08:48	08:03	07:00		06:45			05:40	05:03	05:16	06:03	06:58	19:19 (7)	07:52	07:52	08:41
	16:36	17:34	18:29		20:27			21:21	22:04	22:02	21:14	20:02	15 19:34 (7)	18:48	16:43	16:12
12	08:47	08:01	06:58		06:42			05:38	05:03	05:17	06:05	07:00	19:19 (7)	07:54	07:54	08:42
	16:37	17:36	18:31		20:28			21:23	22:04	22:01	21:11	19:59	13 19:32 (7)	18:46	16:42	16:12
13	08:46	07:59	06:56		06:40			05:37	05:03	05:18	06:07	07:02	19:18 (7)	07:56	07:56	08:43
	16:39	17:38	18:33		20:30			21:25	22:05	22:00	21:09	19:57	11 19:29 (7)	18:44	16:40	16:12
14	08:45	07:57	06:53		06:38			05:35	05:02	05:19	06:09	07:04	19:18 (7)	07:58	07:57	08:44
	16:40	17:40	18:34		20:32			21:27	22:06	21:59	21:07	19:55	8 19:26 (7)	18:41	16:38	16:12
15	08:45	07:55	06:51		06:35			05:33	05:02	05:21	06:10	07:05	19:19 (7)	08:00	07:59	08:45
	16:42	17:42	18:36		20:34			21:28	22:06	21:58	21:05	19:52	5 19:24 (7)	18:39	16:37	16:12
16	08:44	07:53	06:48		06:33			05:32	05:02	05:22	06:12	07:07	19:20 (7)	08:02	08:01	08:46
	16:44	17:44	18:38		20:36			21:30	22:07	21:57	21:03	19:50	2 19:22 (7)	18:37	16:35	16:12
17	08:43	07:51	06:46		06:31			05:30	05:02	05:23	06:14	07:09		08:03	08:03	08:47
	16:45	17:46	18:40		20:38			21:32	22:07	21:56	21:01	19:47		18:34	16:34	16:12
18	08:41	07:49	06:43		06:28			05:28	05:02	05:25	06:16	07:11		08:05	08:05	08:47
	16:47	17:48	18:42		20:40			21:33	22:08	21:54	20:59	19:45		18:32	16:32	16:13
19	08:40	07:47	06:41		06:26			05:27	05:02	05:26	06:18	07:13		08:07	08:07	08:48
	16:49	17:50	18:44		20:41			21:35	22:08	21:53	20:56	19:42		18:30	16:31	16:13
20	08:39	07:44	06:39		06:24			05:25	05:02	05:27	06:19	07:14		08:09	08:09	08:49
	16:51	17:52	18:46		20:43			21:36	22:09	21:52	20:54	19:40		18:27	16:29	16:13
21	08:38	07:42	06:36		06:22			05:24	05:02	05:29	06:21	07:16		08:11	08:10	08:49
	16:53	17:54	18:48		20:45			21:38	22:09	21:50	20:52	19:37		18:25	16:28	16:14
22	08:37	07:40	06:34		06:19			05:22	05:02	05:30	06:23	07:18		08:13	08:12	08:50
	16:54	17:56	18:49		20:47			21:40	22:09	21:49	20:50	19:35		18:23	16:27	16:14
23	08:35	07:38	06:31		06:17			05:21	05:02	05:32	06:25	07:20		08:15	08:14	08:51
	16:56	17:58	18:51		20:49			21:41	22:09	21:48	20:47	19:32		18:21	16:26	16:15
24	08:34	07:36	06:29		06:15			05:20	05:03	05:33	06:26	07:21		08:17	08:16	08:51
	16:58	18:00	18:53		20:51			21:43	22:09	21:46	20:45	19:30		18:19	16:24	16:15
25	08:33	07:33	06:26		06:13			05:18	05:03	05:35	06:28	07:23		07:19	08:17	08:51
	17:00	18:02	18:55		20:52			21:44	22:09	21:45	20:43	19:27		17:16	16:23	16:16
26	08:31	07:31	06:24		06:10			05:17	05:03	05:37	06:30	07:25		07:21	08:19	08:52
	17:02	18:04	18:57		20:54			21:45	22:09	21:43	20:40	19:25		17:14	16:22	16:17
27	08:30	07:29	06:21	18:31 (7)	06:08			05:16	05:04	05:38	06:32	07:27		07:23	08:21	08:52
	17:04	18:06	18:59	1 18:32 (7)	20:56			21:47	22:09	21:41	20:38	19:22		17:12	16:21	16:17
28	08:28	07:26	06:19	18:30 (7)	06:06			05:15	05:04	05:40	06:34	07:29		07:25	08:23	08:52
	17:06	18:08	19:01	4 18:34 (7)	20:58			21:48	22:09	21:40	20:36	19:20		17:10	16:20	16:18
29	08:27		07:16	19:28 (7)	06:04			05:13	05:05	05:41	06:35	07:30		07:26	08:24	08:52
	17:08		20:02	8 19:36 (7)	21:00			21:50	22:09	21:38	20:33	19:17		17:08	16:19	16:19
30	08:25		07:14	19:28 (7)	06:02			05:12	05:06	05:43	06:37	07:32		07:28	08:26	08:52
	17:10		20:04	10 19:38 (7)	21:02			21:51	22:09	21:36	20:31	19:15		17:06	16:18	16:20
31	08:23		07:11	19:26 (7)				05:11		05:45	06:39			07:30		08:52
	17:12		20:06	13 19:39 (7)				21:52		21:35	20:29			17:04		16:21
Potential sun hours	250	273	367		420			494	510	512	460	382		328	259	233
Total, worst case				36		137							175			
Sun reduction				0.22		0.31							0.25			
Oper. time red.				1.00		1.00							1.00			
Wind dir. red.				0.64		0.64							0.64			
Total reduction				0.14		0.20							0.16			
Total, real				5		27							28			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** EF - H151

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February		March	April	May	June	July	August	September	October		November		December
1	08:52	08:22		07:24	07:09	05:59	05:10	05:06	05:46	06:40	07:34		07:32	16:19 (10)	08:27
	16:22	17:13		18:09	20:08	21:03	21:53	22:08	21:33	20:26	19:12		17:02	16:31 (10)	16:17
2	08:52	08:20		07:22	07:06	05:57	05:09	05:07	05:48	06:42	07:36		07:34	16:18 (10)	08:29
	16:23	17:15		18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10		17:00	16:29 (10)	16:16
3	08:52	08:18		07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:37		07:36	16:18 (10)	08:30
	16:24	17:17		18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07		16:58	16:26 (10)	16:16
4	08:51	08:16		07:17	07:01	05:53	05:07	05:08	05:51	06:46	07:39		07:38	16:18 (10)	08:32
	16:26	17:19		18:15	20:13	21:09	21:57	22:07	21:27	20:19	19:05		16:56	16:24 (10)	16:15
5	08:51	08:15	16:49 (10)	07:15	06:59	05:51	05:06	05:09	05:53	06:47	07:41		07:40	16:18 (10)	08:33
	16:27	17:21	1 16:50 (10)	18:17	20:15	21:11	21:58	22:06	21:25	20:16	19:02		16:54	16:22 (10)	16:14
6	08:51	08:13	16:49 (10)	07:12	06:57	05:49	05:06	05:10	05:54	06:49	07:43		07:42	16:19 (10)	08:35
	16:28	17:23	3 16:52 (10)	18:19	20:17	21:12	21:59	22:06	21:23	20:14	19:00		16:52	16:20 (10)	16:14
7	08:50	08:11	16:49 (10)	07:10	06:54	05:47	05:05	05:11	05:56	06:51	07:45		07:44		08:36
	16:29	17:25	6 16:55 (10)	18:21	20:19	21:14	22:00	22:05	21:21	20:12	18:58		16:50		16:13
8	08:50	08:09	16:49 (10)	07:07	06:52	05:46	05:04	05:12	05:58	06:53	07:47		07:46		08:37
	16:31	17:27	8 16:57 (10)	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55		16:48		16:13
9	08:49	08:07	16:49 (10)	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48		07:48		08:38
	16:32	17:29	10 16:59 (10)	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53		16:46		16:13
10	08:48	08:05	16:49 (10)	07:03	06:47	05:42	05:03	05:14	06:01	06:56	07:50		07:50		08:40
	16:34	17:31	13 17:02 (10)	18:27	20:25	21:19	22:03	22:03	21:15	20:04	18:50		16:45		16:12
11	08:48	08:03	16:49 (10)	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52		07:52		08:41
	16:35	17:33	15 17:04 (10)	18:29	20:26	21:21	22:04	22:02	21:13	20:02	18:48		16:43		16:12
12	08:47	08:01	16:49 (10)	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54		07:53		08:42
	16:37	17:35	16 17:05 (10)	18:30	20:28	21:23	22:04	22:01	21:11	19:59	18:46		16:41		16:12
13	08:46	07:59	16:50 (10)	06:55	06:40	05:36	05:02	05:18	06:07	07:02	07:56		07:55		08:43
	16:38	17:38	17 17:07 (10)	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43		16:40		16:12
14	08:45	07:57	16:51 (10)	06:53	06:37	05:35	05:02	05:19	06:08	07:03	07:58		07:57		08:44
	16:40	17:40	19 17:10 (10)	18:34	20:32	21:26	22:06	21:59	21:07	19:54	18:41		16:38		16:12
15	08:44	07:55	16:53 (10)	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00		07:59		08:45
	16:42	17:42	16 17:09 (10)	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39		16:36		16:12
16	08:43	07:53	16:55 (10)	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:01		08:01		08:46
	16:43	17:44	12 17:07 (10)	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36		16:35		16:12
17	08:42	07:51	16:59 (10)	06:46	06:30	05:30	05:01	05:23	06:14	07:09	08:03		08:03		08:47
	16:45	17:46	4 17:03 (10)	18:40	20:38	21:31	22:07	21:56	21:01	19:47	18:34		16:33		16:12
18	08:41	07:49		06:43	06:28	05:28	05:01	05:24	06:16	07:10	08:05		08:05		08:47
	16:47	17:48		18:42	20:39	21:33	22:08	21:54	20:58	19:44	18:32		16:32		16:12
19	08:40	07:46		06:41	06:26	05:26	05:01	05:26	06:17	07:12	08:07		08:07		08:48
	16:49	17:50		18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:29		16:30		16:13
20	08:39	07:44		06:38	06:24	05:25	05:01	05:27	06:19	07:14	08:09		08:08		08:49
	16:50	17:52		18:46	20:43	21:36	22:08	21:52	20:54	19:39	18:27		16:29		16:13
21	08:38	07:42		06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11		08:10		08:49
	16:52	17:54		18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25		16:28		16:13
22	08:37	07:40		06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13		08:12		08:50
	16:54	17:55		18:49	20:47	21:39	22:09	21:49	20:49	19:34	18:23		16:26		16:14
23	08:35	07:38		06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15		08:14		08:50
	16:56	17:57		18:51	20:49	21:41	22:09	21:47	20:47	19:32	18:21		16:25		16:14
24	08:34	07:35		06:28	06:15	05:19	05:02	05:33	06:26	07:21	08:17		08:16		08:51
	16:58	17:59		18:53	20:50	21:42	22:09	21:46	20:45	19:29	18:18		16:24		16:15
25	08:33	07:33		06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	16:27 (10)	08:17		08:51
	17:00	18:01		18:55	20:52	21:44	22:09	21:44	20:43	19:27	17:16	7 16:34 (10)	16:23		16:15
26	08:31	07:31		06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	16:24 (10)	08:19		08:52
	17:02	18:03		18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	13 16:37 (10)	16:22		16:16
27	08:30	07:29		06:21	06:08	05:15	05:04	05:38	06:31	07:27	07:22	16:22 (10)	08:21		08:52
	17:04	18:05		18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	17 16:39 (10)	16:21		16:17
28	08:28	07:26		06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24	16:21 (10)	08:22		08:52
	17:06	18:07		19:00	20:58	21:48	22:09	21:40	20:36	19:20	17:10	18 16:39 (10)	16:20		16:18
29	08:26			07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	16:19 (10)	08:24		08:52
	17:07			20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	18 16:37 (10)	16:19		16:19
30	08:25			07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	16:19 (10)	08:26		08:52
	17:09			20:04	21:01	21:51	22:09	21:36	20:31	19:15	17:06	15 16:34 (10)	16:18		16:20
31	08:23			07:11		05:11		05:44	06:39		07:30	16:18 (10)			08:52
	17:11			20:06		21:52		21:35	20:28		17:04	14 16:32 (10)			16:21
Potential sun hours	250	273		367	420	494	510	513	460	382	328		259		233
Total, worst case			140									102		42	
Sun reduction			0.19									0.23		0.20	
Oper. time red.			1.00									1.00		1.00	
Wind dir. red.			0.64									0.64		0.64	
Total reduction			0.12									0.15		0.13	
Total, real			17									15		5	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** EG - H152

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February	March	April	May	June	July	August	September	October	November	December		
1	08:52		15:20 (10)	08:22	07:24	07:09	05:59	05:10	05:06	05:46	06:40	07:34	07:32	08:27		
	16:22	21	15:41 (10)	17:13	18:09	20:08	21:03	21:53	22:08	21:33	20:26	19:12	17:02	16:17		
2	08:52		15:21 (10)	08:20	07:22	07:06	05:57	05:09	05:07	05:48	06:42	07:36	07:34	08:29		15:14 (10)
	16:23	20	15:41 (10)	17:15	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:16	7	15:21 (10)
3	08:52		15:22 (10)	08:18	07:19	07:04	05:55	05:08	05:07	05:49	06:44	07:37	07:36	08:30		15:12 (10)
	16:24	20	15:42 (10)	17:17	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58	16:16	11	15:23 (10)
4	08:51		15:23 (10)	08:16	07:17	07:01	05:53	05:07	05:08	05:51	06:46	07:39	07:38	08:32		15:12 (10)
	16:26	18	15:41 (10)	17:19	18:15	20:13	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15	13	15:25 (10)
5	08:51		15:24 (10)	08:15	07:15	06:59	05:51	05:06	05:09	05:53	06:48	07:41	07:40	08:33		15:11 (10)
	16:27	18	15:42 (10)	17:21	18:17	20:15	21:11	21:58	22:06	21:25	20:16	19:02	16:54	16:14	15	15:26 (10)
6	08:51		15:25 (10)	08:13	07:12	06:57	05:49	05:06	05:10	05:54	06:49	07:43	07:42	08:35		15:11 (10)
	16:28	16	15:41 (10)	17:23	18:19	20:17	21:12	21:59	22:06	21:23	20:14	19:00	16:52	16:14	16	15:27 (10)
7	08:50		15:26 (10)	08:11	07:10	06:54	05:47	05:05	05:11	05:56	06:51	07:45	07:44	08:36		15:10 (10)
	16:29	15	15:41 (10)	17:25	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:13	18	15:28 (10)
8	08:50		15:28 (10)	08:09	07:07	06:52	05:46	05:04	05:12	05:58	06:53	07:47	07:46	08:37		15:11 (10)
	16:31	13	15:41 (10)	17:27	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48	16:13	18	15:29 (10)
9	08:49		15:29 (10)	08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48	08:38		15:11 (10)
	16:32	11	15:40 (10)	17:29	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46	16:13	19	15:30 (10)
10	08:48		15:31 (10)	08:05	07:03	06:47	05:42	05:03	05:14	06:01	06:56	07:50	07:50	08:40		15:10 (10)
	16:34	8	15:39 (10)	17:31	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:50	16:45	16:12	20	15:30 (10)
11	08:48			08:03	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52	08:41		15:10 (10)
	16:35			17:33	18:29	20:26	21:21	22:04	22:02	21:13	20:02	18:48	16:43	16:12	21	15:31 (10)
12	08:47			08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42		15:11 (10)
	16:37			17:36	18:30	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41	16:12	21	15:32 (10)
13	08:46			07:59	06:55	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:55	08:43		15:11 (10)
	16:38			17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12	22	15:33 (10)
14	08:45			07:57	06:53	06:37	05:35	05:02	05:19	06:08	07:03	07:58	07:57	08:44		15:12 (10)
	16:40			17:40	18:34	20:32	21:26	22:06	21:59	21:07	19:54	18:41	16:38	16:12	21	15:33 (10)
15	08:44			07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59	08:45		15:12 (10)
	16:42			17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36	16:12	22	15:34 (10)
16	08:43			07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:01	08:01	08:46		15:12 (10)
	16:43			17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16:12	22	15:34 (10)
17	08:42			07:51	06:46	06:30	05:30	05:01	05:23	06:14	07:09	08:03	08:03	08:47		15:12 (10)
	16:45			17:46	18:40	20:38	21:31	22:07	21:56	21:01	19:47	18:34	16:33	16:12	22	15:34 (10)
18	08:41			07:49	06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05	08:05	08:47		15:13 (10)
	16:47			17:48	18:42	20:39	21:33	22:08	21:54	20:58	19:44	18:32	16:32	16:12	21	15:34 (10)
19	08:40			07:47	06:41	06:26	05:26	05:01	05:26	06:17	07:12	08:07	08:07	08:48		15:13 (10)
	16:49			17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:29	16:30	16:13	21	15:34 (10)
20	08:39			07:44	06:38	06:24	05:25	05:01	05:27	06:19	07:14	08:09	08:09	08:49		15:14 (10)
	16:50			17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:39	18:27	16:29	16:13	21	15:35 (10)
21	08:38			07:42	06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11	08:10	08:49		15:14 (10)
	16:52			17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:13	21	15:35 (10)
22	08:37			07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50		15:15 (10)
	16:54			17:56	18:49	20:47	21:39	22:09	21:49	20:50	19:34	18:23	16:26	16:14	21	15:36 (10)
23	08:35			07:38	06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15	08:14	08:50		15:15 (10)
	16:56			17:57	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	16:14	21	15:36 (10)
24	08:34			07:35	06:28	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16	08:51		15:15 (10)
	16:58			17:59	18:53	20:50	21:43	22:09	21:46	20:45	19:30	18:18	16:24	16:15	21	15:36 (10)
25	08:33			07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17	08:51		15:16 (10)
	17:00			18:01	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	16:15	22	15:38 (10)
26	08:31			07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:52		15:17 (10)
	17:02			18:03	18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	16:22	16:16	21	15:38 (10)
27	08:30			07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:22	08:21	08:52		15:17 (10)
	17:04			18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17	22	15:39 (10)
28	08:28			07:26	06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24	08:22	08:52		15:18 (10)
	17:06			18:07	19:00	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18	22	15:40 (10)
29	08:27				07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52		15:18 (10)
	17:08				20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19	22	15:40 (10)
30	08:25				07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26	08:52		15:19 (10)
	17:09				20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20	22	15:41 (10)
31	08:23				07:11		05:11		05:44	06:39		07:30		08:52		15:20 (10)
	17:11				20:06		21:52		21:35	20:28		17:04		16:21	21	15:41 (10)
Potential sun hours	250			273	367	420	494	510	513	460	382	328	259	233		
Total, worst case		160													587	
Sun reduction		0.16													0.12	
Oper. time red.		1.00													1.00	
Wind dir. red.		0.65													0.65	
Total reduction		0.11													0.08	
Total, real		17													46	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** EH - H153

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February		March	April	May	June	July	August	September	October		November	December
1	08:53	08:22		07:25	07:09	06:00	05:10	05:07	05:47	06:41	07:34		07:33	08:28
	16:23	17:14		18:10	20:08	21:04	21:54	22:09	21:33	20:27	19:13		17:02	16:18
2	08:52	08:20		07:22	07:07	05:58	05:10	05:07	05:48	06:43	07:36		07:35	08:29
	16:24	17:16		18:12	20:10	21:06	21:55	22:08	21:31	20:24	19:10		17:00	16:17
3	08:52	08:19		07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38		07:37	08:31
	16:25	17:18		18:14	20:12	21:07	21:56	22:08	21:30	20:22	19:08		16:58	16:16
4	08:52	08:17		07:17	07:02	05:54	05:08	05:09	05:52	06:46	07:40		07:39	08:32
	16:26	17:20		18:16	20:14	21:09	21:57	22:07	21:28	20:19	19:05		16:56	16:16
5	08:52	08:15		07:15	07:00	05:52	05:07	05:10	05:53	06:48	07:42		07:40	08:34
	16:27	17:22		18:18	20:16	21:11	21:59	22:07	21:26	20:17	19:03		16:54	16:15
6	08:51	08:13		07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43		07:42	08:35
	16:29	17:24		18:19	20:18	21:13	22:00	22:06	21:24	20:14	19:01		16:52	16:14
7	08:51	08:11		07:10	06:55	05:48	05:06	05:12	05:57	06:52	07:45		07:44	08:36
	16:30	17:26		18:21	20:19	21:15	22:01	22:06	21:22	20:12	18:58		16:51	16:14
8	08:50	08:09		07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47		07:46	08:38
	16:31	17:28		18:23	20:21	21:16	22:02	22:05	21:20	20:10	18:56		16:49	16:14
9	08:50	08:08		07:06	06:50	05:44	05:04	05:14	06:00	06:55	07:49		07:48	08:39
	16:33	17:30		18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53		16:47	16:13
10	08:49	08:06		07:03	06:48	05:42	05:04	05:15	06:02	06:57	07:51		07:50	08:40
	16:34	17:32		18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51		16:45	16:13
11	08:48	08:04		07:01	06:45	05:40	05:04	05:16	06:04	06:59	07:53		07:52	08:41
	16:36	17:34		18:29	20:27	21:22	22:04	22:02	21:14	20:02	18:49		16:43	16:13
12	08:47	08:02		06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54		07:54	08:42
	16:37	17:36		18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46		16:42	16:12
13	08:47	08:00	08:26 (2)	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56		07:56	08:43
	16:39	17:38	2 08:28 (2)	18:33	20:31	21:25	22:06	22:00	21:10	19:57	18:44		16:40	16:12
14	08:46	07:58	08:24 (2)	06:53	06:38	05:35	05:03	05:20	06:09	07:04	07:58		07:58	08:44
	16:41	17:40	5 08:29 (2)	18:35	20:32	21:27	22:06	21:59	21:08	19:55	18:42		16:38	16:12
15	08:45	07:56	08:21 (2)	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00	08:44 (2)	08:00	08:45
	16:42	17:42	8 08:29 (2)	18:37	20:34	21:29	22:07	21:58	21:05	19:52	18:39	9 08:53 (2)	16:37	16:12
16	08:44	07:53	08:19 (2)	06:49	06:33	05:32	05:02	05:22	06:13	07:07	08:02	08:41 (2)	08:02	08:46
	16:44	17:44	10 08:29 (2)	18:39	20:36	21:30	22:07	21:57	21:03	19:50	18:37	14 08:55 (2)	16:35	16:12
17	08:43	07:51	08:17 (2)	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:39 (2)	08:03	08:47
	16:46	17:46	13 08:30 (2)	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:35	18 08:57 (2)	16:34	16:13
18	08:42	07:49	08:15 (2)	06:44	06:29	05:29	05:02	05:25	06:16	07:11	08:06	08:38 (2)	08:05	08:48
	16:47	17:48	15 08:30 (2)	18:42	20:40	21:34	22:08	21:55	20:59	19:45	18:32	20 08:58 (2)	16:32	16:13
19	08:41	07:47	08:13 (2)	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:08	08:36 (2)	08:07	08:49
	16:49	17:50	17 08:30 (2)	18:44	20:42	21:35	22:09	21:54	20:57	19:42	18:30	23 08:59 (2)	16:31	16:13
20	08:40	07:45	08:10 (2)	06:39	06:24	05:25	05:02	05:28	06:20	07:15	08:10	08:37 (2)	08:09	08:49
	16:51	17:52	19 08:29 (2)	18:46	20:44	21:37	22:09	21:52	20:55	19:40	18:28	22 08:59 (2)	16:30	16:13
21	08:38	07:43	08:08 (2)	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:39 (2)	08:11	08:50
	16:53	17:54	21 08:29 (2)	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	21 09:00 (2)	16:28	16:14
22	08:37	07:40	08:06 (2)	06:34	06:20	05:23	05:02	05:31	06:23	07:18	08:13	08:41 (2)	08:13	08:50
	16:55	17:56	23 08:29 (2)	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	19 09:00 (2)	16:27	16:14
23	08:36	07:38	08:05 (2)	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:43 (2)	08:14	08:51
	16:57	17:58	22 08:27 (2)	18:52	20:49	21:41	22:10	21:48	20:48	19:32	18:21	17 09:00 (2)	16:26	16:15
24	08:34	07:36	08:07 (2)	06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:45 (2)	08:16	08:51
	16:58	18:00	20 08:27 (2)	18:54	20:51	21:43	22:10	21:46	20:45	19:30	18:19	15 09:00 (2)	16:25	16:15
25	08:33	07:34	08:08 (2)	06:27	06:13	05:18	05:03	05:35	06:28	07:23	07:19	07:47 (2)	08:18	08:52
	17:00	18:02	17 08:25 (2)	18:55	20:53	21:44	22:10	21:45	20:43	19:28	17:17	12 07:59 (2)	16:23	16:16
26	08:32	07:31	08:10 (2)	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	07:49 (2)	08:20	08:52
	17:02	18:04	12 08:22 (2)	18:57	20:55	21:46	22:10	21:43	20:41	19:25	17:15	10 07:59 (2)	16:22	16:17
27	08:30	07:29	08:14 (2)	06:22	06:09	05:16	05:04	05:38	06:32	07:27	07:23	07:52 (2)	08:21	08:52
	17:04	18:06	4 08:18 (2)	18:59	20:56	21:47	22:10	21:42	20:38	19:23	17:12	7 07:59 (2)	16:21	16:18
28	08:29	07:27		06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	07:54 (2)	08:23	08:52
	17:06	18:08		19:01	20:58	21:49	22:09	21:40	20:36	19:20	17:10	4 07:58 (2)	16:20	16:18
29	08:27			07:17	06:04	05:14	05:05	05:42	06:36	07:31	07:27	07:56 (2)	08:25	08:53
	17:08			20:03	21:00	21:50	22:09	21:39	20:34	19:18	17:08	1 07:57 (2)	16:19	16:19
30	08:25			07:14	06:02	05:13	05:06	05:43	06:37	07:32	07:29		08:26	08:53
	17:10			20:05	21:02	21:51	22:09	21:37	20:31	19:15	17:06		16:19	16:20
31	08:24			07:12		05:11		05:45	06:39		07:31			08:53
	17:12			20:07		21:53		21:35	20:29		17:04			16:21
Potential sun hours	250	273		367	420	494	510	512	460	382	328		259	233
Total, worst case			208									212		
Sun reduction			0.19									0.23		
Oper. time red.			1.00									1.00		
Wind dir. red.			0.62									0.62		
Total reduction			0.12									0.14		
Total, real			25									30		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** EI - H156

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February		March	April	May	June	July	August	September	October		November		December
1	08:53	08:22		07:25	07:09	06:00	05:10	05:07	05:47	06:41	07:34		07:33		08:02 (2)	08:28
	16:23	17:14		18:10	20:08	21:04	21:54	22:09	21:33	20:27	19:13		17:02	9	08:11 (2)	16:18
2	08:52	08:20		07:22	07:07	05:58	05:10	05:07	05:48	06:43	07:36		07:35		08:04 (2)	08:29
	16:24	17:16		18:12	20:10	21:06	21:55	22:08	21:31	20:24	19:10		17:00	7	08:11 (2)	16:17
3	08:52	08:19		07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38		07:37		08:06 (2)	08:31
	16:25	17:18		18:14	20:12	21:07	21:56	22:08	21:30	20:22	19:08		16:58	4	08:10 (2)	16:16
4	08:52	08:17		07:17	07:02	05:54	05:08	05:09	05:52	06:46	07:40		07:39		08:08 (2)	08:32
	16:26	17:20		18:16	20:14	21:09	21:57	22:07	21:28	20:19	19:05		16:56	1	08:09 (2)	16:16
5	08:52	08:15		07:15	07:00	05:52	05:07	05:10	05:53	06:48	07:42		07:40			08:34
	16:27	17:22		18:18	20:16	21:11	21:59	22:07	21:26	20:17	19:03		16:54			16:15
6	08:51	08:13		07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43		07:42			08:35
	16:29	17:24		18:19	20:18	21:13	22:00	22:06	21:24	20:14	19:01		16:52			16:14
7	08:51	08:11	08:38 (2)	07:10	06:55	05:48	05:06	05:12	05:57	06:52	07:45		07:44			08:36
	16:30	17:26	2 08:40 (2)	18:21	20:19	21:15	22:01	22:06	21:22	20:12	18:58		16:51			16:14
8	08:50	08:10	08:36 (2)	07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47		07:46			08:38
	16:31	17:28	4 08:40 (2)	18:23	20:21	21:16	22:02	22:05	21:20	20:10	18:56		16:49			16:14
9	08:50	08:08	08:34 (2)	07:06	06:50	05:44	05:04	05:14	06:00	06:55	07:49		07:48			08:39
	16:33	17:30	7 08:41 (2)	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53		16:47			16:13
10	08:49	08:06	08:32 (2)	07:03	06:48	05:42	05:04	05:15	06:02	06:57	07:51		07:50			08:40
	16:34	17:32	10 08:42 (2)	18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51		16:45			16:13
11	08:48	08:04	08:30 (2)	07:01	06:45	05:40	05:04	05:16	06:04	06:59	07:53		07:52			08:41
	16:36	17:34	12 08:42 (2)	18:29	20:27	21:22	22:04	22:02	21:14	20:02	18:49		16:43			16:13
12	08:48	08:02	08:28 (2)	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54		07:54			08:42
	16:37	17:36	15 08:43 (2)	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46		16:42			16:12
13	08:47	08:00	08:26 (2)	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56		07:56			08:43
	16:39	17:38	17 08:43 (2)	18:33	20:31	21:25	22:06	22:00	21:10	19:57	18:44		16:40			16:12
14	08:46	07:58	08:24 (2)	06:54	06:38	05:35	05:03	05:20	06:09	07:04	07:58		07:58			08:44
	16:41	17:40	19 08:43 (2)	18:35	20:32	21:27	22:06	21:59	21:08	19:55	18:42		16:38			16:12
15	08:45	07:56	08:21 (2)	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00		08:00			08:45
	16:42	17:42	20 08:41 (2)	18:37	20:34	21:29	22:07	21:58	21:06	19:52	18:39		16:37			16:12
16	08:44	07:53	08:19 (2)	06:49	06:33	05:32	05:02	05:22	06:13	07:07	08:02		08:02			08:46
	16:44	17:44	22 08:41 (2)	18:39	20:36	21:30	22:07	21:57	21:03	19:50	18:37		16:35			16:12
17	08:43	07:51	08:19 (2)	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04		08:03			08:47
	16:46	17:46	22 08:41 (2)	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:35		16:34			16:13
18	08:42	07:49	08:21 (2)	06:44	06:29	05:29	05:02	05:25	06:16	07:11	08:06		08:05			08:48
	16:47	17:48	19 08:40 (2)	18:42	20:40	21:34	22:08	21:55	20:59	19:45	18:32		16:32			16:13
19	08:41	07:47	08:22 (2)	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:08		08:07			08:49
	16:49	17:50	16 08:38 (2)	18:44	20:42	21:35	22:09	21:54	20:57	19:42	18:30		16:31			16:13
20	08:40	07:45	08:23 (2)	06:39	06:24	05:25	05:02	05:28	06:20	07:15	08:10		08:09			08:49
	16:51	17:52	13 08:36 (2)	18:46	20:44	21:37	22:09	21:52	20:55	19:40	18:28		16:30			16:13
21	08:38	07:43	08:28 (2)	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:56 (2)	08:11			08:50
	16:53	17:54	3 08:31 (2)	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	8 09:04 (2)	16:28			16:14
22	08:37	07:40		06:34	06:20	05:23	05:02	05:31	06:23	07:18	08:13	08:53 (2)	08:13			08:50
	16:55	17:56		18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	14 09:07 (2)	16:27			16:14
23	08:36	07:38		06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:51 (2)	08:14			08:51
	16:57	17:58		18:52	20:49	21:41	22:10	21:48	20:48	19:32	18:21	17 09:08 (2)	16:26			16:15
24	08:34	07:36		06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:50 (2)	08:16			08:51
	16:58	18:00		18:54	20:51	21:43	22:10	21:47	20:45	19:30	18:19	19 09:09 (2)	16:25			16:15
25	08:33	07:34		06:27	06:13	05:18	05:03	05:35	06:28	07:23	07:19	07:49 (2)	08:18			08:52
	17:00	18:02		18:55	20:53	21:44	22:10	21:45	20:43	19:28	17:17	21 08:10 (2)	16:23			16:16
26	08:32	07:31		06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	07:50 (2)	08:20			08:52
	17:02	18:04		18:57	20:55	21:46	22:10	21:43	20:41	19:25	17:15	22 08:12 (2)	16:22			16:17
27	08:30	07:29		06:22	06:09	05:16	05:04	05:38	06:32	07:27	07:23	07:52 (2)	08:21			08:52
	17:04	18:06		18:59	20:57	21:47	22:10	21:42	20:38	19:23	17:12	20 08:12 (2)	16:21			16:18
28	08:29	07:27		06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	07:54 (2)	08:23			08:52
	17:06	18:08		19:01	20:58	21:49	22:09	21:40	20:36	19:20	17:10	18 08:12 (2)	16:20			16:18
29	08:27			07:17	06:04	05:14	05:05	05:42	06:36	07:31	07:27	07:56 (2)	08:25			08:53
	17:08			20:03	21:00	21:50	22:09	21:39	20:34	19:18	17:08	16 08:12 (2)	16:19			16:19
30	08:25			07:14	06:02	05:13	05:06	05:43	06:37	07:32	07:29	07:58 (2)	08:26			08:53
	17:10			20:05	21:02	21:51	22:09	21:37	20:31	19:15	17:06	14 08:12 (2)	16:19			16:20
31	08:24			07:12		05:11		05:45	06:39		07:31	08:00 (2)				08:53
	17:12			20:07		21:53		21:35	20:29		17:04	12 08:12 (2)				16:21
Potential sun hours	250	273		367	420	494	510	512	460	382	328		259			233
Total, worst case			201									181		21		
Sun reduction			0.19									0.23		0.20		
Oper. time red.			1.00									1.00		1.00		
Wind dir. red.			0.61									0.61		0.61		
Total reduction			0.12									0.14		0.12		
Total, real			24									25		3		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** EJ - H157

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March		April		May	June	July	August	September		October	November	December
1	08:52	08:22	07:25		07:09		07:33 (2)	06:00	05:11	05:07	05:47	06:41		07:34	07:33	08:28
	16:23	17:14	18:10		20:08	10	07:43 (2)	21:04	21:54	22:09	21:33	20:27		19:13	17:02	16:18
2	08:52	08:20	07:22		07:07		07:31 (2)	05:58	05:10	05:07	05:48	06:43	07:22 (2)	07:36	07:35	08:29
	16:24	17:16	18:12		20:10	12	07:43 (2)	21:06	21:55	22:08	21:31	20:24	9 07:31 (2)	19:10	17:00	16:17
3	08:52	08:19	07:20		07:04		07:28 (2)	05:56	05:09	05:08	05:50	06:45	07:19 (2)	07:38	07:37	08:31
	16:25	17:18	18:14		20:12	15	07:43 (2)	21:07	21:56	22:08	21:30	20:22	15 07:34 (2)	19:08	16:58	16:16
4	08:52	08:17	07:17		07:02		07:26 (2)	05:54	05:08	05:09	05:52	06:46	07:16 (2)	07:40	07:38	08:32
	16:26	17:20	18:16		20:14	16	07:42 (2)	21:09	21:57	22:07	21:28	20:19	19 07:35 (2)	19:05	16:56	16:16
5	08:52	08:15	07:15		07:00		07:23 (2)	05:52	05:07	05:10	05:53	06:48	07:15 (2)	07:42	07:40	08:34
	16:27	17:22	18:18		20:16	18	07:41 (2)	21:11	21:58	22:07	21:26	20:17	21 07:36 (2)	19:03	16:54	16:15
6	08:51	08:13	07:13		06:57		07:21 (2)	05:50	05:06	05:11	05:55	06:50	07:17 (2)	07:43	07:42	08:35
	16:29	17:24	18:20		20:18	20	07:41 (2)	21:13	22:00	22:06	21:24	20:14	20 07:37 (2)	19:01	16:52	16:14
7	08:51	08:11	07:10		06:55		07:19 (2)	05:48	05:06	05:12	05:57	06:52	07:18 (2)	07:45	07:44	08:36
	16:30	17:26	18:21		20:19	21	07:40 (2)	21:15	22:01	22:06	21:22	20:12	18 07:36 (2)	18:58	16:51	16:14
8	08:50	08:09	07:08		06:52		07:19 (2)	05:46	05:05	05:13	05:59	06:53	07:20 (2)	07:47	07:46	08:38
	16:31	17:28	18:23		20:21	19	07:38 (2)	21:16	22:01	22:05	21:20	20:10	17 07:37 (2)	18:56	16:49	16:14
9	08:50	08:08	07:06		06:50		07:21 (2)	05:44	05:05	05:14	06:00	06:55	07:22 (2)	07:49	07:48	08:39
	16:33	17:30	18:25		20:23	15	07:36 (2)	21:18	22:02	22:04	21:18	20:07	15 07:37 (2)	18:53	16:47	16:13
10	08:49	08:06	07:03		06:48		07:24 (2)	05:42	05:04	05:15	06:02	06:57	07:24 (2)	07:51	07:50	08:40
	16:34	17:32	18:27		20:25	9	07:33 (2)	21:20	22:03	22:03	21:16	20:05	13 07:37 (2)	18:51	16:45	16:13
11	08:48	08:04	07:01		06:45			05:41	05:04	05:16	06:04	06:59	07:25 (2)	07:53	07:52	08:41
	16:36	17:34	18:29		20:27			21:22	22:04	22:02	21:14	20:02	10 07:35 (2)	18:49	16:43	16:13
12	08:47	08:02	06:58		06:43			05:39	05:03	05:17	06:06	07:00	07:27 (2)	07:54	07:54	08:42
	16:37	17:36	18:31		20:29			21:23	22:05	22:01	21:12	20:00	8 07:35 (2)	18:46	16:42	16:13
13	08:47	08:00	06:56		06:40			05:37	05:03	05:18	06:07	07:02	07:29 (2)	07:56	07:56	08:43
	16:39	17:38	18:33		20:31			21:25	22:06	22:00	21:10	19:57	5 07:34 (2)	18:44	16:40	16:12
14	08:46	07:58	06:54		06:38			05:35	05:03	05:20	06:09	07:04	07:30 (2)	07:58	07:58	08:44
	16:41	17:40	18:35		20:32			21:27	22:06	21:59	21:08	19:55	2 07:32 (2)	18:42	16:39	16:12
15	08:45	07:55	06:51		06:36			05:33	05:02	05:21	06:11	07:06		08:00	08:00	08:45
	16:42	17:42	18:37		20:34			21:29	22:07	21:58	21:05	19:52		18:39	16:37	16:12
16	08:44	07:53	06:49		06:33			05:32	05:02	05:22	06:13	07:08		08:02	08:02	08:46
	16:44	17:44	18:39		20:36			21:30	22:07	21:57	21:03	19:50		18:37	16:35	16:12
17	08:43	07:51	06:46		06:31			05:30	05:02	05:24	06:14	07:09		08:04	08:03	08:47
	16:46	17:46	18:40		20:38			21:32	22:08	21:56	21:01	19:47		18:35	16:34	16:13
18	08:42	07:49	06:44		06:29			05:29	05:02	05:25	06:16	07:11		08:06	08:05	08:48
	16:48	17:48	18:42		20:40			21:34	22:08	21:55	20:59	19:45		18:32	16:32	16:13
19	08:41	07:47	06:41		06:26			05:27	05:02	05:26	06:18	07:13		08:08	08:07	08:49
	16:49	17:50	18:44		20:42			21:35	22:09	21:53	20:57	19:42		18:30	16:31	16:13
20	08:40	07:45	06:39		06:24			05:25	05:02	05:28	06:20	07:15		08:10	08:09	08:49
	16:51	17:52	18:46		20:44			21:37	22:09	21:52	20:54	19:40		18:28	16:30	16:13
21	08:38	07:43	06:36		06:22			05:24	05:02	05:29	06:21	07:16		08:11	08:11	08:50
	16:53	17:54	18:48		20:45			21:38	22:09	21:51	20:52	19:37		18:26	16:28	16:14
22	08:37	07:40	06:34		06:20			05:23	05:02	05:31	06:23	07:18		08:13	08:13	08:50
	16:55	17:56	18:50		20:47			21:40	22:09	21:49	20:50	19:35		18:23	16:27	16:14
23	08:36	07:38	06:31		06:17			05:21	05:03	05:32	06:25	07:20		08:15	08:14	08:51
	16:57	17:58	18:52		20:49			21:41	22:10	21:48	20:48	19:33		18:21	16:26	16:15
24	08:34	07:36	06:29		06:15			05:20	05:03	05:34	06:27	07:22		08:17	08:16	08:51
	16:58	18:00	18:54		20:51			21:43	22:10	21:46	20:45	19:30		18:19	16:25	16:15
25	08:33	07:34	06:27		06:13			05:18	05:03	05:35	06:29	07:24		07:19	08:18	08:52
	17:00	18:02	18:55		20:53			21:44	22:10	21:45	20:43	19:28		17:17	16:24	16:16
26	08:32	07:31	06:24		06:11			05:17	05:04	05:37	06:30	07:25		07:21	08:20	08:52
	17:02	18:04	18:57		20:55			21:46	22:10	21:43	20:41	19:25		17:15	16:22	16:17
27	08:30	07:29	06:22		06:09			05:16	05:04	05:38	06:32	07:27		07:23	08:21	08:52
	17:04	18:06	18:59		20:56			21:47	22:10	21:42	20:38	19:23		17:12	16:21	16:18
28	08:29	07:27	06:19		06:06			05:15	05:05	05:40	06:34	07:29		07:25	08:23	08:52
	17:06	18:08	19:01		20:58			21:49	22:09	21:40	20:36	19:20		17:10	16:20	16:18
29	08:27		07:17	07:40 (2)	06:04			05:14	05:05	05:42	06:36	07:31		07:27	08:25	08:53
	17:08		20:03	2 07:42 (2)	21:00			21:50	22:09	21:38	20:34	19:18		17:08	16:19	16:19
30	08:25		07:14	07:38 (2)	06:02			05:13	05:06	05:43	06:37	07:32		07:29	08:26	08:53
	17:10		20:05	5 07:43 (2)	21:02			21:51	22:09	21:37	20:31	19:15		17:06	16:19	16:20
31	08:24		07:12	07:35 (2)				05:12		05:45	06:39			07:31		08:53
	17:12		20:07	8 07:43 (2)				21:53		21:35	20:29			17:04		16:21
Potential sun hours	250	273	367		420			494	510	512	460	382		328	259	233
Total, worst case				15		155							172			
Sun reduction				0.22		0.31							0.25			
Oper. time red.				1.00		1.00							1.00			
Wind dir. red.				0.65		0.65							0.65			
Total reduction				0.14		0.20							0.16			
Total, real				2		31							28			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** EK - H158

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:53	08:22	07:25	07:09	06:00	05:10	05:07	05:47	06:41	07:34	07:33	08:28
	16:23	17:14	18:10	20:08	21:04	21:54	22:09	21:33	20:27	19:13	17:02 2 08:04 (2)	16:18
2	08:52	08:20	07:22	07:07	05:58	05:10	05:07	05:48	06:43	07:36	07:35	08:29
	16:24	17:16	18:12	20:10	21:06	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38	07:37	08:31
	16:25	17:18	18:14	20:12	21:07	21:56	22:08	21:30	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:52	06:46	07:40	07:39	08:32
	16:26	17:20	18:16	20:14	21:09	21:57	22:07	21:28	20:19	19:05	16:56	16:16
5	08:52	08:15	07:15	07:00	05:52	05:07	05:10	05:53	06:48	07:42	07:40	08:34
	16:27	17:22	18:18	20:16	21:11	21:59	22:07	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:18	21:13	22:00	22:06	21:24	20:14	19:01	16:52	16:14
7	08:51	08:11	07:10	06:55	05:48	05:06	05:12	05:57	06:52	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:15	22:01	22:06	21:22	20:12	18:58	16:51	16:14
8	08:50	08:10	07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47	07:46	08:38
	16:31	17:28	18:23	20:21	21:16	22:02	22:05	21:20	20:10	18:56	16:49	16:14
9	08:50	08:08	07:06	06:50	05:44	05:04	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:06	08:32 (2)	07:03	06:48	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32 2	08:34 (2)	18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51	16:45	16:13
11	08:48	08:04	08:30 (2)	07:01	06:45	05:40	05:04	05:16	06:04	06:59	07:53	07:52	08:41
	16:36	17:34 5	08:35 (2)	18:29	20:27	21:22	22:04	22:02	21:14	20:02	18:49	16:43	16:13
12	08:48	08:02	08:28 (2)	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36 8	08:36 (2)	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:12
13	08:47	08:00	08:26 (2)	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38 10	08:36 (2)	18:33	20:31	21:25	22:06	22:00	21:10	19:57	18:44	16:40	16:12
14	08:46	07:58	08:24 (2)	06:54	06:38	05:35	05:03	05:20	06:09	07:04	07:58	07:58	08:44
	16:41	17:40 13	08:37 (2)	18:35	20:32	21:27	22:06	21:59	21:08	19:55	18:42	16:38	16:12
15	08:45	07:56	08:21 (2)	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00	08:00	08:45
	16:42	17:42 15	08:36 (2)	18:37	20:34	21:29	22:07	21:58	21:06	19:52	18:39	16:37	16:12
16	08:44	07:53	08:19 (2)	06:49	06:33	05:32	05:02	05:22	06:13	07:07	08:02	08:02	08:46
	16:44	17:44 17	08:36 (2)	18:39	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	08:17 (2)	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	08:47
	16:46	17:46 19	08:36 (2)	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:35	16:34	16:13
18	08:42	07:49	08:15 (2)	06:44	06:29	05:29	05:02	05:25	06:16	07:11	08:06	08:05	08:48
	16:47	17:48 21	08:36 (2)	18:42	20:40	21:34	22:08	21:55	20:59	19:45	18:32	16:32	16:13
19	08:41	07:47	08:14 (2)	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:08	08:49 (2)	08:07	08:49
	16:49	17:50 21	08:35 (2)	18:44	20:42	21:35	22:09	21:54	20:57	19:42	18:30 11	09:00 (2)	16:31	16:13
20	08:40	07:45	08:14 (2)	06:39	06:24	05:25	05:02	05:28	06:20	07:15	08:10	08:47 (2)	08:09	08:49
	16:51	17:52 20	08:34 (2)	18:46	20:44	21:37	22:09	21:52	20:55	19:40	18:28 15	09:02 (2)	16:30	16:13
21	08:38	07:43	08:15 (2)	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:45 (2)	08:11	08:50
	16:53	17:54 18	08:33 (2)	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25 18	09:03 (2)	16:28	16:14
22	08:37	07:40	08:17 (2)	06:34	06:20	05:23	05:02	05:31	06:23	07:18	08:13	08:44 (2)	08:13	08:50
	16:55	17:56 14	08:31 (2)	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23 20	09:04 (2)	16:27	16:14
23	08:36	07:38	08:19 (2)	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:43 (2)	08:14	08:51
	16:57	17:58 8	08:27 (2)	18:52	20:49	21:41	22:10	21:48	20:48	19:32	18:21 22	09:05 (2)	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:45 (2)	08:16	08:51
	16:58	18:00	18:54	20:51	21:43	22:10	21:47	20:45	19:30	18:19 20	09:05 (2)	16:25	16:15
25	08:33	07:34	06:27	06:13	05:18	05:03	05:35	06:28	07:24	07:19	07:47 (2)	08:18	08:52
	17:00	18:02	18:55	20:53	21:44	22:10	21:45	20:43	19:28	17:17 19	08:06 (2)	16:23	16:16
26	08:32	07:31	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	07:50 (2)	08:20	08:52
	17:02	18:04	18:57	20:55	21:46	22:10	21:43	20:41	19:25	17:15 17	08:07 (2)	16:22	16:17
27	08:30	07:29	06:22	06:09	05:16	05:04	05:38	06:32	07:27	07:23	07:52 (2)	08:21	08:52
	17:04	18:06	18:59	20:57	21:47	22:10	21:42	20:38	19:23	17:12 15	08:07 (2)	16:21	16:18
28	08:29	07:27	06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	07:54 (2)	08:23	08:52
	17:06	18:08	19:01	20:58	21:49	22:09	21:40	20:36	19:20	17:10 12	08:06 (2)	16:20	16:18
29	08:27		07:17	06:04	05:14	05:05	05:42	06:36	07:31	07:27	07:56 (2)	08:25	08:53
	17:08		20:03	21:00	21:50	22:09	21:39	20:34	19:18	17:08 10	08:06 (2)	16:19	16:19
30	08:25		07:14	06:02	05:13	05:06	05:43	06:37	07:32	07:29	07:58 (2)	08:26	08:53
	17:10		20:05	21:02	21:51	22:09	21:37	20:31	19:15	17:06 7	08:05 (2)	16:19	16:20
31	08:24		07:12		05:11		05:45	06:39		07:31	08:00 (2)		08:53
	17:12		20:07		21:53		21:35	20:29		17:04 5	08:05 (2)		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case		191								191	2	
Sun reduction		0.19								0.23	0.20	
Oper. time red.		1.00								1.00	1.00	
Wind dir. red.		0.62								0.62	0.62	
Total reduction		0.12								0.14	0.12	
Total, real		23								27	0	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** EL - H159

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:11	05:07	05:47	06:41	07:34	07:33	08:28
	16:23	17:14	18:10	20:08	21:04	21:54	22:09	21:33	20:27	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:10	05:07	05:48	06:43	07:36	07:35	08:29
	16:24	17:16	18:12	20:10	21:06	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38	07:36	08:31
	16:25	17:18	18:14	20:12	21:07	21:56	22:08	21:30	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:52	06:46	07:40	07:38	08:32
	16:26	17:20	18:16	20:14	21:09	21:57	22:07	21:28	20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	07:00	05:52	05:07	05:10	05:53	06:48	07:42	07:40	08:33
	16:27	17:22	18:18	20:16	21:11	21:58	22:07	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:18	21:13	21:59	22:06	21:24	20:14	19:01	16:52	16:15
7	08:51	08:11	07:10	06:55	05:48	05:06	05:12	05:57	06:52	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:15	22:00	22:05	21:22	20:12	18:58	16:51	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:13	05:59	06:53	07:47	07:46	08:38
	16:31	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:10	18:56	16:49	16:14
9	08:49	08:07	07:06	06:50	05:44	05:05	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:06	07:03	06:48	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51	16:45	16:13
11	08:48	08:04	07:01	06:45	05:41	05:04	05:16	06:04	06:59	07:53	07:52	08:41
	16:36	17:34	18:29	20:27	21:22	22:04	22:02	21:14	20:02	18:49	16:43	16:13
12	08:47	08:02	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:13
13	08:47	08:00	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:31	21:25	22:05	22:00	21:10	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:03	05:20	06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	21:59	21:08	19:55	18:41	16:39	16:12
15	08:45	07:55	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00	08:00	08:45
	16:42	17:42	18:37	20:34	21:28	22:07	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:49	06:33	05:32	05:02	05:22	06:13	07:07	08:02	08:01	08:46
	16:44	17:44	18:39	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:13
17	08:43	07:51	06:46	06:31	05:30	05:02	05:24	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:35	16:34	16:13
18	08:42	07:49	06:44	06:29	05:29	05:02	05:25	06:16	07:11	08:06	08:05	08:48
	16:48	17:48	18:42	20:40	21:33	22:08	21:55	20:59	19:45	18:32	16:32	16:13
19	08:41	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:08	08:07	08:48
	16:49	17:50	18:44	20:42	21:35	22:09	21:53	20:57	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:28	06:20	07:15	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:37	22:09	21:52	20:54	19:40	18:28	16:30	16:13
21	08:38	07:43	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:20	05:23	05:02	05:31	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:36	07:38	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:14	08:51
	16:57	17:58	18:52	20:49	21:41	22:09	21:48	20:48	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:10	21:46	20:45	19:30	18:19	16:25	16:15
25	08:33	07:34	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:52
	17:00	18:02	18:55	20:53	21:44	22:10	21:45	20:43	19:28	17:17	16:24	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:55	21:46	22:10	21:43	20:41	19:25	17:15	16:22	16:17
27	08:30	07:29	06:22	06:09	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:23	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:49	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	05:14	05:05	05:42	06:36	07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:34	19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	05:13	05:06	05:43	06:37	07:32	07:29	08:26	08:52
	17:10		20:05	21:02	21:51	22:09	21:37	20:31	19:15	17:06	16:19	16:20
31	08:24		07:12		05:12		05:45	06:39		07:31		08:52
	17:12		20:06		21:53		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** EM - H161

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:53	08:22	07:25	07:09	06:00	05:11	05:07	05:47	06:41	07:34	08:01 (2)	07:33	08:28
	16:23	17:14	18:10	20:08	21:04	21:54	22:09	21:33	20:27	19:13	3 08:04 (2)	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:10	05:07	05:48	06:43	07:36		07:35	08:29
	16:24	17:16	18:12	20:10	21:06	21:55	22:08	21:31	20:24	19:10		17:00	16:17
3	08:52	08:19	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38		07:37	08:31
	16:25	17:18	18:14	20:12	21:07	21:56	22:08	21:30	20:22	19:08		16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:52	06:46	07:40		07:39	08:32
	16:26	17:20	18:16	20:14	21:09	21:57	22:07	21:28	20:19	19:05		16:56	16:16
5	08:52	08:15	07:15	07:00	05:52	05:07	05:10	05:53	06:48	07:42		07:40	08:34
	16:27	17:22	18:18	20:16	21:11	21:59	22:07	21:26	20:17	19:03		16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43		07:42	08:35
	16:29	17:24	18:20	20:18	21:13	22:00	22:06	21:24	20:15	19:01		16:52	16:14
7	08:51	08:11	07:10	06:55	05:48	05:06	05:12	05:57	06:52	07:45		07:44	08:36
	16:30	17:26	18:21	20:20	21:15	22:01	22:06	21:22	20:12	18:58		16:51	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:13	05:59	06:53	07:47		07:46	08:38
	16:31	17:28	18:23	20:21	21:16	22:02	22:05	21:20	20:10	18:56		16:49	16:14
9	08:50	08:08	07:06	06:50	05:44	05:05	05:14	06:00	06:55	07:49		07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53		16:47	16:13
10	08:49	08:06	07:03	06:48	05:42	05:04	05:15	06:02	06:57	07:51		07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51		16:45	16:13
11	08:48	08:04	07:01	06:45	05:40	05:04	05:16	06:04	06:59	07:53		07:52	08:41
	16:36	17:34	18:29	20:27	21:22	22:04	22:02	21:14	20:02	18:49		16:43	16:13
12	08:47	08:02	06:58 07:22 (2)	06:43	05:39	05:03	05:17	06:05	07:00	07:54		07:54	08:42
	16:37	17:36	18:31 2	07:24 (2) 20:29	21:23	22:05	22:01	21:12	20:00	18:46		16:42	16:13
13	08:47	08:00	06:56	07:20 (2) 06:40	05:37	05:03	05:18	06:07	07:02	07:56		07:56	08:43
	16:39	17:38	18:33 5	07:25 (2) 20:31	21:25	22:06	22:00	21:10	19:57	18:44		16:40	16:12
14	08:46	07:58	06:54	07:17 (2) 06:38	05:35	05:03	05:20	06:09	07:04	07:58		07:58	08:44
	16:41	17:40	18:35 8	07:25 (2) 20:32	21:27	22:06	21:59	21:08	19:55	18:42		16:39	16:12
15	08:45	07:56	06:51	07:15 (2) 06:36	05:33	05:02	05:21	06:11	07:06	08:00		08:00	08:45
	16:42	17:42	18:37 11	07:26 (2) 20:34	21:29	22:07	21:58	21:05	19:52	18:39		16:37	16:12
16	08:44	07:53	06:49	07:13 (2) 06:33	05:32	05:02	05:22	06:13	07:08	08:02		08:02	08:46
	16:44	17:44	18:39 13	07:26 (2) 20:36	21:30	22:07	21:57	21:03	19:50	18:37		16:35	16:12
17	08:43	07:51	06:46	07:10 (2) 06:31	05:30	05:02	05:24	06:14	07:09	08:04		08:03	08:47
	16:46	17:46	18:40 15	07:25 (2) 20:38	21:32	22:08	21:56	21:01	19:47	18:35		16:34	16:13
18	08:42	07:49	06:44	07:08 (2) 06:29	05:29	05:02	05:25	06:16	07:11	08:06		08:05	08:48
	16:48	17:48	18:42 17	07:25 (2) 20:40	21:34	22:08	21:55	20:59	19:45	18:32		16:32	16:13
19	08:41	07:47	06:41	07:05 (2) 06:26	05:27	05:02	05:26	06:18	07:13 07:56 (2)	08:08		08:07	08:49
	16:49	17:50	18:44 19	07:24 (2) 20:42	21:35	22:09	21:53	20:57	19:42 3 07:59 (2)	18:30		16:31	16:13
20	08:40	07:45	06:39	07:03 (2) 06:24	05:25	05:02	05:28	06:20	07:15 07:51 (2)	08:10		08:09	08:49
	16:51	17:52	18:46 20	07:23 (2) 20:44	21:37	22:09	21:52	20:55	19:40 12 08:03 (2)	18:28		16:30	16:13
21	08:38	07:43	06:36	07:02 (2) 06:22	05:24	05:02	05:29	06:21	07:16 07:49 (2)	08:11		08:11	08:50
	16:53	17:54	18:48 20	07:22 (2) 20:45	21:38	22:09	21:51	20:52	19:37 16 08:05 (2)	18:26		16:28	16:14
22	08:37	07:40	06:34	07:03 (2) 06:20	05:23	05:02	05:31	06:23	07:18 07:47 (2)	08:13		08:13	08:50
	16:55	17:56	18:50 17	07:20 (2) 20:47	21:40	22:09	21:49	20:50	19:35 19 08:06 (2)	18:23		16:27	16:14
23	08:36	07:38	06:31	07:04 (2) 06:17	05:21	05:03	05:32	06:25	07:20 07:46 (2)	08:15		08:14	08:51
	16:57	17:58	18:52 14	07:18 (2) 20:49	21:41	22:10	21:48	20:48	19:33 21 08:07 (2)	18:21		16:26	16:15
24	08:34	07:36	06:29	07:08 (2) 06:15	05:20	05:03	05:34	06:27	07:22 07:48 (2)	08:17		08:16	08:51
	16:58	18:00	18:54 6	07:14 (2) 20:51	21:43	22:10	21:46	20:45	19:30 19 08:07 (2)	18:19		16:25	16:15
25	08:33	07:34	06:27	06:13	05:18	05:03	05:35	06:29	07:24 07:50 (2)	07:19		08:18	08:52
	17:00	18:02	18:55	20:53	21:44	22:10	21:45	20:43	19:28 18 08:08 (2)	17:17		16:23	16:16
26	08:32	07:31	06:24	06:11	05:17	05:04	05:37	06:30	07:25 07:52 (2)	07:21		08:20	08:52
	17:02	18:04	18:57	20:55	21:46	22:10	21:43	20:41	19:25 16 08:08 (2)	17:15		16:22	16:17
27	08:30	07:29	06:22	06:09	05:16	05:04	05:38	06:32	07:27 07:53 (2)	07:23		08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:10	21:42	20:38	19:23 14 08:07 (2)	17:12		16:21	16:18
28	08:29	07:27	06:19	06:06	05:15	05:05	05:40	06:34	07:29 07:55 (2)	07:25		08:23	08:52
	17:06	18:08	19:01	20:58	21:49	22:09	21:40	20:36	19:20 11 08:06 (2)	17:10		16:20	16:18
29	08:27		07:17	06:04	05:14	05:05	05:42	06:36	07:31 07:57 (2)	07:27		08:25	08:53
	17:08		20:03	21:00	21:50	22:09	21:38	20:34	19:18 9 08:06 (2)	17:08		16:19	16:19
30	08:25		07:14	06:02	05:13	05:06	05:43	06:37	07:32 07:59 (2)	07:29		08:26	08:53
	17:10		20:05	21:02	21:51	22:09	21:37	20:31	19:15 6 08:05 (2)	17:06		16:19	16:20
31	08:24		07:12		05:12		05:45	06:39		07:31			08:53
	17:12		20:07		21:53		21:35	20:29		17:04			16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328		259	233
Total, worst case			167						164	3			
Sun reduction			0.22						0.25	0.23			
Oper. time red.			1.00						1.00	1.00			
Wind dir. red.			0.64						0.64	0.64			
Total reduction			0.14						0.16	0.14			
Total, real			23						26	0			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** EN - H165

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March		April	May	June	July	August	September		October		November	December
1	08:53	08:22	07:25		07:09	06:00	05:11	05:07	05:47	06:41		07:34		08:01 (2)	07:33	08:28
	16:23	17:14	18:10		20:08	21:04	21:54	22:09	21:33	20:27		19:13	12	08:13 (2)	17:02	16:18
2	08:52	08:20	07:22		07:07	05:58	05:10	05:07	05:48	06:43		07:36		08:02 (2)	07:35	08:29
	16:24	17:16	18:12		20:10	21:06	21:55	22:08	21:31	20:24		19:10	10	08:12 (2)	17:00	16:17
3	08:52	08:19	07:20		07:04	05:56	05:09	05:08	05:50	06:44		07:38		08:04 (2)	07:37	08:31
	16:25	17:18	18:14		20:12	21:07	21:56	22:08	21:30	20:22		19:08	7	08:11 (2)	16:58	16:16
4	08:52	08:17	07:17		07:02	05:54	05:08	05:09	05:52	06:46		07:40		08:06 (2)	07:39	08:32
	16:26	17:20	18:16		20:14	21:09	21:57	22:07	21:28	20:19		19:05	4	08:10 (2)	16:56	16:16
5	08:52	08:15	07:15		07:00	05:52	05:07	05:10	05:53	06:48		07:42		08:08 (2)	07:40	08:34
	16:27	17:22	18:18		20:16	21:11	21:59	22:07	21:26	20:17		19:03	1	08:09 (2)	16:54	16:15
6	08:51	08:13	07:13		06:57	05:50	05:06	05:11	05:55	06:50		07:43			07:42	08:35
	16:29	17:24	18:20		20:18	21:13	22:00	22:06	21:24	20:15		19:01			16:52	16:14
7	08:51	08:11	07:10		06:55	05:48	05:06	05:12	05:57	06:52		07:45			07:44	08:36
	16:30	17:26	18:21		20:20	21:15	22:01	22:06	21:22	20:12		18:58			16:51	16:14
8	08:50	08:10	07:08		06:52	05:46	05:05	05:13	05:59	06:53		07:47			07:46	08:38
	16:31	17:28	18:23		20:21	21:16	22:02	22:05	21:20	20:10		18:56			16:49	16:14
9	08:50	08:08	07:06	07:30 (2)	06:50	05:44	05:05	05:14	06:00	06:55		07:49			07:48	08:39
	16:33	17:30	18:25	3 07:33 (2)	20:23	21:18	22:02	22:04	21:18	20:07		18:53			16:47	16:13
10	08:49	08:06	07:03	07:27 (2)	06:48	05:42	05:04	05:15	06:02	06:57		07:51			07:50	08:40
	16:34	17:32	18:27	6 07:33 (2)	20:25	21:20	22:03	22:03	21:16	20:05		18:51			16:45	16:13
11	08:48	08:04	07:01	07:25 (2)	06:45	05:40	05:04	05:16	06:04	06:59		07:53			07:52	08:41
	16:36	17:34	18:29	9 07:34 (2)	20:27	21:22	22:04	22:02	21:14	20:02		18:49			16:43	16:13
12	08:47	08:02	06:58	07:22 (2)	06:43	05:39	05:03	05:17	06:05	07:00		07:54			07:54	08:42
	16:37	17:36	18:31	11 07:33 (2)	20:29	21:23	22:05	22:01	21:12	20:00		18:46			16:42	16:13
13	08:47	08:00	06:56	07:20 (2)	06:40	05:37	05:03	05:18	06:07	07:02		07:56			07:56	08:43
	16:39	17:38	18:33	14 07:34 (2)	20:31	21:25	22:06	22:00	21:10	19:57		18:44			16:40	16:12
14	08:46	07:58	06:54	07:17 (2)	06:38	05:35	05:03	05:20	06:09	07:04		07:58			07:58	08:44
	16:41	17:40	18:35	16 07:33 (2)	20:32	21:27	22:06	21:59	21:08	19:55		18:42			16:39	16:12
15	08:45	07:56	06:51	07:15 (2)	06:36	05:33	05:02	05:21	06:11	07:06		08:00			08:00	08:45
	16:42	17:42	18:37	17 07:32 (2)	20:34	21:29	22:07	21:58	21:06	19:52		18:39			16:37	16:12
16	08:44	07:53	06:49	07:13 (2)	06:33	05:32	05:02	05:22	06:13	07:08		08:02			08:02	08:46
	16:44	17:44	18:39	19 07:32 (2)	20:36	21:30	22:07	21:57	21:03	19:50		18:37			16:35	16:12
17	08:43	07:51	06:46	07:11 (2)	06:31	05:30	05:02	05:24	06:14	07:09		08:04			08:03	08:47
	16:46	17:46	18:40	19 07:30 (2)	20:38	21:32	22:08	21:56	21:01	19:47		18:35			16:34	16:13
18	08:42	07:49	06:44	07:12 (2)	06:29	05:29	05:02	05:25	06:16	07:11		08:06			08:05	08:48
	16:48	17:48	18:42	17 07:29 (2)	20:40	21:34	22:08	21:55	20:59	19:45		18:32			16:32	16:13
19	08:41	07:47	06:41	07:13 (2)	06:26	05:27	05:02	05:26	06:18	07:13		08:08			08:07	08:49
	16:49	17:50	18:44	13 07:26 (2)	20:42	21:35	22:09	21:54	20:57	19:42		18:30			16:31	16:13
20	08:40	07:45	06:39	07:16 (2)	06:24	05:25	05:02	05:28	06:20	07:15		08:10			08:09	08:49
	16:51	17:52	18:46	7 07:23 (2)	20:44	21:37	22:09	21:52	20:55	19:40		18:28			16:30	16:13
21	08:38	07:43	06:36		06:22	05:24	05:02	05:29	06:21	07:16		08:11			08:11	08:50
	16:53	17:54	18:48		20:45	21:38	22:09	21:51	20:52	19:37		18:26			16:28	16:14
22	08:37	07:40	06:34		06:20	05:23	05:02	05:31	06:23	07:18		08:13			08:13	08:50
	16:55	17:56	18:50		20:47	21:40	22:09	21:49	20:50	19:35		18:23			16:27	16:14
23	08:36	07:38	06:31		06:17	05:21	05:03	05:32	06:25	07:20	08:02 (2)	08:15			08:14	08:51
	16:57	17:58	18:52		20:49	21:41	22:10	21:48	20:48	19:33	3 08:05 (2)	18:21			16:26	16:15
24	08:34	07:36	06:29		06:15	05:20	05:03	05:34	06:27	07:22	07:57 (2)	08:17			08:16	08:51
	16:58	18:00	18:54		20:51	21:43	22:10	21:46	20:45	19:30	12 08:09 (2)	18:19			16:25	16:15
25	08:33	07:34	06:27		06:13	05:18	05:03	05:35	06:29	07:24	07:55 (2)	07:19			08:18	08:52
	17:00	18:02	18:55		20:53	21:44	22:10	21:45	20:43	19:28	16 08:11 (2)	17:17			16:23	16:16
26	08:32	07:31	06:24		06:11	05:17	05:04	05:37	06:30	07:25	07:54 (2)	07:21			08:20	08:52
	17:02	18:04	18:57		20:55	21:46	22:10	21:43	20:41	19:25	19 08:13 (2)	17:15			16:22	16:17
27	08:30	07:29	06:22		06:09	05:16	05:04	05:38	06:32	07:27	07:53 (2)	07:23			08:21	08:52
	17:04	18:06	18:59		20:57	21:47	22:10	21:42	20:38	19:23	19 08:12 (2)	17:12			16:21	16:18
28	08:29	07:27	06:19		06:06	05:15	05:05	05:40	06:34	07:29	07:55 (2)	07:25			08:23	08:52
	17:06	18:08	19:01		20:58	21:49	22:09	21:40	20:36	19:20	18 08:13 (2)	17:10			16:20	16:18
29	08:27		07:17		06:04	05:14	05:05	05:42	06:36	07:31	07:57 (2)	07:27			08:25	08:53
	17:08		20:03		21:00	21:50	22:09	21:38	20:34	19:18	16 08:13 (2)	17:08			16:19	16:19
30	08:25		07:14		06:02	05:13	05:06	05:43	06:37	07:33	07:59 (2)	07:29			08:26	08:53
	17:10		20:05		21:02	21:51	22:09	21:37	20:31	19:15	14 08:13 (2)	17:06			16:19	16:20
31	08:24		07:12			05:12		05:45	06:39			07:31				08:53
	17:12		20:07			21:53		21:35	20:29			17:04				16:21
Potential sun hours	250	273	367		420	494	510	512	460	382		328		259	233	
Total, worst case				151							117		34			
Sun reduction				0.22							0.25		0.23			
Oper. time red.				1.00							1.00		1.00			
Wind dir. red.				0.63							0.63		0.63			
Total reduction				0.14							0.16		0.14			
Total, real				21							19		5			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar

Calculation: Real Case Analysis **Shadow receptor:** EO - H235

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March		April	May	June	July	August	September		October	November	December
1	08:53	08:22	07:25		07:09	06:00	05:11	05:07	05:47	06:41		07:34	07:33	08:28
	16:23	17:14	18:10		20:08	21:04	21:54	22:09	21:33	20:27		19:13	17:02	16:18
2	08:52	08:20	07:22		07:07	05:58	05:10	05:07	05:48	06:43		07:36	07:35	08:29
	16:24	17:16	18:12		20:10	21:06	21:55	22:08	21:31	20:24		19:10	17:00	16:17
3	08:52	08:19	07:20		07:04	05:56	05:09	05:08	05:50	06:44		07:38	07:37	08:31
	16:25	17:18	18:14		20:12	21:07	21:56	22:08	21:30	20:22		19:08	16:58	16:16
4	08:52	08:17	07:17		07:02	05:54	05:08	05:09	05:52	06:46		07:40	07:39	08:32
	16:26	17:20	18:16		20:14	21:09	21:57	22:07	21:28	20:19		19:05	16:56	16:16
5	08:52	08:15	07:15		07:00	05:52	05:07	05:10	05:53	06:48		07:42	07:40	08:34
	16:27	17:22	18:18		20:16	21:11	21:58	22:07	21:26	20:17		19:03	16:54	16:15
6	08:51	08:13	07:13		06:57	05:50	05:06	05:11	05:55	06:50		07:43	07:42	08:35
	16:29	17:24	18:20		20:18	21:13	22:00	22:06	21:24	20:14		19:01	16:52	16:14
7	08:51	08:11	07:10		06:55	05:48	05:06	05:12	05:57	06:52		07:45	07:44	08:36
	16:30	17:26	18:21		20:19	21:15	22:01	22:06	21:22	20:12		18:58	16:51	16:14
8	08:50	08:09	07:08		06:52	05:46	05:05	05:13	05:59	06:53		07:47	07:46	08:38
	16:31	17:28	18:23		20:21	21:16	22:02	22:05	21:20	20:10		18:56	16:49	16:14
9	08:50	08:08	07:06		06:50	05:44	05:05	05:14	06:00	06:55		07:49	07:48	08:39
	16:33	17:30	18:25		20:23	21:18	22:02	22:04	21:18	20:07		18:53	16:47	16:13
10	08:49	08:06	07:03		06:48	05:42	05:04	05:15	06:02	06:57		07:51	07:50	08:40
	16:34	17:32	18:27		20:25	21:20	22:03	22:03	21:16	20:05		18:51	16:45	16:13
11	08:48	08:04	07:01		06:45	05:40	05:04	05:16	06:04	06:59		07:53	07:52	08:41
	16:36	17:34	18:29		20:27	21:22	22:04	22:02	21:14	20:02		18:49	16:43	16:13
12	08:47	08:02	06:58		06:43	05:39	05:03	05:17	06:05	07:00		07:54	07:54	08:42
	16:37	17:36	18:31		20:29	21:23	22:05	22:01	21:12	20:00		18:46	16:42	16:13
13	08:47	08:00	06:56		06:40	05:37	05:03	05:18	06:07	07:02		07:56	07:56	08:43
	16:39	17:38	18:33		20:31	21:25	22:06	22:00	21:10	19:57		18:44	16:40	16:12
14	08:46	07:58	06:54		06:38	05:35	05:03	05:20	06:09	07:04		07:58	07:58	08:44
	16:41	17:40	18:35		20:32	21:27	22:06	21:59	21:08	19:55		18:42	16:39	16:12
15	08:45	07:56	06:51		07:15 (2)	06:36	05:02	05:21	06:11	07:06		08:00	08:00	08:45
	16:42	17:42	18:37	2	07:17 (2)	20:34	21:29	22:07	21:58	21:05	19:52		18:39	16:37	16:12
16	08:44	07:53	06:49		07:13 (2)	06:33	05:32	05:02	05:22	06:13	07:08		08:02	08:02	08:46
	16:44	17:44	18:39	5	07:18 (2)	20:36	21:30	22:07	21:57	21:03	19:50	10	07:57 (2)	18:37	16:35	16:12
17	08:43	07:51	06:46		07:10 (2)	06:31	05:30	05:02	05:24	06:14	07:09		07:44 (2)	08:04	08:03	08:47
	16:46	17:46	18:40	8	07:18 (2)	20:38	21:32	22:08	21:56	21:01	19:47	16	08:00 (2)	18:35	16:34	16:13
18	08:42	07:49	06:44		07:08 (2)	06:29	05:29	05:02	05:25	06:16	07:11		07:42 (2)	08:06	08:05	08:48
	16:48	17:48	18:42	11	07:19 (2)	20:40	21:34	22:08	21:55	20:59	19:45	18	08:00 (2)	18:32	16:32	16:13
19	08:41	07:47	06:41		07:05 (2)	06:26	05:27	05:02	05:26	06:18	07:13		07:40 (2)	08:08	08:07	08:49
	16:49	17:50	18:44	13	07:18 (2)	20:42	21:35	22:09	21:53	20:57	19:42	21	08:01 (2)	18:30	16:31	16:13
20	08:40	07:45	06:39		07:03 (2)	06:24	05:25	05:02	05:28	06:20	07:15		07:41 (2)	08:10	08:09	08:49
	16:51	17:52	18:46	15	07:18 (2)	20:44	21:37	22:09	21:52	20:54	19:40	21	08:02 (2)	18:28	16:30	16:13
21	08:38	07:43	06:36		07:00 (2)	06:22	05:24	05:02	05:29	06:21	07:16		07:43 (2)	08:11	08:11	08:50
	16:53	17:54	18:48	17	07:17 (2)	20:45	21:38	22:09	21:51	20:52	19:37	20	08:03 (2)	18:26	16:28	16:14
22	08:37	07:40	06:34		06:58 (2)	06:20	05:23	05:02	05:31	06:23	07:18		07:44 (2)	08:13	08:13	08:50
	16:55	17:56	18:50	19	07:17 (2)	20:47	21:40	22:09	21:49	20:50	19:35	18	08:02 (2)	18:23	16:27	16:14
23	08:36	07:38	06:31		06:55 (2)	06:17	05:21	05:03	05:32	06:25	07:20		07:46 (2)	08:15	08:14	08:51
	16:57	17:58	18:52	21	07:16 (2)	20:49	21:41	22:10	21:48	20:48	19:33	16	08:02 (2)	18:21	16:26	16:15
24	08:34	07:36	06:29		06:54 (2)	06:15	05:20	05:03	05:34	06:27	07:22		07:48 (2)	08:17	08:16	08:51
	16:58	18:00	18:54	21	07:15 (2)	20:51	21:43	22:10	21:46	20:45	19:30	14	08:02 (2)	18:19	16:25	16:15
25	08:33	07:34	06:27		06:54 (2)	06:13	05:18	05:03	05:35	06:29	07:24		07:50 (2)	07:19	08:18	08:52
	17:00	18:02	18:55	19	07:13 (2)	20:53	21:44	22:10	21:45	20:43	19:28	11	08:01 (2)	17:17	16:23	16:16
26	08:32	07:31	06:24		06:56 (2)	06:11	05:17	05:04	05:37	06:30	07:25		07:52 (2)	07:21	08:20	08:52
	17:02	18:04	18:57	16	07:12 (2)	20:55	21:46	22:10	21:43	20:41	19:25	9	08:01 (2)	17:15	16:22	16:17
27	08:30	07:29	06:22		06:57 (2)	06:09	05:16	05:04	05:38	06:32	07:27		07:53 (2)	07:23	08:21	08:52
	17:04	18:06	18:59	11	07:08 (2)	20:56	21:47	22:10	21:42	20:38	19:23	6	07:59 (2)	17:12	16:21	16:18
28	08:29	07:27	06:19			06:06	05:15	05:05	05:40	06:34	07:29		07:55 (2)	07:25	08:23	08:52
	17:06	18:08	19:01			20:58	21:49	22:09	21:40	20:36	19:20	3	07:58 (2)	17:10	16:20	16:18
29	08:27		07:17			06:04	05:14	05:05	05:42	06:36	07:31			07:27	08:25	08:53
	17:08		20:03			21:00	21:50	22:09	21:38	20:34	19:18			17:08	16:19	16:19
30	08:25		07:14			06:02	05:13	05:06	05:43	06:37	07:32			07:29	08:26	08:53
	17:10		20:05			21:02	21:51	22:09	21:37	20:31	19:15			17:06	16:19	16:20
31	08:24		07:12				05:12		05:45	06:39				07:31		08:53
	17:12		20:07				21:53		21:35	20:29				17:04		16:21
Potential sun hours	250	273	367		420	494	510	512	460	382		328	259	233
Total, worst case				178							183			
Sun reduction				0.22							0.25			
Oper. time red.				1.00							1.00			
Wind dir. red.				0.64							0.64			
Total reduction				0.14							0.16			
Total, real				25							29			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

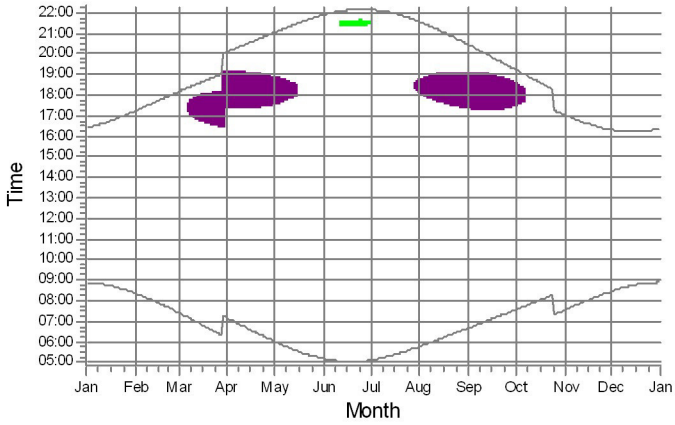
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

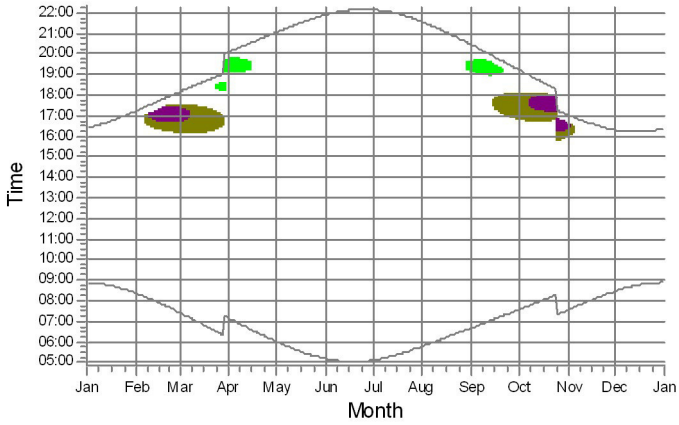
SHADOW - Calendar, graphical

Calculation: Real Case Analysis

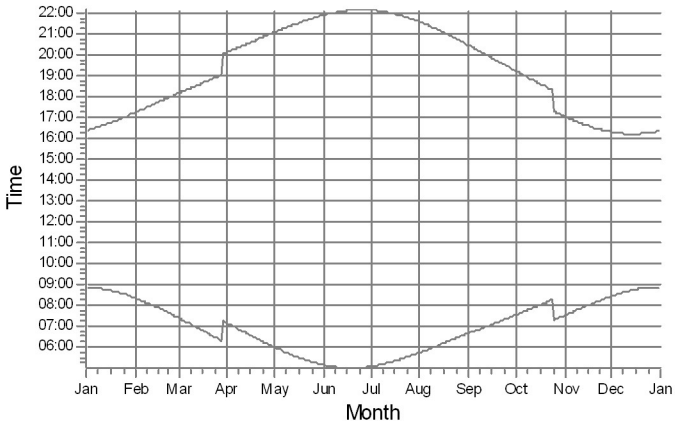
A: H001



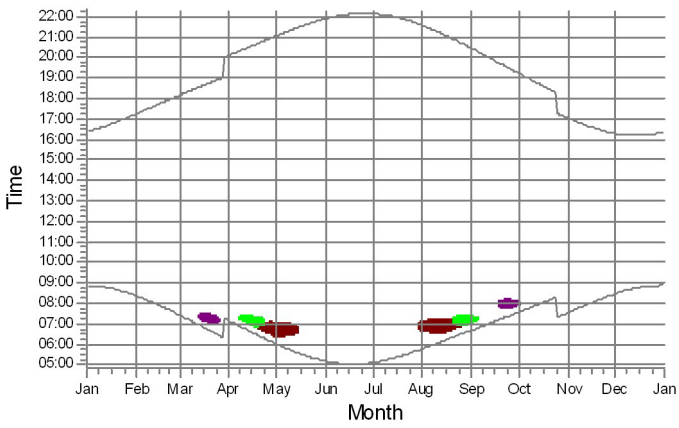
B: H002



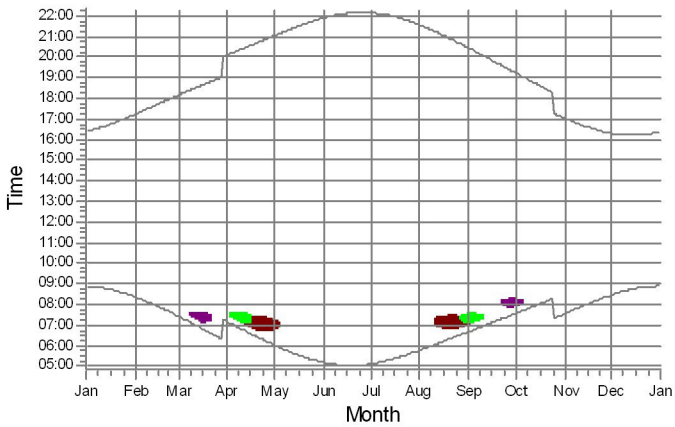
C: H003



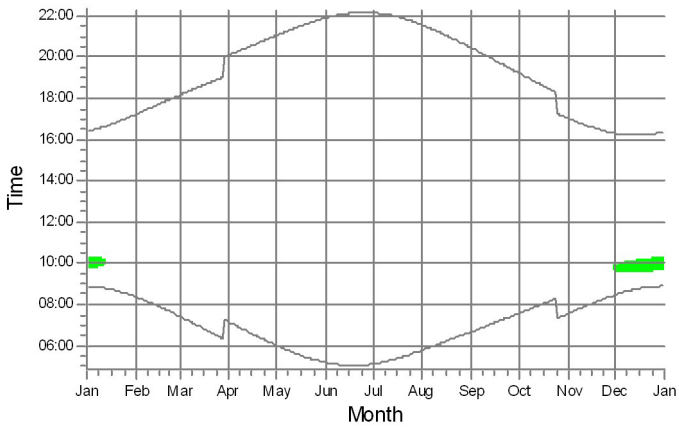
D: H004



E: H005



F: H006



WTGs

8: T08 9: T09 10: T10 11: T11

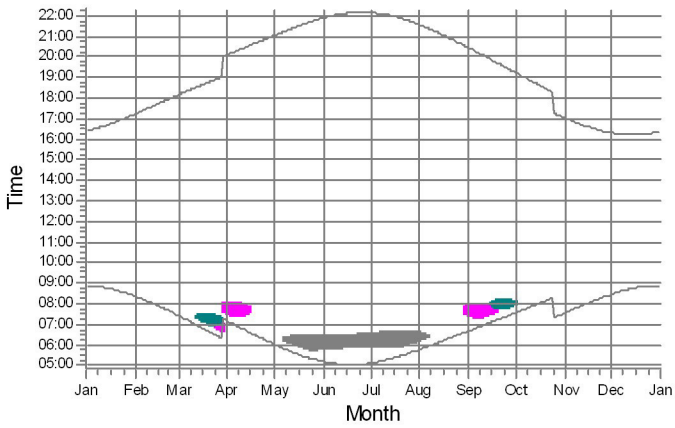
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

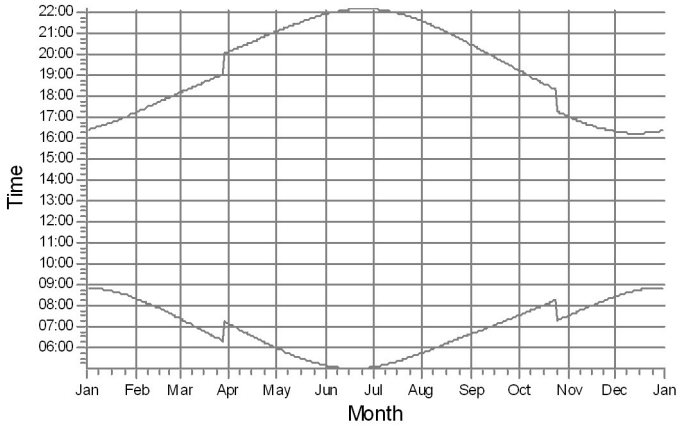
SHADOW - Calendar, graphical

Calculation: Real Case Analysis

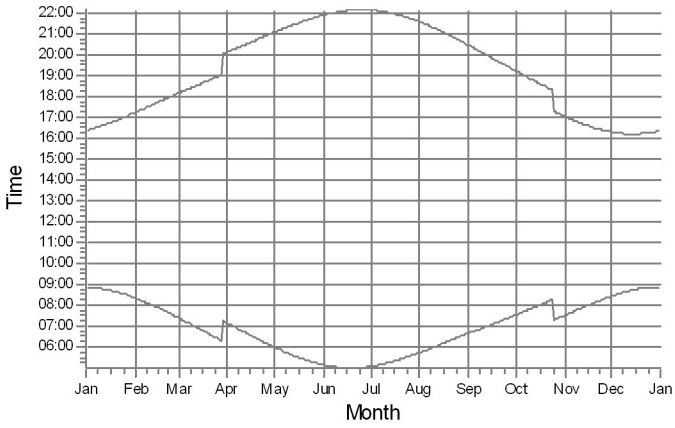
G: H007



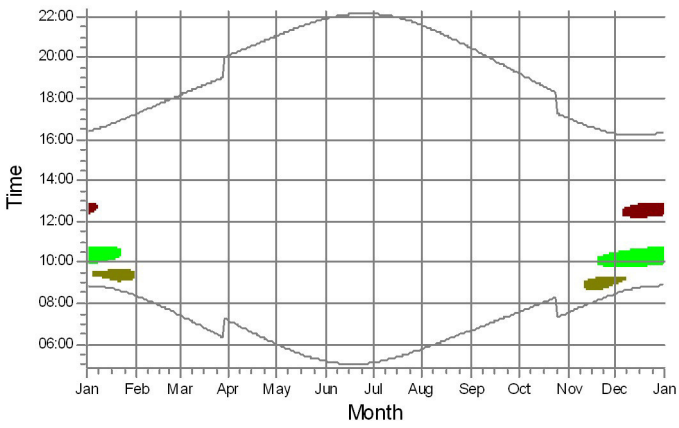
H: H008



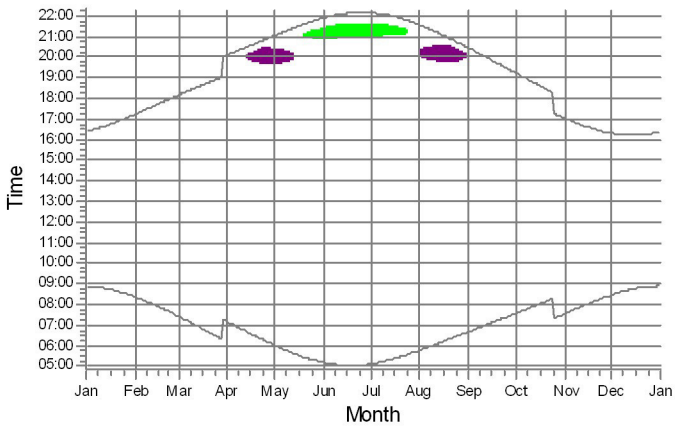
I: H009



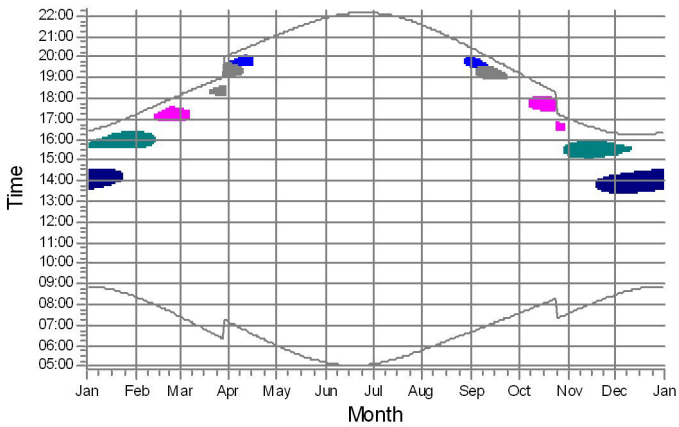
J: H010



K: H011



L: H012



WTGs

3: T03	6: T06	9: T09
4: T04	7: T07	10: T10
5: T05	8: T08	11: T11

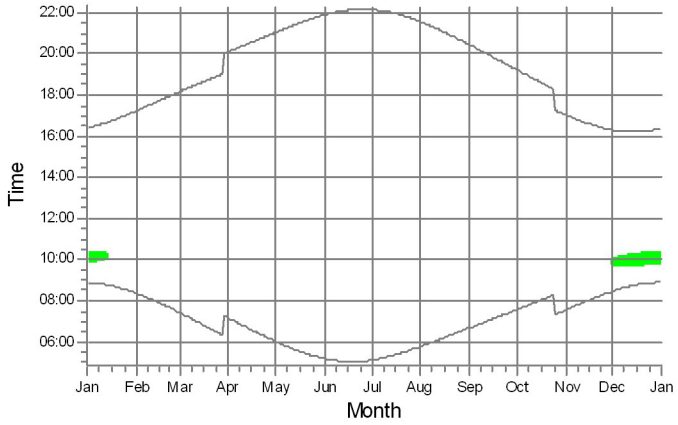
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

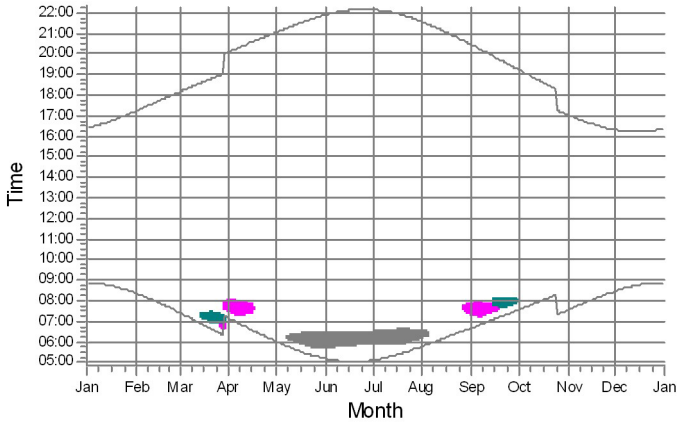
SHADOW - Calendar, graphical

Calculation: Real Case Analysis

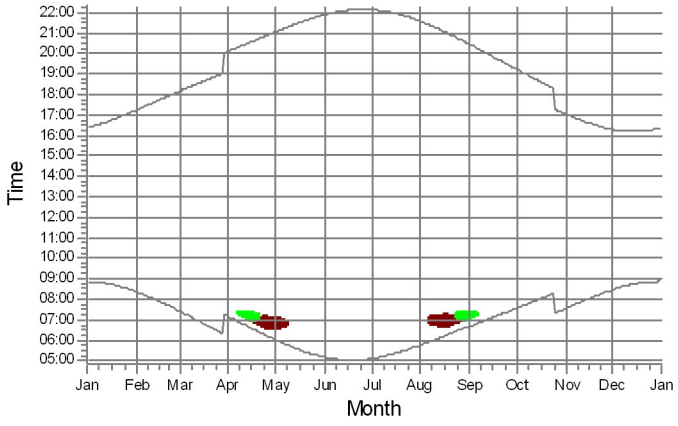
M: H013



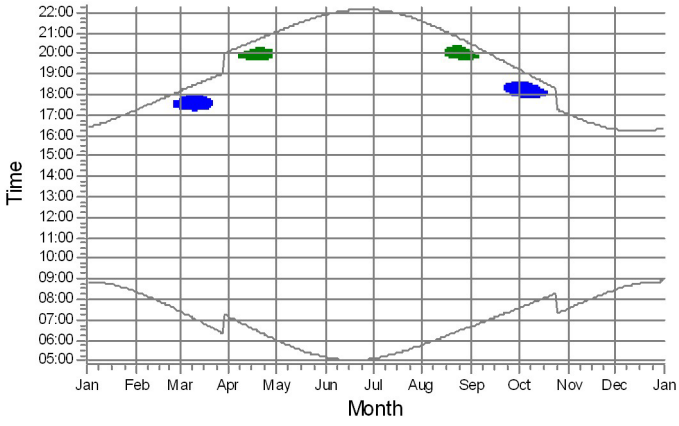
N: H014



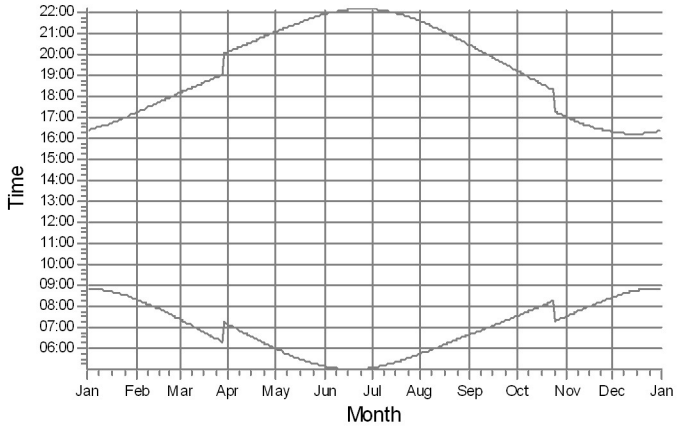
O: H015



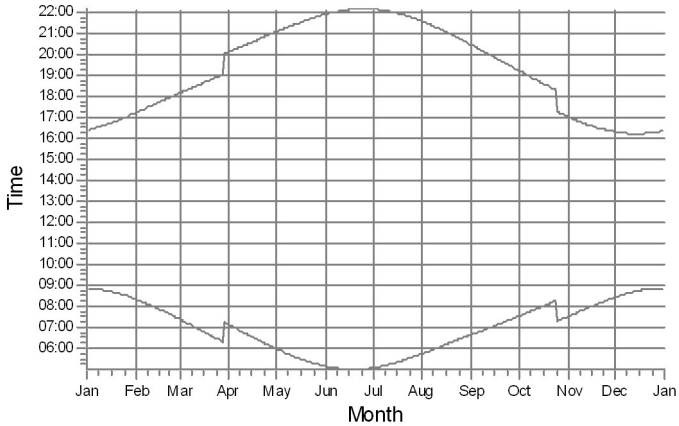
P: H016



Q: H018



R: H019



WTGs

	1: T01		4: T04		6: T06		9: T09
	3: T03		5: T05		8: T08		

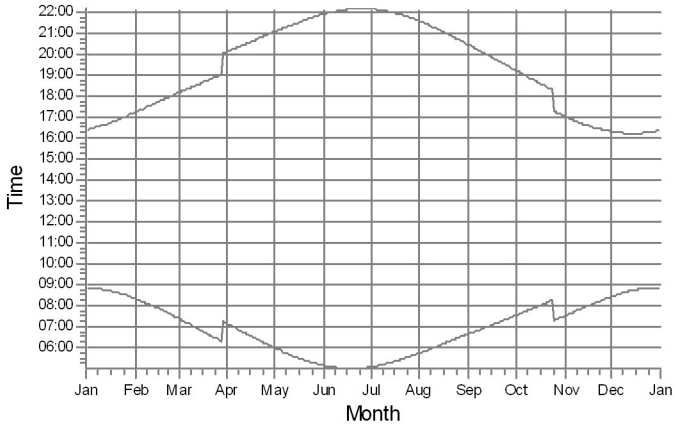
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

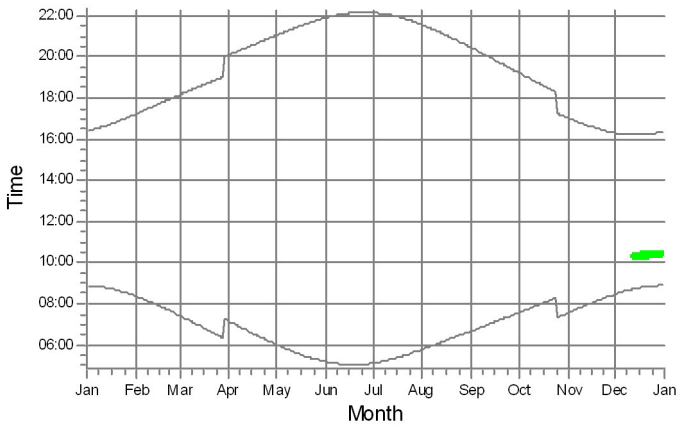
SHADOW - Calendar, graphical

Calculation: Real Case Analysis

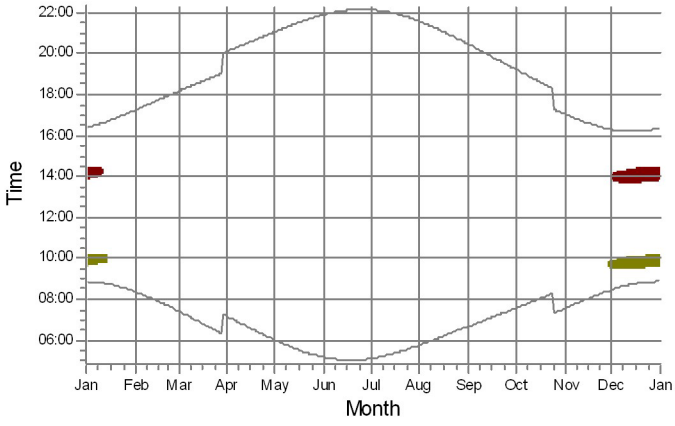
S: H020



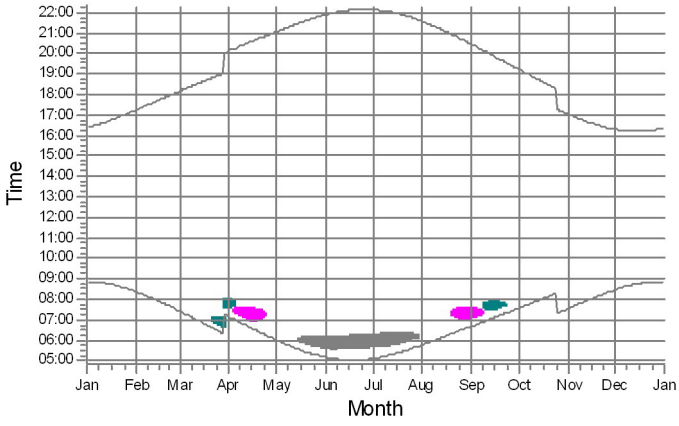
T: H021



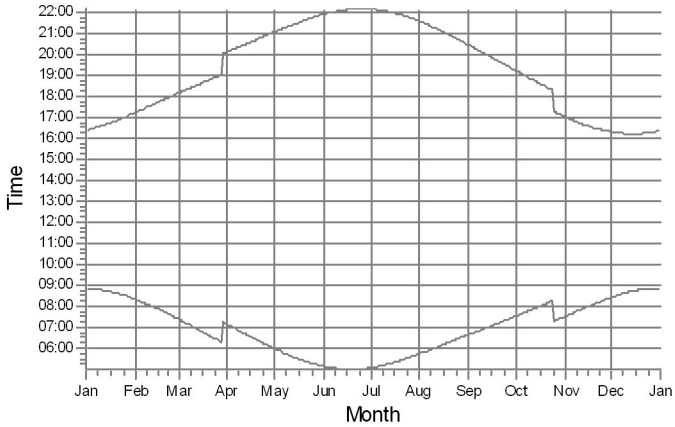
U: H022



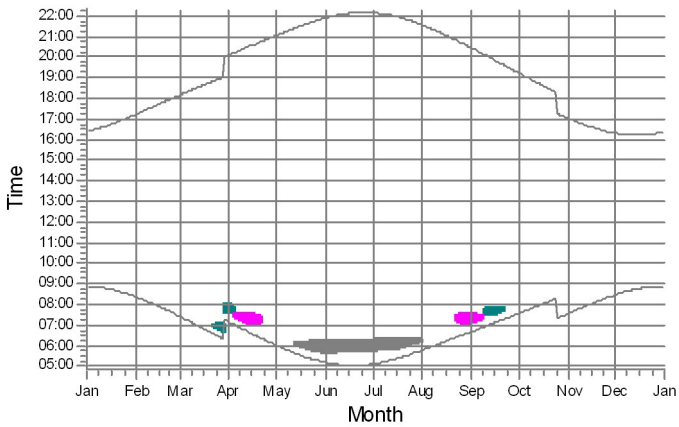
V: H023



W: H024



X: H025



WTGs

4: T04	6: T06	9: T09
5: T05	8: T08	10: T10

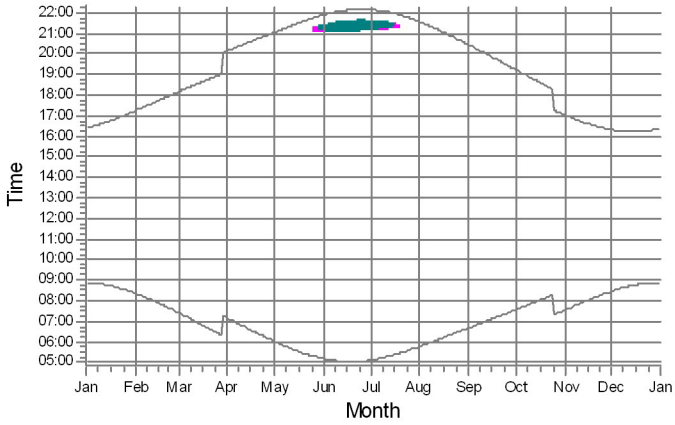
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

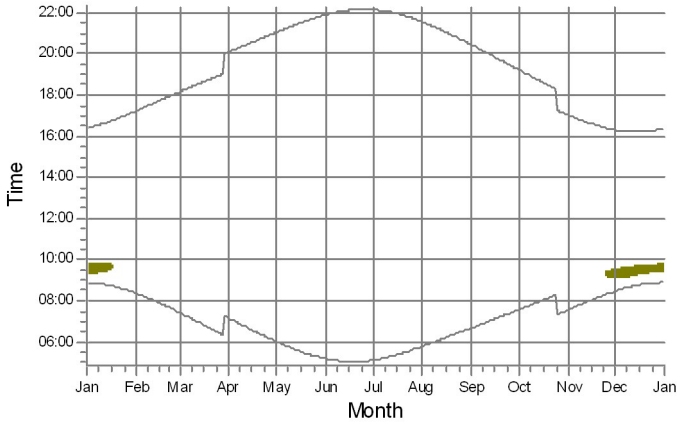
SHADOW - Calendar, graphical

Calculation: Real Case Analysis

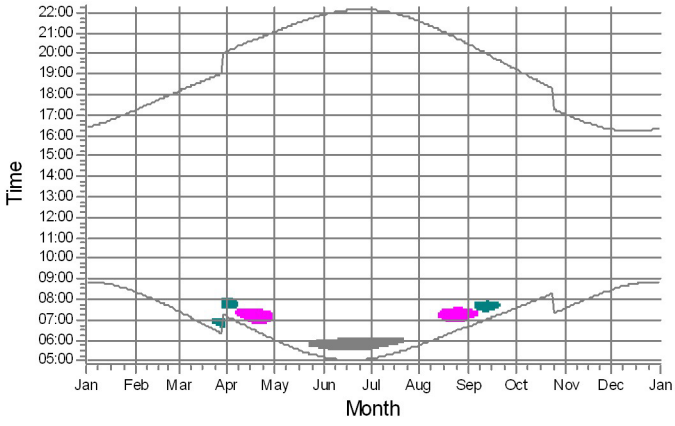
Y: H027



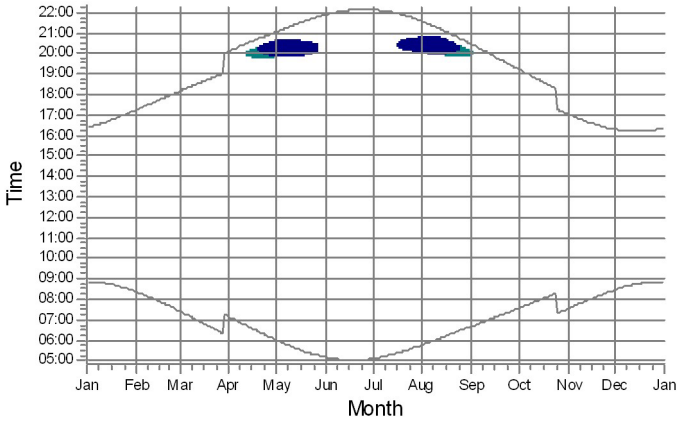
Z: H028



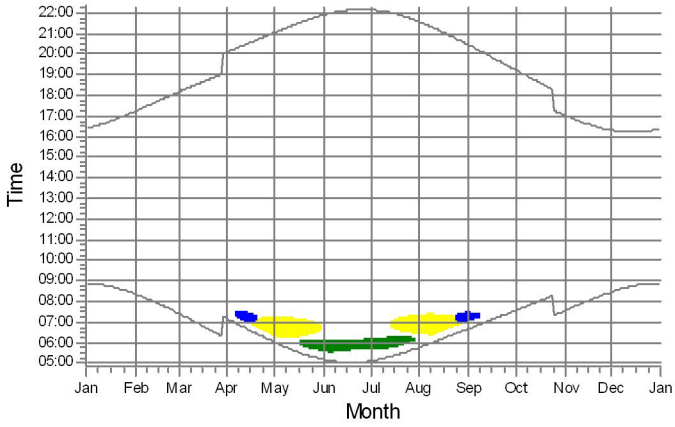
AA: H029



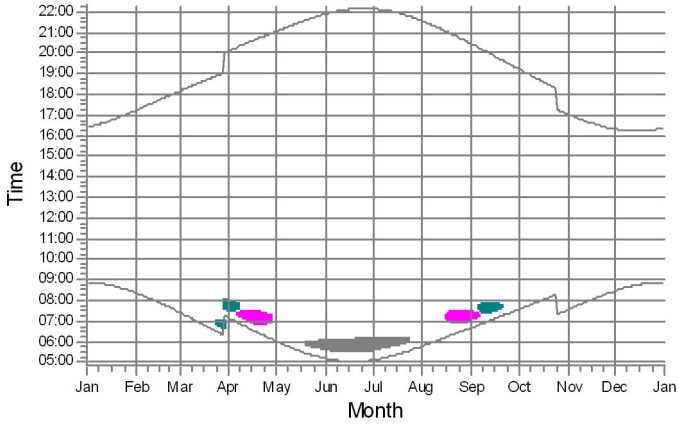
AB: H030



AC: H031



AD: H032



WTGs

	1: T01		3: T03		5: T05		7: T07
	2: T02		4: T04		6: T06		10: T10

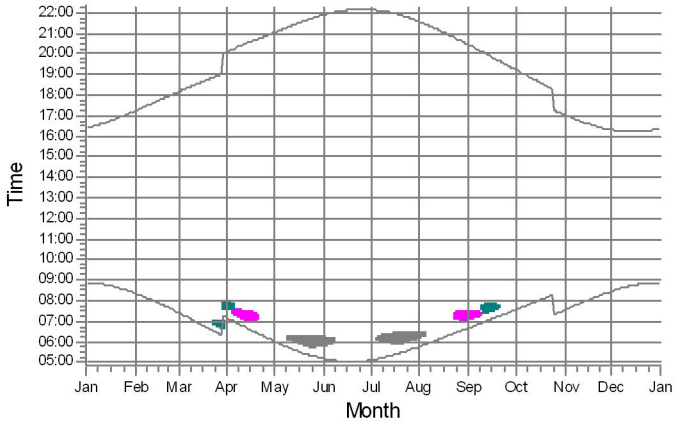
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

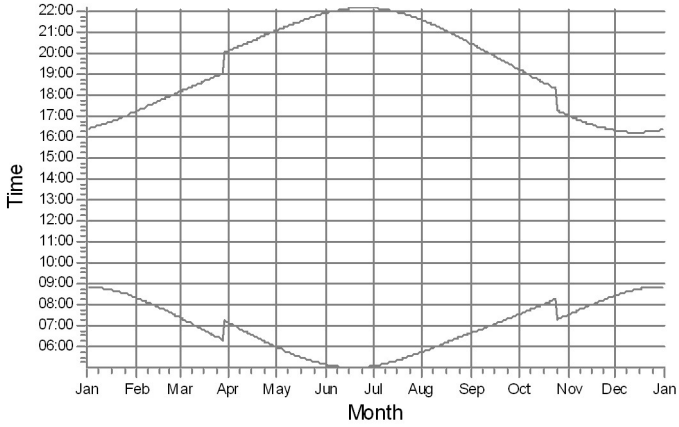
SHADOW - Calendar, graphical

Calculation: Real Case Analysis

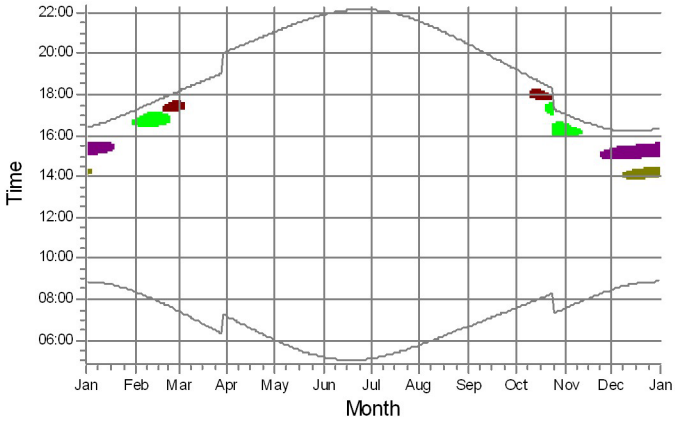
AE: H033



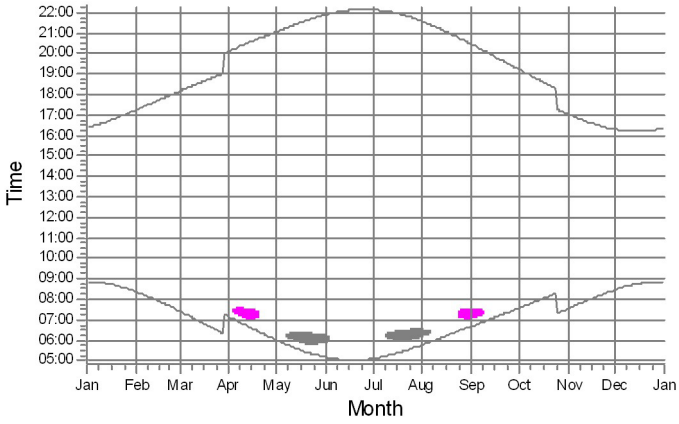
AF: H034



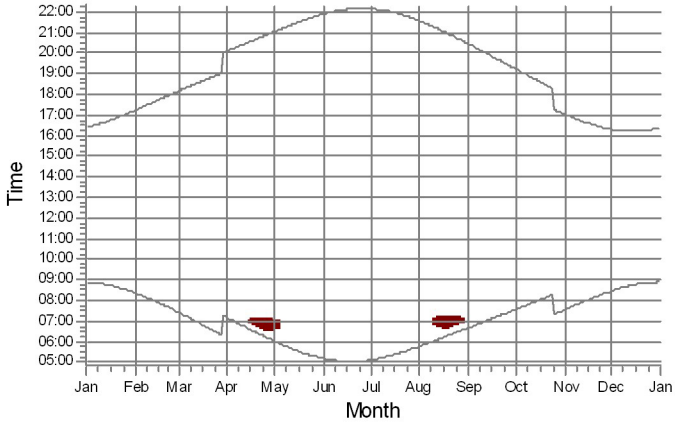
AG: H035



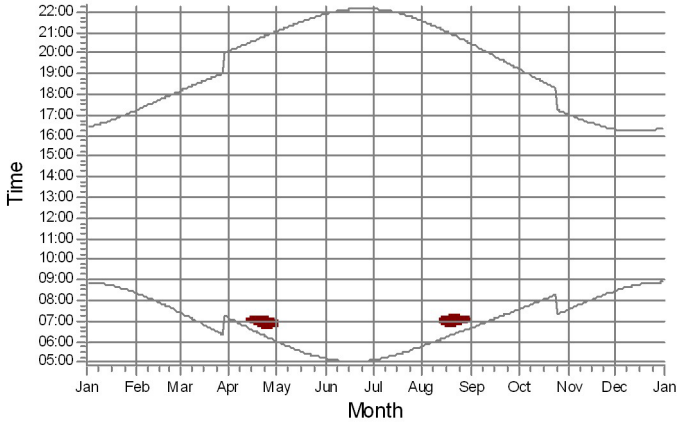
AH: H036



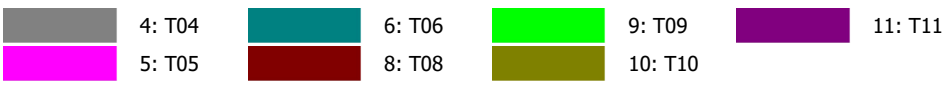
AI: H037



AJ: H038



WTGs



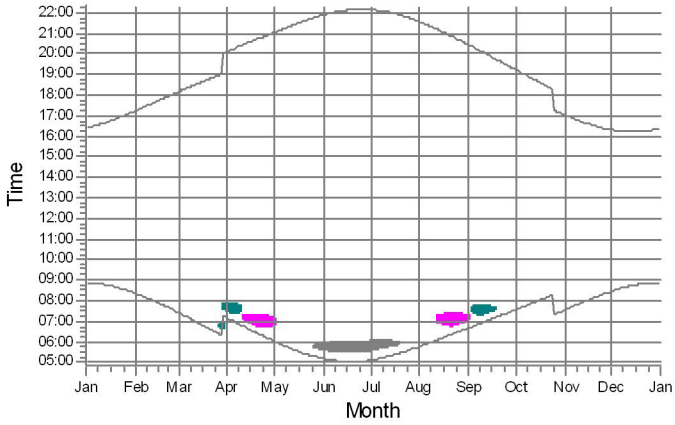
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

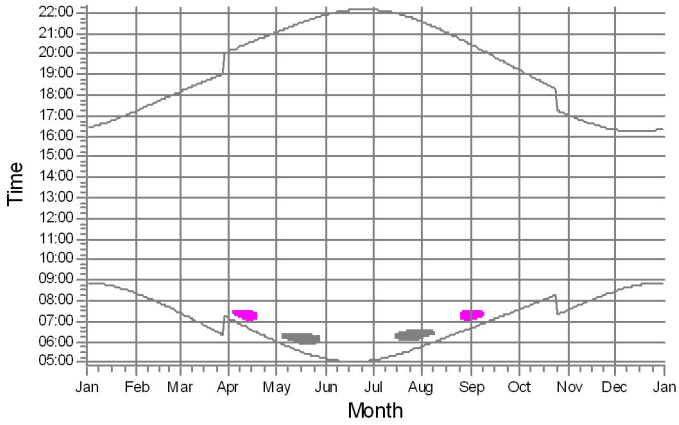
SHADOW - Calendar, graphical

Calculation: Real Case Analysis

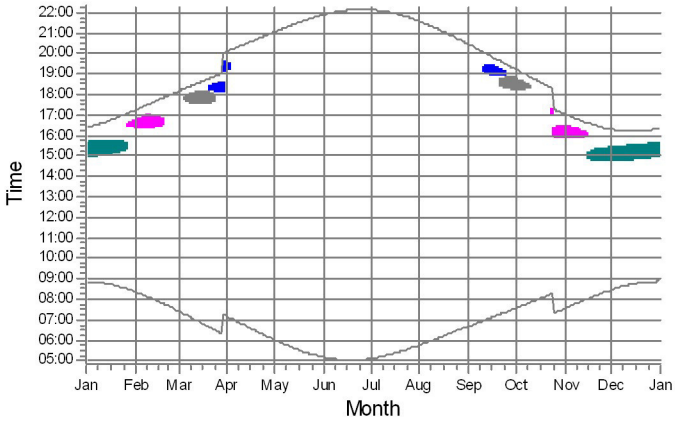
AK: H039



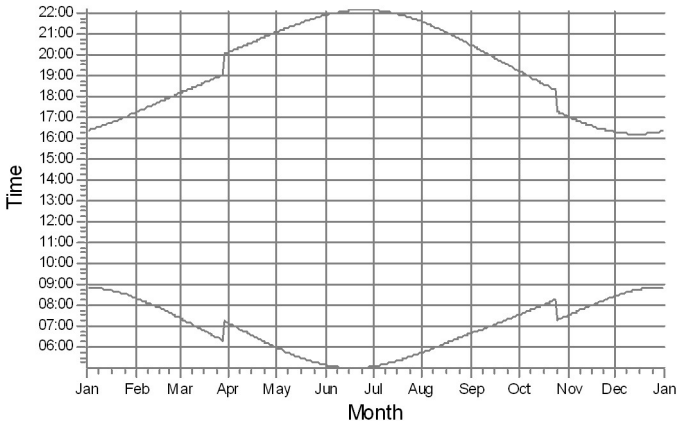
AL: H040



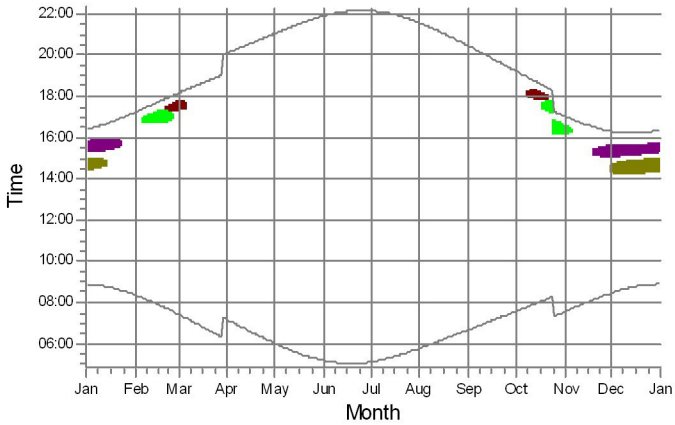
AM: H041



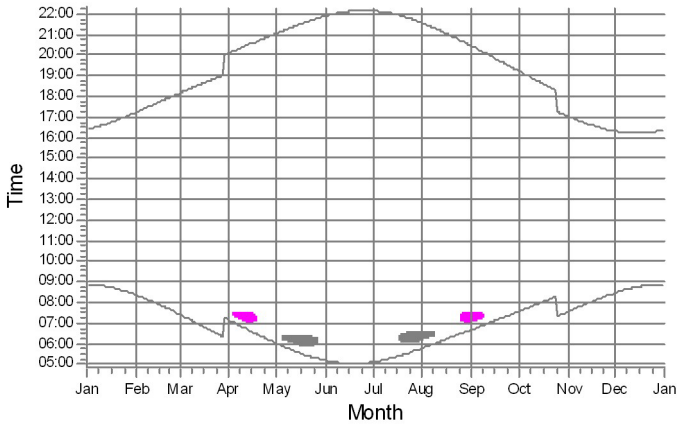
AN: H042



AO: H043



AP: H044



WTGs

	3: T03		5: T05		8: T08		10: T10
	4: T04		6: T06		9: T09		11: T11

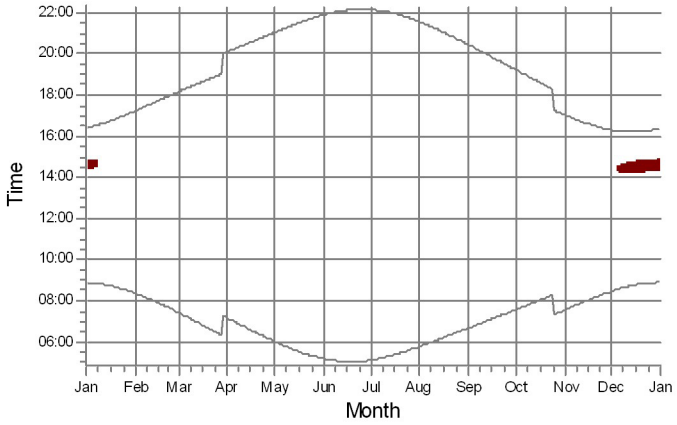
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

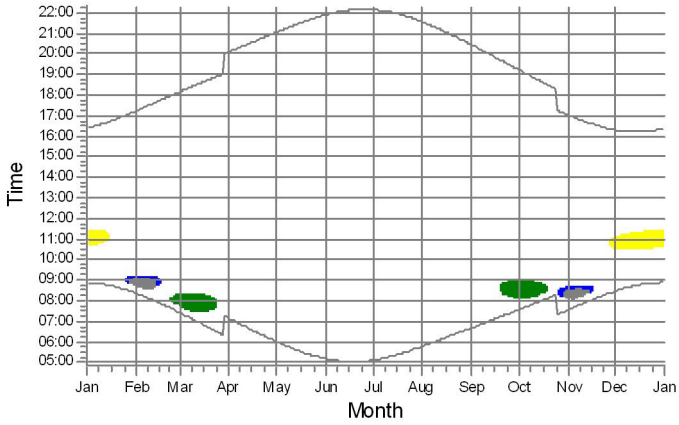
SHADOW - Calendar, graphical

Calculation: Real Case Analysis

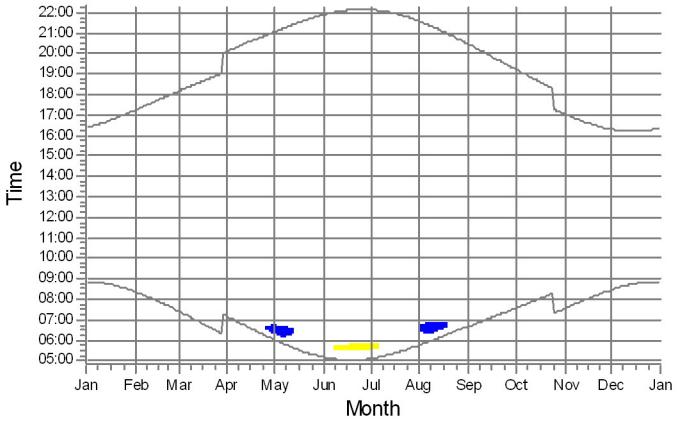
AQ: H045



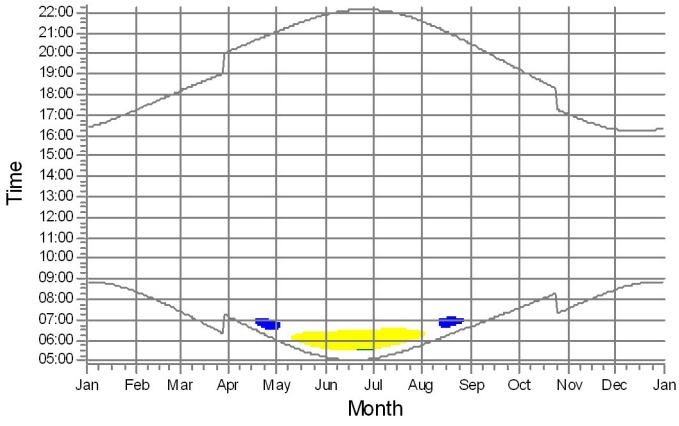
AR: H046



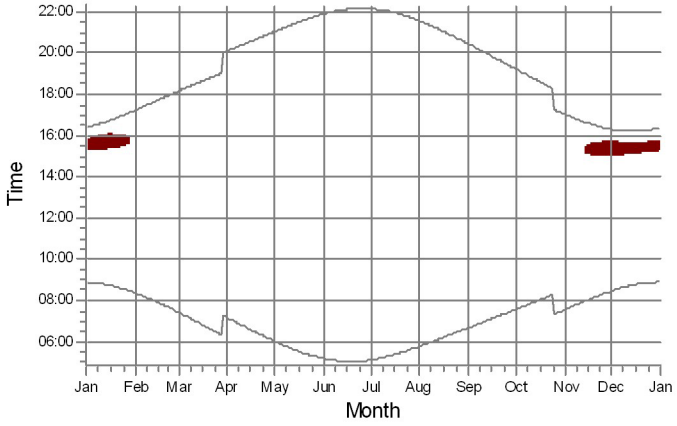
AS: H047



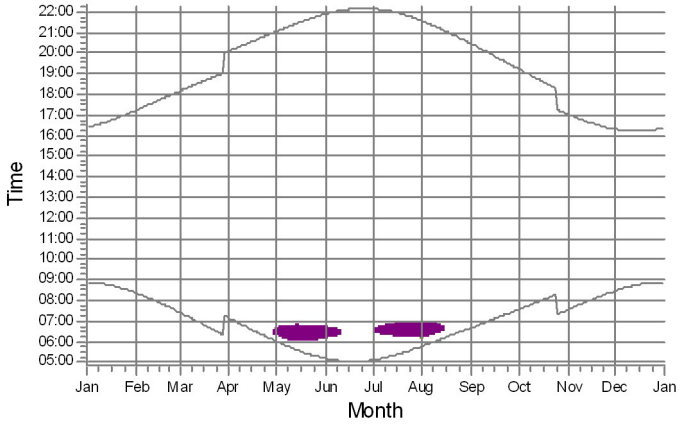
AT: H048



AU: H049



AV: H050



WTGs

	1: T01		3: T03		8: T08		11: T11
	2: T02		4: T04		10: T10		

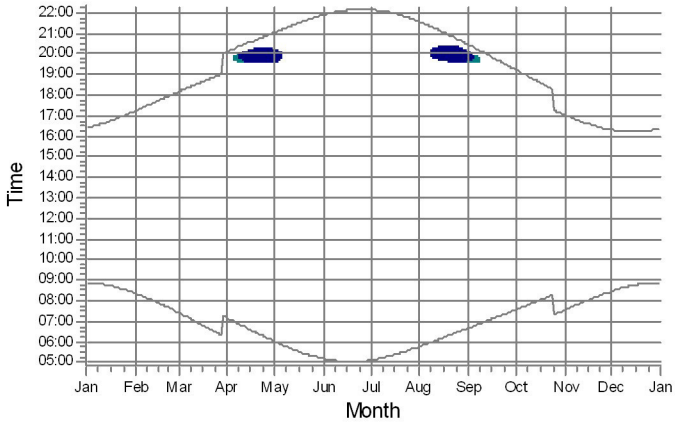
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

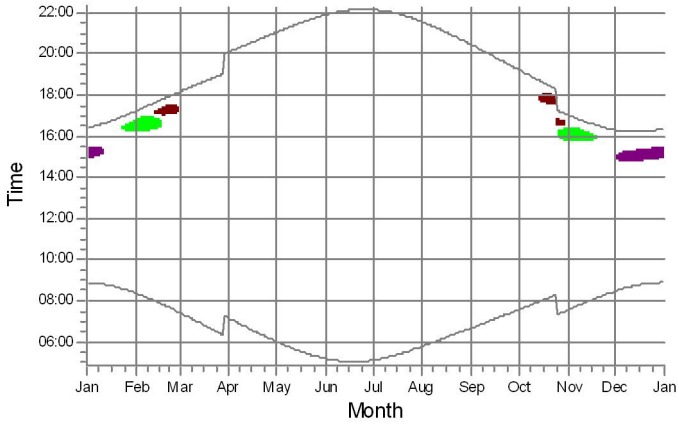
SHADOW - Calendar, graphical

Calculation: Real Case Analysis

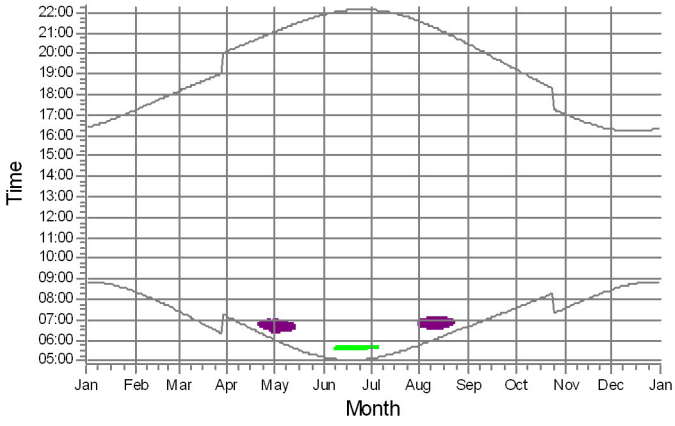
AW: H052



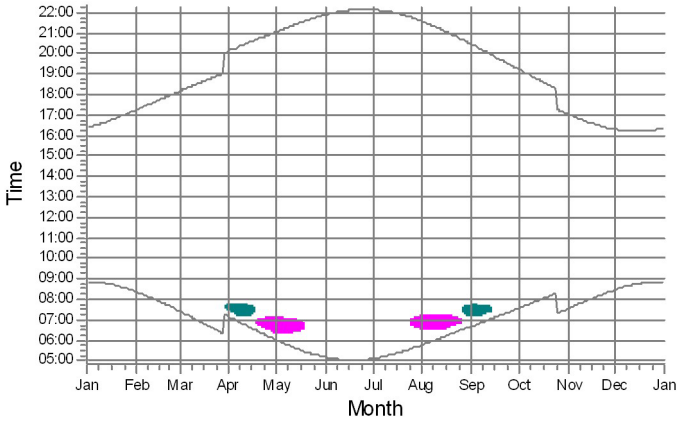
AX: H053



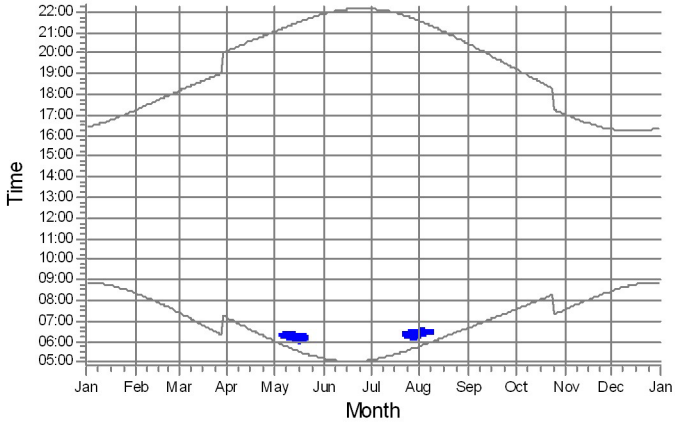
AY: H054



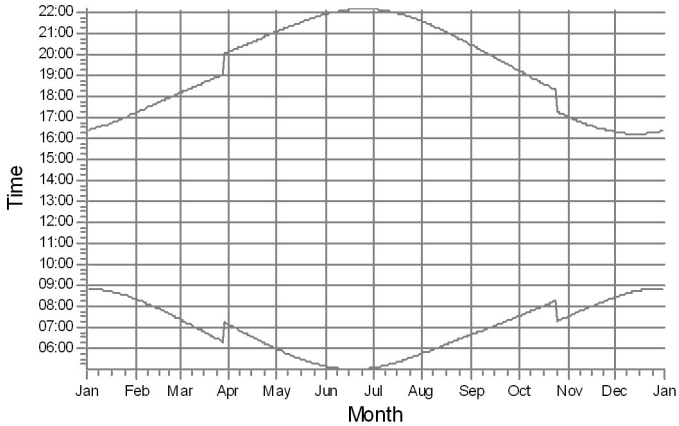
AZ: H055



BA: H056



BB: H058



WTGs

3: T03	6: T06	8: T08	11: T11
5: T05	7: T07	9: T09	

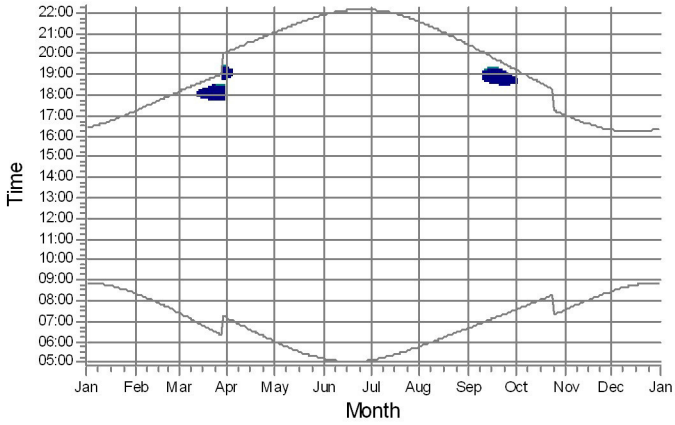
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

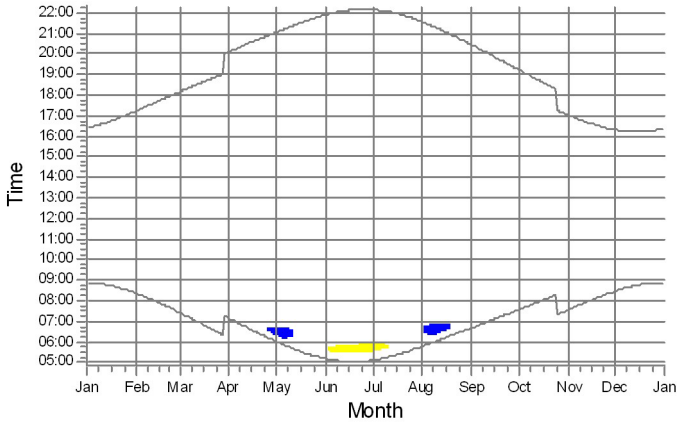
SHADOW - Calendar, graphical

Calculation: Real Case Analysis

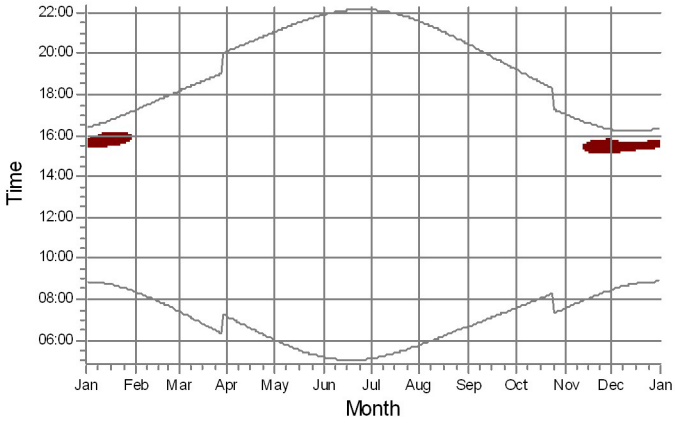
BC: H059



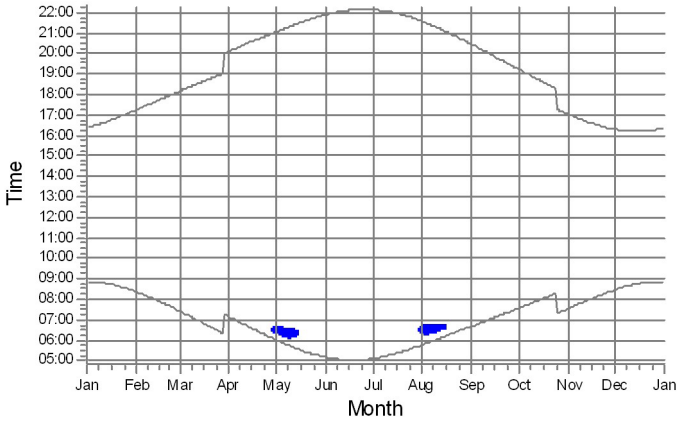
BD: H060



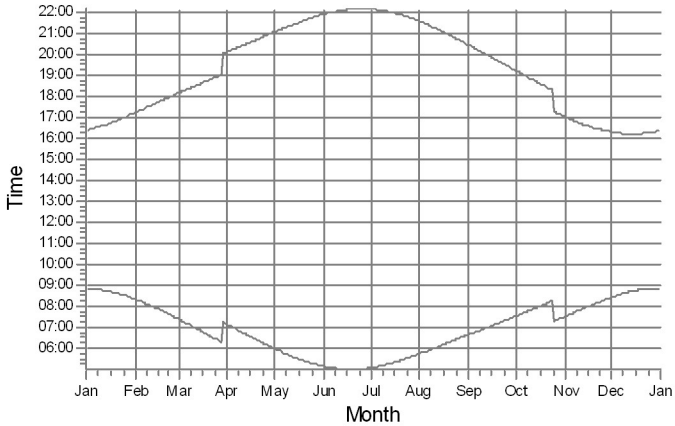
BE: H061



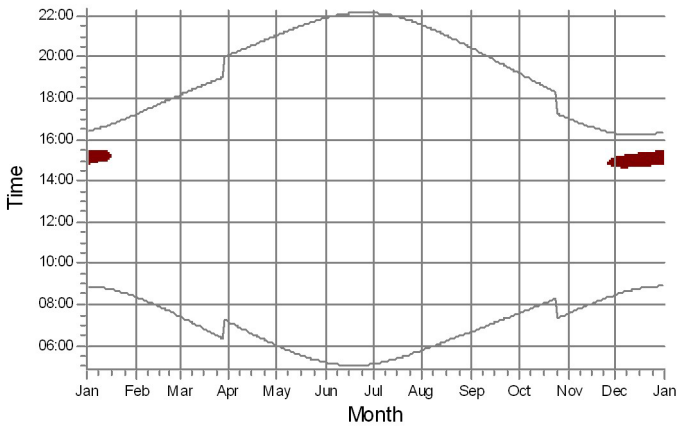
BF: H062



BG: H063



BH: H064



WTGs

2: T02	6: T06	8: T08
3: T03	7: T07	

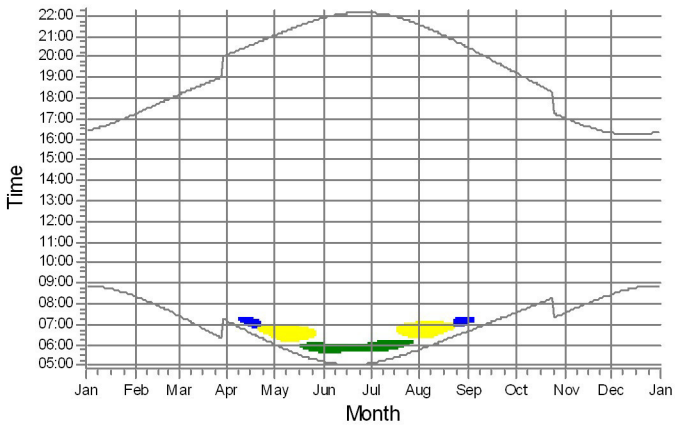
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

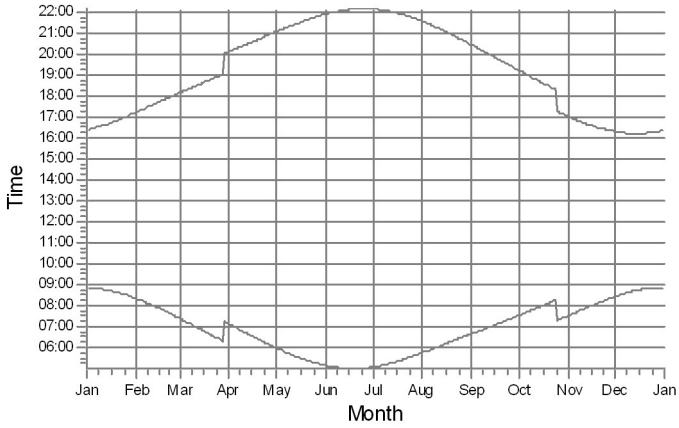
SHADOW - Calendar, graphical

Calculation: Real Case Analysis

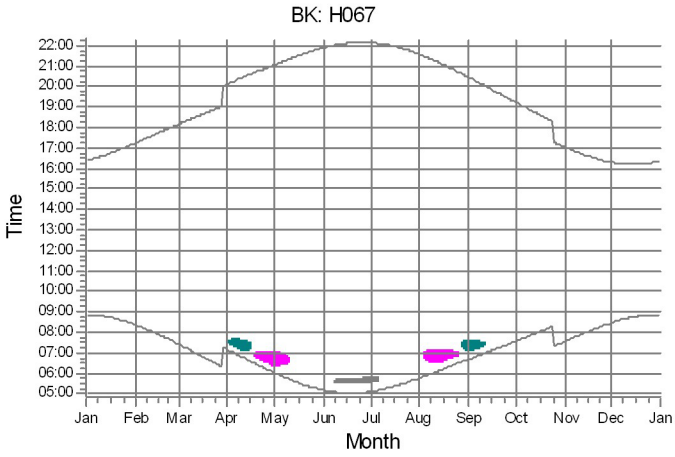
BI: H065



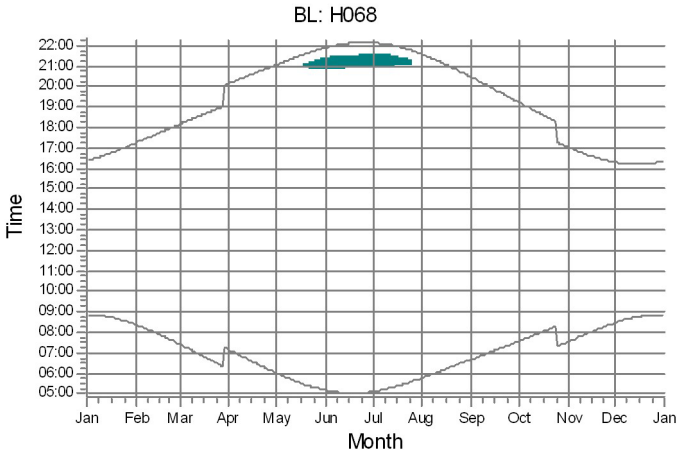
BJ: H066



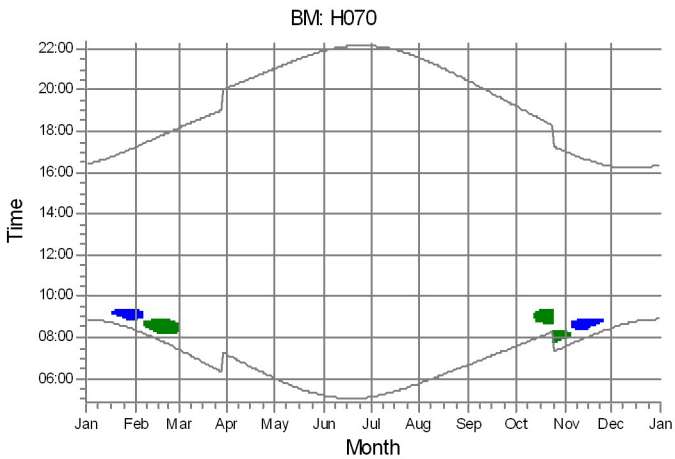
BK: H067



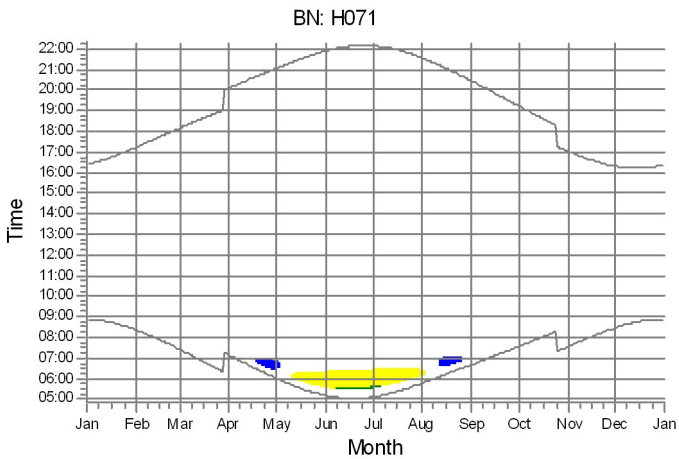
BL: H068



BM: H070



BN: H071



WTGs

	1: T01		3: T03		5: T05
	2: T02		4: T04		6: T06

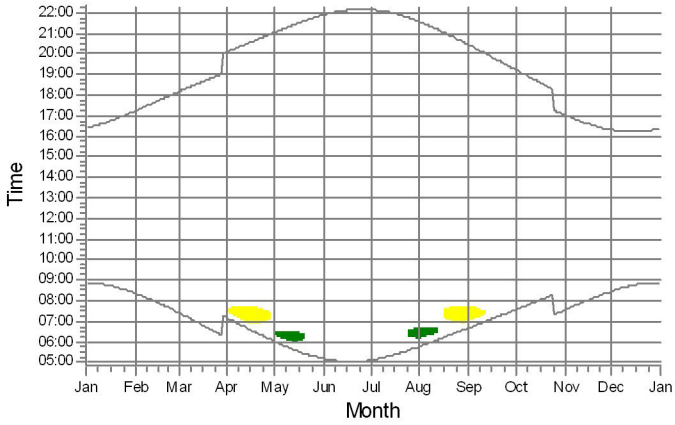
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

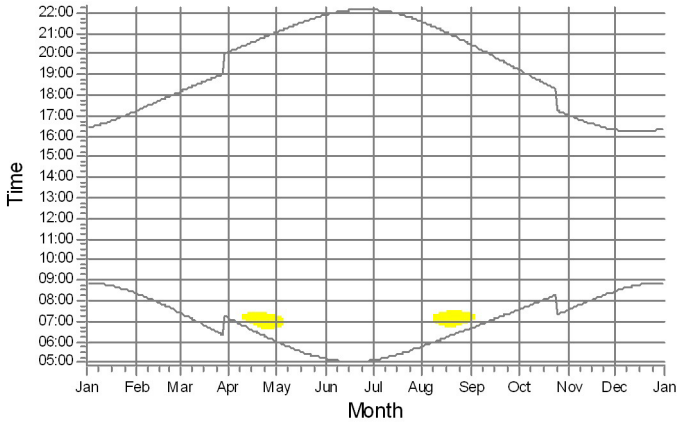
SHADOW - Calendar, graphical

Calculation: Real Case Analysis

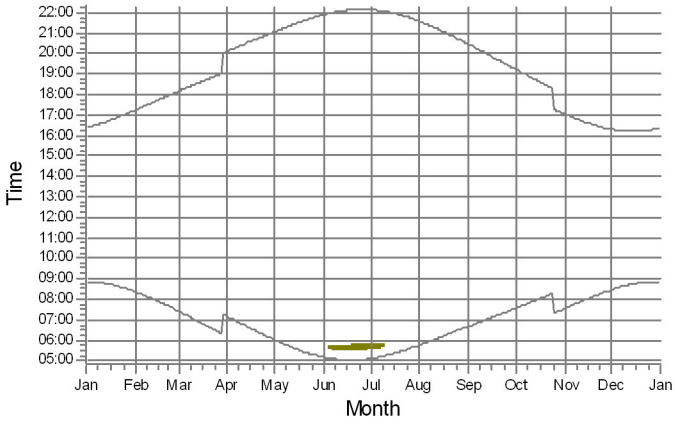
BO: H072



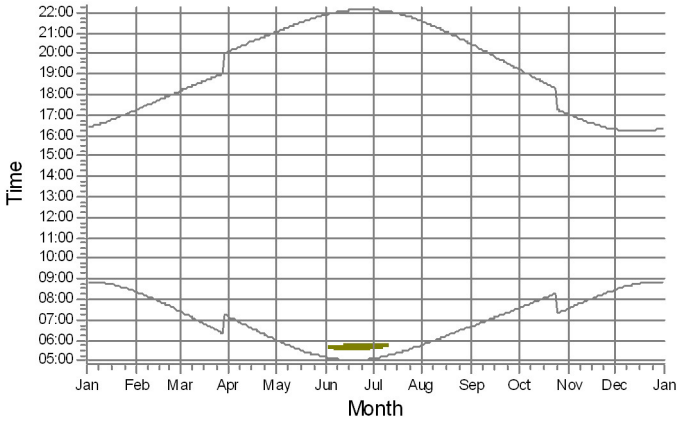
BP: H073



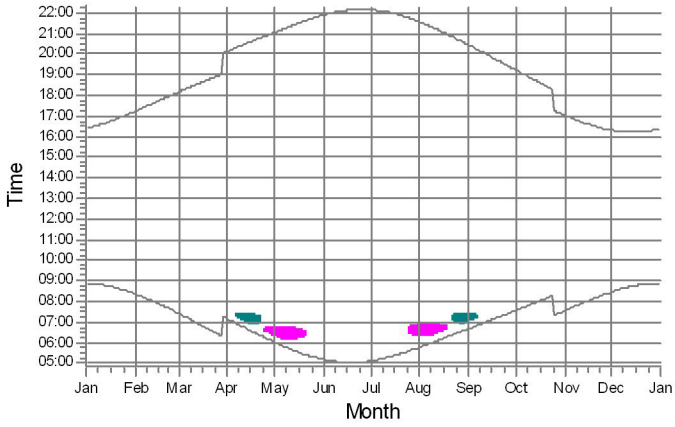
BQ: H074



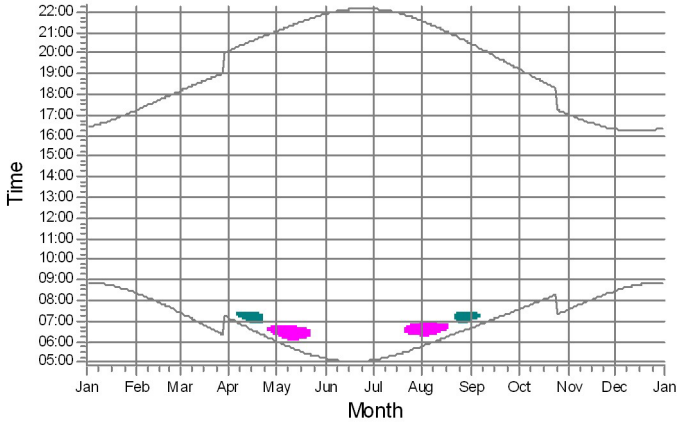
BR: H075



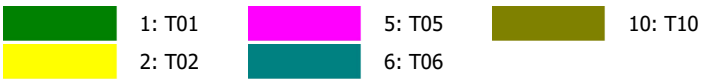
BS: H076



BT: H077



WTGs



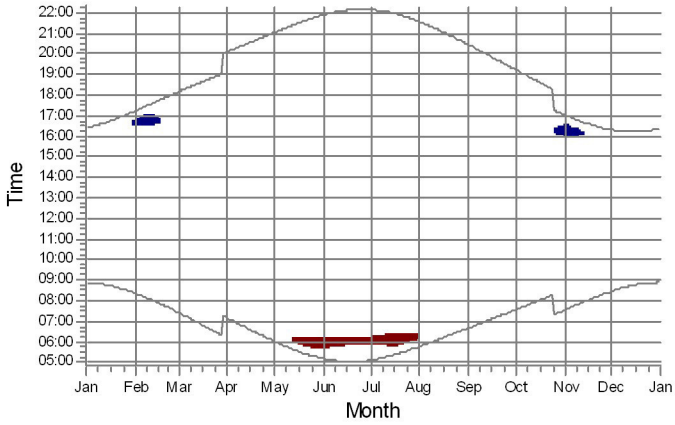
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

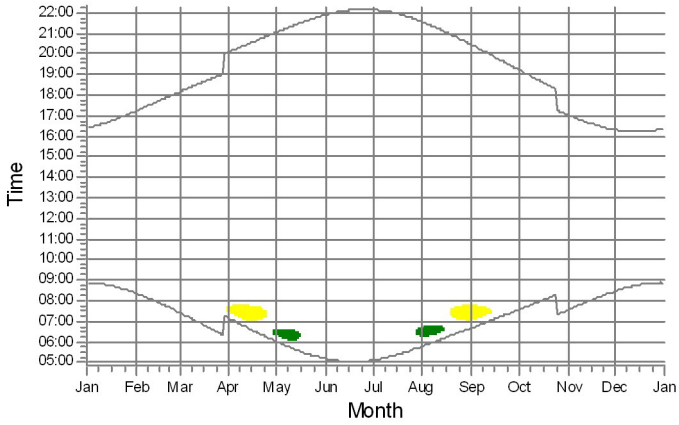
SHADOW - Calendar, graphical

Calculation: Real Case Analysis

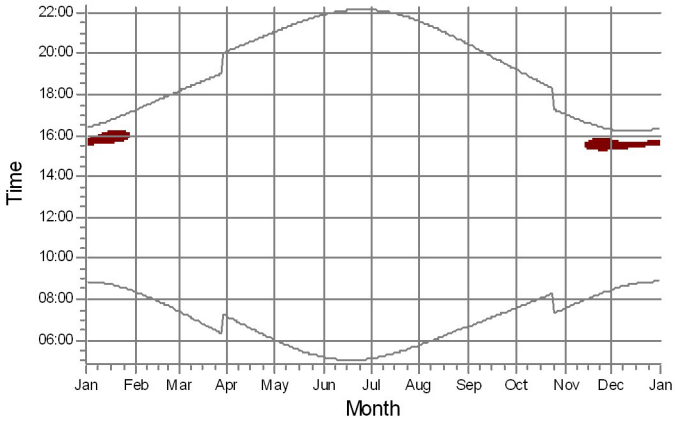
BU: H078



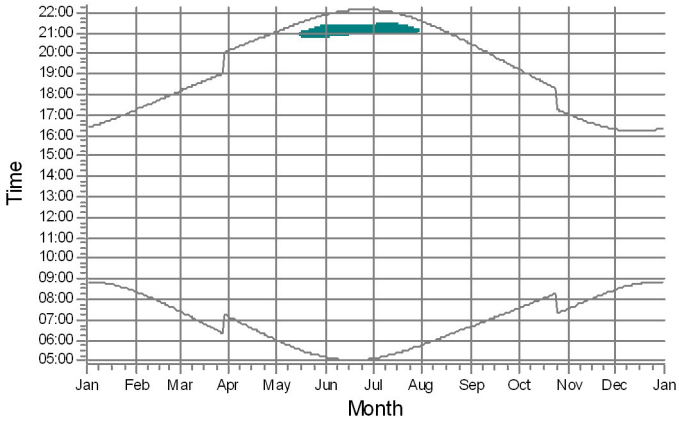
BV: H079



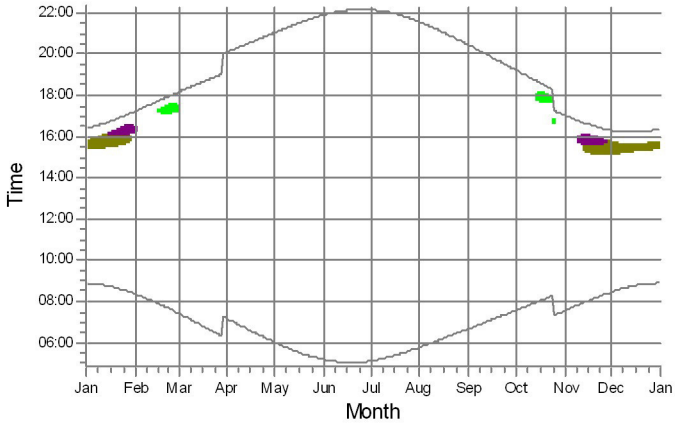
BW: H081



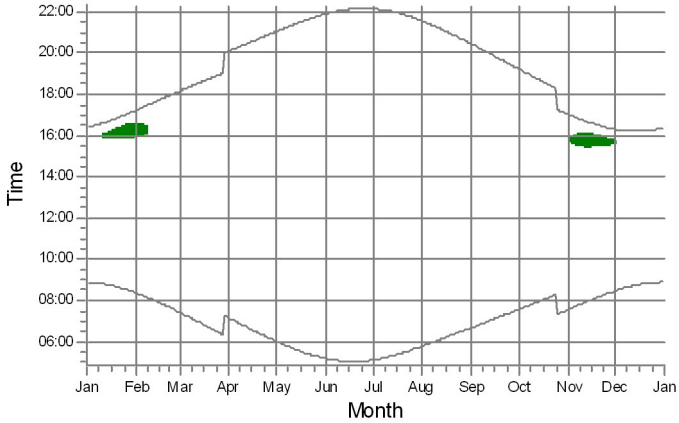
BX: H083



BY: H084



BZ: H085



WTGs

1: T01	6: T06	8: T08	10: T10
2: T02	7: T07	9: T09	11: T11

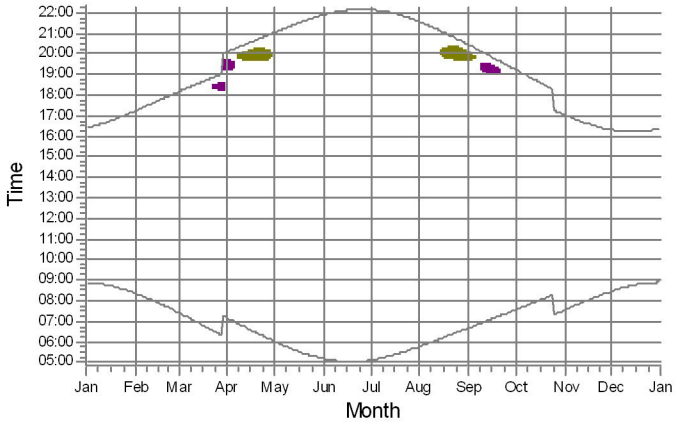
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

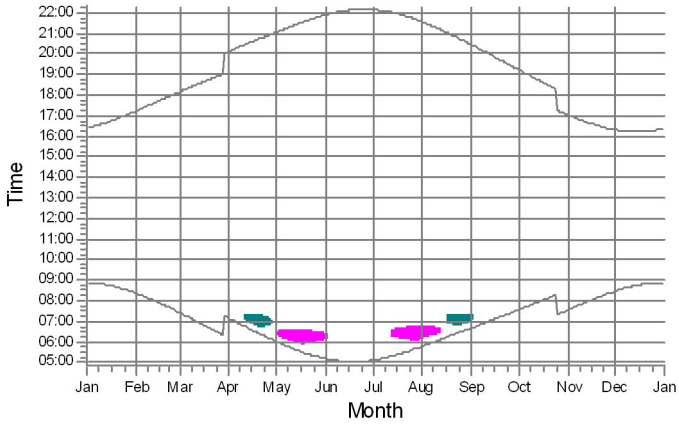
SHADOW - Calendar, graphical

Calculation: Real Case Analysis

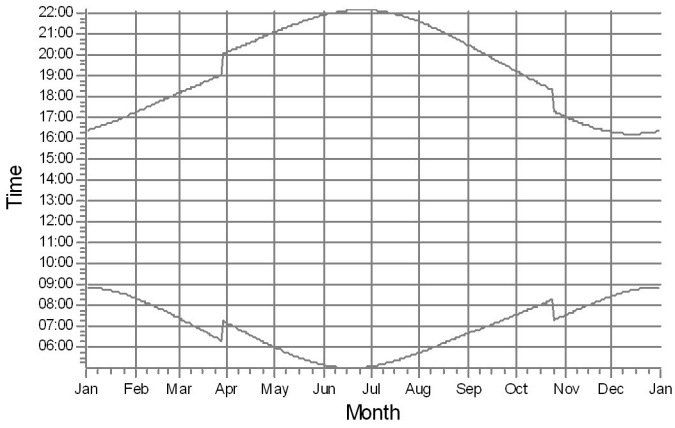
CA: H086



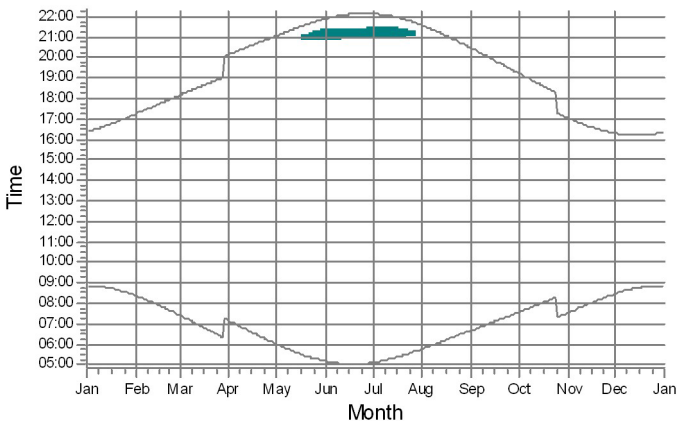
CB: H087



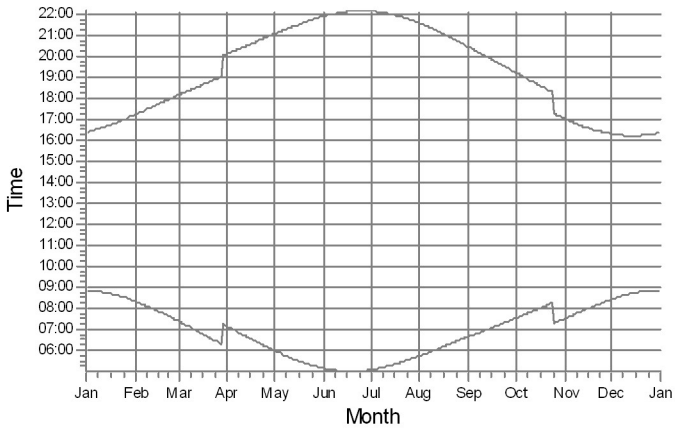
CC: H089



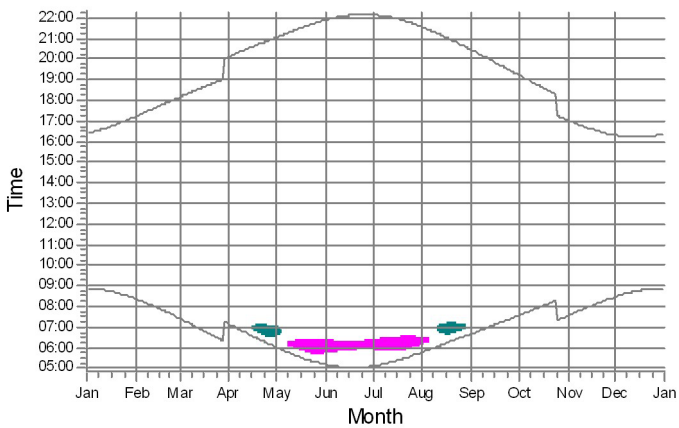
CD: H090



CE: H091



CF: H093



WTGs

5: T05 6: T06 10: T10 11: T11

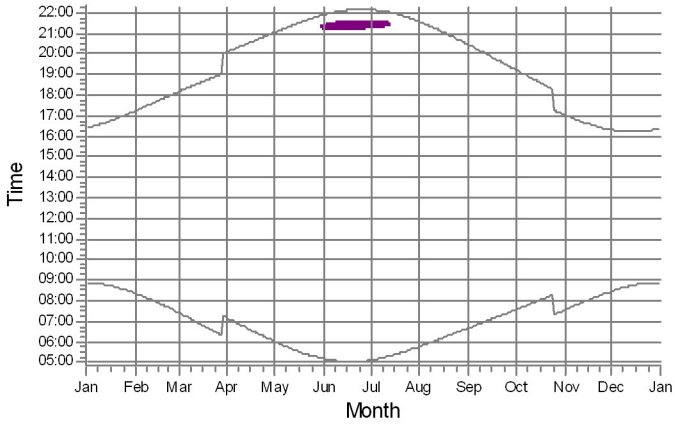
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

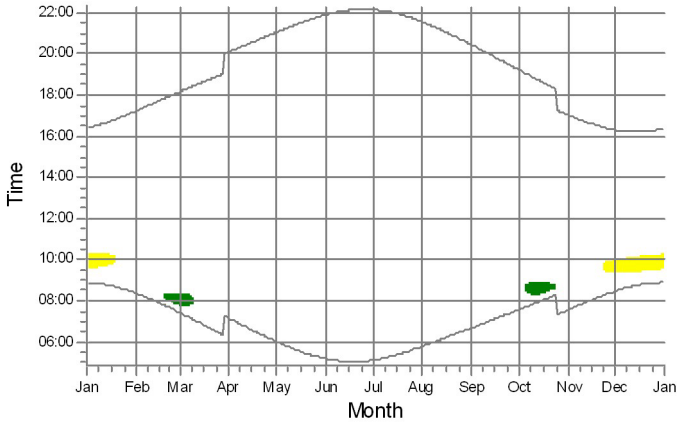
SHADOW - Calendar, graphical

Calculation: Real Case Analysis

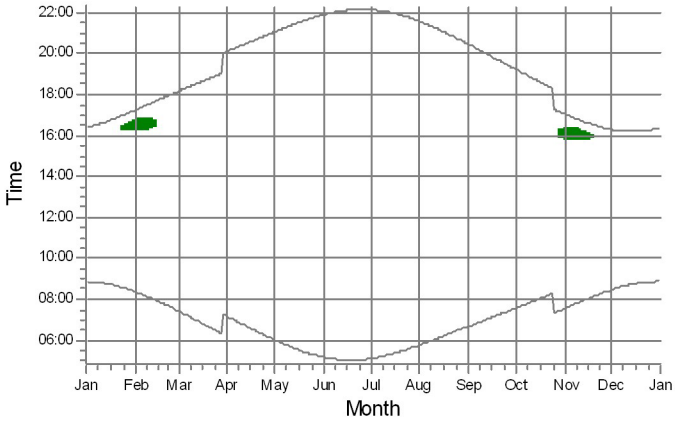
CG: H094



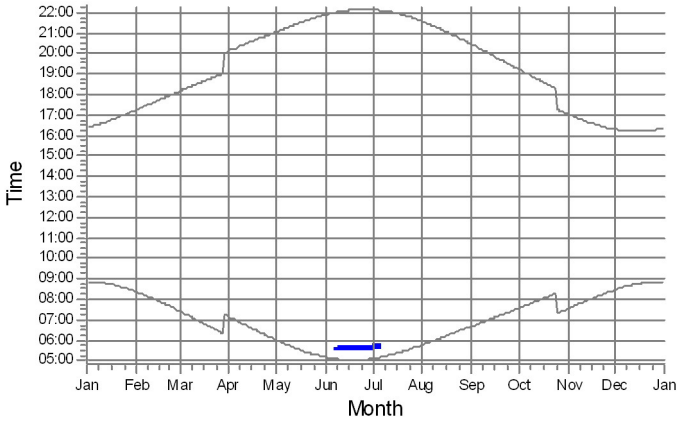
CH: H095



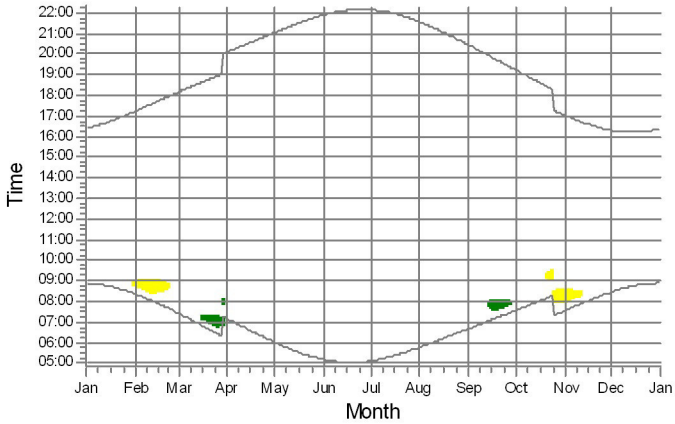
CI: H096



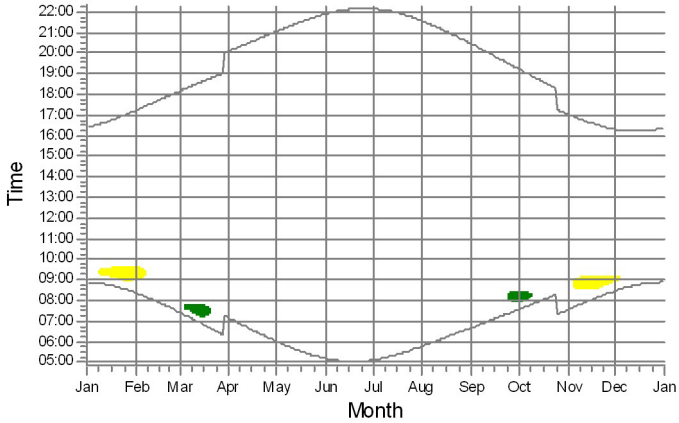
CJ: H097



CK: H098



CL: H099



WTGs

1: T01 2: T02 3: T03 11: T11

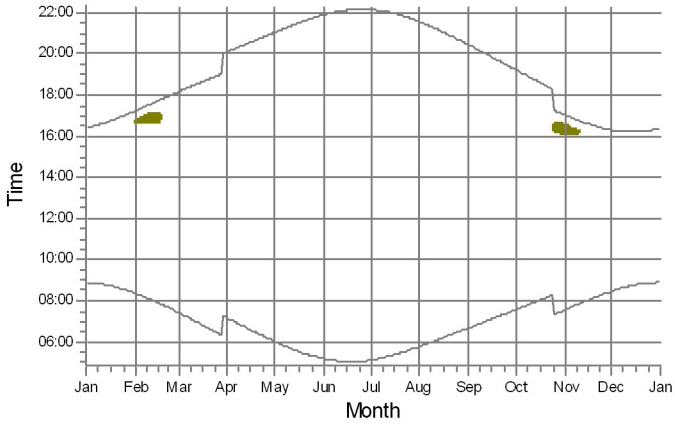
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

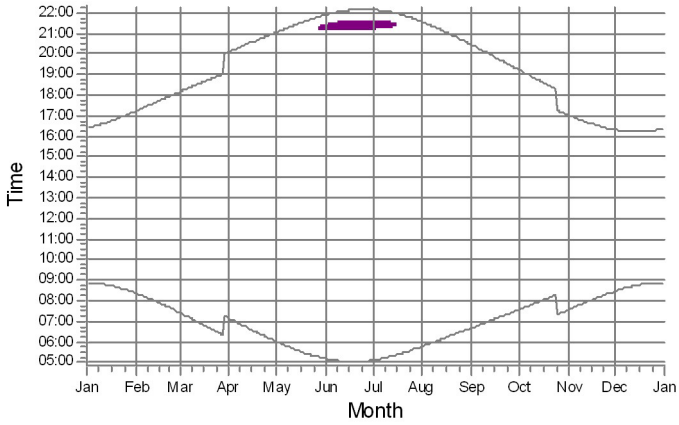
SHADOW - Calendar, graphical

Calculation: Real Case Analysis

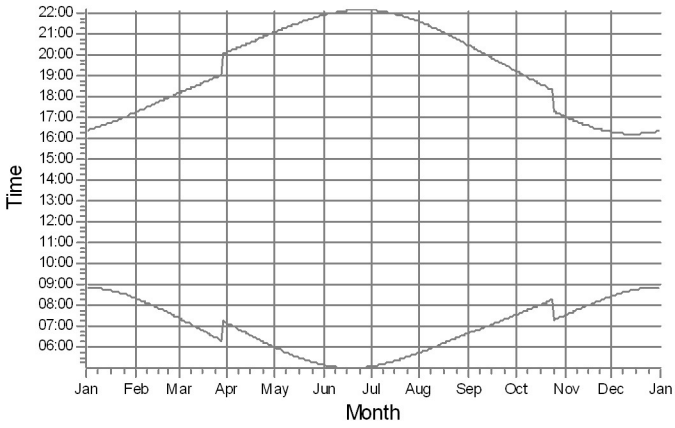
CM: H100



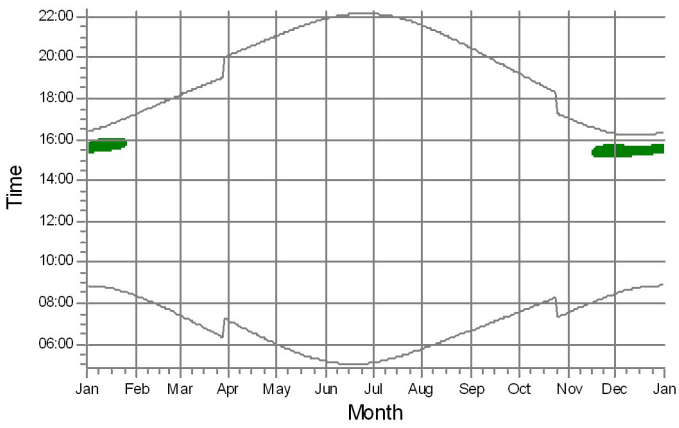
CN: H101



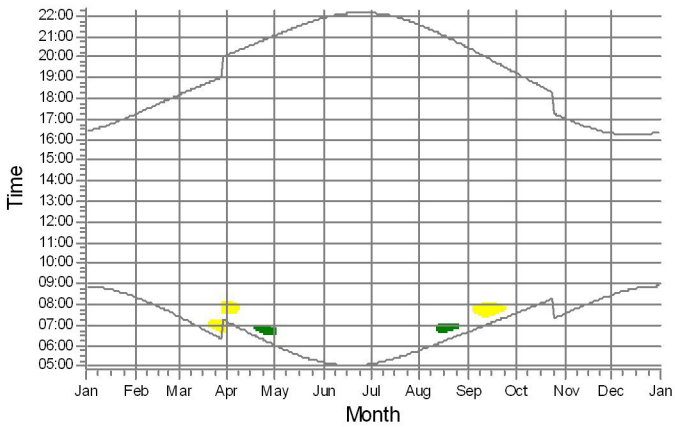
CO: H102



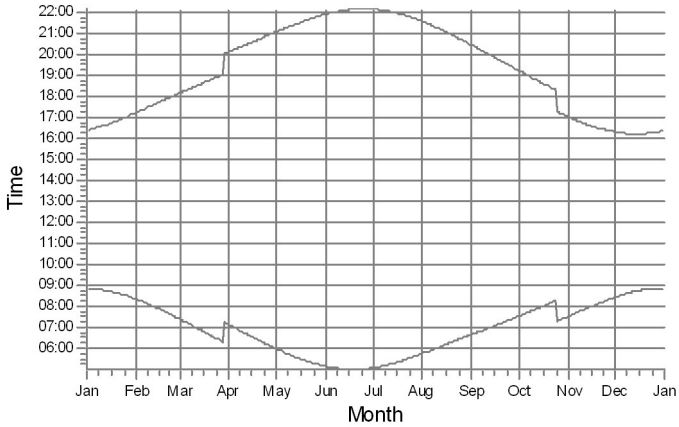
CP: H103



CQ: H104



CR: H105



WTGs

1: T01 2: T02 10: T10 11: T11

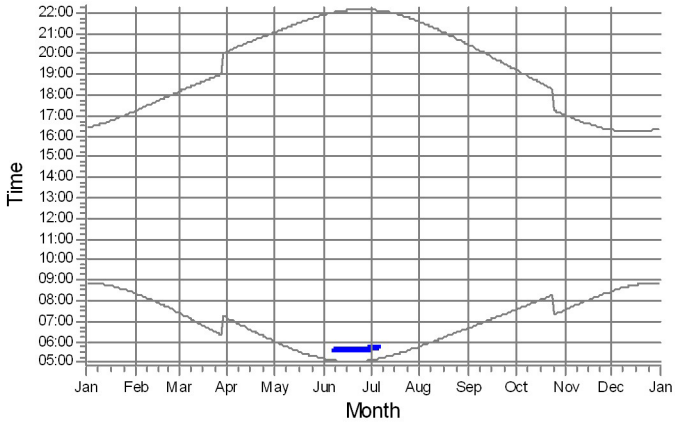
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

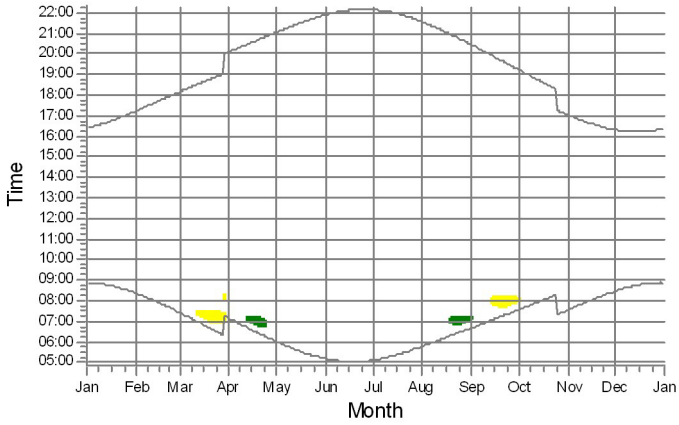
SHADOW - Calendar, graphical

Calculation: Real Case Analysis

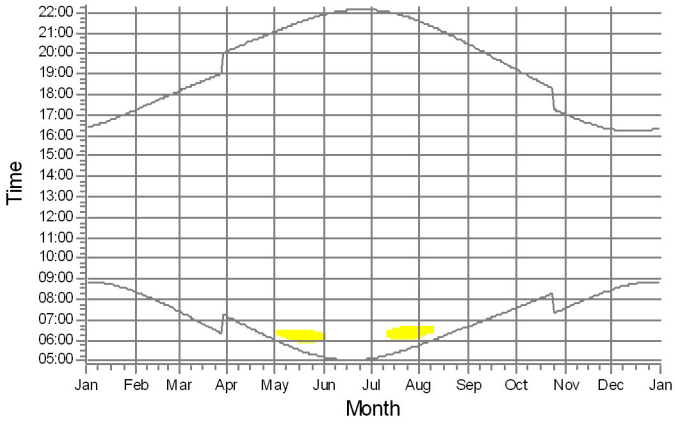
CS: H106



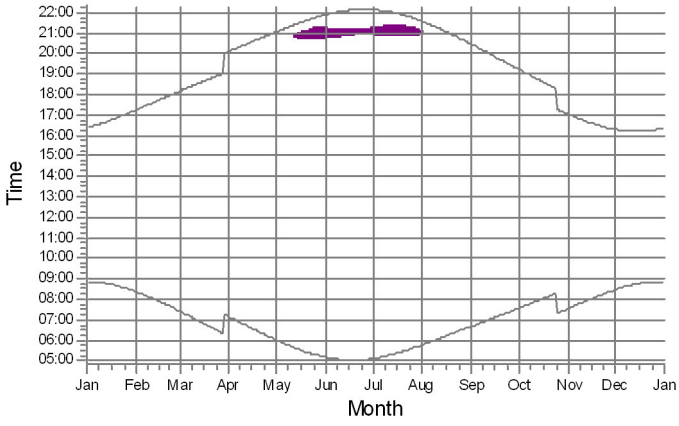
CT: H107



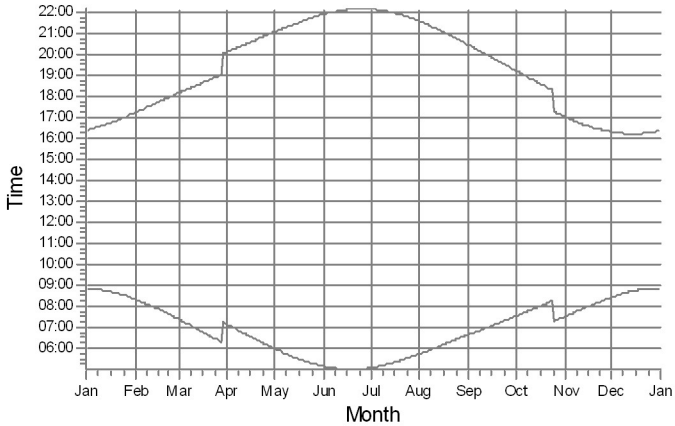
CU: H108



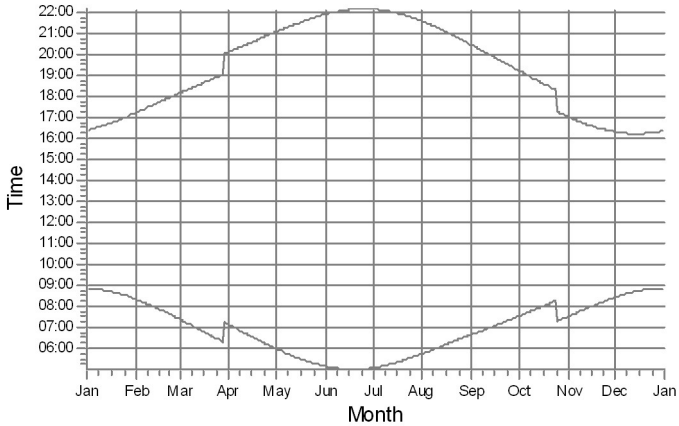
CV: H110



CW: H111



CX: H112



WTGs

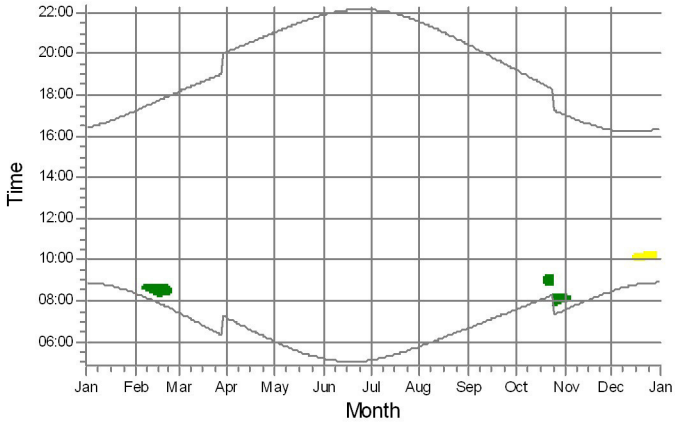
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

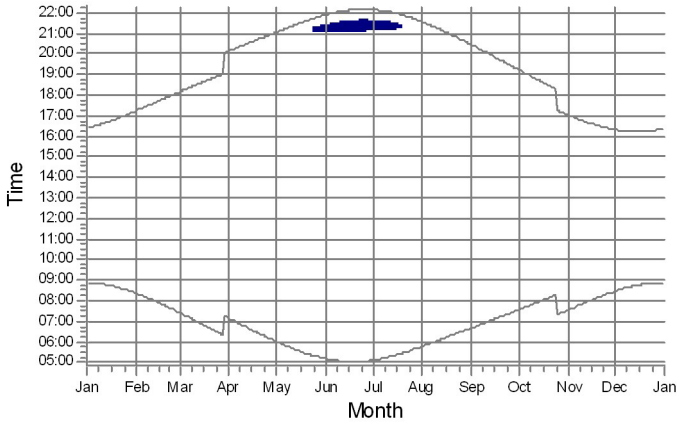
SHADOW - Calendar, graphical

Calculation: Real Case Analysis

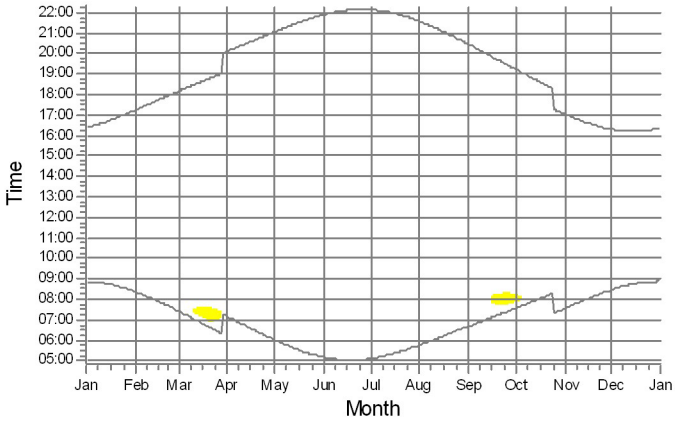
CY: H113



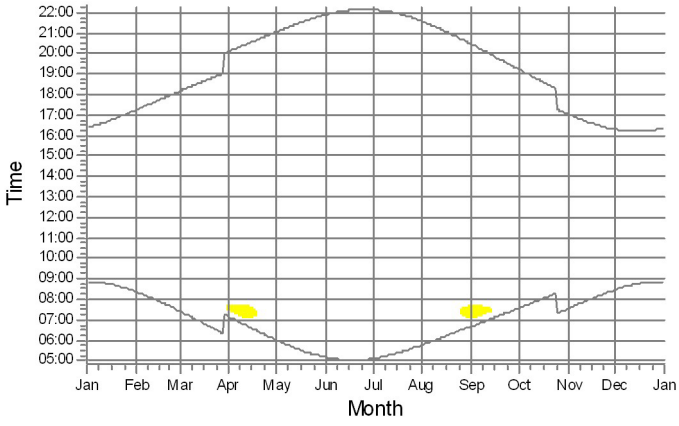
CZ: H114



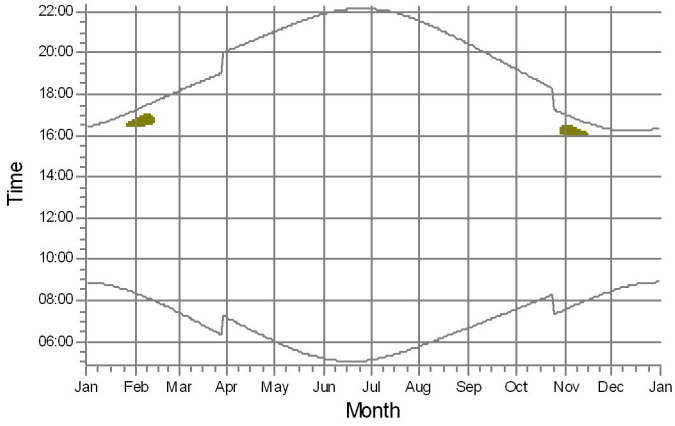
DA: H115



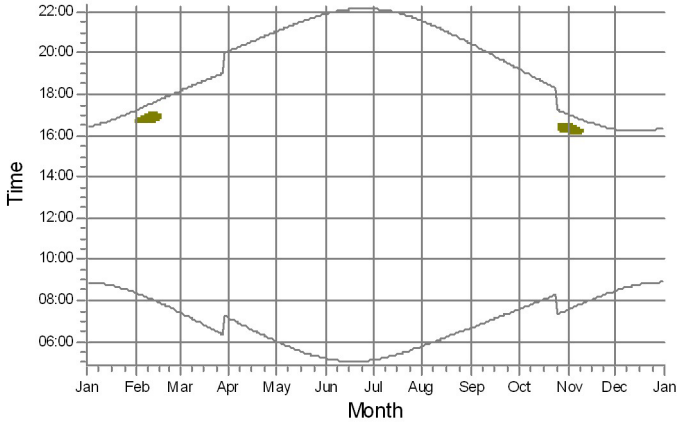
DB: H116



DC: H117



DD: H118



WTGs

1: T01 2: T02 7: T07 10: T10

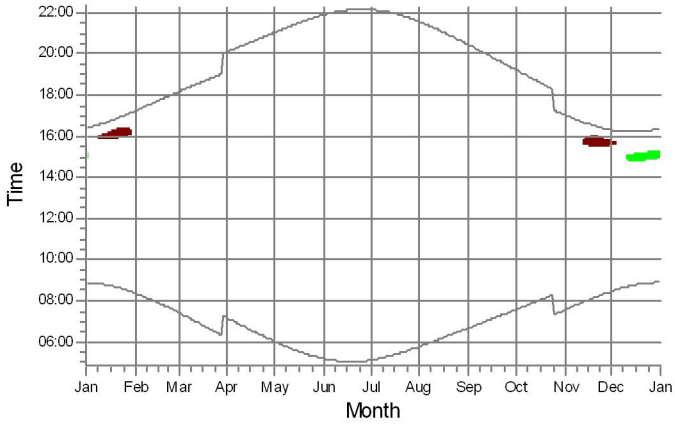
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

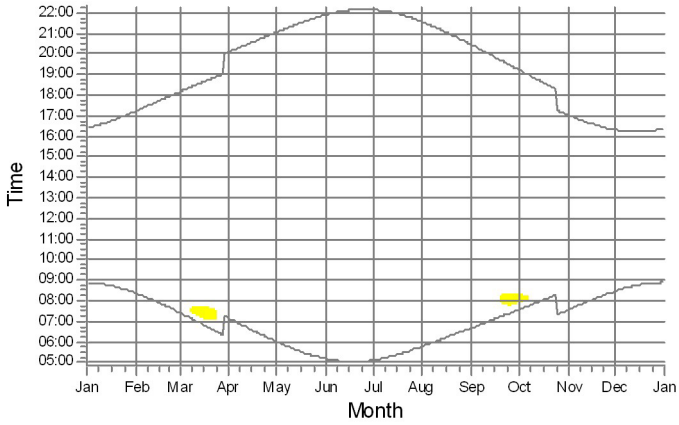
SHADOW - Calendar, graphical

Calculation: Real Case Analysis

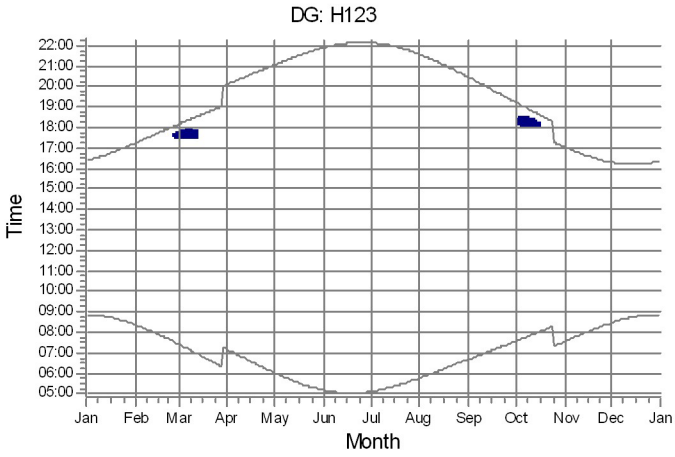
DE: H119



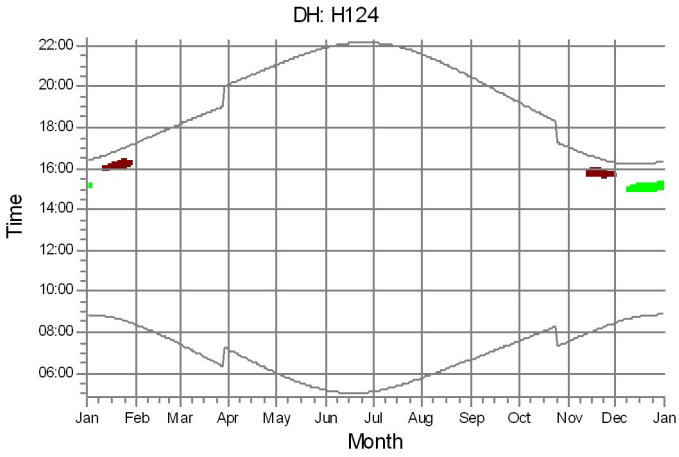
DF: H120



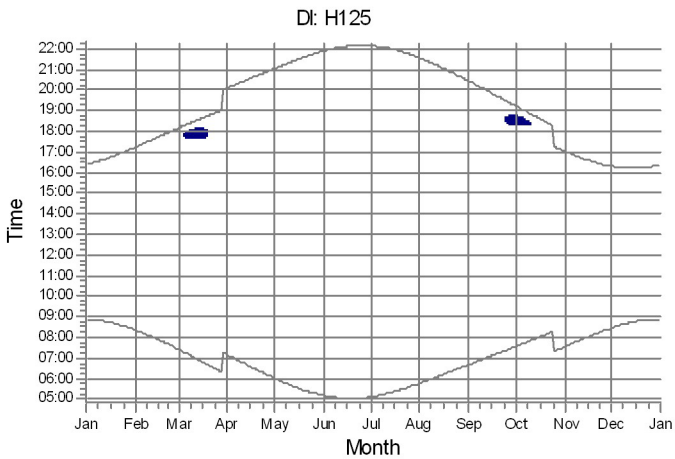
DG: H123



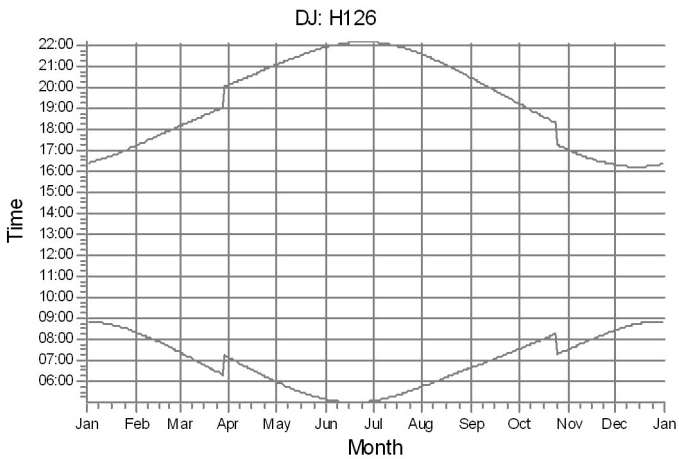
DH: H124



DI: H125



DJ: H126



WTGs

2: T02 7: T07 8: T08 9: T09

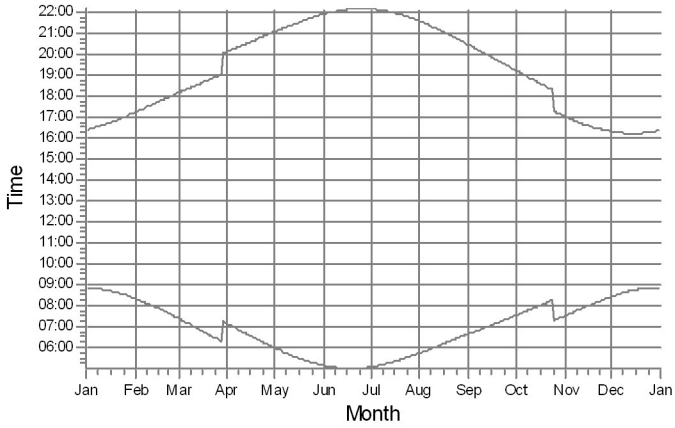
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

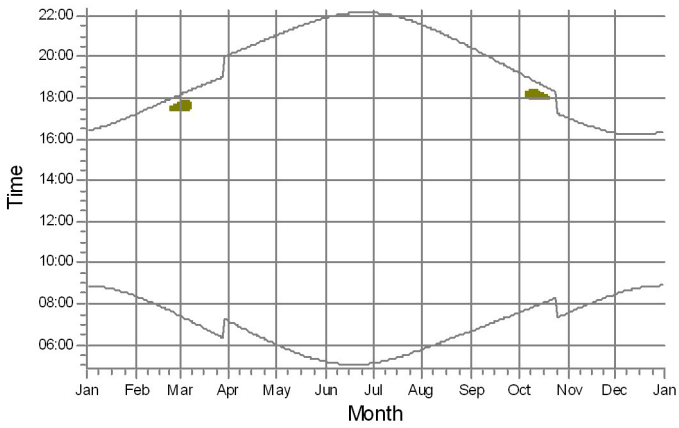
SHADOW - Calendar, graphical

Calculation: Real Case Analysis

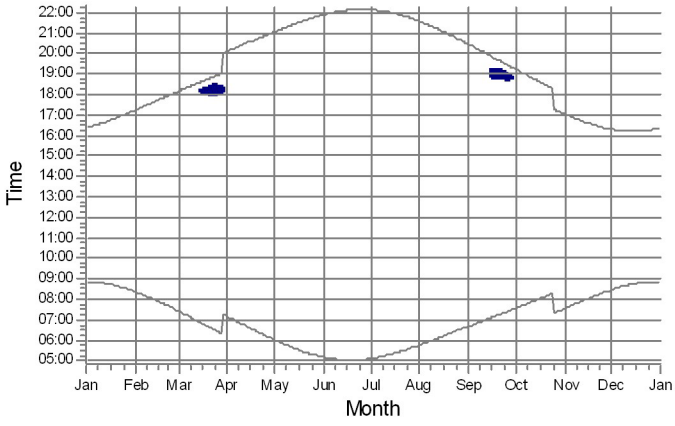
DK: H128



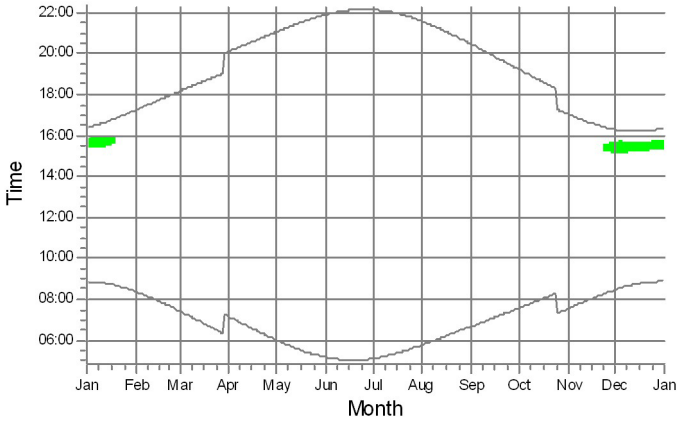
DL: H129



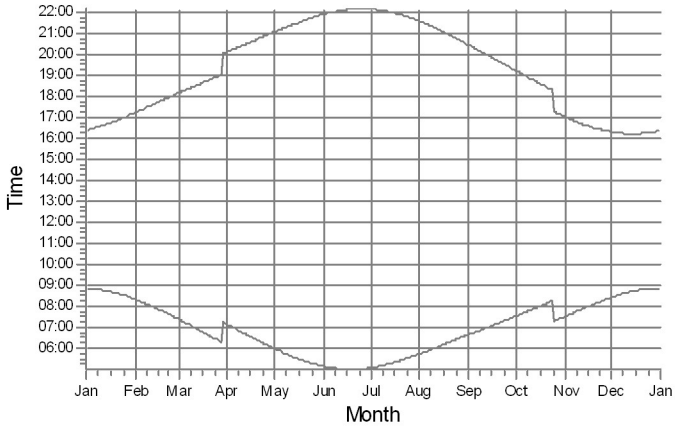
DM: H130



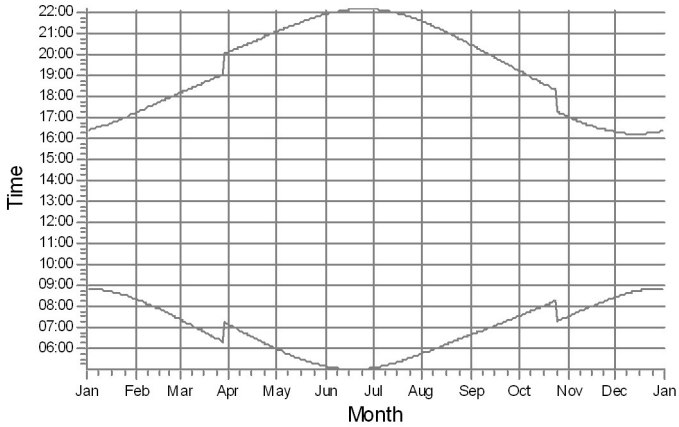
DN: H131



DO: H132



DP: H133



WTGs

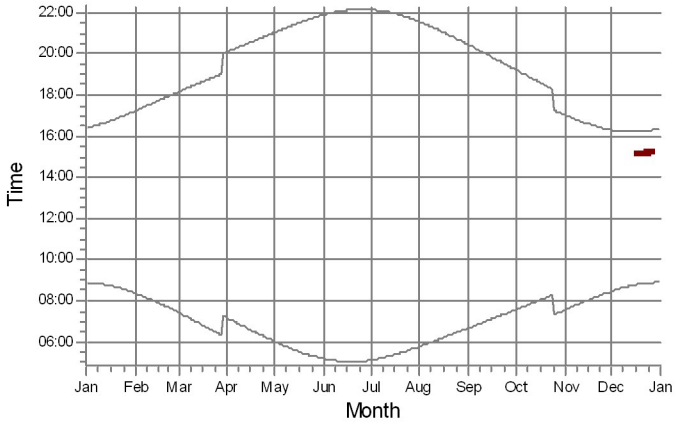
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

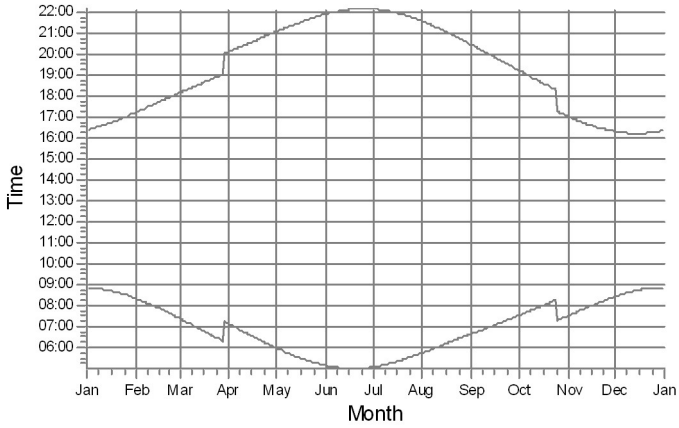
SHADOW - Calendar, graphical

Calculation: Real Case Analysis

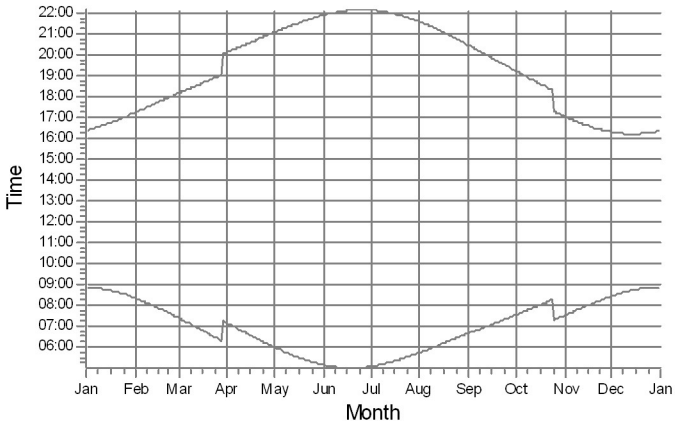
DQ: H135



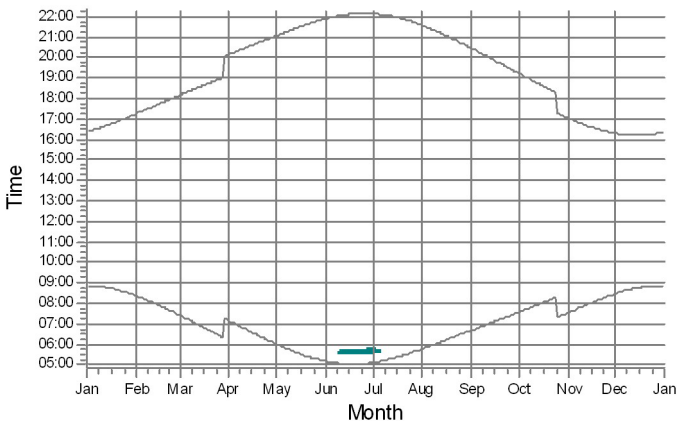
DR: H136



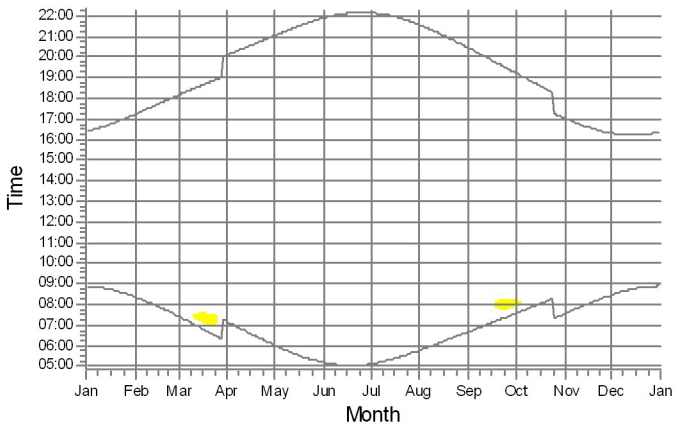
DS: H137



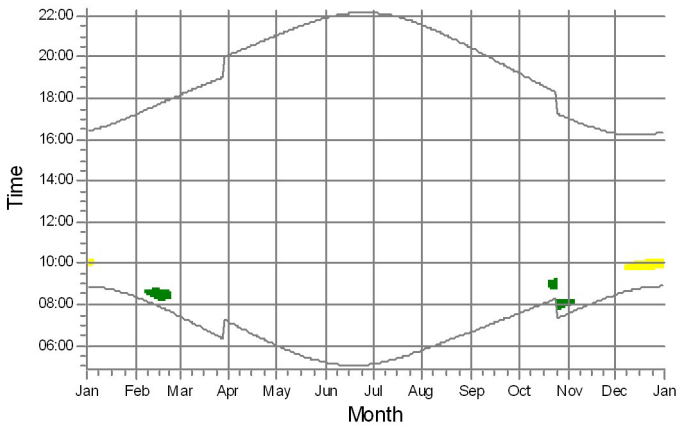
DT: H138



DU: H139



DV: H140



WTGs

1: T01 2: T02 6: T06 8: T08

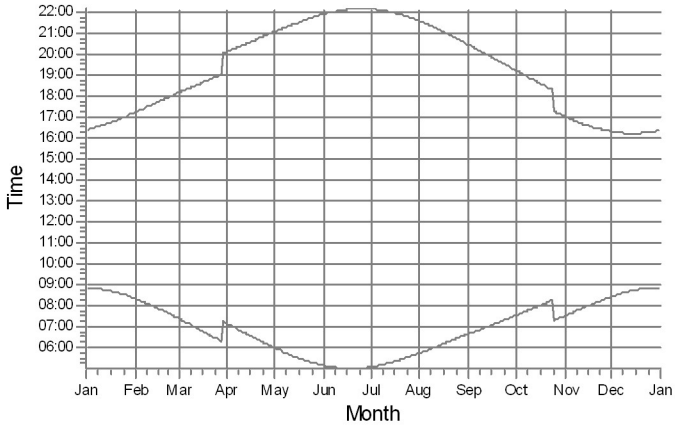
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

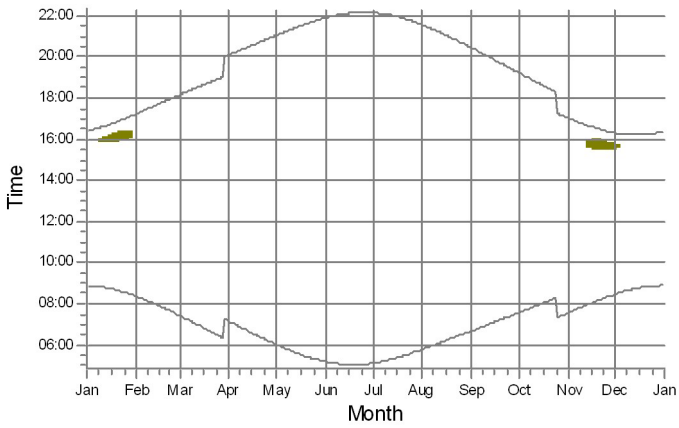
SHADOW - Calendar, graphical

Calculation: Real Case Analysis

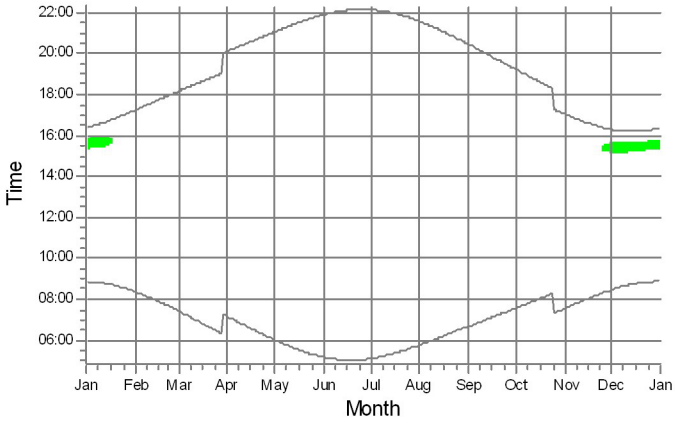
DW: H141



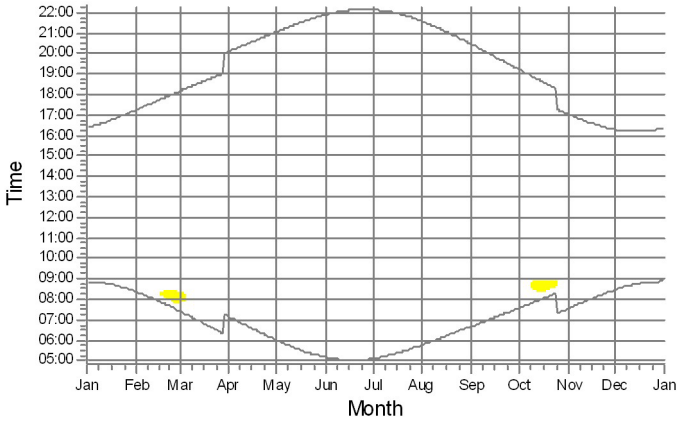
DX: H142



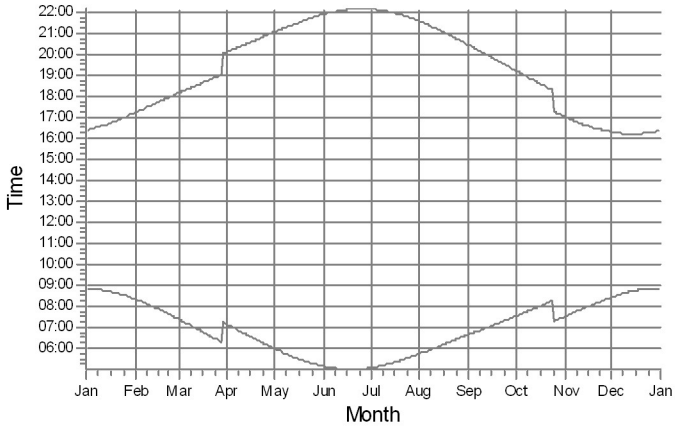
DY: H143



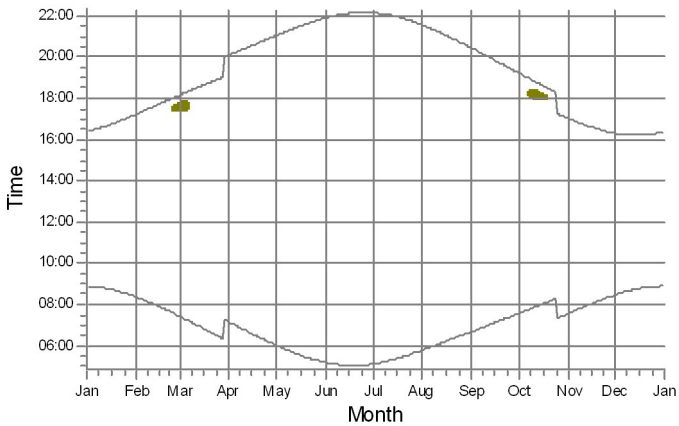
DZ: H144



EA: H145



EB: H146



WTGs

2: T02 9: T09 10: T10

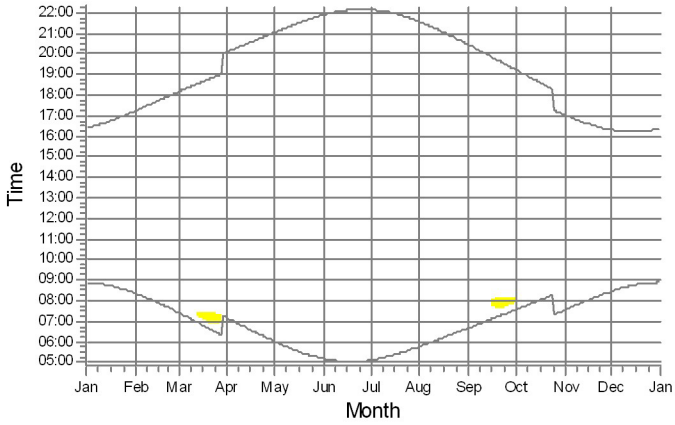
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

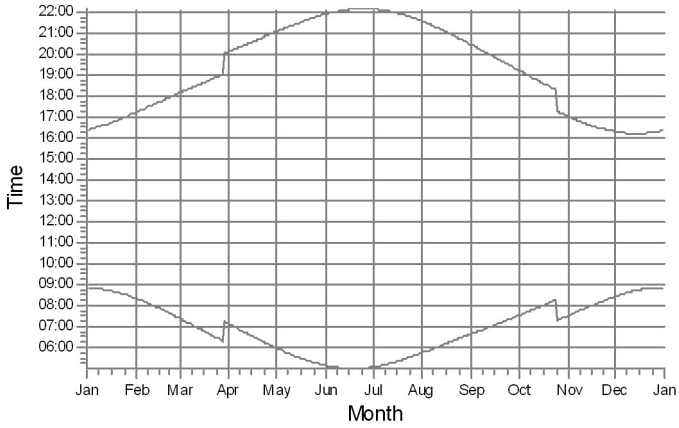
SHADOW - Calendar, graphical

Calculation: Real Case Analysis

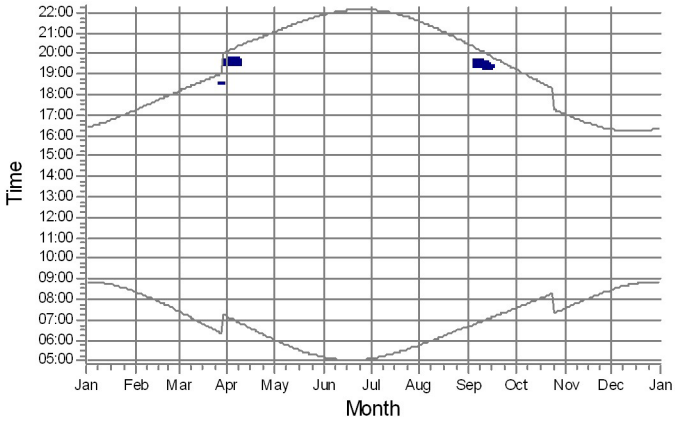
EC: H147



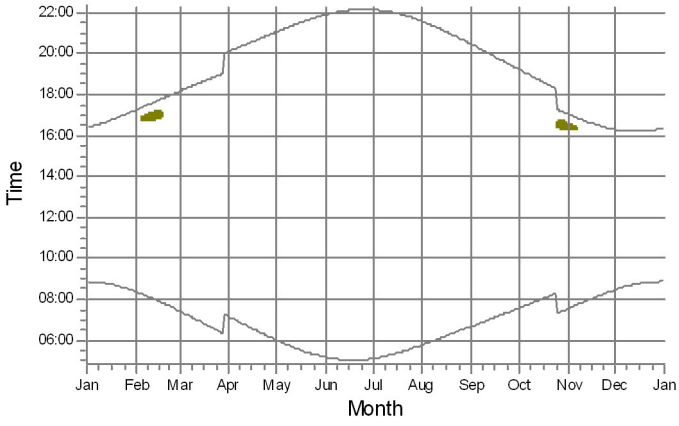
ED: H148



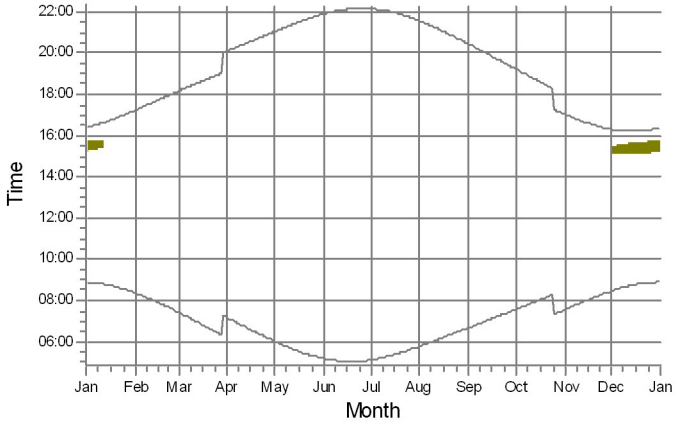
EE: H149



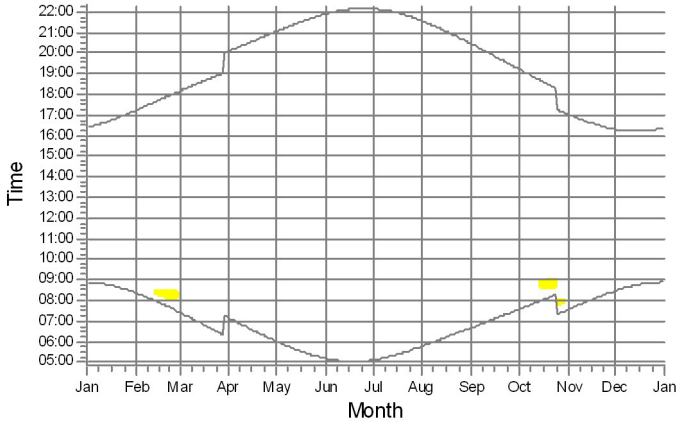
EF: H151



EG: H152



EH: H153



WTGs

2: T02 7: T07 10: T10

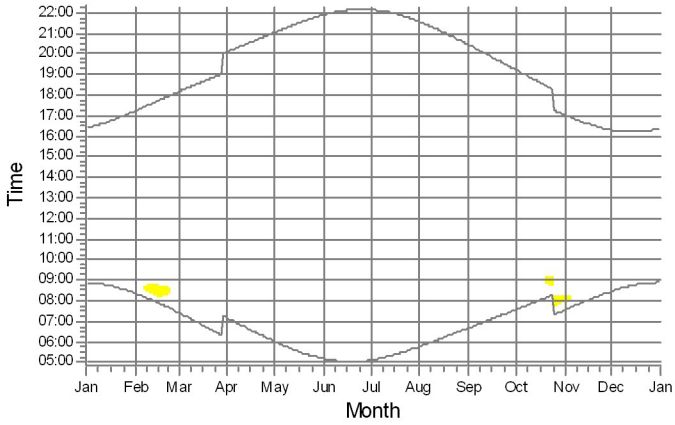
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

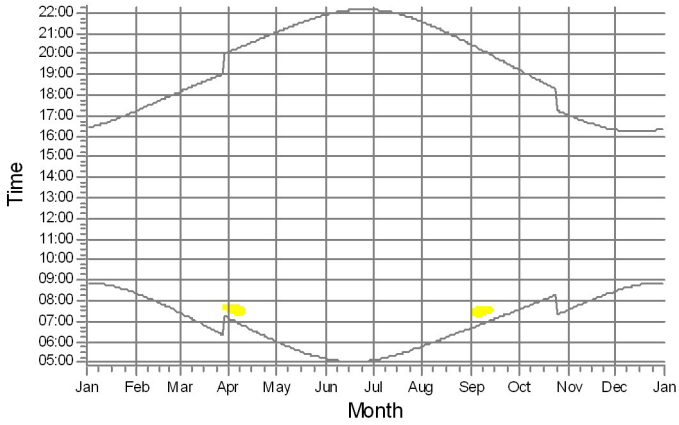
SHADOW - Calendar, graphical

Calculation: Real Case Analysis

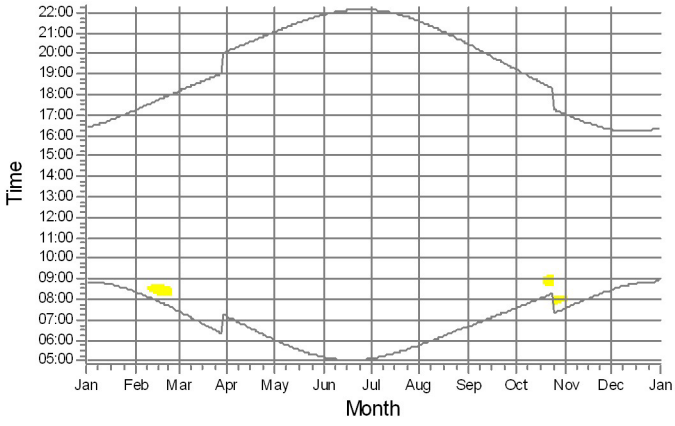
EI: H156



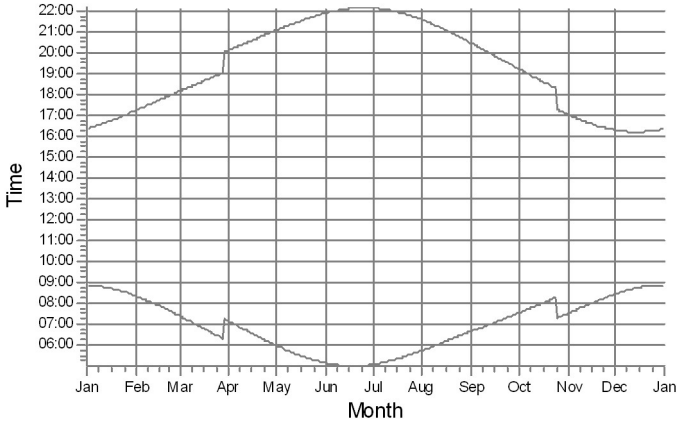
EJ: H157



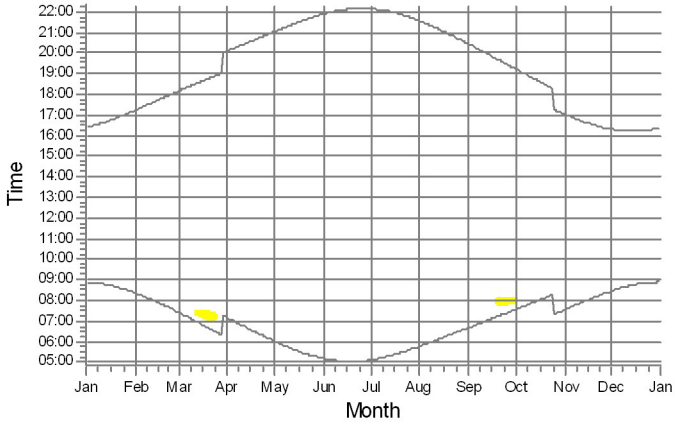
EK: H158



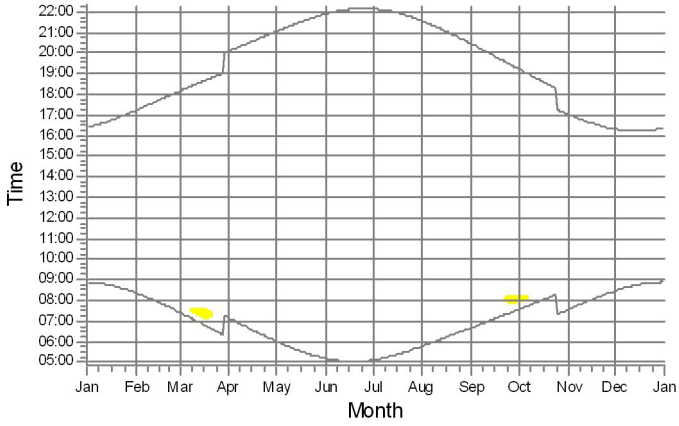
EL: H159



EM: H161



EN: H165



WTGs

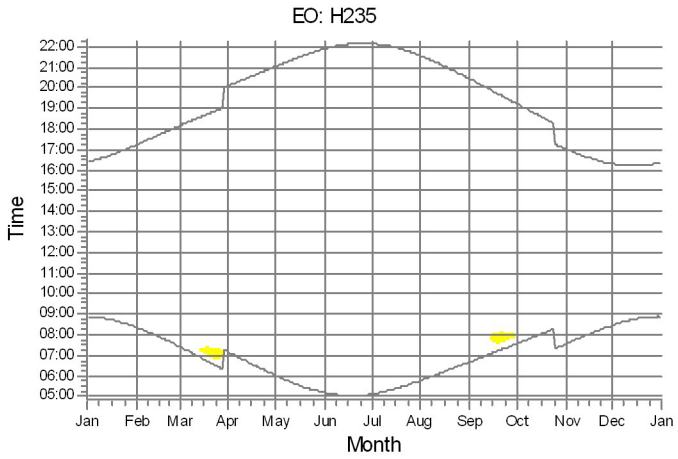
2: T02

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar, graphical

Calculation: Real Case Analysis



WTGs

2: T02

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar per WTG

Calculation: Real Case Analysis **WTG:** 1 - T01

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March		April		May		June	
1	08:52	15:25-15:45/20	08:22	16:02-16:42/40	07:24	07:49-08:17/28	07:09		06:00	06:26-06:31/5	05:10	05:41-06:03/22
	16:22		17:14		18:10		20:08		21:04		21:54	
2	08:52	15:25-15:45/20	08:20	16:03-16:44/41	07:22	07:47-08:17/30	07:07		05:58	06:24-06:32/8	05:09	05:40-06:03/23
	16:24		17:16		18:12		20:10		21:06		21:55	
3	08:52	15:26-15:47/21	08:19	16:04-16:46/42	07:20	07:44-08:17/33	07:04		05:56	06:22-06:32/10	05:09	05:40-06:03/23
	16:25		17:18		18:14		20:12		21:07		21:56	
4	08:52	15:26-15:48/22	08:17	16:05-16:48/43	07:17	07:42-08:18/36	07:02		05:54	06:20-06:32/12	05:08	05:39-06:03/24
	16:26		17:20		18:16		20:14		21:09		21:57	
5	08:51	15:27-15:50/23	08:15	16:07-16:50/43	07:15	07:39-08:18/39	06:59		05:52	06:18-06:31/13	05:07	05:38-06:03/25
	16:27		17:22		18:17		20:16		21:11		21:58	
6	08:51	15:27-15:51/24	08:13	08:40-08:41/1	07:13	07:37-08:18/41	06:57		05:50	06:16-06:31/15	05:06	05:38-06:03/25
	16:29		17:24	16:09-16:49/40	18:19		20:18		21:13		21:59	
7	08:51	15:28-15:53/25	08:11	08:38-08:42/4	07:10	07:35-08:19/44	06:55		05:48	06:15-06:31/16	05:06	05:37-06:03/26
	16:30		17:26	16:11-16:49/38	18:21		20:19		21:15		22:00	
8	08:50	15:28-15:54/26	08:09	08:36-08:43/7	07:08	07:32-08:18/46	06:52	19:53-19:54/1	05:46	06:13-06:31/18	05:05	05:37-06:03/26
	16:31		17:28	16:22-16:48/26	18:23		20:21		21:16		22:01	
9	08:49	15:28-15:56/28	08:07	08:34-08:44/10	07:05	07:30-08:19/49	06:50	19:51-19:56/5	05:44	06:11-06:30/19	05:04	05:36-06:02/26
	16:33		17:30	16:23-16:48/25	18:25		20:23		21:18		22:02	
10	08:49	15:29-15:57/28	08:06	08:32-08:45/13	07:03	07:27-08:18/51	06:47	19:49-19:57/8	05:42	06:09-06:29/20	05:04	05:36-06:03/27
	16:34		17:32	16:24-16:47/23	18:27		20:25		21:20		22:03	
11	08:48	15:29-15:59/30	08:04	08:30-08:46/16	07:01	07:25-08:18/53	06:45	19:48-19:59/11	05:40	06:08-06:29/21	05:03	05:36-06:03/27
	16:36		17:34	16:26-16:46/20	18:29		20:27		21:22		22:04	
12	08:47	15:30-16:01/31	08:02	08:28-08:47/19	06:58	07:22-08:17/55	06:43	07:07-07:08/1	05:39	06:06-06:27/21	05:03	05:35-06:02/27
	16:37		17:36	16:28-16:44/16	18:31		20:29	19:47-20:01/14	21:23		22:05	
13	08:47	15:30-16:02/32	08:00	08:26-08:47/21	06:56	07:20-08:16/56	06:40	07:04-07:08/4	05:37	06:05-06:26/21	05:03	05:35-06:02/27
	16:39		17:38	16:31-16:42/11	18:33		20:31	19:46-20:02/16	21:25		22:05	
14	08:46	15:31-16:04/33	07:57	08:24-08:48/24	06:53	07:17-08:15/58	06:38	07:02-07:09/7	05:35	06:06-06:25/19	05:02	05:35-06:02/27
	16:41		17:40		18:35		20:32	19:45-20:04/19	21:27		22:06	
15	08:45	15:32-16:06/34	07:55	08:21-08:48/27	06:51	07:18-08:15/57	06:36	07:00-07:09/9	05:33	06:07-06:23/16	05:02	05:35-06:03/28
	16:42		17:42		18:37		20:34	19:45-20:06/21	21:28		22:07	
16	08:44	15:33-16:08/35	07:53	08:19-08:48/29	06:49	07:19-08:13/54	06:33	06:58-07:09/11	05:32	06:09-06:22/13	05:02	05:35-06:03/28
	16:44		17:44		18:38	07:12-07:13/1	20:36	19:44-20:07/23	21:30		22:07	
17	08:43	15:34-16:11/37	07:51	08:17-08:48/31	06:46	07:20-08:12/52	06:31	06:55-07:08/13	05:30	06:10-06:20/10	05:02	05:35-05:43/8
	16:46		17:46		18:40	07:10-07:14/4	20:38	19:44-20:09/25	21:32	05:58-06:00/2	22:08	05:44-06:03/19
18	08:42	15:34-16:12/38	07:49	08:15-08:49/34	06:44	07:22-08:10/48	06:29	06:53-07:08/15	05:28	06:13-06:18/5	05:02	05:35-06:03/28
	16:47		17:48		18:42	07:08-07:16/8	20:40	19:44-20:11/27	21:33	05:57-06:01/4	22:08	
19	08:41	15:35-16:14/39	07:47	08:15-08:49/34	06:41	07:25-07:32/7 07:36-08:09/33	06:26	06:51-07:07/16	05:27	05:56-06:02/6	05:02	05:35-06:03/28
	16:49		17:50		18:44	07:05-07:15/10	20:42	19:44-20:13/29	21:35		22:09	
20	08:39	15:37-16:17/40	07:45	08:10-08:47/37	06:39	07:03-07:16/13	06:24	06:49-07:06/17	05:25	05:54-06:02/8	05:02	05:35-06:03/28
	16:51		17:52		18:46	07:38-08:07/29	20:43	19:44-20:13/29	21:37		22:09	
21	08:38	15:37-16:18/41	07:43	08:08-08:47/39	06:36	07:00-07:15/15	06:22	06:47-07:05/18	05:24	05:53-06:02/9	05:02	05:35-06:03/28
	16:53		17:54		18:48	07:39-08:04/25	20:45	19:44-20:11/27	21:38		22:09	
22	08:37	15:39-15:58/19	07:40	08:06-08:47/41	06:34	06:58-07:16/18	06:19	06:44-07:03/19	05:22	05:52-06:03/11	05:02	05:35-06:03/28
	16:55	15:59-16:21/22	17:56		18:50	07:41-08:02/21	20:47	19:45-20:11/26	21:40		22:09	
23	08:36	15:40-15:56/16	07:38	08:03-08:45/42	06:31	06:55-07:15/20	06:17	06:42-07:01/19	05:21	05:50-06:02/12	05:03	05:36-06:04/28
	16:56	15:58-16:22/24	17:58		18:52	07:44-07:57/13	20:49	19:46-20:10/24	21:41		22:09	
24	08:34	15:43-15:55/12	07:36	08:01-08:45/44	06:29	06:53-07:14/21	06:15	06:40-06:53/13	05:20	05:49-06:03/14	05:03	05:36-06:04/28
	16:58	15:59-16:25/26	18:00		18:53		20:51	19:47-20:08/21	21:43		22:10	
25	08:33	15:47-15:51/4	07:34	07:59-08:44/45	06:26	06:50-07:13/23	06:13	06:38-06:53/15	05:18	05:48-06:03/15	05:03	05:36-06:04/28
	17:00	15:59-16:26/27	18:02		18:55		20:53	19:48-20:07/19	21:44		22:10	
26	08:31	16:00-16:29/29	07:31	07:56-08:17/21	06:24	06:51-07:12/21	06:11	06:36-06:52/16	05:17	05:47-06:03/16	05:04	05:37-05:45/8
	17:02		18:04	08:19-08:41/22	18:57		20:55	19:50-20:05/15	21:46		22:10	05:46-06:05/19
27	08:30	16:00-16:31/31	07:29	07:54-08:18/24	06:21	06:52-07:10/18	06:08	06:34-06:51/17	05:16	05:46-06:03/17	05:04	05:37-06:05/28
	17:04		18:06	08:21-08:39/18	18:59		20:56	19:53-20:02/9	21:47		22:09	
28	08:28	16:00-16:33/33	07:27	07:52-08:18/26	06:19	06:54-07:08/14	06:06	06:35-06:50/15	05:15	05:45-06:03/18	05:05	05:38-06:06/28
	17:06		18:08	08:24-08:36/12	19:01		20:58		21:49		22:09	
29	08:27	16:00-16:35/35			07:17	07:56-08:05/9	06:04	06:36-06:48/12	05:13	05:44-06:03/19	05:05	05:38-06:05/27
	17:08				20:03		21:00		21:50		22:09	
30	08:25	16:01-16:38/37			07:14		06:02	06:38-06:46/8	05:12	05:43-06:03/20	05:06	05:39-06:06/27
	17:10				20:05		21:02	06:28-06:31/3	21:51		22:09	
31	08:24	16:02-16:40/38			07:12				05:11	05:42-06:03/21		
	17:12				20:06				21:53			
Potential sun hours	250		273		367		420		494		510	
Sum of minutes with flicker	980		1049		1153		617		454		799	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar per WTG

Calculation: Real Case Analysis **WTG:** 1 - T01

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August		September		October		November		December	
1	05:06	05:40-06:07/27	05:46	06:17-06:38/21	06:41	19:47-19:58/11	07:34	08:01-08:56/55	07:33	08:02-08:14/12	08:28	15:11-15:41/30
	22:09		21:33		20:26		19:13		17:02	15:54-16:17/23	16:18	
2	05:07	05:40-06:07/27	05:48	06:19-06:39/20	06:43	19:48-19:56/8	07:36	08:02-08:56/54	07:34	08:04-08:13/9	08:29	15:12-15:41/29
	22:08		21:31		20:24		19:10		17:00	15:52-16:18/26	16:17	
3	05:08	05:41-06:07/26	05:50	06:20-06:40/20	06:44	19:48-19:53/5	07:38	08:04-08:56/52	07:36	08:06-08:13/7 15:45-15:50/5	08:31	15:12-15:40/28
	22:08		21:30		20:22		19:08		16:58	15:52-16:18/26	16:16	
4	05:09	05:42-06:08/26	05:51	06:22-06:41/19	06:46	19:50-19:51/1	07:40	08:06-08:55/49	07:38	08:08-08:11/3	08:32	15:12-15:39/27
	22:07		21:28		20:19		19:05		16:56	15:40-16:19/39	16:15	
5	05:10	05:43-06:09/26	05:53	06:23-06:40/17	06:48		07:41	08:08-08:55/47	07:40	15:38-16:19/41	08:34	15:13-15:38/25
	22:07		21:26		20:17		19:03		16:54		16:15	
6	05:11	05:44-06:09/25	05:55	06:25-06:41/16	06:50		07:43	08:10-08:55/45	07:42	15:37-16:20/43	08:35	15:13-15:37/24
	22:06		21:24		20:14		19:00		16:52		16:14	
7	05:12	05:45-06:10/25	05:57	06:27-06:41/14	06:51		07:45	08:12-08:55/43	07:44	15:36-16:19/43	08:36	15:14-15:37/23
	22:05		21:22		20:12		18:58		16:50		16:14	
8	05:13	05:46-06:10/24	05:58	06:28-06:41/13	06:53		07:47	08:14-08:54/40	07:46	15:35-16:17/42	08:38	15:14-15:36/22
	22:05		21:20		20:09		18:56		16:49		16:13	
9	05:14	05:47-06:11/24	06:00	06:30-06:41/11	06:55		07:49	08:16-08:53/37	07:48	15:34-16:14/40	08:39	15:14-15:35/21
	22:04		21:18		20:07		18:53		16:47		16:13	
10	05:15	05:48-06:11/23	06:02	06:31-06:40/9	06:57		07:51	08:17-08:52/35	07:50	15:33-16:12/39	08:40	15:15-15:36/21
	22:03		21:16		20:05		18:51		16:45		16:13	
11	05:16	05:49-06:11/22	06:04	06:33-06:40/7	06:59		07:53	08:19-08:51/32	07:52	15:33-16:10/37	08:41	15:16-15:35/19
	22:02		21:14		20:02		18:48		16:43		16:13	
12	05:17	05:50-06:12/22	06:05	06:35-06:40/5	07:00		07:54	08:21-08:50/29	07:54	15:32-16:09/37	08:42	15:16-15:35/19
	22:01		21:12		20:00		18:46		16:42		16:12	
13	05:18	05:51-06:12/21	06:07	06:45-06:54/9	07:02		07:56	08:23-08:50/27	07:56	15:32-16:07/35	08:43	15:16-15:34/18
	22:00		21:10	06:36-06:38/2	19:57		18:44	08:59-09:06/7	16:40		16:12	
14	05:19	05:52-06:12/20	06:09	06:43-06:56/13	07:04	07:47-07:54/7	07:58	08:25-08:50/25	07:58	15:32-16:05/33	08:44	15:17-15:34/17
	21:59		21:08		19:55		18:41	08:55-09:10/15	16:38		16:12	
15	05:21	05:53-06:12/19	06:11	06:42-06:58/16	07:06	07:43-07:57/14	08:00	08:27-08:50/23	08:00	15:33-16:04/31	08:45	15:17-15:34/17
	21:58		21:05		19:52		18:39	08:52-09:12/20	16:37		16:12	
16	05:22	05:54-06:12/18	06:12	06:41-06:58/17	07:07	07:42-07:59/17	08:02	08:29-08:49/20	08:01	15:33-16:02/29	08:46	15:18-15:34/16
	21:57		21:03	19:58-20:09/11	19:50		18:37	08:50-09:14/24	16:35		16:12	
17	05:23	05:56-06:13/17	06:14	06:43-06:59/16	07:09	07:40-08:00/20	08:04	08:31-09:15/44	08:03	15:21-15:25/4	08:47	15:19-15:35/16
	21:56		21:01	19:56-20:12/16	19:47		18:34		16:34	15:33-16:00/27	16:12	
18	05:25	05:57-06:13/16	06:16	06:45-07:00/15	07:11	07:38-08:00/22	08:06	08:33-09:16/43	08:05	15:17-15:29/12	08:48	15:19-15:35/16
	21:55		20:59	19:54-20:14/20	19:45		18:32		16:32	15:33-15:59/26	16:13	
19	05:26	05:58-06:12/14	06:18	06:46-07:03/17	07:13	07:39-08:01/22	08:07	08:35-09:17/42	08:07	15:15-15:31/16	08:48	15:19-15:35/16
	21:53		20:57	19:52-20:14/22	19:42		18:30		16:31	15:33-15:57/24	16:13	
20	05:28	06:00-06:13/13	06:19	06:48-07:07/19	07:14	07:41-08:01/20	08:09	08:37-09:17/40	08:09	15:14-15:33/19	08:49	15:20-15:35/15
	21:52		20:54	19:51-20:15/24	19:40	08:32-08:42/10	18:28		16:30	15:34-15:56/22	16:13	
21	05:29	06:01-06:13/12	06:21	06:50-07:09/19	07:16	07:43-08:01/18	08:11	08:39-09:18/39	08:11	15:13-15:54/41	08:50	15:20-15:35/15
	21:51		20:52	19:50-20:16/26	19:37	08:28-08:47/19	18:25		16:28		16:14	
22	05:31	06:02-06:12/10	06:23	06:51-07:09/18	07:18	07:44-08:00/16	08:13	08:41-09:18/37	08:12	15:13-15:53/40	08:50	15:21-15:36/15
	21:49		20:50	19:49-20:16/27	19:35	08:24-08:48/24	18:23		16:27		16:14	
23	05:32	06:04-06:13/9	06:25	06:53-07:10/17	07:20	07:46-08:00/14	08:15	08:44-09:18/34	08:14	15:12-15:51/39	08:51	15:21-15:36/15
	21:48		20:48	19:48-20:17/29	19:32	08:22-08:50/28	18:21		16:26		16:15	
24	05:34	06:05-06:12/7	06:27	06:55-07:11/16	07:22	07:48-07:59/11	08:17	08:45-09:18/33	08:16	15:12-15:50/38	08:51	15:22-15:37/15
	21:46		20:45	19:48-20:17/29	19:30	08:20-08:52/32	18:19		16:24		16:15	
25	05:35	06:07-06:12/5	06:28	06:56-07:10/14	07:23	08:06-08:18/12 08:19-08:53/34	07:19	07:47-08:18/31	08:18	15:12-15:49/37	08:52	15:22-15:38/16
	21:45		20:43	19:47-20:14/27	19:27	07:50-07:58/8	17:17		16:23		16:16	
26	05:37	06:22-06:30/8	06:30	06:58-07:11/13	07:25	08:03-08:54/51	07:21	07:49-08:17/28	08:19	15:11-15:47/36	08:52	15:22-15:38/16
	21:43	06:08-06:11/3	20:41	19:47-20:12/25	19:25	07:52-07:57/5	17:14		16:22		16:17	
27	05:38	06:19-06:31/12	06:32	07:00-07:11/11	07:27	08:01-08:54/53	07:23	07:52-08:18/26	08:21	15:11-15:45/34	08:52	15:23-15:39/16
	21:42	06:09-06:10/1	20:38	19:47-20:10/23	19:22	07:53-07:55/2	17:12		16:21		16:17	
28	05:40	06:19-06:33/14	06:34	07:02-07:11/9	07:29	07:59-08:55/56	07:25	07:54-08:18/24	08:23	15:11-15:45/34	08:52	15:23-15:40/17
	21:40		20:36	19:46-20:07/21	19:20		17:10		16:20		16:18	
29	05:41	06:17-06:34/17	06:35	07:03-07:09/6	07:31	07:58-08:56/58	07:27	07:56-08:17/21	08:24	15:11-15:44/33	08:52	15:24-15:41/17
	21:38		20:34	19:46-20:05/19	19:18		17:08	16:00-16:12/12	16:19		16:19	
30	05:43	06:16-06:36/20	06:37	07:05-07:09/4	07:32	07:59-08:56/57	07:29	07:58-08:16/18	08:26	15:12-15:43/31	08:52	15:24-15:42/18
	21:37		20:31	19:47-20:03/16	19:15		17:06	15:57-16:14/17	16:18		16:20	
31	05:45	06:16-06:37/21	06:39	07:07-07:08/1			07:31	08:00-08:15/15			08:52	15:25-15:43/18
	21:35		20:29	19:46-20:00/14			17:04	15:55-16:16/21			16:21	
Potential sun hours	512		460		382		328		259		233	
Sum of minutes with flicker		574		773		655		1204		1113		597

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar per WTG

Calculation: Real Case Analysis **WTG:** 2 - T02

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June
1	08:52 09:39-10:11/32 16:23 10:44-11:21/37	08:22 09:06-09:33/27 17:14 08:50-08:56/6	07:24 07:57-08:16/19 18:10	07:09 07:33-08:05/32 20:08	06:00 06:26-07:11/45 21:04	05:10 05:41-06:21/40 21:54
2	08:52 09:39-10:11/32 16:24 10:44-11:20/36	08:20 09:07-09:32/25 17:16 08:48-08:57/9	07:22 07:59-08:15/16 18:12	07:07 07:31-08:04/33 20:10	05:58 06:24-07:10/46 21:06	05:10 05:40-06:21/41 21:55
3	08:52 09:40-10:12/32 16:25 10:46-11:21/35	08:19 09:09-09:31/22 17:18 08:46-08:58/12	07:20 08:00-08:12/12 18:14	07:04 07:28-08:02/34 20:12	05:56 06:22-07:09/47 21:07	05:09 05:40-06:22/42 21:56
4	08:52 09:41-10:12/31 16:26 10:46-11:20/34	08:17 09:10-09:30/20 17:20 08:44-08:59/15	07:17 18:16	07:02 07:26-08:01/35 20:14	05:54 06:20-07:09/49 21:09	05:08 05:39-06:21/42 21:57
5	08:51 09:42-10:12/30 16:27 10:47-11:21/34	08:15 09:12-09:28/16 17:22 08:42-09:00/18	07:15 18:17	06:59 07:23-07:58/35 20:16	05:52 06:18-07:09/51 21:11	05:07 05:38-06:21/43 21:58
6	08:51 09:42-10:12/30 16:29 10:48-11:20/32	08:13 09:15-09:25/10 17:24 08:40-09:00/20	07:13 18:19	06:57 07:21-07:56/35 20:18	05:50 06:16-07:08/52 21:13	05:06 05:38-06:22/44 21:59
7	08:51 09:43-10:13/30 16:30 10:50-11:20/30	08:11 08:38-09:01/23 17:26	07:10 18:21	06:55 07:19-07:43/24 20:19 07:46-07:52/6	05:48 06:15-07:09/54 21:15	05:06 05:37-06:22/45 22:00
8	08:50 09:44-10:13/29 16:31 10:51-11:20/29	08:09 08:36-09:01/25 17:28	07:08 18:23	06:52 07:16-07:42/26 20:21	05:46 06:13-07:08/55 21:16	05:05 05:37-06:22/45 22:01
9	08:49 09:22-09:24/2 10:52-11:19/27 16:33 09:44-10:12/28	08:07 08:34-09:01/27 17:30	07:06 07:30-07:34/4 18:25	06:50 07:14-07:43/29 20:23	05:44 06:11-07:08/57 21:18	05:04 05:36-06:22/46 22:02
10	08:49 09:21-09:25/4 10:53-11:18/25 16:34 09:45-10:12/27	08:06 08:32-09:02/30 17:32	07:03 07:27-07:35/8 18:27	06:47 07:11-07:42/31 20:25	05:42 06:09-07:07/58 21:20	05:04 05:36-06:23/47 22:03
11	08:48 09:20-09:26/6 10:55-11:17/22 16:36 09:46-10:12/26	08:04 08:30-09:02/32 17:34	07:01 07:25-07:36/11 18:29	06:45 07:09-07:42/33 20:27	05:40 06:08-07:07/59 21:22	05:03 05:36-06:23/47 22:04
12	08:47 09:19-09:26/7 10:57-11:16/19 16:37 09:47-10:12/25	08:02 08:28-09:02/34 17:36	06:58 07:22-07:36/14 18:31	06:43 07:07-07:42/35 20:29	05:39 06:06-07:06/60 21:23	05:03 05:35-06:23/48 22:05
13	08:47 09:18-09:27/9 10:59-11:14/15 16:39 09:48-10:11/23	08:00 08:26-09:01/35 17:38	06:56 07:20-07:36/16 18:33	06:40 07:04-07:40/36 20:31	05:37 06:04-07:05/61 21:25	05:03 05:35-06:23/48 22:05
14	08:46 09:17-09:28/11 11:03-11:11/8 16:41 09:49-10:11/22	07:57 08:24-09:01/37 17:40	06:53 07:17-07:36/19 18:35	06:38 07:02-07:40/38 20:32	05:35 06:03-07:05/62 21:27	05:02 05:35-06:23/48 22:06
15	08:45 09:16-09:29/13 16:42 09:50-10:10/20	07:55 08:21-09:00/39 17:42	06:51 07:15-07:36/21 18:37	06:36 07:00-07:40/40 20:34	05:33 06:01-07:04/63 21:28	05:02 05:35-06:24/49 22:07
16	08:44 09:15-09:30/15 16:44 09:52-10:10/18	07:53 08:19-08:59/40 17:44	06:49 07:13-07:36/23 18:38	06:33 06:58-07:39/41 20:36	05:32 06:00-07:04/64 21:30	05:02 05:35-06:24/49 22:07
17	08:43 09:14-09:31/17 16:46 09:54-10:09/15	07:51 08:17-08:58/41 17:46	06:46 07:10-07:35/25 18:40	06:31 06:55-07:37/42 20:38	05:30 05:58-07:03/65 21:32	05:02 05:35-06:24/49 22:08
18	08:42 09:13-09:32/19 16:47 09:57-10:07/10	07:49 08:15-08:57/42 17:48	06:44 07:08-07:35/27 18:42	06:29 06:53-07:36/43 20:40	05:28 05:57-07:03/66 21:33	05:02 05:35-06:24/49 22:08
19	08:41 09:11-09:32/21 16:49	07:47 08:13-08:55/42 17:50	06:41 07:05-07:33/28 18:44	06:26 06:51-07:35/44 20:42	05:27 05:56-07:02/66 21:35	05:02 05:35-06:24/49 22:09
20	08:39 09:10-09:33/23 16:51	07:45 08:10-08:36/26 17:52 08:38-08:52/14	06:39 07:03-07:32/29 18:46	06:24 06:49-07:33/44 20:43	05:25 05:54-07:01/67 21:37	05:02 05:35-06:24/49 22:09
21	08:38 09:08-09:33/25 16:53	07:43 08:08-08:33/25 17:54 08:43-08:47/4	06:36 07:00-07:30/30 18:48	06:22 06:47-07:32/45 20:45	05:24 05:53-07:00/67 21:38	05:02 05:35-06:24/49 22:09
22	08:37 09:07-09:34/27 16:55	07:40 08:06-08:31/25 17:56	06:34 06:58-07:29/31 18:50	06:20 06:44-07:30/46 20:47	05:22 05:52-06:59/67 21:40	05:02 05:35-06:24/49 22:09
23	08:36 09:05-09:34/29 16:56	07:38 08:03-08:27/24 17:58	06:31 06:55-07:26/31 18:52	06:17 06:42-07:28/46 20:49	05:21 05:50-06:23/33 21:41 06:24-06:57/33	05:03 05:36-06:25/49 22:09
24	08:34 09:04-09:35/31 16:58	07:36 08:01-08:27/26 18:00	06:29 06:53-07:26/33 18:53	06:15 06:40-07:26/46 20:51	05:20 05:49-06:23/34 21:43 06:26-06:56/30	05:03 05:36-06:25/49 22:10
25	08:33 09:02-09:34/32 17:00	07:34 07:59-08:25/26 18:02	06:26 06:50-07:24/34 18:55	06:13 06:38-07:24/46 20:53	05:18 05:48-06:22/34 21:44 06:29-06:55/26	05:03 05:36-06:25/49 22:10
26	08:31 09:03-09:35/32 17:02	07:31 07:56-08:22/26 18:04	06:24 06:48-07:23/35 18:57	06:11 06:36-07:21/45 20:55	05:17 05:47-06:21/34 21:46 06:34-06:54/20	05:04 05:37-06:26/49 22:10
27	08:30 09:03-09:35/32 17:04	07:29 07:55-08:19/24 18:06	06:22 06:45-07:21/36 18:59	06:08 06:34-07:16/42 20:56	05:16 05:46-06:21/35 21:47 06:36-06:52/16	05:04 05:37-06:26/49 22:09
28	08:28 09:03-09:34/31 17:06	07:27 07:56-08:18/22 18:08	06:19 06:43-07:19/36 19:01	06:06 06:32-07:15/43 20:58	05:15 05:45-06:20/35 21:49 06:38-06:50/12	05:05 05:38-06:26/48 22:09
29	08:27 09:05-09:35/30 17:08		07:17 07:40-08:14/34 20:03	06:04 06:30-07:14/44 21:00	05:14 05:44-06:20/36 21:50 06:43-06:45/2	05:05 05:38-06:26/48 22:09
30	08:25 09:05-09:34/29 17:10		07:14 07:38-08:07/29 20:05	06:02 06:28-07:12/44 21:02	05:12 05:43-06:21/38 21:51	05:06 05:39-06:27/48 22:09
31	08:24 09:06-09:34/28 17:12 08:52-08:55/3		07:12 07:35-08:05/30 20:06		05:11 05:42-06:21/39 21:53	
Potential sun hours	250	273	367	420	494	510
Sum of minutes with flicker	1319	889	631	1163	1738	1407

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar per WTG

Calculation: Real Case Analysis **WTG:** 2 - T02

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July	August	September	October	November	December
1	05:07 05:40-06:27/47 22:09	05:46 06:17-07:17/60 21:33	06:41 07:08-07:41/33 20:26	07:34 08:01-08:16/15 19:13	07:33 08:02-08:31/29 17:02	08:28 09:02-09:08/6 10:37-10:59/22 16:18 09:28-09:54/26
2	05:07 05:40-06:27/47 22:08	05:48 06:19-07:18/59 21:31	06:43 07:10-07:41/31 20:24	07:36 08:02-08:14/12 19:10	07:35 08:04-08:31/27 17:00	08:29 09:04-09:08/4 10:36-11:01/25 16:17 09:28-09:55/27
3	05:08 05:41-06:27/46 22:08	05:50 06:20-07:18/58 21:30	06:44 07:12-07:41/29 20:22	07:38 08:04-08:13/9 19:08	07:36 08:06-08:31/25 16:58	08:31 09:06-09:08/2 10:36-11:03/27 16:16 09:28-09:56/28
4	05:09 05:42-06:28/46 22:07	05:52 06:22-07:18/56 21:28	06:46 07:13-07:39/26 20:19	07:40 08:06-08:12/6 19:05	07:38 08:08-08:30/22 16:56	08:32 09:28-09:57/29 16:16 10:35-11:04/29
5	05:10 05:43-06:28/45 22:07	05:53 06:23-07:18/55 21:26	06:48 07:15-07:39/24 20:17 07:43-07:47/4	07:41 08:08-08:10/2 19:03	07:40 08:45-08:56/11 16:54 08:11-08:31/20	08:34 09:28-09:58/30 16:15 10:35-11:05/30
6	05:11 05:44-06:28/44 22:06	05:55 06:25-07:18/53 21:24	06:50 07:17-07:52/35 20:14	07:43 19:00	07:42 08:43-08:59/16 16:52 08:13-08:30/17	08:35 09:28-09:58/30 16:14 10:34-11:06/32
7	05:12 05:45-06:29/44 22:05	05:57 06:27-07:19/52 21:22	06:51 07:18-07:53/35 20:12	07:45 18:58	07:44 08:41-09:01/20 16:50 08:15-08:30/15	08:36 09:29-09:59/30 16:14 10:35-11:08/33
8	05:13 05:46-06:29/43 22:05	05:58 06:28-07:18/50 21:20	06:53 07:20-07:55/35 20:10	07:47 18:56	07:46 08:39-09:02/23 16:49 08:17-08:29/12	08:38 09:28-09:59/31 16:13 10:34-11:08/34
9	05:14 05:47-06:29/42 22:04	06:00 06:30-07:19/49 21:18	06:55 07:22-07:56/34 20:07	07:49 18:53	07:48 08:38-09:03/25 16:47 08:19-08:28/9	08:39 09:28-10:00/32 16:13 10:34-11:09/35
10	05:15 05:48-06:29/41 22:03	06:02 06:31-07:18/47 21:16	06:57 07:24-07:57/33 20:05	07:51 08:38-08:45/7 18:51	07:50 08:37-09:04/27 16:45 08:21-08:27/6	08:40 09:29-10:01/32 16:13 10:35-11:10/35
11	05:16 05:49-06:29/40 22:02	06:04 06:33-07:18/45 21:14	06:59 07:25-07:57/32 20:02	07:53 08:33-08:47/14 18:49	07:52 08:37-09:05/28 16:43 08:23-08:26/3	08:41 09:29-10:01/32 16:13 10:34-11:11/37
12	05:17 05:50-06:29/39 22:01	06:05 06:35-07:20/45 21:12	07:00 07:27-07:58/31 20:00	07:54 08:31-08:49/18 18:46	07:54 08:36-09:05/29 16:42	08:42 09:30-10:02/32 16:12 10:34-11:12/38
13	05:18 05:51-06:29/38 22:00	06:07 06:36-07:20/44 21:10	07:02 07:29-07:58/29 19:57	07:56 08:29-08:50/21 18:44	07:56 08:36-09:06/30 16:40	08:43 09:30-10:02/32 16:12 10:34-11:12/38
14	05:20 05:52-06:29/37 21:59	06:09 06:38-07:22/44 21:08	07:04 07:30-08:04/34 19:55	07:58 08:28-08:51/23 18:41	07:58 08:36-09:07/31 16:38	08:44 09:30-10:03/33 16:12 10:35-11:13/38
15	05:21 05:53-06:29/36 21:58 06:48-06:57/9	06:11 06:40-07:23/43 21:05	07:06 07:32-08:07/35 19:52	08:00 08:27-08:53/26 18:39	08:00 08:36-09:08/32 16:37	08:45 09:31-10:03/32 10:35-11:14/39 16:12 10:05-10:09/4
16	05:22 05:54-06:29/35 21:57 06:45-07:00/15	06:12 06:41-07:23/42 21:03	07:07 07:34-08:10/36 19:50	08:02 08:29-08:55/26 18:37	08:01 08:36-09:08/32 16:35	08:46 09:31-10:11/40 16:12 10:35-11:14/39
17	05:23 05:56-06:31/35 21:56 06:44-07:03/19	06:14 06:43-07:28/45 21:01	07:09 07:36-08:11/35 19:47	08:04 08:31-08:57/26 18:34	08:03 08:36-09:08/32 16:34	08:47 09:32-10:12/40 16:13 10:36-11:15/39
18	05:25 05:57-06:31/34 21:55 06:41-07:04/23	06:16 06:45-07:31/46 20:59	07:11 07:37-08:11/34 19:45	08:06 08:33-08:58/25 18:32	08:05 08:38-09:08/30 16:32	08:48 09:32-10:13/41 16:13 10:36-11:16/40
19	05:26 05:58-06:32/34 21:53 06:37-07:05/28	06:18 06:46-07:32/46 20:57	07:13 07:39-08:12/33 19:42	08:08 08:35-09:00/25 18:30	08:07 08:40-09:09/29 16:31	08:48 09:32-10:13/41 16:13 10:36-11:16/40
20	05:28 06:00-06:33/33 21:52 06:36-07:07/31	06:20 06:48-07:34/46 20:54	07:15 07:41-08:13/32 19:40	08:09 08:37-09:02/25 18:28	08:09 08:42-09:09/27 16:30	08:49 09:33-10:15/42 16:13 10:37-11:17/40
21	05:29 06:01-07:08/67 21:51	06:21 06:50-07:36/46 20:52	07:16 07:43-08:14/31 19:37	08:11 08:39-09:04/25 18:25 09:11-09:20/9	08:11 08:44-09:09/25 16:28	08:50 09:33-10:15/42 16:14 10:37-11:17/40
22	05:31 06:02-07:09/67 21:49	06:23 06:51-07:36/45 20:50	07:18 07:44-08:14/30 19:35	08:13 08:41-09:07/26 18:23 09:08-09:23/15	08:12 08:46-09:09/23 16:27	08:50 09:34-10:16/42 16:14 10:38-11:18/40
23	05:32 06:04-07:11/67 21:48	06:25 06:53-07:37/44 20:48	07:20 07:46-08:16/30 19:32	08:15 08:43-09:25/42 18:21	08:14 08:48-09:09/21 16:26	08:51 09:34-10:16/42 16:15 10:38-11:18/40
24	05:34 06:05-07:11/66 21:46	06:27 06:55-07:39/44 20:45	07:22 07:48-08:17/29 19:30	08:17 08:45-09:27/42 18:19	08:16 08:50-09:09/19 16:25 09:34-09:44/10	08:51 09:35-10:17/42 16:15 10:39-11:19/40
25	05:35 06:07-07:13/66 21:45	06:28 06:56-07:39/43 20:43	07:23 07:50-08:17/27 19:27	07:19 07:47-08:28/41 17:17	08:18 08:52-09:09/17 16:23 09:32-09:47/15	08:52 09:35-10:16/41 16:16 10:39-11:19/40
26	05:37 06:08-07:13/65 21:43	06:30 06:58-07:40/42 20:41	07:25 07:52-08:18/26 19:25	07:21 07:49-08:29/40 17:14	08:19 08:54-09:09/15 16:22 09:31-09:49/18	08:52 09:36-10:16/40 16:17 10:40-11:19/39
27	05:38 06:09-07:14/65 21:42	06:32 07:00-07:41/41 20:38	07:27 07:53-08:17/24 19:23	07:23 07:52-08:30/38 17:12	08:21 08:55-09:08/13 16:21 09:30-09:49/19	08:52 09:36-10:16/40 16:17 10:40-11:19/39
28	05:40 06:11-07:15/64 21:40	06:34 07:01-07:42/41 20:36	07:29 07:55-08:17/22 19:20	07:25 07:54-08:31/37 17:10	08:23 08:57-09:08/11 10:44-10:50/6 16:20 09:29-09:51/22	08:52 09:36-10:09/33 10:41-11:20/39 16:18 10:10-10:16/6
29	05:42 06:12-07:15/63 21:38	06:36 07:03-07:41/38 20:34	07:31 07:57-08:17/20 19:18	07:27 07:56-08:31/35 17:08	08:24 08:59-09:09/10 10:41-10:55/14 16:19 09:29-09:52/23	08:52 09:37-10:10/33 16:19 10:41-11:20/39
30	05:43 06:14-07:16/62 21:37	06:37 07:05-07:41/36 20:31	07:32 07:59-08:16/17 19:15	07:29 07:58-08:31/33 17:06	08:26 09:01-09:09/8 10:39-10:58/19 16:18 09:29-09:54/25	08:52 09:38-10:10/32 16:20 10:42-11:20/38
31	05:45 06:16-07:17/61 21:35	06:39 07:07-07:42/35 20:29		07:31 08:00-08:31/31 17:04		08:52 09:38-10:11/33 16:21 10:43-11:21/38
Potential sun hours	512	460	382	328	259	233
Sum of minutes with flicker	1644	1440	906	694	940	2224

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar per WTG

Calculation: Real Case Analysis **WTG:** 3 - T03

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June
1	08:52	08:22 08:50-09:16/26	07:24 17:23-17:42/19	07:09 19:18-19:28/10	06:00 06:26-06:41/15	05:10
	16:22	17:14	18:10	20:08	21:04 06:42-06:45/3	21:54
2	08:52	08:20 08:48-09:15/27	07:22 17:22-17:45/23	07:07 19:42-19:43/1	05:58 06:24-06:39/15	05:09
	16:24	17:16	18:12	20:10	21:06	21:55
3	08:52	08:19 08:46-09:13/27	07:20 17:20-17:46/26	07:04 19:40-19:45/5	05:56 06:22-06:39/17	05:09
	16:25	17:18	18:14	20:12	21:07	21:56
4	08:52	08:17 08:44-09:11/27	07:17 17:20-17:48/28	07:02 19:40-19:47/7	05:54 06:20-06:38/18	05:08
	16:26	17:20	18:16	20:14	21:09	21:57
5	08:51	08:15 08:42-09:09/27	07:15 17:19-17:50/31	06:59 19:38-19:48/10	05:52 06:18-06:37/19	05:07
	16:27	17:22	18:17	20:16	21:11	21:58
6	08:51	08:13 08:40-09:09/29	07:13 17:19-17:52/33	06:57 07:21-07:24/3	05:50 06:16-06:37/21	05:06
	16:29	17:24	18:19	20:18 19:38-19:50/12	21:13	21:59
7	08:51	08:11 08:40-09:09/29	07:10 17:18-17:54/36	06:55 07:19-07:25/6	05:48 06:15-06:36/21	05:06 05:37-05:38/1
	16:30	17:26	18:21	20:19 19:37-19:52/15	21:15	22:00
8	08:50	08:09 08:41-09:08/27	07:08 17:18-17:56/38	06:52 07:16-07:25/9	05:46 06:13-06:35/22	05:05 05:37-05:39/2
	16:31	17:28	18:23	20:21 19:37-19:54/17	21:16	22:01
9	08:49	08:07 08:42-09:08/26	07:05 17:18-17:56/38	06:50 07:14-07:25/11	05:44 06:11-06:33/22	05:04 05:36-05:39/3
	16:33	17:30	18:25	20:23 19:37-19:56/19	21:18	22:02
10	08:49	08:05 08:43-09:07/24	07:03 17:17-17:55/38	06:47 07:11-07:24/13	05:42 06:09-06:31/22	05:04 05:36-05:39/3
	16:34	17:32	18:27	20:25 19:37-19:57/20	21:20	22:03
11	08:48	08:04 08:44-09:07/23	07:01 17:18-17:55/37	06:45 07:09-07:24/15	05:40 06:08-06:29/21	05:03 05:36-05:40/4
	16:36	17:34	18:29	20:27 19:38-19:59/21	21:22	22:04
12	08:47	08:02 08:45-09:05/20	06:58 17:18-17:54/36	06:43 07:07-07:24/17	05:39 06:06-06:27/21	05:03 05:35-05:39/4
	16:37	17:36	18:31	20:29 19:39-19:58/19	21:23	22:05
13	08:47	07:59 08:47-09:04/17	06:56 17:18-17:54/36	06:40 07:04-07:22/18	05:37 06:04-06:24/20	05:03 05:35-05:40/5
	16:39	17:38	18:33	20:30 19:39-19:56/17	21:25	22:05
14	08:46	07:57 08:49-09:02/13	06:53 17:18-17:52/34	06:38 07:02-07:22/20	05:35 06:03-06:22/19	05:02 05:35-05:40/5
	16:41	17:40	18:35	20:32 19:41-19:54/13	21:27	22:06
15	08:45	07:55 08:53-08:56/3	06:51 17:20-17:51/31	06:36 07:00-07:21/21	05:33 06:01-06:21/20	05:02 05:35-05:41/6
	16:42	17:42	18:37	20:34 19:44-19:51/7	21:28	22:07
16	08:44	07:53	06:48 17:20-17:49/29	06:33 06:58-07:19/21	05:32 06:00-06:21/21	05:02 05:35-05:41/6
	16:44	17:44	18:38	20:36	21:30	22:07
17	08:43	07:51	06:46 17:22-17:48/26	06:31 06:55-07:16/21	05:30 06:01-06:20/19	05:02 05:35-05:41/6
	16:46	17:46	18:40	20:38	21:32	22:08
18	08:42 09:13-09:14/1	07:49	06:44 17:23-17:45/22	06:29 06:53-07:13/20	05:28 06:02-06:19/17	05:02 05:35-05:41/6
	16:47	17:48	18:42	20:40	21:33	22:08
19	08:41 09:11-09:14/3	07:47	06:41 17:26-17:43/17	06:26 06:51-07:08/17	05:27 06:04-06:18/14	05:02 05:35-05:42/7
	16:49	17:50	18:44	20:42	21:35	22:08
20	08:39 09:10-09:15/5	07:45	06:39 18:18-18:19/1	06:24 06:49-06:57/8	05:25 06:04-06:16/12	05:02 05:35-05:42/7
	16:51	17:52	18:46 17:29-17:38/9	20:43 07:01-07:04/3	21:37	22:09
21	08:38 09:08-09:15/7	07:42	06:36 18:16-18:21/5	06:22 06:47-06:57/10	05:24 06:06-06:15/9	05:02 05:35-05:42/7
	16:53	17:54	18:48	20:45	21:38	22:09
22	08:37 09:07-09:16/9	07:40	06:34 18:15-18:23/8	06:19 06:44-06:56/12	05:22	05:02 05:35-05:42/7
	16:55	17:56	18:50	20:47	21:40	22:09
23	08:36 09:05-09:16/11	07:38	06:31 18:14-18:25/11	06:17 06:42-06:56/14	05:21	05:03 05:36-05:43/7
	16:56	17:58	18:52	20:49	21:41	22:09
24	08:34 09:04-09:17/13	07:36	06:29 18:13-18:26/13	06:15 06:40-06:56/16	05:20	05:03 05:36-05:42/6
	16:58	18:00	18:53	20:51	21:43	22:10
25	08:33 09:02-09:17/15	07:34 17:30-17:33/3	06:26 18:13-18:29/16	06:13 06:38-06:55/17	05:18	05:03 05:36-05:42/6
	17:00	18:02	18:55	20:53	21:44	22:10
26	08:31 09:01-09:18/17	07:31 17:28-17:36/8	06:24 18:13-18:31/18	06:11 06:36-06:55/19	05:17	05:04 05:37-05:43/6
	17:02	18:04	18:57	20:55	21:46	22:10
27	08:30 08:59-09:18/19	07:29 17:26-17:38/12	06:21 18:13-18:32/19	06:08 06:34-06:54/20	05:16	05:04 05:37-05:43/6
	17:04	18:06	18:59	20:56	21:47	22:09
28	08:28 08:57-09:18/21	07:27 17:24-17:40/16	06:19 18:13-18:34/21	06:06 06:32-06:53/21	05:15	05:05 05:38-05:43/5
	17:06	18:08	19:01	20:58	21:49	22:09
29	08:27 08:55-09:17/22		07:17 19:13-19:34/21	06:04 06:30-06:51/21	05:14	05:05 05:38-05:43/5
	17:08		20:03	21:00	21:50	22:09
30	08:25 08:54-09:18/24		07:14 19:14-19:33/19	06:02 06:28-06:49/21	05:12	05:06 05:39-05:44/5
	17:10		20:05	21:02	21:51	22:09
31	08:24 08:52-09:17/25		07:12 19:15-19:31/16		05:11	
	17:12		20:06		21:52	
Potential sun hours	250	273	367	420	494	510
Sum of minutes with flicker	192	384	755	587	388	125

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar per WTG

Calculation: Real Case Analysis **WTG:** 3 - T03

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August		September		October		November		December
1	05:06	05:40-05:44/4	05:46	06:17-06:38/21	06:41	07:08-07:23/15	07:34	17:57-18:33/36	07:33	08:12-08:37/25	08:28
	22:09		21:33		20:26	19:36-19:58/22	19:13		17:02		16:18
2	05:07	05:40-05:44/4	05:48	06:19-06:41/22	06:43	07:10-07:23/13	07:36	17:56-18:33/37	07:34	08:11-08:38/27	08:29
	22:08		21:31		20:24	19:36-19:56/20	19:10		17:00		16:17
3	05:08	05:41-05:44/3	05:50	06:20-06:43/23	06:44	07:12-07:23/11	07:38	17:55-18:33/38	07:36	08:11-08:38/27	08:31
	22:08		21:29		20:22	19:34-19:53/19	19:08		16:58		16:16
4	05:09	05:42-05:44/2	05:51	06:22-06:44/22	06:46	07:13-07:22/9	07:40	17:55-18:33/38	07:38	08:10-08:38/28	08:32
	22:07		21:28		20:19	19:34-19:51/17	19:05		16:56		16:15
5	05:10	05:43-05:44/1	05:53	06:23-06:45/22	06:48	07:15-07:21/6	07:41	17:55-18:33/38	07:40	08:10-08:39/29	08:33
	22:07		21:26		20:17	19:34-19:49/15	19:03		16:54		16:15
6	05:11	05:44-05:45/1	05:55	06:25-06:46/21	06:50	07:17-07:21/4	07:43	17:55-18:32/37	07:42	08:13-08:40/27	08:35
	22:06		21:24		20:14	19:34-19:47/13	19:00		16:52		16:14
7	05:12		05:57	06:27-06:47/20	06:51	19:33-19:44/11	07:45	17:55-18:30/35	07:44	08:15-08:42/27	08:36
	22:05		21:22		20:12		18:58		16:50		16:14
8	05:13		05:58	06:28-06:47/19	06:53	19:34-19:41/7	07:47	17:54-18:26/32	07:46	08:17-08:44/27	08:37
	22:05		21:20		20:09		18:56		16:49		16:13
9	05:14		06:00	06:30-06:48/18	06:55	19:35-19:39/4	07:49	17:54-18:24/30	07:48	08:19-08:46/27	08:39
	22:04		21:18		20:07		18:53		16:47		16:13
10	05:15		06:02	06:31-06:47/16	06:57	19:35-19:36/1	07:51	17:54-18:21/27	07:50	08:21-08:47/26	08:40
	22:03		21:16		20:05		18:51		16:45		16:13
11	05:16		06:04	06:33-06:48/15	06:59	19:10-19:20/10	07:52	17:55-18:19/24	07:52	08:23-08:48/25	08:41
	22:02		21:14		20:02		18:48		16:43		16:13
12	05:17		06:05	06:35-06:55/20	07:00	19:08-19:23/15	07:54	17:55-18:17/22	07:54	08:25-08:48/23	08:42
	22:01		21:12		20:00		18:46		16:42		16:12
13	05:18		06:07	06:36-06:57/21	07:02	19:06-19:24/18	07:56	17:56-18:14/18	07:56	08:27-08:49/22	08:43
	22:00		21:10		19:57		18:44		16:40		16:12
14	05:19		06:09	06:38-06:59/21	07:04	19:04-19:24/20	07:58	17:57-18:12/15	07:58	08:30-08:50/20	08:44
	21:59		21:07		19:55		18:41		16:38		16:12
15	05:21		06:11	06:40-07:00/20	07:06	19:03-19:24/21	08:00	17:59-18:10/11	08:00	08:32-08:51/19	08:45
	21:58		21:05		19:52		18:39		16:37		16:12
16	05:22		06:12	06:41-07:01/20	07:07	19:02-19:22/20	08:02	18:01-18:07/6	08:01	08:34-08:51/17	08:46
	21:57		21:03		19:50		18:37		16:35		16:12
17	05:23		06:14	06:43-07:01/18	07:09	19:01-19:19/18	08:04	18:03-18:05/2	08:03	08:36-08:51/15	08:47
	21:56		21:01		19:47		18:34		16:34		16:12
18	05:25		06:16	06:45-07:02/17	07:11	19:00-19:16/16	08:06		08:05	08:38-08:51/13	08:48
	21:55		20:59		19:45		18:32		16:32		16:13
19	05:26		06:18	06:46-07:02/16	07:13	19:00-19:14/14	08:07		08:07	08:40-08:51/11	08:48
	21:53		20:57		19:42		18:30		16:31		16:13
20	05:28		06:19	06:48-07:02/14	07:14	19:01-19:12/11	08:09		08:09	08:42-08:51/9	08:49
	21:52		20:54		19:40		18:28		16:30		16:13
21	05:29		06:21	06:50-07:02/12	07:16	19:00-19:09/9	08:11		08:11	08:44-08:51/7	08:50
	21:51		20:52		19:37		18:25		16:28		16:14
22	05:31	06:18-06:23/5	06:23	06:51-07:01/10	07:18	19:01-19:06/5	08:13		08:12	08:46-08:51/5	08:50
	21:49		20:50		19:35		18:23		16:27		16:14
23	05:32	06:16-06:26/10	06:25	06:53-07:01/8	07:20	19:02-19:04/2	08:15		08:14	08:48-08:51/3	08:51
	21:48		20:48	07:04-07:09/5	19:32	18:17-18:19/2	18:21		16:26		16:15
24	05:34	06:14-06:27/13	06:27	06:55-07:00/5	07:22	18:11-18:26/15	08:17		08:16	08:50-08:51/1	08:51
	21:46		20:45	07:01-07:12/11	19:30		18:19		16:24		16:15
25	05:35	06:13-06:29/16	06:28	06:56-07:16/20	07:23	18:08-18:28/20	07:19		08:18		08:52
	21:45		20:43		19:27		17:17		16:23		16:16
26	05:37	06:12-06:30/18	06:30	06:58-07:19/21	07:25	18:04-18:29/25	07:21		08:19		08:52
	21:43		20:41		19:25		17:14		16:22		16:17
27	05:38	06:11-06:30/19	06:32	07:00-07:21/21	07:27	18:02-18:31/29	07:23	08:22-08:29/7	08:21		08:52
	21:42		20:38		19:22		17:12		16:21		16:17
28	05:40	06:11-06:32/21	06:34	07:01-07:22/21	07:29	18:01-18:32/31	07:25	08:18-08:32/14	08:23		08:52
	21:40		20:36	19:44-19:52/8	19:20		17:10		16:20		16:18
29	05:41	06:12-06:32/20	06:35	07:03-07:23/20	07:31	18:00-18:32/32	07:27	08:16-08:34/18	08:24		08:52
	21:38		20:34	19:41-19:55/14	19:18		17:08		16:19		16:19
30	05:43	06:14-06:33/19	06:37	07:05-07:23/18	07:32	17:59-18:33/34	07:29	08:14-08:35/21	08:26		08:52
	21:37		20:31	19:40-19:57/17	19:15		17:06		16:18		16:20
31	05:45	06:16-06:37/21	06:39	07:07-07:24/17			07:31	08:13-08:36/23			08:52
	21:35		20:29	19:37-19:57/20			17:04				16:21
Potential sun hours	512		460		382		328		259		233
Sum of minutes with flicker		177		634		554		529		460	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar per WTG

Calculation: Real Case Analysis **WTG:** 4 - T04

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June
1	08:52 16:22	08:22 08:50-08:59/9 17:14	07:24 18:10	07:09 19:08-19:38/30 20:08	06:00 21:04	05:10 05:41-06:27/46 21:54
2	08:52 16:24	08:20 08:48-09:00/12 17:16	07:22 18:12	07:07 19:07-19:36/29 20:10	05:58 21:05	05:09 05:40-06:27/47 21:55
3	08:52 16:25	08:18 08:46-09:00/14 17:18	07:20 18:14	07:04 19:08-19:36/28 20:12	05:56 21:07	05:09 05:40-06:27/47 21:56
4	08:52 16:26	08:17 08:44-09:00/16 17:20	07:17 18:15	07:02 19:09-19:35/26 20:14	05:54 21:09	05:08 05:39-06:27/48 21:57
5	08:51 16:27	08:15 08:42-09:00/18 17:22	07:15 17:46-17:50/4 18:17	06:59 19:10-19:33/23 20:16	05:52 21:11	05:07 05:38-06:27/49 21:58
6	08:51 16:29	08:13 08:40-09:00/20 17:24	07:13 17:44-17:52/8 18:19	06:57 19:11-19:31/20 20:17	05:50 06:16-06:19/3 21:13	05:06 05:38-06:27/49 21:59
7	08:50 16:30	08:11 08:39-08:59/20 17:26	07:10 17:42-17:54/12 18:21	06:55 19:13-19:28/15 20:19	05:48 06:15-06:20/5 21:15	05:06 05:37-06:27/50 22:00
8	08:50 16:31	08:09 08:39-08:59/20 17:28	07:08 17:41-17:56/15 18:23	06:52 19:16-19:25/9 20:21	05:46 06:13-06:21/8 21:16	05:05 05:37-06:27/50 22:01
9	08:49 16:33	08:07 08:40-08:58/18 17:30	07:05 17:40-17:59/19 18:25	06:50 20:23	05:44 06:11-06:21/10 21:18	05:04 05:36-06:27/51 22:02
10	08:49 16:34	08:05 08:41-08:57/16 17:32	07:03 17:39-18:00/21 18:27	06:47 20:25	05:42 06:09-06:21/12 21:20	05:04 05:36-06:27/51 22:03
11	08:48 16:36	08:03 08:43-08:56/13 17:34	07:01 17:39-18:02/23 18:29	06:45 20:27	05:40 06:08-06:23/15 21:22	05:03 05:36-06:27/51 22:04
12	08:47 16:37	08:01 08:46-08:53/7 17:36	06:58 17:38-18:04/26 18:31	06:43 20:29	05:39 06:06-06:23/17 21:23	05:03 05:35-06:26/51 22:05
13	08:46 16:39	07:59 17:38	06:56 17:38-18:06/28 18:33	06:40 20:30	05:37 06:04-06:23/19 21:25	05:03 05:35-06:27/52 22:05
14	08:46 16:41	07:57 17:40	06:53 17:37-18:07/30 18:35	06:38 20:32	05:35 06:03-06:25/22 21:27	05:02 05:35-06:27/52 22:06
15	08:45 16:42	07:55 17:42	06:51 17:38-18:07/29 18:37	06:36 20:34	05:33 06:01-06:25/24 21:28	05:02 05:35-06:27/52 22:07
16	08:44 16:44	07:53 17:44	06:48 17:37-18:06/29 18:38	06:33 20:36	05:32 06:00-06:26/26 21:30	05:02 05:35-06:27/52 22:07
17	08:43 16:46	07:51 17:46	06:46 17:38-18:05/27 18:40	06:31 20:38	05:30 05:58-06:25/27 21:32	05:02 05:35-06:27/52 22:08
18	08:42 16:47	07:49 17:48	06:44 17:38-18:04/26 18:42	06:29 20:40	05:28 05:57-06:26/29 21:33	05:02 05:35-06:28/53 22:08
19	08:41 16:49	07:47 17:50	06:41 17:40-18:03/23 18:44	06:26 20:42	05:27 05:55-06:26/31 21:35	05:02 05:35-06:28/53 22:08
20	08:39 16:51	07:45 17:52	06:39 17:40-18:00/20 18:46	06:24 20:43	05:25 05:54-06:26/32 21:37	05:02 05:35-06:28/53 22:09
21	08:38 16:53	07:42 17:54	06:36 17:43-17:58/15 18:48 18:18-18:21/3	06:22 20:45	05:24 05:53-06:27/34 21:38	05:02 05:35-06:28/53 22:09
22	08:37 16:55	07:40 17:56	06:34 17:45-17:54/9 18:50 18:15-18:23/8	06:19 20:47	05:22 05:52-06:27/35 21:40	05:02 05:35-06:28/53 22:09
23	08:36 16:56	07:38 17:58	06:31 18:14-18:25/11 18:51	06:17 20:49	05:21 05:50-06:27/37 21:41	05:03 05:36-06:29/53 22:09
24	08:34 16:58	07:36 18:00	06:29 18:12-18:26/14 18:53	06:15 20:51	05:20 05:49-06:27/38 21:43	05:03 05:36-06:29/53 22:09
25	08:33 17:00	07:34 18:02	06:26 18:11-18:29/18 18:55	06:13 20:53	05:18 05:48-06:27/39 21:44	05:03 05:36-06:28/52 22:10
26	08:31 17:02	07:31 18:04	06:24 18:10-18:31/21 18:57	06:11 20:54	05:17 05:47-06:27/40 21:46	05:04 05:37-06:29/52 22:09
27	08:30 17:04	07:29 18:06	06:21 18:09-18:32/23 18:59	06:08 20:56	05:16 05:46-06:27/41 21:47	05:04 05:37-06:29/52 22:09
28	08:28 17:06	07:27 18:08	06:19 18:09-18:34/25 19:01	06:06 20:58	05:15 05:45-06:27/42 21:48	05:05 05:38-06:30/52 22:09
29	08:27 08:55-08:56/1 17:08		07:17 19:08-19:36/28 20:03	06:04 21:00	05:13 05:44-06:27/43 21:50	05:05 05:38-06:30/52 22:09
30	08:25 08:54-08:58/4 17:10		07:14 19:08-19:38/30 20:04	06:02 21:02	05:12 05:43-06:27/44 21:51	05:06 05:39-06:31/52 22:09
31	08:24 08:52-08:59/7 17:12		07:12 19:07-19:38/31 20:06		05:11 05:42-06:27/45 21:52	
Potential sun hours	250	273	367	420	494	510
Sum of minutes with flicker	12	183	576	180	718	1533

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar per WTG

Calculation: Real Case Analysis **WTG:** 4 - T04

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August		September		October		November		December
1	05:06	05:40-06:31/51	05:46	06:17-06:33/16	06:41		07:34	18:17-18:44/27	07:32	08:11-08:27/16	08:28
	22:08		21:33		20:26		19:13		17:02		16:18
2	05:07	05:40-06:31/51	05:48	06:19-06:33/14	06:43		07:36	18:17-18:41/24	07:34	08:10-08:28/18	08:29
	22:08		21:31		20:24		19:10		17:00		16:17
3	05:08	05:41-06:32/51	05:50	06:20-06:31/11	06:44		07:38	18:17-18:39/22	07:36	08:09-08:29/20	08:31
	22:08		21:29		20:22		19:08		16:58		16:16
4	05:09	05:42-06:32/50	05:51	06:22-06:31/9	06:46	19:14-19:22/8	07:40	18:17-18:37/20	07:38	08:08-08:29/21	08:32
	22:07		21:28		20:19		19:05		16:56		16:15
5	05:10	05:43-06:33/50	05:53	06:23-06:30/7	06:48	19:10-19:25/15	07:41	18:18-18:34/16	07:40	08:10-08:30/20	08:33
	22:07		21:26		20:17		19:03		16:54		16:15
6	05:11	05:44-06:33/49	05:55	06:25-06:30/5	06:50	19:08-19:27/19	07:43	18:19-18:32/13	07:42	08:13-08:31/18	08:35
	22:06		21:24		20:14		19:00		16:52		16:14
7	05:12	05:45-06:34/49	05:57	06:27-06:29/2	06:51	19:05-19:28/23	07:45	18:20-18:30/10	07:44	08:15-08:31/16	08:36
	22:05		21:22		20:12		18:58		16:50		16:14
8	05:13	05:46-06:33/47	05:58		06:53	19:04-19:29/25	07:47	18:20-18:26/6	07:46	08:17-08:31/14	08:37
	22:05		21:20		20:09		18:56		16:49		16:13
9	05:14	05:46-06:34/48	06:00		06:55	19:03-19:30/27	07:49	18:22-18:24/2	07:48	08:19-08:30/11	08:39
	22:04		21:18		20:07		18:53		16:47		16:13
10	05:15	05:48-06:35/47	06:02		06:57	19:01-19:29/28	07:51		07:50	08:21-08:30/9	08:40
	22:03		21:16		20:05		18:51		16:45		16:13
11	05:16	05:49-06:35/46	06:04		06:59	19:00-19:30/30	07:52		07:52	08:23-08:29/6	08:41
	22:02		21:14		20:02		18:48		16:43		16:13
12	05:17	05:50-06:36/46	06:05		07:00	19:00-19:30/30	07:54		07:54	08:25-08:29/4	08:42
	22:01		21:12		20:00		18:46		16:42		16:12
13	05:18	05:51-06:36/45	06:07		07:02	18:59-19:30/31	07:56		07:56	08:27-08:28/1	08:43
	22:00		21:10		19:57		18:44		16:40		16:12
14	05:19	05:52-06:36/44	06:09		07:04	18:58-19:26/28	07:58		07:58		08:44
	21:59		21:07		19:55		18:41		16:38		16:12
15	05:21	05:53-06:36/43	06:11		07:06	18:58-19:24/26	08:00		08:00		08:45
	21:58		21:05		19:52		18:39		16:37		16:12
16	05:22	05:54-06:36/42	06:12		07:07	18:58-19:22/24	08:02		08:01		08:46
	21:57		21:03		19:50		18:37		16:35		16:12
17	05:23	05:56-06:37/41	06:14		07:09	18:58-19:19/21	08:04		08:03		08:47
	21:56		21:01		19:47		18:34		16:34		16:12
18	05:25	05:57-06:37/40	06:16		07:11	18:58-19:16/18	08:06		08:05		08:48
	21:55		20:59		19:45		18:32		16:32		16:13
19	05:26	05:58-06:37/39	06:18		07:13	18:59-19:14/15	08:07		08:07		08:48
	21:53		20:57		19:42		18:30		16:31		16:13
20	05:28	06:00-06:37/37	06:19		07:14	19:00-19:12/12	08:09		08:09		08:49
	21:52		20:54		19:40		18:28		16:30		16:13
21	05:29	06:01-06:37/36	06:21		07:16	18:33-18:38/5	08:11		08:11		08:50
	21:51		20:52		19:37	19:00-19:09/9	18:25		16:28		16:14
22	05:31	06:02-06:37/35	06:23		07:18	18:28-18:42/14	08:13		08:12		08:50
	21:49		20:50		19:35	19:02-19:06/4	18:23		16:27		16:14
23	05:32	06:04-06:37/33	06:25		07:20	18:26-18:44/18	08:15		08:14		08:51
	21:48		20:48		19:32		18:21		16:26		16:15
24	05:34	06:05-06:37/32	06:27		07:22	18:24-18:46/22	08:17		08:16		08:51
	21:46		20:45		19:30		18:19		16:24		16:15
25	05:35	06:06-06:36/30	06:28		07:23	18:22-18:47/25	07:19		08:18		08:52
	21:45		20:43		19:27		17:17		16:23		16:16
26	05:37	06:08-06:36/28	06:30		07:25	18:20-18:47/27	07:21		08:19		08:52
	21:43		20:41		19:25		17:14		16:22		16:17
27	05:38	06:09-06:36/27	06:32		07:27	18:19-18:47/28	07:23		08:21		08:52
	21:42		20:38		19:22		17:12		16:21		16:17
28	05:40	06:11-06:36/25	06:34		07:29	18:19-18:48/29	07:25		08:23		08:52
	21:40		20:36		19:20		17:10		16:20		16:18
29	05:41	06:12-06:35/23	06:35		07:31	18:18-18:48/30	07:27		08:24		08:52
	21:38		20:34		19:18		17:08		16:19		16:19
30	05:43	06:14-06:35/21	06:37		07:32	18:18-18:47/29	07:29	08:15-08:23/8	08:26		08:52
	21:37		20:31		19:15		17:06		16:18		16:20
31	05:45	06:15-06:34/19	06:39				07:31	08:12-08:26/14			08:52
	21:35		20:29				17:04				16:21
Potential sun hours	512		460		382		328		259		233
Sum of minutes with flicker	1225		64		620		162		174		0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar per WTG

Calculation: Real Case Analysis **WTG:** 5 - T05

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June
1	08:52	08:22 16:27-16:42/15	07:24 16:58-17:26/28	07:09 07:33-08:02/29	06:00 06:26-07:03/37	05:10 05:50-06:17/27
	16:22	17:14	18:10	20:08	21:04 20:12-20:25/13	21:54 21:08-21:19/11
2	08:52	08:20 16:27-16:44/17	07:22 16:59-17:25/26	07:07 07:31-08:02/31	05:58 06:24-07:02/38	05:09 05:51-06:17/26
	16:24	17:16	18:12	20:10	21:05 20:14-20:23/9	21:55 21:08-21:20/12
3	08:52	08:18 16:26-16:46/20	07:20 17:00-17:23/23	07:04 07:28-08:02/34	05:56 06:22-07:02/40	05:09 05:52-06:17/25
	16:25	17:18	18:14	20:12	21:07	21:56 21:09-21:22/13
4	08:52	08:17 16:26-16:48/22	07:17 17:02-17:21/19	07:02 07:26-08:02/36	05:54 06:20-07:02/42	05:08 05:52-06:17/25
	16:26	17:20	18:15	20:14	21:09	21:57 21:09-21:22/13
5	08:51	08:15 16:25-16:50/25	07:15 17:04-17:18/14	06:59 07:23-08:01/38	05:52 06:18-07:01/43	05:07 05:52-06:16/24
	16:27	17:22	18:17	20:16	21:11	21:58 21:08-21:23/15
6	08:51	08:13 16:25-16:53/28	07:13 17:10-17:12/2	06:57 07:21-08:00/39	05:50 06:16-07:00/44	05:06 05:54-06:16/22
	16:29	17:24	18:19	20:17	21:13	21:59 21:09-21:24/15
7	08:50	08:11 16:25-16:55/30	07:10	06:55 07:19-08:00/41	05:48 06:15-07:01/46	05:06 05:54-06:16/22
	16:30	17:26	18:21	20:19	21:14	22:00 21:09-21:25/16
8	08:50	08:09 16:25-16:55/30	07:08	06:52 07:16-07:58/42	05:46 06:13-07:00/47	05:05 05:55-06:16/21
	16:31	17:28	18:23	20:21	21:16	22:01 21:09-21:26/17
9	08:49	08:07 16:25-16:56/31	07:05	06:50 07:14-07:57/43	05:44 06:11-06:59/48	05:04 05:55-06:15/20
	16:33	17:30	18:25	20:23	21:18	22:02 21:09-21:26/17
10	08:49	08:05 16:26-16:55/29	07:03	06:47 07:11-07:55/44	05:42 06:09-06:58/49	05:04 05:56-06:15/19
	16:34	17:32	18:27	20:25	21:20	22:03 21:09-21:28/19
11	08:48	08:03 16:26-16:55/29	07:01	06:45 07:09-07:54/45	05:40 06:08-06:58/50	05:03 05:57-06:15/18
	16:36	17:34	18:29	20:27	21:22	22:04 21:09-21:28/19
12	08:47	08:01 16:27-16:55/28	06:58	06:43 07:07-07:53/46	05:39 06:06-06:56/50	05:03 05:57-06:14/17
	16:37	17:36	18:31	20:29	21:23	22:05 21:09-21:29/20
13	08:46	07:59 16:28-16:54/26	06:56	06:40 07:04-07:49/45	05:37 06:04-06:55/51	05:03 05:57-06:14/17
	16:39	17:38 17:06-17:09/3	18:33	20:30	21:25	22:05 21:10-21:29/19
14	08:46	07:57 16:28-16:53/25	06:53	06:38 07:02-07:46/44	05:35 06:03-06:54/51	05:02 05:58-06:15/17
	16:41	17:40 17:03-17:10/7	18:35	20:32	21:27	22:06 21:10-21:30/20
15	08:45	07:55 16:29-16:52/23	06:51	06:36 07:00-07:44/44	05:33 06:01-06:52/51	05:02 05:59-06:15/16
	16:42	17:42 17:02-17:12/10	18:36	20:34	21:28	22:07 21:11-21:31/20
16	08:44	07:53 16:31-16:51/20	06:48	06:33 06:58-07:31/33	05:32 06:00-06:51/51	05:02 05:59-06:15/16
	16:44	17:44 17:01-17:15/14	18:38	20:36 07:35-07:38/3	21:30	22:07 21:11-21:31/20
17	08:43	07:51 16:33-16:49/16	06:46	06:31 06:55-07:29/34	05:30 05:58-06:36/38	05:02 06:00-06:14/14
	16:46	17:46 17:00-17:17/17	18:40	20:38	21:32 06:37-06:48/11	22:08 21:11-21:32/21
18	08:42	07:49 16:36-16:47/11	06:44	06:29 06:53-07:28/35	05:28 05:57-06:35/38	05:02 06:00-06:14/14
	16:47	17:48 16:59-17:19/20	18:42	20:40	21:33	22:08 21:11-21:32/21
19	08:41	07:47 16:58-17:21/23	06:41	06:26 06:51-07:27/36	05:27 05:55-06:33/38	05:02 06:00-06:14/14
	16:49	17:50	18:44	20:42 20:12-20:13/1	21:35	22:08 21:12-21:33/21
20	08:39	07:45 16:57-17:23/26	06:39	06:24 06:49-07:26/37	05:25 05:54-06:32/38	05:02 06:01-06:14/13
	16:51	17:52	18:46	20:43 20:10-20:14/4	21:37	22:09 21:12-21:33/21
21	08:38	07:42 16:57-17:26/29	06:36	06:22 06:46-07:24/38	05:24 05:53-06:30/37	05:02 06:01-06:14/13
	16:53	17:54	18:48	20:45 20:09-20:16/7	21:38	22:09 21:12-21:33/21
22	08:37	07:40 16:56-17:27/31	06:34	06:19 06:44-07:24/40	05:22 05:52-06:30/38	05:02 06:01-06:14/13
	16:55	17:56	18:50	20:47 20:09-20:18/9	21:40	22:09 21:12-21:33/21
23	08:36	07:38 16:56-17:29/33	06:31	06:17 06:42-07:23/41	05:21 05:50-06:28/38	05:03 06:02-06:15/13
	16:56	17:58	18:51	20:49 20:08-20:20/12	21:41	22:09 21:13-21:34/21
24	08:34	07:36 16:56-17:29/33	06:29 06:53-06:55/2	06:15 06:40-07:22/42	05:20 05:49-06:28/39	05:03 06:01-06:15/14
	16:58	18:00	18:53	20:51 20:08-20:22/14	21:43	22:09 21:12-21:33/21
25	08:33	07:34 16:56-17:28/32	06:26 06:50-06:57/7	06:13 06:38-07:20/42	05:18 05:48-06:27/39	05:03 06:01-06:15/14
	17:00	18:02	18:55	20:53 20:08-20:24/16	21:44	22:09 21:12-21:33/21
26	08:31	07:31 16:56-17:28/32	06:24 06:48-06:59/11	06:11 06:36-07:19/43	05:17 05:48-06:27/39	05:04 06:01-06:17/16
	17:02	18:04	18:57	20:54 20:08-20:25/17	21:46 21:10-21:12/2	22:09 21:13-21:34/21
27	08:30	07:29 16:57-17:28/31	06:21 06:45-07:00/15	06:08 06:34-07:17/43	05:16 05:49-06:26/37	05:04 06:01-06:17/16
	17:04	18:06	18:59	20:56 20:08-20:27/19	21:47 21:10-21:13/3	22:09 21:13-21:33/20
28	08:28 16:31-16:33/2	07:27 16:57-17:26/29	06:19 06:43-07:01/18	06:06 06:32-07:14/42	05:15 05:49-06:25/36	05:05 06:01-06:18/17
	17:06	18:08	19:01	20:58 20:09-20:29/20	21:48 21:10-21:15/5	22:09 21:13-21:33/20
29	08:27 16:29-16:35/6		07:17 07:40-08:01/21	06:04 06:30-07:07/37	05:14 05:49-06:24/35	05:05 06:01-06:17/16
	17:08		20:03	21:00 20:10-20:28/18	21:50 21:09-21:16/7	22:09 21:13-21:33/20
30	08:25 16:28-16:37/9		07:14 07:38-08:02/24	06:02 06:28-07:05/37	05:12 05:50-06:22/32	05:06 06:01-06:18/17
	17:10		20:04	21:02 20:10-20:27/17	21:51 21:09-21:17/8	22:09 21:14-21:33/19
31	08:24 16:28-16:40/12		07:12 07:35-08:02/27		05:11 05:50-06:20/30	
	17:12		20:06		21:52 21:09-21:18/9	
Potential sun hours	250	273	367	420	494	510
Sum of minutes with flicker	29	795	237	1338	1357	1091

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar per WTG

Calculation: Real Case Analysis **WTG:** 5 - T05

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July	August	September	October	November	December
1	05:06 06:01-06:19/18	05:46 06:17-07:07/50	06:41 07:08-07:53/45	07:34	07:32 15:55-16:25/30	08:27
	22:08 21:14-21:33/19	21:33	20:26	19:13	17:02	16:18
2	05:07 06:00-06:19/19	05:48 06:19-07:08/49	06:43 07:10-07:54/44	07:36	07:34 15:55-16:25/30	08:29
	22:08 21:14-21:32/18	21:31	20:24	19:10	17:00	16:17
3	05:08 06:00-06:20/20	05:50 06:20-07:09/49	06:44 07:12-07:55/43	07:38	07:36 15:55-16:25/30	08:31
	22:08 21:14-21:32/18	21:29	20:22	19:08	16:58	16:16
4	05:09 06:00-06:21/21	05:51 06:22-07:10/48	06:46 07:13-07:55/42	07:40	07:38 15:55-16:24/29	08:32
	22:07 21:15-21:32/17	21:28	20:19	19:05	16:56	16:15
5	05:10 06:00-06:22/22	05:53 06:23-07:09/46	06:48 07:15-07:56/41	07:41	07:40 15:55-16:22/27	08:33
	22:07 21:15-21:31/16	21:26	20:17	19:03	16:54	16:15
6	05:11 06:00-06:23/23	05:55 06:25-07:10/45	06:50 07:17-07:56/39	07:43	07:42 15:55-16:20/25	08:35
	22:06 21:15-21:31/16	21:24	20:14	19:00	16:52	16:14
7	05:12 06:00-06:23/23	05:57 06:27-07:11/44	06:51 07:18-07:56/38	07:45	07:44 15:56-16:19/23	08:36
	22:05 21:15-21:30/15	21:22	20:12	18:58	16:50	16:14
8	05:13 06:00-06:24/24	05:58 06:28-07:11/43	06:53 07:20-07:56/36	07:47 17:41-17:51/10	07:46 15:57-16:17/20	08:37
	22:05 21:15-21:29/14	21:20	20:09	18:56	16:49	16:13
9	05:14 05:59-06:24/25	06:00 06:30-07:11/41	06:55 07:22-07:56/34	07:49 17:38-17:54/16	07:48 15:57-16:15/18	08:39
	22:04 21:15-21:28/13	21:18	20:07	18:53	16:47	16:13
10	05:15 05:59-06:25/26	06:02 06:31-07:11/40	06:57 07:24-07:56/32	07:51 17:35-17:56/21	07:50 15:58-16:13/15	08:40
	22:03 21:15-21:28/13	21:16 20:24-20:29/5	20:05	18:51	16:45	16:13
11	05:16 05:59-06:25/26	06:04 06:33-07:11/38	06:58 07:25-07:54/29	07:52 17:33-17:57/24	07:52 15:59-16:11/12	08:41
	22:02 21:16-21:27/11	21:14 20:21-20:32/11	20:02	18:48	16:43	16:13
12	05:17 05:59-06:26/27	06:05 06:35-07:11/36	07:00 07:27-07:54/27	07:54 17:32-17:58/26	07:54 16:00-16:09/9	08:42
	22:01 21:17-21:27/10	21:12 20:20-20:34/14	20:00	18:46	16:42	16:12
13	05:18 05:58-06:30/32	06:07 06:36-07:13/37	07:02 07:29-07:53/24	07:56 17:31-17:59/28	07:56 16:01-16:07/6	08:43
	22:00 21:17-21:26/9	21:10 20:18-20:34/16	19:57	18:44	16:40	16:12
14	05:19 05:58-06:31/33	06:09 06:38-07:18/40	07:04 07:30-07:52/22	07:58 17:30-18:00/30	07:58 16:03-16:05/2	08:44
	21:59 21:18-21:25/7	21:07 20:17-20:35/18	19:55	18:41	16:38	16:12
15	05:21 05:58-06:33/35	06:11 06:40-07:22/42	07:06 07:32-07:51/19	08:00 17:29-18:00/31	07:59	08:45
	21:58 21:18-21:24/6	21:05 20:15-20:35/20	19:52	18:39	16:37	16:12
16	05:22 05:57-06:34/37	06:12 06:41-07:24/43	07:07 07:34-07:49/15	08:02 17:28-18:00/32	08:01	08:46
	21:57 21:18-21:22/4	21:03 20:15-20:33/18	19:50	18:37	16:35	16:12
17	05:23 05:58-06:36/38	06:14 06:43-07:26/43	07:09 07:36-07:48/12	08:04 17:28-18:00/32	08:03	08:47
	21:56 21:20-21:22/2	21:01 20:15-20:32/17	19:47	18:34	16:34	16:12
18	05:25 05:58-06:37/39	06:16 06:45-07:27/42	07:11 07:37-07:45/8	08:06 17:28-18:00/32	08:05	08:48
	21:55 21:20-21:21/1	20:59 20:14-20:29/15	19:45	18:32	16:32	16:13
19	05:26 05:58-06:37/39	06:18 06:46-07:28/42	07:13 07:39-07:42/3	08:07 17:27-18:00/33	08:07	08:48
	21:53	20:57 20:14-20:27/13	19:42	18:30	16:31	16:13
20	05:28 06:00-06:39/39	06:19 06:48-07:29/41	07:14	08:09 17:27-17:58/31	08:09	08:49
	21:52	20:54 20:14-20:25/11	19:40	18:28	16:30	16:13
21	05:29 06:01-06:39/38	06:21 06:50-07:29/39	07:16	08:11 17:27-17:55/28	08:11	08:50
	21:51	20:52 20:14-20:22/8	19:37	18:25	16:28	16:14
22	05:31 06:02-06:39/37	06:23 06:51-07:29/38	07:18	08:13 17:28-17:53/25	08:12	08:50
	21:49	20:50 20:14-20:21/7	19:35	18:23	16:27	16:14
23	05:32 06:04-06:42/38	06:25 06:53-07:30/37	07:20	08:15 17:28-17:51/23	08:14	08:51
	21:48	20:48 20:15-20:19/4	19:32	18:21	16:26	16:15
24	05:34 06:05-06:43/38	06:27 06:55-07:31/36	07:22	08:17 17:04-17:17/13	08:16	08:51
	21:46	20:45 20:16-20:17/1	19:30	18:19 17:29-17:48/19	16:24	16:15
25	05:35 06:07-06:45/38	06:28 06:56-07:31/35	07:23	07:19 16:02-16:19/17	08:18	08:51
	21:45	20:43	19:27	17:17 16:29-16:46/17	16:23	16:16
26	05:37 06:08-06:46/38	06:30 06:58-07:32/34	07:25	07:21 16:00-16:21/21	08:19	08:52
	21:43 06:49-06:57/8	20:41	19:25	17:14 16:30-16:44/14	16:22	16:17
27	05:38 06:09-07:00/51	06:32 07:00-07:32/32	07:27	07:23 15:58-16:22/24	08:21	08:52
	21:42	20:38 07:36-07:41/5	19:22	17:12 16:32-16:41/9	16:21	16:17
28	05:40 06:11-07:02/51	06:34 07:01-07:45/44	07:29	07:25 15:57-16:23/26	08:23	08:52
	21:40	20:36	19:20	17:10 16:33-16:39/6	16:20	16:18
29	05:41 06:12-07:03/51	06:35 07:03-07:47/44	07:31	07:27 15:57-16:24/27	08:24	08:52
	21:38	20:34	19:18	17:08 16:37-16:38/1	16:19	16:19
30	05:43 06:14-07:05/51	06:37 07:05-07:50/45	07:32	07:29 15:56-16:25/29	08:26	08:52
	21:37	20:31	19:15	17:06	16:18	16:20
31	05:45 06:15-07:06/51	06:39 07:07-07:53/46		07:31 15:56-16:25/29		08:52
	21:35	20:29		17:04		16:21
Potential sun hours	512	460	382	328	259	233
Sum of minutes with flicker	1265	1472	553	674	276	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar per WTG

Calculation: Real Case Analysis **WTG:** 6 - T06

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June
1	08:52 15:02-15:36/34 16:22	08:22 15:40-16:19/39 17:14	07:24 18:10	07:09 07:33-07:59/26 20:08	06:00 06:42-06:54/12 21:04 19:59-20:06/7	05:10 20:54-21:19/25 21:54
2	08:52 15:02-15:37/35 16:24 15:44-15:46/2	08:20 15:40-16:18/38 17:16	07:22 18:12	07:07 07:31-07:58/27 20:10	05:58 06:46-06:50/4 21:05	05:09 20:54-21:20/26 21:55
3	08:52 15:03-15:38/35 16:25 15:44-15:47/3	08:18 15:41-16:18/37 17:18	07:20 18:14	07:04 07:28-07:56/28 20:12	05:56 21:07	05:09 20:55-21:22/27 21:56
4	08:52 15:03-15:38/35 16:26 15:43-15:48/5	08:17 15:42-16:17/35 17:20	07:17 18:15	07:02 07:26-07:55/29 20:14	05:54 21:09	05:08 20:55-21:22/27 21:57
5	08:51 15:04-15:39/35 16:27 15:42-15:50/8	08:15 15:43-16:17/34 17:22	07:15 18:17	06:59 07:23-07:52/29 20:16 19:47-19:48/1	05:52 21:11	05:07 20:55-21:23/28 21:58
6	08:51 15:04-15:39/35 16:29 15:41-15:51/10	08:13 15:43-16:16/33 17:24	07:13 18:19	06:57 07:21-07:50/29 20:17 19:45-19:50/5	05:50 21:13	05:06 20:56-21:24/28 21:59
7	08:50 15:04-15:39/35 16:30 15:41-15:52/11	08:11 15:45-16:15/30 17:26	07:10 18:21	06:55 07:18-07:45/27 20:19 19:43-19:52/9	05:48 21:14	05:06 20:56-21:25/29 22:00
8	08:50 15:05-15:40/35 16:31 15:41-15:55/14	08:09 15:46-16:14/28 17:28	07:08 18:23	06:52 07:16-07:43/27 20:21 19:42-19:54/12	05:46 21:16	05:05 20:57-21:26/29 22:01
9	08:49 15:06-15:56/50 16:33	08:07 15:48-16:13/25 17:30	07:05 18:25	06:50 07:14-07:43/29 20:23 19:41-19:56/15	05:44 21:18	05:04 05:36-05:37/1 22:02 20:57-21:26/29
10	08:49 15:06-15:58/52 16:34	08:05 15:50-16:11/21 17:32	07:03 18:27	06:47 07:11-07:42/31 20:25 19:40-19:57/17	05:42 21:20	05:04 05:36-05:38/2 22:03 20:58-21:28/30
11	08:48 15:06-15:59/53 16:36	08:03 15:53-16:09/16 17:34	07:01 18:29	06:45 07:09-07:41/32 20:27 19:39-19:59/20	05:40 21:22	05:03 05:36-05:39/3 22:04 20:57-21:28/31
12	08:47 15:07-16:01/54 16:37	08:01 15:57-16:05/8 17:36	06:58 07:22-07:23/1 18:31	06:43 07:07-07:40/33 20:29 19:39-20:01/22	05:39 21:23	05:03 05:35-05:39/4 22:05 20:58-21:29/31
13	08:46 15:07-16:03/56 16:39	07:59 17:38	06:56 07:20-07:25/5 18:33	06:40 07:04-07:38/34 20:30 19:38-20:02/24	05:37 21:25	05:03 05:35-05:40/5 22:05 20:59-21:29/30
14	08:46 15:08-16:05/57 16:41	07:57 17:40	06:53 07:17-07:25/8 18:35	06:38 07:02-07:36/34 20:32 19:39-20:04/25	05:35 21:27	05:02 05:35-05:40/5 22:06 20:59-21:30/31
15	08:45 15:09-16:07/58 16:42	07:55 17:42	06:51 07:15-07:27/12 18:36	06:36 07:00-07:34/34 20:34 19:39-20:06/27	05:33 21:28	05:02 05:35-05:41/6 22:07 21:00-21:31/31
16	08:44 15:10-16:09/59 16:44	07:53 17:44	06:48 07:12-07:27/15 18:38	06:33 06:58-07:21/23 19:38-20:07/29 20:36 07:24-07:31/7	05:32 20:56-20:58/2 21:30	05:02 05:35-05:41/6 22:07 21:00-21:31/31
17	08:43 15:11-16:11/60 16:46	07:51 17:46	06:46 18:13-18:14/1 18:40 07:10-07:27/17	06:31 06:55-07:20/25 20:38 19:39-20:09/30	05:30 20:55-20:59/4 21:32	05:02 05:35-05:42/7 22:08 21:01-21:32/31
18	08:42 15:11-16:12/61 16:47	07:49 17:48	06:44 18:10-18:15/5 18:42 07:07-07:27/20	06:29 06:53-07:19/26 20:40 19:40-20:11/31	05:28 20:54-21:01/7 21:33	05:02 05:35-05:42/7 22:08 21:01-21:32/31
19	08:40 15:12-16:14/62 16:49	07:47 17:50	06:41 18:09-18:18/9 18:44 07:05-07:27/22	06:26 06:51-07:18/27 20:42 19:42-20:13/31	05:27 20:53-21:02/9 21:35	05:02 05:35-05:42/7 22:08 21:01-21:33/32
20	08:39 15:13-16:15/62 16:51	07:45 17:52	06:39 18:07-18:19/12 18:46 07:03-07:27/24	06:24 06:49-07:16/27 20:43 19:42-20:14/32	05:25 20:53-21:04/11 21:37	05:02 05:35-05:42/7 22:09 21:01-21:33/32
21	08:38 15:14-16:15/61 16:53	07:42 17:54	06:36 18:07-18:21/14 18:48 07:00-07:26/26	06:22 06:46-07:12/26 20:45 19:45-20:16/31	05:24 20:53-21:05/12 21:38	05:02 05:35-05:42/7 22:09 21:02-21:33/31
22	08:37 15:16-16:16/60 16:55	07:40 17:56	06:34 18:06-18:23/17 18:50 06:58-07:26/28	06:19 06:44-07:11/27 20:47 19:49-20:17/28	05:22 20:52-21:06/14 21:40	05:02 05:35-05:42/7 22:09 21:02-21:33/31
23	08:36 15:17-16:16/59 16:56	07:38 17:58	06:31 18:06-18:25/19 18:51 06:55-07:24/29	06:17 06:42-07:09/27 20:49 19:50-20:17/27	05:21 20:52-21:08/16 21:41	05:03 05:36-05:43/7 22:09 21:02-21:34/32
24	08:34 15:19-16:18/59 16:58	07:36 18:00	06:29 18:05-18:26/21 18:53 06:53-07:23/30	06:15 06:40-07:08/28 20:51 19:50-20:17/27	05:20 20:52-21:09/17 21:43	05:03 05:36-05:43/7 22:09 21:02-21:33/31
25	08:33 15:20-15:36/16 17:00 15:38-16:18/40	07:33 18:02	06:26 18:05-18:29/24 18:55 06:50-07:21/31	06:13 06:38-07:06/28 20:53 19:50-20:16/26	05:18 20:53-21:11/18 21:44	05:03 05:36-05:43/7 22:09 21:02-21:33/31
26	08:31 15:23-15:34/11 17:02 15:38-16:18/40	07:31 18:04	06:24 18:05-18:28/23 18:57 06:48-07:19/31	06:11 06:37-07:01/24 20:54 19:51-20:15/24	05:17 20:53-21:12/19 21:46	05:04 05:37-05:43/6 22:09 21:03-21:34/31
27	08:30 15:38-16:18/40 17:04	07:29 18:06	06:21 18:06-18:28/22 18:59 06:45-07:15/30	06:08 06:37-07:00/23 20:56 19:52-20:14/22	05:16 20:53-21:13/20 21:47	05:04 05:37-05:43/6 22:09 21:02-21:33/31
28	08:28 15:38-16:18/40 17:06	07:27 18:08	06:19 18:07-18:27/20 07:03-07:12/9 19:01 06:43-07:02/19	06:06 06:38-06:59/21 20:58 19:53-20:13/20	05:15 20:53-21:15/22 21:48	05:05 05:38-05:44/6 22:09 21:03-21:33/30
29	08:27 15:38-16:18/40 17:08		07:17 19:07-19:25/18 20:03 07:40-08:01/21	06:04 06:39-06:57/18 21:00 19:54-20:11/17	05:13 20:53-21:16/23 21:50	05:05 05:38-05:43/5 22:09 21:02-21:33/31
30	08:25 15:39-16:18/39 17:10		07:14 19:09-19:23/14 20:04 07:38-08:01/23	06:02 06:40-06:56/16 21:02 19:56-20:09/13	05:12 20:53-21:17/24 21:51	05:06 05:39-05:43/4 22:09 21:02-21:33/31
31	08:24 15:40-16:19/39 17:12		07:12 19:11-19:19/8 20:06 07:35-07:59/24		05:11 20:53-21:18/25 21:52	
Potential sun hours	250	273	367	420	494	510
Sum of minutes with flicker	1560	344	652	1387	266	1021

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar per WTG

Calculation: Real Case Analysis **WTG:** 6 - T06

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July	August	September	October	November	December
1	05:06 05:40-05:44/4	05:46	06:41 07:08-07:40/32	07:34 08:01-08:03/2	07:32 15:19-15:41/22	08:27 14:48-15:41/53
	22:08 21:03-21:33/30	21:33	20:26 19:38-19:58/20	19:13	17:02	16:18
2	05:07 05:40-05:43/3	05:48	06:43 07:10-07:41/31	07:36	07:34 15:17-15:43/26	08:29 14:49-15:41/52
	22:08 21:02-21:32/30	21:31	20:24 19:39-19:56/17	19:10	17:00	16:17
3	05:08 05:41-05:43/2	05:50	06:44 07:12-07:41/29	07:38	07:36 15:15-15:44/29	08:30 14:49-15:39/50
	22:08 21:02-21:32/30	21:29	20:22 19:38-19:53/15	19:08	16:58	16:16
4	05:09 05:42-05:43/1	05:51	06:46 07:13-07:40/27	07:40	07:38 15:14-15:45/31	08:32 14:49-15:24/35
	22:07 21:02-21:32/30	21:28	20:19 19:39-19:51/12	19:05	16:56	16:15 15:25-15:39/14
5	05:10 21:02-21:31/29	05:53	06:48 07:15-07:41/26	07:41	07:40 15:13-15:46/33	08:33 14:50-15:25/35
	22:07	21:26	20:17 19:40-19:49/9	19:03	16:54	16:15 15:27-15:39/12
6	05:11 21:01-21:31/30	05:55	06:50 07:17-07:46/29	07:43	07:42 15:12-15:47/35	08:35 14:50-15:25/35
	22:06	21:24	20:14 19:41-19:47/6	19:00	16:52	16:14 15:27-15:37/10
7	05:12 21:01-21:30/29	05:57	06:51 07:18-07:47/29	07:45	07:44 15:12-15:48/36	08:36 14:50-15:25/35
	22:05	21:22	20:12 19:42-19:43/1	18:58	16:50	16:14 15:28-15:36/8
8	05:13 21:01-21:29/28	05:58	06:53 07:20-07:49/29	07:47	07:46 15:12-15:49/37	08:37 14:51-15:26/35
	22:05	21:20	20:09	18:56	16:49	16:13 15:31-15:36/5
9	05:14 21:01-21:28/27	06:00	06:55 07:22-07:50/28	07:49	07:48 15:11-15:49/38	08:39 14:51-15:26/35
	22:04	21:18	20:07	18:53	16:47	16:13 15:32-15:36/4
10	05:15 21:01-21:28/27	06:02	06:57 07:24-07:51/27	07:51	07:50 15:11-15:49/38	08:40 14:51-15:26/35
	22:03	21:16	20:04	18:51	16:45	16:13 15:33-15:35/2
11	05:16 21:01-21:27/26	06:04 06:53-07:00/7	06:58 07:25-07:51/26	07:52	07:52 15:11-15:50/39	08:41 14:53-15:27/34
	22:02	21:14	20:02	18:48	16:43	16:13
12	05:17 21:02-21:27/25	06:05 06:50-07:03/13	07:00 19:04-19:11/7	07:54	07:54 15:10-15:50/40	08:42 14:53-15:27/34
	22:01	21:12 20:07-20:15/8	20:00 07:27-07:51/24	18:46	16:42	16:12
13	05:18 21:02-21:26/24	06:07 06:47-07:04/17	07:02 19:00-19:13/13	07:56	07:56 15:10-15:50/40	08:43 14:53-15:28/35
	22:00	21:10 20:03-20:17/14	19:57 07:29-07:52/23	18:44	16:40	16:12
14	05:19 21:02-21:25/23	06:09 06:46-07:05/19	07:04 18:58-19:15/17	07:58	07:58 15:10-15:50/40	08:44 14:54-15:28/34
	21:59	21:07 20:01-20:19/18	19:55 07:30-07:51/21	18:41	16:38	16:12
15	05:21 21:02-21:24/22	06:11 06:46-07:06/20	07:06 18:56-19:16/20 07:54-08:01/7	08:00	07:59 15:10-15:50/40	08:45 14:54-15:29/35
	21:58	21:05 19:59-20:20/21	19:52 07:32-07:52/20	18:39	16:37	16:12
16	05:22 21:01-21:22/21	06:12 06:44-07:06/22	07:07 18:55-19:17/22	08:02	08:01 14:57-15:08/11	08:46 14:55-15:29/34
	21:57	21:03 19:58-20:21/23	19:50 07:34-08:04/30	18:37	16:35 15:11-15:50/39	16:12
17	05:23 21:01-21:21/20	06:14 06:43-07:09/26	07:09 18:53-19:17/24	08:04	08:03 14:54-15:10/16	08:47 14:56-15:30/34
	21:56	21:01 19:57-20:22/25	19:47 07:36-08:07/31	18:34	16:34 15:12-15:51/39	16:12
18	05:25 21:02-21:21/19	06:16 06:45-07:13/28	07:11 18:53-19:16/23	08:06	08:05 14:53-15:51/58	08:48 14:55-15:29/34
	21:55	20:59 19:56-20:22/26	19:45 07:37-08:08/31	18:32	16:32	16:13
19	05:26 21:02-21:19/17	06:18 06:46-07:14/28	07:13 18:52-19:14/22	08:07	08:07 14:52-15:51/59	08:48 14:56-15:30/34
	21:53	20:57 19:55-20:22/27	19:42 07:39-08:09/30	18:30	16:31	16:13
20	05:28 21:02-21:18/16	06:19 06:48-07:15/27	07:14 18:52-19:12/20	08:09	08:09 14:51-15:51/60	08:49 14:57-15:31/34
	21:52	20:54 19:55-20:23/28	19:40 07:41-08:10/29	18:28	16:30	16:13
21	05:29 21:03-21:17/14	06:21 06:50-07:16/26	07:16 18:51-19:09/18	08:11	08:11 14:50-15:51/61	08:50 14:57-15:31/34
	21:51	20:52 19:54-20:22/28	19:37 07:43-08:11/28	18:25	16:28	16:14
22	05:31 21:03-21:16/13	06:23 06:51-07:18/27	07:18 18:51-19:06/15	08:13	08:12 14:49-15:51/62	08:50 14:58-15:32/34
	21:49	20:50 19:49-20:21/32	19:35 07:44-08:11/27	18:23	16:27	16:14
23	05:32 21:04-21:15/11	06:25 06:53-07:20/27	07:20 18:52-19:04/12	08:15	08:14 14:49-15:51/62	08:51 14:58-15:32/34
	21:48	20:47 19:47-20:19/32	19:32 07:46-08:11/25	18:21	16:26	16:15
24	05:34 21:04-21:13/9	06:27 06:55-07:21/26	07:22 18:53-19:02/9	08:17	08:16 14:49-15:50/61	08:51 14:58-15:32/34
	21:46	20:45 19:45-20:17/32	19:30 07:48-08:11/23	18:19	16:24	16:15
25	05:35 21:04-21:12/8	06:28 06:56-07:22/26	07:23 18:53-18:59/6	07:19	08:18 14:48-15:48/60	08:51 14:59-15:33/34
	21:45	20:43 19:43-20:14/31	19:27 07:50-08:11/21	17:17	16:23	16:16
26	05:37 21:05-21:11/6	06:30 06:58-07:23/25	07:25 18:54-18:56/2	07:21	08:19 14:48-15:47/59	08:52 15:00-15:34/34
	21:43	20:41 19:42-20:12/30	19:25 07:51-08:09/18	17:14	16:22	16:17
27	05:38 21:05-21:09/4	06:32 07:00-07:23/23 19:41-20:10/29	07:27 07:53-08:09/16	07:23	08:21 14:48-15:46/58	08:52 15:00-15:34/34
	21:42	20:38 07:26-07:33/7	19:22	17:12	16:21	16:17
28	05:40 21:07-21:08/1	06:34 07:01-07:35/34	07:29 07:55-08:08/13	07:25	08:23 14:48-15:45/57	08:52 15:00-15:34/34
	21:40	20:36 19:40-20:07/27	19:20	17:10	16:20	16:18
29	05:41	06:35 07:03-07:37/34	07:30 07:57-08:07/10	07:27	08:24 14:48-15:44/56	08:52 15:01-15:35/34
	21:38	20:34 19:39-20:05/26	19:17	17:08	16:19	16:19
30	05:43	06:37 07:05-07:39/34	07:32 07:59-08:05/6	07:29 15:25-15:36/11	08:26 14:48-15:42/54	08:52 15:01-15:35/34
	21:37	20:31 19:39-20:03/24	19:15	17:06	16:18	16:20
31	05:45	06:39 07:07-07:39/32		07:30 15:22-15:39/17		08:52 15:02-15:36/34
	21:35	20:29 19:38-20:00/22		17:04		16:21
Potential sun hours	512	460	382	328	259	233
Sum of minutes with flicker	579	1031	1056	30	1396	1171

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar per WTG

Calculation: Real Case Analysis **WTG:** 7 - T07

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June
1	08:52 13:39-14:28/49 16:22	08:22 16:36-16:42/6 17:14	07:24 17:31-17:42/11 18:10	07:09 19:26-19:41/15 20:08 18:56-19:14/18	06:00 19:42-20:34/52 21:04	05:10 21:07-21:19/12 21:54
2	08:52 13:40-14:29/49 16:24	08:20 16:35-16:44/9 17:16	07:22 17:30-17:44/14 18:12	07:07 19:26-19:43/17 20:10 18:58-19:09/11	05:58 19:44-20:36/52 21:05	05:09 21:07-21:20/13 21:55
3	08:52 13:41-14:30/49 16:25	08:18 16:34-16:46/12 17:18	07:20 17:29-17:46/17 18:13	07:04 19:26-19:45/19 20:12	05:56 19:45-20:37/52 21:07	05:09 21:07-21:22/15 21:56
4	08:52 13:41-14:29/48 16:26	08:17 16:34-16:48/14 17:20	07:17 17:29-17:48/19 18:15	07:02 19:26-19:46/20 20:14	05:54 19:48-20:36/48 21:09	05:08 21:07-21:22/15 21:57
5	08:51 13:42-14:30/48 16:27	08:15 16:34-16:50/16 17:22	07:15 17:29-17:50/21 18:17	06:59 19:26-19:47/21 20:16	05:52 19:54-20:36/42 21:11	05:07 21:07-21:23/16 21:58
6	08:51 13:43-14:30/47 16:29	08:13 16:34-16:53/19 17:24	07:13 17:29-17:52/23 18:19	06:57 19:28-19:46/18 20:17	05:50 19:54-20:36/42 21:13	05:06 21:07-21:24/17 21:59
7	08:50 13:43-14:30/47 16:30	08:11 16:34-16:55/21 17:26	07:10 17:29-17:54/25 18:21	06:55 19:28-19:44/16 20:19	05:48 19:54-20:36/42 21:14	05:06 21:07-21:25/18 22:00
8	08:50 13:45-14:30/45 16:31	08:09 16:34-16:57/23 17:28	07:08 17:30-17:56/26 18:23	06:52 19:30-19:41/11 20:21	05:46 19:55-20:36/41 21:16	05:05 21:07-21:26/19 22:01
9	08:49 13:45-14:30/45 16:33	08:07 16:35-16:58/23 17:30	07:05 17:30-17:58/28 18:25	06:50 19:51-19:56/5 20:23	05:44 19:55-20:36/41 21:18	05:04 21:07-21:26/19 22:02
10	08:49 13:46-14:30/44 16:34	08:05 16:36-16:58/22 17:32	07:03 17:31-18:00/29 18:27	06:47 19:48-19:57/9 20:25	05:42 19:55-20:35/40 21:20	05:04 21:08-21:27/19 22:03
11	08:48 13:47-14:30/43 16:36	08:03 16:36-16:57/21 17:34	07:01 17:34-18:02/28 18:29	06:45 19:46-19:59/13 20:27	05:40 19:55-20:34/39 21:21	05:03 21:07-21:28/21 22:04
12	08:47 13:48-14:29/41 16:37	08:01 16:38-16:56/18 17:36	06:58 17:36-18:04/28 18:31	06:43 19:44-20:01/17 20:29	05:39 19:56-20:34/38 21:23	05:03 21:07-21:29/22 22:05
13	08:46 13:49-14:29/40 16:39	07:59 16:39-16:55/16 17:38	06:56 17:41-18:06/25 18:33	06:40 19:42-20:02/20 20:30	05:37 19:56-20:34/38 21:25	05:03 21:08-21:29/21 22:05
14	08:46 13:50-14:29/39 16:41	07:57 16:40-16:52/12 17:40	06:53 17:41-18:08/27 18:35	06:38 19:41-20:04/23 20:32	05:35 19:57-20:34/37 21:27	05:02 21:08-21:30/22 22:06
15	08:45 13:52-14:29/37 16:42	07:55 16:44-16:49/5 17:42	06:51 17:42-18:10/28 18:36	06:35 19:40-20:06/26 20:34	05:33 19:57-20:33/36 21:28	05:02 21:09-21:31/22 22:07
16	08:44 13:53-14:28/35 16:44	07:53 17:44	06:48 17:43-18:11/28 18:38	06:33 19:39-20:07/28 20:36	05:32 19:58-20:32/34 21:30	05:02 21:09-21:31/22 22:07
17	08:43 13:55-14:28/33 16:46	07:51 17:46	06:46 17:45-18:14/29 18:40	06:31 19:38-20:09/31 20:38	05:30 19:58-20:31/33 21:32	05:02 21:09-21:32/23 22:08
18	08:42 13:56-14:26/30 16:47	07:49 17:48	06:44 17:47-18:15/28 18:42	06:29 19:38-20:11/33 20:40	05:28 20:00-20:31/31 21:33	05:02 21:09-21:32/23 22:08
19	08:40 13:58-14:25/27 16:49	07:47 17:50	06:41 17:52-18:18/26 18:44	06:26 19:38-20:13/35 20:41	05:27 20:00-20:30/30 21:35	05:02 21:09-21:33/24 22:08
20	08:39 14:01-14:24/23 16:51	07:45 17:52	06:39 17:50-18:19/29 18:46	06:24 19:37-20:14/37 20:43	05:25 20:01-20:29/28 21:37	05:02 21:10-21:33/23 22:09
21	08:38 14:03-14:22/19 16:53	07:42 17:54	06:36 17:50-18:21/31 18:48	06:22 19:37-20:16/39 20:45	05:24 20:03-20:28/25 21:38	05:02 21:10-21:33/23 22:09
22	08:37 14:07-14:19/12 16:55	07:40 17:56	06:34 17:49-18:23/34 18:50	06:19 19:37-20:18/41 20:47	05:22 20:03-20:27/24 21:40	05:02 21:10-21:33/23 22:09
23	08:35 16:56	07:38 17:58	06:31 17:50-18:25/35 18:51	06:17 19:37-20:20/43 20:49	05:21 20:05-20:26/21 21:41	05:02 21:10-21:34/24 22:09
24	08:34 16:58	07:36 18:00	06:29 17:49-18:25/36 18:53	06:15 19:37-20:22/45 20:51	05:20 20:07-20:24/17 21:43	05:03 21:10-21:33/23 22:09
25	08:33 17:00	07:33 18:02	06:26 17:49-18:24/35 18:55	06:13 19:37-20:24/47 20:53	05:18 21:10-21:11/1 21:44 20:09-20:23/14	05:03 21:10-21:33/23 22:09
26	08:31 17:02	07:31 17:35-17:36/1 18:04	06:24 17:49-18:22/33 18:57	06:11 19:38-20:25/47 20:54	05:17 21:09-21:12/3 21:46 20:12-20:20/8	05:04 21:11-21:34/23 22:09
27	08:30 17:04	07:29 17:34-17:38/4 18:06	06:21 18:31-18:32/1 18:59 17:50-18:22/32	06:08 19:38-20:27/49 20:56	05:16 21:09-21:13/4 21:47	05:04 21:11-21:33/22 22:09
28	08:28 17:06	07:27 17:32-17:40/8 18:08	06:19 18:30-18:34/4 19:01 17:51-18:21/30	06:06 19:39-20:29/50 20:58	05:15 21:08-21:15/7 21:48	05:05 21:11-21:33/22 22:09
29	08:27 17:08		07:16 19:28-19:36/8 20:03 18:51-19:19/28	06:04 19:40-20:31/51 21:00	05:13 21:08-21:16/8 21:50	05:05 21:11-21:33/22 22:09
30	08:25 17:10		07:14 19:28-19:38/10 20:04 18:52-19:18/26	06:02 19:41-20:32/51 21:02	05:12 21:08-21:17/9 21:51	05:06 21:12-21:33/21 22:09
31	08:24 16:36-16:40/4 17:12		07:12 19:26-19:39/13 20:06 18:53-19:16/23		05:11 21:07-21:18/11 21:52	
Potential sun hours	250	273	367	420	494	510
Sum of minutes with flicker	854	250	868	906	948	612

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar per WTG

Calculation: Real Case Analysis **WTG:** 7 - T07

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July	August	September	October	November	December
1	05:06 21:12-21:33/21 22:08	05:46 20:06-20:45/39 21:33	06:41 19:45-19:58/13 20:26	07:34 18:20-18:44/24 19:13	07:32 16:05-16:27/22 17:02	08:27 13:29-14:12/43 16:18
2	05:07 21:12-21:32/20 22:08	05:48 20:05-20:45/40 21:31	06:43 19:47-19:56/9 20:24	07:36 18:13-18:41/28 19:10	07:34 16:04-16:28/24 17:00	08:29 13:29-14:13/44 16:17
3	05:08 21:12-21:32/20 22:08	05:50 20:05-20:45/40 21:29	06:44 19:48-19:53/5 20:22	07:38 18:10-18:39/29 19:08	07:36 16:04-16:26/22 16:58	08:30 13:29-14:13/44 16:16
4	05:09 21:13-21:32/19 22:07	05:51 20:05-20:46/41 21:28	06:46 19:27-19:38/11 20:19	07:40 18:08-18:37/29 19:05	07:38 16:04-16:24/20 16:56	08:32 13:29-14:14/45 16:15
5	05:10 21:13-21:31/18 22:07	05:53 20:04-20:46/42 21:26	06:48 19:25-19:41/16 20:17	07:41 18:07-18:34/27 19:03	07:40 16:04-16:22/18 16:54	08:33 13:29-14:16/47 16:15
6	05:11 21:13-21:30/17 22:06	05:55 20:04-20:46/42 21:24	06:50 19:23-19:41/18 20:14	07:43 18:06-18:32/26 19:00	07:42 16:04-16:20/16 16:52	08:35 13:29-14:16/47 16:14
7	05:12 21:13-21:29/16 22:05	05:57 20:03-20:45/42 21:22	06:51 19:22-19:42/20 20:12	07:45 18:04-18:29/25 18:58	07:44 16:04-16:18/14 16:50	08:36 13:29-14:16/47 16:14
8	05:13 21:13-21:29/16 22:05	05:58 20:04-20:46/42 21:20	06:53 19:21-19:41/20 20:09	07:47 18:04-18:26/22 18:56	07:46 16:05-16:17/12 16:49	08:37 13:29-14:17/48 16:13
9	05:14 21:14-21:28/14 22:04	06:00 19:57-20:46/49 21:18	06:55 19:20-19:39/19 20:07	07:49 18:04-18:24/20 18:53	07:48 16:06-16:15/9 16:47	08:39 13:29-14:18/49 16:13
10	05:15 21:14-21:28/14 22:03	06:02 19:53-20:45/52 21:16	06:57 19:19-19:36/17 20:04 18:52-19:02/10	07:51 18:03-18:21/18 18:51	07:50 16:06-16:13/7 16:45	08:40 13:29-14:18/49 16:13
11	05:16 21:14-21:27/13 22:02	06:04 19:52-20:44/52 21:14	06:58 19:19-19:34/15 20:02 18:48-19:05/17	07:52 18:04-18:19/15 18:48	07:52 16:07-16:11/4 16:43	08:41 13:30-14:20/50 16:13
12	05:17 21:15-21:27/12 22:01	06:05 19:50-20:42/52 21:12	07:00 19:19-19:32/13 20:00 18:46-19:08/22	07:54 18:04-18:17/13 18:46	07:54 16:08-16:09/1 16:42	08:42 13:30-14:20/50 16:12
13	05:18 21:16-21:26/10 22:00	06:07 19:48-20:39/51 21:10	07:02 19:18-19:29/11 19:57 18:43-19:08/25	07:56 18:04-18:14/10 18:44	07:56 16:40	08:43 13:30-14:20/50 16:12
14	05:19 21:16-21:25/9 21:59	06:09 19:47-20:38/51 21:07	07:04 19:18-19:26/8 19:55 18:42-19:09/27	07:58 18:05-18:12/7 18:41	07:58 16:38	08:44 13:31-14:21/50 16:12
15	05:21 21:17-21:24/7 21:58	06:11 19:45-20:35/50 21:05	07:06 19:19-19:24/5 19:52 18:40-19:10/30	08:00 18:06-18:10/4 18:39	07:59 16:37	08:45 13:31-14:22/51 16:12
16	05:22 21:17-21:22/5 21:57	06:12 19:45-20:33/48 21:03	07:07 19:20-19:22/2 19:50 18:39-19:11/32	08:02 18:37	08:01 16:35	08:46 13:32-14:22/50 16:12
17	05:23 21:17-21:21/4 21:56 20:24-20:26/2	06:14 19:44-20:32/48 21:01	07:09 18:38-19:10/32 19:47	08:04 18:34	08:03 16:34	08:47 13:32-14:23/51 16:12
18	05:25 21:19-21:21/2 21:54 20:20-20:31/11	06:16 19:43-20:29/46 20:59	07:11 18:37-19:11/34 19:45	08:05 18:32	08:05 16:32	08:48 13:32-14:23/51 16:13
19	05:26 20:18-20:33/15 21:53	06:18 19:43-20:27/44 20:56	07:13 18:36-19:12/36 19:42	08:07 18:30	08:07 16:31	08:48 13:32-14:24/52 16:13
20	05:28 20:16-20:34/18 21:52	06:19 19:42-20:25/43 20:54	07:14 18:36-19:12/36 19:40	08:09 18:28	08:09 13:42-13:54/12 16:29	08:49 13:33-14:24/51 16:13
21	05:29 20:15-20:37/22 21:51	06:21 19:41-20:22/41 20:52	07:16 18:35-19:09/34 19:37	08:11 18:25	08:11 13:39-13:58/19 16:28	08:50 13:33-14:24/51 16:14
22	05:30 20:13-20:37/24 21:49	06:23 19:41-20:21/40 20:50	07:18 18:35-19:06/31 19:35	08:13 18:23	08:12 13:37-14:00/23 16:27	08:50 13:34-14:25/51 16:14
23	05:32 20:12-20:38/26 21:48	06:25 19:41-20:19/38 20:47	07:20 18:35-19:04/29 19:32	08:15 18:21	08:14 13:35-14:02/27 16:26	08:51 13:34-14:25/51 16:15
24	05:34 20:11-20:40/29 21:46	06:27 19:41-20:17/36 20:45	07:21 18:35-19:02/27 19:30	08:17 18:19	08:16 13:34-14:04/30 16:24	08:51 13:34-14:25/51 16:15
25	05:35 20:10-20:40/30 21:45	06:28 19:41-20:14/33 20:43	07:23 18:31-18:59/28 19:27	07:19 17:17	08:18 13:32-14:05/33 16:23	08:51 13:36-14:27/51 16:16
26	05:37 20:10-20:42/32 21:43	06:30 19:41-20:12/31 20:41	07:25 18:27-18:56/29 19:25	07:21 17:14	08:19 13:31-14:06/35 16:22	08:52 13:36-14:27/51 16:17
27	05:38 20:08-20:42/34 21:42	06:32 19:42-20:10/28 20:38	07:27 18:25-18:54/29 19:22	07:23 16:12-16:20/8 17:12	08:21 13:31-14:08/37 16:21	08:52 13:36-14:27/51 16:17
28	05:40 20:08-20:43/35 21:40	06:34 19:41-20:07/26 20:36	07:29 18:24-18:52/28 19:20	07:25 16:09-16:22/13 17:10	08:23 13:30-14:09/39 16:20	08:52 13:37-14:27/50 16:18
29	05:41 20:07-20:43/36 21:38	06:35 19:42-20:05/23 20:33	07:30 18:22-18:49/27 19:17	07:27 16:07-16:24/17 17:08	08:24 13:30-14:10/40 16:19	08:52 13:37-14:28/51 16:19
30	05:43 20:07-20:44/37 21:37	06:37 19:43-20:03/20 20:31	07:32 18:20-18:47/27 19:15	07:29 16:07-16:26/19 17:06	08:26 13:29-14:11/42 16:18	08:52 13:38-14:28/50 16:20
31	05:45 20:06-20:44/38 21:35	06:39 19:43-20:00/17 20:29		07:30 16:06-16:27/21 17:04		08:52 13:39-14:29/50 16:21
Potential sun hours	512	460	382	328	259	233
Sum of minutes with flicker	626	1247	792	375	506	1527

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar per WTG

Calculation: Real Case Analysis **WTG:** 8 - T08

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June
1	08:52 14:52-15:44/52 13:55-14:24/29 16:22 14:27-14:47/20 12:27-12:50/23	08:22 17:14	07:24 17:18-17:42/24 18:09	07:09 19:25-19:41/16 20:08	06:00 06:27-07:08/41 21:03	05:10 05:47-06:10/23 21:54
2	08:52 14:53-15:45/52 13:56-14:25/29 16:23 14:28-14:47/19 12:28-12:50/22	08:20 17:16	07:22 17:19-17:42/23 18:11	07:07 19:24-19:43/19 20:10	05:58 06:27-07:04/37 21:05	05:09 05:47-06:09/22 21:55
3	08:52 14:55-15:47/52 13:58-14:25/27 16:24 14:30-14:47/17 12:30-12:49/19	08:18 17:18	07:19 17:22-17:40/18 18:13	07:04 19:24-19:45/21 20:12	05:56 06:27-07:01/34 21:07	05:08 05:48-06:09/21 21:56
4	08:52 14:55-15:48/53 13:58-14:24/26 16:26 14:31-14:46/15 12:32-12:48/16	08:17 17:20	07:17 17:28-17:38/10 18:15	07:02 19:24-19:46/22 20:14	05:54 06:27-07:00/33 21:09	05:07 05:49-06:09/20 21:57
5	08:51 14:56-15:50/54 14:00-14:24/24 16:27 14:33-14:45/12 12:35-12:47/12	08:15 17:22	07:15 18:17	06:59 19:25-19:46/21 20:15	05:52 06:27-06:59/32 21:11	05:07 05:49-06:09/20 21:58
6	08:51 14:57-15:51/54 14:01-14:23/22 16:28 14:35-14:44/9 12:40-12:42/2	08:13 17:24	07:12 18:19	06:57 19:26-19:45/19 20:17	05:50 06:28-06:58/30 21:13	05:06 05:50-06:09/19 21:59
7	08:50 15:23-15:52/29 14:02-14:22/20 16:30 14:57-15:22/25	08:11 17:26	07:10 18:21	06:54 19:27-19:42/15 20:19	05:48 06:28-06:57/29 21:14	05:05 05:50-06:08/18 22:00
8	08:50 15:24-15:54/30 14:05-14:22/17 16:31 14:59-15:23/24	08:09 17:28	07:08 18:23	06:52 19:29-19:40/11 20:21	05:46 06:29-06:57/28 21:16	05:05 05:51-06:08/17 22:01
9	08:49 15:25-15:56/31 14:07-14:21/14 16:32 15:00-15:23/23	08:07 17:30	07:05 18:25	06:50 20:23	05:44 06:30-06:56/26 21:18	05:04 05:51-06:08/17 22:02
10	08:49 15:25-15:57/32 14:10-14:18/8 16:34 15:01-15:22/21	08:05 17:32	07:03 18:27	06:47 07:11-07:14/3 20:25	05:42 06:31-06:54/23 21:20	05:04 05:52-06:08/16 22:03
11	08:48 15:25-15:59/34 16:35 15:02-15:21/19	08:03 17:34	07:00 18:29	06:45 07:09-07:16/7 20:27	05:40 06:32-06:53/21 21:21	05:03 05:52-06:07/15 22:04
12	08:47 15:26-16:01/35 16:37 15:04-15:21/17	08:01 17:36	06:58 18:31	06:42 07:07-07:17/10 20:28	05:38 06:34-06:52/18 21:23	05:03 05:53-06:07/14 22:04
13	08:46 15:26-16:02/36 16:39 15:05-15:20/15	07:59 17:38	06:56 18:32	06:40 07:04-07:18/14 20:30	05:37 06:04-06:06/2 21:25 06:35-06:49/14	05:02 05:54-06:07/13 22:05
14	08:45 15:27-16:04/37 16:40 15:08-15:18/10	07:57 17:09-17:10/1 17:40	06:53 18:34	06:38 07:02-07:19/17 20:32	05:35 06:03-06:07/4 21:27 06:39-06:47/8	05:02 05:55-06:07/12 22:06
15	08:45 15:27-16:06/39 16:42 15:12-15:15/3	07:55 17:08-17:12/4 17:42	06:51 18:36	06:35 07:00-07:19/19 20:34	05:33 06:01-06:07/6 21:28	05:02 05:56-06:07/11 22:06
16	08:44 15:28-16:08/40 16:44	07:53 17:08-17:15/7 17:44	06:48 18:38	06:33 06:57-07:19/22 20:36	05:31 06:00-06:09/9 21:30	05:02 05:55-06:06/11 22:07
17	08:43 15:28-16:09/41 16:45	07:51 17:07-17:17/10 17:46	06:46 18:40	06:31 06:55-07:19/24 20:38	05:30 05:58-06:09/11 21:32	05:02 05:56-06:05/9 22:07
18	08:41 15:29-16:12/43 16:47	07:49 17:06-17:18/12 17:48	06:43 18:42	06:28 06:53-07:20/27 20:40	05:28 05:57-06:09/12 21:33	05:02 05:57-06:06/9 22:08
19	08:40 15:30-16:14/44 16:49	07:47 17:07-17:21/14 17:50	06:41 18:44	06:26 06:51-07:20/29 20:41	05:27 05:55-06:09/14 21:35	05:02 05:58-06:06/8 22:08
20	08:39 15:30-16:15/45 16:51	07:44 17:07-17:23/16 17:52	06:38 18:46	06:24 06:48-07:19/31 20:43	05:25 05:54-06:10/16 21:36	05:02 05:58-06:06/8 22:09
21	08:38 15:32-16:18/46 16:52	07:42 17:07-17:26/19 17:54	06:36 18:48	06:21 06:46-07:19/33 20:45	05:24 05:53-06:10/17 21:38	05:02 05:58-06:06/8 22:09
22	08:37 15:33-16:20/47 16:54	07:40 17:07-17:27/20 17:56	06:34 18:49	06:19 06:44-07:18/34 20:47	05:22 05:51-06:10/19 21:40	05:02 05:58-06:06/8 22:09
23	08:35 15:34-16:22/48 16:56	07:38 17:08-17:29/21 17:58	06:31 18:51	06:17 06:42-07:18/36 20:49	05:21 05:50-06:10/20 21:41	05:02 05:58-06:06/8 22:09
24	08:34 15:36-16:23/47 16:58	07:36 17:10-17:32/22 18:00	06:29 18:53	06:15 06:40-07:18/38 20:51	05:19 05:49-06:10/21 21:43	05:03 05:59-06:07/8 22:09
25	08:33 15:37-16:23/46 17:00	07:33 17:10-17:33/23 18:02	06:26 18:55	06:13 06:38-07:17/39 20:52	05:18 05:48-06:10/22 21:44	05:03 05:58-06:07/9 22:09
26	08:31 16:05-16:22/17 17:02 15:39-16:04/25	07:31 17:13-17:36/23 18:04	06:24 18:57	06:10 06:36-07:16/40 20:54	05:17 05:47-06:11/24 21:46	05:03 05:59-06:08/9 22:09
27	08:30 16:08-16:22/14 17:04 15:43-16:02/19	07:29 17:17-17:38/21 18:06	06:21 18:29-18:32/3 18:59	06:08 06:34-07:15/41 20:56	05:16 05:46-06:11/25 21:47	05:04 05:58-06:09/11 22:09
28	08:28 16:10-16:20/10 17:06 15:50-15:55/5	07:26 17:17-17:40/23 18:07	06:19 18:27-18:33/6 19:01	06:06 06:31-07:13/42 20:58	05:14 05:46-06:11/25 21:48	05:04 05:58-06:10/12 22:09
29	08:27 17:08		07:16 19:26-19:36/10 20:02	06:04 06:29-07:11/42 21:00	05:13 05:46-06:10/24 21:50	05:05 05:57-06:10/13 22:09
30	08:25 17:10		07:14 19:25-19:37/12 20:04	06:02 06:27-07:09/42 21:02	05:12 05:46-06:10/24 21:51	05:05 05:58-06:11/13 22:09
31	08:23 17:12		07:11 19:25-19:39/14 20:06		05:11 05:47-06:10/23 21:52	
Potential sun hours	250	273	367	420	494	510
Sum of minutes with flicker	1716	236	120	734	692	402

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com
Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar per WTG

Calculation: Real Case Analysis **WTG:** 8 - T08

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July	August	September	October	November	December
1	05:06 05:57-06:11/14 22:08	05:46 06:43-07:03/20 21:33	06:41 07:08-07:15/7 20:26	07:34 19:12	07:32 17:02	08:27 15:07-15:41/34 16:17 14:44-15:03/19
2	05:07 05:57-06:12/15 22:08	05:48 06:41-07:03/22 21:31	06:42 07:10-07:13/3 20:24	07:36 19:10	07:34 17:00	08:29 15:08-15:40/32 13:54-14:01/7 16:17 14:44-15:05/21
3	05:08 05:57-06:13/16 22:07	05:50 06:41-07:05/24 21:29	06:44 20:21	07:38 19:07	07:36 16:58	08:30 15:08-15:39/31 13:50-14:04/14 16:16 14:43-15:06/23
4	05:09 05:57-06:13/16 22:07	05:51 06:39-07:06/27 21:27	06:46 19:26-19:37/11 20:19	07:39 19:05	07:38 16:56	08:32 15:08-15:39/31 13:49-14:06/17 16:15 14:43-15:07/24
5	05:09 05:57-06:14/17 22:06	05:53 06:39-07:07/28 21:26	06:48 19:24-19:39/15 20:17	07:41 19:03	07:40 16:54	08:33 15:08-15:37/29 13:48-14:08/20 16:15 14:42-15:07/25
6	05:10 05:56-06:14/18 22:06	05:55 06:38-07:08/30 21:24	06:49 19:21-19:40/19 20:14	07:43 19:00	07:42 16:52	08:35 14:43-15:37/54 13:47-14:09/22 16:14 14:21-14:30/9
7	05:11 05:55-06:15/20 22:05	05:56 06:37-07:08/31 21:22	06:51 19:20-19:41/21 20:12	07:45 18:58	07:44 16:50	08:36 14:42-15:36/54 13:46-14:10/24 16:14 14:19-14:31/12 12:21-12:32/11
8	05:12 05:55-06:15/20 22:04	05:58 06:36-07:09/33 21:20	06:53 19:19-19:41/22 20:09	07:47 18:55	07:46 16:48	08:37 14:43-15:36/53 13:46-14:12/26 16:13 14:19-14:34/15 12:20-12:36/16
9	05:13 05:55-06:16/21 22:04	06:00 06:36-07:09/33 21:18	06:55 19:18-19:38/20 20:07	07:49 18:04-18:10/6 18:53	07:48 16:47	08:39 14:43-15:35/52 13:46-14:13/27 16:13 14:18-14:35/17 12:19-12:37/18
10	05:14 05:55-06:16/21 22:03	06:02 06:35-07:10/35 21:16	06:56 19:17-19:36/19 20:04	07:50 18:01-18:13/12 18:51	07:50 16:45	08:40 14:43-15:35/52 13:45-14:14/29 16:13 14:17-14:36/19 12:18-12:39/21
11	05:16 05:55-06:17/22 22:02	06:03 06:35-07:14/39 21:14	06:58 19:17-19:34/17 20:02	07:52 17:55-18:15/20 18:48	07:52 16:43	08:41 14:44-15:35/51 13:46-14:15/29 16:12 14:18-14:38/20 12:18-12:41/23
12	05:17 05:54-06:17/23 22:01	06:05 06:34-07:16/42 21:11	07:00 19:17-19:32/15 19:59	07:54 17:53-18:16/23 18:46	07:54 16:41	08:42 14:44-15:35/51 13:46-14:16/30 16:12 14:18-14:39/21 12:17-12:42/25
13	05:18 05:55-06:19/24 22:00	06:07 06:36-07:18/42 21:09	07:02 19:16-19:29/13 19:57	07:56 17:51-18:14/23 18:43	07:56 16:40	08:43 14:44-15:34/50 12:17-12:43/26 16:12 13:46-14:39/53
14	05:19 05:55-06:19/24 21:59	06:09 06:38-07:20/42 21:07	07:04 19:17-19:26/9 19:54	07:58 17:50-18:12/22 18:41	07:57 15:42-15:52/10 16:38 15:22-15:27/5	08:44 14:44-15:34/50 12:17-12:44/27 16:12 13:46-14:40/54
15	05:20 05:54-06:19/25 21:58	06:10 06:39-07:21/42 21:05	07:05 19:17-19:24/7 19:52	08:00 17:49-18:09/20 18:39	07:59 15:39-15:54/15 16:37 15:15-15:34/19	08:45 14:44-15:34/50 12:17-12:45/28 16:12 13:46-14:41/55
16	05:22 05:54-06:19/25 21:57	06:12 06:41-07:22/41 21:03	07:07 19:17-19:21/4 19:49	08:02 17:44-18:07/23 18:36	08:01 15:38-15:55/17 16:35 15:12-15:37/25	08:46 14:45-15:34/49 12:17-12:46/29 16:12 13:46-14:42/56
17	05:23 05:55-06:19/24 21:56	06:14 06:43-07:23/40 21:01	07:09 19:18-19:19/1 19:47	08:03 17:42-18:05/23 18:34	08:03 15:10-15:56/46 16:33	08:47 14:45-15:35/50 12:17-12:47/30 16:12 13:47-14:43/56
18	05:24 05:57-06:20/23 21:54	06:16 06:44-07:23/39 20:59	07:11 19:45	08:05 17:40-18:02/22 18:32	08:05 15:09-15:57/48 16:32	08:48 14:45-15:34/49 12:17-12:47/30 16:12 13:46-14:43/57
19	05:26 05:58-06:20/22 21:53	06:17 06:46-07:23/37 20:56	07:12 19:42	08:07 17:39-18:00/21 18:30	08:07 15:09-15:57/48 16:31	08:48 14:46-15:34/48 12:17-12:48/31 16:13 13:47-14:43/56
20	05:27 05:59-06:20/21 21:52	06:19 06:48-07:24/36 20:54	07:14 19:40	08:09 17:38-17:58/20 18:27	08:09 15:08-15:55/47 16:29	08:49 14:47-15:35/48 12:18-12:49/31 16:13 13:48-14:44/56
21	05:29 06:01-06:20/19 21:50	06:21 06:49-07:23/34 20:52	07:16 19:37	08:11 17:38-17:55/17 18:25	08:10 15:08-15:54/46 16:28	08:50 14:46-15:35/49 12:18-12:49/31 16:13 13:48-14:44/56
22	05:30 06:02-06:20/18 21:49	06:23 06:51-07:23/32 20:50	07:18 19:35	08:13 17:37-17:53/16 18:23	08:12 15:07-15:53/46 16:27	08:50 14:47-15:36/49 12:19-12:50/31 16:14 13:48-14:45/57
23	05:32 06:03-06:20/17 21:48	06:25 06:53-07:24/31 20:47	07:20 19:32	08:15 17:37-17:51/14 18:21	08:14 15:06-15:50/44 16:25	08:51 14:48-15:36/48 12:19-12:50/31 16:14 13:49-14:45/56
24	05:33 06:05-06:20/15 21:46	06:26 06:54-07:23/29 20:45	07:21 19:30	08:17 17:37-17:48/11 18:18	08:16 15:06-15:49/43 16:24	08:51 14:48-15:36/48 12:19-12:50/31 16:15 13:49-14:45/56
25	05:35 06:06-06:19/13 21:45	06:28 06:56-07:22/26 20:43	07:23 19:27	08:19 16:37-16:46/9 17:16	08:18 15:06-15:48/42 16:23	08:51 14:49-15:38/49 12:21-12:51/30 16:16 13:50-14:47/57
26	05:36 06:08-06:20/12 21:43	06:30 06:58-07:22/24 20:40	07:25 19:25	08:21 16:37-16:43/6 17:14	08:19 15:06-15:46/40 16:22	08:52 14:49-15:38/49 12:21-12:51/30 16:16 13:51-14:47/56
27	05:38 06:09-06:19/10 21:41	06:32 07:00-07:22/22 20:38	07:27 19:22	08:23 16:38-16:41/3 17:12	08:21 15:07-15:45/38 16:21 14:52-14:53/1	08:52 14:50-15:39/49 12:22-12:51/29 16:17 13:51-14:47/56
28	05:40 06:11-06:19/8 21:40	06:33 07:01-07:20/19 20:36	07:29 19:20	08:25 16:38-16:39/1 17:10	08:23 15:07-15:44/37 16:20 14:48-14:58/10	08:52 14:50-15:40/50 12:23-12:51/28 16:18 13:52-14:47/55
29	05:41 06:12-06:17/5 21:38	06:35 07:03-07:19/16 20:33	07:30 19:17	08:26 17:08	08:24 15:07-15:44/37 16:19 14:47-15:01/14	08:52 14:51-15:41/50 12:23-12:51/28 16:19 13:52-14:47/55
30	05:43 06:14-06:17/3 21:36 06:48-06:59/11	06:37 07:05-07:18/13 20:31	07:32 19:15	08:28 17:06	08:26 15:07-15:42/35 16:18 14:45-15:02/17	08:52 14:52-15:42/50 12:25-12:51/26 16:20 13:53-14:47/54
31	05:44 06:45-07:00/15 21:35	06:39 07:06-07:16/10 20:29		08:30 17:04		08:52 14:52-15:43/51 13:54-14:25/31 16:21 14:26-14:48/22 12:26-12:51/25
Potential sun hours	512	460	382	328	259	233
Sum of minutes with flicker	557	939	203	312	730	3650

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar per WTG

Calculation: Real Case Analysis **WTG:** 9 - T09

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June
1	08:52 15:25-15:44/19 09:48-10:41/53 16:22 15:04-15:15/11	08:22 16:20-16:42/22 17:14	07:24 18:09	07:09 19:12-19:41/29 20:08	06:00 21:03	05:10 20:59-21:19/20 21:54
2	08:52 15:26-15:45/19 09:49-10:42/53 16:23 15:06-15:14/8	08:20 16:20-16:44/24 17:16	07:22 18:11	07:06 19:11-19:43/32 20:10	05:58 21:05	05:09 20:59-21:20/21 21:55
3	08:52 15:27-15:47/20 09:50-10:43/53 16:24 15:09-15:14/5	08:18 16:20-16:46/26 17:18	07:19 18:13	07:04 07:28-07:30/2 20:12 19:11-19:45/34	05:56 21:07	05:08 20:58-21:21/23 21:56
4	08:51 15:27-15:48/21 16:26 09:50-10:42/52	08:16 16:20-16:48/28 17:20	07:17 18:15	07:02 07:25-07:30/5 20:14 19:10-19:44/34	05:53 21:09	05:07 20:59-21:22/23 21:57
5	08:51 15:28-15:50/22 16:27 09:52-10:43/51	08:15 16:21-16:50/29 17:22	07:15 18:17	06:59 07:23-07:31/8 20:15 19:10-19:44/34	05:51 21:11	05:07 20:59-21:23/24 21:58
6	08:51 15:28-15:51/23 16:28 09:52-10:43/51	08:13 16:21-16:52/31 17:24	07:12 18:19	06:57 07:21-07:32/11 20:17 19:11-19:44/33	05:50 21:12	05:06 20:59-21:23/24 21:59
7	08:50 15:29-15:52/23 16:30 09:53-10:43/50	08:11 16:21-16:55/34 17:26	07:10 18:21	06:54 07:18-07:31/13 20:19 19:11-19:42/31	05:48 21:14	05:05 21:00-21:25/25 22:00
8	08:50 15:30-15:54/24 16:31 09:55-10:43/48	08:09 16:22-16:57/35 17:28	07:08 18:23	06:52 07:16-07:32/16 20:21 19:12-19:42/30	05:46 21:16	05:05 05:36-05:37/1 22:01 20:59-21:25/26
9	08:49 15:31-15:54/23 16:32 09:57-10:43/46	08:07 16:23-16:59/36 17:30	07:05 18:25	06:50 07:14-07:32/18 20:23 19:12-19:40/28	05:44 21:18	05:04 05:36-05:38/2 22:02 21:00-21:26/26
10	08:49 15:31-15:54/23 16:34 09:58-10:43/45	08:05 16:24-17:02/38 17:32	07:03 18:27	06:47 07:11-07:30/19 20:25 19:13-19:38/25	05:42 21:20	05:04 05:36-05:39/3 22:03 21:01-21:28/27
11	08:48 15:32-15:54/22 16:35 10:01-10:43/42	08:03 16:25-17:04/39 17:34	07:00 18:29	06:45 07:09-07:30/21 20:27 19:15-19:37/22	05:40 21:21	05:03 05:35-05:38/3 22:04 21:00-21:28/28
12	08:47 15:33-15:53/20 16:37 10:07-10:43/36	08:01 16:26-17:06/40 17:36	06:58 18:31	06:42 07:07-07:29/22 20:28 19:16-19:34/18	05:38 21:23	05:03 05:35-05:39/4 22:04 21:01-21:29/28
13	08:46 15:34-15:53/19 16:39 10:08-10:42/34	07:59 16:27-17:07/40 17:38	06:56 18:32	06:40 07:04-07:27/23 20:30 19:19-19:31/12	05:36 21:25	05:02 05:35-05:40/5 22:05 21:01-21:30/29
14	08:45 15:36-15:53/17 16:40 10:10-10:42/32	07:57 16:29-17:10/41 17:40	06:53 18:34	06:38 07:02-07:26/24 20:32	05:35 21:27	05:02 05:35-05:40/5 22:06 21:02-21:30/28
15	08:45 15:37-15:52/15 16:42 10:11-10:42/31	07:55 16:33-17:12/39 17:42	06:51 18:36	06:35 07:00-07:24/24 20:34	05:33 21:28	05:02 05:35-05:41/6 22:06 21:01-21:30/29
16	08:44 15:39-15:52/13 16:44 10:12-10:41/29	07:53 16:35-17:15/40 17:44	06:48 18:38	06:33 06:57-07:18/21 20:36	05:31 21:30	05:02 05:34-05:40/6 22:07 21:01-21:31/30
17	08:43 15:40-15:50/10 16:45 10:14-10:41/27	07:51 16:36-17:17/41 17:46	06:46 18:40	06:31 06:55-07:17/22 20:38	05:30 21:32	05:02 05:34-05:40/6 22:07 21:02-21:31/29
18	08:41 15:45-15:46/1 16:47 10:15-10:39/24	07:49 16:36-17:18/42 17:48	06:43 18:42	06:28 06:55-07:16/21 20:39	05:28 21:33	05:02 05:34-05:41/7 22:08 21:02-21:31/29
19	08:40 10:17-10:38/21 16:49	07:47 16:38-17:21/43 17:50	06:41 18:44	06:26 06:56-07:15/19 20:41	05:27 21:35	05:02 05:35-05:42/7 22:08 21:02-21:32/30
20	08:39 10:19-10:37/18 16:51	07:44 16:40-17:23/43 17:52	06:38 18:46	06:24 06:56-07:13/17 20:43	05:25 21:02-21:04/2 21:36	05:02 05:35-05:42/7 22:09 21:03-21:33/30
21	08:38 10:22-10:34/12 16:52	07:42 16:44-17:26/42 17:54	06:36 18:48	06:21 06:58-07:11/13 20:45	05:24 21:01-21:04/3 21:38	05:02 05:35-05:42/7 22:09 21:03-21:33/30
22	08:37 16:54	07:40 17:11-17:27/16 17:56 16:51-17:09/18	06:33 18:49	06:19 07:00-07:09/9 20:47	05:22 21:00-21:06/6 21:40	05:02 05:35-05:42/7 22:09 21:03-21:33/30
23	08:35 16:56	07:38 17:12-17:29/17 17:58 16:53-17:07/14	06:31 18:51	06:17 20:49	05:21 21:00-21:08/8 21:41	05:02 05:35-05:42/7 22:09 21:03-21:33/30
24	08:34 16:23-16:24/1 16:58	07:36 17:13-17:32/19 18:00 16:58-17:03/5	06:29 18:21-18:26/5 18:53	06:15 20:51	05:19 21:00-21:09/9 21:43	05:03 05:36-05:43/7 22:09 21:04-21:34/30
25	08:33 16:23-16:26/3 17:00	07:33 17:13-17:32/19 18:02	06:26 18:19-18:29/10 18:55	06:12 20:52	05:18 21:00-21:11/11 21:44	05:03 05:36-05:43/7 22:09 21:04-21:33/29
26	08:31 16:22-16:28/6 17:02	07:31 17:15-17:31/16 18:04	06:24 18:17-18:30/13 18:57	06:10 20:54	05:17 20:58-21:11/13 21:45	05:03 05:37-05:43/6 22:09 21:04-21:33/29
27	08:30 16:22-16:31/9 17:04	07:29 17:16-17:28/12 18:05	06:21 18:16-18:32/16 18:59	06:08 20:56	05:16 20:58-21:12/14 21:47	05:04 05:37-05:43/6 22:09 21:04-21:33/29
28	08:28 16:21-16:33/12 17:06	07:26 17:22-17:24/2 18:07	06:19 18:14-18:33/19 19:01	06:06 20:58	05:14 20:58-21:14/16 21:48	05:04 05:38-05:43/5 22:09 21:04-21:33/29
29	08:27 16:21-16:35/14 17:08		07:16 19:13-19:36/23 20:02	06:04 21:00	05:13 20:58-21:15/17 21:50	05:05 05:38-05:43/5 22:09 21:04-21:33/29
30	08:25 16:20-16:37/17 17:10		07:14 19:12-19:37/25 20:04	06:02 21:02	05:12 20:58-21:16/18 21:51	05:05 05:39-05:43/4 22:09 21:05-21:33/28
31	08:23 16:21-16:40/19 17:12		07:11 19:12-19:39/27 20:06		05:11 20:59-21:18/19 21:52	
Potential sun hours	250	273	367	420	494	510
Sum of minutes with flicker	1247	891	138	690	136	945

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar per WTG

Calculation: Real Case Analysis **WTG:** 9 - T09

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July	August	September	October	November	December
1	05:06 05:39-05:43/4	05:46	06:41 07:08-07:29/21	07:34	07:32 15:53-16:31/38	08:27 15:14-15:36/22
	22:08 21:04-21:32/28	21:33	20:26 19:14-19:36/22	19:12	17:02	16:17 09:44-10:25/41
2	05:07 05:40-05:43/3	05:48	06:42 07:10-07:29/19	07:36	07:34 15:52-16:28/36	08:29 15:15-15:37/22
	22:08 21:05-21:32/27	21:31	20:24 19:11-19:36/25	19:10	17:00	16:17 09:42-10:26/44
3	05:08 05:41-05:43/2	05:49	06:44 07:11-07:29/18	07:38	07:36 15:52-16:26/34	08:30 15:14-15:37/23
	22:07 21:05-21:32/27	21:29	20:21 19:10-19:38/28	19:07	16:58	16:16 09:40-10:26/46
4	05:08 05:42-05:43/1	05:51	06:46 07:13-07:29/16	07:39	07:38 15:51-16:24/33	08:32 15:14-15:38/24
	22:07 21:06-21:32/26	21:27	20:19 19:09-19:39/30	19:05	16:56	16:15 09:39-10:27/48
5	05:09 21:05-21:30/25	05:53	06:48 07:15-07:28/13	07:41	07:40 15:51-16:22/31	08:33 15:14-15:37/23
	22:06	21:25	20:17 19:08-19:39/31	19:03	16:54	16:15 09:39-10:29/50
6	05:10 21:05-21:30/25	05:55	06:49 07:16-07:27/11	07:43	07:42 15:50-16:20/30	08:35 15:14-15:37/23
	22:06	21:24	20:14 19:06-19:39/33	19:00	16:52	16:14 09:39-10:29/50
7	05:11 21:05-21:30/25	05:56	06:51 07:18-07:27/9	07:45	07:44 15:50-16:18/28	08:36 15:14-15:36/22
	22:05	21:22	20:12 19:06-19:39/33	18:58	16:50	16:14 09:38-10:29/51
8	05:12 21:06-21:29/23	05:58	06:53 07:20-07:26/6	07:47	07:46 15:50-16:16/26	08:37 15:15-15:36/21
	22:04	21:20	20:09 19:05-19:39/34	18:55	16:48	16:13 09:38-10:30/52
9	05:13 21:06-21:28/22	06:00	06:55 07:22-07:25/3	07:49	07:48 15:51-16:14/23	08:38 15:15-15:35/20 09:38-10:31/53
	22:04	21:18	20:07 19:04-19:38/34	18:53	16:47	16:13 14:57-15:01/4
10	05:14 21:06-21:28/22	06:02	06:56 19:04-19:36/32	07:50	07:50 15:51-16:12/21	08:40 15:15-15:35/20 09:38-10:31/53
	22:03	21:16	20:04	18:51	16:45	16:12 14:55-15:03/8
11	05:16 21:06-21:27/21	06:03	06:58 19:04-19:34/30	07:52	07:52 15:52-16:10/18	08:41 15:16-15:35/19 09:39-10:32/53
	22:02	21:14	20:02	18:48	16:43	16:12 14:55-15:06/11
12	05:17 21:06-21:26/20	06:05	07:00 19:04-19:32/28	07:54	07:54 15:52-16:09/17	08:42 15:16-15:35/19 09:39-10:33/54
	22:01	21:11	19:59	18:46	16:41	16:12 14:54-15:07/13
13	05:18 21:06-21:25/19	06:07	07:02 19:03-19:29/26	07:56	07:55 15:52-16:07/15	08:43 15:16-15:34/18 09:39-10:33/54
	22:00	21:09	19:57	18:43	16:40	16:12 14:53-15:08/15
14	05:19 21:08-21:25/17	06:09	07:04 19:04-19:26/22	07:58 17:52-18:00/8	07:57 15:53-16:05/12	08:44 15:17-15:34/17 09:39-10:34/55
	21:59	21:07	19:54	18:41	16:38	16:12 14:53-15:09/16
15	05:20 21:08-21:24/16	06:10	07:05 19:04-19:24/20	08:00 17:49-18:02/13	07:59 15:54-16:03/9	08:45 15:17-15:34/17 09:39-10:34/55
	21:58	21:05	19:52	18:39	16:37	16:12 14:53-15:10/17
16	05:22 21:08-21:23/15	06:12	07:07 19:04-19:21/17	08:02 17:47-18:04/17	08:01 15:55-16:01/6	08:46 15:18-15:34/16 09:40-10:35/55
	21:57	21:03	19:49	18:36	16:35	16:12 14:53-15:10/17
17	05:23 21:08-21:21/13	06:14	07:09 19:05-19:19/14	08:03 17:45-18:05/20	08:03 15:56-15:59/3	08:47 15:17-15:34/17 09:40-10:36/56
	21:56	21:01	19:47	18:34	16:33	16:12 14:53-15:11/18
18	05:24 21:08-21:20/12	06:16	07:11 19:07-19:16/9	08:05 17:44-18:02/18	08:05 15:57-15:58/1	08:47 15:18-15:34/16 09:40-10:35/55
	21:54	20:59	19:45	18:32 17:27-17:36/9	16:32	16:12 14:52-15:11/19
19	05:26 21:09-21:20/11	06:17	07:12 19:08-19:14/6	08:07 17:43-18:00/17	08:07	08:48 15:19-15:34/15 09:41-10:36/55
	21:53	20:56	19:42	18:30 17:24-17:39/15	16:31	16:13 14:53-15:12/19
20	05:27 21:09-21:18/9	06:19	07:14 19:10-19:11/1	08:09 17:43-17:58/15	08:09	08:49 15:20-15:35/15 09:41-10:37/56
	21:52	20:54	19:40	18:27 17:21-17:41/20	16:29	16:13 14:54-15:13/19
21	05:29 21:10-21:17/7	06:21 07:04-07:14/10	07:16	08:11 17:13-17:55/42	08:10 09:58-10:10/12	08:49 15:20-15:35/15 09:41-10:37/56
	21:50	20:52	19:37	18:25	16:28	16:13 14:53-15:13/20
22	05:30 21:11-21:16/5	06:23 07:02-07:16/14	07:18	08:13 17:10-17:53/43	08:12 09:55-10:13/18	08:50 15:21-15:36/15 09:42-10:38/56
	21:49	20:50	19:35	18:23	16:27	16:14 14:54-15:14/20
23	05:32 21:12-21:14/2	06:25 07:01-07:18/17	07:20	08:15 17:08-17:51/43	08:14 09:54-10:15/21	08:51 15:21-15:36/15 09:42-10:38/56
	21:48	20:47	19:32	18:21	16:25	16:14 14:54-15:14/20
24	05:33	06:26 06:58-07:18/20	07:21	08:17 17:06-17:48/42	08:16 09:52-10:16/24	08:51 15:21-15:36/15 09:43-10:38/55
	21:46	20:45	19:30	18:18	16:24	16:15 14:55-15:14/19
25	05:35	06:28 06:58-07:19/21	07:23	07:19 16:05-16:46/41	08:17 15:18-15:28/10	08:51 15:22-15:38/16 09:44-10:39/55
	21:45	20:43	19:27	17:16	16:23 09:51-10:18/27	16:16 14:56-15:15/19
26	05:36	06:30 06:58-07:20/22	07:25	07:21 16:04-16:43/39	08:19 15:17-15:30/13	08:52 15:22-15:38/16 09:44-10:40/56
	21:43	20:40	19:25	17:14	16:22 09:50-10:19/29	16:16 14:57-15:15/18
27	05:38	06:32 07:00-07:22/22	07:27	07:23 16:01-16:41/40	08:21 15:16-15:31/15	08:52 15:23-15:39/16 09:45-10:40/55
	21:41	20:38	19:22	17:12	16:21 09:50-10:21/31	16:17 14:57-15:15/18
28	05:40	06:33 07:01-07:25/24	07:28	07:24 15:58-16:39/41	08:23 15:16-15:33/17	08:52 15:23-15:40/17 09:45-10:40/55
	21:40	20:36	19:20	17:10	16:20 09:50-10:22/32	16:18 14:58-15:16/18
29	05:41	06:35 07:03-07:27/24	07:30	07:26 15:56-16:37/41	08:24 15:15-15:34/19	08:52 15:24-15:41/17 09:46-10:41/55
	21:38	20:33	19:17	17:08	16:19 09:50-10:23/33	16:19 14:59-15:16/17
30	05:43	06:37 07:05-07:28/23	07:32	07:28 15:54-16:34/40	08:26 15:14-15:34/20	08:52 15:24-15:42/18 09:47-10:41/54
	21:36	20:31 19:18-19:31/13	19:15	17:06	16:18 09:49-10:24/35	16:20 15:00-15:16/16
31	05:44	06:39 07:06-07:28/22		07:30 15:54-16:33/39		08:52 15:25-15:43/18 09:47-10:42/55
	21:35	20:29 19:16-19:34/18		17:04		16:21 15:02-15:16/14
Potential sun hours	512	460	382	328	259	233
Sum of minutes with flicker	427	250	591	603	737	2586

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar per WTG

Calculation: Real Case Analysis **WTG:** 10 - T10

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June
1	08:52 15:20-15:44/24 14:06-14:19/13 16:22 14:26-14:56/30 09:26-10:07/41	08:22 16:32-16:42/10 17:14	07:24 16:14-17:42/88 18:09	07:09 20:08	06:00 21:03	05:10 21:53
2	08:52 15:21-15:46/25 14:09-14:19/10 16:23 14:27-14:57/30 09:26-10:08/42	08:20 16:32-16:44/12 17:16	07:22 16:13-17:44/91 18:11	07:06 20:10	05:58 06:24-06:27/3 21:05	05:09 21:55
3	08:52 15:22-15:47/25 14:12-14:17/5 16:24 14:29-14:57/28 09:26-10:08/42	08:18 16:32-16:46/14 17:18	07:19 16:13-17:46/93 18:13	07:04 20:12	05:55 06:22-06:28/6 21:07	05:08 05:39-05:40/1 21:56
4	08:51 15:23-15:48/25 09:25-10:08/43 16:26 14:29-14:57/28	08:16 16:32-16:48/16 17:20	07:17 16:13-17:46/93 18:15	07:02 20:13	05:53 06:20-06:28/8 21:09	05:07 05:39-05:41/2 21:57
5	08:51 15:24-15:50/26 09:25-10:09/44 16:27 14:31-14:57/26	08:15 16:32-16:50/18 17:22	07:15 16:13-17:46/93 18:17	06:59 20:15	05:51 06:18-06:28/10 21:11	05:07 05:38-05:41/3 21:58
6	08:51 15:25-15:51/26 09:24-10:08/44 16:28 14:31-14:56/25	08:13 16:33-16:53/20 17:24	07:12 17:28-17:44/16 18:19 16:13-17:26/73	06:57 20:17	05:49 06:16-06:28/12 21:12	05:06 05:38-05:42/4 21:59
7	08:50 15:26-15:52/26 09:23-10:08/45 16:30 14:32-14:56/24	08:11 16:34-16:55/21 17:26	07:10 17:30-17:41/11 18:21 16:12-17:25/73	06:54 20:19	05:48 06:14-06:28/14 21:14	05:05 05:37-05:42/5 22:00
8	08:50 15:28-15:54/26 09:23-09:47/24 16:31 14:34-14:56/22 09:48-10:08/20	08:09 16:35-16:57/22 17:28	07:08 16:13-17:25/72 18:23	06:52 19:52-19:54/2 20:21	05:46 06:12-06:28/16 21:16	05:05 05:36-05:42/6 22:01
9	08:49 15:29-15:56/27 09:22-09:46/24 16:32 14:36-14:55/19 09:49-10:08/19	08:07 16:36-16:59/23 17:30	07:05 16:12-17:24/72 18:25	06:49 19:50-19:55/5 20:23	05:44 06:11-06:29/18 21:18	05:04 05:36-05:42/6 22:02
10	08:48 15:31-15:57/26 09:21-09:46/25 16:34 14:37-14:54/17 09:50-10:07/17	08:05 16:35-17:02/27 17:32	07:03 16:13-17:24/71 18:27	06:47 19:48-19:57/9 20:25	05:42 06:09-06:28/19 21:20	05:04 05:36-05:43/7 22:03
11	08:48 15:32-15:59/27 09:20-09:46/26 16:35 14:39-14:53/14 09:51-10:06/15	08:03 16:33-17:04/31 17:34	07:00 16:13-17:23/70 18:29	06:45 19:47-19:59/12 20:26	05:40 06:07-06:28/21 21:21	05:03 05:35-05:43/8 22:04
12	08:47 15:33-16:01/28 09:19-09:46/27 16:37 14:42-14:51/9 09:53-10:05/12	08:01 16:31-17:06/35 17:36	06:58 16:14-17:23/69 18:31	06:42 19:46-20:00/14 20:28	05:38 06:06-06:28/22 21:23	05:03 05:35-05:43/8 22:04
13	08:46 15:33-16:02/29 09:55-10:04/9 16:39 09:31-09:45/14 09:18-09:30/12	07:59 16:28-17:08/40 17:38	06:55 16:13-17:21/68 18:32	06:40 19:45-20:02/17 20:30	05:36 06:06-06:27/21 21:25	05:02 05:35-05:44/9 22:05
14	08:45 15:34-16:04/30 09:17-09:31/14 16:40 09:32-09:45/13	07:57 16:27-17:10/43 17:40	06:53 16:14-17:21/67 18:34	06:38 19:44-20:04/20 20:32	05:35 06:07-06:27/20 21:26	05:02 05:35-05:44/9 22:06
15	08:44 15:34-16:06/32 09:16-09:32/16 16:42 09:34-09:44/10	07:55 16:26-17:12/46 17:42	06:51 16:15-17:20/65 18:36	06:35 19:43-20:05/22 20:34	05:33 06:07-06:26/19 21:28	05:02 05:35-05:45/10 22:06
16	08:43 15:35-16:08/33 09:15-09:32/17 16:44 09:37-09:42/5	07:53 16:24-17:15/51 17:44	06:48 16:16-17:19/63 18:38	06:33 19:43-20:07/24 20:36	05:31 06:07-06:25/18 21:30	05:02 05:34-05:44/10 22:07
17	08:42 15:35-16:10/35 16:45 09:14-09:33/19	07:51 16:23-17:17/54 17:46	06:46 16:17-17:18/61 18:40	06:31 19:43-20:09/26 20:38	05:30 06:09-06:24/15 21:31	05:02 05:34-05:44/10 22:07
18	08:41 15:36-16:12/36 16:47 09:12-09:33/21	07:49 16:21-17:18/57 17:48	06:43 16:17-17:16/59 18:42	06:28 19:43-20:11/28 20:39	05:28 06:10-06:23/13 21:33	05:02 05:34-05:45/11 22:08
19	08:40 15:37-16:14/37 16:49 09:11-09:33/22	07:47 16:21-17:21/60 17:50	06:41 16:19-17:15/56 18:44	06:26 19:42-20:12/30 20:41	05:27 06:12-06:21/9 21:35	05:02 05:35-05:46/11 22:08
20	08:39 15:37-16:15/38 16:51 09:10-09:34/24	07:44 16:20-17:23/63 17:52	06:38 16:20-17:13/53 18:46	06:24 19:43-20:12/29 20:43	05:25 06:16-06:18/2 21:36	05:02 05:35-05:46/11 22:09
21	08:38 15:38-16:18/40 16:52 09:08-09:33/25	07:42 16:19-17:24/65 17:54	06:36 16:22-17:12/50 18:47	06:21 19:43-20:12/29 20:45	05:24 21:38	05:02 05:35-05:46/11 22:09
22	08:37 15:39-16:19/40 16:54 09:09-09:34/25	07:40 16:18-17:24/66 17:56	06:33 16:23-17:09/46 18:49	06:19 19:44-20:11/27 20:47	05:22 21:39	05:02 05:35-05:46/11 22:09
23	08:35 15:40-16:22/42 16:56 09:09-09:33/24	07:38 17:27-17:29/2 17:58 16:17-17:25/68	06:31 16:25-17:08/43 18:51	06:17 19:45-20:10/25 20:49	05:21 21:41	05:02 05:35-05:46/11 22:09
24	08:34 15:41-16:22/41 16:58 09:10-09:34/24	07:35 16:17-17:32/75 18:00	06:29 16:27-17:05/38 18:53	06:15 19:46-20:09/23 20:51	05:19 21:43	05:02 05:36-05:47/11 22:09
25	08:33 15:43-16:22/39 17:00 09:11-09:33/22	07:33 16:16-17:33/77 18:02	06:26 16:30-17:02/32 18:55	06:12 19:46-20:07/21 20:52	05:18 21:44	05:03 05:36-05:46/10 22:09
26	08:31 16:05-16:21/16 09:11-09:32/21 17:02 15:45-16:03/18	07:31 16:15-17:36/81 18:03	06:24 16:33-16:58/25 18:57	06:10 19:48-20:05/17 20:54	05:17 21:45	05:03 05:37-05:47/10 22:09
27	08:30 16:07-16:21/14 09:13-09:32/19 17:04 15:48-16:02/14	07:29 16:14-17:37/83 18:05	06:21 16:38-16:53/15 18:59	06:08 19:50-20:02/12 20:56	05:15 21:47	05:04 05:37-05:47/10 22:09
28	08:28 16:09-16:18/9 15:50-15:59/9 17:06 16:32-16:33/1 09:14-09:30/16	07:26 16:14-17:40/86 18:07	06:19 19:00	06:06 19:55-19:57/2 20:58	05:14 21:48	05:04 05:38-05:47/9 22:09
29	08:27 16:31-16:35/4 17:08 09:16-09:29/13		07:16 20:02	06:04 21:00	05:13 21:50	05:05 05:38-05:47/9 22:09
30	08:25 16:31-16:37/6 17:10 09:19-09:26/7		07:14 20:04	06:02 21:02	05:12 21:51	05:05 05:39-05:48/9 22:09
31	08:23 16:31-16:39/8 17:12		07:11 20:06		05:11 21:52	
Potential sun hours	250	273	367	420	494	510
Sum of minutes with flicker	2084	1266	1726	394	266	232

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar per WTG

Calculation: Real Case Analysis **WTG:** 10 - T10

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July	August	September	October	November	December
1	05:06 05:39-05:47/8 22:08	05:46 06:17-06:38/21 21:33	06:40 19:46-19:58/12 20:26	07:34 16:53-18:01/68 19:12	07:32 16:06-16:31/25 17:02	08:27 15:14-15:41/27 09:02-09:28/26 16:17 14:22-14:35/13 09:33-09:48/15
2	05:07 05:40-05:47/7 22:08	05:48 06:18-06:38/20 21:31	06:42 19:46-19:55/9 20:24	07:36 16:52-18:02/70 19:10	07:34 16:05-16:29/24 17:00	08:29 15:14-15:41/27 09:04-09:29/25 16:17 14:20-14:37/17 09:33-09:50/17
3	05:08 05:41-05:48/7 22:07	05:49 06:20-06:39/19 21:29	06:44 19:48-19:53/5 20:21	07:37 16:51-18:02/71 19:07	07:36 16:04-16:26/22 16:58	08:30 15:12-15:39/27 09:05-09:30/25 16:16 14:19-14:38/19 09:32-09:51/19
4	05:08 05:42-05:48/6 22:07	05:51 06:21-06:38/17 21:27	06:46 19:49-19:51/2 20:19	07:39 16:51-18:02/71 19:05	07:38 16:03-16:24/21 16:56	08:32 15:12-15:39/27 09:07-09:31/24 16:15 14:18-14:40/22 09:32-09:52/20
5	05:09 05:42-05:47/5 22:06	05:53 06:23-06:38/15 21:25	06:48 20:16	07:41 16:50-18:02/72 19:03	07:40 16:03-16:22/19 16:54	08:33 15:11-15:37/26 09:09-09:54/45 16:15 14:17-14:41/24
6	05:10 05:43-05:47/4 22:06	05:55 06:25-06:39/14 21:24	06:49 20:14	07:43 18:07-18:15/8 19:00 16:49-18:01/72	07:42 16:02-16:20/18 16:52	08:35 15:11-15:37/26 09:10-09:54/44 16:14 14:17-14:43/26
7	05:11 05:44-05:47/3 22:05	05:56 06:26-06:38/12 21:22	06:51 20:12	07:45 18:04-18:18/14 18:58 16:48-18:01/73	07:44 16:02-16:18/16 16:50	08:36 15:10-15:36/26 09:11-09:55/44 16:14 14:17-14:43/26
8	05:12 05:45-05:47/2 22:04	05:58 06:28-06:38/10 21:20	06:53 20:09	07:47 18:02-18:20/18 18:55 16:48-18:01/73	07:46 16:02-16:16/14 16:48	08:37 15:11-15:36/25 09:13-09:56/43 16:13 14:17-14:45/28
9	05:13 05:46-05:47/1 22:04	06:00 06:30-06:37/7 21:18	06:55 20:07	07:48 16:47-18:21/94 18:53	07:48 16:02-16:15/13 16:46	08:38 15:11-15:35/24 14:00-14:05/5 16:13 14:17-14:45/28 09:14-09:57/43
10	05:14 22:03	06:02 06:31-06:36/5 21:16	06:56 20:04	07:50 16:47-18:21/94 18:51	07:50 16:02-16:12/10 16:45	08:40 15:10-15:35/25 13:58-14:08/10 16:12 14:16-14:46/30 09:15-09:57/42
11	05:16 22:02	06:03 06:33-06:35/2 21:13	06:58 20:02	07:52 16:47-18:19/92 18:48	07:52 16:03-16:10/7 16:43	08:41 15:10-15:34/24 13:58-14:10/12 16:12 14:17-14:48/31 09:17-09:58/41
12	05:17 22:01	06:05 21:11	07:00 19:59	07:54 16:47-18:17/90 18:46	07:54 16:03-16:09/6 16:41 08:50-08:58/8	08:42 15:11-15:35/24 13:57-14:12/15 16:12 14:17-14:48/31 09:18-09:59/41
13	05:18 22:00	06:07 21:09	07:02 19:57	07:56 16:47-18:14/87 18:43	07:55 16:03-16:07/4 16:40 08:48-09:01/13	08:43 15:11-15:34/23 13:56-14:13/17 16:12 14:17-14:49/32 09:19-09:59/40
14	05:19 21:59	06:09 21:07	07:04 19:54	07:58 16:47-18:12/85 18:41	07:57 15:41-15:50/9 15:22-15:31/9 16:38 16:04-16:05/1 08:46-09:02/16	08:44 15:12-15:34/22 13:56-14:14/18 16:12 14:17-14:49/32 09:20-10:00/40
15	05:20 21:58	06:10 20:00-20:07/7 21:05	07:05 19:52	08:00 16:47-18:10/83 18:39	07:59 15:39-15:53/14 08:45-09:04/19 16:36 15:19-15:34/15	08:45 15:12-15:34/22 13:56-14:15/19 16:12 14:18-14:50/32 09:21-10:01/40
16	05:22 21:57	06:12 19:57-20:11/14 21:03	07:07 17:29-17:40/11 19:49	08:02 16:48-18:07/79 18:36	08:01 15:38-15:54/16 08:44-09:05/21 16:35 15:18-15:36/18	08:46 15:12-15:34/22 13:56-14:16/20 16:12 14:18-14:51/33 09:22-10:01/39
17	05:23 21:56	06:14 19:55-20:13/18 21:01	07:09 17:22-17:46/24 19:47	08:03 16:48-18:05/77 18:34	08:03 15:16-15:55/39 16:33 08:44-09:06/22	08:47 15:12-15:34/22 13:55-14:16/21 16:12 14:18-14:51/33 09:23-10:02/39
18	05:24 21:54	06:16 19:52-20:14/22 20:59	07:11 17:18-17:49/31 19:44	08:05 17:58-18:02/4 18:32 16:48-17:57/69	08:05 15:15-15:56/41 16:32 08:44-09:08/24	08:47 15:13-15:34/21 13:56-14:17/21 16:12 14:18-14:51/33 09:23-10:02/39
19	05:26 21:53	06:17 19:51-20:15/24 20:56	07:12 17:15-17:52/37 19:42	08:07 17:59-18:00/1 18:30 16:49-17:56/67	08:07 15:14-15:56/42 16:31 08:44-09:08/24	08:48 15:13-15:35/22 13:56-14:18/22 16:13 14:19-14:52/33 09:24-10:03/39
20	05:27 21:52	06:19 19:50-20:16/26 20:54	07:14 17:11-17:53/42 19:39	08:09 16:49-17:55/66 18:27	08:09 15:14-15:55/41 16:29 08:44-09:09/25	08:49 15:14-15:35/21 13:57-14:19/22 16:13 14:20-14:53/33 09:25-10:04/39
21	05:29 21:50	06:21 19:48-20:16/28 20:52	07:16 17:09-17:55/46 19:37	08:11 16:50-17:54/64 18:25	08:10 15:13-15:53/40 16:28 08:44-09:09/25	08:49 15:14-15:35/21 09:25-10:03/38 16:13 13:57-14:53/56
22	05:30 21:49	06:23 19:48-20:17/29 20:50	07:18 17:07-17:56/49 19:35	08:13 16:51-17:53/62 18:23	08:12 15:13-15:52/39 16:27 08:46-09:10/24	08:50 15:15-15:36/21 09:26-10:04/38 16:14 13:58-14:54/56
23	05:32 21:48	06:24 19:47-20:17/30 20:47	07:19 17:05-17:57/52 19:32	08:15 16:51-17:51/60 18:21	08:14 15:13-15:50/37 16:25 08:48-09:10/22	08:50 15:15-15:36/21 13:58-14:20/22 16:14 14:21-14:54/33 09:26-10:04/38
24	05:33 06:24-06:30/6 21:46	06:26 19:46-20:16/30 20:45	07:21 17:03-17:59/56 19:30	08:17 16:52-17:48/56 18:18	08:16 15:13-15:49/36 16:24 08:49-09:10/21	08:51 15:15-15:36/21 13:58-14:20/22 16:15 14:21-14:54/33 09:26-10:05/39
25	05:35 06:21-06:32/11 21:45	06:28 19:46-20:14/28 20:43	07:23 17:01-17:59/58 19:27	07:19 15:53-16:46/53 17:16	08:17 15:13-15:48/35 16:23 08:51-09:10/19	08:51 15:16-15:38/22 13:59-14:21/22 16:16 14:22-14:55/33 09:27-10:06/39
26	05:36 06:20-06:34/14 21:43	06:30 19:46-20:12/26 20:40	07:25 16:59-17:59/60 19:25	07:21 15:54-16:44/50 17:14	08:19 15:13-15:47/34 08:53-09:10/17 16:22 09:15-09:20/5	08:52 15:17-15:38/21 14:00-14:21/21 16:16 14:22-14:56/34 09:27-10:06/39
27	05:38 06:19-06:35/16 21:41	06:32 19:45-20:09/24 20:38	07:27 16:58-18:00/62 19:22	07:23 15:55-16:41/46 17:12	08:21 15:13-15:45/32 08:55-09:11/16 16:21 09:13-09:23/10	08:52 15:17-15:39/22 14:01-14:21/20 16:17 14:23-14:56/33 09:27-10:06/39
28	05:40 06:18-06:36/18 21:40	06:33 19:45-20:07/22 20:36	07:28 16:57-18:01/64 19:20	07:24 15:57-16:39/42 17:10	08:22 15:14-15:45/31 08:57-09:11/14 16:20 09:12-09:25/13	08:52 15:18-15:40/22 14:01-14:21/20 16:18 14:23-14:56/33 09:27-10:07/40
29	05:41 06:17-06:37/20 21:38	06:35 19:45-20:05/20 20:33	07:30 16:56-18:02/66 19:17	07:26 15:58-16:37/39 17:08	08:24 15:14-15:44/30 09:37-09:45/8 16:19 08:59-09:26/27	08:52 15:18-15:41/23 14:02-14:21/19 16:19 14:24-14:56/32 09:27-10:07/40
30	05:43 06:17-06:38/21 21:36	06:37 19:45-20:02/17 20:31	07:32 16:54-18:01/67 19:15	07:28 16:00-16:34/34 17:06	08:26 15:14-15:42/28 09:00-09:27/27 16:18 14:24-14:31/7 09:34-09:46/12	08:52 15:19-15:42/23 14:04-14:21/17 16:20 14:25-14:57/32 09:27-10:07/40
31	05:44 06:16-06:38/22 21:35	06:39 19:45-20:00/15 20:29		07:30 16:02-16:32/30 17:04		08:52 15:20-15:43/23 14:05-14:21/16 16:21 14:26-14:57/31 09:27-10:08/41
Potential sun hours	512	460	382	328	259	233
Sum of minutes with flicker	171	522	753	2134	1225	3326

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar per WTG

Calculation: Real Case Analysis **WTG:** 11 - T11

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June
1	08:52 15:01-15:44/43 16:22	08:22 16:17-16:25/8 17:14	07:24 16:49-17:17/28 18:09	07:09 19:19-19:37/18 20:08 17:28-19:06/98	06:00 06:25-06:56/31 17:38-18:48/70 21:03 19:45-20:19/34	05:10 20:49-21:11/22 06:16-06:39/23 21:53 21:13-21:19/6
2	08:52 15:02-15:46/44 16:23	08:20 17:16	07:22 16:49-17:15/26 18:11	07:06 19:19-19:35/16 20:10 17:27-19:06/99	05:58 06:24-06:55/31 17:39-18:47/68 21:05 19:45-20:18/33	05:09 20:49-21:10/21 06:17-06:38/21 21:55 21:13-21:20/7
3	08:52 15:04-15:47/43 16:24	08:18 17:18	07:19 16:51-17:14/23 18:13	07:04 19:21-19:33/12 20:12 17:27-19:06/99	05:56 06:22-06:55/33 17:42-18:46/64 21:07 19:47-20:19/32	05:08 20:50-21:10/20 06:17-06:37/20 21:56 21:12-21:21/9
4	08:51 15:04-15:48/44 16:26	08:16 17:20	07:17 16:53-17:12/19 18:15	07:02 19:25-19:27/2 20:14 17:26-19:05/99	05:53 06:20-06:54/34 17:43-18:45/62 21:09 19:47-20:18/31	05:07 20:51-21:10/19 06:19-06:37/18 21:57 21:13-21:22/9
5	08:51 15:05-15:50/45 16:27	08:15 17:22	07:15 16:56-17:08/12 18:17	06:59 17:26-19:05/99 20:15	05:51 06:18-06:54/36 17:44-18:44/60 21:11 19:48-20:17/29	05:07 20:51-21:10/19 06:20-06:36/16 21:58 21:12-21:23/11
6	08:51 15:06-15:51/45 16:28	08:13 17:24	07:12 18:19	06:57 17:26-19:06/100 20:17	05:50 06:16-06:53/37 17:46-18:42/56 21:12 19:49-20:15/26	05:06 20:51-21:09/18 06:20-06:35/15 21:59 21:12-21:23/11
7	08:50 15:07-15:51/44 16:30	08:11 17:26	07:10 17:17-17:30/13 18:21	06:54 17:25-19:05/100 20:19	05:48 06:14-06:52/38 17:47-18:40/53 21:14 19:50-20:14/24	05:05 20:53-21:09/16 06:22-06:34/12 22:00 21:12-21:25/13
8	08:50 15:09-15:52/43 16:31	08:09 17:28	07:08 17:10-17:38/28 18:23	06:52 17:26-19:05/99 20:21	05:46 06:12-06:51/39 17:49-18:39/50 21:16 19:51-20:12/21	05:05 20:53-21:08/15 06:23-06:33/10 22:01 21:12-21:25/13
9	08:49 15:11-15:52/41 16:32	08:07 17:30	07:05 07:29-07:31/2 18:25 17:05-17:41/36	06:50 17:25-19:04/99 20:23	05:44 06:11-06:50/39 17:52-18:38/46 21:18 19:53-20:12/19	05:04 20:54-21:08/14 06:25-06:31/6 22:02 21:12-21:26/14
10	08:49 15:12-15:52/40 16:34	08:05 16:59-17:02/3 17:32	07:03 07:27-07:33/6 18:27 17:01-17:45/44	06:47 17:25-19:04/99 20:25	05:42 06:09-06:48/39 17:54-18:35/41 21:20 19:55-20:09/14	05:04 20:55-21:09/14 22:03 21:13-21:28/15
11	08:48 15:13-15:52/39 16:35	08:03 16:56-17:04/8 17:34	07:00 07:25-07:34/9 18:29 16:57-17:47/50	06:45 17:26-19:04/98 20:26	05:40 06:08-06:46/38 17:56-18:33/37 21:21 19:58-20:05/7	05:03 20:55-21:08/13 22:04 21:12-21:28/16
12	08:47 15:14-15:52/38 16:37	08:01 16:54-17:06/12 17:36	06:58 07:22-07:34/12 18:31 16:55-17:50/55	06:42 17:25-19:03/98 20:28	05:38 06:09-06:44/35 21:23 17:59-18:31/32	05:03 20:56-21:08/12 22:04 21:12-21:29/17
13	08:46 15:15-15:53/38 16:39	07:59 16:51-17:08/17 17:38	06:56 07:20-07:34/14 18:32 16:52-17:51/59	06:40 17:25-19:03/98 20:30	05:36 20:50-20:53/3 18:02-18:28/26 21:25 06:08-06:44/36	05:02 20:57-21:07/10 22:05 21:13-21:29/16
14	08:45 15:16-15:53/37 16:40	07:57 16:50-17:10/20 17:40	06:53 07:17-07:34/17 18:34 16:50-17:54/64	06:38 20:02-20:04/2 20:32 17:26-19:03/97	05:35 20:49-20:54/5 18:05-18:24/19 21:26 06:09-06:45/36	05:02 20:58-21:07/9 22:06 21:13-21:30/17
15	08:44 15:18-15:53/35 16:42	07:55 16:49-17:12/23 17:42	06:51 07:15-07:34/19 18:36 16:49-17:56/67	06:35 19:57-20:05/8 20:34 17:25-19:01/96	05:33 20:48-20:56/8 21:28 06:08-06:44/36	05:02 20:58-21:06/8 22:06 21:12-21:30/18
16	08:44 16:07-16:08/1 16:44 15:20-15:53/33	07:53 16:49-17:15/26 17:44	06:48 07:12-07:32/20 18:38 16:46-17:57/71	06:33 19:55-20:07/12 20:36 17:26-19:01/95	05:31 20:47-20:57/10 21:30 06:08-06:44/36	05:02 20:59-21:06/7 22:07 21:12-21:30/18
17	08:42 16:06-16:10/4 15:23-15:28/5 16:45 15:30-15:52/22	07:51 16:48-17:17/29 17:46	06:46 07:10-07:32/22 18:40 16:45-17:58/73	06:31 19:53-20:09/16 20:38 17:27-19:01/94	05:30 20:47-20:59/12 21:32 06:08-06:44/36	05:02 20:59-21:06/7 22:07 21:13-21:31/18
18	08:41 16:06-16:12/6 16:47 15:32-15:52/20	07:49 16:47-17:18/31 17:48	06:43 07:07-07:30/23 18:42 16:43-17:59/76	06:28 19:51-20:11/20 20:39 17:27-19:00/93	05:28 20:46-21:00/14 21:33 06:09-06:44/35	05:02 21:00-21:05/5 22:08 21:13-21:31/18
19	08:40 16:07-16:14/7 16:49 15:33-15:51/18	07:47 16:46-17:21/35 17:50	06:41 07:05-07:28/23 18:44 16:41-18:01/80	06:26 19:49-20:12/23 20:41 17:27-18:59/92	05:27 20:46-21:02/16 21:35 06:08-06:44/36	05:02 21:01-21:05/4 22:08 21:13-21:32/19
20	08:39 16:06-16:16/10 16:51 15:34-15:50/16	07:44 16:46-17:22/36 17:52	06:38 07:02-07:25/23 18:46 16:39-18:01/82	06:24 19:48-20:14/26 20:43 17:28-18:58/90	05:25 20:47-21:04/17 21:36 06:09-06:44/35	05:02 21:02-21:06/4 22:09 21:14-21:33/19
21	08:38 16:07-16:18/11 16:52 15:37-15:49/12	07:42 16:46-17:22/36 17:54	06:36 07:03-07:23/20 18:48 16:39-18:02/83	06:21 06:46-06:50/4 17:29-18:58/89 20:45 19:48-20:16/28	05:24 20:46-21:04/18 21:38 06:10-06:44/34	05:02 21:02-21:06/4 22:09 21:14-21:33/19
22	08:37 16:07-16:19/12 16:54 15:40-15:47/7	07:40 16:45-17:21/36 17:56	06:33 07:03-07:21/18 18:49 16:37-18:02/85	06:19 06:44-06:52/8 17:30-18:57/87 20:47 19:47-20:18/31	05:22 20:46-21:06/20 21:39 06:09-06:43/34	05:02 21:02-21:06/4 22:09 21:14-21:33/19
23	08:35 16:07-16:22/15 16:56	07:38 16:46-17:21/35 17:58	06:31 18:23-18:25/2 16:36-18:03/87 18:51 07:04-07:20/16	06:17 06:42-06:53/11 17:30-18:56/86 20:49 19:47-20:20/33	05:21 20:46-21:08/22 21:41 06:10-06:43/33	05:02 21:02-21:06/4 22:09 21:14-21:33/19
24	08:34 16:07-16:24/17 16:58	07:36 16:46-17:21/35 18:00	06:29 18:21-18:26/5 16:34-18:03/89 18:53 07:05-07:17/12	06:15 06:40-06:54/14 17:31-18:56/85 20:51 19:46-20:22/36	05:19 20:47-21:09/22 21:43 06:11-06:43/32	05:03 21:02-21:07/5 22:09 21:15-21:33/18
25	08:33 16:08-16:26/18 17:00	07:33 16:46-17:20/34 18:02	06:26 18:20-18:29/9 16:34-18:04/90 18:55 07:10-07:12/2	06:12 06:38-06:55/17 17:32-18:55/83 20:52 19:46-20:22/36	05:18 20:47-21:11/24 21:44 06:11-06:42/31	05:03 21:02-21:08/6 22:09 21:15-21:33/18
26	08:31 16:09-16:28/19 17:02	07:31 16:46-17:20/34 18:04	06:24 18:18-18:30/12 18:57 16:32-18:04/92	06:10 06:36-06:55/19 17:32-18:53/81 20:54 19:45-20:21/36	05:17 20:46-21:11/25 21:45 06:12-06:42/30	05:03 21:01-21:08/7 22:09 21:15-21:33/18
27	08:30 16:10-16:31/21 17:04	07:29 16:46-17:19/33 18:05	06:21 18:18-18:32/14 18:59 16:32-18:05/93	06:08 06:34-06:56/22 17:33-18:52/79 20:56 19:45-20:21/36	05:16 20:46-21:11/25 21:47 06:13-06:42/29	05:04 21:01-21:09/8 22:09 21:15-21:33/18
28	08:28 16:11-16:30/19 17:06	07:26 16:47-17:18/31 18:07	06:19 18:17-18:33/16 19:01 16:30-18:05/95	06:06 06:31-06:55/24 17:34-18:51/77 20:58 19:45-20:20/35	05:14 20:47-21:11/24 21:48 06:13-06:41/28	05:04 21:00-21:09/9 22:09 21:15-21:33/18
29	08:27 16:11-16:29/18 17:08		07:16 19:17-19:36/19 20:02 17:30-19:05/95	06:04 06:29-06:55/26 17:36-18:50/74 21:00 19:45-20:20/35	05:13 20:47-21:10/23 06:14-06:41/27 21:50 21:14-21:15/1	05:05 21:00-21:10/10 22:09 21:16-21:33/17
30	08:25 16:12-16:28/16 17:10		07:14 19:17-19:37/20 20:04 17:29-19:05/96	06:02 06:27-06:55/28 17:37-18:49/72 21:02 19:45-20:20/35	05:12 20:47-21:10/23 06:15-06:40/25 21:51 21:15-21:17/2	05:05 21:01-21:12/11 22:09 21:16-21:33/17
31	08:23 16:14-16:26/12 17:12		07:11 19:18-19:38/20 20:06 17:28-19:06/98		05:11 20:49-21:11/22 06:15-06:39/24 21:52 21:14-21:18/4	
Potential sun hours	250	273	367	420	494	510
Sum of minutes with flicker	958	522	2284	3424	2337	931

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar per WTG

Calculation: Real Case Analysis **WTG:** 11 - T11

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July	August	September	October	November	December
1	05:06 21:00-21:12/12	05:46 06:19-06:55/36	06:41 17:25-19:03/98	07:34 08:00-08:13/13	07:32 16:29-16:31/2	08:27 14:55-15:34/39
	22:08 21:16-21:32/16	21:33 18:08-18:43/35	20:26	19:12 17:33-18:30/57	17:02	16:17
2	05:07 20:59-21:13/14	05:48 06:19-06:57/38 18:05-18:44/39	06:42 17:24-19:03/99	07:36 08:02-08:12/10	07:34	08:29 14:55-15:35/40
	22:08 21:17-21:32/15	21:31 20:07-20:17/10	20:24	19:10 17:35-18:27/52	17:00	16:17
3	05:08 20:59-21:14/15 06:32-06:36/4	05:50 06:20-06:59/39 18:03-18:46/43	06:44 17:23-19:02/99	07:38 08:04-08:11/7	07:36	08:30 14:54-15:35/41
	22:07 21:17-21:32/15	21:29 20:04-20:20/16	20:21	19:07 17:38-18:24/46	16:58	16:16
4	05:09 20:59-21:14/15 06:30-06:38/8	05:51 06:21-07:00/39 18:00-18:48/48	06:46 17:23-19:02/99	07:39 08:06-08:10/4	07:38	08:32 14:53-15:36/43
	22:07 21:18-21:32/14	21:27 20:02-20:22/20	20:19	19:05 17:41-18:21/40	16:56	16:15
5	05:09 20:58-21:14/16 06:28-06:39/11	05:53 06:23-07:01/38 17:59-18:49/50	06:48 17:22-19:02/100	07:41 17:45-18:17/32	07:40	08:33 14:52-15:36/44
	22:06 21:17-21:30/13	21:25 20:01-20:23/22	20:17	19:03	16:54	16:15
6	05:10 20:58-21:15/17 06:27-06:40/13	05:55 06:25-07:02/37 17:57-18:51/54	06:49 17:21-19:01/100	07:43 17:49-18:10/21	07:42	08:35 14:52-15:37/45
	22:06 21:18-21:30/12	21:24 20:00-20:25/25	20:14	19:00	16:52	16:14
7	05:11 20:58-21:16/18 06:26-06:42/16	05:56 06:26-07:02/36 17:55-18:52/57	06:51 17:21-19:01/100	07:45	07:44	08:36 14:52-15:36/44
	22:05 21:18-21:30/12	21:22 19:58-20:25/27	20:12	18:58	16:50	16:14
8	05:12 20:58-21:16/18 06:26-06:43/17	05:58 06:28-07:03/35 17:53-18:53/60	06:53 17:21-19:00/99	07:47 17:34-17:41/7	07:46	08:37 14:52-15:36/44
	22:04 21:19-21:29/10	21:20 19:57-20:26/29	20:09	18:55	16:48	16:13
9	05:13 20:57-21:17/20 06:25-06:44/19	06:00 06:30-07:04/34 17:51-18:54/63	06:55 19:15-19:26/11	07:48 17:29-17:45/16	07:48	08:38 14:52-15:35/43
	22:04 21:19-21:28/9	21:18 19:56-20:26/30	20:07 17:20-18:59/99	18:53	16:47	16:13
10	05:14 20:57-21:17/20 06:24-06:45/21	06:02 06:31-07:04/33 17:50-18:55/65	06:56 19:13-19:28/15	07:50 17:26-17:47/21	07:50 15:48-15:56/8	08:40 14:51-15:35/44
	22:03 21:20-21:28/8	21:16 19:55-20:27/32	20:04 17:20-18:59/99	18:51	16:45	16:12
11	05:16 20:57-21:18/21 06:24-06:46/22	06:03 06:33-07:04/31 17:48-18:57/69	06:58 19:11-19:29/18	07:52 17:24-17:49/25	07:52 15:46-15:58/12	08:41 14:52-15:35/43
	22:02 21:21-21:27/6	21:14 19:55-20:28/33	20:02 17:20-18:58/98	18:48	16:43	16:12
12	05:17 20:56-21:18/22 06:23-06:47/24	06:05 06:34-07:03/29 17:46-18:57/71	07:00 19:10-19:30/20	07:54 17:23-17:50/27	07:54 15:44-16:00/16	08:42 14:52-15:35/43
	22:01 21:21-21:26/5	21:11 19:53-20:28/35	19:59 17:21-18:58/97	18:46	16:41	16:12
13	05:18 20:56-21:19/23 06:24-06:48/24	06:07 06:36-07:04/28 17:45-18:58/73	07:02 19:08-19:29/21	07:56 17:21-17:51/30	07:55 15:43-16:01/18	08:43 14:52-15:34/42
	22:00 21:22-21:25/3	21:09 19:53-20:28/35	19:57 17:20-18:56/96	18:43	16:40	16:12
14	05:19 20:57-21:20/23 06:23-06:49/26	06:09 06:38-07:04/26 17:44-18:59/75	07:04 19:08-19:26/18	07:58 17:20-17:52/32	07:57 15:42-16:02/20	08:44 14:53-15:34/41
	21:59 21:24-21:25/1	21:07 19:53-20:29/36	19:54 17:20-18:56/96	18:41	16:38	16:12
15	05:20 20:56-21:20/24	06:10 06:39-07:03/24 17:42-18:59/77	07:05 19:08-19:24/16	08:00 17:19-17:52/33	07:59 15:42-16:03/21	08:45 14:53-15:34/41
	21:58 06:22-06:49/27	21:05 19:52-20:28/36	19:52 17:20-18:55/95	18:39	16:37	16:12
16	05:22 20:56-21:20/24	06:12 06:41-07:02/21 17:41-19:00/79	07:07 19:07-19:21/14	08:02 17:18-17:52/34	08:01 15:42-16:01/19	08:46 14:53-15:34/41
	21:57 06:22-06:50/28	21:03 19:52-20:28/36	19:49 17:20-18:54/94	18:36	16:35	16:12
17	05:23 20:56-21:20/24	06:14 06:43-07:02/19 17:40-19:01/81	07:09 19:07-19:19/12	08:03 17:18-17:53/35	08:03 15:41-15:59/18	08:47 14:53-15:34/41
	21:56 06:21-06:50/29	21:01 19:52-20:28/36	19:47 17:20-18:53/93	18:34	16:33	16:12
18	05:24 20:56-21:20/24	06:16 06:44-07:00/16 17:38-19:01/83	07:11 19:07-19:16/9	08:05 17:17-17:53/36	08:05 15:41-15:58/17	08:47 14:54-15:34/40
	21:54 06:21-06:52/31	20:59 19:52-20:27/35	19:44 17:21-18:52/91	18:32	16:32	16:12
19	05:26 20:56-21:20/24	06:17 06:46-07:00/14 17:37-19:01/84	07:12 19:08-19:14/6 17:22-18:51/89	08:07 17:17-17:53/36	08:07 15:41-15:56/15	08:48 14:54-15:35/41
	21:53 06:21-06:52/31	20:56 19:52-20:27/35	19:42 07:54-08:04/10	18:30	16:31	16:13
20	05:27 20:56-21:18/22	06:19 06:48-06:59/11 17:36-19:02/86	07:14 19:08-19:11/3 17:21-18:49/88	08:09 17:17-17:53/36	08:09 15:42-15:55/13	08:49 14:55-15:35/40
	21:52 06:20-06:52/32	20:54 19:52-20:25/33	19:40 07:51-08:06/15	18:27	16:29 15:14-15:21/7	16:13
21	05:29 20:56-21:16/20	06:21 06:49-06:56/7 17:34-19:02/88	07:16 07:49-08:06/17	08:11 17:17-17:52/35	08:10 15:42-15:53/11	08:49 14:55-15:35/40
	21:50 06:20-06:53/33	20:52 19:52-20:22/30	19:37 17:22-18:48/86	18:25	16:28 15:12-15:24/12	16:13
22	05:30 20:56-21:16/20	06:23 06:51-06:54/3 17:33-19:02/89	07:18 07:48-08:07/19	08:13 17:17-17:52/35	08:12 15:42-15:52/10	08:50 14:56-15:36/40
	21:49 06:20-06:53/33	20:50 19:53-20:21/28	19:35 17:23-18:47/84	18:23	16:27 15:10-15:26/16	16:14
23	05:32 20:56-21:14/18	06:25 19:53-20:19/26	07:20 07:47-08:08/21	08:15 17:17-17:51/34	08:14 15:43-15:50/7	08:50 14:56-15:36/40
	21:48 06:19-06:53/34	20:47 17:32-19:03/91	19:32 17:24-18:46/82	18:21	16:25 15:10-15:27/17	16:14
24	05:33 20:57-21:13/16	06:26 19:53-20:16/23	07:21 07:48-08:11/23	08:17 17:17-17:48/31	08:16 15:43-15:49/6	08:51 14:56-15:36/40
	21:46 06:19-06:54/35	20:45 17:31-19:03/92	19:30 17:25-18:45/80	18:18	16:24 15:09-15:29/20	16:15
25	05:35 20:57-21:12/15	06:28 19:54-20:14/20	07:23 07:49-08:12/23	07:19 16:18-16:46/28	08:17 15:44-15:48/4 15:01-15:06/5	08:51 14:57-15:38/41
	21:45 06:19-06:54/35	20:43 17:30-19:03/93	19:27 17:25-18:42/77	17:16	16:23 15:09-15:30/21	16:16
26	05:36 20:58-21:11/13	06:30 19:56-20:12/16	07:25 07:51-08:13/22	07:21 16:18-16:44/26	08:19 15:45-15:47/2	08:52 14:58-15:38/40
	21:43 06:19-06:55/36	20:40 17:29-19:03/94	19:25 17:26-18:41/75	17:14	16:22 14:58-15:31/33	16:16
27	05:38 20:58-21:09/11	06:32 19:57-20:09/12	07:27 07:53-08:14/21	07:23 16:19-16:41/22	08:21 14:57-15:32/35	08:52 14:58-15:39/41
	21:41 06:19-06:54/35	20:38 17:28-19:03/95	19:22 17:27-18:39/72	17:12	16:21	16:17
28	05:40 20:59-21:08/9	06:33 19:59-20:07/8	07:28 07:55-08:14/19	07:24 16:20-16:39/19	08:22 14:56-15:33/37	08:52 14:59-15:40/41
	21:40 06:19-06:55/36	20:36 17:27-19:03/96	19:20 17:29-18:37/68	17:10	16:20	16:18
29	05:41 20:59-21:06/7 18:20-18:31/11	06:35 20:03-20:05/2	07:30 07:57-08:14/17	07:26 16:21-16:37/16	08:24 14:56-15:34/38	08:52 14:59-15:41/42
	21:38 06:18-06:55/37	20:33 17:27-19:03/96	19:17 17:30-18:35/65	17:08	16:19	16:19
30	05:43 21:00-21:05/5 18:15-18:37/22	06:37 17:25-19:03/98	07:32 07:58-08:13/15	07:28 16:23-16:34/11	08:26 14:55-15:34/39	08:52 15:00-15:42/42
	21:36 06:19-06:55/36	20:31	19:15 17:31-18:32/61	17:06	16:18	16:20
31	05:44 21:01-21:03/2 18:11-18:40/29	06:39 17:25-19:03/98		07:30 16:25-16:32/7		08:52 15:01-15:43/42
	21:35 06:19-06:54/35	20:29		17:04		16:21
Potential sun hours	512	460	382	328	259	233
Sum of minutes with flicker	1501	3642	3064	914	499	1289

Table layout: For each day in each month the following matrix apply

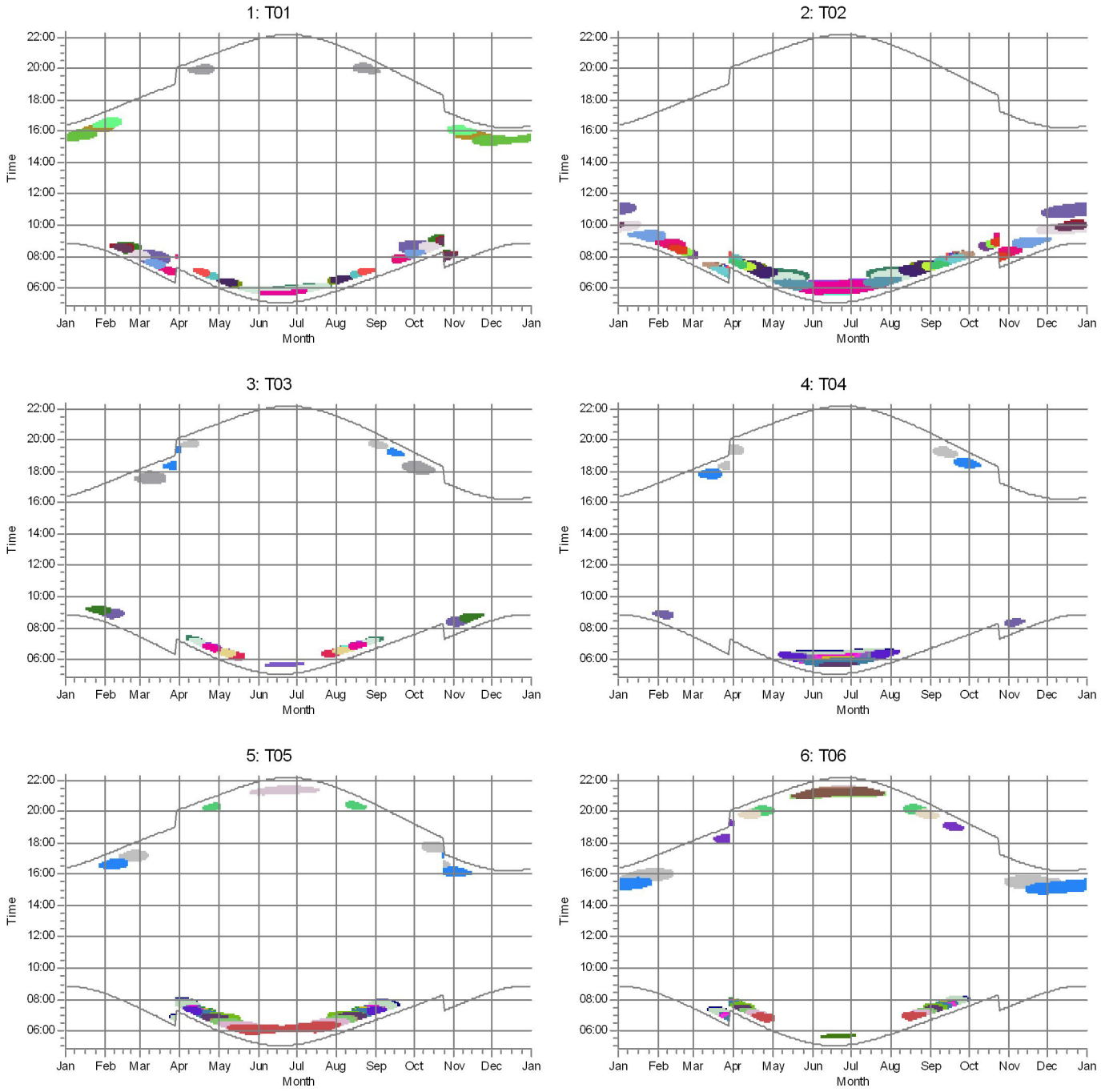
Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Calendar per WTG, graphical

Calculation: Real Case Analysis



Shadow receptors

G: H007	AA: H029	AL: H040	AZ: H055	BL: H068	BV: H079	CI: H096	CT: H107	DU: H139	EK: H158
L: H012	AB: H030	AM: H041	BA: H056	BM: H070	BX: H083	CJ: H097	CU: H108	DV: H140	EM: H161
N: H014	AC: H031	AP: H044	BC: H059	BN: H071	BZ: H085	CK: H098	CY: H113	DZ: H144	EN: H165
P: H016	AD: H032	AR: H046	BD: H060	BO: H072	CB: H087	CL: H099	DA: H115	EC: H147	EO: H235
V: H023	AE: H033	AS: H047	BF: H062	BP: H073	CD: H090	CP: H103	DB: H116	EH: H153
X: H025	AH: H036	AT: H048	BI: H065	BS: H076	CF: H093	CQ: H104	DF: H120	EI: H156
Y: H027	AK: H039	AW: H052	BK: H067	BT: H077	CH: H095	CS: H106	DT: H138	EJ: H157

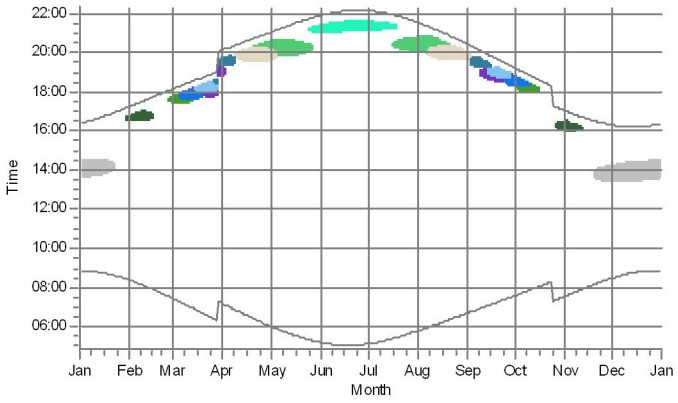
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

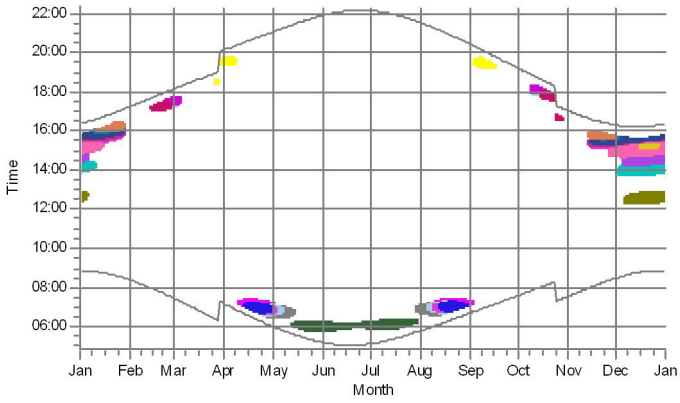
SHADOW - Calendar per WTG, graphical

Calculation: Real Case Analysis

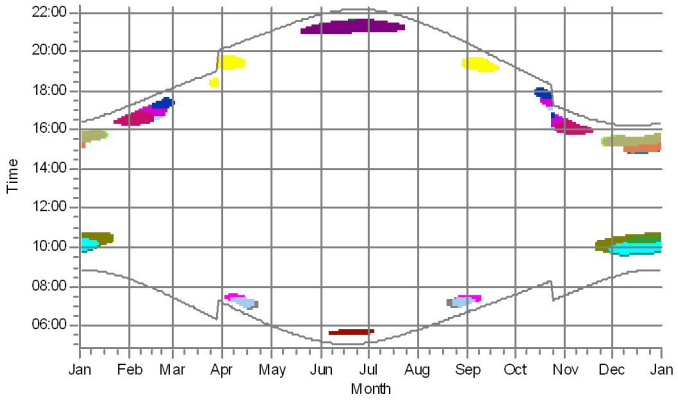
7: T07



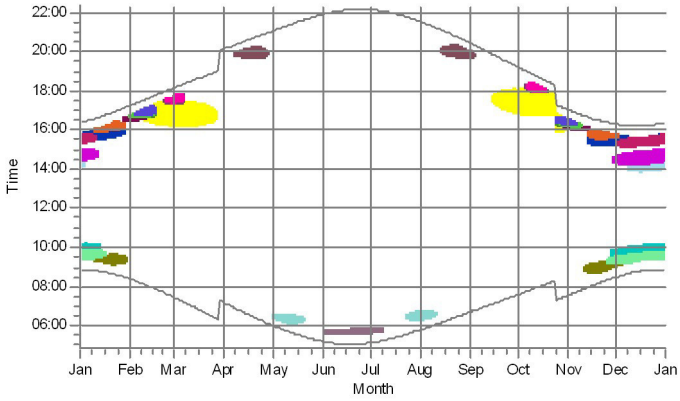
8: T08



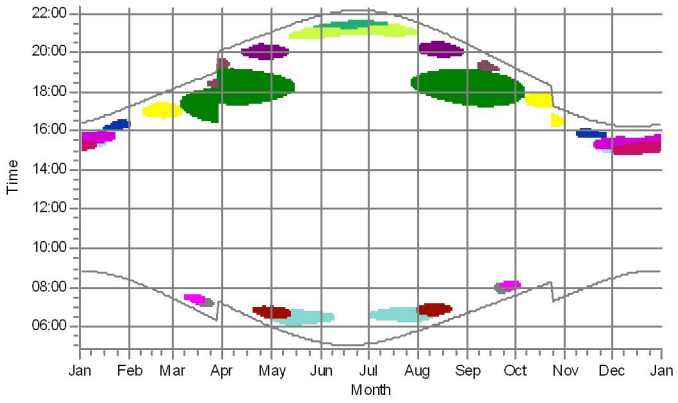
9: T09



10: T10



11: T11



Shadow receptors

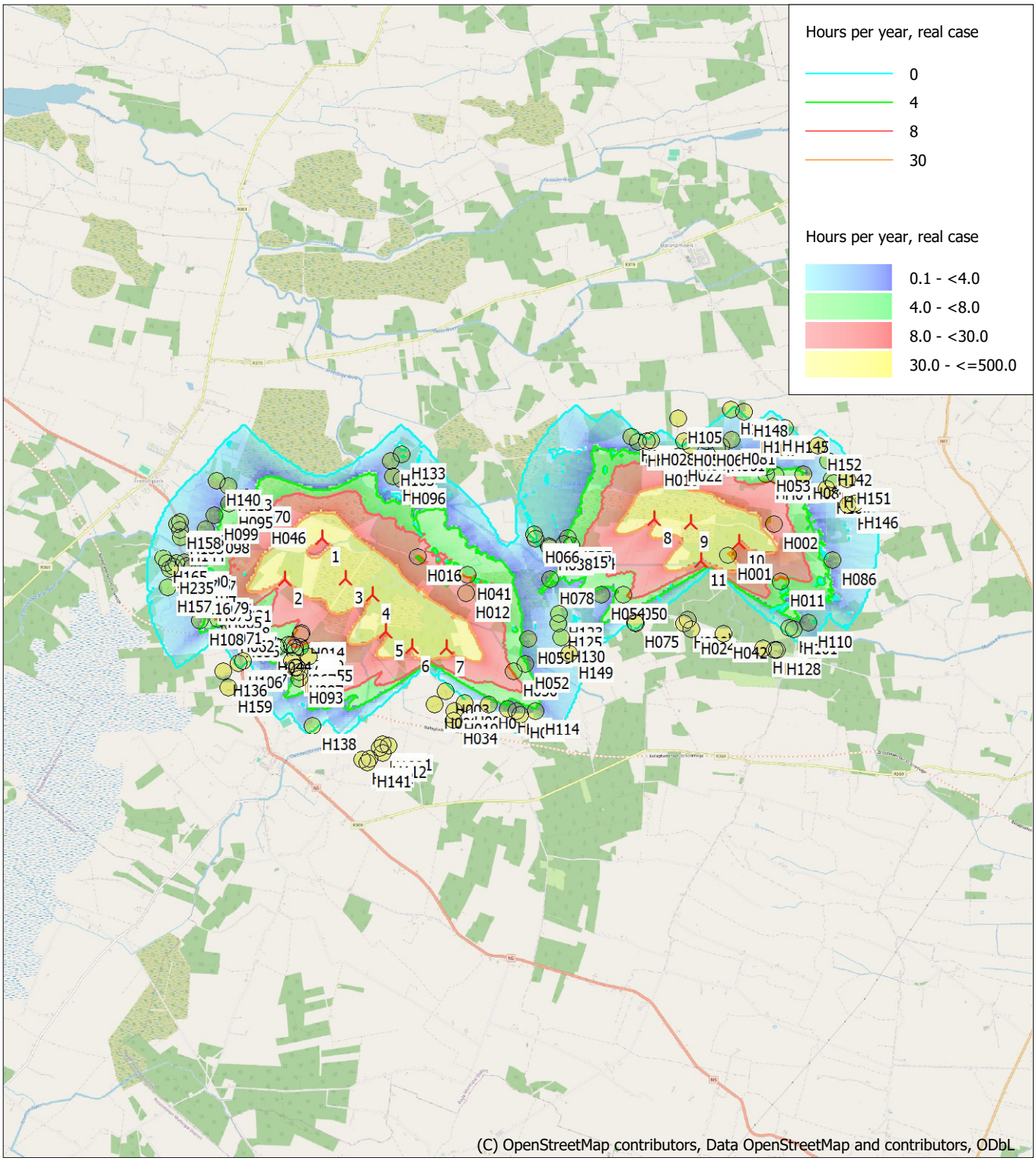
A: H001	J: H010	T: H021	AI: H037	AV: H050	BE: H061	BW: H081	CN: H101	DE: H119	DM: H130	EB: H146
B: H002	K: H011	U: H022	AJ: H038	AW: H052	BH: H064	BY: H084	CV: H110	DG: H123	DN: H131	EE: H149
D: H004	L: H012	Z: H028	AO: H043	AX: H053	BQ: H074	CA: H086	CZ: H114	DH: H124	DQ: H135	EF: H151
E: H005	M: H013	AB: H030	AQ: H045	AY: H054	BR: H075	CG: H094	DC: H117	DI: H125	DX: H142	EG: H152
F: H006	O: H015	AG: H035	AU: H049	BC: H059	BU: H078	CM: H100	DD: H118	DL: H129	DY: H143

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
19/01/2026 12:56/4.2.285

SHADOW - Map

Calculation: Real Case Analysis



Map: EMD OpenStreetMap , Print scale 1:75,000, Map center Irish ITM-IRENET95 (IE), geocentric, GRS80 East: 577,950 North: 789,810

New WTG Shadow receptor

Flicker map level: Height Contours: CONTOURLINE_Carrigeen Renewable Energy Development _.wpo (1)

Time step: 4 minutes, Day step: 14 days, Map resolution: 30 m, Visibility resolution: 15 m, Eye height: 1.5 m

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Main Result

Calculation: Worst Case Analysis

Assumptions for shadow calculations

Maximum distance for influence
Calculate only when more than 20 % of sun is covered by the blade
Please look in WTG table

Minimum sun height over horizon for influence	3 °
Day step for calculation	1 days
Time step for calculation	1 minutes

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

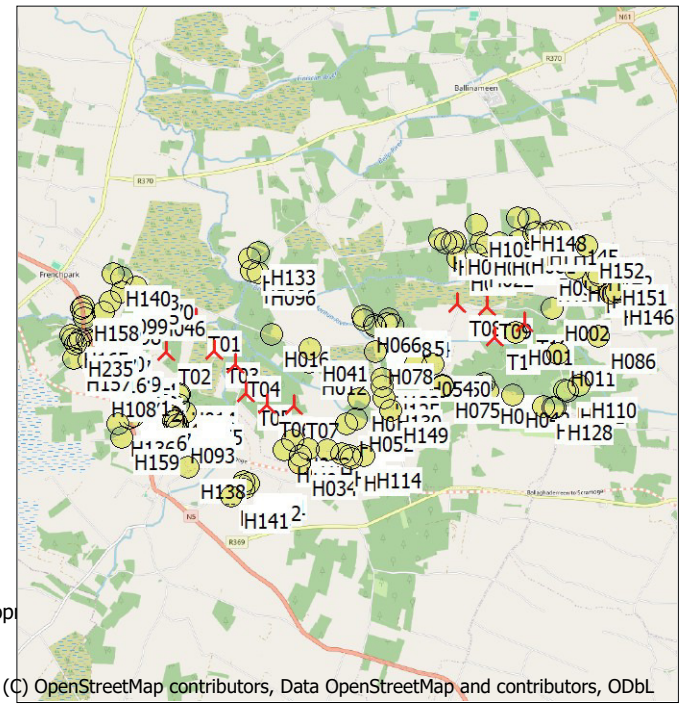
Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW
220	198	165	317	218	306	541	740	684	712	1,330	910

W	WNW	NW	NNW	Sum
725	710	432	552	8,760

Monthly aggregation of real case reduction
A ZVI (Zones of Visual Influence) calculation is performed before flicker calculation so non visible WTG do not contribute to calculated flicker values. A WTG will be visible if it is visible from any part of the receiver window. The ZVI calculation is based on the following assumptions:
DHM: Height Contours: CONTOURLINE_Carrigeen Renewable Energy Develop
Receptor grid resolution: 1.0 m
Topographic shadow included in calculation

All coordinates are in
Irish ITM-IRENET95 (IE), geocentric, GRS80



(C) OpenStreetMap contributors, Data OpenStreetMap and contributors, ODbL

Scale 1:125,000

New WTG Shadow receptor

WTGs

	Easting	Northing	Z	Row data/Description	WTG type Valid	Manufact.	Type-generator	Power, rated	Rotor diameter	Hub height	Shadow data Calculation distance	RPM
			[m]					[kW]	[m]	[m]	[m]	[RPM]
1	575,477	790,430	67.0	T01	Yes	NORDEX	N163/5.X-5,700	5,700	163.0	103.5	1,789	10.7
2	574,977	789,898	68.1	T02	Yes	NORDEX	N163/5.X-5,700	5,700	163.0	103.5	1,789	10.7
3	575,779	789,896	69.4	T03	Yes	NORDEX	N163/5.X-5,700	5,700	163.0	103.5	1,789	10.7
4	576,135	789,684	77.4	T04	Yes	NORDEX	N163/5.X-5,700	5,700	163.0	103.5	1,789	10.7
5	576,298	789,215	82.7	T05	Yes	NORDEX	N163/5.X-5,700	5,700	163.0	103.5	1,789	10.7
6	576,648	789,007	89.4	T06	Yes	NORDEX	N163/5.X-5,700	5,700	163.0	103.5	1,789	10.7
7	577,096	788,988	80.8	T07	Yes	NORDEX	N163/5.X-5,700	5,700	163.0	103.5	1,789	10.7
8	579,819	790,661	74.6	T08	Yes	NORDEX	N163/5.X-5,700	5,700	163.0	103.5	1,789	10.7
9	580,296	790,613	75.0	T09	Yes	NORDEX	N163/5.X-5,700	5,700	163.0	103.5	1,789	10.7
10	580,937	790,353	75.1	T10	Yes	NORDEX	N163/5.X-5,700	5,700	163.0	103.5	1,789	10.7
11	580,433	790,105	90.8	T11	Yes	NORDEX	N163/5.X-5,700	5,700	163.0	103.5	1,789	10.7

Shadow receptor-Input

No.	Name	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
				[m]	[m]	[m]	[m]	[°]		[m]
A	H001	580,789	790,181	77.9	2.0	2.0	0.5	90.0	"Green house mode"	2.5
B	H002	581,390	790,585	74.4	2.0	2.0	0.5	90.0	"Green house mode"	2.5
C	H003	577,081	788,430	72.0	2.0	2.0	0.5	90.0	"Green house mode"	2.5
D	H004	578,745	790,321	76.4	2.0	2.0	0.5	90.0	"Green house mode"	2.5
E	H005	578,683	790,413	75.6	2.0	2.0	0.5	90.0	"Green house mode"	2.5
F	H006	579,527	791,732	81.1	2.0	2.0	0.5	90.0	"Green house mode"	2.5
G	H007	575,204	789,190	80.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5
H	H008	576,938	788,257	74.8	2.0	2.0	0.5	90.0	"Green house mode"	2.5
I	H009	577,329	788,268	77.1	2.0	2.0	0.5	90.0	"Green house mode"	2.5
J	H010	579,831	791,411	77.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
K	H011	581,475	789,829	74.9	2.0	2.0	0.5	90.0	"Green house mode"	2.5
L	H012	577,359	789,698	72.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
M	H013	579,616	791,664	78.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
N	H014	575,185	789,166	82.0	2.0	2.0	0.5	90.0	"Green house mode"	2.5

To be continued on next page...

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Main Result

Calculation: Worst Case Analysis

...continued from previous page

No.	Name	Easting	Northing	Z [m]	Width [m]	Height [m]	Elevation a.g.l. [m]	Slope of window [°]	Direction mode	Eye height (ZVI) a.g.l. [m]
O	H015	578,641	790,334	77.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
P	H016	576,727	790,172	69.1	2.0	2.0	0.5	90.0	"Green house mode"	2.5
Q	H018	580,249	789,333	74.9	2.0	2.0	0.5	90.0	"Green house mode"	2.5
R	H019	577,194	788,164	78.8	2.0	2.0	0.5	90.0	"Green house mode"	2.5
S	H020	580,201	789,297	74.6	2.0	2.0	0.5	90.0	"Green house mode"	2.5
T	H021	579,730	791,677	80.8	2.0	2.0	0.5	90.0	"Green house mode"	2.5
U	H022	580,133	791,471	79.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
V	H023	575,080	789,037	88.4	2.0	2.0	0.5	90.0	"Green house mode"	2.5
W	H024	580,303	789,219	79.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
X	H025	575,035	789,036	88.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
Y	H027	577,645	788,259	76.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
Z	H028	579,790	791,684	80.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AA	H029	575,178	789,011	84.9	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AB	H030	577,980	788,684	76.6	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AC	H031	574,231	789,656	86.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AD	H032	575,109	788,998	88.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AE	H033	574,894	789,011	92.1	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AF	H034	577,186	788,041	77.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AG	H035	581,288	791,234	81.4	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AH	H036	574,858	789,015	91.8	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AI	H037	578,453	790,291	74.0	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AJ	H038	578,431	790,315	75.1	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AK	H039	575,107	788,949	89.4	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AL	H040	574,780	789,003	91.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AM	H041	577,369	789,939	69.1	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AN	H042	580,724	789,157	75.0	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AO	H043	581,408	791,228	83.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AP	H044	574,754	788,997	91.6	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AQ	H045	580,309	791,616	78.4	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AR	H046	574,684	790,678	70.0	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AS	H047	574,299	789,325	86.0	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AT	H048	574,222	789,442	85.4	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AU	H049	580,641	791,582	78.8	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AV	H050	579,419	789,670	72.0	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AW	H052	578,121	788,772	73.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AX	H053	581,297	791,327	83.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AY	H054	579,122	789,675	73.4	2.0	2.0	0.5	90.0	"Green house mode"	2.5
AZ	H055	575,293	788,892	82.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BA	H056	574,345	789,211	88.9	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BB	H058	580,214	791,675	78.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BC	H059	578,168	789,100	78.6	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BD	H060	574,251	789,308	87.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BE	H061	580,699	791,604	80.4	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BF	H062	574,274	789,274	88.1	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BG	H063	578,242	790,463	75.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BH	H064	580,503	791,665	78.9	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BI	H065	574,105	789,577	89.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BJ	H066	578,262	790,401	74.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BK	H067	575,080	788,834	91.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BL	H068	577,895	788,194	78.8	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BM	H070	574,487	790,963	71.1	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BN	H071	574,111	789,384	88.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BO	H072	573,979	789,757	80.9	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BP	H073	573,981	789,674	85.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BQ	H074	579,571	789,300	77.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BR	H075	579,562	789,305	77.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BS	H076	575,108	788,747	90.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BT	H077	575,142	788,747	90.1	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BU	H078	578,462	789,878	69.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BV	H079	573,944	789,778	80.4	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BW	H081	580,831	791,693	82.4	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BX	H083	578,010	788,170	81.1	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BY	H084	581,772	791,238	92.9	2.0	2.0	0.5	90.0	"Green house mode"	2.5
BZ	H085	576,405	791,229	73.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5

To be continued on next page...

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Main Result

Calculation: Worst Case Analysis

...continued from previous page

No.	Name	Easting	Northing	Z [m]	Width [m]	Height [m]	Elevation a.g.l. [m]	Slope of window [°]	Direction mode	Eye height (ZVI) a.g.l. [m]
CA	H086	582,149	790,105	79.0	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CB	H087	575,168	788,691	89.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CC	H089	576,255	787,731	79.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CD	H090	578,052	788,124	82.0	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CE	H091	576,332	787,706	80.6	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CF	H093	575,167	788,598	88.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CG	H094	581,583	789,236	78.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CH	H095	574,258	790,891	72.1	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CI	H096	576,524	791,190	73.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CJ	H097	574,426	788,836	92.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CK	H098	573,960	790,550	72.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CL	H099	574,065	790,731	71.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CM	H100	582,072	791,047	103.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CN	H101	581,635	789,213	79.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CO	H102	576,223	787,673	80.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CP	H103	576,377	791,424	75.6	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CQ	H104	573,778	789,924	79.6	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CR	H105	580,135	791,968	82.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CS	H106	574,375	788,805	93.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CT	H107	573,775	790,044	77.1	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CU	H108	573,872	789,358	91.9	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CV	H110	581,834	789,296	74.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CW	H111	581,238	788,967	75.8	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CX	H112	576,252	787,605	80.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CY	H113	574,255	791,111	71.0	2.0	2.0	0.5	90.0	"Green house mode"	2.5
CZ	H114	578,254	788,161	83.0	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DA	H115	573,709	790,073	78.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DB	H116	573,701	789,762	85.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DC	H117	582,142	791,162	103.9	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DD	H118	582,175	791,120	106.0	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DE	H119	581,101	791,829	86.0	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DF	H120	573,670	790,116	78.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DG	H123	578,571	789,420	71.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DH	H124	581,131	791,834	86.6	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DI	H125	578,555	789,301	74.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DJ	H126	581,390	788,941	75.8	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DK	H128	581,429	788,941	76.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DL	H129	582,357	790,827	88.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DM	H130	578,600	789,118	78.6	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DN	H131	581,345	791,802	90.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DO	H132	576,088	787,540	78.8	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DP	H133	576,525	791,517	75.9	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DQ	H135	580,831	792,068	89.1	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DR	H136	574,166	788,703	98.1	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DS	H137	575,978	787,531	78.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DT	H138	575,347	787,982	72.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DU	H139	573,573	790,098	80.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DV	H140	574,110	791,177	72.1	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DW	H141	576,056	787,492	79.6	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DX	H142	582,096	791,405	102.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DY	H143	581,382	791,862	88.4	2.0	2.0	0.5	90.0	"Green house mode"	2.5
DZ	H144	573,630	790,453	76.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5
EA	H145	581,531	791,829	93.4	2.0	2.0	0.5	90.0	"Green house mode"	2.5
EB	H146	582,452	790,855	95.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
EC	H147	573,530	790,061	81.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
ED	H148	581,005	792,045	90.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
EE	H149	578,706	788,900	80.9	2.0	2.0	0.5	90.0	"Green house mode"	2.5
EF	H151	582,347	791,161	100.0	2.0	2.0	0.5	90.0	"Green house mode"	2.5
EG	H152	581,965	791,612	98.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
EH	H153	573,614	790,539	78.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
EI	H156	573,611	790,654	77.9	2.0	2.0	0.5	90.0	"Green house mode"	2.5
EJ	H157	573,450	789,791	86.0	2.0	2.0	0.5	90.0	"Green house mode"	2.5
EK	H158	573,584	790,617	78.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5
EL	H159	574,239	788,490	98.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5

To be continued on next page...

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Main Result

Calculation: Worst Case Analysis

...continued from previous page

No.	Name	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
				[m]	[m]	[m]	[m]	[°]		[m]
EM	H161	573,440	790,099	81.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
EN	H165	573,397	790,172	80.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
EO	H235	573,483	790,037	82.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5

Calculation Results

Shadow receptor

		Shadow, worst case			**Shadow, expected values**
No.	Name	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
A	H001	177:45	158	1:40	30:13
B	H002	107:39	131	1:14	15:52
C	H003	0:00	0	0:00	0:00
D	H004	33:17	100	0:35	5:53
E	H005	26:34	84	0:33	4:37
F	H006	14:50	42	0:27	1:09
G	H007	71:22	160	0:39	11:53
H	H008	0:00	0	0:00	0:00
I	H009	0:00	0	0:00	0:00
J	H010	63:07	80	1:14	5:41
K	H011	46:36	121	0:36	7:41
L	H012	119:16	202	1:06	14:17
M	H013	16:40	44	0:28	1:18
N	H014	67:43	157	0:38	11:17
O	H015	20:36	62	0:32	3:44
P	H016	33:23	89	0:38	5:15
Q	H018	0:00	0	0:00	0:00
R	H019	0:00	0	0:00	0:00
S	H020	0:00	0	0:00	0:00
T	H021	3:47	20	0:15	0:16
U	H022	35:49	46	1:02	2:56
V	H023	49:53	143	0:32	8:19
W	H024	0:00	0	0:00	0:00
X	H025	47:49	142	0:31	7:59
Y	H027	13:23	54	0:22	2:01
Z	H028	14:26	52	0:21	1:13
AA	H029	43:28	133	0:34	7:21
AB	H030	44:17	91	0:42	7:45
AC	H031	74:52	154	0:50	13:06
AD	H032	44:08	136	0:31	7:24
AE	H033	29:28	117	0:26	5:03
AF	H034	0:00	0	0:00	0:00
AG	H035	50:56	118	0:51	5:24
AH	H036	21:54	83	0:26	3:51
AI	H037	10:36	38	0:26	1:55
AJ	H038	9:52	36	0:26	1:47
AK	H039	35:36	125	0:31	6:06
AL	H040	17:41	73	0:24	3:07
AM	H041	70:48	173	0:35	8:16
AN	H042	0:00	0	0:00	0:00
AO	H043	59:48	119	0:54	6:10
AP	H044	16:25	70	0:23	2:54
AQ	H045	11:02	32	0:25	0:54
AR	H046	69:36	148	0:46	8:04
AS	H047	9:56	60	0:21	1:46
AT	H048	53:34	110	0:49	8:52
AU	H049	30:47	74	0:33	3:05
AV	H050	36:04	83	0:38	6:18
AW	H052	24:59	60	0:37	4:25
AX	H053	33:47	109	0:31	3:44
AY	H054	16:37	71	0:28	3:01
AZ	H055	36:02	95	0:37	6:32
BA	H056	7:59	37	0:21	1:24

To be continued on next page...

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Main Result

Calculation: Worst Case Analysis

...continued from previous page

No.	Name	Shadow, worst case			Shadow, expected values
		Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
BB	H058	0:00	0	0:00	0:00
BC	H059	18:33	43	0:40	2:50
BD	H060	12:09	67	0:19	2:07
BE	H061	26:11	76	0:31	2:42
BF	H062	6:27	32	0:20	1:11
BG	H063	0:00	0	0:00	0:00
BH	H064	20:59	50	0:32	1:48
BI	H065	51:10	148	0:42	8:57
BJ	H066	0:00	0	0:00	0:00
BK	H067	22:27	99	0:29	4:03
BL	H068	23:09	67	0:27	3:32
BM	H070	24:45	81	0:34	3:03
BN	H071	48:05	109	0:45	7:57
BO	H072	27:38	84	0:37	4:59
BP	H073	20:20	50	0:37	3:41
BQ	H074	3:44	34	0:10	0:36
BR	H075	4:35	37	0:11	0:44
BS	H076	22:35	78	0:30	4:05
BT	H077	24:51	82	0:31	4:29
BU	H078	28:59	112	0:25	4:28
BV	H079	25:10	80	0:36	4:33
BW	H081	17:35	74	0:27	1:52
BX	H083	21:52	74	0:25	3:23
BY	H084	38:38	109	0:41	4:16
BZ	H085	18:24	55	0:32	2:12
CA	H086	18:50	67	0:30	3:13
CB	H087	28:54	92	0:31	5:08
CC	H089	0:00	0	0:00	0:00
CD	H090	20:03	71	0:23	3:05
CE	H091	0:00	0	0:00	0:00
CF	H093	37:58	122	0:30	6:28
CG	H094	8:49	43	0:18	1:20
CH	H095	36:41	90	0:33	3:38
CI	H096	13:31	42	0:30	1:40
CJ	H097	2:06	29	0:06	0:20
CK	H098	21:44	72	0:32	2:51
CL	H099	27:28	87	0:32	3:18
CM	H100	8:44	34	0:25	1:08
CN	H101	10:11	47	0:19	1:32
CO	H102	0:00	0	0:00	0:00
CP	H103	24:47	70	0:30	2:27
CQ	H104	16:26	62	0:30	2:46
CR	H105	0:00	0	0:00	0:00
CS	H106	2:20	30	0:07	0:23
CT	H107	16:17	61	0:30	2:35
CU	H108	18:29	59	0:30	3:14
CV	H110	19:50	80	0:25	3:07
CW	H111	0:00	0	0:00	0:00
CX	H112	0:00	0	0:00	0:00
CY	H113	11:50	49	0:27	1:24
CZ	H114	14:52	55	0:24	2:14
DA	H115	9:53	33	0:28	1:28
DB	H116	9:50	36	0:27	1:46
DC	H117	7:03	32	0:22	0:52
DD	H118	6:24	30	0:21	0:49
DE	H119	11:28	60	0:20	1:10
DF	H120	9:02	31	0:27	1:20
DG	H123	7:24	29	0:24	1:04
DH	H124	12:40	60	0:19	1:15
DI	H125	7:46	29	0:25	1:08
DJ	H126	0:00	0	0:00	0:00
DK	H128	0:00	0	0:00	0:00
DL	H129	6:14	27	0:22	0:53

To be continued on next page...

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Main Result

Calculation: Worst Case Analysis

...continued from previous page

		Shadow, worst case			Shadow, expected values
No.	Name	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
DM	H130	7:04	28	0:23	1:04
DN	H131	16:05	55	0:24	1:29
DO	H132	0:00	0	0:00	0:00
DP	H133	0:00	0	0:00	0:00
DQ	H135	1:18	12	0:08	0:06
DR	H136	0:00	0	0:00	0:00
DS	H137	0:00	0	0:00	0:00
DT	H138	2:12	26	0:07	0:21
DU	H139	7:20	29	0:24	1:05
DV	H140	13:47	57	0:23	1:25
DW	H141	0:00	0	0:00	0:00
DX	H142	7:53	38	0:21	0:55
DY	H143	14:57	52	0:23	1:20
DZ	H144	7:37	30	0:24	1:00
EA	H145	0:00	0	0:00	0:00
EB	H146	4:38	23	0:19	0:39
EC	H147	6:43	28	0:23	1:00
ED	H148	0:00	0	0:00	0:00
EE	H149	5:48	26	0:21	1:00
EF	H151	4:44	26	0:19	0:37
EG	H152	12:27	40	0:22	1:02
EH	H153	7:00	30	0:23	0:54
EI	H156	6:43	30	0:22	0:51
EJ	H157	5:42	26	0:21	1:00
EK	H158	6:24	28	0:22	0:49
EL	H159	0:00	0	0:00	0:00
EM	H161	5:34	26	0:21	0:50
EN	H165	5:02	25	0:19	0:44
EO	H235	6:01	26	0:21	0:54

Total amount of flickering on the shadow receptors caused by each WTG

No.	Name	Worst case [h/year]	Expected [h/year]
1	T01	166:08	23:26
2	T02	249:55	35:40
3	T03	79:45	12:19
4	T04	90:47	14:32
5	T05	151:27	24:55
6	T06	174:53	24:36
7	T07	158:31	22:34
8	T08	171:31	21:12
9	T09	154:01	18:56
10	T10	234:59	28:59
11	T11	356:05	56:19

Total times in Receptor wise and WTG wise tables can differ, as a WTG can lead to flicker at 2 or more receptors simultaneously and/or receptors may receive flicker from 2 or more WTGs simultaneously.

The calculation of the total expected values for a given receptor assumes a weighted average directional reduction for all WTGs contributing to shadow flicker within the same day. In the case where shadow flicker from different WTGs is not concurrent within the day, the total expected time at a given receptor may deviate marginally from the individual flicker time caused by each turbine separately.

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Detailed Results

Calculation: Worst Case Analysis

Worst case, Shadow hours per year [h/year]

Receptor	WTG 1	2	3	4	5	6	7	8	9	10	11	Total
A	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:54	0:00	175:51	177:45
B	0:00	0:00	0:00	0:00	0:00	0:00	0:00	6:22	16:46	90:43	20:56	107:39
C	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
D	0:00	0:00	0:00	0:00	0:00	0:00	0:00	20:38	6:55	0:00	5:47	33:17
E	0:00	0:00	0:00	0:00	0:00	0:00	0:00	16:47	6:05	0:00	5:10	26:34
F	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	14:50	0:00	0:00	14:50
G	0:00	0:00	0:00	45:29	17:19	8:34	0:00	0:00	0:00	0:00	0:00	71:22
H	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
I	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
J	0:00	0:00	0:00	0:00	0:00	0:00	0:00	12:40	37:35	12:52	0:00	63:07
K	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	22:32	0:00	24:04	46:36
L	0:00	0:00	6:11	13:05	16:10	38:36	45:14	0:00	0:00	0:00	0:00	119:16
M	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	16:40	0:00	0:00	16:40
N	0:00	0:00	0:00	42:57	16:33	8:13	0:00	0:00	0:00	0:00	0:00	67:43
O	0:00	0:00	0:00	0:00	0:00	0:00	0:00	15:28	5:35	0:00	0:00	20:36
P	12:23	0:00	21:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	33:23
Q	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
R	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
S	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
T	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	3:47	0:00	0:00	3:47
U	0:00	0:00	0:00	0:00	0:00	0:00	0:00	18:09	0:00	17:40	0:00	35:49
V	0:00	0:00	0:00	30:31	12:53	6:29	0:00	0:00	0:00	0:00	0:00	49:53
W	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
X	0:00	0:00	0:00	30:17	11:33	5:59	0:00	0:00	0:00	0:00	0:00	47:49
Y	0:00	0:00	0:00	0:00	13:18	11:40	0:00	0:00	0:00	0:00	0:00	13:23
Z	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	14:26	0:00	14:26
AA	0:00	0:00	0:00	18:28	16:54	8:06	0:00	0:00	0:00	0:00	0:00	43:28
AB	0:00	0:00	0:00	0:00	5:54	12:18	37:06	0:00	0:00	0:00	0:00	44:17
AC	21:19	47:59	5:34	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	74:52
AD	0:00	0:00	0:00	23:08	14:03	6:57	0:00	0:00	0:00	0:00	0:00	44:08
AE	0:00	0:00	0:00	16:39	8:21	4:28	0:00	0:00	0:00	0:00	0:00	29:28
AF	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
AG	0:00	0:00	0:00	0:00	0:00	0:00	0:00	5:57	15:43	7:33	21:43	50:56
AH	0:00	0:00	0:00	14:12	7:42	0:00	0:00	0:00	0:00	0:00	0:00	21:54
AI	0:00	0:00	0:00	0:00	0:00	0:00	0:00	10:36	0:00	0:00	0:00	10:36
AJ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	9:52	0:00	0:00	0:00	9:52
AK	0:00	0:00	0:00	14:44	13:59	6:53	0:00	0:00	0:00	0:00	0:00	35:36
AL	0:00	0:00	0:00	11:06	6:35	0:00	0:00	0:00	0:00	0:00	0:00	17:41
AM	0:00	0:00	5:57	12:11	15:16	37:24	0:00	0:00	0:00	0:00	0:00	70:48
AN	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
AO	0:00	0:00	0:00	0:00	0:00	0:00	0:00	4:35	11:55	19:57	23:21	59:48
AP	0:00	0:00	0:00	10:13	6:12	0:00	0:00	0:00	0:00	0:00	0:00	16:25
AQ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	11:02	0:00	0:00	0:00	11:02
AR	30:50	25:44	12:47	6:31	0:00	0:00	0:00	0:00	0:00	0:00	0:00	69:36
AS	0:00	2:58	6:58	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	9:56
AT	2:31	46:50	5:47	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	53:34
AU	0:00	0:00	0:00	0:00	0:00	0:00	0:00	30:47	0:00	0:00	0:00	30:47
AV	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	8:56	35:44	36:04
AW	0:00	0:00	0:00	0:00	0:00	9:22	22:47	0:00	0:00	0:00	0:00	24:59
AX	0:00	0:00	0:00	0:00	0:00	0:00	0:00	5:33	15:03	0:00	13:11	33:47
AY	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	2:13	0:00	14:24	16:37
AZ	0:00	0:00	0:00	0:00	25:19	10:43	0:00	0:00	0:00	0:00	0:00	36:02
BA	0:00	0:00	7:59	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	7:59
BB	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
BC	0:00	0:00	0:00	0:00	0:00	7:37	17:11	0:00	0:00	0:00	0:00	18:33
BD	0:00	6:03	6:06	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	12:09
BE	0:00	0:00	0:00	0:00	0:00	0:00	0:00	26:11	0:00	0:00	0:00	26:11
BF	0:00	0:00	6:27	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	6:27
BG	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
BH	0:00	0:00	0:00	0:00	0:00	0:00	0:00	20:59	0:00	0:00	0:00	20:59
BI	15:23	31:41	4:06	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	51:10
BJ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
BK	0:00	0:00	0:00	2:22	13:34	6:31	0:00	0:00	0:00	0:00	0:00	22:27
BL	0:00	0:00	0:00	0:00	0:00	23:09	0:00	0:00	0:00	0:00	0:00	23:09

To be continued on next page...

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Detailed Results

Calculation: Worst Case Analysis

...continued from previous page

Receptor	WTG 1	2	3	4	5	6	7	8	9	10	11	Total
BM	16:48	0:00	7:57	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	24:45
BN	3:38	41:08	4:20	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	48:05
BO	7:21	20:17	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	27:38
BP	0:00	20:20	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	20:20
BQ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	3:44	0:00	3:44
BR	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	4:35	0:00	4:35
BS	0:00	0:00	0:00	0:00	15:37	6:58	0:00	0:00	0:00	0:00	0:00	22:35
BT	0:00	0:00	0:00	0:00	17:19	7:32	0:00	0:00	0:00	0:00	0:00	24:51
BU	0:00	0:00	0:00	0:00	0:00	0:00	8:08	20:51	0:00	0:00	0:00	28:59
BV	6:42	18:28	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	25:10
BW	0:00	0:00	0:00	0:00	0:00	0:00	0:00	17:35	0:00	0:00	0:00	17:35
BX	0:00	0:00	0:00	0:00	0:00	21:52	0:00	0:00	0:00	0:00	0:00	21:52
BY	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	4:58	26:33	7:11	38:38
BZ	18:24	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	18:24
CA	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	13:22	5:28	18:50
CB	0:00	0:00	0:00	0:00	20:42	8:12	0:00	0:00	0:00	0:00	0:00	28:54
CC	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CD	0:00	0:00	0:00	0:00	0:00	20:03	0:00	0:00	0:00	0:00	0:00	20:03
CE	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CF	0:00	0:00	0:00	0:00	29:30	8:28	0:00	0:00	0:00	0:00	0:00	37:58
CG	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	8:49	8:49
CH	10:26	26:15	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	36:41
CI	13:31	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	13:31
CJ	0:00	0:00	2:06	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	2:06
CK	6:31	15:13	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	21:44
CL	7:39	19:49	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	27:28
CM	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	8:44	0:00	8:44
CN	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	10:11	10:11
CO	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CP	24:47	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	24:47
CQ	4:29	11:57	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	16:26
CR	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CS	0:00	0:00	2:20	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	2:20
CT	4:33	11:44	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	16:17
CU	0:00	18:29	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	18:29
CV	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	19:50	19:50
CW	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CX	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CY	9:51	1:59	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	11:50
CZ	0:00	0:00	0:00	0:00	0:00	0:00	14:52	0:00	0:00	0:00	0:00	14:52
DA	0:00	9:53	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	9:53
DB	0:00	9:50	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	9:50
DC	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	7:03	0:00	7:03
DD	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	6:24	0:00	6:24
DE	0:00	0:00	0:00	0:00	0:00	0:00	0:00	7:17	4:11	0:00	0:00	11:28
DF	0:00	9:02	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	9:02
DG	0:00	0:00	0:00	0:00	0:00	0:00	7:24	0:00	0:00	0:00	0:00	7:24
DH	0:00	0:00	0:00	0:00	0:00	0:00	0:00	6:42	5:58	0:00	0:00	12:40
DI	0:00	0:00	0:00	0:00	0:00	0:00	7:46	0:00	0:00	0:00	0:00	7:46
DJ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DK	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DL	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	6:14	0:00	6:14
DM	0:00	0:00	0:00	0:00	0:00	0:00	7:04	0:00	0:00	0:00	0:00	7:04
DN	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	16:05	0:00	0:00	16:05
DO	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DP	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DQ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:18	0:00	0:00	0:00	1:18
DR	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DS	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DT	0:00	0:00	0:00	0:00	0:00	2:12	0:00	0:00	0:00	0:00	0:00	2:12
DU	0:00	7:20	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	7:20
DV	7:08	6:39	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	13:47
DW	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DX	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	7:53	0:00	7:53
DY	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	14:57	0:00	0:00	14:57

To be continued on next page...

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Detailed Results

Calculation: Worst Case Analysis

...continued from previous page

Receptor	WTG 1	2	3	4	5	6	7	8	9	10	11	Total
DZ	0:00	7:37	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	7:37
EA	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
EB	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	4:38	0:00	4:38
EC	0:00	6:43	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	6:43
ED	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
EE	0:00	0:00	0:00	0:00	0:00	0:00	5:48	0:00	0:00	0:00	0:00	5:48
EF	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	4:44	0:00	4:44
EG	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	12:27	0:00	12:27
EH	0:00	7:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	7:00
EI	0:00	6:43	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	6:43
EJ	0:00	5:42	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	5:42
EK	0:00	6:24	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	6:24
EL	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
EM	0:00	5:34	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	5:34
EN	0:00	5:02	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	5:02
EO	0:00	6:01	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	6:01
Total	166:08	249:55	79:45	90:47	151:27	174:53	158:31	171:31	154:01	234:59	356:05	

Worst case, Shadow days per year [days/year]

Receptor	WTG 1	2	3	4	5	6	7	8	9	10	11	Total
A	0	0	0	0	0	0	0	0	19	0	139	158
B	0	0	0	0	0	0	0	27	43	97	49	131
C	0	0	0	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	53	30	0	26	100
E	0	0	0	0	0	0	0	46	27	0	24	84
F	0	0	0	0	0	0	0	0	42	0	0	42
G	0	0	0	92	44	32	0	0	0	0	0	160
H	0	0	0	0	0	0	0	0	0	0	0	0
I	0	0	0	0	0	0	0	0	0	0	0	0
J	0	0	0	0	0	0	0	31	62	50	0	80
K	0	0	0	0	0	0	0	0	65	0	56	121
L	0	0	28	38	44	84	64	0	0	0	0	202
M	0	0	0	0	0	0	0	0	44	0	0	44
N	0	0	0	89	44	30	0	0	0	0	0	157
O	0	0	0	0	0	0	0	46	26	0	0	62
P	40	0	49	0	0	0	0	0	0	0	0	89
Q	0	0	0	0	0	0	0	0	0	0	0	0
R	0	0	0	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0	0	0	0
T	0	0	0	0	0	0	0	0	20	0	0	20
U	0	0	0	0	0	0	0	40	0	46	0	46
V	0	0	0	76	40	27	0	0	0	0	0	143
W	0	0	0	0	0	0	0	0	0	0	0	0
X	0	0	0	80	36	26	0	0	0	0	0	142
Y	0	0	0	0	54	46	0	0	0	0	0	54
Z	0	0	0	0	0	0	0	0	0	52	0	52
AA	0	0	0	58	45	30	0	0	0	0	0	133
AB	0	0	0	0	29	40	75	0	0	0	0	91
AC	72	86	26	0	0	0	0	0	0	0	0	154
AD	0	0	0	65	42	29	0	0	0	0	0	136
AE	0	0	0	61	32	24	0	0	0	0	0	117
AF	0	0	0	0	0	0	0	0	0	0	0	0
AG	0	0	0	0	0	0	0	26	44	26	54	118
AH	0	0	0	53	30	0	0	0	0	0	0	83
AI	0	0	0	0	0	0	0	38	0	0	0	38
AJ	0	0	0	0	0	0	0	36	0	0	0	36
AK	0	0	0	54	41	30	0	0	0	0	0	125
AL	0	0	0	45	28	0	0	0	0	0	0	73
AM	0	0	26	37	44	72	0	0	0	0	0	173
AN	0	0	0	0	0	0	0	0	0	0	0	0
AO	0	0	0	0	0	0	0	24	38	44	64	119
AP	0	0	0	42	28	0	0	0	0	0	0	70
AQ	0	0	0	0	0	0	0	32	0	0	0	32
AR	58	48	42	30	0	0	0	0	0	0	0	148

To be continued on next page...

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Detailed Results

Calculation: Worst Case Analysis

...continued from previous page

Receptor	WTG 1	2	3	4	5	6	7	8	9	10	11	Total
AS	0	28	32	0	0	0	0	0	0	0	0	60
AT	30	82	28	0	0	0	0	0	0	0	0	110
AU	0	0	0	0	0	0	0	74	0	0	0	74
AV	0	0	0	0	0	0	0	0	0	38	83	83
AW	0	0	0	0	0	34	52	0	0	0	0	60
AX	0	0	0	0	0	0	0	27	46	0	40	109
AY	0	0	0	0	0	0	0	0	27	0	44	71
AZ	0	0	0	0	59	36	0	0	0	0	0	95
BA	0	0	37	0	0	0	0	0	0	0	0	37
BB	0	0	0	0	0	0	0	0	0	0	0	0
BC	0	0	0	0	0	30	43	0	0	0	0	43
BD	0	37	30	0	0	0	0	0	0	0	0	67
BE	0	0	0	0	0	0	0	76	0	0	0	76
BF	0	0	32	0	0	0	0	0	0	0	0	32
BG	0	0	0	0	0	0	0	0	0	0	0	0
BH	0	0	0	0	0	0	0	50	0	0	0	50
BI	70	71	24	0	0	0	0	0	0	0	0	148
BJ	0	0	0	0	0	0	0	0	0	0	0	0
BK	0	0	0	28	43	28	0	0	0	0	0	99
BL	0	0	0	0	0	67	0	0	0	0	0	67
BM	45	0	36	0	0	0	0	0	0	0	0	81
BN	35	83	26	0	0	0	0	0	0	0	0	109
BO	34	50	0	0	0	0	0	0	0	0	0	84
BP	0	50	0	0	0	0	0	0	0	0	0	50
BQ	0	0	0	0	0	0	0	0	0	34	0	34
BR	0	0	0	0	0	0	0	0	0	37	0	37
BS	0	0	0	0	49	29	0	0	0	0	0	78
BT	0	0	0	0	52	30	0	0	0	0	0	82
BU	0	0	0	0	0	0	33	79	0	0	0	112
BV	32	48	0	0	0	0	0	0	0	0	0	80
BW	0	0	0	0	0	0	0	74	0	0	0	74
BX	0	0	0	0	0	74	0	0	0	0	0	74
BY	0	0	0	0	0	0	0	0	25	76	34	109
BZ	55	0	0	0	0	0	0	0	0	0	0	55
CA	0	0	0	0	0	0	0	0	0	42	25	67
CB	0	0	0	0	60	32	0	0	0	0	0	92
CC	0	0	0	0	0	0	0	0	0	0	0	0
CD	0	0	0	0	0	71	0	0	0	0	0	71
CE	0	0	0	0	0	0	0	0	0	0	0	0
CF	0	0	0	0	88	34	0	0	0	0	0	122
CG	0	0	0	0	0	0	0	0	0	0	43	43
CH	34	56	0	0	0	0	0	0	0	0	0	90
CI	42	0	0	0	0	0	0	0	0	0	0	42
CJ	0	0	29	0	0	0	0	0	0	0	0	29
CK	28	44	0	0	0	0	0	0	0	0	0	72
CL	29	58	0	0	0	0	0	0	0	0	0	87
CM	0	0	0	0	0	0	0	0	0	34	0	34
CN	0	0	0	0	0	0	0	0	0	0	47	47
CO	0	0	0	0	0	0	0	0	0	0	0	0
CP	70	0	0	0	0	0	0	0	0	0	0	70
CQ	24	38	0	0	0	0	0	0	0	0	0	62
CR	0	0	0	0	0	0	0	0	0	0	0	0
CS	0	0	30	0	0	0	0	0	0	0	0	30
CT	25	36	0	0	0	0	0	0	0	0	0	61
CU	0	59	0	0	0	0	0	0	0	0	0	59
CV	0	0	0	0	0	0	0	0	0	0	80	80
CW	0	0	0	0	0	0	0	0	0	0	0	0
CX	0	0	0	0	0	0	0	0	0	0	0	0
CY	35	14	0	0	0	0	0	0	0	0	0	49
CZ	0	0	0	0	0	0	55	0	0	0	0	55
DA	0	33	0	0	0	0	0	0	0	0	0	33
DB	0	36	0	0	0	0	0	0	0	0	0	36
DC	0	0	0	0	0	0	0	0	0	32	0	32
DD	0	0	0	0	0	0	0	0	0	30	0	30
DE	0	0	0	0	0	0	0	38	22	0	0	60

To be continued on next page...

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Detailed Results

Calculation: Worst Case Analysis

...continued from previous page

Receptor	WTG 1	2	3	4	5	6	7	8	9	10	11	Total
DF	0	31	0	0	0	0	0	0	0	0	0	31
DG	0	0	0	0	0	0	29	0	0	0	0	29
DH	0	0	0	0	0	0	0	34	26	0	0	60
DI	0	0	0	0	0	0	29	0	0	0	0	29
DJ	0	0	0	0	0	0	0	0	0	0	0	0
DK	0	0	0	0	0	0	0	0	0	0	0	0
DL	0	0	0	0	0	0	0	0	0	27	0	27
DM	0	0	0	0	0	0	28	0	0	0	0	28
DN	0	0	0	0	0	0	0	0	55	0	0	55
DO	0	0	0	0	0	0	0	0	0	0	0	0
DP	0	0	0	0	0	0	0	0	0	0	0	0
DQ	0	0	0	0	0	0	0	12	0	0	0	12
DR	0	0	0	0	0	0	0	0	0	0	0	0
DS	0	0	0	0	0	0	0	0	0	0	0	0
DT	0	0	0	0	0	26	0	0	0	0	0	26
DU	0	29	0	0	0	0	0	0	0	0	0	29
DV	29	28	0	0	0	0	0	0	0	0	0	57
DW	0	0	0	0	0	0	0	0	0	0	0	0
DX	0	0	0	0	0	0	0	0	0	38	0	38
DY	0	0	0	0	0	0	0	0	52	0	0	52
DZ	0	30	0	0	0	0	0	0	0	0	0	30
EA	0	0	0	0	0	0	0	0	0	0	0	0
EB	0	0	0	0	0	0	0	0	0	23	0	23
EC	0	28	0	0	0	0	0	0	0	0	0	28
ED	0	0	0	0	0	0	0	0	0	0	0	0
EE	0	0	0	0	0	0	26	0	0	0	0	26
EF	0	0	0	0	0	0	0	0	0	26	0	26
EG	0	0	0	0	0	0	0	0	0	40	0	40
EH	0	30	0	0	0	0	0	0	0	0	0	30
EI	0	30	0	0	0	0	0	0	0	0	0	30
EJ	0	26	0	0	0	0	0	0	0	0	0	26
EK	0	28	0	0	0	0	0	0	0	0	0	28
EL	0	0	0	0	0	0	0	0	0	0	0	0
EM	0	26	0	0	0	0	0	0	0	0	0	26
EN	0	25	0	0	0	0	0	0	0	0	0	25
EO	0	26	0	0	0	0	0	0	0	0	0	26
Total	787	1294	475	848	932	961	434	863	713	792	808	

Worst case, Max shadow hours per day [h/day]

Receptor	WTG 1	2	3	4	5	6	7	8	9	10	11	Total
A	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:08	0:00	1:40	1:40
B	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:22	0:34	1:14	0:36	1:14
C	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
D	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:35	0:22	0:00	0:21	0:35
E	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:33	0:21	0:00	0:20	0:33
F	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:27	0:00	0:00	0:27
G	0:00	0:00	0:00	0:39	0:35	0:25	0:00	0:00	0:00	0:00	0:00	0:39
H	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
I	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
J	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:31	0:44	0:25	0:00	1:14
K	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:29	0:00	0:36	0:36
L	0:00	0:00	0:22	0:31	0:33	0:40	0:52	0:00	0:00	0:00	0:00	1:06
M	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:28	0:00	0:00	0:28
N	0:00	0:00	0:00	0:38	0:34	0:25	0:00	0:00	0:00	0:00	0:00	0:38
O	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:32	0:20	0:00	0:00	0:32
P	0:29	0:00	0:38	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:38
Q	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
R	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
S	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
T	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:15	0:00	0:00	0:15
U	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:35	0:00	0:28	0:00	1:02
V	0:00	0:00	0:00	0:32	0:30	0:22	0:00	0:00	0:00	0:00	0:00	0:32
W	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
X	0:00	0:00	0:00	0:31	0:29	0:22	0:00	0:00	0:00	0:00	0:00	0:31

To be continued on next page...

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Detailed Results

Calculation: Worst Case Analysis

...continued from previous page

Receptor	WTG 1	2	3	4	5	6	7	8	9	10	11	Total
Y	0:00	0:00	0:00	0:00	0:21	0:22	0:00	0:00	0:00	0:00	0:00	0:22
Z	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:21	0:00	0:21
AA	0:00	0:00	0:00	0:28	0:34	0:24	0:00	0:00	0:00	0:00	0:00	0:34
AB	0:00	0:00	0:00	0:00	0:20	0:28	0:42	0:00	0:00	0:00	0:00	0:42
AC	0:25	0:50	0:20	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:50
AD	0:00	0:00	0:00	0:31	0:31	0:23	0:00	0:00	0:00	0:00	0:00	0:31
AE	0:00	0:00	0:00	0:26	0:25	0:19	0:00	0:00	0:00	0:00	0:00	0:26
AF	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
AG	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:21	0:33	0:22	0:29	0:51
AH	0:00	0:00	0:00	0:26	0:24	0:00	0:00	0:00	0:00	0:00	0:00	0:26
AI	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:26	0:00	0:00	0:00	0:26
AJ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:26	0:00	0:00	0:00	0:26
AK	0:00	0:00	0:00	0:23	0:31	0:23	0:00	0:00	0:00	0:00	0:00	0:31
AL	0:00	0:00	0:00	0:24	0:22	0:00	0:00	0:00	0:00	0:00	0:00	0:24
AM	0:00	0:00	0:21	0:30	0:31	0:35	0:00	0:00	0:00	0:00	0:00	0:35
AN	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
AO	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:19	0:29	0:34	0:27	0:54
AP	0:00	0:00	0:00	0:23	0:21	0:00	0:00	0:00	0:00	0:00	0:00	0:23
AQ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:25	0:00	0:00	0:00	0:25
AR	0:46	0:40	0:29	0:21	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:46
AS	0:00	0:09	0:21	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:21
AT	0:07	0:47	0:20	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:49
AU	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:33	0:00	0:00	0:00	0:33
AV	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:22	0:37	0:38
AW	0:00	0:00	0:00	0:00	0:00	0:26	0:37	0:00	0:00	0:00	0:00	0:37
AX	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:21	0:31	0:00	0:24	0:31
AY	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:07	0:00	0:28	0:28
AZ	0:00	0:00	0:00	0:00	0:37	0:27	0:00	0:00	0:00	0:00	0:00	0:37
BA	0:00	0:00	0:21	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:21
BB	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
BC	0:00	0:00	0:00	0:00	0:00	0:24	0:35	0:00	0:00	0:00	0:00	0:40
BD	0:00	0:14	0:19	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:19
BE	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:31	0:00	0:00	0:00	0:31
BF	0:00	0:00	0:20	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:20
BG	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
BH	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:32	0:00	0:00	0:00	0:32
BI	0:21	0:42	0:17	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:42
BJ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
BK	0:00	0:00	0:00	0:07	0:29	0:22	0:00	0:00	0:00	0:00	0:00	0:29
BL	0:00	0:00	0:00	0:00	0:00	0:27	0:00	0:00	0:00	0:00	0:00	0:27
BM	0:34	0:00	0:22	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:34
BN	0:09	0:40	0:17	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:45
BO	0:20	0:37	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:37
BP	0:00	0:37	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:37
BQ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:10	0:00	0:10
BR	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:11	0:00	0:11
BS	0:00	0:00	0:00	0:00	0:30	0:22	0:00	0:00	0:00	0:00	0:00	0:30
BT	0:00	0:00	0:00	0:00	0:31	0:23	0:00	0:00	0:00	0:00	0:00	0:31
BU	0:00	0:00	0:00	0:00	0:00	0:00	0:24	0:25	0:00	0:00	0:00	0:25
BV	0:20	0:36	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:36
BW	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:27	0:00	0:00	0:00	0:27
BX	0:00	0:00	0:00	0:00	0:00	0:25	0:00	0:00	0:00	0:00	0:00	0:25
BY	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:20	0:32	0:21	0:41
BZ	0:32	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:32
CA	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:30	0:21	0:30
CB	0:00	0:00	0:00	0:00	0:31	0:24	0:00	0:00	0:00	0:00	0:00	0:31
CC	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CD	0:00	0:00	0:00	0:00	0:00	0:23	0:00	0:00	0:00	0:00	0:00	0:23
CE	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CF	0:00	0:00	0:00	0:00	0:30	0:24	0:00	0:00	0:00	0:00	0:00	0:30
CG	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:18	0:18
CH	0:28	0:33	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:33
CI	0:30	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:30
CJ	0:00	0:00	0:06	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:06
CK	0:23	0:32	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:32

To be continued on next page...

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Detailed Results

Calculation: Worst Case Analysis

...continued from previous page

Receptor	WTG 1	2	3	4	5	6	7	8	9	10	11	Total
CL	0:25	0:32	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:32
CM	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:25	0:00	0:25
CN	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:19	0:19
CO	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CP	0:30	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:30
CQ	0:17	0:30	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:30
CR	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CS	0:00	0:00	0:07	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:07
CT	0:17	0:30	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:30
CU	0:00	0:30	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:30
CV	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:25	0:25
CW	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CX	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CY	0:27	0:11	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:27
CZ	0:00	0:00	0:00	0:00	0:00	0:00	0:24	0:00	0:00	0:00	0:00	0:24
DA	0:00	0:28	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:28
DB	0:00	0:27	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:27
DC	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:22	0:00	0:22
DD	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:21	0:00	0:21
DE	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:20	0:15	0:00	0:00	0:20
DF	0:00	0:27	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:27
DG	0:00	0:00	0:00	0:00	0:00	0:00	0:24	0:00	0:00	0:00	0:00	0:24
DH	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:19	0:17	0:00	0:00	0:19
DI	0:00	0:00	0:00	0:00	0:00	0:00	0:25	0:00	0:00	0:00	0:00	0:25
DJ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DK	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DL	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:22	0:00	0:22
DM	0:00	0:00	0:00	0:00	0:00	0:00	0:23	0:00	0:00	0:00	0:00	0:23
DN	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:24	0:00	0:00	0:24
DO	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DP	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DQ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:08	0:00	0:00	0:00	0:08
DR	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DS	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DT	0:00	0:00	0:00	0:00	0:00	0:07	0:00	0:00	0:00	0:00	0:00	0:07
DU	0:00	0:24	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:24
DV	0:23	0:18	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:23
DW	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DX	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:21	0:00	0:21
DY	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:23	0:00	0:00	0:23
DZ	0:00	0:24	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:24
EA	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
EB	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:19	0:00	0:19
EC	0:00	0:23	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:23
ED	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
EE	0:00	0:00	0:00	0:00	0:00	0:00	0:21	0:00	0:00	0:00	0:00	0:21
EF	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:19	0:00	0:19
EG	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:22	0:00	0:22
EH	0:00	0:23	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:23
EI	0:00	0:22	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:22
EJ	0:00	0:21	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:21
EK	0:00	0:22	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:22
EL	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
EM	0:00	0:21	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:21
EN	0:00	0:19	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:19
EO	0:00	0:21	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:21
Total	7:43	14:30	5:00	6:50	10:09	9:42	5:07	8:41	7:27	8:00	7:42	

Real case, Shadow hours per year [h/year]

Receptor	WTG 1	2	3	4	5	6	7	8	9	10	11	Total
A	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:18	0:00	29:55	30:13
B	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:06	2:53	12:57	2:53	15:52
C	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
D	0:00	0:00	0:00	0:00	0:00	0:00	0:00	3:47	1:15	0:00	0:52	5:53

To be continued on next page...

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Detailed Results

Calculation: Worst Case Analysis

...continued from previous page

Receptor	WTG 1	2	3	4	5	6	7	8	9	10	11	Total
E	0:00	0:00	0:00	0:00	0:00	0:00	0:00	3:02	1:06	0:00	0:46	4:37
F	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:10	0:00	0:00	1:09
G	0:00	0:00	0:00	7:36	3:00	1:17	0:00	0:00	0:00	0:00	0:00	11:53
H	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
I	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
J	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:02	3:17	1:23	0:00	5:41
K	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	3:26	0:00	4:16	7:41
L	0:00	0:00	1:06	2:10	2:14	4:34	4:14	0:00	0:00	0:00	0:00	14:17
M	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:19	0:00	0:00	1:18
N	0:00	0:00	0:00	7:09	2:55	1:14	0:00	0:00	0:00	0:00	0:00	11:17
O	0:00	0:00	0:00	0:00	0:00	0:00	0:00	2:50	1:00	0:00	0:00	3:44
P	2:11	0:00	3:05	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	5:15
Q	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
R	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
S	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
T	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:17	0:00	0:00	0:16
U	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:32	0:00	1:25	0:00	2:56
V	0:00	0:00	0:00	4:58	2:19	1:02	0:00	0:00	0:00	0:00	0:00	8:19
W	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
X	0:00	0:00	0:00	4:58	2:05	0:57	0:00	0:00	0:00	0:00	0:00	7:59
Y	0:00	0:00	0:00	0:00	2:00	1:46	0:00	0:00	0:00	0:00	0:00	2:01
Z	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:14	0:00	1:13
AA	0:00	0:00	0:00	2:59	3:02	1:20	0:00	0:00	0:00	0:00	0:00	7:21
AB	0:00	0:00	0:00	0:00	1:03	2:10	6:29	0:00	0:00	0:00	0:00	7:45
AC	3:27	8:39	1:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	13:06
AD	0:00	0:00	0:00	3:44	2:32	1:09	0:00	0:00	0:00	0:00	0:00	7:24
AE	0:00	0:00	0:00	2:50	1:30	0:43	0:00	0:00	0:00	0:00	0:00	5:03
AF	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
AG	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:50	2:03	0:36	1:56	5:24
AH	0:00	0:00	0:00	2:28	1:23	0:00	0:00	0:00	0:00	0:00	0:00	3:51
AI	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:56	0:00	0:00	0:00	1:55
AJ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:48	0:00	0:00	0:00	1:47
AK	0:00	0:00	0:00	2:23	2:32	1:12	0:00	0:00	0:00	0:00	0:00	6:06
AL	0:00	0:00	0:00	1:57	1:11	0:00	0:00	0:00	0:00	0:00	0:00	3:07
AM	0:00	0:00	0:55	1:48	1:57	3:36	0:00	0:00	0:00	0:00	0:00	8:16
AN	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
AO	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:39	1:36	1:42	2:14	6:10
AP	0:00	0:00	0:00	1:48	1:07	0:00	0:00	0:00	0:00	0:00	0:00	2:54
AQ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:55	0:00	0:00	0:00	0:54
AR	4:23	2:09	1:30	0:46	0:00	0:00	0:00	0:00	0:00	0:00	0:00	8:04
AS	0:00	0:30	1:17	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:46
AT	0:25	7:39	1:03	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	8:52
AU	0:00	0:00	0:00	0:00	0:00	0:00	0:00	3:05	0:00	0:00	0:00	3:05
AV	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:36	6:15	6:18
AW	0:00	0:00	0:00	0:00	0:00	1:40	4:01	0:00	0:00	0:00	0:00	4:25
AX	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:46	1:54	0:00	1:06	3:44
AY	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:22	0:00	2:39	3:01
AZ	0:00	0:00	0:00	0:00	4:37	1:56	0:00	0:00	0:00	0:00	0:00	6:32
BA	0:00	0:00	1:25	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:24
BB	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
BC	0:00	0:00	0:00	0:00	0:00	1:10	2:38	0:00	0:00	0:00	0:00	2:50
BD	0:00	0:59	1:08	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	2:07
BE	0:00	0:00	0:00	0:00	0:00	0:00	0:00	2:42	0:00	0:00	0:00	2:42
BF	0:00	0:00	1:11	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:11
BG	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
BH	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:48	0:00	0:00	0:00	1:48
BI	2:30	5:44	0:44	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	8:57
BJ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
BK	0:00	0:00	0:00	0:23	2:30	1:11	0:00	0:00	0:00	0:00	0:00	4:03
BL	0:00	0:00	0:00	0:00	0:00	3:32	0:00	0:00	0:00	0:00	0:00	3:32
BM	2:10	0:00	0:53	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	3:03
BN	0:36	6:44	0:47	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	7:57
BO	1:20	3:40	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	4:59
BP	0:00	3:41	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	3:41
BQ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:37	0:00	0:36

To be continued on next page...

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Detailed Results

Calculation: Worst Case Analysis

...continued from previous page

Receptor	WTG 1	2	3	4	5	6	7	8	9	10	11	Total
BR	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:45	0:00	0:44
BS	0:00	0:00	0:00	0:00	2:50	1:15	0:00	0:00	0:00	0:00	0:00	4:05
BT	0:00	0:00	0:00	0:00	3:08	1:21	0:00	0:00	0:00	0:00	0:00	4:29
BU	0:00	0:00	0:00	0:00	0:00	0:00	1:02	3:27	0:00	0:00	0:00	4:28
BV	1:14	3:20	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	4:33
BW	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:53	0:00	0:00	0:00	1:52
BX	0:00	0:00	0:00	0:00	0:00	3:23	0:00	0:00	0:00	0:00	0:00	3:23
BY	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:41	2:45	0:50	4:16
BZ	2:12	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	2:12
CA	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	2:21	0:53	3:13
CB	0:00	0:00	0:00	0:00	3:40	1:29	0:00	0:00	0:00	0:00	0:00	5:08
CC	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CD	0:00	0:00	0:00	0:00	0:00	3:05	0:00	0:00	0:00	0:00	0:00	3:05
CE	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CF	0:00	0:00	0:00	0:00	4:55	1:33	0:00	0:00	0:00	0:00	0:00	6:28
CG	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:20	1:20
CH	1:25	2:13	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	3:38
CI	1:41	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:40
CJ	0:00	0:00	0:21	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:20
CK	0:59	1:53	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	2:51
CL	1:06	2:12	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	3:18
CM	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:08	0:00	1:08
CN	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:32	1:32
CO	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CP	2:28	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	2:27
CQ	0:49	1:57	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	2:46
CR	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CS	0:00	0:00	0:23	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:23
CT	0:49	1:46	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	2:35
CU	0:00	3:15	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	3:14
CV	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	3:08	3:07
CW	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CX	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
CY	1:16	0:09	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:24
CZ	0:00	0:00	0:00	0:00	0:00	0:00	2:15	0:00	0:00	0:00	0:00	2:14
DA	0:00	1:29	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:28
DB	0:00	1:46	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:46
DC	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:53	0:00	0:52
DD	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:50	0:00	0:49
DE	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:51	0:20	0:00	0:00	1:10
DF	0:00	1:20	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:20
DG	0:00	0:00	0:00	0:00	0:00	0:00	1:04	0:00	0:00	0:00	0:00	1:04
DH	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:47	0:28	0:00	0:00	1:15
DI	0:00	0:00	0:00	0:00	0:00	0:00	1:09	0:00	0:00	0:00	0:00	1:08
DJ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DK	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DL	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:53	0:00	0:53
DM	0:00	0:00	0:00	0:00	0:00	0:00	1:04	0:00	0:00	0:00	0:00	1:04
DN	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:29	0:00	0:00	1:29
DO	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DP	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DQ	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:06	0:00	0:00	0:00	0:06
DR	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DS	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DT	0:00	0:00	0:00	0:00	0:00	0:22	0:00	0:00	0:00	0:00	0:00	0:21
DU	0:00	1:06	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:05
DV	0:55	0:30	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:25
DW	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
DX	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:55	0:00	0:55
DY	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:21	0:00	0:00	1:20
DZ	0:00	1:01	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:00
EA	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
EB	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:40	0:00	0:39
EC	0:00	1:01	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:00
ED	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00

To be continued on next page...

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Detailed Results

Calculation: Worst Case Analysis

...continued from previous page

Receptor	WTG 1	2	3	4	5	6	7	8	9	10	11	Total
EE	0:00	0:00	0:00	0:00	0:00	0:00	1:00	0:00	0:00	0:00	0:00	1:00
EF	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:38	0:00	0:37
EG	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:03	0:00	1:02
EH	0:00	0:55	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:54
EI	0:00	0:52	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:51
EJ	0:00	1:01	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	1:00
EK	0:00	0:50	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:49
EL	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
EM	0:00	0:50	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:50
EN	0:00	0:44	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:44
EO	0:00	0:55	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:54
Total	23:26	35:40	12:19	14:33	24:56	24:37	22:35	21:13	18:56	28:59	56:20	

Total time can be different from the sum in case of concurrent Shadow flicker events

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** A - H001

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March			April			May			June		
1	08:52		08:22		07:24			07:09			17:28 (11)		06:00		17:38 (11)	05:10		
	16:22		17:14		18:09			20:08	98		19:06 (11)		21:03	70	18:48 (11)	21:53		
2	08:52		08:20		07:22			07:06			17:27 (11)		05:58		17:39 (11)	05:09		
	16:23		17:16		18:11			20:10	99		19:06 (11)		21:05	68	18:47 (11)	21:55		
3	08:52		08:18		07:19			07:04			17:27 (11)		05:55		17:42 (11)	05:08		
	16:24		17:18		18:13			20:12	99		19:06 (11)		21:07	64	18:46 (11)	21:56		
4	08:51		08:16		07:17			07:02			17:26 (11)		05:53		17:43 (11)	05:07		
	16:26		17:20		18:15			20:13	99		19:05 (11)		21:09	62	18:45 (11)	21:57		
5	08:51		08:15		07:15			06:59			17:26 (11)		05:51		17:44 (11)	05:07		
	16:27		17:22		18:17			20:15	99		19:05 (11)		21:11	60	18:44 (11)	21:58		
6	08:51		08:13		07:12			06:57			17:26 (11)		05:50		17:46 (11)	05:06		
	16:28		17:24		18:19			20:17	100		19:06 (11)		21:12	56	18:42 (11)	21:59		
7	08:50		08:11		07:10		17:17 (11)	06:54			17:25 (11)		05:48		17:47 (11)	05:05		
	16:30		17:26		18:21	13	17:30 (11)	20:19	100		19:05 (11)		21:14	53	18:40 (11)	22:00		
8	08:50		08:09		07:08		17:10 (11)	06:52			17:26 (11)		05:46		17:49 (11)	05:05		
	16:31		17:28		18:23	28	17:38 (11)	20:21	99		19:05 (11)		21:16	50	18:39 (11)	22:01		
9	08:49		08:07		07:05		17:05 (11)	06:49			17:25 (11)		05:44		17:52 (11)	05:04		
	16:32		17:30		18:25	36	17:41 (11)	20:23	99		19:04 (11)		21:18	46	18:38 (11)	22:02		
10	08:48		08:05		07:03		17:01 (11)	06:47			17:25 (11)		05:42		17:54 (11)	05:04		
	16:34		17:32		18:27	44	17:45 (11)	20:25	99		19:04 (11)		21:20	41	18:35 (11)	22:03		
11	08:48		08:03		07:00		16:57 (11)	06:45			17:26 (11)		05:40		17:56 (11)	05:03		
	16:35		17:34		18:29	50	17:47 (11)	20:26	98		19:04 (11)		21:21	37	18:33 (11)	22:04		
12	08:47		08:01		06:58		16:55 (11)	06:42			17:25 (11)		05:38		17:59 (11)	05:03		21:27 (9)
	16:37		17:36		18:31	55	17:50 (11)	20:28	98		19:03 (11)		21:23	32	18:31 (11)	22:04	2	21:29 (9)
13	08:46		07:59		06:55		16:52 (11)	06:40			17:25 (11)		05:36		18:02 (11)	05:02		21:27 (9)
	16:39		17:38		18:32	59	17:51 (11)	20:30	98		19:03 (11)		21:25	26	18:28 (11)	22:05	3	21:30 (9)
14	08:45		07:57		06:53		16:50 (11)	06:38			17:26 (11)		05:35		18:05 (11)	05:02		21:26 (9)
	16:40		17:40		18:34	64	17:54 (11)	20:32	97		19:03 (11)		21:26	19	18:24 (11)	22:06	4	21:30 (9)
15	08:44		07:55		06:51		16:49 (11)	06:35			17:25 (11)		05:33			05:02		21:25 (9)
	16:42		17:42		18:36	67	17:56 (11)	20:34	96		19:01 (11)		21:28			22:06	5	21:30 (9)
16	08:43		07:53		06:48		16:46 (11)	06:33			17:26 (11)		05:31			05:02		21:24 (9)
	16:44		17:44		18:38	71	17:57 (11)	20:36	95		19:01 (11)		21:30			22:07	7	21:31 (9)
17	08:42		07:51		06:46		16:45 (11)	06:31			17:27 (11)		05:30			05:02		21:24 (9)
	16:45		17:46		18:40	73	17:58 (11)	20:38	94		19:01 (11)		21:31			22:07	7	21:31 (9)
18	08:41		07:49		06:43		16:43 (11)	06:28			17:27 (11)		05:28			05:02		21:24 (9)
	16:47		17:48		18:42	76	17:59 (11)	20:39	93		19:00 (11)		21:33			22:08	7	21:31 (9)
19	08:40		07:47		06:41		16:41 (11)	06:26			17:27 (11)		05:27			05:02		21:24 (9)
	16:49		17:50		18:44	80	18:01 (11)	20:41	92		18:59 (11)		21:35			22:08	8	21:32 (9)
20	08:39		07:44		06:38		16:39 (11)	06:24			17:28 (11)		05:25			05:02		21:25 (9)
	16:51		17:52		18:46	82	18:01 (11)	20:43	90		18:58 (11)		21:36			22:09	8	21:33 (9)
21	08:38		07:42		06:36		16:39 (11)	06:21			17:29 (11)		05:24			05:02		21:25 (9)
	16:52		17:54		18:47	83	18:02 (11)	20:45	89		18:58 (11)		21:38			22:09	8	21:33 (9)
22	08:37		07:40		06:33		16:37 (11)	06:19			17:30 (11)		05:22			05:02		21:25 (9)
	16:54		17:56		18:49	85	18:02 (11)	20:47	87		18:57 (11)		21:39			22:09	8	21:33 (9)
23	08:35		07:38		06:31		16:36 (11)	06:17			17:30 (11)		05:21			05:02		21:25 (9)
	16:56		17:58		18:51	87	18:03 (11)	20:49	86		18:56 (11)		21:41			22:09	8	21:33 (9)
24	08:34		07:36		06:29		16:34 (11)	06:15			17:31 (11)		05:19			05:03		21:26 (9)
	16:58		18:00		18:53	89	18:03 (11)	20:51	85		18:56 (11)		21:43			22:09	8	21:34 (9)
25	08:33		07:33		06:26		16:34 (11)	06:12			17:32 (11)		05:18			05:03		21:26 (9)
	17:00		18:02		18:55	90	18:04 (11)	20:52	83		18:55 (11)		21:44			22:09	7	21:33 (9)
26	08:31		07:31		06:24		16:32 (11)	06:10			17:32 (11)		05:17			05:03		21:26 (9)
	17:02		18:03		18:57	92	18:04 (11)	20:54	81		18:53 (11)		21:45			22:09	7	21:33 (9)
27	08:30		07:29		06:21		16:32 (11)	06:08			17:33 (11)		05:16			05:04		21:27 (9)
	17:04		18:05		18:59	93	18:05 (11)	20:56	79		18:52 (11)		21:47			22:09	6	21:33 (9)
28	08:28		07:26		06:19		16:30 (11)	06:06			17:34 (11)		05:14			05:04		21:28 (9)
	17:06		18:07		19:01	95	18:05 (11)	20:58	77		18:51 (11)		21:48			22:09	5	21:33 (9)
29	08:27				07:16		17:30 (11)	06:04			17:36 (11)		05:13			05:05		21:29 (9)
	17:08				20:02	95	19:05 (11)	21:00	74		18:50 (11)		21:50			22:09	4	21:33 (9)
30	08:25				07:14		17:29 (11)	06:02			17:37 (11)		05:12			05:05		21:31 (9)
	17:10				20:04	96	19:05 (11)	21:02	72		18:49 (11)		21:51			22:09	2	21:33 (9)
31	08:23				07:11		17:28 (11)						05:11					
	17:12				20:06	98	19:06 (11)						21:52					
Potential sun hours	250		273		367			420			494				510			
Total, worst case						1801			2755			684				114		
Sun reduction						0.22			0.31			0.31				0.26		
Oper. time red.						1.00			1.00			1.00				1.00		
Wind dir. red.						0.64			0.64			0.64				0.61		
Total reduction						0.14			0.20			0.20				0.16		
Total, real						254			544			138				18		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** A - H001

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July			August			September			October			November	December
1	05:06			05:46		18:08 (11)	06:40		17:25 (11)	07:34		17:33 (11)	07:32	08:27
	22:08			21:33	35	18:43 (11)	20:26	98	19:03 (11)	19:12	57	18:30 (11)	17:02	16:17
2	05:07			05:48		18:05 (11)	06:42		17:24 (11)	07:36		17:35 (11)	07:34	08:29
	22:08			21:31	39	18:44 (11)	20:24	99	19:03 (11)	19:10	52	18:27 (11)	17:00	16:17
3	05:08			05:49		18:03 (11)	06:44		17:23 (11)	07:37		17:38 (11)	07:36	08:30
	22:07			21:29	43	18:46 (11)	20:21	99	19:02 (11)	19:07	46	18:24 (11)	16:58	16:16
4	05:08			05:51		18:00 (11)	06:46		17:23 (11)	07:39		17:41 (11)	07:38	08:32
	22:07			21:27	48	18:48 (11)	20:19	99	19:02 (11)	19:05	40	18:21 (11)	16:56	16:15
5	05:09			05:53		17:59 (11)	06:48		17:22 (11)	07:41		17:45 (11)	07:40	08:33
	22:06			21:25	50	18:49 (11)	20:16	100	19:02 (11)	19:03	32	18:17 (11)	16:54	16:15
6	05:10			05:55		17:57 (11)	06:49		17:21 (11)	07:43		17:49 (11)	07:42	08:35
	22:06			21:24	54	18:51 (11)	20:14	100	19:01 (11)	19:00	21	18:10 (11)	16:52	16:14
7	05:11			05:56		17:55 (11)	06:51		17:21 (11)	07:45			07:44	08:36
	22:05			21:22	57	18:52 (11)	20:12	100	19:01 (11)	18:58			16:50	16:14
8	05:12			05:58		17:53 (11)	06:53		17:21 (11)	07:47			07:46	08:37
	22:04			21:20	60	18:53 (11)	20:09	99	19:00 (11)	18:55			16:48	16:13
9	05:13			06:00		17:51 (11)	06:55		17:20 (11)	07:48			07:48	08:38
	22:04			21:18	63	18:54 (11)	20:07	99	18:59 (11)	18:53			16:47	16:13
10	05:14			06:02		17:50 (11)	06:56		17:20 (11)	07:50			07:50	08:40
	22:03			21:16	65	18:55 (11)	20:04	99	18:59 (11)	18:51			16:45	16:12
11	05:16			06:03		17:48 (11)	06:58		17:20 (11)	07:52			07:52	08:41
	22:02			21:13	69	18:57 (11)	20:02	98	18:58 (11)	18:48			16:43	16:12
12	05:17			06:05		17:46 (11)	07:00		17:21 (11)	07:54			07:54	08:42
	22:01			21:11	71	18:57 (11)	19:59	97	18:58 (11)	18:46			16:41	16:12
13	05:18			06:07		17:45 (11)	07:02		17:20 (11)	07:56			07:55	08:43
	22:00			21:09	73	18:58 (11)	19:57	96	18:56 (11)	18:43			16:40	16:12
14	05:19			06:09		17:44 (11)	07:04		17:20 (11)	07:58			07:57	08:44
	21:59			21:07	75	18:59 (11)	19:54	96	18:56 (11)	18:41			16:38	16:12
15	05:20			06:10		17:42 (11)	07:05		17:20 (11)	08:00			07:59	08:45
	21:58			21:05	77	18:59 (11)	19:52	95	18:55 (11)	18:39			16:36	16:12
16	05:22			06:12		17:41 (11)	07:07		17:20 (11)	08:02			08:01	08:46
	21:57			21:03	79	19:00 (11)	19:49	94	18:54 (11)	18:36			16:35	16:12
17	05:23			06:14		17:40 (11)	07:09		17:20 (11)	08:03			08:03	08:47
	21:56			21:01	81	19:01 (11)	19:47	93	18:53 (11)	18:34			16:33	16:12
18	05:24			06:16		17:38 (11)	07:11		17:21 (11)	08:05			08:05	08:47
	21:54			20:59	83	19:01 (11)	19:44	91	18:52 (11)	18:32			16:32	16:12
19	05:26			06:17		17:37 (11)	07:12		17:22 (11)	08:07			08:07	08:48
	21:53			20:56	84	19:01 (11)	19:42	89	18:51 (11)	18:30			16:31	16:13
20	05:27			06:19		17:36 (11)	07:14		17:21 (11)	08:09			08:09	08:49
	21:52			20:54	86	19:02 (11)	19:40	88	18:49 (11)	18:27			16:29	16:13
21	05:29			06:21		17:34 (11)	07:16		17:22 (11)	08:11			08:10	08:49
	21:50			20:52	88	19:02 (11)	19:37	86	18:48 (11)	18:25			16:28	16:13
22	05:30			06:23		17:33 (11)	07:18		17:23 (11)	08:13			08:12	08:50
	21:49			20:50	89	19:02 (11)	19:35	84	18:47 (11)	18:23			16:27	16:14
23	05:32			06:25		17:32 (11)	07:19		17:24 (11)	08:15			08:14	08:50
	21:48			20:47	91	19:03 (11)	19:32	82	18:46 (11)	18:21			16:25	16:14
24	05:33			06:26		17:31 (11)	07:21		17:25 (11)	08:17			08:16	08:51
	21:46			20:45	92	19:03 (11)	19:30	80	18:45 (11)	18:18			16:24	16:15
25	05:35			06:28		17:30 (11)	07:23		17:25 (11)	07:19			08:17	08:51
	21:45			20:43	93	19:03 (11)	19:27	77	18:42 (11)	17:16			16:23	16:16
26	05:36			06:30		17:29 (11)	07:25		17:26 (11)	07:21			08:19	08:52
	21:43			20:40	94	19:03 (11)	19:25	75	18:41 (11)	17:14			16:22	16:16
27	05:38			06:32		17:28 (11)	07:27		17:27 (11)	07:23			08:21	08:52
	21:41			20:38	95	19:03 (11)	19:22	72	18:39 (11)	17:12			16:21	16:17
28	05:40			06:33		17:27 (11)	07:28		17:29 (11)	07:24			08:22	08:52
	21:40			20:36	96	19:03 (11)	19:20	68	18:37 (11)	17:10			16:20	16:18
29	05:41		18:20 (11)	06:35		17:27 (11)	07:30		17:30 (11)	07:26			08:24	08:52
	21:38	11	18:31 (11)	20:33	96	19:03 (11)	19:17	65	18:35 (11)	17:08			16:19	16:19
30	05:43		18:15 (11)	06:37		17:25 (11)	07:32		17:31 (11)	07:28			08:26	08:52
	21:36	22	18:37 (11)	20:31	98	19:03 (11)	19:15	61	18:32 (11)	17:06			16:18	16:20
31	05:44		18:11 (11)	06:39		17:25 (11)				07:30				08:52
	21:35	29	18:40 (11)	20:29	98	19:03 (11)				17:04				16:21
Potential sun hours	512			460			382			328			259	233
Total, worst case		62			2322			2679			248			
Sun reduction		0.22			0.26			0.25			0.23			
Oper. time red.		1.00			1.00			1.00			1.00			
Wind dir. red.		0.64			0.64			0.64			0.64			
Total reduction		0.14			0.16			0.16			0.15			
Total, real		9			382			432			36			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** B - H002

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February		March		April		May	June
1	08:52	08:22		07:24		16:14 (10)	07:09	19:12 (9)	06:00	05:10
	16:22	17:13		18:09	73	17:27 (10)	20:08	19:41 (9)	21:03	21:53
2	08:52	08:20		07:22		16:13 (10)	07:06	19:11 (9)	05:57	05:09
	16:23	17:15		18:11	73	17:26 (10)	20:10	19:43 (9)	21:05	21:55
3	08:52	08:18		07:19		16:13 (10)	07:04	19:11 (9)	05:55	05:08
	16:24	17:17		18:13	74	17:27 (10)	20:12	19:45 (9)	21:07	21:56
4	08:51	08:16		07:17		16:13 (10)	07:02	19:10 (9)	05:53	05:07
	16:26	17:19		18:15	74	17:27 (10)	20:13	19:46 (8)	21:09	21:57
5	08:51	08:15		07:15		16:13 (10)	06:59	19:10 (9)	05:51	05:07
	16:27	17:21		18:17	73	17:26 (10)	20:15	19:46 (8)	21:11	21:58
6	08:51	08:13		07:12		16:13 (10)	06:57	19:11 (9)	05:49	05:06
	16:28	17:23		18:19	73	17:26 (10)	20:17	19:45 (8)	21:12	21:59
7	08:50	08:11		07:10		16:12 (10)	06:54	19:11 (9)	05:48	05:05
	16:30	17:25		18:21	73	17:25 (10)	20:19	19:42 (9)	21:14	22:00
8	08:50	08:09	16:43 (10)	07:08		16:13 (10)	06:52	19:12 (9)	05:46	05:05
	16:31	17:28	14 16:57 (10)	18:23	72	17:25 (10)	20:21	19:42 (9)	21:16	22:01
9	08:49	08:07	16:38 (10)	07:05		16:12 (10)	06:49	19:12 (9)	05:44	05:04
	16:32	17:30	21 16:59 (10)	18:25	72	17:24 (10)	20:23	19:40 (9)	21:18	22:02
10	08:48	08:05	16:35 (10)	07:03		16:13 (10)	06:47	19:13 (9)	05:42	05:03
	16:34	17:32	27 17:02 (10)	18:27	71	17:24 (10)	20:25	19:38 (9)	21:20	22:03
11	08:48	08:03	16:33 (10)	07:00		16:13 (10)	06:45	19:15 (9)	05:40	05:03
	16:35	17:34	31 17:04 (10)	18:29	70	17:23 (10)	20:26	19:37 (9)	21:21	22:04
12	08:47	08:01	16:31 (10)	06:58		16:14 (10)	06:42	19:16 (9)	05:38	05:03
	16:37	17:36	35 17:06 (10)	18:31	69	17:23 (10)	20:28	19:34 (9)	21:23	22:04
13	08:46	07:59	16:28 (10)	06:55		16:13 (10)	06:40	19:19 (9)	05:36	05:02
	16:39	17:38	40 17:08 (10)	18:32	68	17:21 (10)	20:30	19:31 (9)	21:25	22:05
14	08:45	07:57	16:27 (10)	06:53		16:14 (10)	06:38		05:35	05:02
	16:40	17:40	43 17:10 (10)	18:34	67	17:21 (10)	20:32		21:26	22:06
15	08:44	07:55	16:26 (10)	06:51		16:15 (10)	06:35		05:33	05:02
	16:42	17:42	46 17:12 (10)	18:36	65	17:20 (10)	20:34		21:28	22:06
16	08:43	07:53	16:24 (10)	06:48		16:16 (10)	06:33		05:31	05:02
	16:44	17:44	51 17:15 (10)	18:38	63	17:19 (10)	20:36		21:30	22:07
17	08:42	07:51	16:23 (10)	06:46		16:17 (10)	06:31		05:30	05:02
	16:45	17:46	54 17:17 (10)	18:40	61	17:18 (10)	20:38		21:31	22:07
18	08:41	07:49	16:21 (10)	06:43		16:17 (10)	06:28		05:28	05:02
	16:47	17:48	57 17:18 (10)	18:42	59	17:16 (10)	20:39		21:33	22:08
19	08:40	07:47	16:21 (10)	06:41		16:19 (10)	06:26		05:26	05:02
	16:49	17:50	60 17:21 (10)	18:44	56	17:15 (10)	20:41		21:35	22:08
20	08:39	07:44	16:20 (10)	06:38		16:20 (10)	06:24		05:25	05:02
	16:51	17:52	63 17:23 (10)	18:46	53	17:13 (10)	20:43		21:36	22:09
21	08:38	07:42	16:19 (10)	06:36		16:22 (10)	06:21		05:23	05:02
	16:52	17:54	65 17:24 (10)	18:47	50	17:12 (10)	20:45		21:38	22:09
22	08:37	07:40	16:18 (10)	06:33		16:23 (10)	06:19		05:22	05:02
	16:54	17:56	66 17:24 (10)	18:49	46	17:09 (10)	20:47		21:39	22:09
23	08:35	07:38	16:17 (10)	06:31		16:25 (10)	06:17		05:21	05:02
	16:56	17:58	68 17:25 (10)	18:51	43	17:08 (10)	20:49		21:41	22:09
24	08:34	07:35	16:17 (10)	06:29		16:27 (10)	06:15		05:19	05:02
	16:58	18:00	69 17:26 (10)	18:53	43	18:26 (9)	20:51		21:42	22:09
25	08:33	07:33	16:16 (10)	06:26		16:30 (10)	06:12		05:18	05:03
	17:00	18:01	69 17:25 (10)	18:55	42	18:29 (9)	20:52		21:44	22:09
26	08:31	07:31	16:15 (10)	06:24		16:33 (10)	06:10		05:17	05:03
	17:02	18:03	71 17:26 (10)	18:57	38	18:30 (9)	20:54		21:45	22:09
27	08:30	07:29	16:14 (10)	06:21		16:38 (10)	06:08		05:15	05:04
	17:04	18:05	72 17:26 (10)	18:59	31	18:32 (9)	20:56		21:47	22:09
28	08:28	07:26	16:14 (10)	06:19		18:14 (9)	06:06		05:14	05:04
	17:06	18:07	72 17:26 (10)	19:00	19	18:33 (9)	20:58		21:48	22:09
29	08:27			07:16		19:13 (9)	06:04		05:13	05:05
	17:08			20:02	23	19:36 (9)	21:00		21:50	22:09
30	08:25			07:14		19:12 (9)	06:02		05:12	05:05
	17:10			20:04	25	19:37 (9)	21:02		21:51	22:09
31	08:23			07:11		19:12 (9)			05:11	
	17:12			20:06	27	19:39 (9)			21:52	
Potential sun hours	250	273		367			420		494	510
Total, worst case			1094		1746			367		
Sun reduction			0.19		0.22			0.31		
Oper. time red.			1.00		1.00			1.00		
Wind dir. red.			0.65		0.65			0.64		
Total reduction			0.13		0.14			0.20		
Total, real			138		248			73		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** B - H002

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August			September			October			November			December
1	05:06		05:46			06:40		19:14 (9)	07:34		16:53 (10)	07:32		16:06 (10)	08:27
	22:08		21:33			20:26	22	19:36 (9)	19:12	68	18:01 (10)	17:02	25	16:31 (10)	16:17
2	05:07		05:48			06:42		19:11 (9)	07:36		16:52 (10)	07:34		16:09 (10)	08:29
	22:08		21:31			20:24	25	19:36 (9)	19:10	70	18:02 (10)	17:00	20	16:29 (10)	16:16
3	05:08		05:49			06:44		19:10 (9)	07:37		16:51 (10)	07:36		16:13 (10)	08:30
	22:07		21:29			20:21	28	19:38 (9)	19:07	71	18:02 (10)	16:58	13	16:26 (10)	16:16
4	05:08		05:51			06:46		19:09 (9)	07:39		16:51 (10)	07:38			08:32
	22:07		21:27			20:19	30	19:39 (9)	19:05	71	18:02 (10)	16:56			16:15
5	05:09		05:53			06:48		19:08 (9)	07:41		16:50 (10)	07:40			08:33
	22:06		21:25			20:16	31	19:39 (9)	19:03	72	18:02 (10)	16:54			16:15
6	05:10		05:55			06:49		19:06 (9)	07:43		16:49 (10)	07:42			08:35
	22:06		21:23			20:14	34	19:40 (8)	19:00	72	18:01 (10)	16:52			16:14
7	05:11		05:56			06:51		19:06 (9)	07:45		16:48 (10)	07:44			08:36
	22:05		21:22			20:12	35	19:41 (8)	18:58	73	18:01 (10)	16:50			16:13
8	05:12		05:58			06:53		19:05 (9)	07:47		16:48 (10)	07:46			08:37
	22:04		21:20			20:09	36	19:41 (8)	18:55	73	18:01 (10)	16:48			16:13
9	05:13		06:00			06:55		19:04 (9)	07:48		16:47 (10)	07:48			08:38
	22:04		21:18			20:07	34	19:38 (9)	18:53	74	18:01 (10)	16:46			16:13
10	05:14		06:01			06:56		19:04 (9)	07:50		16:47 (10)	07:50			08:40
	22:03		21:16			20:04	32	19:36 (9)	18:50	74	18:01 (10)	16:45			16:12
11	05:15		06:03			06:58		19:04 (9)	07:52		16:47 (10)	07:52			08:41
	22:02		21:13			20:02	30	19:34 (9)	18:48	73	18:00 (10)	16:43			16:12
12	05:17		06:05			07:00		19:04 (9)	07:54		16:47 (10)	07:54			08:42
	22:01		21:11			19:59	28	19:32 (9)	18:46	73	18:00 (10)	16:41			16:12
13	05:18		06:07			07:02		19:03 (9)	07:56		16:47 (10)	07:55			08:43
	22:00		21:09			19:57	26	19:29 (9)	18:43	73	18:00 (10)	16:40			16:12
14	05:19		06:09			07:03		19:04 (9)	07:58		16:47 (10)	07:57			08:44
	21:59		21:07			19:54	22	19:26 (9)	18:41	72	17:59 (10)	16:38			16:12
15	05:20		06:10			07:05		19:04 (9)	08:00		16:47 (10)	07:59			08:45
	21:58		21:05			19:52	20	19:24 (9)	18:39	72	17:59 (10)	16:36			16:12
16	05:22		06:12			07:07		17:29 (10)	08:01		16:48 (10)	08:01			08:46
	21:57		21:03			19:49	28	19:21 (9)	18:36	70	17:58 (10)	16:35			16:12
17	05:23		06:14			07:09		17:22 (10)	08:03		16:48 (10)	08:03			08:47
	21:56		21:01			19:47	38	19:19 (9)	18:34	69	17:57 (10)	16:33			16:12
18	05:24		06:16			07:11		17:18 (10)	08:05		16:48 (10)	08:05			08:47
	21:54		20:58			19:44	40	19:16 (9)	18:32	69	17:57 (10)	16:32			16:12
19	05:26		06:17			07:12		17:15 (10)	08:07		16:49 (10)	08:07			08:48
	21:53		20:56			19:42	43	19:14 (9)	18:30	67	17:56 (10)	16:31			16:13
20	05:27		06:19			07:14		17:11 (10)	08:09		16:49 (10)	08:09			08:49
	21:52		20:54			19:39	43	19:11 (9)	18:27	66	17:55 (10)	16:29			16:13
21	05:29		06:21			07:16		17:09 (10)	08:11		16:50 (10)	08:10			08:49
	21:50		20:52			19:37	46	17:55 (10)	18:25	64	17:54 (10)	16:28			16:13
22	05:30		06:23			07:18		17:07 (10)	08:13		16:51 (10)	08:12			08:50
	21:49		20:50			19:35	49	17:56 (10)	18:23	62	17:53 (10)	16:27			16:14
23	05:32		06:24			07:19		17:05 (10)	08:15		16:51 (10)	08:14			08:50
	21:48		20:47			19:32	52	17:57 (10)	18:21	60	17:51 (10)	16:25			16:14
24	05:33		06:26			07:21		17:03 (10)	08:17		16:52 (10)	08:16			08:51
	21:46		20:45			19:30	56	17:59 (10)	18:18	56	17:48 (10)	16:24			16:15
25	05:35		06:28			07:23		17:01 (10)	07:19		15:53 (10)	08:17			08:51
	21:45		20:43			19:27	58	17:59 (10)	17:16	53	16:46 (10)	16:23			16:16
26	05:36		06:30			07:25		16:59 (10)	07:21		15:54 (10)	08:19			08:52
	21:43		20:40			19:25	60	17:59 (10)	17:14	50	16:44 (10)	16:22			16:16
27	05:38		06:32			07:27		16:58 (10)	07:22		15:55 (10)	08:21			08:52
	21:41		20:38			19:22	62	18:00 (10)	17:12	46	16:41 (10)	16:21			16:17
28	05:39		06:33			07:28		16:57 (10)	07:24		15:57 (10)	08:22			08:52
	21:40		20:36			19:20	64	18:01 (10)	17:10	42	16:39 (10)	16:20			16:18
29	05:41		06:35			07:30		16:56 (10)	07:26		15:58 (10)	08:24			08:52
	21:38		20:33			19:17	66	18:02 (10)	17:08	39	16:37 (10)	16:19			16:19
30	05:43		06:37		19:18 (9)	07:32		16:54 (10)	07:28		16:00 (10)	08:26			08:52
	21:36		20:31	13	19:31 (9)	19:15	67	18:01 (10)	17:06	34	16:34 (10)	16:18			16:20
31	05:44		06:39		19:16 (9)				07:30		16:02 (10)				08:52
	21:35		20:29	18	19:34 (9)				17:04	30	16:32 (10)				16:21
Potential sun hours	512		460			382			328			259			233
Total, worst case				31			1205			1958			58		
Sun reduction				0.26			0.25			0.23			0.20		
Oper. time red.				1.00			1.00			1.00			1.00		
Wind dir. red.				0.64			0.65			0.65			0.65		
Total reduction				0.17			0.16			0.15			0.13		
Total, real				5			195			287			7		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** C - H003

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:10	20:08	21:04	21:54	22:08	21:33	20:26	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:09	05:07	05:48	06:43	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:14	20:12	21:07	21:56	22:08	21:29	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:51	06:46	07:40	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52	05:07	05:10	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	21:58	22:06	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:55	05:48	05:06	05:12	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:56	16:49	16:13
9	08:49	08:07	07:05	06:50	05:44	05:04	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:01	06:45	05:40	05:03	05:16	06:04	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:13
12	08:47	08:01	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	22:00	21:09	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:34	16:12
18	08:42	07:49	06:44	06:29	05:28	05:02	05:25	06:16	07:11	08:05	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:28	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:28	16:30	16:13
21	08:38	07:42	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	05:02	05:31	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34	06:27	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	21:44	22:09	21:45	20:43	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:41	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:22	17:12	16:21	16:17
28	08:28	07:27	06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:14	05:05	05:41	06:35	07:30	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:29	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:12		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** D - H004

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March		April		May		June
1	08:52	08:22	07:24		07:09		06:00		06:27 (8)	05:10
	16:22	17:14	18:09		20:08		21:04	34	07:01 (8)	21:54
2	08:52	08:20	07:22		07:07		05:58		06:27 (8)	05:09
	16:23	17:16	18:11		20:10		21:05	34	07:01 (8)	21:55
3	08:52	08:18	07:20		07:04		05:56		06:27 (8)	05:08
	16:25	17:18	18:13		20:12		21:07	33	07:00 (8)	21:56
4	08:52	08:17	07:17		07:02		05:54		06:27 (8)	05:08
	16:26	17:20	18:15		20:14		21:09	33	07:00 (8)	21:57
5	08:51	08:15	07:15		06:59		05:52		06:27 (8)	05:07
	16:27	17:22	18:17		20:15		21:11	32	06:59 (8)	21:58
6	08:51	08:13	07:12		06:57		05:50		06:28 (8)	05:06
	16:28	17:24	18:19		20:17		21:13	30	06:58 (8)	21:59
7	08:50	08:11	07:10		06:54		05:48		06:28 (8)	05:05
	16:30	17:26	18:21		20:19		21:14	29	06:57 (8)	22:00
8	08:50	08:09	07:08		06:52		05:46		06:29 (8)	05:05
	16:31	17:28	18:23		20:21	1	07:17 (9)	21:16	28	06:57 (8)	22:01
9	08:49	08:07	07:05		06:50		07:14 (9)	05:44		06:30 (8)	05:04
	16:33	17:30	18:25		20:23	4	07:18 (9)	21:18	26	06:56 (8)	22:02
10	08:49	08:05	07:03		06:47		07:11 (9)	05:42		06:31 (8)	05:04
	16:34	17:32	18:27		20:25	7	07:18 (9)	21:20	23	06:54 (8)	22:03
11	08:48	08:03	07:00		06:45		07:09 (9)	05:40		06:32 (8)	05:03
	16:36	17:34	18:29		20:27	10	07:19 (9)	21:21	21	06:53 (8)	22:04
12	08:47	08:01	06:58		06:42		07:07 (9)	05:38		06:34 (8)	05:03
	16:37	17:36	18:31		20:28	12	07:19 (9)	21:23	18	06:52 (8)	22:05
13	08:46	07:59	06:56	07:20 (11)	06:40		07:04 (9)	05:37		06:35 (8)	05:02
	16:39	17:38	18:33	3	07:23 (11)	20:30	15	07:19 (9)	21:25	14	06:49 (8)	22:05
14	08:46	07:57	06:53	07:17 (11)	06:38		07:02 (9)	05:35		06:39 (8)	05:02
	16:40	17:40	18:34	7	07:24 (11)	20:32	17	07:19 (9)	21:27	8	06:47 (8)	22:06
15	08:45	07:55	06:51	07:15 (11)	06:35		07:00 (9)	05:33			05:02
	16:42	17:42	18:36	10	07:25 (11)	20:34	19	07:19 (9)	21:28			22:06
16	08:44	07:53	06:48	07:12 (11)	06:33		06:57 (9)	05:31			05:02
	16:44	17:44	18:38	13	07:25 (11)	20:36	20	07:17 (9)	21:30			22:07
17	08:43	07:51	06:46	07:10 (11)	06:31		06:55 (9)	05:30			05:02
	16:45	17:46	18:40	15	07:25 (11)	20:38	22	07:17 (9)	21:32			22:08
18	08:42	07:49	06:43	07:07 (11)	06:28		06:53 (8)	05:28			05:02
	16:47	17:48	18:42	17	07:24 (11)	20:40	22	07:16 (9)	21:33			22:08
19	08:40	07:47	06:41	07:05 (11)	06:26		06:51 (8)	05:27			05:02
	16:49	17:50	18:44	19	07:24 (11)	20:41	24	07:15 (9)	21:35			22:08
20	08:39	07:45	06:39	07:02 (11)	06:24		06:48 (8)	05:25			05:02
	16:51	17:52	18:46	21	07:23 (11)	20:43	25	07:13 (9)	21:36			22:09
21	08:38	07:42	06:36	07:03 (11)	06:22		06:46 (8)	05:24			05:02
	16:53	17:54	18:48	20	07:23 (11)	20:45	25	07:11 (9)	21:38			22:09
22	08:37	07:40	06:34	07:03 (11)	06:19		06:44 (8)	05:22			05:02
	16:54	17:56	18:49	18	07:21 (11)	20:47	24	07:09 (9)	21:40			22:09
23	08:35	07:38	06:31	07:04 (11)	06:17		06:42 (8)	05:21			05:02
	16:56	17:58	18:51	16	07:20 (11)	20:49	18	07:00 (8)	21:41			22:09
24	08:34	07:36	06:29	07:05 (11)	06:15		06:40 (8)	05:19			05:03
	16:58	18:00	18:53	12	07:17 (11)	20:51	21	07:01 (8)	21:43			22:09
25	08:33	07:33	06:26	07:10 (11)	06:13		06:38 (8)	05:18			05:03
	17:00	18:02	18:55	2	07:12 (11)	20:52	23	07:01 (8)	21:44			22:09
26	08:31	07:31	06:24		06:10		06:36 (8)	05:17			05:03
	17:02	18:04	18:57		20:54	25	07:01 (8)	21:46			22:09
27	08:30	07:29	06:21		06:08		06:34 (8)	05:16			05:04
	17:04	18:06	18:59		20:56	28	07:02 (8)	21:47			22:09
28	08:28	07:27	06:19		06:06		06:31 (8)	05:14			05:04
	17:06	18:08	19:01		20:58	30	07:01 (8)	21:48			22:09
29	08:27		07:16		06:04		06:29 (8)	05:13			05:05
	17:08		20:02		21:00	32	07:01 (8)	21:50			22:09
30	08:25		07:14		06:02		06:27 (8)	05:12			05:06
	17:10		20:04		21:02	33	07:00 (8)	21:51			22:09
31	08:23		07:11					05:11			
	17:12		20:06					21:52			
Potential sun hours	250	273	367		420		494		510
Total, worst case			173		457		363		
Sun reduction			0.22		0.31		0.31		
Oper. time red.			1.00		1.00		1.00		
Wind dir. red.			0.64		0.64		0.65		
Total reduction			0.14		0.20		0.20		
Total, real			24		90		74		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** D - H004

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July			August			September			October			November	December
1	05:06			05:46		06:43 (8)	06:41		07:08 (9)	07:34		08:00 (11)	07:32	08:27
	22:08			21:33	20	07:03 (8)	20:26	10	07:18 (9)	19:12	1	08:01 (11)	17:02	16:17
2	05:07			05:48		06:41 (8)	06:42		07:10 (9)	07:36			07:34	08:29
	22:08			21:31	22	07:03 (8)	20:24	7	07:17 (9)	19:10			17:00	16:17
3	05:08			05:50		06:41 (8)	06:44		07:11 (9)	07:38			07:36	08:30
	22:08			21:29	24	07:05 (8)	20:21	4	07:15 (9)	19:08			16:58	16:16
4	05:09			05:51		06:39 (8)	06:46		07:13 (9)	07:39			07:38	08:32
	22:07			21:27	27	07:06 (8)	20:19	1	07:14 (9)	19:05			16:56	16:15
5	05:09			05:53		06:39 (8)	06:48			07:41			07:40	08:33
	22:07			21:26	28	07:07 (8)	20:17			19:03			16:54	16:15
6	05:10			05:55		06:38 (8)	06:49			07:43			07:42	08:35
	22:06			21:24	30	07:08 (8)	20:14			19:00			16:52	16:14
7	05:11			05:56		06:37 (8)	06:51			07:45			07:44	08:36
	22:05			21:22	31	07:08 (8)	20:12			18:58			16:50	16:14
8	05:12			05:58		06:36 (8)	06:53			07:47			07:46	08:37
	22:05			21:20	33	07:09 (8)	20:09			18:55			16:48	16:13
9	05:13			06:00		06:36 (8)	06:55			07:49			07:48	08:39
	22:04			21:18	33	07:09 (8)	20:07			18:53			16:47	16:13
10	05:15			06:02		06:35 (8)	06:57			07:50			07:50	08:40
	22:03			21:16	34	07:09 (8)	20:04			18:51			16:45	16:13
11	05:16			06:03		06:35 (8)	06:58			07:52			07:52	08:41
	22:02			21:14	34	07:09 (8)	20:02			18:48			16:43	16:12
12	05:17			06:05		06:34 (8)	07:00			07:54			07:54	08:42
	22:01			21:12	35	07:09 (8)	19:59			18:46			16:41	16:12
13	05:18			06:07		06:36 (8)	07:02			07:56			07:56	08:43
	22:00			21:09	33	07:09 (8)	19:57			18:44			16:40	16:12
14	05:19			06:09		06:38 (8)	07:04			07:58			07:57	08:44
	21:59			21:07	31	07:09 (8)	19:55			18:41			16:38	16:12
15	05:21			06:10		06:39 (8)	07:05			08:00			07:59	08:45
	21:58			21:05	29	07:08 (8)	19:52			18:39			16:37	16:12
16	05:22			06:12		06:41 (8)	07:07			08:02			08:01	08:46
	21:57			21:03	27	07:08 (8)	19:50			18:37			16:35	16:12
17	05:23			06:14		06:43 (8)	07:09			08:04			08:03	08:47
	21:56			21:01	25	07:08 (8)	19:47			18:34			16:34	16:12
18	05:25			06:16		06:44 (8)	07:11			08:05			08:05	08:48
	21:54			20:59	23	07:07 (8)	19:45			18:32			16:32	16:12
19	05:26			06:18		06:46 (8)	07:12		07:54 (11)	08:07			08:07	08:48
	21:53			20:56	20	07:06 (8)	19:42	10	08:04 (11)	18:30			16:31	16:13
20	05:27			06:19		06:48 (8)	07:14		07:51 (11)	08:09			08:09	08:49
	21:52			20:54	18	07:06 (8)	19:40	15	08:06 (11)	18:27			16:29	16:13
21	05:29			06:21		06:49 (8)	07:16		07:49 (11)	08:11			08:10	08:50
	21:51			20:52	25	07:14 (9)	19:37	17	08:06 (11)	18:25			16:28	16:14
22	05:30			06:23		06:51 (8)	07:18		07:48 (11)	08:13			08:12	08:50
	21:49			20:50	25	07:16 (9)	19:35	19	08:07 (11)	18:23			16:27	16:14
23	05:32			06:25		06:53 (8)	07:20		07:47 (11)	08:15			08:14	08:51
	21:48			20:47	25	07:18 (9)	19:32	21	08:08 (11)	18:21			16:25	16:15
24	05:33			06:26		06:54 (8)	07:21		07:48 (11)	08:17			08:16	08:51
	21:46			20:45	24	07:18 (9)	19:30	20	08:08 (11)	18:19			16:24	16:15
25	05:35			06:28		06:58 (9)	07:23		07:49 (11)	07:19			08:18	08:51
	21:45			20:43	21	07:19 (9)	19:27	18	08:07 (11)	17:16			16:23	16:16
26	05:36			06:30		06:58 (9)	07:25		07:51 (11)	07:21			08:19	08:52
	21:43			20:40	22	07:20 (9)	19:25	16	08:07 (11)	17:14			16:22	16:16
27	05:38			06:32		07:00 (9)	07:27		07:53 (11)	07:23			08:21	08:52
	21:41			20:38	20	07:20 (9)	19:22	13	08:06 (11)	17:12			16:21	16:17
28	05:40			06:34		07:01 (9)	07:29		07:55 (11)	07:25			08:23	08:52
	21:40			20:36	19	07:20 (9)	19:20	11	08:06 (11)	17:10			16:20	16:18
29	05:41			06:35		07:03 (9)	07:30		07:57 (11)	07:27			08:24	08:52
	21:38			20:33	17	07:20 (9)	19:17	8	08:05 (11)	17:08			16:19	16:19
30	05:43		06:48 (8)	06:37		07:05 (9)	07:32		07:58 (11)	07:28			08:26	08:52
	21:36	11	06:59 (8)	20:31	15	07:20 (9)	19:15	5	08:03 (11)	17:06			16:18	16:20
31	05:45		06:45 (8)	06:39		07:06 (9)				07:30				08:52
	21:35	15	07:00 (8)	20:29	12	07:18 (9)				17:04				16:21
Potential sun hours	512			460			382			328			259	233
Total, worst case		26			782			195			1			
Sun reduction		0.22			0.26			0.25			0.23			
Oper. time red.		1.00			1.00			1.00			1.00			
Wind dir. red.		0.65			0.65			0.64			0.64			
Total reduction		0.15			0.17			0.16			0.14			
Total, real		4			130			31			0			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** E - H005

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March		April		May		June	
1	08:52	16:22	08:22	17:14	07:24	18:09	07:09	20:08	06:00	21:04	06:54 (8)	07:08 (8)
2	08:52	16:23	08:20	17:16	07:22	18:11	07:07	20:10	05:58	21:05	06:57 (8)	07:04 (8)
3	08:52	16:25	08:18	17:18	07:20	18:13	07:04	20:12	07:28 (9)	07:30 (9)	05:56	07:07
4	08:52	16:26	08:17	17:20	07:17	18:15	07:02	20:14	07:25 (9)	07:30 (9)	05:54	07:09
5	08:51	16:27	08:15	17:22	07:15	18:17	06:59	20:15	07:23 (9)	07:31 (9)	05:52	07:11
6	08:51	16:28	08:13	17:24	07:12	18:19	06:57	20:17	07:21 (9)	07:32 (9)	05:50	07:13
7	08:50	16:30	08:11	17:26	07:10	18:21	06:54	20:19	07:18 (9)	07:31 (9)	05:48	07:14
8	08:50	16:31	08:09	17:28	07:08	18:23	06:52	20:21	07:16 (9)	07:32 (9)	05:46	07:16
9	08:49	16:33	08:07	17:30	07:05	18:25	07:29 (11)	07:31 (11)	06:50	20:23	07:14 (9)	07:32 (9)
10	08:49	16:34	08:05	17:32	07:03	18:27	07:27 (11)	07:33 (11)	06:47	20:25	07:11 (9)	07:30 (9)
11	08:48	16:36	08:03	17:34	07:00	18:29	07:25 (11)	07:34 (11)	06:45	20:27	07:09 (9)	07:30 (9)
12	08:47	16:37	08:01	17:36	06:58	18:31	07:22 (11)	07:34 (11)	06:42	20:28	07:07 (8)	07:29 (9)
13	08:46	16:39	07:59	17:38	06:56	18:33	07:20 (11)	07:34 (11)	06:40	20:30	07:04 (8)	07:27 (9)
14	08:46	16:40	07:57	17:40	06:53	18:34	07:17 (11)	07:34 (11)	06:38	20:32	07:02 (8)	07:26 (9)
15	08:45	16:42	07:55	17:42	06:51	18:36	07:15 (11)	07:34 (11)	06:35	20:34	07:00 (8)	07:24 (9)
16	08:44	16:44	07:53	17:44	06:48	18:38	07:12 (11)	07:32 (11)	06:33	20:36	06:57 (8)	07:19 (8)
17	08:43	16:45	07:51	17:46	06:46	18:40	07:13 (11)	07:32 (11)	06:31	20:38	06:55 (8)	07:19 (8)
18	08:42	16:47	07:49	17:48	06:43	18:42	07:13 (11)	07:30 (11)	06:28	20:40	06:53 (8)	07:20 (8)
19	08:40	16:49	07:47	17:50	06:41	18:44	07:15 (11)	07:28 (11)	06:26	20:41	06:51 (8)	07:20 (8)
20	08:39	16:51	07:45	17:52	06:39	18:46	07:17 (11)	07:25 (11)	06:24	20:43	06:48 (8)	07:19 (8)
21	08:38	16:53	07:42	17:54	06:36	18:48	06:22	20:45	06:46 (8)	07:19 (8)	05:24	07:38
22	08:37	16:54	07:40	17:56	06:34	18:49	06:19	20:47	06:46 (8)	07:18 (8)	05:22	07:40
23	08:35	16:56	07:38	17:58	06:31	18:51	06:17	20:49	06:46 (8)	07:18 (8)	05:21	07:41
24	08:34	16:58	07:36	18:00	06:29	18:53	06:15	20:51	06:47 (8)	07:18 (8)	05:19	07:43
25	08:33	17:00	07:33	18:02	06:26	18:55	06:13	20:53	06:47 (8)	07:17 (8)	05:18	07:44
26	08:31	17:02	07:31	18:04	06:24	18:57	06:10	20:54	06:48 (8)	07:16 (8)	05:17	07:46
27	08:30	17:04	07:29	18:06	06:21	18:59	06:08	20:56	06:48 (8)	07:15 (8)	05:16	07:47
28	08:28	17:06	07:27	18:08	06:19	19:01	06:06	20:58	06:48 (8)	07:13 (8)	05:14	07:48
29	08:27	17:08			07:16	20:02	06:04	21:00	06:49 (8)	07:11 (8)	05:13	07:50
30	08:25	17:10			07:14	20:04	06:02	21:02	06:51 (8)	07:09 (8)	05:12	07:51
31	08:23	17:12			07:11	20:06			05:11	21:52		
Potential sun hours	250		273		367		420		494		510	
Total, worst case					156		617		21			
Sun reduction					0.22		0.31		0.31			
Oper. time red.					1.00		1.00		1.00			
Wind dir. red.					0.63		0.64		0.64			
Total reduction					0.14		0.20		0.20			
Total, real					22		122		4			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** E - H005

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July	August		September		October		November	December
1	05:06	05:46		06:41	07:08 (9)	07:34	08:00 (11)	07:32	08:27
	22:08	21:33		20:26	21 07:29 (9)	19:12	13 08:13 (11)	17:02	16:17
2	05:07	05:48		06:42	07:10 (9)	07:36	08:02 (11)	07:34	08:29
	22:08	21:31		20:24	19 07:29 (9)	19:10	10 08:12 (11)	17:00	16:17
3	05:08	05:50		06:44	07:11 (9)	07:38	08:04 (11)	07:36	08:30
	22:08	21:29		20:21	18 07:29 (9)	19:08	7 08:11 (11)	16:58	16:16
4	05:09	05:51		06:46	07:13 (9)	07:39	08:06 (11)	07:38	08:32
	22:07	21:27		20:19	16 07:29 (9)	19:05	4 08:10 (11)	16:56	16:15
5	05:09	05:53		06:48	07:15 (9)	07:41		07:40	08:33
	22:07	21:26		20:17	13 07:28 (9)	19:03		16:54	16:15
6	05:10	05:55		06:49	07:16 (9)	07:43		07:42	08:35
	22:06	21:24		20:14	11 07:27 (9)	19:00		16:52	16:14
7	05:11	05:56		06:51	07:18 (9)	07:45		07:44	08:36
	22:05	21:22		20:12	9 07:27 (9)	18:58		16:50	16:14
8	05:12	05:58		06:53	07:20 (9)	07:47		07:46	08:37
	22:05	21:20		20:09	6 07:26 (9)	18:55		16:48	16:13
9	05:13	06:00		06:55	07:22 (9)	07:49		07:48	08:39
	22:04	21:18		20:07	3 07:25 (9)	18:53		16:47	16:13
10	05:15	06:02		06:57		07:50		07:50	08:40
	22:03	21:16		20:04		18:51		16:45	16:13
11	05:16	06:03	07:04 (8)	06:58		07:52		07:52	08:41
	22:02	21:14	10 07:14 (8)	20:02		18:48		16:43	16:12
12	05:17	06:05	07:01 (8)	07:00		07:54		07:54	08:42
	22:01	21:12	15 07:16 (8)	19:59		18:46		16:41	16:12
13	05:18	06:07	06:59 (8)	07:02		07:56		07:56	08:43
	22:00	21:09	19 07:18 (8)	19:57		18:44		16:40	16:12
14	05:19	06:09	06:58 (8)	07:04		07:58		07:57	08:44
	21:59	21:07	22 07:20 (8)	19:55		18:41		16:38	16:12
15	05:21	06:10	06:56 (8)	07:05		08:00		07:59	08:45
	21:58	21:05	25 07:21 (8)	19:52		18:39		16:37	16:12
16	05:22	06:12	06:55 (8)	07:07		08:02		08:01	08:46
	21:57	21:03	27 07:22 (8)	19:50		18:37		16:35	16:12
17	05:23	06:14	06:54 (8)	07:09		08:04		08:03	08:47
	21:56	21:01	29 07:23 (8)	19:47		18:34		16:34	16:12
18	05:25	06:16	06:52 (8)	07:11		08:05		08:05	08:48
	21:54	20:59	31 07:23 (8)	19:45		18:32		16:32	16:12
19	05:26	06:18	06:52 (8)	07:12		08:07		08:07	08:48
	21:53	20:56	31 07:23 (8)	19:42		18:30		16:31	16:13
20	05:27	06:19	06:52 (8)	07:14		08:09		08:09	08:49
	21:52	20:54	32 07:24 (8)	19:40		18:27		16:29	16:13
21	05:29	06:21	06:51 (8)	07:16		08:11		08:10	08:50
	21:51	20:52	32 07:23 (8)	19:37		18:25		16:28	16:14
22	05:30	06:23	06:51 (8)	07:18		08:13		08:12	08:50
	21:49	20:50	32 07:23 (8)	19:35		18:23		16:27	16:14
23	05:32	06:25	06:53 (8)	07:20	08:03 (11)	08:15		08:14	08:51
	21:48	20:47	31 07:24 (8)	19:32	5 08:08 (11)	18:21		16:25	16:15
24	05:33	06:26	06:54 (8)	07:21	08:00 (11)	08:17		08:16	08:51
	21:46	20:45	29 07:23 (8)	19:30	11 08:11 (11)	18:19		16:24	16:15
25	05:35	06:28	06:56 (8)	07:23	07:57 (11)	07:19		08:18	08:51
	21:45	20:43	26 07:22 (8)	19:27	15 08:12 (11)	17:16		16:23	16:16
26	05:36	06:30	06:58 (8)	07:25	07:55 (11)	07:21		08:19	08:52
	21:43	20:40	24 07:22 (8)	19:25	18 08:13 (11)	17:14		16:22	16:16
27	05:38	06:32	07:00 (8)	07:27	07:54 (11)	07:23		08:21	08:52
	21:41	20:38	22 07:22 (9)	19:22	20 08:14 (11)	17:12		16:21	16:17
28	05:40	06:34	07:01 (8)	07:29	07:55 (11)	07:25		08:23	08:52
	21:40	20:36	24 07:25 (9)	19:20	19 08:14 (11)	17:10		16:20	16:18
29	05:41	06:35	07:03 (8)	07:30	07:57 (11)	07:27		08:24	08:52
	21:38	20:33	24 07:27 (9)	19:17	17 08:14 (11)	17:08		16:19	16:19
30	05:43	06:37	07:05 (8)	07:32	07:58 (11)	07:28		08:26	08:52
	21:36	20:31	23 07:28 (9)	19:15	15 08:13 (11)	17:06		16:18	16:20
31	05:45	06:39	07:06 (8)			07:30			08:52
	21:35	20:29	22 07:28 (9)			17:04			16:21
Potential sun hours	512	460		382		328		259	233
Total, worst case			530		236		34		
Sun reduction			0.26		0.25		0.23		
Oper. time red.			1.00		1.00		1.00		
Wind dir. red.			0.64		0.64		0.63		
Total reduction			0.16		0.16		0.14		
Total, real			87		38		5		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** F - H006

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February	March	April	May	June	July	August	September	October	November	December		
1	08:52		09:48 (9)	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27		09:44 (9)
	16:22	23	10:11 (9)	17:14	18:09	20:08	21:04	21:54	22:08	21:33	20:26	19:12	17:02	16:17	4	09:48 (9)
2	08:52		09:49 (9)	08:20	07:22	07:07	05:58	05:09	05:07	05:48	06:42	07:36	07:34	08:29		09:42 (9)
	16:23	23	10:12 (9)	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17	9	09:51 (9)
3	08:52		09:50 (9)	08:18	07:19	07:04	05:56	05:08	05:08	05:49	06:44	07:38	07:36	08:30		09:40 (9)
	16:24	22	10:12 (9)	17:18	18:13	20:12	21:07	21:56	22:08	21:29	20:21	19:07	16:58	16:16	13	09:53 (9)
4	08:52		09:50 (9)	08:17	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38	08:32		09:39 (9)
	16:26	21	10:11 (9)	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15	16	09:55 (9)
5	08:51		09:52 (9)	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40	08:33		09:39 (9)
	16:27	20	10:12 (9)	17:22	18:17	20:15	21:11	21:58	22:07	21:26	20:17	19:03	16:54	16:15	18	09:57 (9)
6	08:51		09:52 (9)	08:13	07:12	06:57	05:50	05:06	05:10	05:55	06:49	07:43	07:42	08:35		09:39 (9)
	16:28	19	10:11 (9)	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14	18	09:57 (9)
7	08:50		09:53 (9)	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44	08:36		09:38 (9)
	16:30	18	10:11 (9)	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14	20	09:58 (9)
8	08:50		09:55 (9)	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37		09:38 (9)
	16:31	16	10:11 (9)	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:55	16:48	16:13	21	09:59 (9)
9	08:49		09:57 (9)	08:07	07:05	06:50	05:44	05:04	05:13	06:00	06:55	07:49	07:48	08:39		09:38 (9)
	16:32	13	10:10 (9)	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13	22	10:00 (9)
10	08:49		09:58 (9)	08:05	07:03	06:47	05:42	05:04	05:14	06:02	06:57	07:50	07:50	08:40		09:38 (9)
	16:34	10	10:08 (9)	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:12	23	10:01 (9)
11	08:48		10:01 (9)	08:03	07:00	06:45	05:40	05:03	05:16	06:03	06:58	07:52	07:52	08:41		09:39 (9)
	16:35	5	10:06 (9)	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:12	23	10:02 (9)
12	08:47			08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42		09:39 (9)
	16:37			17:36	18:31	20:28	21:23	22:05	22:01	21:12	19:59	18:46	16:41	16:12	24	10:03 (9)
13	08:46			07:59	06:56	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:56	08:43		09:39 (9)
	16:39			17:38	18:33	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12	24	10:03 (9)
14	08:46			07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57	08:44		09:39 (9)
	16:40			17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38	16:12	25	10:04 (9)
15	08:45			07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59	08:45		09:39 (9)
	16:42			17:42	18:36	20:34	21:28	22:07	21:58	21:05	19:52	18:39	16:37	16:12	26	10:05 (9)
16	08:44			07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01	08:46		09:40 (9)
	16:44			17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:36	16:35	16:12	25	10:05 (9)
17	08:43			07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03	08:47		09:40 (9)
	16:45			17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:33	16:12	26	10:06 (9)
18	08:42			07:49	06:43	06:28	05:28	05:02	05:24	06:16	07:11	08:05	08:05	08:48		09:40 (9)
	16:47			17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:12	26	10:06 (9)
19	08:40			07:47	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07	08:48		09:41 (9)
	16:49			17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13	26	10:07 (9)
20	08:39			07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49		09:41 (9)
	16:51			17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29	16:13	27	10:08 (9)
21	08:38			07:42	06:36	06:21	05:24	05:02	05:29	06:21	07:16	08:11	08:10	08:50		09:41 (9)
	16:52			17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:13	27	10:08 (9)
22	08:37			07:40	06:34	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50		09:42 (9)
	16:54			17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14	27	10:09 (9)
23	08:35			07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15	08:14	08:51		09:42 (9)
	16:56			17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	16:14	27	10:09 (9)
24	08:34			07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16	08:51		09:43 (9)
	16:58			18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24	16:15	26	10:09 (9)
25	08:33			07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51		09:44 (9)
	17:00			18:02	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	16:16	26	10:10 (9)
26	08:31			07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:52		09:44 (9)
	17:02			18:04	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22	16:16	26	10:10 (9)
27	08:30			07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52		09:45 (9)
	17:04			18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:22	17:12	16:21	16:17	25	10:10 (9)
28	08:28			07:26	06:19	06:06	05:14	05:04	05:40	06:33	07:29	07:25	08:23	08:52		09:45 (9)
	17:06			18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18	26	10:11 (9)
29	08:27				07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52		09:46 (9)
	17:08				20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19	25	10:11 (9)
30	08:25				07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26	08:52		09:47 (9)
	17:10				20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20	24	10:11 (9)
31	08:23				07:11		05:11		05:44	06:39		07:30		08:52		09:47 (9)
	17:12				20:06		21:52		21:35	20:29		17:04		16:21	25	10:12 (9)
Potential sun hours	250			273	367	420	494	510	513	460	382	328	259	233		
Total, worst case		190													700	
Sun reduction		0.16													0.12	
Oper. time red.		1.00													1.00	
Wind dir. red.		0.61													0.61	
Total reduction		0.10													0.07	
Total, real		19													51	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** G - H007

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March		April		May		June	
1	08:52	16:23	08:22	17:14	07:24	18:10	07:09	20:08 (29)	07:33 (5)	08:02 (5)	06:00	21:04	05:10	21:54 (37)	05:50 (4)	06:27 (4)
2	08:52	16:24	08:20	17:16	07:22	18:12	07:07	20:10 (31)	07:31 (5)	08:02 (5)	05:58	21:06	05:10	21:55 (36)	05:51 (4)	06:27 (4)
3	08:52	16:25	08:19	17:18	07:20	18:14	07:04	20:12 (34)	07:28 (5)	08:02 (5)	05:56	21:07	05:09	21:56 (35)	05:52 (4)	06:27 (4)
4	08:52	16:26	08:17	17:20	07:17	18:16	07:02	20:14 (35)	07:27 (5)	08:02 (5)	05:54	21:09	05:08	21:57 (35)	05:52 (4)	06:27 (4)
5	08:51	16:27	08:15	17:22	07:15	18:17	06:59	20:16 (35)	07:26 (5)	08:01 (5)	05:52	21:11	05:07	21:58 (35)	05:52 (4)	06:27 (4)
6	08:51	16:29	08:13	17:24	07:13	18:19	06:57	20:18 (33)	07:27 (5)	08:00 (5)	05:50	21:13	05:06	21:59 (34)	05:53 (4)	06:27 (4)
7	08:51	16:30	08:11	17:26	07:10	18:21	06:55	20:19 (33)	07:27 (5)	08:00 (5)	05:48	21:15 (3)	06:15 (4)	06:18 (4)	05:06	22:00 (34)	05:53 (4)	06:27 (4)
8	08:50	16:31	08:09	17:28	07:08	18:23	06:52	20:21 (31)	07:27 (5)	07:58 (5)	05:46	21:16 (6)	06:13 (4)	06:19 (4)	05:05	22:01 (34)	05:53 (4)	06:27 (4)
9	08:49	16:33	08:07	17:30	07:05	18:25	06:50	20:23 (29)	07:28 (5)	07:57 (5)	05:44	21:18 (9)	06:11 (4)	06:20 (4)	05:04	22:02 (34)	05:53 (4)	06:27 (4)
10	08:49	16:34	08:05	17:32	07:03	18:27	06:47	20:25 (27)	07:28 (5)	07:55 (5)	05:42	21:20 (12)	06:09 (4)	06:21 (4)	05:04	22:03 (33)	05:54 (4)	06:27 (4)
11	08:48	16:36	08:04	17:34	07:01	18:29	06:45	20:27 (25)	07:29 (5)	07:54 (5)	05:40	21:22 (15)	06:08 (4)	06:23 (4)	05:04	22:04 (32)	05:55 (4)	06:27 (4)
12	08:47	16:37	08:02	17:36	06:58	18:31 (1)	07:22 (6)	07:23 (6)	06:43	20:29 (22)	07:31 (5)	07:53 (5)	05:39	21:23 (17)	06:06 (4)	06:23 (4)	05:03	22:05 (32)	05:54 (4)	06:26 (4)
13	08:47	16:39	07:59	17:38	06:56	18:33 (5)	07:20 (6)	07:25 (6)	06:40	20:30 (17)	07:32 (5)	07:49 (5)	05:37	21:25 (19)	06:04 (4)	06:23 (4)	05:03	22:05 (32)	05:55 (4)	06:27 (4)
14	08:46	16:41	07:57	17:40	06:53	18:35 (8)	07:17 (6)	07:25 (6)	06:38	20:32 (11)	07:35 (5)	07:46 (5)	05:35	21:27 (22)	06:03 (4)	06:25 (4)	05:02	22:06 (31)	05:56 (4)	06:27 (4)
15	08:45	16:42	07:55	17:42	06:51	18:37 (12)	07:15 (6)	07:27 (6)	06:36	20:34			05:33	21:28 (24)	06:01 (4)	06:25 (4)	05:02	22:07 (31)	05:56 (4)	06:27 (4)
16	08:44	16:44	07:53	17:44	06:49	18:38 (15)	07:12 (6)	07:27 (6)	06:33	20:36			05:32	21:30 (26)	06:00 (4)	06:26 (4)	05:02	22:07 (31)	05:56 (4)	06:27 (4)
17	08:43	16:46	07:51	17:46	06:46	18:40 (17)	07:10 (6)	07:27 (6)	06:31	20:38			05:30	21:32 (27)	05:58 (4)	06:25 (4)	05:02	22:08 (30)	05:57 (4)	06:27 (4)
18	08:42	16:47	07:49	17:48	06:44	18:42 (20)	07:07 (6)	07:27 (6)	06:29	20:40			05:28	21:33 (29)	05:57 (4)	06:26 (4)	05:02	22:08 (31)	05:57 (4)	06:28 (4)
19	08:41	16:49	07:47	17:50	06:41	18:44 (22)	07:05 (6)	07:27 (6)	06:26	20:42			05:27	21:35 (31)	05:55 (4)	06:26 (4)	05:02	22:08 (31)	05:57 (4)	06:28 (4)
20	08:39	16:51	07:45	17:52	06:39	18:46 (24)	07:03 (6)	07:27 (6)	06:24	20:43			05:25	21:37 (32)	05:54 (4)	06:26 (4)	05:02	22:09 (31)	05:57 (4)	06:28 (4)
21	08:38	16:53	07:43	17:54	06:36	18:48 (25)	07:01 (6)	07:26 (6)	06:22	20:45			05:24	21:38 (34)	05:53 (4)	06:27 (4)	05:02	22:09 (31)	05:57 (4)	06:28 (4)
22	08:37	16:55	07:40	17:56	06:34	18:50 (25)	07:01 (6)	07:26 (6)	06:20	20:47			05:22	21:40 (35)	05:52 (4)	06:27 (4)	05:02	22:09 (31)	05:57 (4)	06:28 (4)
23	08:36	16:57	07:38	17:58	06:31	18:52 (23)	07:01 (6)	07:24 (6)	06:17	20:49			05:21	21:41 (37)	05:50 (4)	06:27 (4)	05:03	22:09 (31)	05:58 (4)	06:29 (4)
24	08:34	16:58	07:36	18:00	06:29	18:53 (22)	06:53 (5)	07:23 (6)	06:15	20:51			05:20	21:43 (38)	05:49 (4)	06:27 (4)	05:03	22:10 (31)	05:58 (4)	06:29 (4)
25	08:33	17:00	07:34	18:02	06:26	18:55 (25)	06:50 (5)	07:21 (6)	06:13	20:53			05:18	21:44 (38)	05:49 (4)	06:27 (4)	05:03	22:10 (30)	05:58 (4)	06:28 (4)
26	08:31	17:02	07:31	18:04	06:24	18:57 (25)	06:48 (5)	07:19 (6)	06:11	20:55			05:17	21:46 (38)	05:49 (4)	06:27 (4)	05:04	22:10 (30)	05:59 (4)	06:29 (4)
27	08:30	17:04	07:29	18:06	06:22	18:59 (22)	06:45 (5)	07:15 (6)	06:08	20:56			05:16	21:47 (38)	05:49 (4)	06:27 (4)	05:04	22:09 (31)	05:58 (4)	06:29 (4)
28	08:28	17:06	07:27	18:08	06:19	19:01 (18)	06:43 (5)	07:01 (5)	06:06	20:58			05:15	21:49 (37)	05:50 (4)	06:27 (4)	05:05	22:09 (31)	05:59 (4)	06:30 (4)
29	08:27	17:08			07:17	20:03 (21)	07:40 (5)	08:01 (5)	06:04	21:00			05:14	21:50 (37)	05:50 (4)	06:27 (4)	05:05	22:09 (32)	05:58 (4)	06:30 (4)
30	08:25	17:10			07:14	20:05 (24)	07:38 (5)	08:02 (5)	06:02	21:02			05:12	21:51 (37)	05:50 (4)	06:27 (4)	05:06	22:09 (32)	05:59 (4)	06:31 (4)
31	08:24	17:12			07:12	20:06 (27)	07:35 (5)	08:02 (5)					05:11	21:52 (37)	05:50 (4)	06:27 (4)				
Potential sun hours	250		273		367		420		494		510									
Total, worst case					381		392		678		969									
Sun reduction					0.22		0.31		0.31		0.26									
Oper. time red.					1.00		1.00		1.00		1.00									
Wind dir. red.					0.64		0.65		0.64		0.64									
Total reduction					0.14		0.20		0.20		0.17									
Total, real					54		78		137		162									

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** G - H007

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August		September		October		November	December
1	05:07		05:59 (4)	05:46		06:17 (4)	06:41		07:28 (5)	07:34		08:01 (6)	07:33	08:28
	22:09	32	06:31 (4)	21:33	16	06:33 (4)	20:26	25	07:53 (5)	19:13	2	08:03 (6)	17:02	16:18
2	05:07		05:58 (4)	05:48		06:19 (4)	06:43		07:27 (5)	07:36			07:34	08:29
	22:08	33	06:31 (4)	21:31	14	06:33 (4)	20:24	27	07:54 (5)	19:10			17:00	16:17
3	05:08		05:59 (4)	05:50		06:20 (4)	06:44		07:26 (5)	07:38			07:36	08:31
	22:08	33	06:32 (4)	21:29	11	06:31 (4)	20:22	29	07:55 (5)	19:08			16:58	16:16
4	05:09		05:59 (4)	05:52		06:22 (4)	06:46		07:24 (5)	07:40			07:38	08:32
	22:07	33	06:32 (4)	21:28	8	06:30 (4)	20:19	31	07:55 (5)	19:05			16:56	16:16
5	05:10		05:59 (4)	05:53		06:23 (4)	06:48		07:23 (5)	07:41			07:40	08:33
	22:07	34	06:33 (4)	21:26	5	06:28 (4)	20:17	33	07:56 (5)	19:03			16:54	16:15
6	05:11		05:59 (4)	05:55		06:25 (4)	06:50		07:23 (5)	07:43			07:42	08:35
	22:06	34	06:33 (4)	21:24	2	06:27 (4)	20:14	33	07:56 (5)	19:00			16:52	16:14
7	05:12		05:59 (4)	05:57			06:51		07:22 (5)	07:45			07:44	08:36
	22:05	35	06:34 (4)	21:22			20:12	34	07:56 (5)	18:58			16:50	16:14
8	05:13		05:58 (4)	05:58			06:53		07:21 (5)	07:47			07:46	08:37
	22:05	35	06:33 (4)	21:20			20:09	35	07:56 (5)	18:56			16:49	16:14
9	05:14		05:58 (4)	06:00			06:55		07:22 (5)	07:49			07:48	08:39
	22:04	36	06:34 (4)	21:18			20:07	34	07:56 (5)	18:53			16:47	16:13
10	05:15		05:59 (4)	06:02			06:57		07:24 (5)	07:51			07:50	08:40
	22:03	36	06:35 (4)	21:16			20:05	32	07:56 (5)	18:51			16:45	16:13
11	05:16		05:59 (4)	06:04			06:59		07:25 (5)	07:53			07:52	08:41
	22:02	36	06:35 (4)	21:14			20:02	29	07:54 (5)	18:48			16:43	16:13
12	05:17		05:59 (4)	06:05			07:00		07:27 (5)	07:54			07:54	08:42
	22:01	37	06:36 (4)	21:12			20:00	27	07:54 (5)	18:46			16:42	16:12
13	05:18		05:59 (4)	06:07			07:02		07:29 (5)	07:56			07:56	08:43
	22:00	37	06:36 (4)	21:10			19:57	24	07:53 (5)	18:44			16:40	16:12
14	05:20		05:58 (4)	06:09			07:04		07:30 (5)	07:58			07:58	08:44
	21:59	38	06:36 (4)	21:08			19:55	22	07:52 (5)	18:41			16:38	16:12
15	05:21		05:58 (4)	06:11			07:06		07:32 (5)	08:00			08:00	08:45
	21:58	38	06:36 (4)	21:05			19:52	19	07:51 (5)	18:39			16:37	16:12
16	05:22		05:58 (4)	06:12			07:07		07:34 (5)	08:02			08:01	08:46
	21:57	38	06:36 (4)	21:03			19:50	18	08:02 (6)	18:37			16:35	16:12
17	05:23		05:59 (4)	06:14			07:09		07:36 (5)	08:04			08:03	08:47
	21:56	38	06:37 (4)	21:01			19:47	25	08:07 (6)	18:34			16:34	16:13
18	05:25		05:59 (4)	06:16			07:11		07:37 (5)	08:06			08:05	08:48
	21:55	38	06:37 (4)	20:59			19:45	25	08:08 (6)	18:32			16:32	16:13
19	05:26		05:58 (4)	06:18			07:13		07:39 (5)	08:07			08:07	08:48
	21:53	39	06:37 (4)	20:57			19:42	23	08:09 (6)	18:30			16:31	16:13
20	05:28		06:00 (4)	06:20			07:14		07:48 (6)	08:09			08:09	08:49
	21:52	37	06:37 (4)	20:54			19:40	22	08:10 (6)	18:28			16:30	16:13
21	05:29		06:01 (4)	06:21			07:16		07:47 (6)	08:11			08:11	08:50
	21:51	36	06:37 (4)	20:52			19:37	24	08:11 (6)	18:25			16:28	16:14
22	05:31		06:02 (4)	06:23			07:18		07:46 (6)	08:13			08:12	08:50
	21:49	35	06:37 (4)	20:50			19:35	25	08:11 (6)	18:23			16:27	16:14
23	05:32		06:04 (4)	06:25			07:20		07:46 (6)	08:15			08:14	08:51
	21:48	33	06:37 (4)	20:48			19:32	25	08:11 (6)	18:21			16:26	16:15
24	05:34		06:05 (4)	06:27			07:22		07:48 (6)	08:17			08:16	08:51
	21:46	32	06:37 (4)	20:45			19:30	23	08:11 (6)	18:19			16:25	16:15
25	05:35		06:06 (4)	06:28			07:23		07:50 (6)	07:19			08:18	08:52
	21:45	30	06:36 (4)	20:43			19:27	21	08:11 (6)	17:17			16:23	16:16
26	05:37		06:08 (4)	06:30			07:25		07:51 (6)	07:21			08:19	08:52
	21:43	28	06:36 (4)	20:41			19:25	18	08:09 (6)	17:14			16:22	16:17
27	05:38		06:09 (4)	06:32			07:27		07:53 (6)	07:23			08:21	08:52
	21:42	27	06:36 (4)	20:38			19:23	16	08:09 (6)	17:12			16:21	16:18
28	05:40		06:11 (4)	06:34			07:29		07:55 (6)	07:25			08:23	08:52
	21:40	25	06:36 (4)	20:36			19:20	13	08:08 (6)	17:10			16:20	16:18
29	05:42		06:12 (4)	06:36		07:36 (5)	07:31		07:57 (6)	07:27			08:24	08:52
	21:38	23	06:35 (4)	20:34	11	07:47 (5)	19:18	10	08:07 (6)	17:08			16:19	16:19
30	05:43		06:14 (4)	06:37		07:33 (5)	07:32		07:59 (6)	07:29			08:26	08:52
	21:37	21	06:35 (4)	20:31	17	07:50 (5)	19:15	6	08:05 (6)	17:06			16:19	16:20
31	05:45		06:15 (4)	06:39		07:31 (5)				07:31				08:52
	21:35	19	06:34 (4)	20:29	22	07:53 (5)				17:04				16:21
Potential sun hours	512			460			382			328			259	233
Total, worst case		1026			106			728			2			
Sun reduction		0.22			0.26			0.25			0.23			
Oper. time red.		1.00			1.00			1.00			1.00			
Wind dir. red.		0.64			0.65			0.64			0.64			
Total reduction		0.14			0.17			0.16			0.14			
Total, real		148			18			118			0			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** H - H008

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:10	20:08	21:04	21:54	22:08	21:33	20:26	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:09	05:07	05:48	06:43	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:14	20:12	21:07	21:56	22:08	21:29	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:51	06:46	07:40	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52	05:07	05:10	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	21:58	22:06	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:55	05:48	05:06	05:12	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:56	16:49	16:13
9	08:49	08:07	07:05	06:50	05:44	05:04	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:01	06:45	05:40	05:03	05:16	06:04	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:13
12	08:47	08:01	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	22:00	21:09	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:34	16:13
18	08:42	07:49	06:44	06:29	05:28	05:02	05:25	06:16	07:11	08:05	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:28	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:28	16:30	16:13
21	08:38	07:42	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	05:02	05:31	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	21:44	22:09	21:45	20:43	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:41	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:22	17:12	16:21	16:17
28	08:28	07:27	06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:14	05:05	05:41	06:35	07:30	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:29	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:12		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** I - H009

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:10	20:08	21:04	21:54	22:08	21:33	20:26	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:09	05:07	05:48	06:43	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12	21:07	21:56	22:08	21:29	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:51	06:46	07:40	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52	05:07	05:10	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	21:58	22:06	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:55	05:48	05:06	05:12	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:56	16:49	16:13
9	08:49	08:07	07:05	06:50	05:44	05:04	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:01	06:45	05:40	05:03	05:16	06:04	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:13
12	08:47	08:01	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	22:00	21:09	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	05:33	05:02	05:21	06:11	07:06	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:07	21:56	21:01	19:47	18:34	16:34	16:12
18	08:42	07:49	06:43	06:29	05:28	05:02	05:25	06:16	07:11	08:05	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:28	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:28	16:30	16:13
21	08:38	07:42	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:10	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	05:02	05:31	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34	06:27	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	21:44	22:09	21:45	20:43	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:27	06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:12		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** J - H010

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February	March	April	May	June	July	August	September	October	November			December		
1	08:52		09:59 (9)	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32			08:27		09:02 (10)
	16:22	65	12:50 (8)	17:14	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02			16:17	45	10:25 (9)
2	08:52		10:00 (9)	08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34			08:29		09:04 (10)
	16:23	64	12:50 (8)	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00			16:17	45	10:26 (9)
3	08:52		10:01 (9)	08:18	07:19	07:04	05:56	05:08	05:08	05:49	06:44	07:38	07:36			08:30		09:05 (10)
	16:24	61	12:49 (8)	17:18	18:13	20:12	21:07	21:56	22:08	21:29	20:21	19:07	16:58			16:16	44	10:26 (9)
4	08:52		10:01 (9)	08:17	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38			08:32		09:07 (10)
	16:26	57	12:48 (8)	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56			16:15	43	10:27 (9)
5	08:51		10:03 (9)	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40			08:33		09:09 (10)
	16:27	52	12:47 (8)	17:22	18:17	20:15	21:11	21:58	22:06	21:26	20:17	19:03	16:54			16:15	43	10:29 (9)
6	08:51		09:24 (10)	08:13	07:12	06:57	05:50	05:06	05:10	05:55	06:49	07:43	07:42			08:35		09:10 (10)
	16:28	44	12:42 (8)	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52			16:14	42	10:29 (9)
7	08:50		09:23 (10)	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44			08:36		09:49 (9)
	16:30	43	10:43 (9)	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50			16:14	51	12:32 (8)
8	08:50		09:23 (10)	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46			08:37		09:49 (9)
	16:31	43	10:43 (9)	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:55	16:48			16:13	57	12:36 (8)
9	08:49		09:22 (10)	08:07	07:05	06:50	05:44	05:04	05:13	06:00	06:55	07:49	07:48			08:39		09:49 (9)
	16:32	44	10:43 (9)	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47			16:13	60	12:37 (8)
10	08:49		09:21 (10)	08:05	07:03	06:47	05:42	05:04	05:14	06:02	06:56	07:50	07:50			08:40		09:49 (9)
	16:34	45	10:43 (9)	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45			16:12	63	12:39 (8)
11	08:48		09:20 (10)	08:03	07:00	06:45	05:40	05:03	05:16	06:03	06:58	07:52	07:52			08:41		09:50 (9)
	16:35	45	10:43 (9)	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43			16:12	65	12:41 (8)
12	08:47		09:19 (10)	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54		08:50 (10)	08:42		09:51 (9)
	16:37	47	10:43 (9)	17:36	18:31	20:28	21:23	22:05	22:01	21:12	19:59	18:46	16:41	8	08:58 (10)	16:12	67	12:42 (8)
13	08:46		09:18 (10)	07:59	06:56	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:56		08:48 (10)	08:43		09:51 (9)
	16:39	46	10:42 (9)	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	13	09:01 (10)	16:12	68	12:43 (8)
14	08:45		09:17 (10)	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57		08:46 (10)	08:44		09:51 (9)
	16:40	46	10:42 (9)	17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38	16	09:02 (10)	16:12	70	12:44 (8)
15	08:45		09:16 (10)	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59		08:45 (10)	08:45		09:52 (9)
	16:42	47	10:42 (9)	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	19	09:04 (10)	16:12	70	12:45 (8)
16	08:44		09:15 (10)	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01		08:44 (10)	08:46		09:52 (9)
	16:44	46	10:41 (9)	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	21	09:05 (10)	16:12	72	12:46 (8)
17	08:43		09:14 (10)	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03		08:44 (10)	08:47		09:53 (9)
	16:45	46	10:41 (9)	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:33	22	09:06 (10)	16:12	73	12:47 (8)
18	08:42		09:12 (10)	07:49	06:43	06:28	05:28	05:02	05:24	06:16	07:11	08:05	08:05		08:44 (10)	08:48		09:52 (9)
	16:47	45	10:39 (9)	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	24	09:08 (10)	16:12	73	12:47 (8)
19	08:40		09:11 (10)	07:47	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07		08:44 (10)	08:48		09:53 (9)
	16:49	43	10:38 (9)	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	24	09:08 (10)	16:13	74	12:48 (8)
20	08:39		09:10 (10)	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09		08:44 (10)	08:49		09:54 (9)
	16:51	42	10:37 (9)	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29	25	09:09 (10)	16:13	74	12:49 (8)
21	08:38		09:08 (10)	07:42	06:36	06:21	05:24	05:02	05:29	06:21	07:16	08:11	08:10		08:44 (10)	08:50		09:54 (9)
	16:52	37	10:34 (9)	17:54	18:48	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	37	10:10 (9)	16:13	74	12:49 (8)
22	08:37		09:09 (10)	07:40	06:34	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12		08:46 (10)	08:50		09:55 (9)
	16:54	25	09:34 (10)	17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	42	10:13 (9)	16:14	74	12:50 (8)
23	08:35		09:09 (10)	07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15	08:14		08:48 (10)	08:51		09:55 (9)
	16:56	24	09:33 (10)	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	43	10:15 (9)	16:14	74	12:50 (8)
24	08:34		09:10 (10)	07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16		08:49 (10)	08:51		09:55 (9)
	16:58	24	09:34 (10)	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24	45	10:16 (9)	16:15	74	12:50 (8)
25	08:33		09:11 (10)	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:18		08:51 (10)	08:51		09:56 (9)
	17:00	22	09:33 (10)	18:02	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	46	10:18 (9)	16:16	73	12:51 (8)
26	08:31		09:11 (10)	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19		08:53 (10)	08:52		09:56 (9)
	17:02	21	09:32 (10)	18:04	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22	46	10:19 (9)	16:16	74	12:51 (8)
27	08:30		09:13 (10)	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21		08:55 (10)	08:52		09:57 (9)
	17:04	19	09:32 (10)	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	47	10:21 (9)	16:17	72	12:51 (8)
28	08:28		09:14 (10)	07:26	06:19	06:06	05:14	05:04	05:40	06:33	07:29	07:25	08:23		08:57 (10)	08:52		09:57 (9)
	17:06	16	09:30 (10)	18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	46	10:22 (9)	16:18	71	12:51 (8)
29	08:27		09:16 (10)		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24		08:59 (10)	08:52		09:58 (9)
	17:08	13	09:29 (10)		20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	46	10:23 (9)	16:19	71	12:51 (8)
30	08:25		09:19 (10)		07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26		09:00 (10)	08:52		09:59 (9)
	17:10	7	09:26 (10)		20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	46	10:24 (9)	16:20	68	12:51 (8)
31	08:23				07:11		05:11		05:44	06:39		07:30				08:52		09:59 (9)
	17:12				20:06		21:52		21:35	20:29		17:04				16:21	68	12:51 (8)
Potential sun hours	250			273	367	420	494	510	513	460	382	328	259			233		
Total, worst case		1179												616			1992	
Sun reduction		0.16												0.20			0.12	
Oper. time red.		1.00												1.00			1.00	
Wind dir. red.		0.62												0.61			0.63	
Total reduction		0.10												0.12			0.08	
Total, real		118												75			150	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** K - H011

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April			May			June		
1	08:52	08:22	07:24	07:09			06:00		19:45 (11)	05:10		20:59 (9)
	16:22	17:14	18:09	20:08			21:03	34	20:19 (11)	21:53	20	21:19 (9)
2	08:52	08:20	07:22	07:06			05:58		19:45 (11)	05:09		20:59 (9)
	16:23	17:15	18:11	20:10			21:05	33	20:18 (11)	21:55	21	21:20 (9)
3	08:52	08:18	07:19	07:04			05:55		19:47 (11)	05:08		20:58 (9)
	16:24	17:17	18:13	20:12			21:07	32	20:19 (11)	21:56	23	21:21 (9)
4	08:51	08:16	07:17	07:02			05:53		19:47 (11)	05:07		20:59 (9)
	16:26	17:19	18:15	20:13			21:09	31	20:18 (11)	21:57	23	21:22 (9)
5	08:51	08:15	07:15	06:59			05:51		19:48 (11)	05:07		20:59 (9)
	16:27	17:21	18:17	20:15			21:11	29	20:17 (11)	21:58	24	21:23 (9)
6	08:51	08:13	07:12	06:57			05:49		19:49 (11)	05:06		20:59 (9)
	16:28	17:23	18:19	20:17			21:12	26	20:15 (11)	21:59	24	21:23 (9)
7	08:50	08:11	07:10	06:54			05:48		19:50 (11)	05:05		21:00 (9)
	16:30	17:26	18:21	20:19			21:14	24	20:14 (11)	22:00	25	21:25 (9)
8	08:50	08:09	07:08	06:52			05:46		19:51 (11)	05:05		20:59 (9)
	16:31	17:28	18:23	20:21			21:16	21	20:12 (11)	22:01	26	21:25 (9)
9	08:49	08:07	07:05	06:49			05:44		19:53 (11)	05:04		21:00 (9)
	16:32	17:30	18:25	20:23			21:18	19	20:12 (11)	22:02	26	21:26 (9)
10	08:48	08:05	07:03	06:47			05:42		19:55 (11)	05:04		21:01 (9)
	16:34	17:32	18:27	20:25			21:19	14	20:09 (11)	22:03	27	21:28 (9)
11	08:48	08:03	07:00	06:45			05:40		19:58 (11)	05:03		21:00 (9)
	16:35	17:34	18:29	20:26			21:21	7	20:05 (11)	22:04	28	21:28 (9)
12	08:47	08:01	06:58	06:42			05:38			05:03		21:01 (9)
	16:37	17:36	18:31	20:28			21:23			22:04	28	21:29 (9)
13	08:46	07:59	06:55	06:40			05:36			05:02		21:01 (9)
	16:39	17:38	18:32	20:30			21:25			22:05	28	21:29 (9)
14	08:45	07:57	06:53	06:38		20:02 (11)	05:35			05:02		21:02 (9)
	16:40	17:40	18:34	20:32	2	20:04 (11)	21:26			22:06	28	21:30 (9)
15	08:44	07:55	06:51	06:35		19:57 (11)	05:33			05:02		21:01 (9)
	16:42	17:42	18:36	20:34	8	20:05 (11)	21:28			22:06	28	21:29 (9)
16	08:43	07:53	06:48	06:33		19:55 (11)	05:31			05:02		21:01 (9)
	16:44	17:44	18:38	20:36	12	20:07 (11)	21:30			22:07	28	21:29 (9)
17	08:42	07:51	06:46	06:31		19:53 (11)	05:30			05:02		21:02 (9)
	16:45	17:46	18:40	20:38	16	20:09 (11)	21:31			22:07	28	21:30 (9)
18	08:41	07:49	06:43	06:28		19:51 (11)	05:28			05:02		21:02 (9)
	16:47	17:48	18:42	20:39	20	20:11 (11)	21:33			22:08	28	21:30 (9)
19	08:40	07:47	06:41	06:26		19:49 (11)	05:27			05:02		21:02 (9)
	16:49	17:50	18:44	20:41	23	20:12 (11)	21:35			22:08	28	21:30 (9)
20	08:39	07:44	06:38	06:24		19:48 (11)	05:25		21:02 (9)	05:02		21:03 (9)
	16:51	17:52	18:46	20:43	26	20:14 (11)	21:36	2	21:04 (9)	22:08	28	21:31 (9)
21	08:38	07:42	06:36	06:21		19:48 (11)	05:24		21:01 (9)	05:02		21:03 (9)
	16:52	17:54	18:47	20:45	28	20:16 (11)	21:38	3	21:04 (9)	22:09	28	21:31 (9)
22	08:37	07:40	06:33	06:19		19:47 (11)	05:22		21:00 (9)	05:02		21:03 (9)
	16:54	17:56	18:49	20:47	31	20:18 (11)	21:39	6	21:06 (9)	22:09	28	21:31 (9)
23	08:35	07:38	06:31	06:17		19:47 (11)	05:21		21:00 (9)	05:02		21:03 (9)
	16:56	17:58	18:51	20:49	33	20:20 (11)	21:41	8	21:08 (9)	22:09	28	21:31 (9)
24	08:34	07:35	06:29	06:15		19:46 (11)	05:19		21:00 (9)	05:02		21:04 (9)
	16:58	18:00	18:53	20:50	36	20:22 (11)	21:42	9	21:09 (9)	22:09	28	21:32 (9)
25	08:33	07:33	06:26	06:12		19:46 (11)	05:18		21:00 (9)	05:03		21:04 (9)
	17:00	18:01	18:55	20:52	36	20:22 (11)	21:44	11	21:11 (9)	22:09	28	21:32 (9)
26	08:31	07:31	06:24	06:10		19:45 (11)	05:17		20:58 (9)	05:03		21:04 (9)
	17:02	18:03	18:57	20:54	36	20:21 (11)	21:45	13	21:11 (9)	22:09	27	21:31 (9)
27	08:30	07:29	06:21	06:08		19:45 (11)	05:15		20:58 (9)	05:04		21:04 (9)
	17:04	18:05	18:59	20:56	36	20:21 (11)	21:47	14	21:12 (9)	22:09	28	21:32 (9)
28	08:28	07:26	06:19	06:06		19:45 (11)	05:14		20:58 (9)	05:04		21:04 (9)
	17:06	18:07	19:00	20:58	35	20:20 (11)	21:48	16	21:14 (9)	22:09	28	21:32 (9)
29	08:27		07:16	06:04		19:45 (11)	05:13		20:58 (9)	05:05		21:04 (9)
	17:08		20:02	21:00	35	20:20 (11)	21:50	17	21:15 (9)	22:09	29	21:33 (9)
30	08:25		07:14	06:02		19:45 (11)	05:12		20:58 (9)	05:05		21:05 (9)
	17:10		20:04	21:02	35	20:20 (11)	21:51	18	21:16 (9)	22:08	28	21:33 (9)
31	08:23		07:11				05:11		20:59 (9)			
	17:12		20:06				21:52	19	21:18 (9)			
Potential sun hours	250	273	367	420			494			510		
Total, worst case					448			406			799	
Sun reduction					0.31			0.31			0.26	
Oper. time red.					1.00			1.00			1.00	
Wind dir. red.					0.63			0.62			0.60	
Total reduction					0.19			0.19			0.16	
Total, real					86			79			124	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** K - H011

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July			August			September	October	November	December
1	05:06		21:04 (9)	05:46			06:40	07:34	07:32	08:27
	22:08	28	21:32 (9)	21:33			20:26	19:12	17:02	16:17
2	05:07		21:05 (9)	05:48		20:07 (11)	06:42	07:36	07:34	08:29
	22:08	27	21:32 (9)	21:31	10	20:17 (11)	20:24	19:10	17:00	16:16
3	05:08		21:05 (9)	05:49		20:04 (11)	06:44	07:37	07:36	08:30
	22:07	27	21:32 (9)	21:29	16	20:20 (11)	20:21	19:07	16:58	16:16
4	05:08		21:06 (9)	05:51		20:02 (11)	06:46	07:39	07:38	08:32
	22:07	26	21:32 (9)	21:27	20	20:22 (11)	20:19	19:05	16:56	16:15
5	05:09		21:05 (9)	05:53		20:01 (11)	06:48	07:41	07:40	08:33
	22:06	25	21:30 (9)	21:25	22	20:23 (11)	20:16	19:03	16:54	16:15
6	05:10		21:05 (9)	05:55		20:00 (11)	06:49	07:43	07:42	08:35
	22:06	25	21:30 (9)	21:23	25	20:25 (11)	20:14	19:00	16:52	16:14
7	05:11		21:05 (9)	05:56		19:58 (11)	06:51	07:45	07:44	08:36
	22:05	25	21:30 (9)	21:22	27	20:25 (11)	20:12	18:58	16:50	16:14
8	05:12		21:06 (9)	05:58		19:57 (11)	06:53	07:47	07:46	08:37
	22:04	23	21:29 (9)	21:20	29	20:26 (11)	20:09	18:55	16:48	16:13
9	05:13		21:06 (9)	06:00		19:56 (11)	06:55	07:48	07:48	08:38
	22:04	22	21:28 (9)	21:18	30	20:26 (11)	20:07	18:53	16:46	16:13
10	05:14		21:06 (9)	06:02		19:55 (11)	06:56	07:50	07:50	08:40
	22:03	22	21:28 (9)	21:15	32	20:27 (11)	20:04	18:50	16:45	16:12
11	05:16		21:06 (9)	06:03		19:55 (11)	06:58	07:52	07:52	08:41
	22:02	21	21:27 (9)	21:13	33	20:28 (11)	20:02	18:48	16:43	16:12
12	05:17		21:06 (9)	06:05		19:53 (11)	07:00	07:54	07:53	08:42
	22:01	20	21:26 (9)	21:11	35	20:28 (11)	19:59	18:46	16:41	16:12
13	05:18		21:06 (9)	06:07		19:53 (11)	07:02	07:56	07:55	08:43
	22:00	19	21:25 (9)	21:09	35	20:28 (11)	19:57	18:43	16:40	16:12
14	05:19		21:08 (9)	06:09		19:53 (11)	07:03	07:58	07:57	08:44
	21:59	17	21:25 (9)	21:07	36	20:29 (11)	19:54	18:41	16:38	16:12
15	05:20		21:08 (9)	06:10		19:52 (11)	07:05	08:00	07:59	08:45
	21:58	16	21:24 (9)	21:05	36	20:28 (11)	19:52	18:39	16:36	16:12
16	05:22		21:08 (9)	06:12		19:52 (11)	07:07	08:01	08:01	08:46
	21:57	15	21:23 (9)	21:03	36	20:28 (11)	19:49	18:36	16:35	16:12
17	05:23		21:08 (9)	06:14		19:52 (11)	07:09	08:03	08:03	08:47
	21:55	13	21:21 (9)	21:01	36	20:28 (11)	19:47	18:34	16:33	16:12
18	05:24		21:08 (9)	06:16		19:52 (11)	07:11	08:05	08:05	08:47
	21:54	12	21:20 (9)	20:58	35	20:27 (11)	19:44	18:32	16:32	16:12
19	05:26		21:09 (9)	06:17		19:52 (11)	07:12	08:07	08:07	08:48
	21:53	11	21:20 (9)	20:56	35	20:27 (11)	19:42	18:30	16:31	16:13
20	05:27		21:09 (9)	06:19		19:52 (11)	07:14	08:09	08:08	08:49
	21:52	9	21:18 (9)	20:54	33	20:25 (11)	19:39	18:27	16:29	16:13
21	05:29		21:10 (9)	06:21		19:52 (11)	07:16	08:11	08:10	08:49
	21:50	7	21:17 (9)	20:52	30	20:22 (11)	19:37	18:25	16:28	16:13
22	05:30		21:11 (9)	06:23		19:53 (11)	07:18	08:13	08:12	08:50
	21:49	5	21:16 (9)	20:49	28	20:21 (11)	19:34	18:23	16:27	16:14
23	05:32		21:12 (9)	06:24		19:53 (11)	07:19	08:15	08:14	08:50
	21:47	2	21:14 (9)	20:47	26	20:19 (11)	19:32	18:21	16:25	16:14
24	05:33			06:26		19:53 (11)	07:21	08:17	08:16	08:51
	21:46			20:45	23	20:16 (11)	19:30	18:18	16:24	16:15
25	05:35			06:28		19:54 (11)	07:23	07:19	08:17	08:51
	21:44			20:43	20	20:14 (11)	19:27	17:16	16:23	16:16
26	05:36			06:30		19:56 (11)	07:25	07:21	08:19	08:51
	21:43			20:40	16	20:12 (11)	19:25	17:14	16:22	16:16
27	05:38			06:32		19:57 (11)	07:27	07:22	08:21	08:52
	21:41			20:38	12	20:09 (11)	19:22	17:12	16:21	16:17
28	05:40			06:33		19:59 (11)	07:28	07:24	08:22	08:52
	21:40			20:36	8	20:07 (11)	19:20	17:10	16:20	16:18
29	05:41			06:35		20:03 (11)	07:30	07:26	08:24	08:52
	21:38			20:33	2	20:05 (11)	19:17	17:08	16:19	16:19
30	05:43			06:37			07:32	07:28	08:26	08:52
	21:36			20:31			19:15	17:06	16:18	16:20
31	05:44			06:39				07:30		08:52
	21:35			20:28				17:04		16:21
Potential sun hours	512			460			382	328	259	233
Total, worst case		417			726					
Sun reduction		0.22			0.26					
Oper. time red.		1.00			1.00					
Wind dir. red.		0.60			0.63					
Total reduction		0.13			0.16					
Total, real		56			117					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** L - H012

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March		April		May	June
1	08:52		13:39 (7)	08:22		15:40 (6)	07:24		16:58 (5)	07:09		19:08 (4)	06:00	05:10
	16:22	49	14:28 (7)	17:14	39	16:19 (6)	18:10	28	17:26 (5)	20:08	30	19:38 (4)	21:04	21:54
2	08:52		13:40 (7)	08:20		15:40 (6)	07:22		16:59 (5)	07:07		19:07 (4)	05:58	05:09
	16:24	51	15:46 (6)	17:16	38	16:18 (6)	18:12	26	17:25 (5)	20:10	30	19:43 (3)	21:05	21:55
3	08:52		13:41 (7)	08:18		15:41 (6)	07:20		17:00 (5)	07:04		19:08 (4)	05:56	05:08
	16:25	52	15:47 (6)	17:18	37	16:18 (6)	18:13	23	17:23 (5)	20:12	33	19:45 (3)	21:07	21:56
4	08:52		13:41 (7)	08:17		15:42 (6)	07:17		17:02 (5)	07:02		19:09 (4)	05:54	05:08
	16:26	53	15:48 (6)	17:20	35	16:17 (6)	18:15	19	17:21 (5)	20:14	33	19:47 (3)	21:09	21:57
5	08:51		13:42 (7)	08:15		15:43 (6)	07:15		17:04 (5)	06:59		19:10 (4)	05:52	05:07
	16:27	56	15:50 (6)	17:22	34	16:17 (6)	18:17	14	17:18 (5)	20:16	33	19:48 (3)	21:11	21:58
6	08:51		13:43 (7)	08:13		15:43 (6)	07:13		17:10 (5)	06:57		19:11 (4)	05:50	05:06
	16:28	57	15:51 (6)	17:24	33	16:16 (6)	18:19	2	17:12 (5)	20:17	32	19:50 (3)	21:13	21:59
7	08:50		13:43 (7)	08:11		15:45 (6)	07:10			06:55		19:13 (4)	05:48	05:05
	16:30	58	15:52 (6)	17:26	30	16:15 (6)	18:21			20:19	30	19:52 (3)	21:14	22:00
8	08:50		13:45 (7)	08:09		15:46 (6)	07:08			06:52		19:16 (4)	05:46	05:05
	16:31	59	15:55 (6)	17:28	28	16:14 (6)	18:23			20:21	26	19:54 (3)	21:16	22:01
9	08:49		13:45 (7)	08:07		15:48 (6)	07:05			06:50		19:37 (3)	05:44	05:04
	16:33	61	15:56 (6)	17:30	25	16:13 (6)	18:25			20:23	19	19:56 (3)	21:18	22:02
10	08:49		13:46 (7)	08:05		15:50 (6)	07:03			06:47		19:37 (3)	05:42	05:04
	16:34	62	15:58 (6)	17:32	21	16:11 (6)	18:27			20:25	20	19:57 (3)	21:20	22:03
11	08:48		13:47 (7)	08:03		15:53 (6)	07:01			06:45		19:38 (3)	05:40	05:03
	16:36	63	15:59 (6)	17:34	16	16:09 (6)	18:29			20:27	21	19:59 (3)	21:21	22:04
12	08:47		13:48 (7)	08:01		15:57 (6)	06:58			06:43		19:39 (3)	05:38	05:03
	16:37	63	16:01 (6)	17:36	8	16:05 (6)	18:31			20:29	19	19:58 (3)	21:23	22:05
13	08:46		13:49 (7)	07:59		17:06 (5)	06:56			06:40		19:39 (3)	05:37	05:03
	16:39	64	16:03 (6)	17:38	3	17:09 (5)	18:33			20:30	17	19:56 (3)	21:25	22:05
14	08:46		13:50 (7)	07:57		17:03 (5)	06:53			06:38		19:41 (3)	05:35	05:02
	16:40	65	16:05 (6)	17:40	7	17:10 (5)	18:35			20:32	13	19:54 (3)	21:27	22:06
15	08:45		13:52 (7)	07:55		17:02 (5)	06:51			06:35		19:44 (3)	05:33	05:02
	16:42	66	16:07 (6)	17:42	10	17:12 (5)	18:36			20:34	7	19:51 (3)	21:28	22:07
16	08:44		13:53 (7)	07:53		17:01 (5)	06:48			06:33			05:32	05:02
	16:44	66	16:09 (6)	17:44	14	17:15 (5)	18:38			20:36			21:30	22:07
17	08:43		13:55 (7)	07:51		17:00 (5)	06:46			06:31			05:30	05:02
	16:46	66	16:11 (6)	17:46	17	17:17 (5)	18:40			20:38			21:32	22:08
18	08:42		13:56 (7)	07:49		16:59 (5)	06:43			06:28			05:28	05:02
	16:47	64	16:12 (6)	17:48	20	17:19 (5)	18:42			20:40			21:33	22:08
19	08:40		13:58 (7)	07:47		16:58 (5)	06:41			06:26			05:27	05:02
	16:49	63	16:14 (6)	17:50	23	17:21 (5)	18:44			20:41			21:35	22:08
20	08:39		14:01 (7)	07:45		16:57 (5)	06:39			06:24			05:25	05:02
	16:51	60	16:15 (6)	17:52	26	17:23 (5)	18:46			20:43			21:37	22:09
21	08:38		14:03 (7)	07:42		16:57 (5)	06:36		18:18 (4)	06:22			05:24	05:02
	16:53	56	16:15 (6)	17:54	29	17:26 (5)	18:48	3	18:21 (4)	20:45			21:38	22:09
22	08:37		14:07 (7)	07:40		16:56 (5)	06:34		18:15 (4)	06:19			05:22	05:02
	16:55	50	16:16 (6)	17:56	31	17:27 (5)	18:50	8	18:23 (4)	20:47			21:40	22:09
23	08:36		15:38 (6)	07:38		16:56 (5)	06:31		18:14 (4)	06:17			05:21	05:02
	16:56	38	16:16 (6)	17:58	33	17:29 (5)	18:51	11	18:25 (4)	20:49			21:41	22:09
24	08:34		15:38 (6)	07:36		16:56 (5)	06:29		18:12 (4)	06:15			05:20	05:03
	16:58	40	16:18 (6)	18:00	33	17:29 (5)	18:53	14	18:26 (4)	20:51			21:43	22:09
25	08:33		15:38 (6)	07:33		16:56 (5)	06:26		18:11 (4)	06:13			05:18	05:03
	17:00	40	16:18 (6)	18:02	32	17:28 (5)	18:55	18	18:29 (4)	20:53			21:44	22:09
26	08:31		15:38 (6)	07:31		16:56 (5)	06:24		18:10 (4)	06:10			05:17	05:04
	17:02	40	16:18 (6)	18:04	32	17:28 (5)	18:57	21	18:31 (4)	20:54			21:46	22:09
27	08:30		15:38 (6)	07:29		16:57 (5)	06:21		18:09 (4)	06:08			05:16	05:04
	17:04	40	16:18 (6)	18:06	31	17:28 (5)	18:59	23	18:32 (4)	20:56			21:47	22:09
28	08:28		15:38 (6)	07:27		16:57 (5)	06:19		18:09 (4)	06:06			05:15	05:04
	17:06	40	16:18 (6)	18:08	29	17:26 (5)	19:01	25	18:34 (4)	20:58			21:48	22:09
29	08:27		15:38 (6)				07:16		19:08 (4)	06:04			05:13	05:05
	17:08	40	16:18 (6)				20:03	28	19:36 (4)	21:00			21:50	22:09
30	08:25		15:39 (6)				07:14		19:08 (4)	06:02			05:12	05:06
	17:10	39	16:18 (6)				20:04	30	19:38 (4)	21:02			21:51	22:09
31	08:24		15:40 (6)				07:12		19:07 (4)				05:11	
	17:12	39	16:19 (6)				20:06	31	19:38 (4)				21:52	
Potential sun hours	250			273			367			420			494	510
Total, worst case		1660			714			324			363			
Sun reduction		0.16			0.19			0.22			0.31			
Oper. time red.		1.00			1.00			1.00			1.00			
Wind dir. red.		0.65			0.65			0.65			0.64			
Total reduction		0.11			0.13			0.14			0.20			
Total, real		175			90			46			72			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** L - H012

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August			September			October			November			December		
1	05:06		05:46			06:41		19:36 (3)	07:34			07:32		15:19 (6)	08:27		13:29 (7)
	22:08		21:33			20:26	22	19:58 (3)	19:13			17:02	22	15:41 (6)	16:18	63	15:41 (6)
2	05:07		05:48			06:42		19:36 (3)	07:36			07:34		15:17 (6)	08:29		13:29 (7)
	22:08		21:31			20:24	20	19:56 (3)	19:10			17:00	26	15:43 (6)	16:17	62	15:41 (6)
3	05:08		05:50			06:44		19:34 (3)	07:38			07:36		15:15 (6)	08:30		13:29 (7)
	22:08		21:29			20:22	19	19:53 (3)	19:08			16:58	29	15:44 (6)	16:16	60	15:39 (6)
4	05:09		05:51			06:46		19:14 (4)	07:40			07:38		15:14 (6)	08:32		13:29 (7)
	22:07		21:28			20:19	25	19:51 (3)	19:05			16:56	31	15:45 (6)	16:15	59	15:39 (6)
5	05:10		05:53			06:48		19:10 (4)	07:41			07:40		15:13 (6)	08:33		13:29 (7)
	22:07		21:26			20:17	30	19:49 (3)	19:03			16:54	33	15:46 (6)	16:15	59	15:39 (6)
6	05:11		05:55			06:50		19:08 (4)	07:43			07:42		15:12 (6)	08:35		13:29 (7)
	22:06		21:24			20:14	32	19:47 (3)	19:00			16:52	35	15:47 (6)	16:14	57	15:37 (6)
7	05:11		05:57			06:51		19:05 (4)	07:45			07:44		15:12 (6)	08:36		13:29 (7)
	22:05		21:22			20:12	34	19:44 (3)	18:58			16:50	36	15:48 (6)	16:14	55	15:36 (6)
8	05:12		05:58			06:53		19:04 (4)	07:47		17:41 (5)	07:46		15:12 (6)	08:37		13:29 (7)
	22:05		21:20			20:09	32	19:41 (3)	18:56	10	17:51 (5)	16:49	37	15:49 (6)	16:13	53	15:36 (6)
9	05:14		06:00			06:55		19:03 (4)	07:49		17:38 (5)	07:48		15:11 (6)	08:39		13:29 (7)
	22:04		21:18			20:07	31	19:39 (3)	18:53	16	17:54 (5)	16:47	38	15:49 (6)	16:13	53	15:36 (6)
10	05:15		06:02			06:57		19:01 (4)	07:51		17:35 (5)	07:50		15:11 (6)	08:40		13:29 (7)
	22:03		21:16			20:04	29	19:36 (3)	18:51	21	17:56 (5)	16:45	38	15:49 (6)	16:13	51	15:35 (6)
11	05:16		06:04			06:58		19:00 (4)	07:52		17:33 (5)	07:52		15:11 (6)	08:41		13:30 (7)
	22:02		21:14			20:02	30	19:30 (4)	18:48	24	17:57 (5)	16:43	39	15:50 (6)	16:12	50	14:20 (7)
12	05:17		06:05			07:00		19:00 (4)	07:54		17:32 (5)	07:54		15:10 (6)	08:42		13:30 (7)
	22:01		21:12			20:00	30	19:30 (4)	18:46	26	17:58 (5)	16:42	40	15:50 (6)	16:12	50	14:20 (7)
13	05:18		06:07			07:02		18:59 (4)	07:56		17:31 (5)	07:56		15:10 (6)	08:43		13:30 (7)
	22:00		21:10			19:57	31	19:30 (4)	18:44	28	17:59 (5)	16:40	40	15:50 (6)	16:12	50	14:20 (7)
14	05:19		06:09			07:04		18:58 (4)	07:58		17:30 (5)	07:58		15:10 (6)	08:44		13:31 (7)
	21:59		21:07			19:55	28	19:26 (4)	18:41	30	18:00 (5)	16:38	40	15:50 (6)	16:12	50	14:21 (7)
15	05:21		06:11			07:05		18:58 (4)	08:00		17:29 (5)	07:59		15:10 (6)	08:45		13:31 (7)
	21:58		21:05			19:52	26	19:24 (4)	18:39	31	18:00 (5)	16:37	40	15:50 (6)	16:12	51	14:22 (7)
16	05:22		06:12			07:07		18:58 (4)	08:02		17:28 (5)	08:01		15:11 (6)	08:46		13:32 (7)
	21:57		21:03			19:50	24	19:22 (4)	18:37	32	18:00 (5)	16:35	39	15:50 (6)	16:12	50	14:22 (7)
17	05:23		06:14			07:09		18:58 (4)	08:04		17:28 (5)	08:03		15:12 (6)	08:47		13:32 (7)
	21:56		21:01			19:47	21	19:19 (4)	18:34	32	18:00 (5)	16:34	39	15:51 (6)	16:12	51	14:23 (7)
18	05:25		06:16			07:11		18:58 (4)	08:05		17:28 (5)	08:05		15:12 (6)	08:48		13:32 (7)
	21:55		20:59			19:45	18	19:16 (4)	18:32	32	18:00 (5)	16:32	39	15:51 (6)	16:13	51	14:23 (7)
19	05:26		06:18			07:13		18:59 (4)	08:07		17:27 (5)	08:07		15:13 (6)	08:48		13:32 (7)
	21:53		20:56			19:42	15	19:14 (4)	18:30	33	18:00 (5)	16:31	38	15:51 (6)	16:13	52	14:24 (7)
20	05:28		06:19			07:14		19:00 (4)	08:09		17:27 (5)	08:09		13:42 (7)	08:49		13:33 (7)
	21:52		20:54			19:40	12	19:12 (4)	18:28	31	17:58 (5)	16:29	50	15:51 (6)	16:13	51	14:24 (7)
21	05:29		06:21			07:16		19:00 (4)	08:11		17:27 (5)	08:11		13:39 (7)	08:50		13:33 (7)
	21:51		20:52			19:37	9	19:09 (4)	18:25	28	17:55 (5)	16:28	56	15:51 (6)	16:14	51	14:24 (7)
22	05:30		06:23			07:18		19:02 (4)	08:13		17:28 (5)	08:12		13:37 (7)	08:50		13:34 (7)
	21:49		20:50			19:35	4	19:06 (4)	18:23	25	17:53 (5)	16:27	60	15:51 (6)	16:14	51	14:25 (7)
23	05:32		06:25			07:20			08:15		17:28 (5)	08:14		13:35 (7)	08:51		13:34 (7)
	21:48		20:47			19:32			18:21	23	17:51 (5)	16:26	63	15:51 (6)	16:15	51	14:25 (7)
24	05:33		06:27			07:21			08:17		17:29 (5)	08:16		13:34 (7)	08:51		13:34 (7)
	21:46		20:45			19:30			18:19	19	17:48 (5)	16:24	64	15:50 (6)	16:15	51	14:25 (7)
25	05:35		06:28			07:23			07:19		16:29 (5)	08:18		13:32 (7)	08:51		13:36 (7)
	21:45		20:43			19:27			17:16	17	16:46 (5)	16:23	65	15:48 (6)	16:16	51	14:27 (7)
26	05:37		06:30			07:25			07:21		16:30 (5)	08:19		13:31 (7)	08:52		13:36 (7)
	21:43		20:41			19:25			17:14	14	16:44 (5)	16:22	66	15:47 (6)	16:17	51	14:27 (7)
27	05:38		06:32			07:27			07:23		16:32 (5)	08:21		13:31 (7)	08:52		13:36 (7)
	21:42		20:38			19:22			17:12	9	16:41 (5)	16:21	66	15:46 (6)	16:17	51	14:27 (7)
28	05:40		06:34		19:44 (3)	07:29			07:25		16:33 (5)	08:23		13:30 (7)	08:52		13:37 (7)
	21:40		20:36	8	19:52 (3)	19:20			17:10	6	16:39 (5)	16:20	65	15:45 (6)	16:18	50	14:27 (7)
29	05:41		06:35		19:41 (3)	07:30			07:27		16:37 (5)	08:24		13:30 (7)	08:52		13:37 (7)
	21:38		20:33	14	19:55 (3)	19:17			17:08	1	16:38 (5)	16:19	64	15:44 (6)	16:19	51	14:28 (7)
30	05:43		06:37		19:40 (3)	07:32			07:29		15:25 (6)	08:26		13:29 (7)	08:52		13:38 (7)
	21:37		20:31	17	19:57 (3)	19:15			17:06	11	15:36 (6)	16:18	64	15:42 (6)	16:20	50	14:28 (7)
31	05:45		06:39		19:37 (3)				07:30		15:22 (6)				08:52		13:39 (7)
	21:35		20:29	20	19:57 (3)				17:04	17	15:39 (6)				16:21	50	14:29 (7)
Potential sun hours	512		460			382			328			259			233		
Total, worst case				59			522			516			1362			1636	
Sun reduction				0.26			0.25			0.23			0.20			0.12	
Oper. time red.				1.00			1.00			1.00			1.00			1.00	
Wind dir. red.				0.64			0.64			0.65			0.65			0.66	
Total reduction				0.16			0.16			0.15			0.13			0.08	
Total, real				10			84			76			176			129	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** M - H013

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February	March	April	May	June	July	August	September	October	November			December		
1	08:52		09:54 (9)	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32			08:27		09:48 (9)
	16:22	26	10:20 (9)	17:14	18:09	20:08	21:04	21:54	22:08	21:33	20:26	19:12	17:02			16:17	10	09:58 (9)
2	08:52		09:55 (9)	08:20	07:22	07:07	05:58	05:09	05:07	05:48	06:42	07:36	07:34			08:29		09:47 (9)
	16:23	25	10:20 (9)	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00			16:17	14	10:01 (9)
3	08:52		09:56 (9)	08:18	07:19	07:04	05:56	05:08	05:08	05:49	06:44	07:38	07:36			08:30		09:46 (9)
	16:24	24	10:20 (9)	17:18	18:13	20:12	21:07	21:56	22:08	21:29	20:21	19:07	16:58			16:16	16	10:02 (9)
4	08:52		09:56 (9)	08:17	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38			08:32		09:45 (9)
	16:26	24	10:20 (9)	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56			16:15	19	10:04 (9)
5	08:51		09:58 (9)	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40			08:33		09:45 (9)
	16:27	22	10:20 (9)	17:22	18:17	20:15	21:11	21:58	22:07	21:26	20:17	19:03	16:54			16:15	20	10:05 (9)
6	08:51		09:59 (9)	08:13	07:12	06:57	05:50	05:06	05:10	05:55	06:49	07:43	07:42			08:35		09:45 (9)
	16:28	21	10:20 (9)	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52			16:14	21	10:06 (9)
7	08:50		09:59 (9)	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44			08:36		09:44 (9)
	16:30	20	10:19 (9)	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50			16:14	22	10:06 (9)
8	08:50		10:01 (9)	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46			08:37		09:45 (9)
	16:31	18	10:19 (9)	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:55	16:48			16:13	23	10:08 (9)
9	08:49		10:02 (9)	08:07	07:05	06:50	05:44	05:04	05:13	06:00	06:55	07:49	07:48			08:39		09:44 (9)
	16:32	17	10:19 (9)	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47			16:13	25	10:09 (9)
10	08:49		10:04 (9)	08:05	07:03	06:47	05:42	05:04	05:14	06:02	06:57	07:50	07:50			08:40		09:44 (9)
	16:34	14	10:18 (9)	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45			16:12	25	10:09 (9)
11	08:48		10:06 (9)	08:03	07:00	06:45	05:40	05:03	05:16	06:03	06:58	07:52	07:52			08:41		09:45 (9)
	16:35	10	10:16 (9)	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43			16:12	26	10:11 (9)
12	08:47		10:09 (9)	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54			08:42		09:45 (9)
	16:37	4	10:13 (9)	17:36	18:31	20:28	21:23	22:05	22:01	21:12	19:59	18:46	16:41			16:12	26	10:11 (9)
13	08:46			07:59	06:56	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:56			08:43		09:45 (9)
	16:39			17:38	18:33	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40			16:12	27	10:12 (9)
14	08:46			07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57			08:44		09:45 (9)
	16:40			17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38			16:12	27	10:12 (9)
15	08:45			07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59			08:45		09:46 (9)
	16:42			17:42	18:36	20:34	21:28	22:07	21:58	21:05	19:52	18:39	16:37			16:12	27	10:13 (9)
16	08:44			07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01			08:46		09:46 (9)
	16:44			17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:36	16:35			16:12	28	10:14 (9)
17	08:43			07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03			08:47		09:47 (9)
	16:45			17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:33			16:12	28	10:15 (9)
18	08:42			07:49	06:43	06:28	05:28	05:02	05:24	06:16	07:11	08:05	08:05			08:48		09:46 (9)
	16:47			17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32			16:12	28	10:14 (9)
19	08:40			07:47	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07			08:48		09:47 (9)
	16:49			17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31			16:13	28	10:15 (9)
20	08:39			07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09			08:49		09:48 (9)
	16:51			17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29			16:13	28	10:16 (9)
21	08:38			07:42	06:36	06:21	05:24	05:02	05:29	06:21	07:16	08:11	08:10			08:50		09:48 (9)
	16:52			17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28			16:13	28	10:16 (9)
22	08:37			07:40	06:34	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12			08:50		09:49 (9)
	16:54			17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27			16:14	28	10:17 (9)
23	08:35			07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15	08:14			08:51		09:49 (9)
	16:56			17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25			16:14	28	10:17 (9)
24	08:34			07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16			08:51		09:49 (9)
	16:58			18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24			16:15	28	10:17 (9)
25	08:33			07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:18			08:51		09:50 (9)
	17:00			18:02	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23			16:16	28	10:18 (9)
26	08:31			07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19			08:52		09:50 (9)
	17:02			18:04	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22			16:16	28	10:18 (9)
27	08:30			07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21			08:52		09:51 (9)
	17:04			18:06	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21			16:17	28	10:19 (9)
28	08:28			07:26	06:19	06:06	05:14	05:04	05:40	06:33	07:29	07:25	08:23			08:52		09:51 (9)
	17:06			18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20			16:18	28	10:19 (9)
29	08:27				07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24			08:52		09:52 (9)
	17:08				20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19			16:19	27	10:19 (9)
30	08:25				07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26		09:51 (9)	08:52		09:53 (9)
	17:10				20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	3	09:54 (9)	16:20	27	10:20 (9)
31	08:23				07:11		05:11		05:44	06:39		07:30				08:52		09:54 (9)
	17:12				20:06		21:52		21:35	20:29		17:04				16:21	26	10:20 (9)
Potential sun hours	250			273	367	420	494	510	513	460	382	328	259			233		
Total, worst case		225												3			772	
Sun reduction		0.16												0.20			0.12	
Oper. time red.		1.00												1.00			1.00	
Wind dir. red.		0.61												0.61			0.61	
Total reduction		0.10												0.12			0.07	
Total, real		22												0			56	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** N - H014

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March		April		May		June	
1	08:52		08:22		07:24		07:09		07:33 (5)		06:00	
	16:23		17:14		18:10		20:08	24	07:57 (5)		21:04	
2	08:52		08:20		07:22		07:07		07:31 (5)		05:58	
	16:24		17:16		18:12		20:10	26	07:57 (5)		21:06	
3	08:52		08:19		07:20		07:04		07:28 (5)		05:56	
	16:25		17:18		18:14		20:12	29	07:57 (5)		21:07	
4	08:52		08:17		07:17		07:02		07:26 (5)		05:54	
	16:26		17:20		18:16		20:14	31	07:57 (5)		21:09	
5	08:51		08:15		07:15		06:59		07:23 (5)		05:52	
	16:27		17:22		18:17		20:16	33	07:56 (5)		21:11	
6	08:51		08:13		07:13		06:57		07:22 (5)		05:50	
	16:29		17:24		18:19		20:18	34	07:56 (5)		21:13	
7	08:51		08:11		07:10		06:55		07:23 (5)		05:48	
	16:30		17:26		18:21		20:19	33	07:56 (5)		21:15	
8	08:50		08:09		07:08		06:52		07:22 (5)		05:46	
	16:31		17:28		18:23		20:21	33	07:55 (5)		21:16	1
9	08:49		08:07		07:05		06:50		07:23 (5)		05:44	
	16:33		17:30		18:25		20:23	31	07:54 (5)		21:18	5
10	08:49		08:05		07:03		06:47		07:23 (5)		05:42	
	16:34		17:32		18:27		20:25	29	07:52 (5)		21:20	8
11	08:48		08:04		07:01		06:45		07:24 (5)		05:40	
	16:36		17:34		18:29		20:27	28	07:52 (5)		21:22	11
12	08:47		08:02		06:58		06:43		07:25 (5)		05:39	
	16:37		17:36		18:31		20:29	25	07:50 (5)		21:23	13
13	08:47		07:59		06:56		06:40		07:25 (5)		05:37	
	16:39		17:38		18:33		20:30	23	07:48 (5)		21:25	16
14	08:46		07:57		06:53	07:17 (6)	06:38		07:27 (5)		05:35	
	16:41		17:40		18:35	3 07:20 (6)	20:32	19	07:46 (5)		21:27	18
15	08:45		07:55		06:51	07:15 (6)	06:36		07:29 (5)		05:33	
	16:42		17:42		18:37	6 07:21 (6)	20:34	15	07:44 (5)		21:28	20
16	08:44		07:53		06:49	07:12 (6)	06:33		07:35 (5)		05:32	
	16:44		17:44		18:38	10 07:22 (6)	20:36	3	07:38 (5)		21:30	22
17	08:43		07:51		06:46	07:10 (6)	06:31				05:30	
	16:46		17:46		18:40	13 07:23 (6)	20:38				21:32	24
18	08:42		07:49		06:44	07:07 (6)	06:29				05:28	
	16:47		17:48		18:42	16 07:23 (6)	20:40				21:33	26
19	08:41		07:47		06:41	07:05 (6)	06:26				05:27	
	16:49		17:50		18:44	18 07:23 (6)	20:42				21:35	27
20	08:39		07:45		06:39	07:03 (6)	06:24				05:25	
	16:51		17:52		18:46	21 07:24 (6)	20:43				21:37	29
21	08:38		07:43		06:36	07:00 (6)	06:22				05:24	
	16:53		17:54		18:48	23 07:23 (6)	20:45				21:38	31
22	08:37		07:40		06:34	06:58 (6)	06:20				05:22	
	16:55		17:56		18:50	25 07:23 (6)	20:47				21:40	32
23	08:36		07:38		06:31	06:57 (6)	06:17				05:21	
	16:57		17:58		18:52	24 07:21 (6)	20:49				21:41	33
24	08:34		07:36		06:29	06:58 (6)	06:15				05:20	
	16:58		18:00		18:53	23 07:21 (6)	20:51				21:43	35
25	08:33		07:34		06:26	06:58 (6)	06:13				05:18	
	17:00		18:02		18:55	21 07:19 (6)	20:53				21:44	36
26	08:31		07:31		06:24	06:48 (5)	06:11				05:17	
	17:02		18:04		18:57	22 07:18 (6)	20:55				21:46	37
27	08:30		07:29		06:22	06:45 (5)	06:08				05:16	
	17:04		18:06		18:59	23 07:15 (6)	20:56				21:47	37
28	08:28		07:27		06:19	06:43 (5)	06:06				05:15	
	17:06		18:08		19:01	21 07:12 (6)	20:58				21:49	37
29	08:27				07:17	07:40 (5)	06:04				05:14	
	17:08				20:03	15 07:55 (5)	21:00				21:50	37
30	08:25				07:14	07:38 (5)	06:02				05:12	
	17:10				20:05	18 07:56 (5)	21:02				21:51	36
31	08:24				07:12	07:35 (5)					05:11	
	17:12				20:06	21 07:56 (5)					21:52	36
Potential sun hours	250		273		367		420		494		510	
Total, worst case						323		416		607		964
Sun reduction						0.22		0.31		0.31		0.26
Oper. time red.						1.00		1.00		1.00		1.00
Wind dir. red.						0.64		0.65		0.64		0.64
Total reduction						0.14		0.20		0.20		0.17
Total, real						45		83		123		160

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** N - H014

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August		September		October	November	December
1	05:07		05:56 (4)	05:46	06:17 (4)	06:41	07:22 (5)	07:34	07:33	08:28
	22:09	32	06:28 (4)	21:33 12	06:29 (4)	20:26 29	07:51 (5)	19:13	17:02	16:18
2	05:07		05:56 (4)	05:48	06:19 (4)	06:43	07:22 (5)	07:36	07:34	08:29
	22:08	32	06:28 (4)	21:31 10	06:29 (4)	20:24 29	07:51 (5)	19:10	17:00	16:17
3	05:08		05:56 (4)	05:50	06:20 (4)	06:44	07:21 (5)	07:38	07:36	08:31
	22:08	33	06:29 (4)	21:29 7	06:27 (4)	20:22 31	07:52 (5)	19:08	16:58	16:16
4	05:09		05:56 (4)	05:52	06:22 (4)	06:46	07:19 (5)	07:40	07:38	08:32
	22:07	33	06:29 (4)	21:28 4	06:26 (4)	20:19 33	07:52 (5)	19:05	16:56	16:16
5	05:10		05:56 (4)	05:53		06:48	07:19 (5)	07:41	07:40	08:33
	22:07	34	06:30 (4)	21:26		20:17 33	07:52 (5)	19:03	16:54	16:15
6	05:11		05:56 (4)	05:55		06:50	07:18 (5)	07:43	07:42	08:35
	22:06	34	06:30 (4)	21:24		20:14 34	07:52 (5)	19:00	16:52	16:14
7	05:12		05:56 (4)	05:57		06:51	07:18 (5)	07:45	07:44	08:36
	22:05	35	06:31 (4)	21:22		20:12 33	07:51 (5)	18:58	16:50	16:14
8	05:13		05:56 (4)	05:58		06:53	07:20 (5)	07:47	07:46	08:37
	22:05	34	06:30 (4)	21:20		20:09 31	07:51 (5)	18:56	16:49	16:14
9	05:14		05:55 (4)	06:00		06:55	07:22 (5)	07:49	07:48	08:39
	22:04	36	06:31 (4)	21:18		20:07 29	07:51 (5)	18:53	16:47	16:13
10	05:15		05:56 (4)	06:02		06:57	07:24 (5)	07:51	07:50	08:40
	22:03	36	06:32 (4)	21:16		20:05 27	07:51 (5)	18:51	16:45	16:13
11	05:16		05:56 (4)	06:04		06:59	07:25 (5)	07:53	07:52	08:41
	22:02	36	06:32 (4)	21:14		20:02 24	07:49 (5)	18:48	16:43	16:13
12	05:17		05:56 (4)	06:05		07:00	07:27 (5)	07:54	07:54	08:42
	22:01	37	06:33 (4)	21:12		20:00 22	07:49 (5)	18:46	16:42	16:12
13	05:18		05:56 (4)	06:07		07:02	07:29 (5)	07:56	07:56	08:43
	22:00	37	06:33 (4)	21:10		19:57 19	07:48 (5)	18:44	16:40	16:12
14	05:20		05:56 (4)	06:09		07:04	07:30 (5)	07:58	07:58	08:44
	21:59	37	06:33 (4)	21:08		19:55 15	07:45 (5)	18:41	16:38	16:12
15	05:21		05:56 (4)	06:11		07:06	07:32 (5)	08:00	08:00	08:45
	21:58	37	06:33 (4)	21:05		19:52 19	08:01 (6)	18:39	16:37	16:12
16	05:22		05:56 (4)	06:12		07:07	07:34 (5)	08:02	08:01	08:46
	21:57	37	06:33 (4)	21:03		19:50 22	08:04 (6)	18:37	16:35	16:12
17	05:23		05:56 (4)	06:14		07:09	07:36 (5)	08:04	08:03	08:47
	21:56	38	06:34 (4)	21:01		19:47 22	08:06 (6)	18:34	16:34	16:13
18	05:25		05:57 (4)	06:16		07:11	07:46 (6)	08:06	08:05	08:48
	21:55	37	06:34 (4)	20:59		19:45 20	08:06 (6)	18:32	16:32	16:13
19	05:26		05:58 (4)	06:18		07:13	07:45 (6)	08:07	08:07	08:48
	21:53	35	06:33 (4)	20:57		19:42 22	08:07 (6)	18:30	16:31	16:13
20	05:28		06:00 (4)	06:20		07:14	07:44 (6)	08:09	08:09	08:49
	21:52	34	06:34 (4)	20:54		19:40 24	08:08 (6)	18:28	16:30	16:13
21	05:29		06:01 (4)	06:21		07:16	07:43 (6)	08:11	08:11	08:50
	21:51	33	06:34 (4)	20:52		19:37 25	08:08 (6)	18:25	16:28	16:14
22	05:31		06:02 (4)	06:23		07:18	07:44 (6)	08:13	08:12	08:50
	21:49	31	06:33 (4)	20:50		19:35 23	08:07 (6)	18:23	16:27	16:14
23	05:32		06:04 (4)	06:25		07:20	07:46 (6)	08:15	08:14	08:51
	21:48	30	06:34 (4)	20:48		19:32 21	08:07 (6)	18:21	16:26	16:15
24	05:34		06:05 (4)	06:27		07:22	07:48 (6)	08:17	08:16	08:51
	21:46	28	06:33 (4)	20:45		19:30 19	08:07 (6)	18:19	16:25	16:15
25	05:35		06:06 (4)	06:28		07:23	07:50 (6)	07:19	08:18	08:52
	21:45	27	06:33 (4)	20:43		19:27 17	08:07 (6)	17:17	16:23	16:16
26	05:37		06:08 (4)	06:30		07:25	07:51 (6)	07:21	08:19	08:52
	21:43	25	06:33 (4)	20:41		19:25 14	08:05 (6)	17:14	16:22	16:17
27	05:38		06:09 (4)	06:32	07:36 (5)	07:27	07:53 (6)	07:23	08:21	08:52
	21:42	23	06:32 (4)	20:38 5	07:41 (5)	19:23 11	08:04 (6)	17:12	16:21	16:18
28	05:40		06:11 (4)	06:34	07:30 (5)	07:29	07:55 (6)	07:25	08:23	08:52
	21:40	21	06:32 (4)	20:36 15	07:45 (5)	19:20 8	08:03 (6)	17:10	16:20	16:18
29	05:42		06:12 (4)	06:36	07:28 (5)	07:31	07:57 (6)	07:27	08:24	08:52
	21:38	19	06:31 (4)	20:34 19	07:47 (5)	19:18 4	08:01 (6)	17:08	16:19	16:19
30	05:43		06:14 (4)	06:37	07:26 (5)	07:32		07:29	08:26	08:52
	21:37	17	06:31 (4)	20:31 23	07:49 (5)	19:15		17:06	16:19	16:20
31	05:45		06:15 (4)	06:39	07:25 (5)			07:31		08:52
	21:35	15	06:30 (4)	20:29 25	07:50 (5)			17:04		16:21
Potential sun hours	512			460		382		328	259	233
Total, worst case		973		120		660				
Sun reduction		0.22		0.26		0.25				
Oper. time red.		1.00		1.00		1.00				
Wind dir. red.		0.64		0.65		0.64				
Total reduction		0.14		0.17		0.16				
Total, real		140		20		107				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** O - H015

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	06:36 (8)	05:10	05:06	05:46	06:41	07:08 (9)	07:34	07:32	08:27
	16:22	17:14	18:09	20:08	21:04 27	07:03 (8)	21:54	22:08	21:33	20:26 13	07:21 (9)	19:12	17:02	16:17
2	08:52	08:20	07:22	07:07	05:58	06:37 (8)	05:09	05:07	05:48	06:42	07:10 (9)	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05 25	07:02 (8)	21:55	22:08	21:31	20:24 11	07:21 (9)	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	06:38 (8)	05:08	05:08	05:50	06:44	07:11 (9)	07:38	07:36	08:30
	16:25	17:18	18:13	20:12	21:07 23	07:01 (8)	21:56	22:08	21:29	20:21 8	07:19 (9)	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	06:39 (8)	05:08	05:09	05:51	06:46	07:13 (9)	07:39	07:38	08:32
	16:26	17:20	18:15	20:14	21:09 20	06:59 (8)	21:57	22:07	21:27	20:19 5	07:18 (9)	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52	06:40 (8)	05:07	05:09	05:53	06:48	07:15 (9)	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11 17	06:57 (8)	21:58	22:07	21:26	20:17 2	07:17 (9)	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50	06:42 (8)	05:06	05:10	05:55	06:54 (8)	06:49	07:43	07:42	08:35
	16:28	17:24	18:19	20:17	21:13 13	06:55 (8)	21:59	22:06	21:24 9	07:03 (8)	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	07:18 (9) 05:48	06:46 (8)	05:05	05:11	05:56	06:51 (8)	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19 2	07:20 (9) 21:14 5	06:51 (8)	22:00	22:05	21:22 14	07:05 (8)	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	07:16 (9) 05:46		05:05	05:12	05:58	06:49 (8)	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21 5	07:21 (9) 21:16		22:01	22:05	21:20 18	07:07 (8)	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:50	07:14 (9) 05:44		05:04	05:13	06:00	06:48 (8)	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23 8	07:22 (9) 21:18		22:02	22:04	21:18 21	07:09 (8)	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	07:11 (9) 05:42		05:04	05:15	06:02	06:46 (8)	06:57	07:50	07:50	08:40
	16:34	17:32	18:27	20:25 11	07:22 (9) 21:20		22:03	22:03	21:16 24	07:10 (8)	20:04	18:51	16:45	16:13
11	08:48	08:03	07:00	06:45	07:09 (9) 05:40		05:03	05:16	06:03	06:45 (8)	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27 13	07:22 (9) 21:21		22:04	22:02	21:14 26	07:11 (8)	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	07:07 (9) 05:38		05:03	05:17	06:05	06:44 (8)	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28 15	07:22 (9) 21:23		22:05	22:01	21:12 27	07:11 (8)	19:59	18:46	16:41	16:12
13	08:46	07:59	06:56	06:40	07:04 (9) 05:37		05:02	05:18	06:07	06:43 (8)	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30 17	07:21 (9) 21:25		22:05	22:00	21:09 29	07:12 (8)	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	07:02 (9) 05:35		05:02	05:19	06:09	06:43 (8)	07:04	07:58	07:57	08:44
	16:40	17:40	18:34	20:32 18	07:20 (9) 21:27		22:06	21:59	21:07 29	07:12 (8)	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	07:00 (9) 05:33		05:02	05:21	06:10	06:41 (8)	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34 20	07:20 (9) 21:28		22:07	21:58	21:05 31	07:12 (8)	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	06:57 (8) 05:31		05:02	05:22	06:12	06:41 (8)	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36 21	07:18 (9) 21:30		22:07	21:57	21:03 32	07:13 (8)	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	06:55 (8) 05:30		05:02	05:23	06:14	06:43 (8)	07:09	08:04	08:03	08:47
	16:45	17:46	18:40	20:38 22	07:17 (9) 21:32		22:08	21:56	21:01 30	07:13 (8)	19:47	18:34	16:34	16:12
18	08:42	07:49	06:43	06:28	06:53 (8) 05:28		05:02	05:25	06:16	06:44 (8)	07:11	08:05	08:05	08:48
	16:47	17:48	18:42	20:40 22	07:15 (9) 21:33		22:08	21:54	20:59 28	07:12 (8)	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	06:51 (8) 05:27		05:02	05:26	06:18	06:46 (8)	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:41 22	07:13 (9) 21:35		22:08	21:53	20:56 26	07:12 (8)	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	06:48 (8) 05:25		05:02	05:27	06:19	06:48 (8)	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43 17	07:05 (8) 21:36		22:09	21:52	20:54 24	07:12 (8)	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:22	06:46 (8) 05:24		05:02	05:29	06:21	06:49 (8)	07:16	08:11	08:10	08:50
	16:53	17:54	18:48	20:45 20	07:06 (8) 21:38		22:09	21:51	20:52 22	07:11 (8)	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	06:44 (8) 05:22		05:02	05:30	06:23	06:51 (8)	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47 22	07:06 (8) 21:40		22:09	21:49	20:50 20	07:11 (8)	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	06:42 (8) 05:21		05:02	05:32	06:25	06:53 (8)	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49 24	07:06 (8) 21:41		22:09	21:48	20:47 17	07:10 (8)	19:32	18:21	16:25	16:15
24	08:34	07:36	06:29	06:15	06:40 (8) 05:19		05:03	05:33	06:26	06:54 (8)	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51 27	07:07 (8) 21:43		22:09	21:46	20:45 22	07:16 (9)	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	06:38 (8) 05:18		05:03	05:35	06:28	06:56 (8)	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53 28	07:06 (8) 21:44		22:09	21:45	20:43 22	07:18 (9)	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	06:36 (8) 05:17		05:03	05:36	06:30	06:58 (8)	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54 30	07:06 (8) 21:46		22:09	21:43	20:40 22	07:20 (9)	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	06:35 (8) 05:16		05:04	05:38	06:32	07:00 (8)	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56 31	07:06 (8) 21:47		22:09	21:41	20:38 21	07:21 (9)	19:22	17:12	16:21	16:17
28	08:28	07:27	06:19	06:06	06:35 (8) 05:14		05:04	05:40	06:34	07:01 (9)	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58 30	07:05 (8) 21:48		22:09	21:40	20:36 20	07:21 (9)	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	06:34 (8) 05:13		05:05	05:41	06:35	07:03 (9)	07:30	07:27	08:24	08:52
	17:08		20:02	21:00 30	07:04 (8) 21:50		22:09	21:38	20:33 18	07:21 (9)	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	06:35 (8) 05:12		05:06	05:43	06:37	07:05 (9)	07:32	07:28	08:26	08:52
	17:10		20:04	21:02 28	07:03 (8) 21:51		22:09	21:36	20:31 17	07:22 (9)	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11			05:45	06:39	07:06 (9)		07:30		08:52
	17:12		20:06		21:52			21:35	20:29 15	07:21 (9)		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case				483	130			584	39			
Sun reduction				0.31	0.31			0.26	0.25			
Oper. time red.				1.00	1.00			1.00	1.00			
Wind dir. red.				0.65	0.65			0.65	0.64			
Total reduction				0.20	0.20			0.17	0.16			
Total, real				96	26			97	6			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** P - H016

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February		March		April		May	June
1	08:52	08:22		07:24		17:23 (3)	07:09	06:00	05:10
	16:22	17:14		18:10	19	17:42 (3)	20:08	21:04	21:54
2	08:52	08:20		07:22		17:22 (3)	07:07	05:58	05:09
	16:24	17:16		18:12	23	17:45 (3)	20:10	21:05	21:55
3	08:52	08:18		07:20		17:20 (3)	07:04	05:56	05:09
	16:25	17:18		18:14	26	17:46 (3)	20:12	21:07	21:56
4	08:52	08:17		07:17		17:20 (3)	07:02	05:54	05:08
	16:26	17:20		18:15	28	17:48 (3)	20:14	21:09	21:57
5	08:51	08:15		07:15		17:19 (3)	06:59	05:52	05:07
	16:27	17:22		18:17	31	17:50 (3)	20:16	21:11	21:58
6	08:51	08:13		07:13		17:19 (3)	06:57	05:50	05:06
	16:28	17:24		18:19	33	17:52 (3)	20:17	21:13	21:59
7	08:50	08:11		07:10		17:18 (3)	06:55	05:48	05:05
	16:30	17:26		18:21	36	17:54 (3)	20:19	21:14	22:00
8	08:50	08:09		07:08		17:18 (3)	06:52	19:53 (1)	05:46	05:05
	16:31	17:28		18:23	38	17:56 (3)	20:21	1	19:54 (1)	21:16	22:01
9	08:49	08:07		07:05		17:18 (3)	06:50	19:51 (1)	05:44	05:04
	16:33	17:30		18:25	38	17:56 (3)	20:23	5	19:56 (1)	21:18	22:02
10	08:49	08:05		07:03		17:17 (3)	06:47	19:49 (1)	05:42	05:04
	16:34	17:32		18:27	38	17:55 (3)	20:25	8	19:57 (1)	21:20	22:03
11	08:48	08:03		07:01		17:18 (3)	06:45	19:48 (1)	05:40	05:03
	16:36	17:34		18:29	37	17:55 (3)	20:27	11	19:59 (1)	21:22	22:04
12	08:47	08:01		06:58		17:18 (3)	06:43	19:47 (1)	05:38	05:03
	16:37	17:36		18:31	36	17:54 (3)	20:29	14	20:01 (1)	21:23	22:05
13	08:46	07:59		06:56		17:18 (3)	06:40	19:46 (1)	05:37	05:03
	16:39	17:38		18:33	36	17:54 (3)	20:30	16	20:02 (1)	21:25	22:05
14	08:46	07:57		06:53		17:18 (3)	06:38	19:45 (1)	05:35	05:02
	16:40	17:40		18:35	34	17:52 (3)	20:32	19	20:04 (1)	21:27	22:06
15	08:45	07:55		06:51		17:20 (3)	06:35	19:45 (1)	05:33	05:02
	16:42	17:42		18:36	31	17:51 (3)	20:34	21	20:06 (1)	21:28	22:07
16	08:44	07:53		06:48		17:20 (3)	06:33	19:44 (1)	05:32	05:02
	16:44	17:44		18:38	29	17:49 (3)	20:36	23	20:07 (1)	21:30	22:07
17	08:43	07:51		06:46		17:22 (3)	06:31	19:44 (1)	05:30	05:02
	16:46	17:46		18:40	26	17:48 (3)	20:38	25	20:09 (1)	21:32	22:08
18	08:42	07:49		06:44		17:23 (3)	06:29	19:44 (1)	05:28	05:02
	16:47	17:48		18:42	22	17:45 (3)	20:40	27	20:11 (1)	21:33	22:08
19	08:41	07:47		06:41		17:26 (3)	06:26	19:44 (1)	05:27	05:02
	16:49	17:50		18:44	17	17:43 (3)	20:42	29	20:13 (1)	21:35	22:08
20	08:39	07:45		06:39		17:29 (3)	06:24	19:44 (1)	05:25	05:02
	16:51	17:52		18:46	9	17:38 (3)	20:43	29	20:13 (1)	21:37	22:09
21	08:38	07:42		06:36			06:22	19:44 (1)	05:24	05:02
	16:53	17:54		18:48			20:45	27	20:11 (1)	21:38	22:09
22	08:37	07:40		06:34			06:19	19:45 (1)	05:22	05:02
	16:55	17:56		18:50			20:47	26	20:11 (1)	21:40	22:09
23	08:36	07:38		06:31			06:17	19:46 (1)	05:21	05:02
	16:56	17:58		18:51			20:49	24	20:10 (1)	21:41	22:09
24	08:34	07:36		06:29			06:15	19:47 (1)	05:20	05:03
	16:58	18:00		18:53			20:51	21	20:08 (1)	21:43	22:09
25	08:33	07:33	17:30 (3)	06:26			06:13	19:48 (1)	05:18	05:03
	17:00	18:02	3 17:33 (3)	18:55			20:53	19	20:07 (1)	21:44	22:10
26	08:31	07:31	17:28 (3)	06:24			06:11	19:50 (1)	05:17	05:04
	17:02	18:04	8 17:36 (3)	18:57			20:54	15	20:05 (1)	21:46	22:09
27	08:30	07:29	17:26 (3)	06:21			06:08	19:53 (1)	05:16	05:04
	17:04	18:06	12 17:38 (3)	18:59			20:56	9	20:02 (1)	21:47	22:09
28	08:28	07:27	17:24 (3)	06:19			06:06		05:15	05:05
	17:06	18:08	16 17:40 (3)	19:01			20:58		21:48	22:09
29	08:27			07:16			06:04		05:13	05:05
	17:08			20:03			21:00		21:50	22:09
30	08:25			07:14			06:02		05:12	05:06
	17:10			20:04			21:02		21:51	22:09
31	08:24			07:12					05:11	
	17:12			20:06					21:52	
Potential sun hours	250	273		367			420		494	510
Total, worst case			39		587			369		
Sun reduction			0.19		0.22			0.31		
Oper. time red.			1.00		1.00			1.00		
Wind dir. red.			0.65		0.65			0.63		
Total reduction			0.13		0.14			0.19		
Total, real			5		84			71		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** P - H016

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August			September			October			November	December
1	05:06		05:46			06:41		19:47 (1)	07:34		17:57 (3)	07:32	08:28
	22:08		21:33			20:26	11	19:58 (1)	19:13	36	18:33 (3)	17:02	16:18
2	05:07		05:48			06:43		19:48 (1)	07:36		17:56 (3)	07:34	08:29
	22:08		21:31			20:24	8	19:56 (1)	19:10	37	18:33 (3)	17:00	16:17
3	05:08		05:50			06:44		19:48 (1)	07:38		17:55 (3)	07:36	08:31
	22:08		21:29			20:22	5	19:53 (1)	19:08	38	18:33 (3)	16:58	16:16
4	05:09		05:51			06:46		19:50 (1)	07:40		17:55 (3)	07:38	08:32
	22:07		21:28			20:19	1	19:51 (1)	19:05	38	18:33 (3)	16:56	16:15
5	05:10		05:53			06:48			07:41		17:55 (3)	07:40	08:33
	22:07		21:26			20:17			19:03	38	18:33 (3)	16:54	16:15
6	05:11		05:55			06:50			07:43		17:55 (3)	07:42	08:35
	22:06		21:24			20:14			19:00	37	18:32 (3)	16:52	16:14
7	05:11		05:57			06:51			07:45		17:55 (3)	07:44	08:36
	22:05		21:22			20:12			18:58	35	18:30 (3)	16:50	16:14
8	05:13		05:58			06:53			07:47		17:54 (3)	07:46	08:37
	22:05		21:20			20:09			18:56	32	18:26 (3)	16:49	16:13
9	05:14		06:00			06:55			07:49		17:54 (3)	07:48	08:39
	22:04		21:18			20:07			18:53	30	18:24 (3)	16:47	16:13
10	05:15		06:02			06:57			07:51		17:54 (3)	07:50	08:40
	22:03		21:16			20:05			18:51	27	18:21 (3)	16:45	16:13
11	05:16		06:04			06:58			07:52		17:55 (3)	07:52	08:41
	22:02		21:14			20:02			18:48	24	18:19 (3)	16:43	16:12
12	05:17		06:05			07:00			07:54		17:55 (3)	07:54	08:42
	22:01		21:12			20:00			18:46	22	18:17 (3)	16:42	16:12
13	05:18		06:07			07:02			07:56		17:56 (3)	07:56	08:43
	22:00		21:10			19:57			18:44	18	18:14 (3)	16:40	16:12
14	05:19		06:09			07:04			07:58		17:57 (3)	07:58	08:44
	21:59		21:07			19:55			18:41	15	18:12 (3)	16:38	16:12
15	05:21		06:11			07:06			08:00		17:59 (3)	07:59	08:45
	21:58		21:05			19:52			18:39	11	18:10 (3)	16:37	16:12
16	05:22		06:12		19:58 (1)	07:07			08:02		18:01 (3)	08:01	08:46
	21:57		21:03	11	20:09 (1)	19:50			18:37	6	18:07 (3)	16:35	16:12
17	05:23		06:14		19:56 (1)	07:09			08:04		18:03 (3)	08:03	08:47
	21:56		21:01	16	20:12 (1)	19:47			18:34	2	18:05 (3)	16:34	16:12
18	05:25		06:16		19:54 (1)	07:11			08:06			08:05	08:48
	21:55		20:59	20	20:14 (1)	19:45			18:32			16:32	16:13
19	05:26		06:18		19:52 (1)	07:13			08:07			08:07	08:48
	21:53		20:57	22	20:14 (1)	19:42			18:30			16:31	16:13
20	05:28		06:19		19:51 (1)	07:14			08:09			08:09	08:49
	21:52		20:54	24	20:15 (1)	19:40			18:28			16:29	16:13
21	05:29		06:21		19:50 (1)	07:16			08:11			08:11	08:50
	21:51		20:52	26	20:16 (1)	19:37			18:25			16:28	16:14
22	05:30		06:23		19:49 (1)	07:18			08:13			08:12	08:50
	21:49		20:50	27	20:16 (1)	19:35			18:23			16:27	16:14
23	05:32		06:25		19:48 (1)	07:20		18:17 (3)	08:15			08:14	08:51
	21:48		20:48	29	20:17 (1)	19:32	2	18:19 (3)	18:21			16:26	16:15
24	05:33		06:27		19:48 (1)	07:22		18:11 (3)	08:17			08:16	08:51
	21:46		20:45	29	20:17 (1)	19:30	15	18:26 (3)	18:19			16:24	16:15
25	05:35		06:28		19:47 (1)	07:23		18:08 (3)	07:19			08:18	08:51
	21:45		20:43	27	20:14 (1)	19:27	20	18:28 (3)	17:17			16:23	16:16
26	05:37		06:30		19:47 (1)	07:25		18:04 (3)	07:21			08:19	08:52
	21:43		20:41	25	20:12 (1)	19:25	25	18:29 (3)	17:14			16:22	16:17
27	05:38		06:32		19:47 (1)	07:27		18:02 (3)	07:23			08:21	08:52
	21:42		20:38	23	20:10 (1)	19:22	29	18:31 (3)	17:12			16:21	16:17
28	05:40		06:34		19:46 (1)	07:29		18:01 (3)	07:25			08:23	08:52
	21:40		20:36	21	20:07 (1)	19:20	31	18:32 (3)	17:10			16:20	16:18
29	05:41		06:35		19:46 (1)	07:30		18:00 (3)	07:27			08:24	08:52
	21:38		20:34	19	20:05 (1)	19:17	32	18:32 (3)	17:08			16:19	16:19
30	05:43		06:37		19:47 (1)	07:32		17:59 (3)	07:29			08:26	08:52
	21:37		20:31	16	20:03 (1)	19:15	34	18:33 (3)	17:06			16:18	16:20
31	05:45		06:39		19:46 (1)				07:31				08:52
	21:35		20:29	14	20:00 (1)				17:04				16:21
Potential sun hours	512		460			382			328			259	233
Total, worst case				349			213			446			
Sun reduction				0.26			0.25			0.23			
Oper. time red.				1.00			1.00			1.00			
Wind dir. red.				0.63			0.65			0.65			
Total reduction				0.16			0.16			0.15			
Total, real				56			35			65			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** Q - H018

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:09	20:08	21:03	21:53	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:19	07:04	05:56	05:08	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58	16:16
4	08:51	08:16	07:17	07:02	05:54	05:07	05:09	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52	05:07	05:09	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11	21:58	22:06	21:25	20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50	05:06	05:10	05:55	06:49	07:43	07:42	08:35
	16:28	17:24	18:19	20:17	21:12	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:50	05:44	05:04	05:13	06:00	06:55	07:49	07:48	08:38
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:48	08:05	07:03	06:47	05:42	05:04	05:14	06:02	06:56	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:00	06:45	05:40	05:03	05:16	06:03	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:26	21:21	22:04	22:02	21:13	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:56	06:40	05:37	05:02	05:18	06:07	07:02	07:56	07:55	08:43
	16:39	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:26	22:06	21:59	21:07	19:54	18:41	16:38	16:12
15	08:44	07:55	06:51	06:35	05:33	05:02	05:21	06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:43	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16:12
17	08:42	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:31	22:07	21:56	21:01	19:47	18:34	16:34	16:12
18	08:41	07:49	06:43	06:28	05:28	05:02	05:25	06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:39	21:33	22:08	21:54	20:59	19:44	18:32	16:32	16:12
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:24	05:02	05:29	06:21	07:16	08:11	08:10	08:49
	16:53	17:54	18:48	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:13
22	08:37	07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:39	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15	08:14	08:50
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	16:14
24	08:34	07:36	06:29	06:15	05:19	05:03	05:33	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:42	22:09	21:46	20:45	19:30	18:18	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:17	08:51
	17:00	18:02	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	05:04	05:40	06:33	07:28	07:24	08:22	08:52
	17:06	18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** R - H019

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:10	20:08	21:04	21:54	22:08	21:33	20:26	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:09	05:07	05:48	06:43	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12	21:07	21:56	22:08	21:29	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:51	06:46	07:40	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52	05:07	05:10	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	21:58	22:06	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:55	05:48	05:06	05:12	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:56	16:49	16:13
9	08:49	08:07	07:05	06:50	05:44	05:04	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:01	06:45	05:40	05:03	05:16	06:04	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:13
12	08:47	08:01	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	22:00	21:09	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	05:33	05:02	05:21	06:11	07:06	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:34	16:12
18	08:42	07:49	06:44	06:29	05:28	05:02	05:25	06:16	07:11	08:05	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:28	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:28	16:30	16:13
21	08:38	07:42	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:10	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	05:02	05:31	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34	06:27	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	21:44	22:09	21:45	20:43	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:41	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:27	06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:14	05:05	05:41	06:35	07:30	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:12		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** S - H020

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:09	20:08	21:03	21:53	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:19	07:04	05:56	05:08	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58	16:16
4	08:51	08:16	07:17	07:02	05:54	05:08	05:09	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52	05:07	05:09	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11	21:58	22:06	21:25	20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50	05:06	05:10	05:55	06:49	07:43	07:42	08:35
	16:28	17:24	18:19	20:17	21:12	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:50	05:44	05:04	05:13	06:00	06:55	07:49	07:48	08:38
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:48	08:05	07:03	06:47	05:42	05:04	05:14	06:02	06:56	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:00	06:45	05:40	05:03	05:16	06:03	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:26	21:21	22:04	22:02	21:13	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:56	06:40	05:37	05:02	05:18	06:07	07:02	07:56	07:55	08:43
	16:39	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:26	22:06	21:59	21:07	19:54	18:41	16:38	16:12
15	08:44	07:55	06:51	06:35	05:33	05:02	05:21	06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:43	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16:12
17	08:42	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:31	22:07	21:56	21:01	19:47	18:34	16:34	16:12
18	08:41	07:49	06:43	06:28	05:28	05:02	05:25	06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:39	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:12
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:24	05:02	05:29	06:21	07:16	08:11	08:10	08:49
	16:53	17:54	18:48	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:13
22	08:37	07:40	06:34	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:39	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15	08:14	08:50
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	16:14
24	08:34	07:36	06:29	06:15	05:19	05:03	05:33	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:42	22:09	21:46	20:45	19:30	18:18	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:17	08:51
	17:00	18:02	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	05:04	05:40	06:33	07:28	07:24	08:22	08:52
	17:06	18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** T - H021

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December		
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27		
	16:22	17:14	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02	16:17		
2	08:52	08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34	08:29		
	16:23	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17		
3	08:52	08:18	07:19	07:04	05:56	05:08	05:08	05:49	06:44	07:38	07:36	08:30		
	16:24	17:18	18:13	20:12	21:07	21:56	22:08	21:29	20:21	19:07	16:58	16:16		
4	08:52	08:17	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38	08:32		
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15		
5	08:51	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40	08:33		
	16:27	17:22	18:17	20:15	21:11	21:58	22:07	21:26	20:17	19:03	16:54	16:15		
6	08:51	08:13	07:12	06:57	05:50	05:06	05:10	05:55	06:49	07:43	07:42	08:35		
	16:28	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14		
7	08:50	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44	08:36		
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14		
8	08:50	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37		
	16:31	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:55	16:48	16:13		
9	08:49	08:07	07:05	06:50	05:44	05:04	05:13	06:00	06:55	07:49	07:48	08:39		
	16:32	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13		
10	08:49	08:05	07:03	06:47	05:42	05:04	05:14	06:02	06:56	07:50	07:50	08:40		
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:12		
11	08:48	08:03	07:00	06:45	05:40	05:03	05:16	06:03	06:58	07:52	07:52	08:41		
	16:35	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:12		
12	08:47	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42		10:17 (9)
	16:37	17:36	18:31	20:28	21:23	22:05	22:01	21:12	19:59	18:46	16:41	16:12	2	10:19 (9)
13	08:46	07:59	06:56	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:56	08:43		10:15 (9)
	16:39	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12	7	10:22 (9)
14	08:46	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57	08:44		10:15 (9)
	16:40	17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38	16:12	9	10:24 (9)
15	08:45	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59	08:45		10:14 (9)
	16:42	17:42	18:36	20:34	21:28	22:07	21:58	21:05	19:52	18:39	16:37	16:12	11	10:25 (9)
16	08:44	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01	08:46		10:14 (9)
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:36	16:35	16:12	12	10:26 (9)
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03	08:47		10:14 (9)
	16:45	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:33	16:12	13	10:27 (9)
18	08:42	07:49	06:43	06:28	05:28	05:02	05:24	06:16	07:11	08:05	08:05	08:48		10:14 (9)
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:12	13	10:27 (9)
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07	08:48		10:14 (9)
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13	15	10:29 (9)
20	08:39	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49		10:15 (9)
	16:51	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29	16:13	15	10:30 (9)
21	08:38	07:42	06:36	06:21	05:24	05:02	05:29	06:21	07:16	08:11	08:10	08:50		10:15 (9)
	16:52	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:13	15	10:30 (9)
22	08:37	07:40	06:34	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50		10:16 (9)
	16:54	17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14	15	10:31 (9)
23	08:35	07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15	08:14	08:51		10:16 (9)
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	16:14	15	10:31 (9)
24	08:34	07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16	08:51		10:16 (9)
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24	16:15	15	10:31 (9)
25	08:33	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51		10:18 (9)
	17:00	18:02	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	16:16	13	10:31 (9)
26	08:31	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:52		10:18 (9)
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22	16:16	13	10:31 (9)
27	08:30	07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21	08:52		10:19 (9)
	17:04	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17	12	10:31 (9)
28	08:28	07:26	06:19	06:06	05:14	05:04	05:40	06:33	07:29	07:25	08:23	08:52		10:20 (9)
	17:06	18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18	11	10:31 (9)
29	08:27		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52		10:21 (9)
	17:08		20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19	10	10:31 (9)
30	08:25		07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26	08:52		10:23 (9)
	17:10		20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20	7	10:30 (9)
31	08:23		07:11		05:11		05:44	06:39		07:30		08:52		10:25 (9)
	17:12		20:06		21:52		21:35	20:29		17:04		16:21	4	10:29 (9)
Potential sun hours	250	273	367	420	494	510	513	460	382	328	259	233		
Total, worst case													227	
Sun reduction													0.12	
Oper. time red.													1.00	
Wind dir. red.													0.62	
Total reduction													0.07	
Total, real													17	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** U - H022

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February	March	April	May	June	July	August	September	October	November			December		
1	08:52		09:42 (10)	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32			08:27		09:33 (10)
	16:22	54	14:24 (8)	17:14	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02			16:17	15	09:48 (10)
2	08:52		09:43 (10)	08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34			08:29		09:33 (10)
	16:23	54	14:25 (8)	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00			16:17	24	14:01 (8)
3	08:52		09:44 (10)	08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:38	07:36			08:30		09:32 (10)
	16:24	51	14:25 (8)	17:18	18:13	20:12	21:07	21:56	22:08	21:29	20:21	19:07	16:58			16:16	33	14:04 (8)
4	08:52		09:44 (10)	08:17	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38			08:32		09:32 (10)
	16:26	50	14:24 (8)	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56			16:15	37	14:06 (8)
5	08:51		09:45 (10)	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40			08:33		09:32 (10)
	16:27	48	14:24 (8)	17:22	18:17	20:15	21:11	21:58	22:06	21:26	20:17	19:03	16:54			16:15	42	14:08 (8)
6	08:51		09:46 (10)	08:13	07:12	06:57	05:49	05:06	05:10	05:55	06:49	07:43	07:42			08:35		09:32 (10)
	16:28	44	14:23 (8)	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52			16:14	44	14:09 (8)
7	08:50		09:46 (10)	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44			08:36		09:31 (10)
	16:30	42	14:22 (8)	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50			16:14	48	14:10 (8)
8	08:50		09:48 (10)	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46			08:37		09:32 (10)
	16:31	37	14:22 (8)	17:28	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48			16:13	50	14:12 (8)
9	08:49		09:49 (10)	08:07	07:05	06:50	05:44	05:04	05:13	06:00	06:55	07:49	07:48			08:39		09:32 (10)
	16:32	33	14:21 (8)	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47			16:13	52	14:13 (8)
10	08:49		09:50 (10)	08:05	07:03	06:47	05:42	05:04	05:14	06:02	06:56	07:50	07:50			08:40		09:32 (10)
	16:34	25	14:18 (8)	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45			16:12	54	14:14 (8)
11	08:48		09:51 (10)	08:03	07:00	06:45	05:40	05:03	05:16	06:03	06:58	07:52	07:52			08:41		09:33 (10)
	16:35	15	10:06 (10)	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43			16:12	54	14:15 (8)
12	08:47		09:53 (10)	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54			08:42		09:33 (10)
	16:37	12	10:05 (10)	17:36	18:31	20:28	21:23	22:05	22:01	21:11	19:59	18:46	16:41			16:12	56	14:16 (8)
13	08:46		09:55 (10)	07:59	06:56	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:56			08:43		09:33 (10)
	16:39	9	10:04 (10)	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40			16:12	57	14:17 (8)
14	08:45			07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57			08:44		09:33 (10)
	16:40			17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38			16:12	59	14:18 (8)
15	08:45			07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59			08:45		09:34 (10)
	16:42			17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36			16:12	59	14:18 (8)
16	08:44			07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01			08:46		09:34 (10)
	16:44			17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35			16:12	60	14:19 (8)
17	08:43			07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03			08:47		09:35 (10)
	16:45			17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:33			16:12	60	14:20 (8)
18	08:41			07:49	06:43	06:28	05:28	05:02	05:24	06:16	07:11	08:05	08:05			08:48		09:34 (10)
	16:47			17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32			16:12	62	14:20 (8)
19	08:40			07:47	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07			08:48		09:35 (10)
	16:49			17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31			16:13	62	14:21 (8)
20	08:39			07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09			08:49		09:36 (10)
	16:51			17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29			16:13	62	14:22 (8)
21	08:38			07:42	06:36	06:21	05:24	05:02	05:29	06:21	07:16	08:11	08:10			08:50		09:36 (10)
	16:52			17:54	18:48	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28			16:13	61	14:22 (8)
22	08:37			07:40	06:34	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12			08:50		09:37 (10)
	16:54			17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27			16:14	62	14:23 (8)
23	08:35			07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15	08:14			08:51		09:37 (10)
	16:56			17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25			16:14	61	14:23 (8)
24	08:34			07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16			08:51		09:37 (10)
	16:58			18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24			16:15	62	14:23 (8)
25	08:33			07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:18			08:51		09:38 (10)
	17:00			18:02	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23			16:16	62	14:24 (8)
26	08:31			07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19			08:52		09:38 (10)
	17:02			18:04	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22			16:16	61	14:24 (8)
27	08:30			07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21			08:52		09:39 (10)
	17:04			18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21			16:17	60	14:24 (8)
28	08:28			07:26	06:19	06:06	05:14	05:04	05:40	06:33	07:28	07:25	08:23			08:52		09:39 (10)
	17:06			18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20			16:18	60	14:24 (8)
29	08:27				07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24		09:37 (10)	08:52		09:40 (10)
	17:08				20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	8	09:45 (10)	16:19	60	14:25 (8)
30	08:25				07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26		09:34 (10)	08:52		09:41 (10)
	17:10				20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	12	09:46 (10)	16:20	58	14:25 (8)
31	08:23				07:11		05:11		05:44	06:39		07:30				08:52		09:41 (10)
	17:12				20:06		21:52		21:35	20:29		17:04				16:21	58	14:25 (8)
Potential sun hours	250			273	367	420	494	510	513	460	382	328	259			233		
Total, worst case		474												20			1655	
Sun reduction		0.16												0.20			0.12	
Oper. time red.		1.00												1.00			1.00	
Wind dir. red.		0.63												0.61			0.64	
Total reduction		0.10												0.12			0.08	
Total, real		48												2			126	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** V - H023

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March			April			May			June		
1	08:52		08:22		07:24			07:09		07:40 (6)	06:00			05:10		05:41 (4)
	16:23		17:14		18:10			20:08	18	07:58 (6)	21:04			21:54	29	06:10 (4)
2	08:52		08:20		07:22			07:07		07:41 (6)	05:58			05:10		05:40 (4)
	16:24		17:16		18:12			20:10	15	07:56 (6)	21:06			21:55	30	06:10 (4)
3	08:52		08:19		07:20			07:04		07:43 (6)	05:56			05:09		05:40 (4)
	16:25		17:18		18:14			20:12	10	07:53 (6)	21:07			21:56	30	06:10 (4)
4	08:52		08:17		07:17			07:02		07:26 (5)	05:54			05:08		05:39 (4)
	16:26		17:20		18:16			20:14	3	07:29 (5)	21:09			21:57	31	06:10 (4)
5	08:51		08:15		07:15			07:00		07:23 (5)	05:52			05:07		05:38 (4)
	16:27		17:22		18:17			20:16	7	07:30 (5)	21:11			21:58	32	06:10 (4)
6	08:51		08:13		07:13			06:57		07:21 (5)	05:50			05:06		05:39 (4)
	16:29		17:24		18:19			20:18	10	07:31 (5)	21:13			21:59	31	06:10 (4)
7	08:51		08:11		07:10			06:55		07:19 (5)	05:48			05:06		05:38 (4)
	16:30		17:26		18:21			20:19	13	07:32 (5)	21:15			22:00	32	06:10 (4)
8	08:50		08:09		07:08			06:52		07:16 (5)	05:46			05:05		05:39 (4)
	16:31		17:28		18:23			20:21	16	07:32 (5)	21:16			22:01	32	06:11 (4)
9	08:49		08:07		07:05			06:50		07:14 (5)	05:44			05:04		05:39 (4)
	16:33		17:30		18:25			20:23	19	07:33 (5)	21:18			22:02	31	06:10 (4)
10	08:49		08:05		07:03			06:47		07:11 (5)	05:42			05:04		05:40 (4)
	16:34		17:32		18:27			20:25	21	07:32 (5)	21:20			22:03	31	06:11 (4)
11	08:48		08:04		07:01			06:45		07:09 (5)	05:40			05:04		05:40 (4)
	16:36		17:34		18:29			20:27	23	07:32 (5)	21:22			22:04	31	06:11 (4)
12	08:47		08:02		06:58			06:43		07:07 (5)	05:39			05:03		05:40 (4)
	16:37		17:36		18:31			20:29	26	07:33 (5)	21:23			22:05	30	06:10 (4)
13	08:47		08:00		06:56			06:40		07:04 (5)	05:37			05:03		05:40 (4)
	16:39		17:38		18:33			20:31	28	07:32 (5)	21:25			22:05	31	06:11 (4)
14	08:46		07:57		06:53			06:38		07:02 (5)	05:35			05:03		05:41 (4)
	16:41		17:40		18:35			20:32	29	07:31 (5)	21:27			22:06	30	06:11 (4)
15	08:45		07:55		06:51			06:36		07:01 (5)	05:33		06:01 (4)	05:02		05:41 (4)
	16:42		17:42		18:37			20:34	30	07:31 (5)	21:28	2	06:03 (4)	22:07	30	06:11 (4)
16	08:44		07:53		06:49			06:33		07:02 (5)	05:32		06:00 (4)	05:02		05:42 (4)
	16:44		17:44		18:38			20:36	29	07:31 (5)	21:30	4	06:04 (4)	22:07	29	06:11 (4)
17	08:43		07:51		06:46			06:31		07:01 (5)	05:30		05:58 (4)	05:02		05:42 (4)
	16:46		17:46		18:40			20:38	28	07:29 (5)	21:32	7	06:05 (4)	22:08	30	06:12 (4)
18	08:42		07:49		06:44			06:29		07:02 (5)	05:29		05:57 (4)	05:02		05:42 (4)
	16:47		17:48		18:42			20:40	26	07:28 (5)	21:33	9	06:06 (4)	22:08	30	06:12 (4)
19	08:41		07:47		06:41			06:26		07:03 (5)	05:27		05:55 (4)	05:02		05:42 (4)
	16:49		17:50		18:44			20:42	24	07:27 (5)	21:35	11	06:06 (4)	22:08	30	06:12 (4)
20	08:39		07:45		06:39			06:24		07:04 (5)	05:25		05:54 (4)	05:02		05:43 (4)
	16:51		17:52		18:46			20:43	21	07:25 (5)	21:37	13	06:07 (4)	22:09	29	06:12 (4)
21	08:38		07:43		06:36			06:22		07:05 (5)	05:24		05:53 (4)	05:02		05:43 (4)
	16:53		17:54		18:48			20:45	18	07:23 (5)	21:38	15	06:08 (4)	22:09	29	06:12 (4)
22	08:37		07:40		06:34		06:58 (6)	06:20		07:07 (5)	05:22		05:52 (4)	05:02		05:43 (4)
	16:55		17:56		18:50	4	07:02 (6)	20:47	13	07:20 (5)	21:40	16	06:08 (4)	22:09	29	06:12 (4)
23	08:36		07:38		06:31		06:55 (6)	06:17		07:13 (5)	05:21		05:50 (4)	05:03		05:43 (4)
	16:57		17:58		18:52	7	07:02 (6)	20:49	1	07:14 (5)	21:41	18	06:08 (4)	22:09	30	06:13 (4)
24	08:34		07:36		06:29		06:53 (6)	06:15			05:20		05:49 (4)	05:03		05:43 (4)
	16:58		18:00		18:53	10	07:03 (6)	20:51			21:43	19	06:08 (4)	22:10	30	06:13 (4)
25	08:33		07:34		06:26		06:50 (6)	06:13			05:18		05:48 (4)	05:03		05:43 (4)
	17:00		18:02		18:55	13	07:03 (6)	20:53			21:44	21	06:09 (4)	22:10	30	06:13 (4)
26	08:31		07:31		06:24		06:48 (6)	06:11			05:17		05:47 (4)	05:04		05:44 (4)
	17:02		18:04		18:57	15	07:03 (6)	20:55			21:46	22	06:09 (4)	22:10	29	06:13 (4)
27	08:30		07:29		06:22		06:45 (6)	06:08			05:16		05:46 (4)	05:04		05:43 (4)
	17:04		18:06		18:59	17	07:02 (6)	20:56			21:47	23	06:09 (4)	22:09	30	06:13 (4)
28	08:28		07:27		06:19		06:43 (6)	06:06			05:15		05:45 (4)	05:05		05:44 (4)
	17:06		18:08		19:01	19	07:02 (6)	20:58			21:49	25	06:10 (4)	22:09	30	06:14 (4)
29	08:27				07:17		07:40 (6)	06:04			05:14		05:44 (4)	05:05		05:44 (4)
	17:08				20:03	21	08:01 (6)	21:00			21:50	26	06:10 (4)	22:09	30	06:14 (4)
30	08:25				07:14		07:39 (6)	06:02			05:13		05:43 (4)	05:06		05:44 (4)
	17:10				20:05	22	08:01 (6)	21:02			21:51	27	06:10 (4)	22:09	30	06:14 (4)
31	08:24				07:12		07:38 (6)				05:11		05:42 (4)			
	17:12				20:06	21	07:59 (6)				21:52	28	06:10 (4)			
Potential sun hours	250		273		367			420			494			510		
Total, worst case						149			428			286			906	
Sun reduction						0.22			0.31			0.31			0.26	
Oper. time red.						1.00			1.00			1.00			1.00	
Wind dir. red.						0.65			0.64			0.64			0.64	
Total reduction						0.14			0.20			0.20			0.17	
Total, real						21			84			57			150	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** V - H023

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August			September		October		November	December
1	05:07		05:45 (4)	05:47		06:41		07:08 (5)	07:34	07:33	08:28
	22:09	30	06:15 (4)	21:33		20:26	23	07:31 (5)	19:13	17:02	16:18
2	05:07		05:44 (4)	05:48		06:43		07:10 (5)	07:36	07:34	08:29
	22:08	31	06:15 (4)	21:31		20:24	21	07:31 (5)	19:10	17:00	16:17
3	05:08		05:44 (4)	05:50		06:44		07:12 (5)	07:38	07:36	08:31
	22:08	31	06:15 (4)	21:29		20:22	19	07:31 (5)	19:08	16:58	16:16
4	05:09		05:44 (4)	05:52		06:46		07:13 (5)	07:40	07:38	08:32
	22:07	32	06:16 (4)	21:28		20:19	16	07:29 (5)	19:05	16:56	16:16
5	05:10		05:45 (4)	05:53		06:48		07:15 (5)	07:41	07:40	08:33
	22:07	31	06:16 (4)	21:26		20:17	13	07:28 (5)	19:03	16:54	16:15
6	05:11		05:45 (4)	05:55		06:50		07:17 (5)	07:43	07:42	08:35
	22:06	32	06:17 (4)	21:24		20:14	10	07:27 (5)	19:00	16:52	16:14
7	05:12		05:45 (4)	05:57		06:51		07:18 (5)	07:45	07:44	08:36
	22:05	32	06:17 (4)	21:22		20:12	7	07:25 (5)	18:58	16:51	16:14
8	05:13		05:46 (4)	05:58		06:53		07:20 (5)	07:47	07:46	08:37
	22:05	31	06:17 (4)	21:20		20:10	3	07:23 (5)	18:56	16:49	16:14
9	05:14		05:46 (4)	06:00		06:55		07:37 (6)	07:49	07:48	08:39
	22:04	31	06:17 (4)	21:18		20:07	10	07:47 (6)	18:53	16:47	16:13
10	05:15		05:48 (4)	06:02		06:57		07:35 (6)	07:51	07:50	08:40
	22:03	30	06:18 (4)	21:16		20:05	14	07:49 (6)	18:51	16:45	16:13
11	05:16		05:49 (4)	06:04		06:59		07:32 (6)	07:53	07:52	08:41
	22:02	29	06:18 (4)	21:14		20:02	18	07:50 (6)	18:49	16:43	16:13
12	05:17		05:50 (4)	06:05		07:00		07:31 (6)	07:54	07:54	08:42
	22:01	28	06:18 (4)	21:12		20:00	20	07:51 (6)	18:46	16:42	16:12
13	05:18		05:51 (4)	06:07		07:02		07:30 (6)	07:56	07:56	08:43
	22:00	27	06:18 (4)	21:10		19:57	22	07:52 (6)	18:44	16:40	16:12
14	05:20		05:52 (4)	06:09		07:04		07:30 (6)	07:58	07:58	08:44
	21:59	26	06:18 (4)	21:08		19:55	21	07:51 (6)	18:41	16:38	16:12
15	05:21		05:53 (4)	06:11		07:06		07:32 (6)	08:00	08:00	08:45
	21:58	25	06:18 (4)	21:05		19:52	20	07:52 (6)	18:39	16:37	16:12
16	05:22		05:54 (4)	06:12		07:07		07:34 (6)	08:02	08:01	08:46
	21:57	24	06:18 (4)	21:03		19:50	18	07:52 (6)	18:37	16:35	16:12
17	05:23		05:56 (4)	06:14		07:09		07:36 (6)	08:04	08:03	08:47
	21:56	23	06:19 (4)	21:01		19:47	16	07:52 (6)	18:34	16:34	16:13
18	05:25		05:57 (4)	06:16		07:11		07:37 (6)	08:06	08:05	08:48
	21:55	21	06:18 (4)	20:59		19:45	13	07:50 (6)	18:32	16:32	16:13
19	05:26		05:58 (4)	06:18		07:13		07:39 (6)	08:07	08:07	08:48
	21:53	20	06:18 (4)	20:57		19:42	11	07:50 (6)	18:30	16:31	16:13
20	05:28		06:00 (4)	06:20	07:17 (5)	07:14		07:41 (6)	08:09	08:09	08:49
	21:52	19	06:19 (4)	20:54	5 07:22 (5)	19:40	8	07:49 (6)	18:28	16:30	16:13
21	05:29		06:01 (4)	06:21	07:13 (5)	07:16		07:43 (6)	08:11	08:11	08:50
	21:51	17	06:18 (4)	20:52	13 07:26 (5)	19:37	5	07:48 (6)	18:25	16:28	16:14
22	05:31		06:02 (4)	06:23	07:09 (5)	07:18		07:44 (6)	08:13	08:12	08:50
	21:49	15	06:17 (4)	20:50	19 07:28 (5)	19:35	1	07:45 (6)	18:23	16:27	16:14
23	05:32		06:04 (4)	06:25	07:08 (5)	07:20			08:15	08:14	08:51
	21:48	14	06:18 (4)	20:48	21 07:29 (5)	19:32			18:21	16:26	16:15
24	05:34		06:05 (4)	06:27	07:07 (5)	07:22			08:17	08:16	08:51
	21:46	12	06:17 (4)	20:45	24 07:31 (5)	19:30			18:19	16:25	16:15
25	05:35		06:07 (4)	06:28	07:05 (5)	07:23			07:19	08:18	08:52
	21:45	10	06:17 (4)	20:43	26 07:31 (5)	19:27			17:17	16:23	16:16
26	05:37		06:08 (4)	06:30	07:04 (5)	07:25			07:21	08:19	08:52
	21:43	8	06:16 (4)	20:41	28 07:32 (5)	19:25			17:14	16:22	16:17
27	05:38		06:09 (4)	06:32	07:03 (5)	07:27			07:23	08:21	08:52
	21:42	6	06:15 (4)	20:38	29 07:32 (5)	19:23			17:12	16:21	16:18
28	05:40		06:11 (4)	06:34	07:02 (5)	07:29			07:25	08:23	08:52
	21:40	3	06:14 (4)	20:36	30 07:32 (5)	19:20			17:10	16:20	16:18
29	05:42		06:12 (4)	06:36	07:03 (5)	07:31			07:27	08:24	08:52
	21:38	1	06:13 (4)	20:34	29 07:32 (5)	19:18			17:08	16:19	16:19
30	05:43			06:37	07:05 (5)	07:32			07:29	08:26	08:52
	21:37			20:31	27 07:32 (5)	19:15			17:06	16:19	16:20
31	05:45			06:39	07:07 (5)				07:31		08:52
	21:35			20:29	25 07:32 (5)				17:04		16:21
Potential sun hours	512			460		382			328	259	233
Total, worst case		639			276		309				
Sun reduction		0.22			0.26		0.25				
Oper. time red.		1.00			1.00		1.00				
Wind dir. red.		0.64			0.64		0.64				
Total reduction		0.14			0.16		0.16				
Total, real		91			45		50				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** W - H024

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:09	20:08	21:03	21:53	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:19	07:04	05:56	05:08	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58	16:16
4	08:51	08:16	07:17	07:02	05:54	05:08	05:09	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52	05:07	05:09	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11	21:58	22:06	21:25	20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50	05:06	05:10	05:55	06:49	07:43	07:42	08:35
	16:28	17:24	18:19	20:17	21:12	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:50	05:44	05:04	05:13	06:00	06:55	07:48	07:48	08:38
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:48	08:05	07:03	06:47	05:42	05:04	05:14	06:02	06:56	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:00	06:45	05:40	05:03	05:16	06:03	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:26	21:21	22:04	22:02	21:13	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:56	06:40	05:37	05:02	05:18	06:07	07:02	07:56	07:55	08:43
	16:39	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:26	22:06	21:59	21:07	19:54	18:41	16:38	16:12
15	08:44	07:55	06:51	06:35	05:33	05:02	05:21	06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:43	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16:12
17	08:42	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:31	22:07	21:56	21:01	19:47	18:34	16:34	16:12
18	08:41	07:49	06:43	06:28	05:28	05:02	05:25	06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:39	21:33	22:08	21:54	20:59	19:44	18:32	16:32	16:12
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:24	05:02	05:29	06:21	07:16	08:11	08:10	08:49
	16:53	17:54	18:48	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:13
22	08:37	07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:39	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15	08:14	08:50
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	16:14
24	08:34	07:36	06:29	06:15	05:19	05:03	05:33	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:42	22:09	21:46	20:45	19:30	18:18	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:17	08:51
	17:00	18:02	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	05:04	05:40	06:33	07:28	07:24	08:22	08:52
	17:06	18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** X - H025

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March		April		May		June	
1	08:52	08:22	07:24		07:09		07:40 (6)		06:00	
	16:23	17:14	18:10		20:08	17	07:57 (6)		21:04	
2	08:52	08:20	07:22		07:07		07:42 (6)		05:58	
	16:24	17:16	18:12		20:10	13	07:55 (6)		21:06	
3	08:52	08:19	07:20		07:04		07:44 (6)		05:56	
	16:25	17:18	18:14		20:12	7	07:51 (6)		21:07	
4	08:52	08:17	07:17		07:02		07:26 (5)		05:54	
	16:26	17:20	18:16		20:14	4	07:30 (5)		21:09	
5	08:51	08:15	07:15		07:00		07:23 (5)		05:52	
	16:27	17:22	18:17		20:16	7	07:30 (5)		21:11	
6	08:51	08:13	07:13		06:57		07:21 (5)		05:50	
	16:29	17:24	18:19		20:18	11	07:32 (5)		21:13	
7	08:51	08:11	07:10		06:55		07:19 (5)		05:48	
	16:30	17:26	18:21		20:19	14	07:33 (5)		21:15	
8	08:50	08:09	07:08		06:52		07:16 (5)		05:46	
	16:31	17:28	18:23		20:21	16	07:32 (5)		21:16	
9	08:49	08:07	07:05		06:50		07:14 (5)		05:44	
	16:33	17:30	18:25		20:23	19	07:33 (5)		21:18	
10	08:49	08:06	07:03		06:47		07:11 (5)		05:42	
	16:34	17:32	18:27		20:25	21	07:32 (5)		21:20	
11	08:48	08:04	07:01		06:45		07:09 (5)		05:40	
	16:36	17:34	18:29		20:27	23	07:32 (5)		21:22	
12	08:47	08:02	06:58		06:43		07:07 (5)		05:39	
	16:37	17:36	18:31		20:29	25	07:32 (5)		21:23	
13	08:47	08:00	06:56		06:40		07:04 (5)		05:37	06:04 (4)
	16:39	17:38	18:33		20:31	27	07:31 (5)		21:25	2 06:06 (4)
14	08:46	07:57	06:53		06:38		07:02 (5)		05:35	06:03 (4)
	16:41	17:40	18:35		20:32	29	07:31 (5)		21:27	5 06:08 (4)
15	08:45	07:55	06:51		06:36		07:03 (5)		05:33	06:01 (4)
	16:42	17:42	18:37		20:34	27	07:30 (5)		21:28	7 06:08 (4)
16	08:44	07:53	06:49		06:33		07:03 (5)		05:32	06:00 (4)
	16:44	17:44	18:38		20:36	27	07:30 (5)		21:30	9 06:09 (4)
17	08:43	07:51	06:46		06:31		07:03 (5)		05:30	05:58 (4)
	16:46	17:46	18:40		20:38	25	07:28 (5)		21:32	11 06:09 (4)
18	08:42	07:49	06:44		06:29		07:04 (5)		05:29	05:57 (4)
	16:47	17:48	18:42		20:40	23	07:27 (5)		21:33	13 06:10 (4)
19	08:41	07:47	06:41		06:26		07:05 (5)		05:27	05:55 (4)
	16:49	17:50	18:44		20:42	20	07:25 (5)		21:35	15 06:10 (4)
20	08:39	07:45	06:39		06:24		07:07 (5)		05:25	05:54 (4)
	16:51	17:52	18:46		20:43	16	07:23 (5)		21:37	17 06:11 (4)
21	08:38	07:43	06:36		06:22		07:09 (5)		05:24	05:53 (4)
	16:53	17:54	18:48		20:45	11	07:20 (5)		21:38	18 06:11 (4)
22	08:37	07:40	06:34	06:58 (6)	06:20				05:22	05:52 (4)
	16:55	17:56	18:50	3 07:01 (6)	20:47				21:40	20 06:12 (4)
23	08:36	07:38	06:31	06:55 (6)	06:17				05:21	05:50 (4)
	16:57	17:58	18:52	6 07:01 (6)	20:49				21:41	21 06:11 (4)
24	08:34	07:36	06:29	06:53 (6)	06:15				05:20	05:49 (4)
	16:58	18:00	18:53	9 07:02 (6)	20:51				21:43	23 06:12 (4)
25	08:33	07:34	06:26	06:50 (6)	06:13				05:18	05:48 (4)
	17:00	18:02	18:55	12 07:02 (6)	20:53				21:44	24 06:12 (4)
26	08:31	07:31	06:24	06:48 (6)	06:11				05:17	05:47 (4)
	17:02	18:04	18:57	14 07:02 (6)	20:55				21:46	25 06:12 (4)
27	08:30	07:29	06:22	06:45 (6)	06:08				05:16	05:46 (4)
	17:04	18:06	18:59	17 07:02 (6)	20:56				21:47	26 06:12 (4)
28	08:28	07:27	06:19	06:43 (6)	06:06				05:15	05:45 (4)
	17:06	18:08	19:01	18 07:01 (6)	20:58				21:49	27 06:12 (4)
29	08:27		07:17	07:40 (6)	06:04				05:14	05:44 (4)
	17:08		20:03	20 08:00 (6)	21:00				21:50	28 06:12 (4)
30	08:25		07:14	07:38 (6)	06:02				05:13	05:43 (4)
	17:10		20:05	22 08:00 (6)	21:02				21:51	29 06:12 (4)
31	08:24		07:12	07:39 (6)					05:11	05:42 (4)
	17:12		20:06	19 07:58 (6)					21:52	30 06:12 (4)
Potential sun hours	250	273	367		420		494		510	
Total, worst case			140		382		350		787	
Sun reduction			0.22		0.31		0.31		0.26	
Oper. time red.			1.00		1.00		1.00		1.00	
Wind dir. red.			0.65		0.64		0.64		0.64	
Total reduction			0.14		0.20		0.20		0.17	
Total, real			20		75		70		130	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** X - H025

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August		September		October	November	December
1	05:07		05:50 (4)	05:47		06:41	07:08 (5)	07:34	07:33	08:28
	22:09	26	06:16 (4)	21:33		20:26	23	07:31 (5)	19:13	17:02	16:18
2	05:07		05:49 (4)	05:48		06:43	07:10 (5)	07:36	07:34	08:29
	22:08	27	06:16 (4)	21:31		20:24	21	07:31 (5)	19:10	17:00	16:17
3	05:08		05:50 (4)	05:50		06:44	07:12 (5)	07:38	07:36	08:31
	22:08	27	06:17 (4)	21:29		20:22	19	07:31 (5)	19:08	16:58	16:16
4	05:09		05:50 (4)	05:52		06:46	07:13 (5)	07:40	07:38	08:32
	22:07	27	06:17 (4)	21:28		20:19	16	07:29 (5)	19:05	16:56	16:16
5	05:10		05:50 (4)	05:53		06:48	07:15 (5)	07:41	07:40	08:33
	22:07	28	06:18 (4)	21:26		20:17	14	07:29 (5)	19:03	16:54	16:15
6	05:11		05:50 (4)	05:55		06:50	07:17 (5)	07:43	07:42	08:35
	22:06	28	06:18 (4)	21:24		20:14	11	07:28 (5)	19:00	16:52	16:14
7	05:12		05:50 (4)	05:57		06:52	07:18 (5)	07:45	07:44	08:36
	22:05	29	06:19 (4)	21:22		20:12	8	07:26 (5)	18:58	16:51	16:14
8	05:13		05:50 (4)	05:58		06:53	07:20 (5)	07:47	07:46	08:37
	22:05	29	06:19 (4)	21:20		20:10	4	07:24 (5)	18:56	16:49	16:14
9	05:14		05:50 (4)	06:00		06:55	07:38 (6)	07:49	07:48	08:39
	22:04	30	06:20 (4)	21:18		20:07	7	07:45 (6)	18:53	16:47	16:13
10	05:15		05:50 (4)	06:02		06:57	07:35 (6)	07:51	07:50	08:40
	22:03	30	06:20 (4)	21:16		20:05	13	07:48 (6)	18:51	16:45	16:13
11	05:16		05:50 (4)	06:04		06:59	07:32 (6)	07:53	07:52	08:41
	22:02	30	06:20 (4)	21:14		20:02	17	07:49 (6)	18:49	16:43	16:13
12	05:17		05:50 (4)	06:05		07:00	07:31 (6)	07:54	07:54	08:42
	22:01	30	06:20 (4)	21:12		20:00	19	07:50 (6)	18:46	16:42	16:12
13	05:18		05:51 (4)	06:07		07:02	07:30 (6)	07:56	07:56	08:43
	22:00	30	06:21 (4)	21:10		19:57	21	07:51 (6)	18:44	16:40	16:12
14	05:20		05:52 (4)	06:09		07:04	07:30 (6)	07:58	07:58	08:44
	21:59	29	06:21 (4)	21:08		19:55	21	07:51 (6)	18:41	16:38	16:12
15	05:21		05:53 (4)	06:11		07:06	07:32 (6)	08:00	08:00	08:45
	21:58	28	06:21 (4)	21:05		19:52	19	07:51 (6)	18:39	16:37	16:12
16	05:22		05:54 (4)	06:12		07:07	07:34 (6)	08:02	08:01	08:46
	21:57	27	06:21 (4)	21:03		19:50	17	07:51 (6)	18:37	16:35	16:12
17	05:23		05:56 (4)	06:14		07:09	07:36 (6)	08:04	08:03	08:47
	21:56	26	06:22 (4)	21:01		19:47	15	07:51 (6)	18:34	16:34	16:13
18	05:25		05:57 (4)	06:16		07:11	07:37 (6)	08:06	08:05	08:48
	21:55	25	06:22 (4)	20:59		19:45	12	07:49 (6)	18:32	16:32	16:13
19	05:26		05:58 (4)	06:18		07:13	07:39 (6)	08:08	08:07	08:48
	21:53	23	06:21 (4)	20:57		19:42	10	07:49 (6)	18:30	16:31	16:13
20	05:28		06:00 (4)	06:20		07:15	07:41 (6)	08:09	08:09	08:49
	21:52	22	06:22 (4)	20:54		19:40	7	07:48 (6)	18:28	16:30	16:13
21	05:29		06:01 (4)	06:21		07:16	07:43 (6)	08:11	08:11	08:50
	21:51	21	06:22 (4)	20:52		19:37	4	07:47 (6)	18:25	16:28	16:14
22	05:31		06:02 (4)	06:23	07:13 (5)	07:18		08:13	08:12	08:50
	21:49	19	06:21 (4)	20:50	12	07:25 (5)	19:35		18:23	16:27	16:14
23	05:32		06:04 (4)	06:25	07:11 (5)	07:20		08:15	08:14	08:51
	21:48	18	06:22 (4)	20:48	16	07:27 (5)	19:32		18:21	16:26	16:15
24	05:34		06:05 (4)	06:27	07:09 (5)	07:22		08:17	08:16	08:51
	21:46	16	06:21 (4)	20:45	20	07:29 (5)	19:30		18:19	16:25	16:15
25	05:35		06:07 (4)	06:28	07:07 (5)	07:23		07:19	08:18	08:52
	21:45	14	06:21 (4)	20:43	23	07:30 (5)	19:27		17:17	16:23	16:16
26	05:37		06:08 (4)	06:30	07:06 (5)	07:25		07:21	08:19	08:52
	21:43	12	06:20 (4)	20:41	25	07:31 (5)	19:25		17:14	16:22	16:17
27	05:38		06:09 (4)	06:32	07:05 (5)	07:27		07:23	08:21	08:52
	21:42	10	06:19 (4)	20:38	27	07:32 (5)	19:23		17:12	16:21	16:18
28	05:40		06:11 (4)	06:34	07:03 (5)	07:29		07:25	08:23	08:52
	21:40	8	06:19 (4)	20:36	28	07:31 (5)	19:20		17:10	16:20	16:18
29	05:42		06:12 (4)	06:36	07:03 (5)	07:31		07:27	08:24	08:52
	21:38	6	06:18 (4)	20:34	29	07:32 (5)	19:18		17:08	16:19	16:19
30	05:43		06:14 (4)	06:37	07:05 (5)	07:32		07:29	08:26	08:52
	21:37	4	06:18 (4)	20:31	27	07:32 (5)	19:15		17:06	16:19	16:20
31	05:45		06:15 (4)	06:39	07:07 (5)			07:31		08:52
	21:35	1	06:16 (4)	20:29	25	07:32 (5)			17:04		16:21
Potential sun hours	512			460			382		328	259	233
Total, worst case		680			232			298				
Sun reduction		0.22			0.26			0.25				
Oper. time red.		1.00			1.00			1.00				
Wind dir. red.		0.64			0.64			0.64				
Total reduction		0.14			0.16			0.16				
Total, real		97			38			48				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** Y - H027

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May		June		July		August	September	October	November	December
1	08:52 16:22	08:22 17:14	07:24 18:10	07:09 20:08	06:00 21:04		05:10 21:54	21:08 (5) 21:19 (6)	05:06 22:08	21:14 (5) 21:33 (6)	05:46 21:33	06:41 20:26	07:34 19:13	07:32 17:02	08:27 16:18
2	08:52 16:24	08:20 17:16	07:22 18:12	07:07 20:10	05:58 21:05		05:09 21:55	21:08 (5) 21:20 (6)	05:07 22:08	21:14 (6) 21:32 (6)	05:48 21:31	06:42 20:24	07:36 19:10	07:34 17:00	08:29 16:17
3	08:52 16:25	08:18 17:18	07:20 18:13	07:04 20:12	05:56 21:07		05:09 21:56	21:09 (5) 21:22 (6)	05:08 22:07	21:14 (5) 21:32 (6)	05:50 21:29	06:44 20:21	07:38 19:08	07:36 16:58	08:30 16:16
4	08:52 16:26	08:17 17:20	07:17 18:15	07:02 20:14	05:54 21:09		05:08 21:57	21:09 (5) 21:22 (6)	05:09 22:07	21:15 (5) 21:32 (6)	05:51 21:27	06:46 20:19	07:39 19:05	07:38 16:56	08:32 16:15
5	08:51 16:27	08:15 17:22	07:15 18:17	06:59 20:16	05:52 21:11		05:07 21:58	21:08 (5) 21:23 (6)	05:10 22:06	21:15 (5) 21:31 (6)	05:53 21:26	06:48 20:17	07:41 19:03	07:40 16:54	08:33 16:15
6	08:51 16:29	08:13 17:24	07:12 18:19	06:57 20:17	05:50 21:13		05:06 21:59	21:09 (5) 21:24 (6)	05:11 22:06	21:15 (5) 21:31 (6)	05:55 21:24	06:50 20:14	07:43 19:00	07:42 16:52	08:35 16:14
7	08:50 16:30	08:11 17:26	07:10 18:21	06:55 20:19	05:48 21:14		05:06 22:00	21:09 (5) 21:25 (6)	05:12 22:05	21:15 (5) 21:30 (6)	05:57 21:22	06:51 20:12	07:45 18:58	07:44 16:50	08:36 16:14
8	08:50 16:31	08:09 17:28	07:08 18:23	06:52 20:21	05:46 21:16		05:05 22:01	21:09 (5) 21:26 (6)	05:13 22:04	21:15 (5) 21:29 (6)	05:58 21:20	06:53 20:09	07:47 18:56	07:46 16:49	08:37 16:13
9	08:49 16:33	08:07 17:30	07:05 18:25	06:50 20:23	05:44 21:18		05:04 22:02	21:09 (5) 21:26 (6)	05:14 22:04	21:15 (5) 21:28 (6)	06:00 21:18	06:55 20:07	07:49 18:53	07:48 16:47	08:39 16:13
10	08:49 16:34	08:05 17:32	07:03 18:27	06:47 20:25	05:42 21:20		05:04 22:03	21:09 (5) 21:28 (6)	05:15 22:03	21:15 (5) 21:28 (6)	06:02 21:16	06:57 20:04	07:50 18:51	07:50 16:45	08:40 16:13
11	08:48 16:36	08:03 17:34	07:01 18:29	06:45 20:27	05:40 21:21		05:03 22:04	21:09 (5) 21:28 (6)	05:16 22:02	21:16 (5) 21:27 (6)	06:04 21:14	06:58 20:02	07:52 18:48	07:52 16:43	08:41 16:13
12	08:47 16:37	08:01 17:36	06:58 18:31	06:43 20:28	05:39 21:23		05:03 22:04	21:09 (5) 21:29 (6)	05:17 22:01	21:17 (5) 21:27 (6)	06:05 21:12	07:00 20:00	07:54 18:46	07:54 16:42	08:42 16:12
13	08:46 16:39	07:59 17:38	06:56 18:33	06:40 20:30	05:37 21:25		05:03 22:05	21:10 (6) 21:29 (6)	05:18 22:00	21:17 (5) 21:26 (6)	06:07 21:09	07:02 19:57	07:56 18:44	07:56 16:40	08:43 16:12
14	08:45 16:41	07:57 17:40	06:53 18:35	06:38 20:32	05:35 21:27		05:02 22:06	21:10 (6) 21:30 (6)	05:19 21:59	21:18 (5) 21:25 (6)	06:09 21:07	07:04 19:55	07:58 18:41	07:57 16:38	08:44 16:12
15	08:45 16:42	07:55 17:42	06:51 18:36	06:35 20:34	05:33 21:28		05:02 22:06	21:11 (6) 21:31 (6)	05:21 21:58	21:18 (5) 21:24 (5)	06:11 21:05	07:05 19:52	08:00 18:39	07:59 16:37	08:45 16:12
16	08:44 16:44	07:53 17:44	06:48 18:38	06:33 20:36	05:32 21:30		05:02 22:07	21:11 (6) 21:31 (6)	05:22 21:57	21:18 (5) 21:22 (5)	06:12 21:03	07:07 19:50	08:02 18:37	08:01 16:35	08:46 16:12
17	08:43 16:46	07:51 17:46	06:46 18:40	06:31 20:38	05:30 21:32		05:02 22:07	21:11 (6) 21:32 (6)	05:23 21:56	21:20 (5) 21:22 (5)	06:14 21:01	07:09 19:47	08:04 18:34	08:03 16:34	08:47 16:12
18	08:42 16:47	07:49 17:48	06:43 18:42	06:28 20:40	05:28 21:33		05:02 22:08	21:11 (6) 21:32 (6)	05:25 21:54	21:20 (5) 21:21 (5)	06:16 20:59	07:11 19:45	08:05 18:32	08:05 16:32	08:48 16:13
19	08:40 16:49	07:47 17:50	06:41 18:44	06:26 20:41	05:27 21:35		05:02 22:08	21:11 (6) 21:33 (6)	05:26 21:53		06:18 20:56	07:13 19:42	08:07 18:30	08:07 16:31	08:48 16:13
20	08:39 16:51	07:45 17:52	06:39 18:46	06:24 20:43	05:25 21:36		05:02 22:09	21:11 (6) 21:33 (6)	05:28 21:52		06:19 20:54	07:14 19:40	08:09 18:28	08:09 16:29	08:49 16:13
21	08:38 16:53	07:42 17:54	06:36 18:48	06:22 20:45	05:24 21:38		05:02 22:09	21:11 (6) 21:33 (6)	05:29 21:50		06:21 20:52	07:16 19:37	08:11 18:25	08:10 16:28	08:50 16:14
22	08:37 16:55	07:40 17:56	06:34 18:50	06:19 20:47	05:22 21:40		05:02 22:09	21:11 (6) 21:33 (6)	05:30 21:49		06:23 20:50	07:18 19:35	08:13 18:23	08:12 16:27	08:50 16:14
23	08:35 16:56	07:38 17:58	06:31 18:51	06:17 20:49	05:21 21:41		05:03 22:09	21:12 (6) 21:34 (6)	05:32 21:48		06:25 20:47	07:20 19:32	08:15 18:21	08:14 16:26	08:51 16:15
24	08:34 16:58	07:36 18:00	06:29 18:53	06:15 20:51	05:20 21:43		05:03 22:09	21:12 (6) 21:33 (6)	05:34 21:46		06:27 20:45	07:21 19:30	08:17 18:19	08:16 16:24	08:51 16:15
25	08:33 17:00	07:33 18:02	06:26 18:55	06:13 20:53	05:18 21:44		05:03 22:09	21:12 (6) 21:33 (6)	05:35 21:45		06:28 20:43	07:23 19:27	08:18 17:16	08:18 16:23	08:51 16:16
26	08:31 17:02	07:31 18:04	06:24 18:57	06:11 20:54	05:17 21:46	21:10 (5) 21:12 (5)	05:04 22:09	21:13 (6) 21:34 (6)	05:37 21:43		06:30 20:40	07:25 19:25	07:21 17:14	08:19 16:22	08:52 16:17
27	08:30 17:04	07:29 18:06	06:21 18:59	06:08 20:56	05:16 21:47	21:10 (5) 21:13 (5)	05:04 22:09	21:13 (6) 21:33 (6)	05:38 21:41		06:32 20:38	07:27 19:22	07:23 17:12	08:21 16:21	08:52 16:17
28	08:28 17:06	07:27 18:08	06:19 19:01	06:06 20:58	05:15 21:48	21:10 (5) 21:15 (5)	05:05 22:09	21:13 (5) 21:33 (6)	05:40 21:40		06:34 20:36	07:29 19:20	07:25 17:10	08:23 16:20	08:52 16:18
29	08:27 17:08		07:16 20:03	06:04 21:00	05:13 21:50	21:09 (5) 21:16 (5)	05:05 22:09	21:13 (6) 21:33 (6)	05:41 21:38		06:35 20:33	07:30 19:17	07:27 17:08	08:24 16:19	08:52 16:19
30	08:25 17:10		07:14 20:04	06:02 21:02	05:12 21:51	21:09 (5) 21:17 (6)	05:06 22:09	21:14 (6) 21:33 (6)	05:43 21:36		06:37 20:31	07:32 19:15	07:28 17:06	08:26 16:18	08:52 16:20
31	08:23 17:12		07:12 20:06		05:11 21:52	21:09 (5) 21:18 (6)			05:45 21:35		06:39 20:29		07:30 17:04		08:52 16:21
Potential sun hours	250	273	367	420	494		510		512		460	382	328	259	233
Total, worst case					34		560		209						
Sun reduction					0.31		0.26		0.22						
Oper. time red.					1.00		1.00		1.00						
Wind dir. red.					0.60		0.60		0.60						
Total reduction					0.19		0.16		0.13						
Total, real					6		87		28						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** Z - H028

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February	March	April	May	June	July	August	September	October	November			December		
1	08:52		09:26 (10)	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32			08:27		09:10 (10)
	16:22	18	09:44 (10)	17:14	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02			16:17	18	09:28 (10)
2	08:52		09:26 (10)	08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34			08:29		09:11 (10)
	16:23	19	09:45 (10)	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00			16:17	18	09:29 (10)
3	08:52		09:26 (10)	08:18	07:19	07:04	05:56	05:08	05:08	05:49	06:44	07:38	07:36			08:30		09:10 (10)
	16:24	20	09:46 (10)	17:18	18:13	20:12	21:07	21:56	22:08	21:29	20:21	19:07	16:58			16:16	20	09:30 (10)
4	08:52		09:25 (10)	08:17	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38			08:32		09:10 (10)
	16:26	20	09:45 (10)	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56			16:15	21	09:31 (10)
5	08:51		09:25 (10)	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40			08:33		09:11 (10)
	16:27	21	09:46 (10)	17:22	18:17	20:15	21:11	21:58	22:07	21:26	20:17	19:03	16:54			16:15	21	09:32 (10)
6	08:51		09:25 (10)	08:13	07:12	06:57	05:50	05:06	05:10	05:55	06:49	07:43	07:42			08:35		09:11 (10)
	16:28	21	09:46 (10)	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52			16:14	21	09:32 (10)
7	08:50		09:25 (10)	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44			08:36		09:11 (10)
	16:30	21	09:46 (10)	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50			16:14	21	09:32 (10)
8	08:50		09:26 (10)	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46			08:37		09:13 (10)
	16:31	21	09:47 (10)	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:55	16:48			16:13	20	09:33 (10)
9	08:49		09:27 (10)	08:07	07:05	06:50	05:44	05:04	05:13	06:00	06:55	07:49	07:48			08:39		09:14 (10)
	16:32	19	09:46 (10)	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47			16:13	20	09:34 (10)
10	08:49		09:28 (10)	08:05	07:03	06:47	05:42	05:04	05:14	06:02	06:56	07:50	07:50			08:40		09:15 (10)
	16:34	18	09:46 (10)	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45			16:12	19	09:34 (10)
11	08:48		09:28 (10)	08:03	07:00	06:45	05:40	05:03	05:16	06:03	06:58	07:52	07:52			08:41		09:17 (10)
	16:35	18	09:46 (10)	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43			16:12	18	09:35 (10)
12	08:47		09:29 (10)	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54			08:42		09:18 (10)
	16:37	17	09:46 (10)	17:36	18:31	20:28	21:23	22:05	22:01	21:12	19:59	18:46	16:41			16:12	18	09:36 (10)
13	08:46		09:31 (10)	07:59	06:56	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:56			08:43		09:19 (10)
	16:39	14	09:45 (10)	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40			16:12	17	09:36 (10)
14	08:46		09:32 (10)	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57			08:44		09:20 (10)
	16:40	13	09:45 (10)	17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38			16:12	17	09:37 (10)
15	08:45		09:34 (10)	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59			08:45		09:21 (10)
	16:42	10	09:44 (10)	17:42	18:36	20:34	21:28	22:07	21:58	21:05	19:52	18:39	16:37			16:12	16	09:37 (10)
16	08:44		09:37 (10)	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01			08:46		09:22 (10)
	16:44	5	09:42 (10)	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:36	16:35			16:12	16	09:38 (10)
17	08:43			07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03			08:47		09:23 (10)
	16:45			17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:33			16:12	15	09:38 (10)
18	08:42			07:49	06:43	06:28	05:28	05:02	05:24	06:16	07:11	08:05	08:05			08:48		09:23 (10)
	16:47			17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32			16:12	15	09:38 (10)
19	08:40			07:47	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07			08:48		09:24 (10)
	16:49			17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31			16:13	15	09:39 (10)
20	08:39			07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09			08:49		09:25 (10)
	16:51			17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29			16:13	15	09:40 (10)
21	08:38			07:42	06:36	06:21	05:24	05:02	05:29	06:21	07:16	08:11	08:10			08:50		09:25 (10)
	16:52			17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28			16:13	15	09:40 (10)
22	08:37			07:40	06:34	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12			08:50		09:26 (10)
	16:54			17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27			16:14	15	09:41 (10)
23	08:35			07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15	08:14			08:51		09:26 (10)
	16:56			17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25			16:14	15	09:41 (10)
24	08:34			07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16			08:51		09:26 (10)
	16:58			18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24			16:15	15	09:41 (10)
25	08:33			07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:18			08:51		09:27 (10)
	17:00			18:02	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23			16:16	15	09:42 (10)
26	08:31			07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19		09:15 (10)	08:52		09:27 (10)
	17:02			18:04	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22	5	09:20 (10)	16:16	15	09:42 (10)
27	08:30			07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21		09:13 (10)	08:52		09:27 (10)
	17:04			18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	10	09:23 (10)	16:17	15	09:42 (10)
28	08:28			07:26	06:19	06:06	05:14	05:04	05:40	06:33	07:29	07:25	08:23		09:12 (10)	08:52		09:27 (10)
	17:06			18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	13	09:25 (10)	16:18	16	09:43 (10)
29	08:27				07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24		09:12 (10)	08:52		09:27 (10)
	17:08				20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	14	09:26 (10)	16:19	16	09:43 (10)
30	08:25				07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26		09:10 (10)	08:52		09:27 (10)
	17:10				20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	17	09:27 (10)	16:20	17	09:44 (10)
31	08:23				07:11		05:11		05:44	06:39		07:30				08:52		09:27 (10)
	17:12				20:06		21:52		21:35	20:29		17:04				16:21	17	09:44 (10)
Potential sun hours	250			273	367	420	494	510	513	460	382	328	259			233		
Total, worst case		275												59			532	
Sun reduction		0.16												0.20			0.12	
Oper. time red.		1.00												1.00			1.00	
Wind dir. red.		0.61												0.61			0.61	
Total reduction		0.10												0.12			0.07	
Total, real		27												7			39	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** AA - H029

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March			April			May			June		
1	08:52	08:22	07:24			07:09		07:35 (6)	06:00			05:10		05:41 (4)
	16:23	17:14	18:10			20:08	24	07:59 (6)	21:04			21:54	16	05:57 (4)
2	08:52	08:20	07:22			07:07		07:35 (6)	05:58			05:10		05:40 (4)
	16:24	17:16	18:12			20:10	23	07:58 (6)	21:06			21:55	17	05:57 (4)
3	08:52	08:19	07:20			07:04		07:35 (6)	05:56			05:09		05:40 (4)
	16:25	17:18	18:14			20:12	21	07:56 (6)	21:07			21:56	18	05:58 (4)
4	08:52	08:17	07:17			07:02		07:37 (6)	05:54			05:08		05:39 (4)
	16:26	17:20	18:16			20:14	18	07:55 (6)	21:09			21:57	19	05:58 (4)
5	08:51	08:15	07:15			06:59		07:38 (6)	05:52			05:07		05:38 (4)
	16:27	17:22	18:17			20:16	14	07:52 (6)	21:11			21:58	20	05:58 (4)
6	08:51	08:13	07:13			06:57		07:41 (6)	05:50			05:06		05:38 (4)
	16:29	17:24	18:19			20:18	9	07:50 (6)	21:13			21:59	21	05:59 (4)
7	08:51	08:11	07:10			06:55		07:19 (5)	05:48			05:06		05:37 (4)
	16:30	17:26	18:21			20:19	4	07:23 (5)	21:15			22:00	22	05:59 (4)
8	08:50	08:09	07:08			06:52		07:16 (5)	05:46			05:05		05:37 (4)
	16:31	17:28	18:23			20:21	8	07:24 (5)	21:16			22:01	23	06:00 (4)
9	08:49	08:07	07:05			06:50		07:14 (5)	05:44			05:04		05:36 (4)
	16:33	17:30	18:25			20:23	11	07:25 (5)	21:18			22:02	23	05:59 (4)
10	08:49	08:05	07:03			06:47		07:11 (5)	05:42			05:04		05:36 (4)
	16:34	17:32	18:27			20:25	14	07:25 (5)	21:20			22:03	24	06:00 (4)
11	08:48	08:04	07:01			06:45		07:09 (5)	05:40			05:04		05:36 (4)
	16:36	17:34	18:29			20:27	17	07:26 (5)	21:22			22:04	25	06:01 (4)
12	08:47	08:02	06:58			06:43		07:07 (5)	05:39			05:03		05:35 (4)
	16:37	17:36	18:31			20:29	20	07:27 (5)	21:23			22:05	25	06:00 (4)
13	08:47	07:59	06:56			06:40		07:04 (5)	05:37			05:03		05:35 (4)
	16:39	17:38	18:33			20:30	23	07:27 (5)	21:25			22:05	26	06:01 (4)
14	08:46	07:57	06:53			06:38		07:02 (5)	05:35			05:03		05:35 (4)
	16:41	17:40	18:35			20:32	25	07:27 (5)	21:27			22:06	26	06:01 (4)
15	08:45	07:55	06:51			06:36		07:00 (5)	05:33			05:02		05:35 (4)
	16:42	17:42	18:37			20:34	28	07:28 (5)	21:28			22:07	26	06:01 (4)
16	08:44	07:53	06:49			06:33		06:58 (5)	05:32			05:02		05:35 (4)
	16:44	17:44	18:38			20:36	30	07:28 (5)	21:30			22:07	27	06:02 (4)
17	08:43	07:51	06:46			06:31		06:55 (5)	05:30			05:02		05:35 (4)
	16:46	17:46	18:40			20:38	32	07:27 (5)	21:32			22:08	27	06:02 (4)
18	08:42	07:49	06:44			06:29		06:53 (5)	05:29			05:02		05:35 (4)
	16:47	17:48	18:42			20:40	34	07:27 (5)	21:33			22:08	27	06:02 (4)
19	08:41	07:47	06:41			06:26		06:53 (5)	05:27			05:02		05:35 (4)
	16:49	17:50	18:44			20:42	33	07:26 (5)	21:35			22:08	27	06:02 (4)
20	08:39	07:45	06:39			06:24		06:54 (5)	05:25			05:02		05:35 (4)
	16:51	17:52	18:46			20:43	32	07:26 (5)	21:37			22:09	28	06:03 (4)
21	08:38	07:43	06:36			06:22		06:53 (5)	05:24			05:02		05:35 (4)
	16:53	17:54	18:48			20:45	31	07:24 (5)	21:38			22:09	28	06:03 (4)
22	08:37	07:40	06:34			06:20		06:54 (5)	05:22			05:02		05:35 (4)
	16:55	17:56	18:50			20:47	30	07:24 (5)	21:40			22:09	28	06:03 (4)
23	08:36	07:38	06:31		06:55 (6)	06:17		06:54 (5)	05:21			05:03		05:36 (4)
	16:57	17:58	18:52	3	06:58 (6)	20:49	29	07:23 (5)	21:41			22:09	27	06:03 (4)
24	08:34	07:36	06:29		06:53 (6)	06:15		06:55 (5)	05:20		05:49 (4)	05:03		05:36 (4)
	16:58	18:00	18:53	7	07:00 (6)	20:51	27	07:22 (5)	21:43	2	05:51 (4)	22:10	27	06:03 (4)
25	08:33	07:34	06:26		06:50 (6)	06:13		06:56 (5)	05:18		05:48 (4)	05:03		05:36 (4)
	17:00	18:02	18:55	10	07:00 (6)	20:53	24	07:20 (5)	21:44	4	05:52 (4)	22:10	27	06:03 (4)
26	08:31	07:31	06:24		06:48 (6)	06:11		06:58 (5)	05:17		05:47 (4)	05:04		05:37 (4)
	17:02	18:04	18:57	13	07:01 (6)	20:55	21	07:19 (5)	21:46	6	05:53 (4)	22:10	27	06:04 (4)
27	08:30	07:29	06:22		06:45 (6)	06:08		06:59 (5)	05:16		05:46 (4)	05:04		05:37 (4)
	17:04	18:06	18:59	16	07:01 (6)	20:56	18	07:17 (5)	21:47	8	05:54 (4)	22:09	27	06:04 (4)
28	08:28	07:27	06:19		06:43 (6)	06:06		07:02 (5)	05:15		05:45 (4)	05:05		05:38 (4)
	17:06	18:08	19:01	18	07:01 (6)	20:58	12	07:14 (5)	21:49	10	05:55 (4)	22:09	26	06:04 (4)
29	08:27		07:17		07:40 (6)	06:04			05:14		05:44 (4)	05:05		05:38 (4)
	17:08		20:03	20	08:00 (6)	21:00			21:50	11	05:55 (4)	22:09	26	06:04 (4)
30	08:25		07:14		07:38 (6)	06:02			05:13		05:43 (4)	05:06		05:39 (4)
	17:10		20:05	22	08:00 (6)	21:02			21:51	13	05:56 (4)	22:09	25	06:04 (4)
31	08:24		07:12		07:35 (6)				05:11		05:42 (4)			
	17:12		20:06	24	07:59 (6)				21:52	14	05:56 (4)			
Potential sun hours	250	273	367			420			494			510		
Total, worst case				133			612			68			735	
Sun reduction				0.22			0.31			0.31			0.26	
Oper. time red.				1.00			1.00			1.00			1.00	
Wind dir. red.				0.65			0.64			0.64			0.64	
Total reduction				0.14			0.20			0.20			0.17	
Total, real				19			120			14			122	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** AA - H029

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August		September		October	November	December
1	05:07		05:40 (4)	05:47		06:41	07:08 (5)	07:34	07:33	08:28
	22:08	25	06:05 (4)	21:33		20:26	17	07:25 (5)	19:13	17:02	16:18
2	05:07		05:40 (4)	05:48		06:43	07:10 (5)	07:36	07:34	08:29
	22:08	24	06:04 (4)	21:31		20:24	14	07:24 (5)	19:10	17:00	16:17
3	05:08		05:41 (4)	05:50		06:44	07:12 (5)	07:38	07:36	08:31
	22:08	24	06:05 (4)	21:29		20:22	11	07:23 (5)	19:08	16:58	16:16
4	05:09		05:42 (4)	05:52		06:46	07:13 (5)	07:40	07:38	08:32
	22:07	23	06:05 (4)	21:28		20:19	8	07:21 (5)	19:05	16:56	16:16
5	05:10		05:43 (4)	05:53		06:48	07:15 (5)	07:41	07:40	08:33
	22:07	22	06:05 (4)	21:26		20:17	4	07:19 (5)	19:03	16:54	16:15
6	05:11		05:44 (4)	05:55		06:50	07:37 (6)	07:43	07:42	08:35
	22:06	21	06:05 (4)	21:24		20:14	9	07:46 (6)	19:00	16:52	16:14
7	05:12		05:45 (4)	05:57		06:51	07:33 (6)	07:45	07:44	08:36
	22:05	20	06:05 (4)	21:22		20:12	14	07:47 (6)	18:58	16:50	16:14
8	05:13		05:46 (4)	05:58		06:53	07:31 (6)	07:47	07:46	08:37
	22:05	19	06:05 (4)	21:20		20:09	18	07:49 (6)	18:56	16:49	16:14
9	05:14		05:46 (4)	06:00		06:55	07:30 (6)	07:49	07:48	08:39
	22:04	18	06:04 (4)	21:18		20:07	20	07:50 (6)	18:53	16:47	16:13
10	05:15		05:48 (4)	06:02		06:57	07:29 (6)	07:51	07:50	08:40
	22:03	17	06:05 (4)	21:16		20:05	22	07:51 (6)	18:51	16:45	16:13
11	05:16		05:49 (4)	06:04		06:59	07:27 (6)	07:53	07:52	08:41
	22:02	16	06:05 (4)	21:14		20:02	24	07:51 (6)	18:49	16:43	16:13
12	05:17		05:50 (4)	06:05		07:00	07:27 (6)	07:54	07:54	08:42
	22:01	15	06:05 (4)	21:12		20:00	24	07:51 (6)	18:46	16:42	16:12
13	05:18		05:51 (4)	06:07		07:02	07:29 (6)	07:56	07:56	08:43
	22:00	13	06:04 (4)	21:10		19:57	23	07:52 (6)	18:44	16:40	16:12
14	05:20		05:52 (4)	06:09	07:12 (5)	07:04	07:30 (6)	07:58	07:58	08:44
	21:59	12	06:04 (4)	21:07	6	07:18 (5)	19:55	21	07:51 (6)	18:41	16:38	16:12
15	05:21		05:53 (4)	06:11	07:08 (5)	07:06	07:32 (6)	08:00	08:00	08:45
	21:58	11	06:04 (4)	21:05	14	07:22 (5)	19:52	18	07:50 (6)	18:39	16:37	16:12
16	05:22		05:54 (4)	06:12	07:05 (5)	07:07	07:34 (6)	08:02	08:01	08:46
	21:57	9	06:03 (4)	21:03	19	07:24 (5)	19:50	16	07:50 (6)	18:37	16:35	16:12
17	05:23		05:56 (4)	06:14	07:04 (5)	07:09	07:36 (6)	08:04	08:03	08:47
	21:56	7	06:03 (4)	21:01	22	07:26 (5)	19:47	13	07:49 (6)	18:34	16:34	16:13
18	05:25		05:57 (4)	06:16	07:03 (5)	07:11	07:37 (6)	08:06	08:05	08:48
	21:55	5	06:02 (4)	20:59	24	07:27 (5)	19:45	11	07:48 (6)	18:32	16:32	16:13
19	05:26		05:58 (4)	06:18	07:01 (5)	07:13	07:39 (6)	08:07	08:07	08:48
	21:53	3	06:01 (4)	20:57	27	07:28 (5)	19:42	7	07:46 (6)	18:30	16:31	16:13
20	05:28		06:00 (4)	06:20	07:00 (5)	07:14	07:41 (6)	08:09	08:09	08:49
	21:52	1	06:01 (4)	20:54	29	07:29 (5)	19:40	4	07:45 (6)	18:28	16:30	16:13
21	05:29			06:21	06:59 (5)	07:16		08:11	08:11	08:50
	21:51			20:52	30	07:29 (5)	19:37			18:25	16:28	16:14
22	05:31			06:23	06:58 (5)	07:18		08:13	08:12	08:50
	21:49			20:50	31	07:29 (5)	19:35			18:23	16:27	16:14
23	05:32			06:25	06:57 (5)	07:20		08:15	08:14	08:51
	21:48			20:48	33	07:30 (5)	19:32			18:21	16:26	16:15
24	05:34			06:27	06:57 (5)	07:22		08:17	08:16	08:51
	21:46			20:45	33	07:30 (5)	19:30			18:19	16:25	16:15
25	05:35			06:28	06:56 (5)	07:23		07:19	08:18	08:52
	21:45			20:43	33	07:29 (5)	19:27			17:17	16:23	16:16
26	05:37			06:30	06:58 (5)	07:25		07:21	08:19	08:52
	21:43			20:41	31	07:29 (5)	19:25			17:14	16:22	16:17
27	05:38			06:32	07:00 (5)	07:27		07:23	08:21	08:52
	21:42			20:38	30	07:30 (5)	19:23			17:12	16:21	16:18
28	05:40			06:34	07:01 (5)	07:29		07:25	08:23	08:52
	21:40			20:36	27	07:28 (5)	19:20			17:10	16:20	16:18
29	05:42			06:36	07:03 (5)	07:31		07:27	08:24	08:52
	21:38			20:34	25	07:28 (5)	19:18			17:08	16:19	16:19
30	05:43			06:37	07:05 (5)	07:32		07:29	08:26	08:52
	21:37			20:31	23	07:28 (5)	19:15			17:06	16:19	16:20
31	05:45			06:39	07:07 (5)			07:31		08:52
	21:35			20:29	20	07:27 (5)				17:04		16:21
Potential sun hours	512			460		382			328	259	233
Total, worst case		305			457			298				
Sun reduction		0.22			0.26			0.25				
Oper. time red.		1.00			1.00			1.00				
Wind dir. red.		0.64			0.64			0.64				
Total reduction		0.14			0.16			0.16				
Total, real		44			75			48				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** AB - H030

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April		May		June	July		August		September	October	November	December
1	08:52	08:22	07:24	07:09		06:00		19:56 (7)	05:10		05:46		20:06 (7)	06:41	07:34	07:32	08:27
	16:22	17:14	18:10	20:08		21:04	38	20:34 (7)	21:54		21:33	39	20:45 (7)	20:26	19:12	17:02	16:18
2	08:52	08:20	07:22	07:07		05:58		19:55 (7)	05:09		05:48		20:05 (7)	06:42	07:36	07:34	08:29
	16:24	17:16	18:12	20:10		21:05	41	20:36 (7)	21:55		21:31	40	20:45 (7)	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04		05:56		19:55 (7)	05:09		05:50		20:05 (7)	06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12		21:07	42	20:37 (7)	21:56		21:29	40	20:45 (7)	20:21	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02		05:54		19:54 (7)	05:08		05:51		20:05 (7)	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14		21:09	42	20:36 (7)	21:57		21:27	41	20:46 (7)	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59		05:52		19:54 (7)	05:07		05:53		20:04 (7)	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15		21:11	42	20:36 (7)	21:58		21:26	42	20:46 (7)	20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57		05:50		19:54 (7)	05:06		05:55		20:04 (7)	06:50	07:43	07:42	08:35
	16:28	17:24	18:19	20:17		21:13	42	20:36 (7)	21:59		21:24	42	20:46 (7)	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54		05:48		19:54 (7)	05:05		05:57		20:03 (7)	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19		21:14	42	20:36 (7)	22:00		21:22	42	20:45 (7)	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52		05:46		19:55 (7)	05:05		05:58		20:04 (7)	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21		21:16	41	20:36 (7)	22:01		21:20	42	20:46 (7)	20:09	18:55	16:49	16:13
9	08:49	08:07	07:05	06:50		05:44		19:55 (7)	05:04		06:00		20:04 (7)	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23		21:18	41	20:36 (7)	22:02		21:18	42	20:46 (7)	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47		05:42		19:55 (7)	05:04		06:02		20:03 (7)	06:57	07:50	07:50	08:40
	16:34	17:32	18:27	20:25		21:20	40	20:35 (7)	22:03		21:16	42	20:45 (7)	20:04	18:51	16:45	16:13
11	08:48	08:03	07:00	06:45		05:40		19:55 (7)	05:03		06:04		20:04 (7)	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27		21:21	39	20:34 (7)	22:04		21:14	40	20:44 (7)	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:43	20:00 (6)	05:38		19:56 (7)	05:03		06:05		20:04 (7)	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	1 20:01 (6)	21:23	38	20:34 (7)	22:04		21:12	38	20:42 (7)	19:59	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	19:57 (6)	05:37		19:56 (7)	05:03		06:07		20:03 (6)	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	5 20:02 (6)	21:25	38	20:34 (7)	22:05		21:09	36	20:39 (7)	19:57	18:44	16:40	16:12
14	08:45	07:57	06:53	06:38	19:55 (6)	05:35		19:57 (7)	05:02		06:09		20:01 (6)	07:04	07:58	07:57	08:44
	16:40	17:40	18:35	20:32	9 20:04 (6)	21:27	37	20:34 (7)	22:06		21:07	37	20:38 (7)	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	19:54 (6)	05:33		19:57 (7)	05:02		06:11		19:59 (6)	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	12 20:06 (6)	21:28	36	20:33 (7)	22:06		21:05	36	20:35 (7)	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	19:52 (6)	05:32		19:58 (7)	05:02		06:12		19:58 (6)	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	15 20:07 (6)	21:30	34	20:32 (7)	22:07		21:03	35	20:33 (7)	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	19:51 (6)	05:30		19:58 (7)	05:02		06:14		19:57 (6)	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	18 20:09 (6)	21:32	33	20:31 (7)	22:07		21:01	35	20:32 (7)	19:47	18:34	16:34	16:12
18	08:42	07:49	06:43	06:28	19:51 (6)	05:28		20:00 (7)	05:02		06:16		19:56 (6)	07:11	08:05	08:05	08:48
	16:47	17:48	18:42	20:40	20 20:11 (6)	21:33	31	20:31 (7)	22:08		20:59	33	20:29 (7)	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	19:51 (6)	05:27		20:00 (7)	05:02		06:18		19:55 (6)	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	22 20:13 (6)	21:35	30	20:30 (7)	22:08		20:56	32	20:27 (7)	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	19:49 (6)	05:25		20:01 (7)	05:02		06:19		19:55 (6)	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	25 20:14 (7)	21:36	28	20:29 (7)	22:09		20:54	30	20:25 (7)	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:22	19:49 (6)	05:24		20:03 (7)	05:02		06:21		19:54 (6)	07:16	08:11	08:10	08:50
	16:53	17:54	18:48	20:45	27 20:16 (7)	21:38	25	20:28 (7)	22:09		20:52	28	20:22 (7)	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	19:49 (6)	05:22		20:03 (7)	05:02		06:23		19:54 (6)	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	29 20:18 (7)	21:40	24	20:27 (7)	22:09		20:50	27	20:21 (7)	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	19:50 (6)	05:21		20:05 (7)	05:02		06:25		19:54 (6)	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	30 20:20 (7)	21:41	21	20:26 (7)	22:09		20:47	25	20:19 (7)	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	19:50 (6)	05:20		20:07 (7)	05:03		06:26		19:54 (6)	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	32 20:22 (7)	21:43	17	20:24 (7)	22:09		20:45	23	20:17 (6)	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	19:50 (6)	05:18		20:09 (7)	05:03		06:28		19:54 (6)	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	34 20:24 (7)	21:44	14	20:23 (7)	22:09		20:43	20	20:14 (6)	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	19:51 (6)	05:17		20:12 (7)	05:04		06:30		19:54 (6)	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	34 20:25 (7)	21:46	8	20:20 (7)	22:09		20:40	18	20:12 (6)	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	19:52 (6)	05:16			05:04		06:32		19:55 (6)	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	35 20:27 (7)	21:47			22:09		20:38	15	20:10 (6)	19:22	17:12	16:21	16:17
28	08:28	07:27	06:19	06:06	19:53 (6)	05:15			05:05		06:34		19:55 (6)	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	36 20:29 (7)	21:48			22:09		20:36	12	20:07 (6)	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	19:54 (6)	05:13			05:05		06:35		19:56 (6)	07:30	07:27	08:24	08:52
	17:08		20:03	21:00	37 20:31 (7)	21:50			22:09		20:33	9	20:05 (6)	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	19:56 (7)	05:12			05:06		06:37		19:58 (6)	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	36 20:32 (7)	21:51			22:09		20:31	5	20:03 (6)	19:15	17:06	16:18	16:20
31	08:23		07:12			05:11					06:39		19:59 (6)		07:30		08:52
	17:12		20:06			21:52					20:29	1	20:00 (6)		17:04		16:21
Potential sun hours	250	273	367	420		494		510	512		460		382	328	259	233	
Total, worst case				457		864			389		947						
Sun reduction				0.31		0.31			0.22		0.26						
Oper. time red.				1.00		1.00			1.00		1.00						
Wind dir. red.				0.63		0.63			0.63		0.63						
Total reduction				0.19		0.20			0.14		0.16						
Total, real				88		170			55		152						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** AC - H031

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March		April			May			June		
1	08:52		08:22		07:24		07:09			06:00		06:26 (2)	05:11		05:41 (1)
	16:23		17:14		18:10		20:08			21:04	44	07:10 (2)	21:54	22	06:03 (1)
2	08:52		08:20		07:22		07:07			05:58		06:24 (2)	05:10		05:40 (1)
	16:24		17:16		18:12		20:10			21:06	46	07:10 (2)	21:55	23	06:03 (1)
3	08:52		08:19		07:20		07:04			05:56		06:22 (2)	05:09		05:40 (1)
	16:25		17:18		18:14		20:12			21:07	47	07:09 (2)	21:56	23	06:03 (1)
4	08:52		08:17		07:17		07:02			05:54		06:20 (2)	05:08		05:39 (1)
	16:26		17:20		18:16		20:14			21:09	49	07:09 (2)	21:57	24	06:03 (1)
5	08:51		08:15		07:15		07:00			05:52		06:19 (2)	05:07		05:38 (1)
	16:27		17:22		18:18		20:16			21:11	50	07:09 (2)	21:58	25	06:03 (1)
6	08:51		08:13		07:13		06:57		07:21 (3)	05:50		06:19 (2)	05:06		05:39 (1)
	16:29		17:24		18:19		20:18	3	07:24 (3)	21:13	49	07:08 (2)	21:59	24	06:03 (1)
7	08:51		08:11		07:10		06:55		07:19 (3)	05:48		06:20 (2)	05:06		05:39 (1)
	16:30		17:26		18:21		20:19	6	07:25 (3)	21:15	49	07:09 (2)	22:00	24	06:03 (1)
8	08:50		08:09		07:08		06:52		07:16 (3)	05:46		06:20 (2)	05:05		05:40 (1)
	16:31		17:28		18:23		20:21	9	07:25 (3)	21:16	48	07:08 (2)	22:01	23	06:03 (1)
9	08:50		08:08		07:06		06:50		07:14 (3)	05:44		06:20 (2)	05:04		05:40 (1)
	16:33		17:30		18:25		20:23	11	07:25 (3)	21:18	48	07:08 (2)	22:02	22	06:02 (1)
10	08:49		08:06		07:03		06:47		07:11 (3)	05:42		06:20 (2)	05:04		05:41 (1)
	16:34		17:32		18:27		20:25	13	07:24 (3)	21:20	47	07:07 (2)	22:03	22	06:03 (1)
11	08:48		08:04		07:01		06:45		07:09 (3)	05:40		06:21 (2)	05:04		05:41 (1)
	16:36		17:34		18:29		20:27	15	07:24 (3)	21:22	46	07:07 (2)	22:04	22	06:03 (1)
12	08:47		08:02		06:58		06:43		07:07 (3)	05:39		06:21 (2)	05:03		05:41 (1)
	16:37		17:36		18:31		20:29	17	07:24 (3)	21:23	45	07:06 (2)	22:05	21	06:02 (1)
13	08:47		08:00		06:56		06:40		07:04 (3)	05:37		06:21 (2)	05:03		05:42 (1)
	16:39		17:38		18:33		20:31	18	07:22 (3)	21:25	44	07:05 (2)	22:05	20	06:02 (1)
14	08:46		07:58		06:53		06:38		07:02 (3)	05:35		06:22 (2)	05:03		05:42 (1)
	16:41		17:40		18:35		20:32	20	07:22 (3)	21:27	43	07:05 (2)	22:06	20	06:02 (1)
15	08:45		07:55		06:51		06:36		07:02 (3)	05:33		06:22 (2)	05:02		05:43 (1)
	16:42		17:42		18:37		20:34	19	07:21 (3)	21:29	42	07:04 (2)	22:07	20	06:03 (1)
16	08:44		07:53		06:49		06:33		07:03 (3)	05:32		06:23 (2)	05:02		05:43 (1)
	16:44		17:44		18:39		20:36	16	07:19 (3)	21:30	41	07:04 (2)	22:07	20	06:03 (1)
17	08:43		07:51		06:46		06:31		06:55 (2)	05:30		05:58 (1)	05:02		05:44 (1)
	16:46		17:46		18:40		20:38	17	07:16 (3)	21:32	41	07:03 (2)	22:08	19	06:03 (1)
18	08:42		07:49		06:44		06:29		06:53 (2)	05:29		05:57 (1)	05:02		05:44 (1)
	16:47		17:48		18:42		20:40	15	07:13 (3)	21:34	42	07:03 (2)	22:08	19	06:03 (1)
19	08:41		07:47		06:41		06:26		06:51 (2)	05:27		05:56 (1)	05:02		05:44 (1)
	16:49		17:50		18:44		20:42	13	07:04 (2)	21:35	42	07:02 (2)	22:09	19	06:03 (1)
20	08:39		07:45		06:39		06:24		06:49 (2)	05:25		05:54 (1)	05:02		05:44 (1)
	16:51		17:52		18:46		20:44	16	07:05 (2)	21:37	43	07:01 (2)	22:09	19	06:03 (1)
21	08:38		07:43		06:36		06:22		06:47 (2)	05:24		05:53 (1)	05:02		05:44 (1)
	16:53		17:54		18:48		20:45	19	07:06 (2)	21:38	42	07:00 (2)	22:09	19	06:03 (1)
22	08:37		07:40		06:34		06:20		06:44 (2)	05:23		05:52 (1)	05:02		05:44 (1)
	16:55		17:56		18:50		20:47	22	07:06 (2)	21:40	41	06:59 (2)	22:09	19	06:03 (1)
23	08:36		07:38		06:31		06:17		06:42 (2)	05:21		05:50 (1)	05:03		05:45 (1)
	16:57		17:58		18:52		20:49	25	07:07 (2)	21:41	40	06:57 (2)	22:10	19	06:04 (1)
24	08:34		07:36		06:29		06:15		06:40 (2)	05:20		05:49 (1)	05:03		05:45 (1)
	16:58		18:00		18:53		20:51	28	07:08 (2)	21:43	39	06:56 (2)	22:10	19	06:04 (1)
25	08:33		07:34		06:26		06:13		06:38 (2)	05:18		05:48 (1)	05:03		05:45 (1)
	17:00		18:02		18:55		20:53	30	07:08 (2)	21:44	38	06:55 (2)	22:10	19	06:04 (1)
26	08:31		07:31		06:24		06:11		06:36 (2)	05:17		05:47 (1)	05:04		05:46 (1)
	17:02		18:04		18:57		20:55	33	07:09 (2)	21:46	36	06:54 (2)	22:10	19	06:05 (1)
27	08:30		07:29		06:22		06:09		06:34 (2)	05:16		05:46 (1)	05:04		05:45 (1)
	17:04		18:06		18:59		20:56	35	07:09 (2)	21:47	33	06:52 (2)	22:10	20	06:05 (1)
28	08:28		07:27		06:19		06:06		06:32 (2)	05:15		05:45 (1)	05:05		05:46 (1)
	17:06		18:08		19:01		20:58	37	07:09 (2)	21:49	30	06:50 (2)	22:09	20	06:06 (1)
29	08:27				07:17		06:04		06:30 (2)	05:14		05:44 (1)	05:05		05:45 (1)
	17:08				20:03		21:00	40	07:10 (2)	21:50	21	06:45 (2)	22:09	20	06:05 (1)
30	08:25				07:14		06:02		06:28 (2)	05:13		05:43 (1)	05:06		05:45 (1)
	17:10				20:05		21:02	42	07:10 (2)	21:51	20	06:03 (1)	22:09	21	06:06 (1)
31	08:24				07:12					05:11		05:42 (1)			
	17:12				20:06					21:53	21	06:03 (1)			
Potential sun hours	250		273		367		420			494			510		
Total, worst case								519			1267			626	
Sun reduction								0.31			0.31			0.26	
Oper. time red.								1.00			1.00			1.00	
Wind dir. red.								0.65			0.65			0.64	
Total reduction								0.20			0.20			0.16	
Total, real								103			257			103	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** AC - H031

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August		September		October	November	December
1	05:07		05:46 (1)	05:47	06:31 (2)	06:41	07:08 (3)	07:34	07:33	08:28
	22:09	21	06:07 (1)	21:33 46	07:17 (2)	20:27 15	07:23 (3)	19:13	17:02	16:18
2	05:07		05:45 (1)	05:48	06:31 (2)	06:43	07:10 (3)	07:36	07:35	08:29
	22:08	22	06:07 (1)	21:31 47	07:18 (2)	20:24 13	07:23 (3)	19:10	17:00	16:17
3	05:08		05:45 (1)	05:50	06:30 (2)	06:44	07:12 (3)	07:38	07:36	08:31
	22:08	22	06:07 (1)	21:30 48	07:18 (2)	20:22 11	07:23 (3)	19:08	16:58	16:16
4	05:09		05:45 (1)	05:52	06:30 (2)	06:46	07:13 (3)	07:40	07:38	08:32
	22:07	23	06:08 (1)	21:28 48	07:18 (2)	20:19 9	07:22 (3)	19:05	16:56	16:16
5	05:10		05:45 (1)	05:53	06:29 (2)	06:48	07:15 (3)	07:42	07:40	08:34
	22:07	24	06:09 (1)	21:26 49	07:18 (2)	20:17 6	07:21 (3)	19:03	16:54	16:15
6	05:11		05:45 (1)	05:55	06:29 (2)	06:50	07:17 (3)	07:43	07:42	08:35
	22:06	24	06:09 (1)	21:24 49	07:18 (2)	20:14 4	07:21 (3)	19:01	16:52	16:14
7	05:12		05:45 (1)	05:57	06:29 (2)	06:52		07:45	07:44	08:36
	22:05	25	06:10 (1)	21:22 50	07:19 (2)	20:12		18:58	16:51	16:14
8	05:13		05:46 (1)	05:58	06:28 (2)	06:53		07:47	07:46	08:38
	22:05	24	06:10 (1)	21:20 50	07:18 (2)	20:10		18:56	16:49	16:14
9	05:14		05:47 (1)	06:00	06:30 (2)	06:55		07:49	07:48	08:39
	22:04	24	06:11 (1)	21:18 49	07:19 (2)	20:07		18:53	16:47	16:13
10	05:15		05:48 (1)	06:02	06:31 (2)	06:57		07:51	07:50	08:40
	22:03	23	06:11 (1)	21:16 47	07:18 (2)	20:05		18:51	16:45	16:13
11	05:16		05:49 (1)	06:04	06:33 (2)	06:59		07:53	07:52	08:41
	22:02	22	06:11 (1)	21:14 45	07:18 (2)	20:02		18:49	16:43	16:13
12	05:17		05:50 (1)	06:05	06:35 (2)	07:00		07:54	07:54	08:42
	22:01	22	06:12 (1)	21:12 43	07:18 (2)	20:00		18:46	16:42	16:12
13	05:18		05:51 (1)	06:07	06:36 (2)	07:02		07:56	07:56	08:43
	22:00	21	06:12 (1)	21:10 41	07:17 (2)	19:57		18:44	16:40	16:12
14	05:20		05:52 (1)	06:09	06:38 (2)	07:04		07:58	07:58	08:44
	21:59	20	06:12 (1)	21:08 39	07:17 (2)	19:55		18:41	16:38	16:12
15	05:21		05:53 (1)	06:11	06:40 (2)	07:06		08:00	08:00	08:45
	21:58	28	06:57 (2)	21:05 37	07:17 (2)	19:52		18:39	16:37	16:12
16	05:22		05:54 (1)	06:13	06:41 (2)	07:07		08:02	08:02	08:46
	21:57	33	07:00 (2)	21:03 35	07:16 (2)	19:50		18:37	16:35	16:12
17	05:24		05:56 (1)	06:14	06:43 (2)	07:09		08:04	08:03	08:47
	21:56	36	07:03 (2)	21:01 32	07:15 (2)	19:47		18:35	16:34	16:13
18	05:25		05:57 (1)	06:16	06:45 (2)	07:11		08:06	08:05	08:48
	21:55	37	07:04 (2)	20:59 30	07:15 (2)	19:45		18:32	16:32	16:13
19	05:26		05:58 (1)	06:18	06:46 (2)	07:13		08:08	08:07	08:49
	21:53	38	07:05 (2)	20:57 27	07:13 (2)	19:42		18:30	16:31	16:13
20	05:28		06:00 (1)	06:20	06:48 (2)	07:15		08:09	08:09	08:49
	21:52	40	07:07 (2)	20:54 25	07:13 (2)	19:40		18:28	16:30	16:13
21	05:29		06:01 (1)	06:21	06:50 (2)	07:16		08:11	08:11	08:50
	21:51	41	07:08 (2)	20:52 22	07:12 (2)	19:37		18:25	16:28	16:14
22	05:31		06:02 (1)	06:23	06:51 (2)	07:18		08:13	08:13	08:50
	21:49	41	07:09 (2)	20:50 19	07:10 (2)	19:35		18:23	16:27	16:14
23	05:32		06:04 (1)	06:25	06:53 (2)	07:20		08:15	08:14	08:51
	21:48	43	07:11 (2)	20:48 15	07:08 (2)	19:32		18:21	16:26	16:15
24	05:34		06:05 (1)	06:27	06:55 (2)	07:22		08:17	08:16	08:51
	21:46	42	07:11 (2)	20:45 12	07:07 (2)	19:30		18:19	16:25	16:15
25	05:35		06:07 (1)	06:28	06:56 (2)	07:23		07:19	08:18	08:52
	21:45	42	07:13 (2)	20:43 15	07:16 (3)	19:28		17:17	16:23	16:16
26	05:37		06:08 (1)	06:30	06:58 (2)	07:25		07:21	08:20	08:52
	21:43	41	07:13 (2)	20:41 17	07:19 (3)	19:25		17:15	16:22	16:17
27	05:38		06:09 (1)	06:32	07:05 (3)	07:27		07:23	08:21	08:52
	21:42	41	07:14 (2)	20:38 16	07:21 (3)	19:23		17:12	16:21	16:18
28	05:40		06:33 (2)	06:34	07:02 (3)	07:29		07:25	08:23	08:52
	21:40	42	07:15 (2)	20:36 20	07:22 (3)	19:20		17:10	16:20	16:18
29	05:42		06:32 (2)	06:36	07:03 (3)	07:31		07:27	08:24	08:52
	21:38	43	07:15 (2)	20:34 20	07:23 (3)	19:18		17:08	16:19	16:19
30	05:43		06:32 (2)	06:37	07:05 (3)	07:32		07:29	08:26	08:53
	21:37	44	07:16 (2)	20:31 18	07:23 (3)	19:15		17:06	16:19	16:20
31	05:45		06:32 (2)	06:39	07:07 (3)			07:31		08:52
	21:35	45	07:17 (2)	20:29 17	07:24 (3)			17:04		16:21
Potential sun hours	512			460		382		328	259	233
Total, worst case		994		1028		58				
Sun reduction		0.22		0.26		0.25				
Oper. time red.		1.00		1.00		1.00				
Wind dir. red.		0.64		0.65		0.64				
Total reduction		0.14		0.17		0.16				
Total, real		143		171		9				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** AD - H032

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March			April			May			June		
1	08:52		08:22		07:24			07:09			07:33 (6)	06:00			05:10		05:41 (4)
	16:23		17:14		18:10			20:08	23		07:56 (6)	21:04			21:54	20	06:01 (4)
2	08:52		08:20		07:22			07:07			07:34 (6)	05:58			05:10		05:40 (4)
	16:24		17:16		18:12			20:10	21		07:55 (6)	21:06			21:55	21	06:01 (4)
3	08:52		08:19		07:20			07:04			07:34 (6)	05:56			05:09		05:40 (4)
	16:25		17:18		18:14			20:12	20		07:54 (6)	21:07			21:56	22	06:02 (4)
4	08:52		08:17		07:17			07:02			07:35 (6)	05:54			05:08		05:39 (4)
	16:26		17:20		18:16			20:14	17		07:52 (6)	21:09			21:57	23	06:02 (4)
5	08:51		08:15		07:15			07:00			07:36 (6)	05:52			05:07		05:38 (4)
	16:27		17:22		18:17			20:16	13		07:49 (6)	21:11			21:58	24	06:02 (4)
6	08:51		08:13		07:13			06:57			07:40 (6)	05:50			05:06		05:38 (4)
	16:29		17:24		18:19			20:18	6		07:46 (6)	21:13			21:59	25	06:03 (4)
7	08:51		08:11		07:10			06:55			07:19 (5)	05:48			05:06		05:37 (4)
	16:30		17:26		18:21			20:19	3		07:22 (5)	21:15			22:00	26	06:03 (4)
8	08:50		08:09		07:08			06:52			07:16 (5)	05:46			05:05		05:37 (4)
	16:31		17:28		18:23			20:21	7		07:23 (5)	21:16			22:01	26	06:03 (4)
9	08:49		08:07		07:05			06:50			07:14 (5)	05:44			05:04		05:36 (4)
	16:33		17:30		18:25			20:23	10		07:24 (5)	21:18			22:02	27	06:03 (4)
10	08:49		08:05		07:03			06:47			07:11 (5)	05:42			05:04		05:36 (4)
	16:34		17:32		18:27			20:25	13		07:24 (5)	21:20			22:03	28	06:04 (4)
11	08:48		08:04		07:01			06:45			07:09 (5)	05:40			05:04		05:36 (4)
	16:36		17:34		18:29			20:27	16		07:25 (5)	21:22			22:04	28	06:04 (4)
12	08:47		08:02		06:58			06:43			07:07 (5)	05:39			05:03		05:35 (4)
	16:37		17:36		18:31			20:29	19		07:26 (5)	21:23			22:05	29	06:04 (4)
13	08:47		07:59		06:56			06:40			07:04 (5)	05:37			05:03		05:35 (4)
	16:39		17:38		18:33			20:31	21		07:25 (5)	21:25			22:05	29	06:04 (4)
14	08:46		07:57		06:53			06:38			07:02 (5)	05:35			05:03		05:35 (4)
	16:41		17:40		18:35			20:32	23		07:25 (5)	21:27			22:06	29	06:04 (4)
15	08:45		07:55		06:51			06:36			07:00 (5)	05:33			05:02		05:35 (4)
	16:42		17:42		18:37			20:34	26		07:26 (5)	21:28			22:07	30	06:05 (4)
16	08:44		07:53		06:49			06:33			06:58 (5)	05:32			05:02		05:35 (4)
	16:44		17:44		18:38			20:36	28		07:26 (5)	21:30			22:07	30	06:05 (4)
17	08:43		07:51		06:46			06:31			06:55 (5)	05:30			05:02		05:35 (4)
	16:46		17:46		18:40			20:38	29		07:24 (5)	21:32			22:08	30	06:05 (4)
18	08:42		07:49		06:44			06:29			06:53 (5)	05:29			05:02		05:35 (4)
	16:47		17:48		18:42			20:40	31		07:24 (5)	21:33			22:08	30	06:05 (4)
19	08:41		07:47		06:41			06:26			06:54 (5)	05:27			05:02		05:35 (4)
	16:49		17:50		18:44			20:42	30		07:24 (5)	21:35			22:08	30	06:05 (4)
20	08:39		07:45		06:39			06:24			06:54 (5)	05:25		05:54 (4)	05:02		05:35 (4)
	16:51		17:52		18:46			20:43	29		07:23 (5)	21:37	1	05:55 (4)	22:09	31	06:06 (4)
21	08:38		07:43		06:36			06:22			06:54 (5)	05:24		05:53 (4)	05:02		05:35 (4)
	16:53		17:54		18:48			20:45	27		07:21 (5)	21:38	3	05:56 (4)	22:09	31	06:06 (4)
22	08:37		07:40		06:34			06:20			06:54 (5)	05:22		05:52 (4)	05:02		05:35 (4)
	16:55		17:56		18:50			20:47	26		07:20 (5)	21:40	5	05:57 (4)	22:09	31	06:06 (4)
23	08:36		07:38		06:31			06:17			06:55 (5)	05:21		05:50 (4)	05:03		05:36 (4)
	16:57		17:58		18:52			20:49	24		07:19 (5)	21:41	7	05:57 (4)	22:09	31	06:07 (4)
24	08:34		07:36		06:29		06:53 (6)	06:15			06:57 (5)	05:20		05:49 (4)	05:03		05:36 (4)
	16:58		18:00		18:53	3	06:56 (6)	20:51	21		07:18 (5)	21:43	9	05:58 (4)	22:10	30	06:06 (4)
25	08:33		07:34		06:26		06:50 (6)	06:13			06:58 (5)	05:18		05:48 (4)	05:03		05:36 (4)
	17:00		18:02		18:55	7	06:57 (6)	20:53	18		07:16 (5)	21:44	11	05:59 (4)	22:10	30	06:06 (4)
26	08:31		07:31		06:24		06:48 (6)	06:11			07:00 (5)	05:17		05:47 (4)	05:04		05:37 (4)
	17:02		18:04		18:57	10	06:58 (6)	20:55	14		07:14 (5)	21:46	12	05:59 (4)	22:10	30	06:07 (4)
27	08:30		07:29		06:22		06:45 (6)	06:08			07:05 (5)	05:16		05:46 (4)	05:04		05:37 (4)
	17:04		18:06		18:59	13	06:58 (6)	20:56	4		07:09 (5)	21:47	14	06:00 (4)	22:09	30	06:07 (4)
28	08:28		07:27		06:19		06:43 (6)	06:06				05:15		05:45 (4)	05:05		05:38 (4)
	17:06		18:08		19:01	15	06:58 (6)	20:58				21:49	15	06:00 (4)	22:09	30	06:08 (4)
29	08:27				07:17		07:40 (6)	06:04				05:14		05:44 (4)	05:05		05:38 (4)
	17:08				20:03	17	07:57 (6)	21:00				21:50	17	06:01 (4)	22:09	29	06:07 (4)
30	08:25				07:14		07:38 (6)	06:02				05:13		05:43 (4)	05:06		05:39 (4)
	17:10				20:05	19	07:57 (6)	21:02				21:51	18	06:01 (4)	22:09	29	06:08 (4)
31	08:24				07:12		07:35 (6)					05:11		05:42 (4)			
	17:12				20:06	21	07:56 (6)					21:52	19	06:01 (4)			
Potential sun hours	250		273		367			420				494			510		
Total, worst case						105			519				131				839
Sun reduction						0.22			0.31				0.31				0.26
Oper. time red.						1.00			1.00				1.00				1.00
Wind dir. red.						0.65			0.64				0.64				0.64
Total reduction						0.14			0.20				0.20				0.16
Total, real						15			102				26				138

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** AD - H032

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August			September		October	November	December
1	05:07		05:40 (4)	05:47		06:41		07:08 (5)	07:34	07:33	08:28
	22:09	28	06:08 (4)	21:33		20:26	16	07:24 (5)	19:13	17:02	16:18
2	05:07		05:40 (4)	05:48		06:43		07:10 (5)	07:36	07:34	08:29
	22:08	28	06:08 (4)	21:31		20:24	13	07:23 (5)	19:10	17:00	16:17
3	05:08		05:41 (4)	05:50		06:44		07:12 (5)	07:38	07:36	08:31
	22:08	27	06:08 (4)	21:29		20:22	10	07:22 (5)	19:08	16:58	16:16
4	05:09		05:42 (4)	05:52		06:46		07:13 (5)	07:40	07:38	08:32
	22:07	27	06:09 (4)	21:28		20:19	7	07:20 (5)	19:05	16:56	16:16
5	05:10		05:43 (4)	05:53		06:48		07:15 (5)	07:41	07:40	08:33
	22:07	26	06:09 (4)	21:26		20:17	3	07:18 (5)	19:03	16:54	16:15
6	05:11		05:44 (4)	05:55		06:50		07:36 (6)	07:43	07:42	08:35
	22:06	25	06:09 (4)	21:24		20:14	6	07:42 (6)	19:00	16:52	16:14
7	05:12		05:45 (4)	05:57		06:51		07:31 (6)	07:45	07:44	08:36
	22:05	25	06:10 (4)	21:22		20:12	13	07:44 (6)	18:58	16:51	16:14
8	05:13		05:46 (4)	05:58		06:53		07:29 (6)	07:47	07:46	08:37
	22:05	24	06:10 (4)	21:20		20:09	17	07:46 (6)	18:56	16:49	16:14
9	05:14		05:46 (4)	06:00		06:55		07:28 (6)	07:49	07:48	08:39
	22:04	23	06:09 (4)	21:18		20:07	20	07:48 (6)	18:53	16:47	16:13
10	05:15		05:48 (4)	06:02		06:57		07:27 (6)	07:51	07:50	08:40
	22:03	22	06:10 (4)	21:16		20:05	22	07:49 (6)	18:51	16:45	16:13
11	05:16		05:49 (4)	06:04		06:59		07:25 (6)	07:53	07:52	08:41
	22:02	21	06:10 (4)	21:14		20:02	23	07:48 (6)	18:49	16:43	16:13
12	05:17		05:50 (4)	06:05		07:00		07:27 (6)	07:54	07:54	08:42
	22:01	20	06:10 (4)	21:12		20:00	22	07:49 (6)	18:46	16:42	16:12
13	05:18		05:51 (4)	06:07		07:02		07:29 (6)	07:56	07:56	08:43
	22:00	19	06:10 (4)	21:10		19:57	20	07:49 (6)	18:44	16:40	16:12
14	05:20		05:52 (4)	06:09		07:04		07:30 (6)	07:58	07:58	08:44
	21:59	17	06:09 (4)	21:08		19:55	18	07:48 (6)	18:41	16:38	16:12
15	05:21		05:53 (4)	06:11		07:06		07:32 (6)	08:00	08:00	08:45
	21:58	16	06:09 (4)	21:05		19:52	16	07:48 (6)	18:39	16:37	16:12
16	05:22		05:54 (4)	06:12		07:10 (5)	07:07	07:34 (6)	08:02	08:01	08:46
	21:57	15	06:09 (4)	21:03	7	07:17 (5)	19:50	13	07:47 (6)	18:37	16:35	16:12
17	05:23		05:56 (4)	06:14		07:06 (5)	07:09		07:36 (6)	08:04	08:03	08:47
	21:56	13	06:09 (4)	21:01	15	07:21 (5)	19:47	10	07:46 (6)	18:34	16:34	16:13
18	05:25		05:57 (4)	06:16		07:04 (5)	07:11		07:37 (6)	08:06	08:05	08:48
	21:55	12	06:09 (4)	20:59	19	07:23 (5)	19:45	7	07:44 (6)	18:32	16:32	16:13
19	05:26		05:58 (4)	06:18		07:02 (5)	07:13		07:39 (6)	08:07	08:07	08:48
	21:53	10	06:08 (4)	20:57	22	07:24 (5)	19:42	4	07:43 (6)	18:30	16:31	16:13
20	05:28		06:00 (4)	06:20		07:01 (5)	07:14		07:41 (6)	08:09	08:09	08:49
	21:52	8	06:08 (4)	20:54	24	07:25 (5)	19:40	1	07:42 (6)	18:28	16:30	16:13
21	05:29		06:01 (4)	06:21		07:00 (5)	07:16			08:11	08:11	08:50
	21:51	6	06:07 (4)	20:52	26	07:26 (5)	19:37			18:25	16:28	16:14
22	05:31		06:02 (4)	06:23		06:58 (5)	07:18			08:13	08:12	08:50
	21:49	4	06:06 (4)	20:50	28	07:26 (5)	19:35			18:23	16:27	16:14
23	05:32		06:04 (4)	06:25		06:58 (5)	07:20			08:15	08:14	08:51
	21:48	2	06:06 (4)	20:48	29	07:27 (5)	19:32			18:21	16:26	16:15
24	05:34			06:27		06:57 (5)	07:22			08:17	08:16	08:51
	21:46			20:45	31	07:28 (5)	19:30			18:19	16:25	16:15
25	05:35			06:28		06:56 (5)	07:23			07:19	08:18	08:52
	21:45			20:43	31	07:27 (5)	19:27			17:17	16:23	16:16
26	05:37			06:30		06:58 (5)	07:25			07:21	08:19	08:52
	21:43			20:41	29	07:27 (5)	19:25			17:14	16:22	16:17
27	05:38			06:32		07:00 (5)	07:27			07:23	08:21	08:52
	21:42			20:38	27	07:27 (5)	19:23			17:12	16:21	16:18
28	05:40			06:34		07:01 (5)	07:29			07:25	08:23	08:52
	21:40			20:36	25	07:26 (5)	19:20			17:10	16:20	16:18
29	05:42			06:36		07:03 (5)	07:31			07:27	08:24	08:52
	21:38			20:34	23	07:26 (5)	19:18			17:08	16:19	16:19
30	05:43			06:37		07:05 (5)	07:32			07:29	08:26	08:52
	21:37			20:31	21	07:26 (5)	19:15			17:06	16:19	16:20
31	05:45			06:39		07:07 (5)				07:31		08:52
	21:35			20:29	18	07:25 (5)				17:04		16:21
Potential sun hours	512			460			382			328	259	233
Total, worst case		418			375			261				
Sun reduction		0.22			0.26			0.25				
Oper. time red.		1.00			1.00			1.00				
Wind dir. red.		0.64			0.64			0.64				
Total reduction		0.14			0.16			0.16				
Total, real		60			61			42				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** AE - H033

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March			April			May			June		
1	08:52	16:23	08:22	17:14	07:24	18:10		07:09	20:08	15	07:37 (6)	07:52 (6)	06:00	21:04		05:10	21:54	19	05:53 (4)	06:12 (4)
2	08:52	16:24	08:20	17:16	07:22	18:12		07:07	20:10	13	07:38 (6)	07:51 (6)	05:58	21:06		05:10	21:55	17	05:54 (4)	06:11 (4)
3	08:52	16:25	08:19	17:18	07:20	18:14		07:04	20:12	7	07:40 (6)	07:47 (6)	05:56	21:07		05:09	21:56	15	05:56 (4)	06:11 (4)
4	08:52	16:26	08:17	17:20	07:17	18:16		07:02	20:14	1	07:26 (5)	07:27 (5)	05:54	21:09		05:08	21:57	13	05:57 (4)	06:10 (4)
5	08:51	16:27	08:15	17:22	07:15	18:18		07:00	20:16	5	07:23 (5)	07:28 (5)	05:52	21:11		05:07	21:58	12	05:57 (4)	06:09 (4)
6	08:51	16:29	08:13	17:24	07:13	18:19		06:57	20:18	8	07:21 (5)	07:29 (5)	05:50	21:13		05:06	21:59	9	05:59 (4)	06:08 (4)
7	08:51	16:30	08:11	17:26	07:10	18:21		06:55	20:19	11	07:19 (5)	07:30 (5)	05:48	21:15		05:06	22:00	5	06:01 (4)	06:06 (4)
8	08:50	16:31	08:09	17:28	07:08	18:23		06:52	20:21	13	07:16 (5)	07:29 (5)	05:46	21:16		05:05	22:01			
9	08:49	16:33	08:07	17:30	07:06	18:25		06:50	20:23	16	07:14 (5)	07:30 (5)	05:44	21:18	2	06:11 (4)	05:04	22:02		
10	08:49	16:34	08:06	17:32	07:03	18:27		06:47	20:25	18	07:11 (5)	07:29 (5)	05:42	21:20	4	06:09 (4)	06:13 (4)	05:04	22:03	
11	08:48	16:36	08:04	17:34	07:01	18:29		06:45	20:27	20	07:09 (5)	07:29 (5)	05:40	21:22	6	06:08 (4)	06:14 (4)	05:04	22:04	
12	08:47	16:37	08:02	17:36	06:58	18:31		06:43	20:29	22	07:07 (5)	07:29 (5)	05:39	21:23	9	06:06 (4)	06:15 (4)	05:03	22:05	
13	08:47	16:39	08:00	17:38	06:56	18:33		06:40	20:31	23	07:04 (5)	07:27 (5)	05:37	21:25	11	06:04 (4)	06:15 (4)	05:03	22:05	
14	08:46	16:41	07:57	17:40	06:53	18:35		06:38	20:32	25	07:02 (5)	07:27 (5)	05:35	21:27	12	06:03 (4)	06:15 (4)	05:03	22:06	
15	08:45	16:42	07:55	17:42	06:51	18:37		06:36	20:34	23	07:03 (5)	07:26 (5)	05:33	21:28	14	06:01 (4)	06:15 (4)	05:02	22:07	
16	08:44	16:44	07:53	17:44	06:49	18:38		06:33	20:36	21	07:04 (5)	07:25 (5)	05:32	21:30	16	06:00 (4)	06:16 (4)	05:02	22:07	
17	08:43	16:46	07:51	17:46	06:46	18:40		06:31	20:38	19	07:04 (5)	07:23 (5)	05:30	21:32	17	05:58 (4)	06:15 (4)	05:02	22:08	
18	08:42	16:47	07:49	17:48	06:44	18:42		06:29	20:40	15	07:06 (5)	07:21 (5)	05:29	21:33	19	05:57 (4)	06:16 (4)	05:02	22:08	
19	08:41	16:49	07:47	17:50	06:41	18:44		06:26	20:42	10	07:08 (5)	07:18 (5)	05:27	21:35	20	05:55 (4)	06:15 (4)	05:02	22:09	
20	08:39	16:51	07:45	17:52	06:39	18:46		06:24	20:43				05:25	21:37	22	05:54 (4)	06:16 (4)	05:02	22:09	
21	08:38	16:53	07:43	17:54	06:36	18:48		06:22	20:45				05:24	21:38	23	05:53 (4)	06:16 (4)	05:02	22:09	
22	08:37	16:55	07:40	17:56	06:34	18:50		06:20	20:47				05:23	21:40	24	05:52 (4)	06:16 (4)	05:02	22:09	
23	08:36	16:57	07:38	17:58	06:31	18:52	1	06:55 (6) 06:56 (6)	06:17	20:49			05:21	21:41	25	05:50 (4)	06:15 (4)	05:03	22:09	
24	08:34	16:58	07:36	18:00	06:29	18:53	4	06:53 (6) 06:57 (6)	06:15	20:51			05:20	21:43	26	05:49 (4)	06:15 (4)	05:03	22:10	
25	08:33	17:00	07:34	18:02	06:26	18:55	7	06:50 (6) 06:57 (6)	06:13	20:53			05:18	21:44	26	05:49 (4)	06:15 (4)	05:03	22:10	
26	08:31	17:02	07:31	18:04	06:24	18:57	9	06:48 (6) 06:57 (6)	06:11	20:55			05:17	21:46	25	05:50 (4)	06:15 (4)	05:04	22:10	
27	08:30	17:04	07:29	18:06	06:22	18:59	12	06:45 (6) 06:57 (6)	06:08	20:56			05:16	21:47	24	05:50 (4)	06:14 (4)	05:04	22:09	
28	08:28	17:06	07:27	18:08	06:19	19:01	14	06:43 (6) 06:57 (6)	06:06	20:58			05:15	21:49	23	05:51 (4)	06:14 (4)	05:05	22:09	
29	08:27	17:08			07:17	20:03	16	07:40 (6) 07:56 (6)	06:04	21:00			05:14	21:50	21	05:52 (4)	06:13 (4)	05:05	22:09	
30	08:25	17:10			07:14	20:05	17	07:38 (6) 07:55 (6)	06:02	21:02			05:13	21:51	21	05:52 (4)	06:13 (4)	05:06	22:09	
31	08:24	17:12			07:12	20:06	19	07:35 (6) 07:54 (6)					05:11	21:52	19	05:53 (4)	06:12 (4)			
Potential sun hours	250		273		367			420			494			510						
Total, worst case						99			285			409					90			
Sun reduction						0.22			0.31			0.31					0.26			
Oper. time red.						1.00			1.00			1.00					1.00			
Wind dir. red.						0.65			0.64			0.64					0.64			
Total reduction						0.14			0.20			0.20					0.17			
Total, real						14			56			83					15			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** AE - H033

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July			August			September			October	November	December
1	05:07			05:47		06:17 (4)	06:41		07:08 (5)	07:34	07:33	08:28
	22:09			21:33	8	06:25 (4)	20:26	20	07:28 (5)	19:13	17:02	16:18
2	05:07			05:48		06:19 (4)	06:43		07:10 (5)	07:36	07:34	08:29
	22:08			21:31	5	06:24 (4)	20:24	18	07:28 (5)	19:10	17:00	16:17
3	05:08			05:50		06:20 (4)	06:44		07:12 (5)	07:38	07:36	08:31
	22:08			21:30	3	06:23 (4)	20:22	16	07:28 (5)	19:08	16:58	16:16
4	05:09			05:52		06:22 (4)	06:46		07:13 (5)	07:40	07:38	08:32
	22:07			21:28	1	06:23 (4)	20:19	13	07:26 (5)	19:05	16:56	16:16
5	05:10		06:08 (4)	05:53			06:48		07:15 (5)	07:41	07:40	08:33
	22:07	3	06:11 (4)	21:26			20:17	11	07:26 (5)	19:03	16:54	16:15
6	05:11		06:06 (4)	05:55			06:50		07:17 (5)	07:43	07:42	08:35
	22:06	8	06:14 (4)	21:24			20:14	8	07:25 (5)	19:01	16:52	16:14
7	05:12		06:05 (4)	05:57			06:52		07:18 (5)	07:45	07:44	08:36
	22:05	10	06:15 (4)	21:22			20:12	5	07:23 (5)	18:58	16:51	16:14
8	05:13		06:04 (4)	05:58			06:53		07:20 (5)	07:47	07:46	08:37
	22:05	13	06:17 (4)	21:20			20:10	1	07:21 (5)	18:56	16:49	16:14
9	05:14		06:04 (4)	06:00			06:55		07:35 (6)	07:49	07:48	08:39
	22:04	14	06:18 (4)	21:18			20:07	6	07:41 (6)	18:53	16:47	16:13
10	05:15		06:03 (4)	06:02			06:57		07:32 (6)	07:51	07:50	08:40
	22:03	16	06:19 (4)	21:16			20:05	12	07:44 (6)	18:51	16:45	16:13
11	05:16		06:02 (4)	06:04			06:59		07:29 (6)	07:53	07:52	08:41
	22:02	18	06:20 (4)	21:14			20:02	16	07:45 (6)	18:49	16:43	16:13
12	05:17		06:02 (4)	06:05			07:00		07:28 (6)	07:54	07:54	08:42
	22:01	18	06:20 (4)	21:12			20:00	18	07:46 (6)	18:46	16:42	16:12
13	05:18		06:01 (4)	06:07			07:02		07:29 (6)	07:56	07:56	08:43
	22:00	20	06:21 (4)	21:10			19:57	17	07:46 (6)	18:44	16:40	16:12
14	05:20		06:00 (4)	06:09			07:04		07:30 (6)	07:58	07:58	08:44
	21:59	22	06:22 (4)	21:08			19:55	16	07:46 (6)	18:41	16:38	16:12
15	05:21		06:00 (4)	06:11			07:06		07:32 (6)	08:00	08:00	08:45
	21:58	22	06:22 (4)	21:05			19:52	14	07:46 (6)	18:39	16:37	16:12
16	05:22		05:59 (4)	06:12			07:07		07:34 (6)	08:02	08:01	08:46
	21:57	24	06:23 (4)	21:03			19:50	12	07:46 (6)	18:37	16:35	16:12
17	05:23		06:00 (4)	06:14			07:09		07:36 (6)	08:04	08:03	08:47
	21:56	24	06:24 (4)	21:01			19:47	10	07:46 (6)	18:34	16:34	16:13
18	05:25		05:59 (4)	06:16			07:11		07:37 (6)	08:06	08:05	08:48
	21:55	25	06:24 (4)	20:59			19:45	7	07:44 (6)	18:32	16:32	16:13
19	05:26		05:58 (4)	06:18			07:13		07:39 (6)	08:08	08:07	08:48
	21:53	26	06:24 (4)	20:57			19:42	5	07:44 (6)	18:30	16:31	16:13
20	05:28		06:00 (4)	06:20			07:15		07:41 (6)	08:09	08:09	08:49
	21:52	25	06:25 (4)	20:54			19:40	1	07:42 (6)	18:28	16:30	16:13
21	05:29		06:01 (4)	06:21			07:16			08:11	08:11	08:50
	21:51	24	06:25 (4)	20:52			19:37			18:25	16:28	16:14
22	05:31		06:02 (4)	06:23			07:18			08:13	08:12	08:50
	21:49	23	06:25 (4)	20:50			19:35			18:23	16:27	16:14
23	05:32		06:04 (4)	06:25			07:20			08:15	08:14	08:51
	21:48	22	06:26 (4)	20:48			19:32			18:21	16:26	16:15
24	05:34		06:05 (4)	06:27		07:12 (5)	07:22			08:17	08:16	08:51
	21:46	21	06:26 (4)	20:45	10	07:22 (5)	19:30			18:19	16:25	16:15
25	05:35		06:07 (4)	06:28		07:08 (5)	07:23			07:19	08:18	08:52
	21:45	20	06:27 (4)	20:43	16	07:24 (5)	19:27			17:17	16:23	16:16
26	05:37		06:08 (4)	06:30		07:07 (5)	07:25			07:21	08:19	08:52
	21:43	18	06:26 (4)	20:41	19	07:26 (5)	19:25			17:14	16:22	16:17
27	05:38		06:09 (4)	06:32		07:06 (5)	07:27			07:23	08:21	08:52
	21:42	17	06:26 (4)	20:38	21	07:27 (5)	19:23			17:12	16:21	16:18
28	05:40		06:11 (4)	06:34		07:04 (5)	07:29			07:25	08:23	08:52
	21:40	15	06:26 (4)	20:36	23	07:27 (5)	19:20			17:10	16:20	16:18
29	05:42		06:12 (4)	06:36		07:03 (5)	07:31			07:27	08:24	08:52
	21:38	13	06:25 (4)	20:34	25	07:28 (5)	19:18			17:08	16:19	16:19
30	05:43		06:14 (4)	06:37		07:05 (5)	07:32			07:29	08:26	08:52
	21:37	12	06:26 (4)	20:31	23	07:28 (5)	19:15			17:06	16:19	16:20
31	05:45		06:16 (4)	06:39		07:07 (5)				07:31		08:52
	21:35	10	06:26 (4)	20:29	22	07:29 (5)				17:04		16:21
Potential sun hours	512			460			382			328	259	233
Total, worst case		483			176			226				
Sun reduction		0.22			0.26			0.25				
Oper. time red.		1.00			1.00			1.00				
Wind dir. red.		0.64			0.64			0.64				
Total reduction		0.14			0.16			0.16				
Total, real		70			29			37				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** AF - H034

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:10	20:08	21:04	21:54	22:08	21:33	20:26	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:09	05:07	05:48	06:43	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:14	20:12	21:07	21:56	22:08	21:29	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:51	06:46	07:40	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52	05:07	05:10	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	21:58	22:06	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:55	05:48	05:06	05:12	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:56	16:49	16:13
9	08:49	08:07	07:05	06:50	05:44	05:04	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:01	06:45	05:40	05:03	05:16	06:04	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:13
12	08:47	08:01	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:04	22:01	21:12	20:00	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	22:00	21:09	19:57	18:44	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:07	21:56	21:01	19:47	18:34	16:34	16:13
18	08:42	07:49	06:44	06:29	05:28	05:02	05:25	06:16	07:11	08:05	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:28	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:28	16:30	16:13
21	08:38	07:42	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:10	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	05:02	05:31	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34	06:27	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	21:44	22:09	21:45	20:43	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:41	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:27	06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:14	05:05	05:41	06:35	07:30	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:12		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** AG - H035

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February			March			April	May	June
1	08:52		14:06 (10)	08:22		16:36 (9)	07:24		17:18 (8)	07:09	06:00	05:10
	16:22	41	15:33 (11)	17:13	6	16:42 (9)	18:09	18	17:36 (8)	20:08	21:03	21:53
2	08:52		14:09 (10)	08:20		16:35 (9)	07:22		17:19 (8)	07:06	05:57	05:09
	16:23	38	15:34 (11)	17:15	9	16:44 (9)	18:11	15	17:34 (8)	20:10	21:05	21:55
3	08:52		14:12 (10)	08:18		16:34 (9)	07:19		17:22 (8)	07:04	05:55	05:08
	16:24	32	15:34 (11)	17:17	12	16:46 (9)	18:13	9	17:31 (8)	20:12	21:07	21:56
4	08:51		15:07 (11)	08:16		16:33 (9)	07:17			07:02	05:53	05:07
	16:26	27	15:34 (11)	17:19	15	16:48 (9)	18:15			20:13	21:09	21:57
5	08:51		15:08 (11)	08:15		16:33 (9)	07:15			06:59	05:51	05:07
	16:27	27	15:35 (11)	17:21	17	16:50 (9)	18:17			20:15	21:11	21:58
6	08:51		15:09 (11)	08:13		16:32 (9)	07:12			06:57	05:49	05:06
	16:28	25	15:34 (11)	17:23	20	16:52 (9)	18:19			20:17	21:12	21:59
7	08:50		15:09 (11)	08:11		16:32 (9)	07:10			06:54	05:47	05:05
	16:30	25	15:34 (11)	17:25	23	16:55 (9)	18:21			20:19	21:14	22:00
8	08:50		15:10 (11)	08:09		16:32 (9)	07:08			06:52	05:46	05:05
	16:31	25	15:35 (11)	17:27	25	16:57 (9)	18:23			20:21	21:16	22:01
9	08:49		15:11 (11)	08:07		16:32 (9)	07:05			06:49	05:44	05:04
	16:32	24	15:35 (11)	17:30	27	16:59 (9)	18:25			20:23	21:18	22:02
10	08:49		15:12 (11)	08:05		16:32 (9)	07:03			06:47	05:42	05:03
	16:34	23	15:35 (11)	17:32	30	17:02 (9)	18:27			20:25	21:20	22:03
11	08:48		15:13 (11)	08:03		16:32 (9)	07:00			06:45	05:40	05:03
	16:35	21	15:34 (11)	17:34	32	17:04 (9)	18:29			20:26	21:21	22:04
12	08:47		15:14 (11)	08:01		16:33 (9)	06:58			06:42	05:38	05:03
	16:37	20	15:34 (11)	17:36	33	17:06 (9)	18:31			20:28	21:23	22:04
13	08:46		15:15 (11)	07:59		16:32 (9)	06:55			06:40	05:36	05:02
	16:39	19	15:34 (11)	17:38	32	17:04 (9)	18:32			20:30	21:25	22:05
14	08:45		15:16 (11)	07:57		16:33 (9)	06:53			06:38	05:35	05:02
	16:40	17	15:33 (11)	17:40	31	17:04 (9)	18:34			20:32	21:26	22:06
15	08:44		15:18 (11)	07:55		16:34 (9)	06:51			06:35	05:33	05:02
	16:42	15	15:33 (11)	17:42	30	17:04 (9)	18:36			20:34	21:28	22:06
16	08:44		15:20 (11)	07:53		16:35 (9)	06:48			06:33	05:31	05:02
	16:44	12	15:32 (11)	17:44	28	17:03 (9)	18:38			20:36	21:30	22:07
17	08:42		15:23 (11)	07:51		16:36 (9)	06:46			06:31	05:30	05:02
	16:45	5	15:28 (11)	17:46	26	17:02 (9)	18:40			20:38	21:32	22:07
18	08:41			07:49		16:36 (9)	06:43			06:28	05:28	05:01
	16:47			17:48	24	17:00 (9)	18:42			20:39	21:33	22:08
19	08:40			07:47		16:38 (9)	06:41			06:26	05:26	05:01
	16:49			17:50	24	17:21 (8)	18:44			20:41	21:35	22:08
20	08:39			07:44		16:40 (9)	06:38			06:24	05:25	05:02
	16:51			17:52	23	17:23 (8)	18:46			20:43	21:36	22:09
21	08:38			07:42		16:44 (9)	06:36			06:21	05:23	05:02
	16:52			17:54	19	17:26 (8)	18:47			20:45	21:38	22:09
22	08:37			07:40		17:16 (8)	06:33			06:19	05:22	05:02
	16:54			17:56	11	17:27 (8)	18:49			20:47	21:39	22:09
23	08:35			07:38		17:16 (8)	06:31			06:17	05:21	05:02
	16:56			17:58	13	17:29 (8)	18:51			20:49	21:41	22:09
24	08:34			07:35		17:16 (8)	06:29			06:15	05:19	05:02
	16:58			18:00	16	17:32 (8)	18:53			20:51	21:43	22:09
25	08:33			07:33		17:15 (8)	06:26			06:12	05:18	05:03
	17:00			18:01	18	17:33 (8)	18:55			20:52	21:44	22:09
26	08:31			07:31		17:16 (8)	06:24			06:10	05:17	05:03
	17:02			18:03	20	17:36 (8)	18:57			20:54	21:45	22:09
27	08:30			07:29		17:17 (8)	06:21			06:08	05:15	05:04
	17:04			18:05	21	17:38 (8)	18:59			20:56	21:47	22:09
28	08:28			07:26		17:17 (8)	06:19			06:06	05:14	05:04
	17:06			18:07	20	17:37 (8)	19:00			20:58	21:48	22:09
29	08:27						07:16			06:04	05:13	05:05
	17:08						20:02			21:00	21:50	22:09
30	08:25						07:14			06:02	05:12	05:05
	17:10						20:04			21:02	21:51	22:09
31	08:23		16:37 (9)				07:11				05:11	
	17:11	3	16:40 (9)				20:06				21:52	
Potential sun hours	250			273			367			420	494	510
Total, worst case		399			605			42				
Sun reduction		0.16			0.19			0.22				
Oper. time red.		1.00			1.00			1.00				
Wind dir. red.		0.65			0.64			0.65				
Total reduction		0.10			0.12			0.14				
Total, real		42			75			6				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** AG - H035

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August		September		October			November			December		
1	05:06		05:46		06:40		07:34			07:32		16:02 (9)	08:27		14:55 (11)
	22:08		21:33		20:26		19:12			17:02	29	16:31 (9)	16:17	21	15:16 (11)
2	05:07		05:48		06:42		07:36			07:34		16:02 (9)	08:29		14:55 (11)
	22:08		21:31		20:24		19:10			17:00	26	16:28 (9)	16:16	23	15:18 (11)
3	05:08		05:49		06:44		07:37			07:36		16:02 (9)	08:30		14:54 (11)
	22:07		21:29		20:21		19:07			16:58	24	16:26 (9)	16:16	24	15:18 (11)
4	05:08		05:51		06:46		07:39			07:38		16:02 (9)	08:32		14:55 (11)
	22:07		21:27		20:19		19:05			16:56	22	16:24 (9)	16:15	24	15:19 (11)
5	05:09		05:53		06:48		07:41			07:40		16:02 (9)	08:33		14:54 (11)
	22:06		21:25		20:16		19:03			16:54	20	16:22 (9)	16:14	25	15:19 (11)
6	05:10		05:55		06:49		07:43			07:42		16:03 (9)	08:35		14:55 (11)
	22:06		21:24		20:14		19:00			16:52	17	16:20 (9)	16:14	26	15:21 (11)
7	05:11		05:56		06:51		07:45			07:44		16:03 (9)	08:36		14:54 (11)
	22:05		21:22		20:12		18:58			16:50	15	16:18 (9)	16:13	27	15:21 (11)
8	05:12		05:58		06:53		07:47			07:46		16:04 (9)	08:37		14:55 (11)
	22:04		21:20		20:09		18:55			16:48	12	16:16 (9)	16:13	27	15:22 (11)
9	05:13		06:00		06:55		07:48			07:48		16:06 (9)	08:38		14:00 (10)
	22:04		21:18		20:07		18:53			16:46	8	16:14 (9)	16:13	32	15:22 (11)
10	05:14		06:01		06:56		07:50			07:50		16:07 (9)	08:40		13:58 (10)
	22:03		21:16		20:04		18:50			16:45	5	16:12 (9)	16:12	38	15:23 (11)
11	05:15		06:03		06:58		07:52		17:55 (8)	07:52		16:08 (9)	08:41		13:58 (10)
	22:02		21:13		20:02		18:48	12	18:07 (8)	16:43	2	16:10 (9)	16:12	40	15:24 (11)
12	05:17		06:05		07:00		07:54		17:53 (8)	07:54			08:42		13:57 (10)
	22:01		21:11		19:59		18:46	15	18:08 (8)	16:41			16:12	43	15:24 (11)
13	05:18		06:07		07:02		07:56		17:51 (8)	07:55			08:43		13:56 (10)
	22:00		21:09		19:57		18:43	19	18:10 (8)	16:40			16:12	45	15:25 (11)
14	05:19		06:09		07:03		07:58		17:50 (8)	07:57			08:44		13:56 (10)
	21:59		21:07		19:54		18:41	21	18:11 (8)	16:38			16:12	46	15:25 (11)
15	05:20		06:10		07:05		08:00		17:49 (8)	07:59			08:45		13:56 (10)
	21:58		21:05		19:52		18:39	20	18:09 (8)	16:36			16:12	48	15:26 (11)
16	05:22		06:12		07:07		08:01		17:48 (8)	08:01			08:46		13:56 (10)
	21:57		21:03		19:49		18:36	19	18:07 (8)	16:35			16:12	48	15:26 (11)
17	05:23		06:14		07:09		08:03		17:47 (8)	08:03			08:47		13:55 (10)
	21:56		21:01		19:47		18:34	18	18:05 (8)	16:33			16:12	49	15:26 (11)
18	05:24		06:16		07:11		08:05		17:47 (8)	08:05			08:47		13:56 (10)
	21:54		20:59		19:44		18:32	15	18:02 (8)	16:32			16:12	50	15:27 (11)
19	05:26		06:17		07:12		08:07		17:47 (8)	08:07			08:48		13:56 (10)
	21:53		20:56		19:42		18:30	13	18:00 (8)	16:31			16:13	51	15:28 (11)
20	05:27		06:19		07:14		08:09		17:47 (8)	08:09			08:49		13:57 (10)
	21:52		20:54		19:39		18:27	11	17:58 (8)	16:29			16:13	50	15:28 (11)
21	05:29		06:21		07:16		08:11		17:13 (9)	08:10			08:49		13:57 (10)
	21:50		20:52		19:37		18:25	21	17:55 (8)	16:28			16:13	50	15:28 (11)
22	05:30		06:23		07:18		08:13		17:10 (9)	08:12			08:50		13:58 (10)
	21:49		20:50		19:35		18:23	23	17:53 (8)	16:27			16:14	50	15:29 (11)
23	05:32		06:24		07:19		08:15		17:08 (9)	08:14			08:50		13:58 (10)
	21:48		20:47		19:32		18:21	24	17:51 (8)	16:25			16:14	50	15:29 (11)
24	05:33		06:26		07:21		08:17		17:06 (9)	08:16			08:51		13:58 (10)
	21:46		20:45		19:30		18:18	25	17:31 (9)	16:24			16:15	51	15:30 (11)
25	05:35		06:28		07:23		07:19		16:05 (9)	08:17		15:01 (11)	08:51		13:59 (10)
	21:45		20:43		19:27		17:16	27	16:32 (9)	16:23	5	15:06 (11)	16:16	51	15:31 (11)
26	05:36		06:30		07:25		07:21		16:04 (9)	08:19		14:58 (11)	08:52		14:00 (10)
	21:43		20:40		19:25		17:14	29	16:33 (9)	16:22	11	15:09 (11)	16:16	50	15:31 (11)
27	05:38		06:32		07:27		07:23		16:03 (9)	08:21		14:57 (11)	08:52		14:01 (10)
	21:41		20:38		19:22		17:12	30	16:33 (9)	16:21	15	15:12 (11)	16:17	48	15:31 (11)
28	05:39		06:33		07:28		07:24		16:02 (9)	08:22		14:56 (11)	08:52		14:01 (10)
	21:40		20:36		19:20		17:10	32	16:34 (9)	16:20	17	15:13 (11)	16:18	49	15:32 (11)
29	05:41		06:35		07:30		07:26		16:02 (9)	08:24		14:56 (11)	08:52		14:02 (10)
	21:38		20:33		19:17		17:08	32	16:34 (9)	16:19	19	15:15 (11)	16:19	47	15:32 (11)
30	05:43		06:37		07:32		07:28		16:01 (9)	08:26		14:55 (11)	08:52		14:04 (10)
	21:36		20:31		19:15		17:06	33	16:34 (9)	16:18	20	15:15 (11)	16:20	46	15:33 (11)
31	05:44		06:39				07:30		16:02 (9)				08:52		14:05 (10)
	21:35		20:29				17:04	31	16:33 (9)				16:21	44	15:33 (11)
Potential sun hours	513		460		382		328			259			233		
Total, worst case								470			267			1273	
Sun reduction								0.23			0.20			0.12	
Oper. time red.								1.00			1.00			1.00	
Wind dir. red.								0.64			0.64			0.65	
Total reduction								0.15			0.13			0.08	
Total, real								68			34			99	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** AH - H036

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April		May		June	
1	08:52	08:22	07:24	07:09		06:00		05:10	06:01 (4)
	16:23	17:14	18:10	20:08		21:04		21:54	9 06:10 (4)
2	08:52	08:20	07:22	07:07		05:58		05:10	06:02 (4)
	16:24	17:16	18:12	20:10		21:06		21:55	6 06:08 (4)
3	08:52	08:19	07:20	07:04		05:56		05:09	
	16:25	17:18	18:14	20:12		21:07		21:56	
4	08:52	08:17	07:17	07:02	07:26 (5)	05:54		05:08	
	16:26	17:20	18:16	20:14	3 07:29 (5)	21:09		21:57	
5	08:51	08:15	07:15	07:00	07:23 (5)	05:52		05:07	
	16:27	17:22	18:18	20:16	6 07:29 (5)	21:11		21:58	
6	08:51	08:13	07:13	06:57	07:21 (5)	05:50		05:06	
	16:29	17:24	18:19	20:18	9 07:30 (5)	21:13		21:59	
7	08:51	08:11	07:10	06:55	07:19 (5)	05:48		05:06	
	16:30	17:26	18:21	20:19	12 07:31 (5)	21:15		22:00	
8	08:50	08:09	07:08	06:52	07:16 (5)	05:46	06:13 (4)	05:05	
	16:31	17:28	18:23	20:21	14 07:30 (5)	21:16	3 06:16 (4)	22:01	
9	08:49	08:07	07:06	06:50	07:14 (5)	05:44	06:11 (4)	05:04	
	16:33	17:30	18:25	20:23	16 07:30 (5)	21:18	5 06:16 (4)	22:02	
10	08:49	08:06	07:03	06:47	07:11 (5)	05:42	06:09 (4)	05:04	
	16:34	17:32	18:27	20:25	18 07:29 (5)	21:20	8 06:17 (4)	22:03	
11	08:48	08:04	07:01	06:45	07:09 (5)	05:40	06:08 (4)	05:04	
	16:36	17:34	18:29	20:27	20 07:29 (5)	21:22	10 06:18 (4)	22:04	
12	08:47	08:02	06:58	06:43	07:07 (5)	05:39	06:06 (4)	05:03	
	16:37	17:36	18:31	20:29	22 07:29 (5)	21:23	12 06:18 (4)	22:05	
13	08:47	08:00	06:56	06:40	07:04 (5)	05:37	06:04 (4)	05:03	
	16:39	17:38	18:33	20:31	24 07:28 (5)	21:25	14 06:18 (4)	22:05	
14	08:46	07:57	06:53	06:38	07:04 (5)	05:35	06:03 (4)	05:03	
	16:41	17:40	18:35	20:32	23 07:27 (5)	21:27	15 06:18 (4)	22:06	
15	08:45	07:55	06:51	06:36	07:05 (5)	05:33	06:01 (4)	05:02	
	16:42	17:42	18:37	20:34	21 07:26 (5)	21:28	17 06:18 (4)	22:07	
16	08:44	07:53	06:49	06:33	07:06 (5)	05:32	06:00 (4)	05:02	
	16:44	17:44	18:38	20:36	19 07:25 (5)	21:30	18 06:18 (4)	22:07	
17	08:43	07:51	06:46	06:31	07:07 (5)	05:30	05:58 (4)	05:02	
	16:46	17:46	18:40	20:38	15 07:22 (5)	21:32	20 06:18 (4)	22:08	
18	08:42	07:49	06:44	06:29	07:10 (5)	05:29	05:57 (4)	05:02	
	16:47	17:48	18:42	20:40	9 07:19 (5)	21:33	21 06:18 (4)	22:08	
19	08:41	07:47	06:41	06:26		05:27	05:55 (4)	05:02	
	16:49	17:50	18:44	20:42		21:35	22 06:17 (4)	22:09	
20	08:39	07:45	06:39	06:24		05:25	05:54 (4)	05:02	
	16:51	17:52	18:46	20:43		21:37	23 06:17 (4)	22:09	
21	08:38	07:43	06:36	06:22		05:24	05:53 (4)	05:02	
	16:53	17:54	18:48	20:45		21:38	25 06:18 (4)	22:09	
22	08:37	07:40	06:34	06:20		05:23	05:52 (4)	05:02	
	16:55	17:56	18:50	20:47		21:40	26 06:18 (4)	22:09	
23	08:36	07:38	06:31	06:17		05:21	05:52 (4)	05:03	
	16:57	17:58	18:52	20:49		21:41	24 06:16 (4)	22:09	
24	08:34	07:36	06:29	06:15		05:20	05:53 (4)	05:03	
	16:58	18:00	18:53	20:51		21:43	23 06:16 (4)	22:10	
25	08:33	07:34	06:26	06:13		05:18	05:54 (4)	05:03	
	17:00	18:02	18:55	20:53		21:44	22 06:16 (4)	22:10	
26	08:31	07:31	06:24	06:11		05:17	05:54 (4)	05:04	
	17:02	18:04	18:57	20:55		21:46	21 06:15 (4)	22:10	
27	08:30	07:29	06:22	06:08		05:16	05:55 (4)	05:04	
	17:04	18:06	18:59	20:56		21:47	20 06:15 (4)	22:09	
28	08:28	07:27	06:19	06:06		05:15	05:56 (4)	05:05	
	17:06	18:08	19:01	20:58		21:49	18 06:14 (4)	22:09	
29	08:27		07:17	06:04		05:14	05:57 (4)	05:05	
	17:08		20:03	21:00		21:50	16 06:13 (4)	22:09	
30	08:25		07:14	06:02		05:13	05:58 (4)	05:06	
	17:10		20:05	21:02		21:51	14 06:12 (4)	22:09	
31	08:24		07:12			05:11	05:59 (4)		
	17:12		20:06			21:53	12 06:11 (4)		
Potential sun hours	250	273	367	420		494		510	
Total, worst case					231		409		15
Sun reduction					0.31		0.31		0.26
Oper. time red.					1.00		1.00		1.00
Wind dir. red.					0.64		0.64		0.64
Total reduction					0.20		0.20		0.17
Total, real					46		83		3

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** AH - H036

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July			August			September			October	November	December
1	05:07			05:47		06:17 (4)	06:41		07:08 (5)	07:34	07:33	08:28
	22:09			21:33	11	06:28 (4)	20:26	20	07:28 (5)	19:13	17:02	16:18
2	05:07			05:48		06:19 (4)	06:43		07:10 (5)	07:36	07:34	08:29
	22:08			21:31	9	06:28 (4)	20:24	18	07:28 (5)	19:10	17:00	16:17
3	05:08			05:50		06:20 (4)	06:44		07:12 (5)	07:38	07:36	08:31
	22:08			21:30	7	06:27 (4)	20:22	16	07:28 (5)	19:08	16:58	16:16
4	05:09			05:52		06:22 (4)	06:46		07:13 (5)	07:40	07:38	08:32
	22:07			21:28	5	06:27 (4)	20:19	14	07:27 (5)	19:05	16:56	16:16
5	05:10			05:53		06:23 (4)	06:48		07:15 (5)	07:41	07:40	08:33
	22:07			21:26	2	06:25 (4)	20:17	12	07:27 (5)	19:03	16:54	16:15
6	05:11			05:55			06:50		07:17 (5)	07:43	07:42	08:35
	22:06			21:24			20:14	9	07:26 (5)	19:01	16:52	16:14
7	05:12			05:57			06:52		07:18 (5)	07:45	07:44	08:36
	22:05			21:22			20:12	6	07:24 (5)	18:58	16:51	16:14
8	05:13			05:58			06:53		07:20 (5)	07:47	07:46	08:37
	22:05			21:20			20:10	3	07:23 (5)	18:56	16:49	16:14
9	05:14			06:00			06:55			07:49	07:48	08:39
	22:04			21:18			20:07			18:53	16:47	16:13
10	05:15		06:13 (4)	06:02			06:57			07:51	07:50	08:40
	22:03	1	06:14 (4)	21:16			20:05			18:51	16:45	16:13
11	05:16		06:10 (4)	06:04			06:59			07:53	07:52	08:41
	22:02	8	06:18 (4)	21:14			20:02			18:49	16:43	16:13
12	05:17		06:08 (4)	06:05			07:00			07:54	07:54	08:42
	22:01	11	06:19 (4)	21:12			20:00			18:46	16:42	16:12
13	05:18		06:07 (4)	06:07			07:02			07:56	07:56	08:43
	22:00	13	06:20 (4)	21:10			19:57			18:44	16:40	16:12
14	05:20		06:06 (4)	06:09			07:04			07:58	07:58	08:44
	21:59	15	06:21 (4)	21:08			19:55			18:41	16:38	16:12
15	05:21		06:05 (4)	06:11			07:06			08:00	08:00	08:45
	21:58	17	06:22 (4)	21:05			19:52			18:39	16:37	16:12
16	05:22		06:04 (4)	06:12			07:07			08:02	08:01	08:46
	21:57	19	06:23 (4)	21:03			19:50			18:37	16:35	16:12
17	05:23		06:04 (4)	06:14			07:09			08:04	08:03	08:47
	21:56	21	06:25 (4)	21:01			19:47			18:35	16:34	16:13
18	05:25		06:04 (4)	06:16			07:11			08:06	08:05	08:48
	21:55	21	06:25 (4)	20:59			19:45			18:32	16:32	16:13
19	05:26		06:03 (4)	06:18			07:13			08:08	08:07	08:48
	21:53	23	06:26 (4)	20:57			19:42			18:30	16:31	16:13
20	05:28		06:03 (4)	06:20			07:15			08:09	08:09	08:49
	21:52	24	06:27 (4)	20:54			19:40			18:28	16:30	16:13
21	05:29		06:02 (4)	06:21			07:16			08:11	08:11	08:50
	21:51	25	06:27 (4)	20:52			19:37			18:25	16:28	16:14
22	05:31		06:02 (4)	06:23			07:18			08:13	08:12	08:50
	21:49	25	06:27 (4)	20:50			19:35			18:23	16:27	16:14
23	05:32		06:04 (4)	06:25			07:20			08:15	08:14	08:51
	21:48	24	06:28 (4)	20:48			19:32			18:21	16:26	16:15
24	05:34		06:05 (4)	06:27			07:22			08:17	08:16	08:51
	21:46	23	06:28 (4)	20:45			19:30			18:19	16:25	16:15
25	05:35		06:07 (4)	06:28		07:12 (5)	07:23			07:19	08:18	08:52
	21:45	22	06:29 (4)	20:43	10	07:22 (5)	19:27			17:17	16:23	16:16
26	05:37		06:08 (4)	06:30		07:10 (5)	07:25			07:21	08:19	08:52
	21:43	21	06:29 (4)	20:41	15	07:25 (5)	19:25			17:14	16:22	16:17
27	05:38		06:09 (4)	06:32		07:08 (5)	07:27			07:23	08:21	08:52
	21:42	19	06:28 (4)	20:38	19	07:27 (5)	19:23			17:12	16:21	16:18
28	05:40		06:11 (4)	06:34		07:06 (5)	07:29			07:25	08:23	08:52
	21:40	18	06:29 (4)	20:36	21	07:27 (5)	19:20			17:10	16:20	16:18
29	05:42		06:12 (4)	06:36		07:05 (5)	07:31			07:27	08:24	08:52
	21:38	16	06:28 (4)	20:34	23	07:28 (5)	19:18			17:08	16:19	16:19
30	05:43		06:14 (4)	06:37		07:05 (5)	07:32			07:29	08:26	08:52
	21:37	15	06:29 (4)	20:31	23	07:28 (5)	19:15			17:06	16:19	16:20
31	05:45		06:16 (4)	06:39		07:07 (5)				07:31		08:52
	21:35	13	06:29 (4)	20:29	22	07:29 (5)				17:04		16:21
Potential sun hours	512			460			382			328	259	233
Total, worst case		394			167			98				
Sun reduction		0.22			0.26			0.25				
Oper. time red.		1.00			1.00			1.00				
Wind dir. red.		0.64			0.64			0.64				
Total reduction		0.14			0.16			0.16				
Total, real		57			28			16				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** AI - H037

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	06:41 (8)	05:10	05:06	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:10	20:08	21:04 17	06:58 (8)	21:54	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:07	05:58	06:43 (8)	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05 13	06:56 (8)	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	06:46 (8)	05:08	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12	21:07 6	06:52 (8)	21:56	22:08	21:29	20:21	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54		05:08	05:09	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14	21:09		21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52		05:07	05:09	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11		21:58	22:07	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50		05:06	05:10	05:55	06:50	07:43	07:42	08:35
	16:28	17:24	18:19	20:17	21:13		21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48		05:05	05:11	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14		22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46		05:05	05:12	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16		22:01	22:05	21:20	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:50	05:44		05:04	05:13	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18		22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42		05:04	05:15	06:02	06:54 (8)	06:57	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20		22:03	22:03	21:16 8	07:02 (8)	20:04	18:51	16:45	16:13
11	08:48	08:03	07:00	06:45	05:40		05:03	05:16	06:03	06:51 (8)	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21		22:04	22:02	21:14 14	07:05 (8)	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38		05:03	05:17	06:05	06:49 (8)	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23		22:05	22:01	21:12 17	07:06 (8)	19:59	18:46	16:41	16:12
13	08:46	07:59	06:56	06:40	05:37		05:03	05:18	06:07	06:47 (8)	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25		22:05	22:00	21:09 20	07:07 (8)	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35		05:02	05:19	06:09	06:47 (8)	07:04	07:58	07:58	08:44
	16:40	17:40	18:34	20:32	21:27		22:06	21:59	21:07 22	07:09 (8)	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35 07:00 (8)	05:33		05:02	05:21	06:10	06:45 (8)	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34 1 07:01 (8)	21:28		22:07	21:58	21:05 24	07:09 (8)	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33 06:57 (8)	05:31		05:02	05:22	06:12	06:44 (8)	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36 5 07:02 (8)	21:30		22:07	21:57	21:03 25	07:09 (8)	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31 06:55 (8)	05:30		05:02	05:23	06:14	06:44 (8)	07:09	08:04	08:03	08:47
	16:45	17:46	18:40	20:38 8 07:03 (8)	21:32		22:08	21:56	21:01 26	07:10 (8)	19:47	18:34	16:34	16:12
18	08:42	07:49	06:43	06:28 06:53 (8)	05:28		05:02	05:25	06:16	06:44 (8)	07:11	08:05	08:05	08:48
	16:47	17:48	18:42	20:40 11 07:04 (8)	21:33		22:08	21:54	20:59 26	07:10 (8)	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26 06:51 (8)	05:27		05:02	05:26	06:18	06:46 (8)	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:41 14 07:05 (8)	21:35		22:08	21:53	20:56 24	07:10 (8)	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24 06:48 (8)	05:25		05:02	05:27	06:19	06:48 (8)	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43 16 07:04 (8)	21:36		22:09	21:52	20:54 22	07:10 (8)	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:22 06:46 (8)	05:24		05:02	05:29	06:21	06:49 (8)	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45 18 07:04 (8)	21:38		22:09	21:51	20:52 20	07:09 (8)	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19 06:44 (8)	05:22		05:02	05:30	06:23	06:51 (8)	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47 20 07:04 (8)	21:40		22:09	21:49	20:50 18	07:09 (8)	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17 06:42 (8)	05:21		05:02	05:32	06:25	06:53 (8)	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49 22 07:04 (8)	21:41		22:09	21:48	20:47 16	07:09 (8)	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15 06:40 (8)	05:19		05:03	05:33	06:26	06:54 (8)	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51 24 07:04 (8)	21:43		22:09	21:46	20:45 13	07:07 (8)	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13 06:38 (8)	05:18		05:03	05:35	06:28	06:56 (8)	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53 26 07:04 (8)	21:44		22:09	21:45	20:43 11	07:07 (8)	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10 06:38 (8)	05:17		05:03	05:36	06:30	06:58 (8)	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54 25 07:03 (8)	21:46		22:09	21:43	20:40 8	07:06 (8)	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08 06:38 (8)	05:16		05:04	05:38	06:32	07:00 (8)	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56 25 07:03 (8)	21:47		22:09	21:42	20:38 5	07:05 (8)	19:22	17:12	16:21	16:17
28	08:28	07:27	06:19	06:06 06:39 (8)	05:14		05:04	05:40	06:34	07:01 (8)	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58 23 07:02 (8)	21:48		22:09	21:40	20:36 1	07:02 (8)	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04 06:38 (8)	05:13		05:05	05:41	06:35		07:30	07:27	08:24	08:52
	17:08		20:03	21:00 22 07:00 (8)	21:50		22:09	21:38	20:33		19:17	17:08	16:19	16:19
30	08:25		07:14	06:02 06:40 (8)	05:12		05:06	05:43	06:37		07:32	07:28	08:26	08:52
	17:10		20:04	21:02 20 07:00 (8)	21:51		22:09	21:36	20:31		19:15	17:06	16:18	16:20
31	08:23		07:11		05:11			05:45	06:39			07:30		08:52
	17:12		20:06		21:52			21:35	20:29			17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case				280	36			320				
Sun reduction				0.31	0.31			0.26				
Oper. time red.				1.00	1.00			1.00				
Wind dir. red.				0.65	0.65			0.65				
Total reduction				0.20	0.20			0.17				
Total, real				56	7			53				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** AJ - H038

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April		May	June	July	August		September	October	November	December
1	08:52	08:22	07:24	07:09		06:00	05:10	05:06	05:46		06:41	07:34	07:32	08:27
	16:22	17:14	18:10	20:08		21:04	21:54	22:08	21:33		20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:07		05:58	05:09	05:07	05:48		06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10		21:05	21:55	22:08	21:31		20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04		05:56	05:08	05:08	05:50		06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12		21:07	21:56	22:08	21:29		20:21	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02		05:54	05:08	05:09	05:51		06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14		21:09	21:57	22:07	21:27		20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59		05:52	05:07	05:09	05:53		06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15		21:11	21:58	22:07	21:26		20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57		05:50	05:06	05:10	05:55		06:50	07:43	07:42	08:35
	16:28	17:24	18:19	20:17		21:13	21:59	22:06	21:24		20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54		05:48	05:05	05:11	05:56		06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19		21:14	22:00	22:05	21:22		20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52		05:46	05:05	05:12	05:58		06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21		21:16	22:01	22:05	21:20		20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:50		05:44	05:04	05:13	06:00		06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23		21:18	22:02	22:04	21:18		20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47		05:42	05:04	05:15	06:02		06:57	07:50	07:50	08:40
	16:34	17:32	18:27	20:25		21:20	22:03	22:03	21:16		20:04	18:51	16:45	16:13
11	08:48	08:03	07:00	06:45		05:40	05:03	05:16	06:03		06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27		21:21	22:04	22:02	21:14		20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42		05:38	05:03	05:17	06:05		07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28		21:23	22:05	22:01	21:12		19:59	18:46	16:41	16:12
13	08:46	07:59	06:56	06:40		07:04 (8)	05:37	05:03	05:18	06:07	06:56 (8)	07:02	07:56	08:43
	16:39	17:38	18:33	20:30	1	07:05 (8)	21:25	22:05	22:00	21:09	10	07:06 (8)	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38		07:02 (8)	05:35	05:02	05:19	06:09	06:54 (8)	07:04	07:58	07:58	08:44
	16:40	17:40	18:34	20:32	4	07:06 (8)	21:27	22:06	21:59	21:07	15	07:09 (8)	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35		07:00 (8)	05:33	05:02	05:21	06:10	06:51 (8)	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	8	07:08 (8)	21:28	22:07	21:58	21:05	19	07:10 (8)	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33		06:57 (8)	05:31	05:02	05:22	06:12	06:50 (8)	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	11	07:08 (8)	21:30	22:07	21:57	21:03	21	07:11 (8)	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31		06:55 (8)	05:30	05:02	05:23	06:14	06:49 (8)	07:09	08:04	08:03	08:47
	16:45	17:46	18:40	20:38	13	07:08 (8)	21:32	22:08	21:56	21:01	23	07:12 (8)	19:47	18:34	16:34	16:12
18	08:42	07:49	06:43	06:28		06:53 (8)	05:28	05:02	05:25	06:16	06:48 (8)	07:11	08:05	08:05	08:48
	16:47	17:48	18:42	20:40	16	07:09 (8)	21:33	22:08	21:54	20:59	24	07:12 (8)	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26		06:51 (8)	05:27	05:02	05:26	06:18	06:47 (8)	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	18	07:09 (8)	21:35	22:08	21:53	20:56	26	07:13 (8)	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24		06:48 (8)	05:25	05:02	05:27	06:19	06:48 (8)	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	20	07:08 (8)	21:36	22:09	21:52	20:54	25	07:13 (8)	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:22		06:46 (8)	05:24	05:02	05:29	06:21	06:49 (8)	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	22	07:08 (8)	21:38	22:09	21:51	20:52	24	07:13 (8)	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19		06:44 (8)	05:22	05:02	05:30	06:23	06:51 (8)	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	24	07:08 (8)	21:40	22:09	21:49	20:50	22	07:13 (8)	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17		06:42 (8)	05:21	05:02	05:32	06:25	06:53 (8)	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	25	07:07 (8)	21:41	22:09	21:48	20:47	20	07:13 (8)	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15		06:42 (8)	05:19	05:03	05:33	06:26	06:54 (8)	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	25	07:07 (8)	21:43	22:09	21:46	20:45	18	07:12 (8)	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13		06:42 (8)	05:18	05:03	05:35	06:28	06:56 (8)	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	24	07:06 (8)	21:44	22:09	21:45	20:43	15	07:11 (8)	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10		06:43 (8)	05:17	05:03	05:36	06:30	06:58 (8)	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	22	07:05 (8)	21:46	22:09	21:43	20:40	13	07:11 (8)	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08		06:44 (8)	05:16	05:04	05:38	06:32	07:00 (8)	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	20	07:04 (8)	21:47	22:09	21:42	20:38	10	07:10 (8)	19:22	17:12	16:21	16:17
28	08:28	07:27	06:19	06:06		06:45 (8)	05:14	05:04	05:40	06:34	07:01 (8)	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	18	07:03 (8)	21:48	22:09	21:40	20:36	7	07:08 (8)	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04		06:46 (8)	05:13	05:05	05:41	06:35	07:03 (8)	07:30	07:27	08:24	08:52
	17:08		20:03	21:00	15	07:01 (8)	21:50	22:09	21:38	20:33	4	07:07 (8)	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02		06:49 (8)	05:12	05:06	05:43	06:37	07:05 (8)	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	9	06:58 (8)	21:51	22:09	21:36	20:31	1	07:06 (8)	19:15	17:06	16:18	16:20
31	08:23		07:11				05:11		05:45	06:39				07:30		08:52
	17:12		20:06				21:52		21:35	20:29				17:04		16:21
Potential sun hours	250	273	367	420			494	510	512	460		382	328	259	233
Total, worst case					295						297				
Sun reduction					0.31						0.26				
Oper. time red.					1.00						1.00				
Wind dir. red.					0.65						0.65				
Total reduction					0.20						0.17				
Total, real					58						49				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** AK - H039

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March			April			May			June		
1	08:52	08:22	07:24			07:09		07:33 (6)	06:00			05:10		05:41 (4)
	16:23	17:14	18:10			20:08	18	07:51 (6)	21:04			21:54	12	05:53 (4)
2	08:52	08:20	07:22			07:07		07:31 (6)	05:58			05:10		05:40 (4)
	16:24	17:16	18:12			20:10	20	07:51 (6)	21:06			21:55	13	05:53 (4)
3	08:52	08:19	07:20			07:04		07:28 (6)	05:56			05:09		05:40 (4)
	16:25	17:18	18:14			20:12	22	07:50 (6)	21:07			21:56	14	05:54 (4)
4	08:52	08:17	07:17			07:02		07:26 (6)	05:54			05:08		05:39 (4)
	16:26	17:20	18:16			20:14	23	07:49 (6)	21:09			21:57	15	05:54 (4)
5	08:51	08:15	07:15			07:00		07:26 (6)	05:52			05:07		05:38 (4)
	16:27	17:22	18:17			20:16	21	07:47 (6)	21:11			21:58	16	05:54 (4)
6	08:51	08:13	07:13			06:57		07:27 (6)	05:50			05:06		05:38 (4)
	16:29	17:24	18:19			20:18	19	07:46 (6)	21:13			21:59	17	05:55 (4)
7	08:51	08:11	07:10			06:55		07:29 (6)	05:48			05:06		05:37 (4)
	16:30	17:26	18:21			20:19	16	07:45 (6)	21:15			22:00	18	05:55 (4)
8	08:50	08:09	07:08			06:52		07:30 (6)	05:46			05:05		05:37 (4)
	16:31	17:28	18:23			20:21	12	07:42 (6)	21:16			22:01	19	05:56 (4)
9	08:49	08:07	07:05			06:50		07:35 (6)	05:44			05:04		05:36 (4)
	16:33	17:30	18:25			20:23	2	07:37 (6)	21:18			22:02	19	05:55 (4)
10	08:49	08:05	07:03			06:47			05:42			05:04		05:36 (4)
	16:34	17:32	18:27			20:25			21:20			22:03	20	05:56 (4)
11	08:48	08:04	07:01			06:45		07:09 (5)	05:40			05:04		05:36 (4)
	16:36	17:34	18:29			20:27	4	07:13 (5)	21:22			22:04	21	05:57 (4)
12	08:47	08:02	06:58			06:43		07:07 (5)	05:39			05:03		05:35 (4)
	16:37	17:36	18:31			20:29	8	07:15 (5)	21:23			22:05	21	05:56 (4)
13	08:47	07:59	06:56			06:40		07:04 (5)	05:37			05:03		05:35 (4)
	16:39	17:38	18:33			20:30	11	07:15 (5)	21:25			22:05	22	05:57 (4)
14	08:46	07:57	06:53			06:38		07:02 (5)	05:35			05:03		05:35 (4)
	16:41	17:40	18:35			20:32	14	07:16 (5)	21:27			22:06	22	05:57 (4)
15	08:45	07:55	06:51			06:36		07:00 (5)	05:33			05:02		05:35 (4)
	16:42	17:42	18:37			20:34	17	07:17 (5)	21:28			22:07	22	05:57 (4)
16	08:44	07:53	06:49			06:33		06:58 (5)	05:32			05:02		05:35 (4)
	16:44	17:44	18:38			20:36	19	07:17 (5)	21:30			22:07	23	05:58 (4)
17	08:43	07:51	06:46			06:31		06:55 (5)	05:30			05:02		05:35 (4)
	16:46	17:46	18:40			20:38	22	07:17 (5)	21:32			22:08	23	05:58 (4)
18	08:42	07:49	06:44			06:29		06:53 (5)	05:29			05:02		05:35 (4)
	16:47	17:48	18:42			20:40	24	07:17 (5)	21:33			22:08	23	05:58 (4)
19	08:41	07:47	06:41			06:26		06:51 (5)	05:27			05:02		05:35 (4)
	16:49	17:50	18:44			20:42	26	07:17 (5)	21:35			22:08	23	05:58 (4)
20	08:39	07:45	06:39			06:24		06:49 (5)	05:25			05:02		05:35 (4)
	16:51	17:52	18:46			20:43	28	07:17 (5)	21:37			22:09	23	05:58 (4)
21	08:38	07:43	06:36			06:22		06:46 (5)	05:24			05:02		05:35 (4)
	16:53	17:54	18:48			20:45	30	07:16 (5)	21:38			22:09	23	05:58 (4)
22	08:37	07:40	06:34			06:20		06:45 (5)	05:22			05:02		05:35 (4)
	16:55	17:56	18:50			20:47	30	07:15 (5)	21:40			22:09	23	05:58 (4)
23	08:36	07:38	06:31			06:17		06:45 (5)	05:21			05:03		05:36 (4)
	16:57	17:58	18:52			20:49	30	07:15 (5)	21:41			22:09	23	05:59 (4)
24	08:34	07:36	06:29			06:15		06:45 (5)	05:20			05:03		05:36 (4)
	16:58	18:00	18:53			20:51	29	07:14 (5)	21:43			22:10	23	05:59 (4)
25	08:33	07:34	06:26			06:13		06:46 (5)	05:18			05:03		05:36 (4)
	17:00	18:02	18:55			20:53	27	07:13 (5)	21:44			22:10	23	05:59 (4)
26	08:31	07:31	06:24		06:48 (6)	06:11		06:47 (5)	05:17		05:47 (4)	05:04		05:37 (4)
	17:02	18:04	18:57	1	06:49 (6)	20:55	25	07:12 (5)	21:46	2	05:49 (4)	22:10	23	06:00 (4)
27	08:30	07:29	06:22		06:45 (6)	06:08		06:48 (5)	05:16		05:46 (4)	05:04		05:37 (4)
	17:04	18:06	18:59	4	06:49 (6)	20:56	23	07:11 (5)	21:47	4	05:50 (4)	22:09	23	06:00 (4)
28	08:28	07:27	06:19		06:43 (6)	06:06		06:49 (5)	05:15		05:45 (4)	05:05		05:38 (4)
	17:06	18:08	19:01	8	06:51 (6)	20:58	20	07:09 (5)	21:49	6	05:51 (4)	22:09	22	06:00 (4)
29	08:27		07:17		07:40 (6)	06:04		06:51 (5)	05:14		05:44 (4)	05:05		05:38 (4)
	17:08		20:03	10	07:50 (6)	21:00	16	07:07 (5)	21:50	8	05:52 (4)	22:09	22	06:00 (4)
30	08:25		07:14		07:38 (6)	06:02		06:53 (5)	05:13		05:43 (4)	05:06		05:39 (4)
	17:10		20:05	13	07:51 (6)	21:02	12	07:05 (5)	21:51	9	05:52 (4)	22:09	21	06:00 (4)
31	08:24		07:12		07:35 (6)				05:11		05:42 (4)			
	17:12		20:06	16	07:51 (6)				21:52	10	05:52 (4)			
Potential sun hours	250	273	367			420			494			510		
Total, worst case				52			568			39			612	
Sun reduction				0.22			0.31			0.31			0.26	
Oper. time red.				1.00			1.00			1.00			1.00	
Wind dir. red.				0.65			0.64			0.64			0.64	
Total reduction				0.14			0.20			0.20			0.17	
Total, real				7			112			8			101	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** AK - H039

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August		September		October	November	December
1	05:07		05:40 (4)	05:47		06:41	07:08 (5)	07:34	07:33	08:28
	22:09	21	06:01 (4)	21:33		20:26	4 07:12 (5)	19:13	17:02	16:18
2	05:07		05:40 (4)	05:48		06:43		07:36	07:34	08:29
	22:08	20	06:00 (4)	21:31		20:24		19:10	17:00	16:17
3	05:08		05:41 (4)	05:50		06:44	07:33 (6)	07:38	07:36	08:31
	22:08	20	06:01 (4)	21:29		20:22	2 07:35 (6)	19:08	16:58	16:16
4	05:09		05:42 (4)	05:52		06:46	07:27 (6)	07:40	07:38	08:32
	22:07	19	06:01 (4)	21:28		20:19	12 07:39 (6)	19:05	16:56	16:16
5	05:10		05:43 (4)	05:53		06:48	07:25 (6)	07:41	07:40	08:33
	22:07	18	06:01 (4)	21:26		20:17	16 07:41 (6)	19:03	16:54	16:15
6	05:11		05:44 (4)	05:55		06:50	07:24 (6)	07:43	07:42	08:35
	22:06	17	06:01 (4)	21:24		20:14	18 07:42 (6)	19:00	16:52	16:14
7	05:12		05:45 (4)	05:57		06:51	07:21 (6)	07:45	07:44	08:36
	22:05	17	06:02 (4)	21:22		20:12	22 07:43 (6)	18:58	16:51	16:14
8	05:13		05:46 (4)	05:58		06:53	07:21 (6)	07:47	07:46	08:37
	22:05	16	06:02 (4)	21:20		20:09	22 07:43 (6)	18:56	16:49	16:14
9	05:14		05:46 (4)	06:00		06:55	07:22 (6)	07:49	07:48	08:39
	22:04	15	06:01 (4)	21:18		20:07	22 07:44 (6)	18:53	16:47	16:13
10	05:15		05:48 (4)	06:02		06:57	07:24 (6)	07:51	07:50	08:40
	22:03	13	06:01 (4)	21:16		20:05	20 07:44 (6)	18:51	16:45	16:13
11	05:16		05:49 (4)	06:04		06:59	07:25 (6)	07:53	07:52	08:41
	22:02	12	06:01 (4)	21:14		20:02	18 07:43 (6)	18:49	16:43	16:13
12	05:17		05:50 (4)	06:05	07:04 (5)	07:00	07:27 (6)	07:54	07:54	08:42
	22:01	11	06:01 (4)	21:12	6 07:10 (5)	20:00	16 07:43 (6)	18:46	16:42	16:12
13	05:18		05:51 (4)	06:07	07:00 (5)	07:02	07:29 (6)	07:56	07:56	08:43
	22:00	10	06:01 (4)	21:10	13 07:13 (5)	19:57	14 07:43 (6)	18:44	16:40	16:12
14	05:20		05:52 (4)	06:09	06:58 (5)	07:04	07:30 (6)	07:58	07:58	08:44
	21:59	8	06:00 (4)	21:08	17 07:15 (5)	19:55	11 07:41 (6)	18:41	16:38	16:12
15	05:21		05:53 (4)	06:11	06:56 (5)	07:06	07:32 (6)	08:00	08:00	08:45
	21:58	7	06:00 (4)	21:05	21 07:17 (5)	19:52	8 07:40 (6)	18:39	16:37	16:12
16	05:22		05:54 (4)	06:12	06:54 (5)	07:07	07:34 (6)	08:02	08:01	08:46
	21:57	5	05:59 (4)	21:03	24 07:18 (5)	19:50	5 07:39 (6)	18:37	16:35	16:12
17	05:23		05:56 (4)	06:14	06:53 (5)	07:09	07:36 (6)	08:04	08:03	08:47
	21:56	3	05:59 (4)	21:01	26 07:19 (5)	19:47	2 07:38 (6)	18:34	16:34	16:13
18	05:25		05:57 (4)	06:16	06:53 (5)	07:11		08:06	08:05	08:48
	21:55	1	05:58 (4)	20:59	27 07:20 (5)	19:45		18:32	16:32	16:13
19	05:26			06:18	06:51 (5)	07:13		08:07	08:07	08:48
	21:53			20:57	29 07:20 (5)	19:42		18:30	16:31	16:13
20	05:28			06:20	06:51 (5)	07:14		08:09	08:09	08:49
	21:52			20:54	29 07:20 (5)	19:40		18:28	16:30	16:13
21	05:29			06:21	06:50 (5)	07:16		08:11	08:11	08:50
	21:51			20:52	31 07:21 (5)	19:37		18:25	16:28	16:14
22	05:31			06:23	06:51 (5)	07:18		08:13	08:12	08:50
	21:49			20:50	29 07:20 (5)	19:35		18:23	16:27	16:14
23	05:32			06:25	06:53 (5)	07:20		08:15	08:14	08:51
	21:48			20:48	28 07:21 (5)	19:32		18:21	16:26	16:15
24	05:34			06:27	06:55 (5)	07:22		08:17	08:16	08:51
	21:46			20:45	26 07:21 (5)	19:30		18:19	16:25	16:15
25	05:35			06:28	06:56 (5)	07:23		07:19	08:18	08:52
	21:45			20:43	24 07:20 (5)	19:27		17:17	16:23	16:16
26	05:37			06:30	06:58 (5)	07:25		07:21	08:19	08:52
	21:43			20:41	21 07:19 (5)	19:25		17:14	16:22	16:17
27	05:38			06:32	07:00 (5)	07:27		07:23	08:21	08:52
	21:42			20:38	19 07:19 (5)	19:23		17:12	16:21	16:18
28	05:40			06:34	07:01 (5)	07:29		07:25	08:23	08:52
	21:40			20:36	17 07:18 (5)	19:20		17:10	16:20	16:18
29	05:42			06:36	07:03 (5)	07:31		07:27	08:24	08:52
	21:38			20:34	14 07:17 (5)	19:18		17:08	16:19	16:19
30	05:43			06:37	07:05 (5)	07:32		07:29	08:26	08:52
	21:37			20:31	11 07:16 (5)	19:15		17:06	16:19	16:20
31	05:45			06:39	07:07 (5)			07:31		08:52
	21:35			20:29	8 07:15 (5)			17:04		16:21
Potential sun hours	512			460		382		328	259	233
Total, worst case		233			420		212			
Sun reduction		0.22			0.26		0.25			
Oper. time red.		1.00			1.00		1.00			
Wind dir. red.		0.64			0.64		0.65			
Total reduction		0.14			0.16		0.16			
Total, real		33			69		34			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** AL - H040

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April		May		June	July		August		September		October	November	December
1	08:52	08:22	07:24	07:09		06:00		05:11	05:07		05:47		06:17 (4)	06:41	07:08 (5)	07:34	07:33	08:28
	16:23	17:14	18:10	20:08		21:04		21:54	22:09		21:33	14	06:31 (4)	20:26	19	07:27 (5)	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07		05:58		05:10	05:07		05:48		06:19 (4)	06:43		07:10 (5)	07:36	07:34	08:29
	16:24	17:16	18:12	20:10		21:06		21:55	22:08		21:31	12	06:31 (4)	20:24	17	07:27 (5)	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04		05:56		05:09	05:08		05:50		06:20 (4)	06:44		07:12 (5)	07:38	07:36	08:31
	16:25	17:18	18:14	20:12		21:07		21:56	22:08		21:30	10	06:30 (4)	20:22	15	07:27 (5)	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	07:26 (5)	05:54		05:08	05:09		05:52		06:22 (4)	06:46		07:13 (5)	07:40	07:38	08:32
	16:26	17:20	18:16	20:14	2 07:28 (5)	21:09		21:57	22:07		21:28	8	06:30 (4)	20:19	13	07:26 (5)	19:05	16:56	16:16
5	08:51	08:15	07:15	07:00	07:23 (5)	05:52		05:07	05:10		05:53		06:23 (4)	06:48		07:15 (5)	07:41	07:40	08:33
	16:27	17:22	18:18	20:16	5 07:28 (5)	21:11		21:58	22:07		21:26	6	06:29 (4)	20:17	11	07:26 (5)	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	07:21 (5)	05:50	06:16 (4)	05:06	05:11		05:55		06:25 (4)	06:50		07:17 (5)	07:43	07:42	08:35
	16:29	17:24	18:19	20:18	8 07:29 (5)	21:13	2 06:18 (4)	21:59	22:06		21:24	4	06:29 (4)	20:14	8	07:25 (5)	19:01	16:52	16:14
7	08:51	08:11	07:10	06:55	07:19 (5)	05:48	06:15 (4)	05:06	05:12		05:57		06:27 (4)	06:52		07:18 (5)	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	10 07:29 (5)	21:15	4 06:19 (4)	22:00	22:05		21:22	1	06:28 (4)	20:12	5	07:23 (5)	18:58	16:51	16:14
8	08:50	08:09	07:08	06:52	07:16 (5)	05:46	06:13 (4)	05:05	05:13		05:58			06:53		07:20 (5)	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	13 07:29 (5)	21:16	7 06:20 (4)	22:01	22:05		21:20			20:10	2	07:22 (5)	18:56	16:49	16:14
9	08:49	08:07	07:06	06:50	07:14 (5)	05:44	06:11 (4)	05:04	05:14		06:00			06:55			07:49	07:48	08:39
	16:33	17:30	18:25	20:23	15 07:29 (5)	21:18	9 06:20 (4)	22:02	22:04		21:18			20:07			18:53	16:47	16:13
10	08:49	08:06	07:03	06:47	07:11 (5)	05:42	06:09 (4)	05:04	05:15		06:02			06:57			07:51	07:50	08:40
	16:34	17:32	18:27	20:25	17 07:28 (5)	21:20	11 06:20 (4)	22:03	22:03		21:16			20:05			18:51	16:45	16:13
11	08:48	08:04	07:01	06:45	07:09 (5)	05:40	06:08 (4)	05:04	05:16		06:04			06:59			07:53	07:52	08:41
	16:36	17:34	18:29	20:27	19 07:28 (5)	21:22	13 06:21 (4)	22:04	22:02		21:14			20:02			18:49	16:43	16:13
12	08:47	08:02	06:58	06:43	07:07 (5)	05:39	06:06 (4)	05:03	05:17		06:05			07:00			07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21 07:28 (5)	21:23	14 06:20 (4)	22:05	22:01		21:12			20:00			18:46	16:42	16:12
13	08:47	08:00	06:56	06:40	07:04 (5)	05:37	06:04 (4)	05:03	05:18		06:07			07:02			07:56	07:56	08:43
	16:39	17:38	18:33	20:31	22 07:26 (5)	21:25	16 06:20 (4)	22:05	22:00		21:10			19:57			18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	07:05 (5)	05:35	06:03 (4)	05:03	05:20		06:09			07:04			07:58	07:58	08:44
	16:41	17:40	18:35	20:32	20 07:25 (5)	21:27	18 06:21 (4)	22:06	21:59		21:08			19:55			18:41	16:38	16:12
15	08:45	07:55	06:51	06:36	07:06 (5)	05:33	06:01 (4)	05:02	05:21		06:11			07:06			08:00	08:00	08:45
	16:42	17:42	18:37	20:34	18 07:24 (5)	21:28	19 06:20 (4)	22:07	21:58		21:05			19:52			18:39	16:37	16:12
16	08:44	07:53	06:49	06:33	07:07 (5)	05:32	06:00 (4)	05:02	05:22	06:14 (4)	06:12			07:07			08:02	08:01	08:46
	16:44	17:44	18:38	20:36	15 07:22 (5)	21:30	20 06:20 (4)	22:07	21:57	5 06:19 (4)	21:03			19:50			18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	07:08 (5)	05:30	05:58 (4)	05:02	05:24	06:13 (4)	06:14			07:09			08:04	08:03	08:47
	16:46	17:46	18:40	20:38	11 07:19 (5)	21:32	21 06:19 (4)	22:08	21:56	9 06:22 (4)	21:01			19:47			18:35	16:34	16:13
18	08:42	07:49	06:44	06:29		05:29	05:57 (4)	05:02	05:25	06:11 (4)	06:16			07:11			08:06	08:05	08:48
	16:47	17:48	18:42	20:40		21:33	23 06:20 (4)	22:08	21:55	13 06:24 (4)	20:59			19:45			18:32	16:32	16:13
19	08:41	07:47	06:41	06:26		05:27	05:55 (4)	05:02	05:26	06:10 (4)	06:18			07:13			08:08	08:07	08:48
	16:49	17:50	18:44	20:42		21:35	24 06:19 (4)	22:09	21:53	15 06:25 (4)	20:57			19:42			18:30	16:31	16:13
20	08:39	07:45	06:39	06:24		05:25	05:56 (4)	05:02	05:28	06:09 (4)	06:20			07:15			08:09	08:09	08:49
	16:51	17:52	18:46	20:43		21:37	22 06:18 (4)	22:09	21:52	17 06:26 (4)	20:54			19:40			18:28	16:30	16:13
21	08:38	07:43	06:36	06:22		05:24	05:57 (4)	05:02	05:29	06:08 (4)	06:21			07:16			08:11	08:11	08:50
	16:53	17:54	18:48	20:45		21:38	21 06:18 (4)	22:09	21:51	19 06:27 (4)	20:52			19:37			18:25	16:28	16:14
22	08:37	07:40	06:34	06:20		05:23	05:58 (4)	05:02	05:31	06:07 (4)	06:23			07:18			08:13	08:12	08:50
	16:55	17:56	18:50	20:47		21:40	20 06:18 (4)	22:09	21:49	20 06:27 (4)	20:50			19:35			18:23	16:27	16:14
23	08:36	07:38	06:31	06:17		05:21	05:58 (4)	05:03	05:32	06:07 (4)	06:25			07:20			08:15	08:14	08:51
	16:57	17:58	18:52	20:49		21:41	18 06:16 (4)	22:09	21:48	22 06:29 (4)	20:48			19:32			18:21	16:26	16:15
24	08:34	07:36	06:29	06:15		05:20	05:59 (4)	05:03	05:34	06:06 (4)	06:27			07:22			08:17	08:16	08:51
	16:58	18:00	18:53	20:51		21:43	17 06:16 (4)	22:10	21:46	23 06:29 (4)	20:45			19:30			18:19	16:25	16:15
25	08:33	07:34	06:26	06:13		05:18	06:01 (4)	05:03	05:35	06:07 (4)	06:28			07:23			07:19	08:18	08:52
	17:00	18:02	18:55	20:53		21:44	14 06:15 (4)	22:10	21:45	23 06:30 (4)	20:43			19:27			17:17	16:23	16:16
26	08:31	07:31	06:24	06:11		05:17	06:02 (4)	05:04	05:37	06:08 (4)	06:30		07:11 (5)	07:25			07:21	08:19	08:52
	17:02	18:04	18:57	20:55		21:46	11 06:13 (4)	22:10	21:43	22 06:30 (4)	20:41	11	07:22 (5)	19:25			17:14	16:22	16:17
27	08:30	07:29	06:22	06:08		05:16	06:04 (4)	05:04	05:38	06:09 (4)	06:32		07:09 (5)	07:27			07:23	08:21	08:52
	17:04	18:06	18:59	20:56		21:47	8 06:12 (4)	22:09	21:42	21 06:30 (4)	20:38	15	07:24 (5)	19:23			17:12	16:21	16:18
28	08:28	07:27	06:19	06:06		05:15		05:05	05:40	06:11 (4)	06:34		07:06 (5)	07:29			07:25	08:23	08:52
	17:06	18:08	19:01	20:58		21:49		22:09	21:40	20 06:31 (4)	20:36	19	07:25 (5)	19:20			17:10	16:20	16:18
29	08:27		07:17	06:04		05:14		05:05	05:42	06:12 (4)	06:36		07:05 (5)	07:31			07:27	08:24	08:52
	17:08		20:03	21:00		21:50		22:09	21:38	18 06:30 (4)	20:34	21	07:26 (5)	19:18			17:08	16:19	16:19
30	08:25		07:14	06:02		05:13		05:06	05:43	06:14 (4)	06:37		07:05 (5)	07:32			07:29	08:26	08:52
	17:10		20:05	21:02		21:51		22:09	21:37	17 06:31 (4)	20:31	22	07:27 (5)	19:15			17:06	16:19	16:20
31	08:24		07:12			05:11			05:45	06:16 (4)	06:39		07:07 (5)				07:31		08:52
	17:12		20:06			21:53			21:35	15 06:31 (4)	20:29	21	07:28 (5)				17:04		16:21
Potential sun hours	250	273	367	420		494		510	512		460			382			328	259	233
Total, worst case					196		332			279		164			90				
Sun reduction					0.31		0.31			0.22		0.26			0.25				
Oper. time red.					1.00		1.00			1.00		1.00			1.00				
Wind dir. red.					0.64		0.65			0.65		0.64			0.64				
Total reduction					0.20		0.20			0.14		0.17			0.16				
Total, real					39		67			40		27			15				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** AM - H041

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February			March			April			May	June
1	08:52		15:02 (6)	08:22		16:27 (5)	07:24			07:09		19:18 (3)	06:00	05:10
	16:22	34	15:36 (6)	17:14	15	16:42 (5)	18:10			20:08	10	19:28 (3)	21:04	21:54
2	08:52		15:02 (6)	08:20		16:27 (5)	07:22			07:07			05:58	05:09
	16:23	35	15:37 (6)	17:16	17	16:44 (5)	18:12			20:10			21:05	21:55
3	08:52		15:03 (6)	08:18		16:26 (5)	07:20			07:04			05:56	05:08
	16:25	35	15:38 (6)	17:18	20	16:46 (5)	18:13			20:12			21:07	21:56
4	08:52		15:03 (6)	08:17		16:26 (5)	07:17			07:02			05:54	05:08
	16:26	35	15:38 (6)	17:20	22	16:48 (5)	18:15			20:14			21:09	21:57
5	08:51		15:04 (6)	08:15		16:25 (5)	07:15		17:46 (4)	06:59			05:52	05:07
	16:27	35	15:39 (6)	17:22	25	16:50 (5)	18:17	4	17:50 (4)	20:16			21:11	21:58
6	08:51		15:04 (6)	08:13		16:25 (5)	07:13		17:44 (4)	06:57			05:50	05:06
	16:28	35	15:39 (6)	17:24	28	16:53 (5)	18:19	8	17:52 (4)	20:17			21:13	21:59
7	08:50		15:04 (6)	08:11		16:25 (5)	07:10		17:42 (4)	06:55			05:48	05:05
	16:30	35	15:39 (6)	17:26	30	16:55 (5)	18:21	12	17:54 (4)	20:19			21:14	22:00
8	08:50		15:05 (6)	08:09		16:25 (5)	07:08		17:41 (4)	06:52			05:46	05:05
	16:31	35	15:40 (6)	17:28	30	16:55 (5)	18:23	15	17:56 (4)	20:21			21:16	22:01
9	08:49		15:06 (6)	08:07		16:25 (5)	07:05		17:40 (4)	06:50			05:44	05:04
	16:33	34	15:40 (6)	17:30	31	16:56 (5)	18:25	19	17:59 (4)	20:23			21:18	22:02
10	08:49		15:06 (6)	08:05		16:26 (5)	07:03		17:39 (4)	06:47			05:42	05:04
	16:34	34	15:40 (6)	17:32	29	16:55 (5)	18:27	21	18:00 (4)	20:25			21:20	22:03
11	08:48		15:06 (6)	08:03		16:26 (5)	07:01		17:39 (4)	06:45			05:40	05:03
	16:36	34	15:40 (6)	17:34	29	16:55 (5)	18:29	23	18:02 (4)	20:27			21:21	22:04
12	08:47		15:07 (6)	08:01		16:27 (5)	06:58		17:38 (4)	06:43			05:38	05:03
	16:37	34	15:41 (6)	17:36	28	16:55 (5)	18:31	26	18:04 (4)	20:29			21:23	22:05
13	08:46		15:07 (6)	07:59		16:28 (5)	06:56		17:38 (4)	06:40			05:37	05:03
	16:39	34	15:41 (6)	17:38	26	16:54 (5)	18:33	28	18:06 (4)	20:30			21:25	22:05
14	08:46		15:08 (6)	07:57		16:28 (5)	06:53		17:37 (4)	06:38			05:35	05:02
	16:40	33	15:41 (6)	17:40	25	16:53 (5)	18:35	30	18:07 (4)	20:32			21:27	22:06
15	08:45		15:09 (6)	07:55		16:29 (5)	06:51		17:38 (4)	06:35			05:33	05:02
	16:42	32	15:41 (6)	17:42	23	16:52 (5)	18:36	29	18:07 (4)	20:34			21:28	22:07
16	08:44		15:10 (6)	07:53		16:31 (5)	06:48		17:37 (4)	06:33			05:32	05:02
	16:44	31	15:41 (6)	17:44	20	16:51 (5)	18:38	29	18:06 (4)	20:36			21:30	22:07
17	08:43		15:11 (6)	07:51		16:33 (5)	06:46		17:38 (4)	06:31			05:30	05:02
	16:46	31	15:42 (6)	17:46	16	16:49 (5)	18:40	27	18:05 (4)	20:38			21:32	22:08
18	08:42		15:11 (6)	07:49		16:36 (5)	06:43		17:38 (4)	06:28			05:28	05:02
	16:47	30	15:41 (6)	17:48	11	16:47 (5)	18:42	26	18:04 (4)	20:40			21:33	22:08
19	08:40		15:12 (6)	07:47			06:41		17:40 (4)	06:26			05:27	05:02
	16:49	29	15:41 (6)	17:50			18:44	23	18:03 (4)	20:41			21:35	22:08
20	08:39		15:13 (6)	07:45			06:39		17:40 (4)	06:24			05:25	05:02
	16:51	28	15:41 (6)	17:52			18:46	21	18:19 (3)	20:43			21:37	22:09
21	08:38		15:14 (6)	07:42			06:36		17:43 (4)	06:22			05:24	05:02
	16:53	26	15:40 (6)	17:54			18:48	20	18:21 (3)	20:45			21:38	22:09
22	08:37		15:16 (6)	07:40			06:34		17:45 (4)	06:19			05:22	05:02
	16:54	24	15:40 (6)	17:56			18:50	17	18:23 (3)	20:47			21:40	22:09
23	08:36		15:17 (6)	07:38			06:31		18:14 (3)	06:17			05:21	05:02
	16:56	22	15:39 (6)	17:58			18:51	11	18:25 (3)	20:49			21:41	22:09
24	08:34		15:19 (6)	07:36			06:29		18:13 (3)	06:15			05:20	05:03
	16:58	19	15:38 (6)	18:00			18:53	13	18:26 (3)	20:51			21:43	22:09
25	08:33		15:20 (6)	07:33			06:26		18:13 (3)	06:13			05:18	05:03
	17:00	16	15:36 (6)	18:02			18:55	16	18:29 (3)	20:53			21:44	22:09
26	08:31		15:23 (6)	07:31			06:24		18:13 (3)	06:10			05:17	05:03
	17:02	11	15:34 (6)	18:04			18:57	18	18:31 (3)	20:54			21:46	22:09
27	08:30			07:29			06:21		18:13 (3)	06:08			05:16	05:04
	17:04			18:06			18:59	19	18:32 (3)	20:56			21:47	22:09
28	08:28		16:31 (5)	07:27			06:19		18:13 (3)	06:06			05:15	05:04
	17:06	2	16:33 (5)	18:08			19:01	21	18:34 (3)	20:58			21:48	22:09
29	08:27		16:29 (5)				07:16		19:13 (3)	06:04			05:13	05:05
	17:08	6	16:35 (5)				20:03	21	19:34 (3)	21:00			21:50	22:09
30	08:25		16:28 (5)				07:14		19:14 (3)	06:02			05:12	05:06
	17:10	9	16:37 (5)				20:04	19	19:33 (3)	21:02			21:51	22:09
31	08:24		16:28 (5)				07:12		19:15 (3)				05:11	
	17:12	12	16:40 (5)				20:06	16	19:31 (3)				21:52	
Potential sun hours	250			273			367			420			494	510
Total, worst case		810			425			532			10			
Sun reduction		0.16			0.19			0.22			0.31			
Oper. time red.		1.00			1.00			1.00			1.00			
Wind dir. red.		0.65			0.64			0.64			0.65			
Total reduction		0.10			0.12			0.14			0.20			
Total, real		85			53			75			2			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** AM - H041

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July	August	September		October		November		December	
1	05:06	05:46	06:41		07:34	18:17 (4)	07:32	15:55 (5)	08:27	14:48 (6)
	22:08	21:33	20:26		19:13 27	18:44 (4)	17:02 30	16:25 (5)	16:18 34	15:22 (6)
2	05:07	05:48	06:42		07:36	18:17 (4)	07:34	15:55 (5)	08:29	14:49 (6)
	22:08	21:31	20:24		19:10 24	18:41 (4)	17:00 30	16:25 (5)	16:17 34	15:23 (6)
3	05:08	05:50	06:44		07:38	18:17 (4)	07:36	15:55 (5)	08:30	14:49 (6)
	22:08	21:29	20:22		19:08 22	18:39 (4)	16:58 30	16:25 (5)	16:16 34	15:23 (6)
4	05:09	05:51	06:46		07:40	18:17 (4)	07:38	15:55 (5)	08:32	14:49 (6)
	22:07	21:28	20:19		19:05 20	18:37 (4)	16:56 29	16:24 (5)	16:15 35	15:24 (6)
5	05:10	05:53	06:48		07:41	18:18 (4)	07:40	15:55 (5)	08:33	14:50 (6)
	22:07	21:26	20:17		19:03 16	18:34 (4)	16:54 27	16:22 (5)	16:15 35	15:25 (6)
6	05:10	05:55	06:50		07:43	18:19 (4)	07:42	15:55 (5)	08:35	14:50 (6)
	22:06	21:24	20:14		19:00 13	18:32 (4)	16:52 25	16:20 (5)	16:14 35	15:25 (6)
7	05:11	05:57	06:51		07:45	18:20 (4)	07:44	15:56 (5)	08:36	14:50 (6)
	22:05	21:22	20:12		18:58 10	18:30 (4)	16:50 23	16:19 (5)	16:14 35	15:25 (6)
8	05:12	05:58	06:53		07:47	18:20 (4)	07:46	15:57 (5)	08:37	14:51 (6)
	22:05	21:20	20:09		18:56 6	18:26 (4)	16:49 20	16:17 (5)	16:13 35	15:26 (6)
9	05:14	06:00	06:55		07:49	18:22 (4)	07:48	15:57 (5)	08:39	14:51 (6)
	22:04	21:18	20:07		18:53 2	18:24 (4)	16:47 18	16:15 (5)	16:13 35	15:26 (6)
10	05:15	06:02	06:57		07:51		07:50	15:58 (5)	08:40	14:51 (6)
	22:03	21:16	20:04		18:51		16:45 15	16:13 (5)	16:13 35	15:26 (6)
11	05:16	06:04	06:58	19:10 (3)	07:52		07:52	15:59 (5)	08:41	14:53 (6)
	22:02	21:14	20:02 10	19:20 (3)	18:48		16:43 12	16:11 (5)	16:12 34	15:27 (6)
12	05:17	06:05	07:00	19:08 (3)	07:54		07:54	16:00 (5)	08:42	14:53 (6)
	22:01	21:12	20:00 15	19:23 (3)	18:46		16:42 9	16:09 (5)	16:12 34	15:27 (6)
13	05:18	06:07	07:02	19:06 (3)	07:56		07:56	16:01 (5)	08:43	14:53 (6)
	22:00	21:10	19:57 18	19:24 (3)	18:44		16:40 6	16:07 (5)	16:12 35	15:28 (6)
14	05:19	06:09	07:04	19:04 (3)	07:58		07:58	16:03 (5)	08:44	14:54 (6)
	21:59	21:07	19:55 20	19:24 (3)	18:41		16:38 2	16:05 (5)	16:12 34	15:28 (6)
15	05:21	06:11	07:05	19:03 (3)	08:00		07:59		08:45	14:54 (6)
	21:58	21:05	19:52 21	19:24 (3)	18:39		16:37		16:12 35	15:29 (6)
16	05:22	06:12	07:07	19:02 (3)	08:02		08:01	14:57 (6)	08:46	14:55 (6)
	21:57	21:03	19:50 20	19:22 (3)	18:37		16:35 11	15:08 (6)	16:12 34	15:29 (6)
17	05:23	06:14	07:09	19:01 (3)	08:04		08:03	14:54 (6)	08:47	14:56 (6)
	21:56	21:01	19:47 18	19:19 (3)	18:34		16:34 16	15:10 (6)	16:12 34	15:30 (6)
18	05:25	06:16	07:11	19:00 (3)	08:05		08:05	14:53 (6)	08:48	14:55 (6)
	21:55	20:59	19:45 16	19:16 (3)	18:32		16:32 19	15:12 (6)	16:13 34	15:29 (6)
19	05:26	06:18	07:13	19:00 (3)	08:07		08:07	14:52 (6)	08:48	14:56 (6)
	21:53	20:56	19:42 14	19:14 (3)	18:30		16:31 22	15:14 (6)	16:13 34	15:30 (6)
20	05:27	06:19	07:14	19:01 (3)	08:09		08:09	14:51 (6)	08:49	14:57 (6)
	21:52	20:54	19:40 11	19:12 (3)	18:28		16:29 24	15:15 (6)	16:13 34	15:31 (6)
21	05:29	06:21	07:16	18:33 (4)	08:11		08:11	14:50 (6)	08:50	14:57 (6)
	21:51	20:52	19:37 14	19:09 (3)	18:25		16:28 26	15:16 (6)	16:14 34	15:31 (6)
22	05:30	06:23	07:18	18:28 (4)	08:13		08:12	14:49 (6)	08:50	14:58 (6)
	21:49	20:50	19:35 19	19:06 (3)	18:23		16:27 28	15:17 (6)	16:14 34	15:32 (6)
23	05:32	06:25	07:20	18:26 (4)	08:15		08:14	14:49 (6)	08:51	14:58 (6)
	21:48	20:47	19:32 20	19:04 (3)	18:21		16:26 29	15:18 (6)	16:15 34	15:32 (6)
24	05:33	06:26	07:21	18:24 (4)	08:17	17:04 (5)	08:16	14:49 (6)	08:51	14:58 (6)
	21:46	20:45	19:30 22	18:46 (4)	18:19 13	17:17 (5)	16:24 30	15:19 (6)	16:15 34	15:32 (6)
25	05:35	06:28	07:23	18:22 (4)	07:19	16:02 (5)	08:18	14:48 (6)	08:51	14:59 (6)
	21:45	20:43	19:27 25	18:47 (4)	17:16 17	16:19 (5)	16:23 31	15:19 (6)	16:16 34	15:33 (6)
26	05:37	06:30	07:25	18:20 (4)	07:21	16:00 (5)	08:19	14:48 (6)	08:52	15:00 (6)
	21:43	20:41	19:25 27	18:47 (4)	17:14 21	16:21 (5)	16:22 31	15:19 (6)	16:17 34	15:34 (6)
27	05:38	06:32	07:27	18:19 (4)	07:23	15:58 (5)	08:21	14:48 (6)	08:52	15:00 (6)
	21:42	20:38	19:22 28	18:47 (4)	17:12 24	16:22 (5)	16:21 32	15:20 (6)	16:17 34	15:34 (6)
28	05:40	06:34	07:29	18:19 (4)	07:25	15:57 (5)	08:23	14:48 (6)	08:52	15:00 (6)
	21:40	20:36	19:20 29	18:48 (4)	17:10 26	16:23 (5)	16:20 33	15:21 (6)	16:18 34	15:34 (6)
29	05:41	06:35	07:30	18:18 (4)	07:27	15:57 (5)	08:24	14:48 (6)	08:52	15:01 (6)
	21:38	20:33	19:17 30	18:48 (4)	17:08 27	16:24 (5)	16:19 34	15:22 (6)	16:19 34	15:35 (6)
30	05:43	06:37	07:32	18:18 (4)	07:29	15:56 (5)	08:26	14:48 (6)	08:52	15:01 (6)
	21:37	20:31	19:15 29	18:47 (4)	17:06 29	16:25 (5)	16:18 34	15:22 (6)	16:20 34	15:35 (6)
31	05:45	06:39			07:30	15:56 (5)			08:52	15:02 (6)
	21:35	20:29			17:04 29	16:25 (5)			16:21 34	15:36 (6)
Potential sun hours	512	460	382		328		259		233	
Total, worst case				406		326		676		1063
Sun reduction				0.25		0.23		0.20		0.12
Oper. time red.				1.00		1.00		1.00		1.00
Wind dir. red.				0.64		0.64		0.65		0.65
Total reduction				0.16		0.14		0.13		0.08
Total, real				66		47		86		83

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** AN - H042

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:09	20:08	21:03	21:53	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:19	07:04	05:56	05:08	05:08	05:50	06:44	07:37	07:36	08:30
	16:24	17:18	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58	16:16
4	08:51	08:16	07:17	07:02	05:54	05:07	05:09	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:13	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52	05:07	05:09	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11	21:58	22:06	21:25	20:16	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50	05:06	05:10	05:55	06:49	07:43	07:42	08:35
	16:28	17:24	18:19	20:17	21:12	21:59	22:06	21:23	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:50	05:44	05:04	05:13	06:00	06:55	07:48	07:48	08:38
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:48	08:05	07:03	06:47	05:42	05:04	05:14	06:02	06:56	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:00	06:45	05:40	05:03	05:16	06:03	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:26	21:21	22:04	22:02	21:13	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:55	06:40	05:37	05:02	05:18	06:07	07:02	07:56	07:55	08:43
	16:39	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:26	22:06	21:59	21:07	19:54	18:41	16:38	16:12
15	08:44	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:43	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:01	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16:12
17	08:42	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:31	22:07	21:56	21:01	19:47	18:34	16:34	16:12
18	08:41	07:49	06:43	06:28	05:28	05:02	05:24	06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:39	21:33	22:08	21:54	20:58	19:44	18:32	16:32	16:12
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:08	21:52	20:54	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:24	05:02	05:29	06:21	07:16	08:11	08:10	08:49
	16:52	17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:13
22	08:37	07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:39	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:19	08:15	08:14	08:50
	16:56	17:58	18:51	20:49	21:41	22:09	21:47	20:47	19:32	18:21	16:25	16:14
24	08:34	07:35	06:29	06:15	05:19	05:03	05:33	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:42	22:09	21:46	20:45	19:30	18:18	16:24	16:15
25	08:33	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17	08:51
	17:00	18:02	18:55	20:52	21:44	22:09	21:44	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:22	08:21	08:52
	17:04	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	05:04	05:40	06:33	07:28	07:24	08:22	08:52
	17:06	18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	22:08	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11		05:44	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** AO - H043

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February			March			April	May	June
1	08:52		14:26 (10)	08:22			07:24		17:24 (8)	07:09	06:00	05:10
	16:22	53	15:44 (11)	17:13			18:09	18	17:42 (8)	20:08	21:03	21:53
2	08:52		14:27 (10)	08:20			07:22		17:24 (8)	07:06	05:57	05:09
	16:23	54	15:46 (11)	17:15			18:11	18	17:42 (8)	20:10	21:05	21:55
3	08:52		14:29 (10)	08:18			07:19		17:26 (8)	07:04	05:55	05:08
	16:24	52	15:47 (11)	17:17			18:13	14	17:40 (8)	20:12	21:07	21:56
4	08:51		14:29 (10)	08:16			07:17		17:28 (8)	07:02	05:53	05:07
	16:26	54	15:48 (11)	17:19			18:15	10	17:38 (8)	20:13	21:09	21:57
5	08:51		14:31 (10)	08:15			07:15			06:59	05:51	05:07
	16:27	53	15:50 (11)	17:21			18:17			20:15	21:11	21:58
6	08:51		14:31 (10)	08:13		16:49 (9)	07:12			06:57	05:49	05:06
	16:28	52	15:51 (11)	17:23	3	16:52 (9)	18:19			20:17	21:12	21:59
7	08:50		14:32 (10)	08:11		16:48 (9)	07:10			06:54	05:47	05:05
	16:30	51	15:51 (11)	17:25	7	16:55 (9)	18:21			20:19	21:14	22:00
8	08:50		14:34 (10)	08:09		16:47 (9)	07:08			06:52	05:46	05:05
	16:31	49	15:52 (11)	17:27	10	16:57 (9)	18:23			20:21	21:16	22:01
9	08:49		14:36 (10)	08:07		16:47 (9)	07:05			06:49	05:44	05:04
	16:32	46	15:52 (11)	17:30	12	16:59 (9)	18:25			20:23	21:18	22:02
10	08:49		14:37 (10)	08:05		16:46 (9)	07:03			06:47	05:42	05:03
	16:34	43	15:52 (11)	17:32	16	17:02 (9)	18:27			20:25	21:20	22:03
11	08:48		14:39 (10)	08:03		16:46 (9)	07:00			06:45	05:40	05:03
	16:35	40	15:52 (11)	17:34	18	17:04 (9)	18:29			20:26	21:21	22:04
12	08:47		14:42 (10)	08:01		16:46 (9)	06:58			06:42	05:38	05:03
	16:37	34	15:52 (11)	17:36	20	17:06 (9)	18:30			20:28	21:23	22:04
13	08:46		15:27 (11)	07:59		16:45 (9)	06:55			06:40	05:36	05:02
	16:39	26	15:53 (11)	17:38	22	17:07 (9)	18:32			20:30	21:25	22:05
14	08:45		15:28 (11)	07:57		16:45 (9)	06:53			06:38	05:35	05:02
	16:40	25	15:53 (11)	17:40	25	17:10 (9)	18:34			20:32	21:26	22:06
15	08:44		15:29 (11)	07:55		16:45 (9)	06:51			06:35	05:33	05:02
	16:42	24	15:53 (11)	17:42	27	17:12 (9)	18:36			20:34	21:28	22:06
16	08:44		15:30 (11)	07:53		16:46 (9)	06:48			06:33	05:31	05:02
	16:44	23	15:53 (11)	17:44	29	17:15 (9)	18:38			20:36	21:30	22:07
17	08:42		15:30 (11)	07:51		16:46 (9)	06:46			06:31	05:30	05:02
	16:45	22	15:52 (11)	17:46	29	17:15 (9)	18:40			20:38	21:31	22:07
18	08:41		15:32 (11)	07:49		16:46 (9)	06:43			06:28	05:28	05:01
	16:47	20	15:52 (11)	17:48	28	17:14 (9)	18:42			20:39	21:33	22:08
19	08:40		15:33 (11)	07:47		16:47 (9)	06:41			06:26	05:26	05:01
	16:49	18	15:51 (11)	17:50	26	17:13 (9)	18:44			20:41	21:35	22:08
20	08:39		15:34 (11)	07:44		16:48 (9)	06:38			06:24	05:25	05:02
	16:51	16	15:50 (11)	17:52	25	17:13 (9)	18:46			20:43	21:36	22:09
21	08:38		15:37 (11)	07:42		16:50 (9)	06:36			06:21	05:23	05:02
	16:52	12	15:49 (11)	17:54	23	17:26 (8)	18:47			20:45	21:38	22:09
22	08:37		15:40 (11)	07:40		16:51 (9)	06:33			06:19	05:22	05:02
	16:54	7	15:47 (11)	17:56	21	17:27 (8)	18:49			20:47	21:39	22:09
23	08:35			07:38		16:53 (9)	06:31			06:17	05:21	05:02
	16:56			17:58	20	17:29 (8)	18:51			20:49	21:41	22:09
24	08:34			07:35		16:58 (9)	06:29			06:15	05:19	05:02
	16:58			18:00	14	17:32 (8)	18:53			20:51	21:43	22:09
25	08:33			07:33		17:22 (8)	06:26			06:12	05:18	05:03
	17:00			18:01	11	17:33 (8)	18:55			20:52	21:44	22:09
26	08:31			07:31		17:22 (8)	06:24			06:10	05:17	05:03
	17:02			18:03	14	17:36 (8)	18:57			20:54	21:45	22:09
27	08:30			07:29		17:23 (8)	06:21			06:08	05:15	05:04
	17:04			18:05	15	17:38 (8)	18:59			20:56	21:47	22:09
28	08:28			07:26		17:23 (8)	06:19			06:06	05:14	05:04
	17:06			18:07	17	17:40 (8)	19:00			20:58	21:48	22:09
29	08:27						07:16			06:04	05:13	05:05
	17:08						20:02			21:00	21:50	22:09
30	08:25						07:14			06:02	05:12	05:05
	17:10						20:04			21:02	21:51	22:09
31	08:23						07:11				05:11	
	17:11						20:06				21:52	
Potential sun hours	250			273			367			420	494	510
Total, worst case		774			432			60				
Sun reduction		0.16			0.19			0.22				
Oper. time red.		1.00			1.00			1.00				
Wind dir. red.		0.65			0.64			0.65				
Total reduction		0.11			0.13			0.14				
Total, real		82			54			9				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** AO - H043

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July	August	September	October			November			December		
1	05:06	05:46	06:40	07:34			07:32		16:16 (9)	08:27		14:22 (10)
	22:08	21:33	20:26	19:12			17:02	15	16:31 (9)	16:17	39	15:34 (11)
2	05:07	05:48	06:42	07:36			07:34		16:16 (9)	08:29		14:20 (10)
	22:08	21:31	20:24	19:10			17:00	12	16:28 (9)	16:16	43	15:35 (11)
3	05:08	05:49	06:44	07:37			07:36		16:17 (9)	08:30		14:19 (10)
	22:07	21:29	20:21	19:07			16:58	9	16:26 (9)	16:16	46	15:35 (11)
4	05:08	05:51	06:46	07:39			07:38		16:18 (9)	08:32		14:18 (10)
	22:07	21:27	20:19	19:05			16:56	6	16:24 (9)	16:15	49	15:36 (11)
5	05:09	05:53	06:48	07:41			07:40		16:19 (9)	08:33		14:17 (10)
	22:06	21:25	20:16	19:03			16:54	3	16:22 (9)	16:14	51	15:36 (11)
6	05:10	05:55	06:49	07:43			07:42			08:35		14:17 (10)
	22:06	21:24	20:14	19:00			16:52			16:14	53	15:37 (11)
7	05:11	05:56	06:51	07:45			07:44			08:36		14:17 (10)
	22:05	21:22	20:12	18:58			16:50			16:13	52	15:36 (11)
8	05:12	05:58	06:53	07:47			07:46			08:37		14:17 (10)
	22:04	21:20	20:09	18:55			16:48			16:13	53	15:36 (11)
9	05:13	06:00	06:55	07:48		18:04 (8)	07:48			08:38		14:17 (10)
	22:04	21:18	20:07	18:53	6	18:10 (8)	16:46			16:13	52	15:35 (11)
10	05:14	06:01	06:56	07:50		18:01 (8)	07:50			08:40		14:16 (10)
	22:03	21:16	20:04	18:50	12	18:13 (8)	16:45			16:12	54	15:35 (11)
11	05:15	06:03	06:58	07:52		17:59 (8)	07:52			08:41		14:17 (10)
	22:02	21:13	20:02	18:48	16	18:15 (8)	16:43			16:12	54	15:35 (11)
12	05:17	06:05	07:00	07:54		17:57 (8)	07:54			08:42		14:17 (10)
	22:01	21:11	19:59	18:46	19	18:16 (8)	16:41			16:12	54	15:35 (11)
13	05:18	06:07	07:02	07:56		17:56 (8)	07:55			08:43		14:17 (10)
	22:00	21:09	19:57	18:43	18	18:14 (8)	16:40			16:12	53	15:34 (11)
14	05:19	06:08	07:03	07:58		17:56 (8)	07:57			08:44		14:17 (10)
	21:59	21:07	19:54	18:41	16	18:12 (8)	16:38			16:12	53	15:34 (11)
15	05:20	06:10	07:05	08:00		17:55 (8)	07:59			08:45		14:18 (10)
	21:58	21:05	19:52	18:39	14	18:09 (8)	16:36			16:12	52	15:34 (11)
16	05:22	06:12	07:07	08:01		17:55 (8)	08:01			08:46		14:18 (10)
	21:57	21:03	19:49	18:36	12	18:07 (8)	16:35			16:12	53	15:34 (11)
17	05:23	06:14	07:09	08:03		17:54 (8)	08:03			08:47		14:18 (10)
	21:56	21:01	19:47	18:34	11	18:05 (8)	16:33			16:12	53	15:34 (11)
18	05:24	06:16	07:11	08:05		17:27 (9)	08:05			08:47		14:18 (10)
	21:54	20:59	19:44	18:32	16	18:02 (8)	16:32			16:12	52	15:34 (11)
19	05:26	06:17	07:12	08:07		17:24 (9)	08:07			08:48		14:19 (10)
	21:53	20:56	19:42	18:30	20	18:00 (8)	16:31			16:13	52	15:35 (11)
20	05:27	06:19	07:14	08:09		17:21 (9)	08:09		15:14 (11)	08:49		14:20 (10)
	21:52	20:54	19:39	18:27	23	17:58 (8)	16:29	7	15:21 (11)	16:13	52	15:35 (11)
21	05:29	06:21	07:16	08:11		17:20 (9)	08:10		15:12 (11)	08:49		14:19 (10)
	21:50	20:52	19:37	18:25	22	17:42 (9)	16:28	12	15:24 (11)	16:13	53	15:35 (11)
22	05:30	06:23	07:18	08:13		17:18 (9)	08:12		15:10 (11)	08:50		14:20 (10)
	21:49	20:50	19:35	18:23	25	17:43 (9)	16:27	16	15:26 (11)	16:14	53	15:36 (11)
23	05:32	06:24	07:19	08:15		17:17 (9)	08:14		15:10 (11)	08:50		14:21 (10)
	21:48	20:47	19:32	18:21	27	17:44 (9)	16:25	17	15:27 (11)	16:14	52	15:36 (11)
24	05:33	06:26	07:21	08:17		17:16 (9)	08:16		15:09 (11)	08:51		14:21 (10)
	21:46	20:45	19:30	18:18	29	17:45 (9)	16:24	20	15:29 (11)	16:15	52	15:36 (11)
25	05:35	06:28	07:23	07:19		16:16 (9)	08:17		15:09 (11)	08:51		14:22 (10)
	21:45	20:43	19:27	17:16	29	16:45 (9)	16:23	21	15:30 (11)	16:16	52	15:38 (11)
26	05:36	06:30	07:25	07:21		16:15 (9)	08:19		15:08 (11)	08:52		14:22 (10)
	21:43	20:40	19:25	17:14	28	16:43 (9)	16:22	23	15:31 (11)	16:16	53	15:38 (11)
27	05:38	06:32	07:27	07:22		16:15 (9)	08:21		15:08 (11)	08:52		14:23 (10)
	21:41	20:38	19:22	17:12	26	16:41 (9)	16:21	24	15:32 (11)	16:17	53	15:39 (11)
28	05:39	06:33	07:28	07:24		16:15 (9)	08:22		15:08 (11)	08:52		14:23 (10)
	21:40	20:36	19:20	17:10	24	16:39 (9)	16:20	25	15:33 (11)	16:18	53	15:40 (11)
29	05:41	06:35	07:30	07:26		16:14 (9)	08:24		15:08 (11)	08:52		14:24 (10)
	21:38	20:33	19:17	17:08	23	16:37 (9)	16:19	26	15:34 (11)	16:19	53	15:41 (11)
30	05:43	06:37	07:32	07:28		16:14 (9)	08:26		14:24 (10)	08:52		14:25 (10)
	21:36	20:31	19:15	17:06	20	16:34 (9)	16:18	33	15:34 (11)	16:20	53	15:42 (11)
31	05:44	06:39		07:30		16:16 (9)				08:52		14:26 (10)
	21:35	20:29		17:04	17	16:33 (9)				16:21	53	15:43 (11)
Potential sun hours	513	460	382	328			259			233		
Total, worst case					453			269			1600	
Sun reduction					0.23			0.20			0.12	
Oper. time red.					1.00			1.00			1.00	
Wind dir. red.					0.64			0.65			0.65	
Total reduction					0.15			0.13			0.08	
Total, real					66			35			125	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** AP - H044

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:11	05:07	05:47	06:17 (4) 06:41	07:08 (5) 07:34	07:33	08:28
	16:23	17:14	18:10	20:08	21:04	21:54	22:09	21:33 14	06:31 (4) 20:26 18	07:26 (5) 19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:10	05:07	05:48	06:19 (4) 06:43	07:10 (5) 07:36	07:35	08:29
	16:24	17:16	18:12	20:10	21:06	21:55	22:08	21:31 13	06:32 (4) 20:24 16	07:26 (5) 19:10	17:00	16:17
3	08:52	08:19	07:20	07:04	05:56	05:09	05:08	05:50	06:20 (4) 06:44	07:12 (5) 07:38	07:36	08:31
	16:25	17:18	18:14	20:12	21:07	21:56	22:08	21:30 11	06:31 (4) 20:22 14	07:26 (5) 19:08	16:58	16:16
4	08:52	08:17	07:17	07:02 07:26 (5)	05:54	05:08	05:09	05:52	06:22 (4) 06:46	07:13 (5) 07:40	07:38	08:32
	16:26	17:20	18:16	20:14 1	07:27 (5) 21:09	21:57	22:07	21:28 9	06:31 (4) 20:19 12	07:25 (5) 19:05	16:56	16:16
5	08:51	08:15	07:15	07:00 07:23 (5)	05:52	05:07	05:10	05:53	06:23 (4) 06:48	07:15 (5) 07:41	07:40	08:33
	16:27	17:22	18:18	20:16 4	07:27 (5) 21:11	21:58	22:07	21:26 7	06:30 (4) 20:17 10	07:25 (5) 19:03	16:54	16:15
6	08:51	08:13	07:13	06:57 07:21 (5)	05:50 06:16 (4)	05:06	05:11	05:55	06:25 (4) 06:50	07:17 (5) 07:43	07:42	08:35
	16:29	17:24	18:19	20:18 7	07:28 (5) 21:13 3	06:19 (4) 21:59	22:06	21:24 5	06:30 (4) 20:14 7	07:24 (5) 19:01	16:52	16:14
7	08:51	08:11	07:10	06:55 07:19 (5)	05:48 06:15 (4)	05:06	05:12	05:57	06:27 (4) 06:52	07:18 (5) 07:45	07:44	08:36
	16:30	17:26	18:21	20:19 10	07:29 (5) 21:15 5	06:20 (4) 22:00	22:05	21:22 2	06:29 (4) 20:12 4	07:22 (5) 18:58	16:51	16:14
8	08:50	08:09	07:08	06:52 07:16 (5)	05:46 06:13 (4)	05:05	05:13	05:58	06:53	07:20 (5) 07:47	07:46	08:38
	16:31	17:28	18:23	20:21 12	07:28 (5) 21:16 8	06:21 (4) 22:01	22:05	21:20	20:10 1	07:21 (5) 18:56	16:49	16:14
9	08:49	08:07	07:06	06:50 07:14 (5)	05:44 06:11 (4)	05:04	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23 14	07:28 (5) 21:18 10	06:21 (4) 22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:06	07:03	06:47 07:11 (5)	05:42 06:09 (4)	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25 17	07:28 (5) 21:20 11	06:20 (4) 22:03	22:03	21:16	20:05	18:51	16:45	16:13
11	08:48	08:04	07:01	06:45 07:09 (5)	05:40 06:08 (4)	05:04	05:16	06:04	06:59	07:53	07:52	08:41
	16:36	17:34	18:29	20:27 18	07:27 (5) 21:22 13	06:21 (4) 22:04	22:02	21:14	20:02	18:49	16:43	16:13
12	08:47	08:02	06:58	06:43 07:07 (5)	05:39 06:06 (4)	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29 20	07:27 (5) 21:23 15	06:21 (4) 22:05	22:01	21:12	20:00	18:46	16:42	16:12
13	08:47	08:00	06:56	06:40 07:04 (5)	05:37 06:04 (4)	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:31 21	07:25 (5) 21:25 16	06:20 (4) 22:05	22:00	21:10	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38 07:04 (5)	05:35 06:03 (4)	05:03	05:20	06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32 21	07:25 (5) 21:27 18	06:21 (4) 22:06	21:59	21:08	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:36 07:06 (5)	05:33 06:01 (4)	05:02	05:21	06:11	07:06	08:00	08:00	08:45
	16:42	17:42	18:37	20:34 17	07:23 (5) 21:28 19	06:20 (4) 22:07	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:49	06:33 07:07 (5)	05:32 06:00 (4)	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36 15	07:22 (5) 21:30 20	06:20 (4) 22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31 07:09 (5)	05:30 05:58 (4)	05:02	05:24	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38 9	07:18 (5) 21:32 22	06:20 (4) 22:08	21:56	21:01	19:47	18:35	16:34	16:13
18	08:42	07:49	06:44	06:29	05:29 05:57 (4)	05:02	05:25 06:14 (4)	06:16	07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40	21:33 23	06:20 (4) 22:08	21:55 8 06:22 (4)	20:59	19:45	18:32	16:32	16:13
19	08:41	07:47	06:41	06:26	05:27 05:57 (4)	05:02	05:26 06:12 (4)	06:18	07:13	08:08	08:07	08:48
	16:49	17:50	18:44	20:42	21:35 21	06:18 (4) 22:09	21:53 12 06:24 (4)	20:57	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25 05:58 (4)	05:02	05:28 06:11 (4)	06:20	07:15	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:37 20	06:18 (4) 22:09	21:52 15 06:26 (4)	20:54	19:40	18:28	16:30	16:13
21	08:38	07:43	06:36	06:22	05:24 05:59 (4)	05:02	05:29 06:10 (4)	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38 19	06:18 (4) 22:09	21:51 17 06:27 (4)	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:20	05:23 06:00 (4)	05:02	05:31 06:09 (4)	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40 17	06:17 (4) 22:09	21:49 18 06:27 (4)	20:50	19:35	18:23	16:27	16:14
23	08:36	07:38	06:31	06:17	05:21 06:00 (4)	05:03	05:32 06:09 (4)	06:25	07:20	08:15	08:14	08:51
	16:57	17:58	18:52	20:49	21:41 16	06:16 (4) 22:09	21:48 20 06:29 (4)	20:48	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20 06:02 (4)	05:03	05:34 06:08 (4)	06:27	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43 13	06:15 (4) 22:10	21:46 21 06:29 (4)	20:45	19:30	18:19	16:25	16:15
25	08:33	07:34	06:26	06:13	05:18 06:03 (4)	05:03	05:35 06:08 (4)	06:28	07:23	07:19	08:18	08:52
	17:00	18:02	18:55	20:53	21:44 10	06:13 (4) 22:10	21:45 22 06:30 (4)	20:43	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17 06:06 (4)	05:04	05:37 06:08 (4)	06:30 07:11 (5)	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:55	21:46 5 06:11 (4)	22:10	21:43 22 06:30 (4)	20:41 10	07:21 (5) 19:25	17:14	16:22	16:17
27	08:30	07:29	06:22	06:09	05:16	05:04	05:38 06:09 (4)	06:32	07:09 (5) 07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:42 21 06:30 (4)	20:38 15	07:24 (5) 19:23	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	05:15	05:05	05:40 06:11 (4)	06:34	07:06 (5) 07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:49	22:09	21:40 20 06:31 (4)	20:36 18	07:24 (5) 19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	05:14	05:05	05:42 06:12 (4)	06:36	07:05 (5) 07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38 19 06:31 (4)	20:34 20	07:25 (5) 19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	05:13	05:06	05:43 06:14 (4)	06:37	07:05 (5) 07:32	07:29	08:26	08:52
	17:10		20:05	21:02	21:51	22:09	21:37 17 06:31 (4)	20:31 21	07:26 (5) 19:15	17:06	16:19	16:20
31	08:24		07:12		05:11		05:45 06:16 (4)	06:39	07:07 (5)	07:31		08:52
	17:12		20:06		21:53		21:35 16 06:32 (4)	20:29 20	07:27 (5)	17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case				186	304		248	165	82			
Sun reduction				0.31	0.31		0.22	0.26	0.25			
Oper. time red.				1.00	1.00		1.00	1.00	1.00			
Wind dir. red.				0.64	0.65		0.65	0.64	0.64			
Total reduction				0.20	0.20		0.14	0.17	0.16			
Total, real				37	62		36	27	13			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** AQ - H045

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February	March	April	May	June	July	August	September	October	November	December		
1	08:52		14:27 (8)	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27		
	16:22	20	14:47 (8)	17:14	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02	16:17		
2	08:52		14:28 (8)	08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34	08:29		
	16:23	19	14:47 (8)	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:16		
3	08:52		14:30 (8)	08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:38	07:36	08:30		
	16:24	17	14:47 (8)	17:18	18:13	20:12	21:07	21:56	22:08	21:29	20:21	19:07	16:58	16:16		
4	08:52		14:31 (8)	08:17	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38	08:32		
	16:26	15	14:46 (8)	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15		
5	08:51		14:33 (8)	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40	08:33		
	16:27	12	14:45 (8)	17:22	18:17	20:15	21:11	21:58	22:06	21:26	20:17	19:03	16:54	16:15		
6	08:51		14:35 (8)	08:13	07:12	06:57	05:49	05:06	05:10	05:55	06:49	07:43	07:42	08:35		14:21 (8)
	16:28	9	14:44 (8)	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14	9	14:30 (8)
7	08:50			08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44	08:36		14:19 (8)
	16:30			17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:13	12	14:31 (8)
8	08:50			08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37		14:19 (8)
	16:31			17:28	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48	16:13	15	14:34 (8)
9	08:49			08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:49	07:48	08:39		14:18 (8)
	16:32			17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46	16:13	17	14:35 (8)
10	08:49			08:05	07:03	06:47	05:42	05:04	05:14	06:02	06:56	07:50	07:50	08:40		14:17 (8)
	16:34			17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:12	19	14:36 (8)
11	08:48			08:03	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52	08:41		14:18 (8)
	16:35			17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:12	20	14:38 (8)
12	08:47			08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42		14:18 (8)
	16:37			17:36	18:31	20:28	21:23	22:05	22:01	21:11	19:59	18:46	16:41	16:12	21	14:39 (8)
13	08:46			07:59	06:56	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:56	08:43		14:17 (8)
	16:39			17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12	22	14:39 (8)
14	08:45			07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57	08:44		14:17 (8)
	16:40			17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38	16:12	23	14:40 (8)
15	08:45			07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59	08:45		14:18 (8)
	16:42			17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36	16:12	23	14:41 (8)
16	08:44			07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01	08:46		14:18 (8)
	16:44			17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16:12	24	14:42 (8)
17	08:43			07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03	08:47		14:18 (8)
	16:45			17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:33	16:12	25	14:43 (8)
18	08:41			07:49	06:43	06:28	05:28	05:02	05:24	06:16	07:11	08:05	08:05	08:48		14:18 (8)
	16:47			17:48	18:42	20:39	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:12	25	14:43 (8)
19	08:40			07:47	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07	08:48		14:18 (8)
	16:49			17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13	25	14:43 (8)
20	08:39			07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49		14:19 (8)
	16:51			17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29	16:13	25	14:44 (8)
21	08:38			07:42	06:36	06:21	05:24	05:02	05:29	06:21	07:16	08:11	08:10	08:50		14:19 (8)
	16:52			17:54	18:48	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:13	25	14:44 (8)
22	08:37			07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50		14:20 (8)
	16:54			17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14	25	14:45 (8)
23	08:35			07:38	06:31	06:17	05:21	05:02	05:32	06:24	07:20	08:15	08:14	08:51		14:20 (8)
	16:56			17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	16:14	25	14:45 (8)
24	08:34			07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16	08:51		14:20 (8)
	16:58			18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24	16:15	25	14:45 (8)
25	08:33			07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51		14:22 (8)
	17:00			18:02	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	16:16	25	14:47 (8)
26	08:31			07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:52		14:22 (8)
	17:02			18:04	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22	16:16	25	14:47 (8)
27	08:30			07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21	08:52		14:23 (8)
	17:04			18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17	24	14:47 (8)
28	08:28			07:26	06:19	06:06	05:14	05:04	05:40	06:33	07:28	07:25	08:23	08:52		14:23 (8)
	17:06			18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18	24	14:47 (8)
29	08:27				07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52		14:24 (8)
	17:08				20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19	23	14:47 (8)
30	08:25				07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26	08:52		14:25 (8)
	17:10				20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20	22	14:47 (8)
31	08:23				07:11		05:11		05:44	06:39		07:30		08:52		14:26 (8)
	17:12				20:06		21:52		21:35	20:29		17:04		16:21	22	14:48 (8)
Potential sun hours	250			273	367	420	494	510	513	460	382	328	259	233		
Total, worst case		92													570	
Sun reduction		0.16													0.12	
Oper. time red.		1.00													1.00	
Wind dir. red.		0.66													0.66	
Total reduction		0.11													0.08	
Total, real		10													45	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** AR - H046

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February			March			April		May	June
1	08:52		10:44 (2)	08:22		08:50 (4)	07:24		07:49 (1)	07:09		06:00	05:10
	16:23	37	11:21 (2)	17:14	18	09:08 (3)	18:10	27	08:16 (1)	20:08		21:04	21:54
2	08:52		10:44 (2)	08:20		08:48 (4)	07:22		07:47 (1)	07:07		05:58	05:09
	16:24	36	11:20 (2)	17:16	21	09:09 (3)	18:12	30	08:17 (1)	20:10		21:06	21:55
3	08:52		10:46 (2)	08:19		08:46 (4)	07:20		07:44 (1)	07:04		05:56	05:09
	16:25	35	11:21 (2)	17:18	23	09:09 (3)	18:14	33	08:17 (1)	20:12		21:07	21:56
4	08:52		10:46 (2)	08:17		08:44 (4)	07:17		07:42 (1)	07:02		05:54	05:08
	16:26	34	11:20 (2)	17:20	25	09:09 (3)	18:16	36	08:18 (1)	20:14		21:09	21:57
5	08:51		10:47 (2)	08:15		08:42 (4)	07:15		07:39 (1)	07:00		05:52	05:07
	16:27	34	11:21 (2)	17:22	27	09:09 (3)	18:17	39	08:18 (1)	20:16		21:11	21:58
6	08:51		10:48 (2)	08:13		08:40 (4)	07:13		07:37 (1)	06:57		05:50	05:06
	16:29	32	11:20 (2)	17:24	29	09:09 (3)	18:19	41	08:18 (1)	20:18		21:13	22:00
7	08:51		10:50 (2)	08:11		08:39 (4)	07:10		07:35 (1)	06:55		05:48	05:06
	16:30	30	11:20 (2)	17:26	30	09:09 (3)	18:21	44	08:19 (1)	20:19		21:15	22:01
8	08:50		10:51 (2)	08:09		08:39 (4)	07:08		07:33 (1)	06:52		05:46	05:05
	16:31	29	11:20 (2)	17:28	29	09:08 (3)	18:23	45	08:18 (1)	20:21		21:16	22:01
9	08:50		10:52 (2)	08:08		08:40 (4)	07:06		07:33 (1)	06:50		05:44	05:04
	16:33	27	11:19 (2)	17:30	28	09:08 (3)	18:25	46	08:19 (1)	20:23		21:18	22:02
10	08:49		10:53 (2)	08:06		08:41 (4)	07:03		07:32 (1)	06:47		05:42	05:04
	16:34	25	11:18 (2)	17:32	26	09:07 (3)	18:27	46	08:18 (1)	20:25		21:20	22:03
11	08:48		10:55 (2)	08:04		08:43 (4)	07:01		07:33 (1)	06:45		05:40	05:03
	16:36	22	11:17 (2)	17:34	24	09:07 (3)	18:29	45	08:18 (1)	20:27		21:22	22:04
12	08:47		10:57 (2)	08:02		08:45 (3)	06:58		07:32 (1)	06:43		05:39	05:03
	16:37	19	11:16 (2)	17:36	20	09:05 (3)	18:31	45	08:17 (1)	20:29		21:23	22:05
13	08:47		10:59 (2)	08:00		08:47 (3)	06:56		07:33 (1)	06:40		05:37	05:03
	16:39	15	11:14 (2)	17:38	17	09:04 (3)	18:33	43	08:16 (1)	20:31		21:25	22:06
14	08:46		11:03 (2)	07:58		08:49 (3)	06:53		07:32 (1)	06:38		05:35	05:02
	16:41	8	11:11 (2)	17:40	13	09:02 (3)	18:35	43	08:15 (1)	20:32		21:27	22:06
15	08:45			07:55		08:53 (3)	06:51		07:33 (1)	06:36		05:33	05:02
	16:42			17:42	3	08:56 (3)	18:37	42	08:15 (1)	20:34		21:29	22:07
16	08:44			07:53			06:49		07:33 (1)	06:33		05:32	05:02
	16:44			17:44			18:38	40	08:13 (1)	20:36		21:30	22:07
17	08:43			07:51			06:46		07:34 (1)	06:31		05:30	05:02
	16:46			17:46			18:40	38	08:12 (1)	20:38		21:32	22:08
18	08:42			07:49			06:44		07:34 (1)	06:29		05:28	05:02
	16:47			17:48			18:42	36	08:10 (1)	20:40		21:34	22:08
19	08:41			07:47			06:41		07:36 (1)	06:26		05:27	05:02
	16:49			17:50			18:44	33	08:09 (1)	20:42		21:35	22:09
20	08:39			07:45			06:39		07:38 (1)	06:24		05:25	05:02
	16:51			17:52			18:46	29	08:07 (1)	20:44		21:37	22:09
21	08:38			07:43			06:36		07:39 (1)	06:22		05:24	05:02
	16:53			17:54			18:48	25	08:04 (1)	20:45		21:38	22:09
22	08:37			07:40			06:34		07:41 (1)	06:20		05:22	05:02
	16:55			17:56			18:50	21	08:02 (1)	20:47		21:40	22:09
23	08:36			07:38		08:03 (1)	06:31		07:44 (1)	06:17		05:21	05:03
	16:56			17:58	1	08:04 (1)	18:52	13	07:57 (1)	20:49		21:41	22:10
24	08:34			07:36		08:01 (1)	06:29			06:15		05:20	05:03
	16:58			18:00	7	08:08 (1)	18:53			20:51		21:43	22:10
25	08:33			07:34		07:59 (1)	06:26			06:13		05:18	05:03
	17:00			18:02	12	08:11 (1)	18:55			20:53		21:44	22:10
26	08:32		09:01 (3)	07:31		07:56 (1)	06:24			06:11		05:17	05:04
	17:02	2	09:03 (3)	18:04	16	08:12 (1)	18:57			20:55		21:46	22:10
27	08:30		08:59 (3)	07:29		07:54 (1)	06:22			06:08		05:16	05:04
	17:04	5	09:04 (3)	18:06	20	08:14 (1)	18:59			20:56		21:47	22:10
28	08:29		08:57 (3)	07:27		07:52 (1)	06:19			06:06		05:15	05:05
	17:06	8	09:05 (3)	18:08	23	08:15 (1)	19:01			20:58		21:49	22:09
29	08:27		08:55 (4)				07:17			06:04		05:14	05:05
	17:08	11	09:06 (3)				20:03			21:00		21:50	22:09
30	08:25		08:54 (4)				07:14			06:02		05:12	05:06
	17:10	13	09:07 (3)				20:05			21:02		21:51	22:09
31	08:24		08:52 (4)				07:12					05:11	
	17:12	16	09:08 (3)				20:06					21:53	
Potential sun hours	250			273			367			420		494	510
Total, worst case		438			412			840					
Sun reduction		0.16			0.19			0.22					
Oper. time red.		1.00			1.00			1.00					
Wind dir. red.		0.63			0.60			0.63					
Total reduction		0.10			0.12			0.14					
Total, real		44			49			116					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** AR - H046

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August		September			October			November			December		
1	05:06		05:46		06:41			07:34		08:12 (1)	07:33		08:11 (4)	08:28		10:37 (2)
	22:09		21:33		20:27			19:13	44	08:56 (1)	17:02	26	08:37 (3)	16:18	22	10:59 (2)
2	05:07		05:48		06:43			07:36		08:11 (1)	07:35		08:10 (4)	08:29		10:36 (2)
	22:08		21:31		20:24			19:10	45	08:56 (1)	17:00	28	08:38 (3)	16:17	25	11:01 (2)
3	05:08		05:50		06:44			07:38		08:10 (1)	07:36		08:09 (4)	08:31		10:36 (2)
	22:08		21:30		20:22			19:08	46	08:56 (1)	16:58	29	08:38 (3)	16:16	27	11:03 (2)
4	05:09		05:52		06:46			07:40		08:10 (1)	07:38		08:08 (4)	08:32		10:35 (2)
	22:07		21:28		20:19			19:05	45	08:55 (1)	16:56	30	08:38 (3)	16:16	29	11:04 (2)
5	05:10		05:53		06:48			07:42		08:10 (1)	07:40		08:10 (4)	08:34		10:35 (2)
	22:07		21:26		20:17			19:03	45	08:55 (1)	16:54	29	08:39 (3)	16:15	30	11:05 (2)
6	05:11		05:55		06:50			07:43		08:10 (1)	07:42		08:13 (4)	08:35		10:34 (2)
	22:06		21:24		20:14			19:01	45	08:55 (1)	16:52	27	08:40 (3)	16:14	32	11:06 (2)
7	05:12		05:57		06:52			07:45		08:12 (1)	07:44		08:15 (4)	08:36		10:35 (2)
	22:05		21:22		20:12			18:58	43	08:55 (1)	16:50	25	08:40 (3)	16:14	33	11:08 (2)
8	05:13		05:58		06:53			07:47		08:14 (1)	07:46		08:17 (4)	08:38		10:34 (2)
	22:05		21:20		20:10			18:56	40	08:54 (1)	16:49	23	08:40 (3)	16:13	34	11:08 (2)
9	05:14		06:00		06:55			07:49		08:16 (1)	07:48		08:19 (4)	08:39		10:34 (2)
	22:04		21:18		20:07			18:53	37	08:53 (1)	16:47	20	08:39 (3)	16:13	35	11:09 (2)
10	05:15		06:02		06:57			07:51		08:17 (1)	07:50		08:21 (4)	08:40		10:35 (2)
	22:03		21:16		20:05			18:51	35	08:52 (1)	16:45	18	08:39 (3)	16:13	35	11:10 (2)
11	05:16		06:04		06:59			07:53		08:19 (1)	07:52		08:23 (4)	08:41		10:34 (2)
	22:02		21:14		20:02			18:49	32	08:51 (1)	16:43	16	08:39 (3)	16:13	37	11:11 (2)
12	05:17		06:05		07:00			07:54		08:21 (1)	07:54		08:25 (4)	08:42		10:34 (2)
	22:01		21:12		20:00			18:46	29	08:50 (1)	16:42	13	08:38 (3)	16:12	38	11:12 (2)
13	05:18		06:07		07:02			07:56		08:23 (1)	07:56		08:27 (4)	08:43		10:34 (2)
	22:00		21:10		19:57			18:44	25	08:48 (1)	16:40	11	08:38 (3)	16:12	38	11:12 (2)
14	05:19		06:09		07:04			07:58		08:25 (1)	07:58		08:30 (3)	08:44		10:35 (2)
	21:59		21:08		19:55			18:41	22	08:47 (1)	16:38	8	08:38 (3)	16:12	38	11:13 (2)
15	05:21		06:11		07:06			08:00		08:27 (1)	08:00		08:32 (3)	08:45		10:35 (2)
	21:58		21:05		19:52			18:39	18	08:45 (1)	16:37	5	08:37 (3)	16:12	39	11:14 (2)
16	05:22		06:12		07:07			08:02		08:29 (1)	08:02		08:34 (3)	08:46		10:35 (2)
	21:57		21:03		19:50			18:37	14	08:43 (1)	16:35	2	08:36 (3)	16:12	39	11:14 (2)
17	05:23		06:14		07:09			08:04		08:31 (1)	08:03			08:47		10:36 (2)
	21:56		21:01		19:47			18:34	10	08:41 (1)	16:34			16:13	39	11:15 (2)
18	05:25		06:16		07:11			08:06		08:33 (1)	08:05			08:48		10:36 (2)
	21:55		20:59		19:45			18:32	5	08:38 (1)	16:32			16:13	40	11:16 (2)
19	05:26		06:18		07:13			08:08			08:07			08:49		10:36 (2)
	21:53		20:57		19:42			18:30			16:31			16:13	40	11:16 (2)
20	05:28		06:20		07:15		08:32 (1)	08:09			08:09			08:49		10:37 (2)
	21:52		20:54		19:40	10	08:42 (1)	18:28			16:30			16:13	40	11:17 (2)
21	05:29		06:21		07:16		08:28 (1)	08:11			08:11			08:50		10:37 (2)
	21:51		20:52		19:37	19	08:47 (1)	18:25			16:28			16:14	40	11:17 (2)
22	05:31		06:23		07:18		08:24 (1)	08:13			08:13			08:50		10:38 (2)
	21:49		20:50		19:35	24	08:48 (1)	18:23			16:27			16:14	40	11:18 (2)
23	05:32		06:25		07:20		08:22 (1)	08:15			08:14			08:51		10:38 (2)
	21:48		20:48		19:32	28	08:50 (1)	18:21			16:26			16:15	40	11:18 (2)
24	05:34		06:27		07:22		08:20 (1)	08:17			08:16			08:51		10:39 (2)
	21:46		20:45		19:30	32	08:52 (1)	18:19			16:25			16:15	40	11:19 (2)
25	05:35		06:28		07:23		08:19 (1)	07:19			08:18			08:52		10:39 (2)
	21:45		20:43		19:27	34	08:53 (1)	17:17			16:23			16:16	40	11:19 (2)
26	05:37		06:30		07:25		08:16 (1)	07:21			08:20			08:52		10:40 (2)
	21:43		20:41		19:25	38	08:54 (1)	17:14			16:22			16:17	39	11:19 (2)
27	05:38		06:32		07:27		08:15 (1)	07:23		08:22 (3)	08:21			08:52		10:40 (2)
	21:42		20:38		19:23	39	08:54 (1)	17:12	7	08:29 (3)	16:21			16:17	39	11:19 (2)
28	05:40		06:34		07:29		08:14 (1)	07:25		08:18 (3)	08:23		10:44 (2)	08:52		10:41 (2)
	21:40		20:36		19:20	41	08:55 (1)	17:10	14	08:32 (3)	16:20	6	10:50 (2)	16:18	39	11:20 (2)
29	05:42		06:36		07:31		08:13 (1)	07:27		08:16 (3)	08:25		10:41 (2)	08:52		10:41 (2)
	21:38		20:34		19:18	43	08:56 (1)	17:08	18	08:34 (3)	16:19	14	10:55 (2)	16:19	39	11:20 (2)
30	05:43		06:37		07:32		08:13 (1)	07:29		08:14 (3)	08:26		10:39 (2)	08:53		10:42 (2)
	21:37		20:31		19:15	43	08:56 (1)	17:06	21	08:35 (3)	16:18	19	10:58 (2)	16:20	38	11:20 (2)
31	05:45		06:39					07:31		08:12 (4)				08:53		10:43 (2)
	21:35		20:29					17:04	24	08:36 (3)				16:21	38	11:21 (2)
Potential sun hours	512		460		382			328			259			233		
Total, worst case						351			664			349			1122	
Sun reduction						0.25			0.23			0.20			0.12	
Oper. time red.						1.00			1.00			1.00			1.00	
Wind dir. red.						0.63			0.62			0.60			0.63	
Total reduction						0.16			0.14			0.12			0.08	
Total, real						55			94			41			85	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** AS - H047

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	06:26 (3)	05:11	05:07	05:40 (2)	05:47	06:41	07:34	07:33	08:28
	16:23	17:14	18:10	20:08	21:04	06:39 (3)	21:54	22:09	05:45 (2)	21:33	20:27	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	06:24 (3)	05:10	05:07	05:40 (2)	05:48	06:32 (3)	06:43	07:36	07:35	08:29
	16:24	17:16	18:12	20:10	21:06	06:39 (3)	21:55	22:08	05:44 (2)	21:31	06:41 (3)	20:24	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04	05:56	06:22 (3)	05:09	05:08	05:41 (2)	05:50	06:30 (3)	06:44	07:38	07:36	08:31
	16:25	17:18	18:14	20:12	21:07	06:39 (3)	21:56	22:08	05:44 (2)	21:30	06:43 (3)	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	06:20 (3)	05:08	05:09	05:42 (2)	05:52	06:28 (3)	06:46	07:40	07:38	08:32
	16:26	17:20	18:16	20:14	21:09	06:38 (3)	21:57	22:07	05:44 (2)	21:28	06:44 (3)	20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	07:00	05:52	06:18 (3)	05:07	05:10	05:43 (2)	05:53	06:27 (3)	06:48	07:42	07:40	08:34
	16:27	17:22	18:18	20:16	21:11	06:37 (3)	21:58	22:07	05:44 (2)	21:26	06:45 (3)	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	06:16 (3)	05:06	05:11		05:55	06:26 (3)	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:18	21:13	06:37 (3)	21:59	22:06		21:24	06:46 (3)	20:14	19:01	16:52	16:14
7	08:51	08:11	07:10	06:55	05:48	06:17 (3)	05:06	05:12		05:57	06:27 (3)	06:52	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:15	06:36 (3)	22:00	22:05		21:22	06:47 (3)	20:12	18:58	16:51	16:14
8	08:50	08:09	07:08	06:52	05:46	06:18 (3)	05:05	05:37 (2)	05:13	05:58	06:28 (3)	06:53	07:47	07:46	08:38
	16:31	17:28	18:23	20:21	21:16	06:35 (3)	22:01	2 05:39 (2)	22:05	21:20	19 06:47 (3)	20:10	18:56	16:49	16:14
9	08:49	08:08	07:06	06:50	05:44	06:19 (3)	05:05	05:36 (2)	05:14	06:00	06:30 (3)	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	06:33 (3)	22:02	3 05:39 (2)	22:04	21:18	18 06:48 (3)	20:07	18:53	16:47	16:13
10	08:49	08:06	07:03	06:47	05:42	06:20 (3)	05:04	05:36 (2)	05:15	06:02	06:31 (3)	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	06:31 (3)	22:03	4 05:40 (2)	22:03	21:16	16 06:47 (3)	20:05	18:51	16:45	16:13
11	08:48	08:04	07:01	06:45	05:40	06:23 (3)	05:04	05:36 (2)	05:16	06:04	06:33 (3)	06:59	07:53	07:52	08:41
	16:36	17:34	18:29	20:27	21:22	6 06:29 (3)	22:04	5 05:41 (2)	22:02	21:14	15 06:48 (3)	20:02	18:49	16:43	16:13
12	08:47	08:02	06:58	06:43	05:39	05:03	05:35 (2)	05:17	06:05	06:35 (3)	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	6 05:41 (2)	22:01	21:12	13 06:48 (3)	20:00	18:46	16:42	16:13
13	08:47	08:00	06:56	06:40	05:37	05:03	05:35 (2)	05:18	06:07	06:36 (3)	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:31	21:25	22:05	6 05:41 (2)	22:00	21:10	11 06:47 (3)	19:57	18:44	16:40	16:12
14	08:46	07:58	06:53	06:38	05:35	05:03	05:35 (2)	05:20	06:09	06:38 (3)	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	7 05:42 (2)	21:59	21:08	9 06:47 (3)	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:36	05:33	05:02	05:35 (2)	05:21	06:11	06:40 (3)	07:06	08:00	08:00	08:45
	16:42	17:42	18:37	20:34	21:29	22:07	7 05:42 (2)	21:58	21:05	7 06:47 (3)	19:52	18:39	16:37	16:12
16	08:44	07:53	06:49	06:33	05:32	05:02	05:35 (2)	05:22	06:13	06:41 (3)	07:07	08:02	08:01	08:46
	16:44	17:44	18:39	20:36	21:30	22:07	8 05:43 (2)	21:57	21:03	5 06:46 (3)	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:35 (2)	05:24	06:14	06:43 (3)	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	8 05:43 (2)	21:56	21:01	2 06:45 (3)	19:47	18:35	16:34	16:13
18	08:42	07:49	06:44	06:29	05:29	05:02	05:35 (2)	05:25	06:16		07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	9 05:44 (2)	21:55	20:59		19:45	18:32	16:32	16:13
19	08:41	07:47	06:41	06:26	05:27	05:02	05:35 (2)	05:26	06:18		07:13	08:08	08:07	08:48
	16:49	17:50	18:44	20:42	21:35	22:09	9 05:44 (2)	21:53	20:57		19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:35 (2)	05:28	06:20		07:15	08:09	08:09	08:49
	16:51	17:52	18:46	20:44	21:37	22:09	9 05:44 (2)	21:52	20:54		19:40	18:28	16:30	16:13
21	08:38	07:43	06:36	06:22	05:24	05:02	05:35 (2)	05:29	06:21		07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	9 05:44 (2)	21:51	20:52		19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:20	05:23	05:02	05:35 (2)	05:31	06:23		07:18	08:13	08:13	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	9 05:44 (2)	21:49	20:50		19:35	18:23	16:27	16:14
23	08:36	07:38	06:31	06:17	05:21	05:03	05:36 (2)	05:32	06:25		07:20	08:15	08:14	08:51
	16:57	17:58	18:52	20:49	21:41	22:09	9 05:45 (2)	21:48	20:48		19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:36 (2)	05:34	06:27		07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:10	9 05:45 (2)	21:46	20:45		19:30	18:19	16:25	16:15
25	08:33	07:34	06:26	06:13	05:18	05:03	05:36 (2)	05:35	06:28		07:23	07:19	08:18	08:52
	17:00	18:02	18:55	20:53	21:44	22:10	8 05:44 (2)	21:45	20:43		19:28	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	06:36 (3)	05:17	05:04	05:37 (2)	05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:55	3 06:39 (3)	21:46	22:10	8 05:45 (2)	21:43	20:41	19:25	17:15	16:22	16:17
27	08:30	07:29	06:22	06:09	06:34 (3)	05:16	05:04	05:37 (2)	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	5 06:39 (3)	21:47	22:10	8 05:45 (2)	21:42	20:38	19:23	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	06:32 (3)	05:15	05:05	05:38 (2)	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	7 06:39 (3)	21:49	22:09	7 05:45 (2)	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	06:30 (3)	05:14	05:05	05:38 (2)	05:42	06:36	07:31	07:27	08:24	08:52
	17:08		20:03	21:00	10 06:40 (3)	21:50	22:09	7 05:45 (2)	21:38	20:34	19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	06:28 (3)	05:13	05:06	05:39 (2)	05:43	06:37	07:32	07:29	08:26	08:52
	17:10		20:05	21:02	12 06:40 (3)	21:51	22:09	6 05:45 (2)	21:37	20:31	19:15	17:06	16:19	16:20
31	08:24		07:12			05:12			05:45	06:39		07:31		08:52
	17:12		20:06			21:53			21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420		494	510		512	460	382	328	259	233
Total, worst case				37		170	163		15	211				
Sun reduction				0.31		0.31	0.26		0.22	0.26				
Oper. time red.				1.00		1.00	1.00		1.00	1.00				
Wind dir. red.				0.65		0.65	0.65		0.65	0.65				
Total reduction				0.20		0.20	0.17		0.15	0.17				
Total, real				7		35	27		2	35				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** AT - H048

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52 16:23	08:22 17:14	07:24 18:10	07:09 20:08	06:00 21:04	06:42 (3) 06:45 (3)	05:11 21:54	05:41 (2) 06:21 (2)	05:07 22:09	05:40 (1) 06:27 (2)	05:47 21:33	06:17 (2) 06:19 (2)	06:41 20:27	07:34 19:13	07:33 17:02	08:28 16:18
2	08:52 16:24	08:20 17:16	07:22 18:12	07:07 20:10	05:58 21:06		05:10 21:55	05:40 (2) 06:21 (2)	05:07 22:08	05:40 (1) 06:27 (2)	05:48 21:31		06:43 20:24	07:36 19:10	07:35 17:00	08:29 16:17
3	08:52 16:25	08:19 17:18	07:20 18:14	07:04 20:12	05:56 21:07		05:09 21:56	05:40 (2) 06:22 (2)	05:08 22:08	05:41 (1) 06:27 (2)	05:50 21:30		06:44 20:22	07:38 19:08	07:36 16:58	08:31 16:16
4	08:52 16:26	08:17 17:20	07:17 18:16	07:02 20:14	05:54 21:09		05:08 21:57	05:39 (2) 06:21 (2)	05:09 22:07	05:42 (1) 06:28 (2)	05:52 21:28		06:46 20:19	07:40 19:05	07:38 16:56	08:32 16:16
5	08:51 16:27	08:15 17:22	07:15 18:18	07:00 20:16	05:52 21:11		05:07 21:58	05:38 (2) 06:21 (2)	05:10 22:07	05:43 (1) 06:28 (2)	05:53 21:26		06:48 20:17	07:42 19:03	07:40 16:54	08:34 16:15
6	08:51 16:29	08:13 17:24	07:13 18:19	06:57 20:18	05:50 21:13		05:06 21:59	05:38 (2) 06:22 (2)	05:11 22:06	05:44 (1) 06:28 (2)	05:55 21:24		06:50 20:14	07:43 19:01	07:42 16:52	08:35 16:14
7	08:51 16:30	08:11 17:26	07:10 18:21	06:55 20:19	05:48 21:15		05:06 22:00	05:37 (1) 06:22 (2)	05:12 22:05	05:45 (2) 06:29 (2)	05:57 21:22		06:52 20:12	07:45 18:58	07:44 16:51	08:36 16:14
8	08:50 16:31	08:09 17:28	07:08 18:23	06:52 20:21	05:46 21:16		05:05 22:01	05:37 (1) 06:22 (2)	05:13 22:05	05:46 (2) 06:29 (2)	05:58 21:20		06:53 20:10	07:47 18:56	07:46 16:49	08:38 16:14
9	08:49 16:33	08:08 17:30	07:06 18:25	06:50 20:23	05:44 21:18		05:05 22:02	05:36 (1) 06:22 (2)	05:14 22:04	05:47 (2) 06:29 (2)	06:00 21:18		06:55 20:07	07:49 18:53	07:48 16:47	08:39 16:13
10	08:49 16:34	08:06 17:32	07:03 18:27	06:47 20:25	05:42 21:20		05:04 22:03	05:36 (1) 06:23 (2)	05:15 22:03	05:48 (2) 06:29 (2)	06:02 21:16		06:57 20:05	07:51 18:51	07:50 16:45	08:40 16:13
11	08:48 16:36	08:04 17:34	07:01 18:29	06:45 20:27	05:40 21:22		05:04 22:04	05:36 (1) 06:23 (2)	05:16 22:02	05:49 (2) 06:29 (2)	06:04 21:14		06:59 20:02	07:53 18:49	07:52 16:43	08:41 16:13
12	08:47 16:37	08:02 17:36	06:58 18:31	06:43 20:29	05:39 21:23	06:06 (2) 06:09 (2)	05:03 22:05	05:35 (1) 06:23 (2)	05:17 22:01	05:50 (2) 06:29 (2)	06:05 21:12	06:49 (3) 06:55 (3)	07:00 20:00	07:54 18:46	07:54 16:42	08:42 16:13
13	08:47 16:39	08:00 17:38	06:56 18:33	06:40 20:31	05:37 21:25	06:04 (2) 06:10 (2)	05:03 22:05	05:35 (1) 06:23 (2)	05:18 22:00	05:51 (2) 06:29 (2)	06:07 21:10	06:45 (3) 06:57 (3)	07:02 19:57	07:56 18:44	07:56 16:40	08:43 16:12
14	08:46 16:41	07:58 17:40	06:53 18:35	06:38 20:32	05:35 21:27	06:03 (2) 06:12 (2)	05:03 22:06	05:35 (1) 06:23 (2)	05:20 21:59	05:52 (2) 06:29 (2)	06:09 21:08	06:43 (3) 06:59 (3)	07:04 19:55	07:58 18:41	07:58 16:38	08:44 16:12
15	08:45 16:42	07:55 17:42	06:51 18:37	06:36 20:34	05:33 21:29	06:01 (2) 06:13 (2)	05:02 22:07	05:35 (1) 06:24 (2)	05:21 21:58	05:53 (2) 06:29 (2)	06:11 21:05	06:42 (3) 07:00 (3)	07:06 19:52	08:00 18:39	08:00 16:37	08:45 16:12
16	08:44 16:44	07:53 17:44	06:49 18:39	06:33 20:36	05:32 21:30	06:00 (2) 06:14 (2)	05:02 22:07	05:35 (1) 06:24 (2)	05:22 21:57	05:54 (2) 06:28 (2)	06:13 21:03	06:41 (3) 07:01 (3)	07:07 19:50	08:02 18:37	08:02 16:35	08:46 16:12
17	08:43 16:46	07:51 17:46	06:46 18:40	06:31 20:38	05:30 21:32	05:58 (2) 06:14 (2)	05:02 22:08	05:35 (1) 06:24 (2)	05:24 21:56	05:56 (2) 06:29 (2)	06:14 21:01	06:43 (3) 07:01 (3)	07:09 19:47	08:04 18:35	08:03 16:34	08:47 16:13
18	08:42 16:47	07:49 17:48	06:44 18:42	06:29 20:40 3	06:53 (3) 06:56 (3)	05:29 21:33	05:57 (2) 06:16 (2)	05:02 22:08	05:35 (1) 06:24 (2)	05:25 21:55	05:57 (2) 06:29 (2)	06:16 20:59	06:45 (3) 07:02 (3)	07:11 19:45	08:06 18:32	08:05 16:32	08:48 16:13
19	08:41 16:49	07:47 17:50	06:41 18:44	06:26 20:42 6	06:51 (3) 06:57 (3)	05:27 21:35	05:56 (2) 06:17 (2)	05:02 22:09	05:35 (1) 06:24 (2)	05:26 21:53	05:58 (2) 06:28 (2)	06:18 20:57	06:46 (3) 07:02 (3)	07:13 19:42	08:08 18:30	08:07 16:31	08:49 16:13
20	08:39 16:51	07:45 17:52	06:39 18:46	06:24 20:44 8	06:49 (3) 06:57 (3)	05:25 21:37	05:54 (2) 06:17 (2)	05:02 22:09	05:35 (1) 06:24 (2)	05:28 21:52	06:00 (2) 06:29 (2)	06:20 20:54	06:48 (3) 07:02 (3)	07:15 19:40	08:09 18:28	08:09 16:30	08:49 16:13
21	08:38 16:53	07:43 17:54	06:36 18:48	06:22 20:45 10	06:47 (3) 06:57 (3)	05:24 21:38	05:53 (2) 06:17 (2)	05:02 22:09	05:35 (1) 06:24 (2)	05:29 21:51	06:01 (2) 06:28 (2)	06:21 20:52	06:50 (3) 07:02 (3)	07:16 19:37	08:11 18:25	08:11 16:28	08:50 16:14
22	08:37 16:55	07:40 17:56	06:34 18:50	06:20 20:47 12	06:44 (3) 06:56 (3)	05:23 21:40	05:52 (2) 06:18 (2)	05:02 22:09	05:35 (1) 06:24 (2)	05:31 21:49	06:02 (2) 06:27 (2)	06:23 20:50	06:51 (3) 07:01 (3)	07:18 19:35	08:13 18:23	08:13 16:27	08:50 16:14
23	08:36 16:57	07:38 17:58	06:31 18:52	06:17 20:49 14	06:42 (3) 06:56 (3)	05:21 21:41	05:50 (2) 06:18 (2)	05:03 22:10	05:36 (1) 06:25 (2)	05:32 21:48	06:04 (2) 06:28 (2)	06:25 20:48	06:53 (3) 07:01 (3)	07:20 19:32	08:15 18:21	08:14 16:26	08:51 16:15
24	08:34 16:58	07:36 18:00	06:29 18:53	06:15 20:51 16	06:40 (3) 06:56 (3)	05:20 21:43	05:49 (2) 06:19 (2)	05:03 22:10	05:36 (1) 06:25 (2)	05:34 21:46	06:05 (2) 06:27 (2)	06:27 20:45	06:55 (3) 07:00 (3)	07:22 19:30	08:17 18:19	08:16 16:25	08:51 16:15
25	08:33 17:00	07:34 18:02	06:26 18:55	06:13 20:53 17	06:38 (3) 06:55 (3)	05:18 21:44	05:48 (2) 06:19 (2)	05:03 22:10	05:36 (1) 06:25 (2)	05:35 21:45	06:07 (2) 06:27 (2)	06:28 20:43	06:56 (3) 06:59 (3)	07:23 19:28	08:18 17:17	08:18 16:23	08:52 16:16
26	08:31 17:02	07:31 18:04	06:24 18:57	06:11 20:55 19	06:36 (3) 06:55 (3)	05:17 21:46	05:47 (2) 06:19 (2)	05:04 22:10	05:37 (1) 06:26 (2)	05:37 21:43	06:08 (2) 06:26 (2)	06:30 20:41		07:25 19:25	08:21 17:15	08:20 16:22	08:52 16:17
27	08:30 17:04	07:29 18:06	06:22 18:59	06:09 20:56 20	06:34 (3) 06:54 (3)	05:16 21:47	05:46 (2) 06:20 (2)	05:04 22:10	05:37 (1) 06:26 (2)	05:38 21:42	06:09 (2) 06:25 (2)	06:32 20:38		07:27 19:23	08:23 17:12	08:21 16:21	08:52 16:18
28	08:28 17:06	07:27 18:08	06:19 19:01	06:06 20:58 18	06:35 (3) 06:53 (3)	05:15 21:49	05:45 (2) 06:20 (2)	05:05 22:09	05:38 (1) 06:26 (2)	05:40 21:40	06:11 (2) 06:24 (2)	06:34 20:36		07:29 19:20	08:25 17:10	08:23 16:20	08:52 16:18
29	08:27 17:08		07:17 20:03	06:04 21:00 15	06:36 (3) 06:51 (3)	05:14 21:50	05:44 (2) 06:20 (2)	05:05 22:09	05:38 (1) 06:26 (2)	05:42 21:38	06:12 (2) 06:23 (2)	06:36 20:34		07:31 19:18	08:27 17:08	08:24 16:19	08:52 16:19
30	08:25 17:10		07:14 20:05	06:02 21:02 11	06:38 (3) 06:49 (3)	05:13 21:51	05:43 (2) 06:21 (2)	05:06 22:09	05:39 (1) 06:27 (2)	05:43 21:37 8	06:14 (2) 06:22 (2)	06:37 20:31		07:32 19:15	07:29 17:06	08:26 16:19	08:52 16:20
31	08:24 17:12		07:12 20:06			05:12 21:53	05:42 (2) 06:21 (2)			05:45 21:35 5	06:16 (2) 06:21 (2)	06:39 20:29			07:31 17:04		08:52 16:21
Potential sun hours	250	273	367	420	494		510		512		460		382	328	259	233
Total, worst case				169	479		1407		982		177					
Sun reduction				0.31	0.31		0.26		0.22		0.26					
Oper. time red.				1.00	1.00		1.00		1.00		1.00					
Wind dir. red.				0.65	0.64		0.64		0.64		0.65					
Total reduction				0.20	0.20		0.17		0.14		0.17					
Total, real				34	96		233		140		29					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** AU - H049

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February	March	April	May	June	July	August	September	October	November			December		
1	08:52		15:21 (8)	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:40	07:34	07:32			08:27		15:07 (8)
	16:22	23	15:44 (8)	17:13	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02			16:17	33	15:40 (8)
2	08:52		15:22 (8)	08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34			08:29		15:08 (8)
	16:23	23	15:45 (8)	17:15	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00			16:16	32	15:40 (8)
3	08:52		15:22 (8)	08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:38	07:36			08:30		15:08 (8)
	16:24	25	15:47 (8)	17:17	18:13	20:12	21:07	21:56	22:08	21:29	20:21	19:07	16:58			16:16	31	15:39 (8)
4	08:52		15:22 (8)	08:16	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38			08:32		15:08 (8)
	16:26	26	15:48 (8)	17:19	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56			16:15	31	15:39 (8)
5	08:51		15:23 (8)	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40			08:33		15:08 (8)
	16:27	27	15:50 (8)	17:21	18:17	20:15	21:11	21:58	22:06	21:25	20:17	19:03	16:54			16:14	29	15:37 (8)
6	08:51		15:23 (8)	08:13	07:12	06:57	05:49	05:06	05:10	05:55	06:49	07:43	07:42			08:35		15:09 (8)
	16:28	28	15:51 (8)	17:23	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52			16:14	28	15:37 (8)
7	08:50		15:23 (8)	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44			08:36		15:09 (8)
	16:30	29	15:52 (8)	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50			16:13	27	15:36 (8)
8	08:50		15:24 (8)	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46			08:37		15:10 (8)
	16:31	30	15:54 (8)	17:28	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48			16:13	26	15:36 (8)
9	08:49		15:25 (8)	08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48			08:39		15:11 (8)
	16:32	31	15:56 (8)	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46			16:13	24	15:35 (8)
10	08:49		15:25 (8)	08:05	07:03	06:47	05:42	05:03	05:14	06:02	06:56	07:50	07:50			08:40		15:11 (8)
	16:34	32	15:57 (8)	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45			16:12	24	15:35 (8)
11	08:48		15:25 (8)	08:03	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52			08:41		15:12 (8)
	16:35	33	15:58 (8)	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43			16:12	23	15:35 (8)
12	08:47		15:26 (8)	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54			08:42		15:12 (8)
	16:37	32	15:58 (8)	17:36	18:31	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41			16:12	23	15:35 (8)
13	08:46		15:26 (8)	07:59	06:56	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:56			08:43		15:13 (8)
	16:39	33	15:59 (8)	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40			16:12	21	15:34 (8)
14	08:45		15:27 (8)	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57			08:44		15:13 (8)
	16:40	32	15:59 (8)	17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38			16:12	21	15:34 (8)
15	08:45		15:27 (8)	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59		15:15 (8)	08:45		15:14 (8)
	16:42	32	15:59 (8)	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36	9	15:24 (8)	16:12	20	15:34 (8)
16	08:44		15:28 (8)	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01		15:12 (8)	08:46		15:15 (8)
	16:44	32	16:00 (8)	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	15	15:27 (8)	16:12	19	15:34 (8)
17	08:43		15:28 (8)	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03		15:10 (8)	08:47		15:15 (8)
	16:45	31	15:59 (8)	17:46	18:40	20:38	21:32	22:07	21:56	21:01	19:47	18:34	16:33	19	15:29 (8)	16:12	20	15:35 (8)
18	08:41		15:29 (8)	07:49	06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05	08:05		15:09 (8)	08:48		15:15 (8)
	16:47	30	15:59 (8)	17:48	18:42	20:39	21:33	22:08	21:54	20:59	19:44	18:32	16:32	21	15:30 (8)	16:12	19	15:34 (8)
19	08:40		15:30 (8)	07:47	06:41	06:26	05:26	05:02	05:26	06:17	07:12	08:07	08:07		15:09 (8)	08:48		15:16 (8)
	16:49	29	15:59 (8)	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	24	15:33 (8)	16:13	18	15:34 (8)
20	08:39		15:30 (8)	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09		15:08 (8)	08:49		15:17 (8)
	16:51	28	15:58 (8)	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29	26	15:34 (8)	16:13	18	15:35 (8)
21	08:38		15:32 (8)	07:42	06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11	08:10		15:08 (8)	08:50		15:17 (8)
	16:52	27	15:59 (8)	17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	27	15:35 (8)	16:13	18	15:35 (8)
22	08:37		15:33 (8)	07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12		15:07 (8)	08:50		15:18 (8)
	16:54	26	15:59 (8)	17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	28	15:35 (8)	16:14	18	15:36 (8)
23	08:35		15:34 (8)	07:38	06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15	08:14		15:06 (8)	08:51		15:18 (8)
	16:56	24	15:58 (8)	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	29	15:35 (8)	16:14	18	15:36 (8)
24	08:34		15:36 (8)	07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16		15:06 (8)	08:51		15:18 (8)
	16:58	21	15:57 (8)	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24	30	15:36 (8)	16:15	18	15:36 (8)
25	08:33		15:37 (8)	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17		15:06 (8)	08:51		15:19 (8)
	17:00	19	15:56 (8)	18:02	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	31	15:37 (8)	16:16	19	15:38 (8)
26	08:31		15:39 (8)	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19		15:06 (8)	08:52		15:19 (8)
	17:02	15	15:54 (8)	18:03	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22	32	15:38 (8)	16:16	19	15:38 (8)
27	08:30		15:43 (8)	07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21		15:07 (8)	08:52		15:19 (8)
	17:04	9	15:52 (8)	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	31	15:38 (8)	16:17	20	15:39 (8)
28	08:28			07:26	06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24	08:23		15:07 (8)	08:52		15:20 (8)
	17:06			18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	32	15:39 (8)	16:18	20	15:40 (8)
29	08:27				07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24		15:07 (8)	08:52		15:20 (8)
	17:08				20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	33	15:40 (8)	16:19	21	15:41 (8)
30	08:25				07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26		15:07 (8)	08:52		15:21 (8)
	17:10				20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	32	15:39 (8)	16:20	21	15:42 (8)
31	08:23				07:11		05:11		05:44	06:39		07:30				08:52		15:21 (8)
	17:12				20:06		21:52		21:35	20:29		17:04				16:21	22	15:43 (8)
Potential sun hours	250			273	367	420	494	510	513	460	382	328	259			233		
Total, worst case		727												419			701	
Sun reduction		0.16												0.20			0.12	
Oper. time red.		1.00												1.00			1.00	
Wind dir. red.		0.65												0.65			0.65	
Total reduction		0.11												0.13			0.08	
Total, real		77												54			55	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** AV - H050

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April			May			June		
1	08:52	08:22	07:24	07:09			06:00		06:25 (11)	05:10		06:16 (11)
	16:22	17:14	18:09	20:08			21:03	11	06:36 (11)	21:54	23	06:39 (11)
2	08:52	08:20	07:22	07:07			05:58		06:24 (10)	05:09		06:17 (11)
	16:23	17:16	18:11	20:10			21:05	14	06:38 (11)	21:55	21	06:38 (11)
3	08:52	08:18	07:19	07:04			05:56		06:22 (10)	05:08		06:17 (11)
	16:25	17:18	18:13	20:12			21:07	18	06:40 (11)	21:56	20	06:37 (11)
4	08:51	08:17	07:17	07:02			05:54		06:20 (10)	05:08		06:19 (11)
	16:26	17:20	18:15	20:14			21:09	21	06:41 (11)	21:57	18	06:37 (11)
5	08:51	08:15	07:15	06:59			05:52		06:18 (10)	05:07		06:20 (11)
	16:27	17:22	18:17	20:15			21:11	23	06:41 (11)	21:58	16	06:36 (11)
6	08:51	08:13	07:12	06:57			05:50		06:16 (10)	05:06		06:20 (11)
	16:28	17:24	18:19	20:17			21:13	26	06:42 (11)	21:59	15	06:35 (11)
7	08:50	08:11	07:10	06:54			05:48		06:14 (10)	05:05		06:22 (11)
	16:30	17:26	18:21	20:19			21:14	28	06:42 (11)	22:00	12	06:34 (11)
8	08:50	08:09	07:08	06:52			05:46		06:12 (10)	05:05		06:23 (11)
	16:31	17:28	18:23	20:21			21:16	30	06:42 (11)	22:01	10	06:33 (11)
9	08:49	08:07	07:05	06:50			05:44		06:11 (10)	05:04		06:25 (11)
	16:33	17:30	18:25	20:23			21:18	33	06:44 (11)	22:02	6	06:31 (11)
10	08:49	08:05	07:03	06:47			05:42		06:09 (10)	05:04		
	16:34	17:32	18:27	20:25			21:20	35	06:44 (11)	22:03		
11	08:48	08:03	07:00	06:45			05:40		06:07 (10)	05:03		
	16:36	17:34	18:29	20:27			21:21	37	06:44 (11)	22:04		
12	08:47	08:01	06:58	06:42			05:38		06:06 (10)	05:03		
	16:37	17:36	18:31	20:28			21:23	38	06:44 (11)	22:04		
13	08:46	07:59	06:56	06:40			05:37		06:06 (10)	05:02		
	16:39	17:38	18:33	20:30			21:25	38	06:44 (11)	22:05		
14	08:45	07:57	06:53	06:38			05:35		06:07 (10)	05:02		
	16:40	17:40	18:34	20:32			21:27	38	06:45 (11)	22:06		
15	08:45	07:55	06:51	06:35			05:33		06:07 (10)	05:02		
	16:42	17:42	18:36	20:34			21:28	37	06:44 (11)	22:06		
16	08:44	07:53	06:48	06:33			05:31		06:07 (10)	05:02		
	16:44	17:44	18:38	20:36			21:30	37	06:44 (11)	22:07		
17	08:43	07:51	06:46	06:31			05:30		06:08 (11)	05:02		
	16:45	17:46	18:40	20:38			21:32	36	06:44 (11)	22:07		
18	08:41	07:49	06:43	06:28			05:28		06:09 (11)	05:02		
	16:47	17:48	18:42	20:40			21:33	35	06:44 (11)	22:08		
19	08:40	07:47	06:41	06:26			05:27		06:08 (11)	05:02		
	16:49	17:50	18:44	20:41			21:35	36	06:44 (11)	22:08		
20	08:39	07:44	06:38	06:24			05:25		06:09 (11)	05:02		
	16:51	17:52	18:46	20:43			21:36	35	06:44 (11)	22:09		
21	08:38	07:42	06:36	06:21			05:24		06:10 (11)	05:02		
	16:53	17:54	18:48	20:45			21:38	34	06:44 (11)	22:09		
22	08:37	07:40	06:34	06:19			05:22		06:09 (11)	05:02		
	16:54	17:56	18:49	20:47			21:40	34	06:43 (11)	22:09		
23	08:35	07:38	06:31	06:17			05:21		06:10 (11)	05:02		
	16:56	17:58	18:51	20:49			21:41	33	06:43 (11)	22:09		
24	08:34	07:36	06:29	06:15			05:19		06:11 (11)	05:03		
	16:58	18:00	18:53	20:51			21:43	32	06:43 (11)	22:09		
25	08:33	07:33	06:26	06:13			05:18		06:11 (11)	05:03		
	17:00	18:02	18:55	20:52			21:44	31	06:42 (11)	22:09		
26	08:31	07:31	06:24	06:10			05:17		06:12 (11)	05:03		
	17:02	18:04	18:57	20:54			21:45	30	06:42 (11)	22:09		
27	08:30	07:29	06:21	06:08			05:16		06:13 (11)	05:04		
	17:04	18:06	18:59	20:56			21:47	29	06:42 (11)	22:09		
28	08:28	07:26	06:19	06:06			05:14		06:13 (11)	05:04		
	17:06	18:08	19:01	20:58			21:48	28	06:41 (11)	22:09		
29	08:27		07:16	06:04			05:13		06:14 (11)	05:05		
	17:08		20:02	21:00			21:50	27	06:41 (11)	22:09		
30	08:25		07:14	06:02		06:27 (11)	05:12		06:15 (11)	05:06		
	17:10		20:04	21:02	6	06:33 (11)	21:51	25	06:40 (11)	22:09		
31	08:23		07:11				05:11		06:15 (11)			
	17:12		20:06				21:52	24	06:39 (11)			
Potential sun hours	250	273	367	420			494			510		
Total, worst case					6			933			141	
Sun reduction					0.31			0.31			0.26	
Oper. time red.					1.00			1.00			1.00	
Wind dir. red.					0.65			0.65			0.65	
Total reduction					0.20			0.20			0.17	
Total, real					1			190			24	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** AV - H050

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July			August			September	October	November	December
1	05:06			05:46		06:17 (10)	06:41	07:34	07:32	08:27
	22:08			21:33	38	06:55 (11)	20:26	19:12	17:02	16:17
2	05:07			05:48		06:18 (10)	06:42	07:36	07:34	08:29
	22:08			21:31	36	06:54 (11)	20:24	19:10	17:00	16:17
3	05:08		06:32 (11)	05:50		06:20 (10)	06:44	07:38	07:36	08:30
	22:07	4	06:36 (11)	21:29	34	06:54 (11)	20:21	19:08	16:58	16:16
4	05:09		06:30 (11)	05:51		06:21 (10)	06:46	07:39	07:38	08:32
	22:07	8	06:38 (11)	21:27	32	06:53 (11)	20:19	19:05	16:56	16:15
5	05:09		06:28 (11)	05:53		06:23 (10)	06:48	07:41	07:40	08:33
	22:06	11	06:39 (11)	21:25	30	06:53 (11)	20:17	19:03	16:54	16:15
6	05:10		06:27 (11)	05:55		06:25 (10)	06:49	07:43	07:42	08:35
	22:06	13	06:40 (11)	21:24	27	06:52 (11)	20:14	19:00	16:52	16:14
7	05:11		06:26 (11)	05:56		06:26 (10)	06:51	07:45	07:44	08:36
	22:05	16	06:42 (11)	21:22	25	06:51 (11)	20:12	18:58	16:50	16:14
8	05:12		06:26 (11)	05:58		06:28 (10)	06:53	07:47	07:46	08:37
	22:04	17	06:43 (11)	21:20	22	06:50 (11)	20:09	18:55	16:48	16:13
9	05:13		06:25 (11)	06:00		06:30 (10)	06:55	07:49	07:48	08:38
	22:04	19	06:44 (11)	21:18	20	06:50 (11)	20:07	18:53	16:47	16:13
10	05:15		06:24 (11)	06:02		06:31 (10)	06:57	07:50	07:50	08:40
	22:03	21	06:45 (11)	21:16	17	06:48 (11)	20:04	18:51	16:45	16:13
11	05:16		06:24 (11)	06:03		06:33 (10)	06:58	07:52	07:52	08:41
	22:02	22	06:46 (11)	21:14	13	06:46 (11)	20:02	18:48	16:43	16:12
12	05:17		06:23 (11)	06:05		06:34 (11)	07:00	07:54	07:54	08:42
	22:01	24	06:47 (11)	21:11	10	06:44 (11)	19:59	18:46	16:41	16:12
13	05:18		06:24 (11)	06:07		06:36 (11)	07:02	07:56	07:56	08:43
	22:00	24	06:48 (11)	21:09	5	06:41 (11)	19:57	18:44	16:40	16:12
14	05:19		06:23 (11)	06:09			07:04	07:58	07:57	08:44
	21:59	26	06:49 (11)	21:07			19:54	18:41	16:38	16:12
15	05:21		06:22 (11)	06:10			07:05	08:00	07:59	08:45
	21:58	27	06:49 (11)	21:05			19:52	18:39	16:37	16:12
16	05:22		06:22 (11)	06:12			07:07	08:02	08:01	08:46
	21:57	28	06:50 (11)	21:03			19:50	18:37	16:35	16:12
17	05:23		06:21 (11)	06:14			07:09	08:03	08:03	08:47
	21:56	29	06:50 (11)	21:01			19:47	18:34	16:34	16:12
18	05:25		06:21 (11)	06:16			07:11	08:05	08:05	08:47
	21:54	31	06:52 (11)	20:59			19:45	18:32	16:32	16:12
19	05:26		06:21 (11)	06:18			07:12	08:07	08:07	08:48
	21:53	31	06:52 (11)	20:56			19:42	18:30	16:31	16:13
20	05:27		06:20 (11)	06:19			07:14	08:09	08:09	08:49
	21:52	32	06:52 (11)	20:54			19:40	18:27	16:29	16:13
21	05:29		06:20 (11)	06:21			07:16	08:11	08:10	08:49
	21:50	33	06:53 (11)	20:52			19:37	18:25	16:28	16:14
22	05:30		06:20 (11)	06:23			07:18	08:13	08:12	08:50
	21:49	33	06:53 (11)	20:50			19:35	18:23	16:27	16:14
23	05:32		06:19 (11)	06:25			07:20	08:15	08:14	08:51
	21:48	34	06:53 (11)	20:47			19:32	18:21	16:25	16:15
24	05:33		06:19 (11)	06:26			07:21	08:17	08:16	08:51
	21:46	35	06:54 (11)	20:45			19:30	18:19	16:24	16:15
25	05:35		06:19 (11)	06:28			07:23	07:19	08:17	08:51
	21:45	35	06:54 (11)	20:43			19:27	17:16	16:23	16:16
26	05:36		06:19 (11)	06:30			07:25	07:21	08:19	08:52
	21:43	36	06:55 (11)	20:40			19:25	17:14	16:22	16:16
27	05:38		06:19 (10)	06:32			07:27	07:23	08:21	08:52
	21:41	35	06:54 (11)	20:38			19:22	17:12	16:21	16:17
28	05:40		06:18 (10)	06:33			07:29	07:25	08:23	08:52
	21:40	37	06:55 (11)	20:36			19:20	17:10	16:20	16:18
29	05:41		06:17 (10)	06:35			07:30	07:26	08:24	08:52
	21:38	38	06:55 (11)	20:33			19:17	17:08	16:19	16:19
30	05:43		06:17 (10)	06:37			07:32	07:28	08:26	08:52
	21:36	38	06:55 (11)	20:31			19:15	17:06	16:18	16:20
31	05:45		06:16 (10)	06:39				07:30		08:52
	21:35	38	06:54 (11)	20:29				17:04		16:21
Potential sun hours	512			460			382	328	259	233
Total, worst case		775			309					
Sun reduction		0.22			0.26					
Oper. time red.		1.00			1.00					
Wind dir. red.		0.65			0.65					
Total reduction		0.15			0.17					
Total, real		113			51					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** AW - H052

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April		May		June	July	August		September		October	November	December
1	08:52	08:22	07:24	07:09		06:00		19:42 (7)	05:10	05:06	05:46		06:41		19:38 (6)	07:34	07:32	08:27
	16:22	17:14	18:10	20:08		21:04	24	20:06 (7)	21:54	22:08	21:33		20:26	20	19:58 (7)	19:12	17:02	16:18
2	08:52	08:20	07:22	07:07		05:58		19:44 (7)	05:09	05:07	05:48		06:42		19:39 (6)	07:36	07:34	08:29
	16:24	17:16	18:11	20:10		21:05	20	20:04 (7)	21:55	22:08	21:31		20:24	17	19:56 (7)	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04		05:56		19:45 (7)	05:08	05:08	05:50		06:44		19:38 (6)	07:38	07:36	08:30
	16:25	17:18	18:13	20:12		21:07	17	20:02 (7)	21:56	22:07	21:29		20:21	15	19:53 (7)	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02		05:54		19:48 (7)	05:08	05:09	05:51		06:46		19:39 (6)	07:39	07:38	08:32
	16:26	17:20	18:15	20:14		21:09	11	19:59 (7)	21:57	22:07	21:27		20:19	12	19:51 (6)	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	19:47 (6)	05:52			05:07	05:10	05:53		06:48		19:40 (6)	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	1 19:48 (6)	21:11			21:58	22:06	21:26		20:17	9	19:49 (6)	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	19:45 (6)	05:50			05:06	05:11	05:55		06:50		19:41 (6)	07:43	07:42	08:35
	16:28	17:24	18:19	20:17	5 19:50 (6)	21:13			21:59	22:06	21:24		20:14	6	19:47 (6)	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	19:43 (6)	05:48			05:05	05:11	05:57		06:51		19:42 (6)	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	9 19:52 (6)	21:14			22:00	22:05	21:22		20:12	1	19:43 (6)	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	19:42 (6)	05:46			05:05	05:12	05:58		06:53			07:47	07:46	08:37
	16:31	17:28	18:23	20:21	12 19:54 (6)	21:16			22:01	22:04	21:20		20:09			18:55	16:49	16:13
9	08:49	08:07	07:05	06:50	19:41 (6)	05:44			05:04	05:14	06:00	19:57 (7)	06:55			07:49	07:48	08:39
	16:33	17:30	18:25	20:23	15 19:56 (7)	21:18			22:02	22:04	21:18	12 20:09 (7)	20:07			18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	19:40 (6)	05:42			05:04	05:15	06:02	19:53 (7)	06:57			07:50	07:50	08:40
	16:34	17:32	18:27	20:25	17 19:57 (7)	21:20			22:03	22:03	21:16	18 20:11 (7)	20:04			18:51	16:45	16:13
11	08:48	08:03	07:00	06:45	19:39 (6)	05:40			05:03	05:16	06:04	19:52 (7)	06:58			07:52	07:52	08:41
	16:36	17:34	18:29	20:27	20 19:59 (7)	21:21			22:04	22:02	21:14	21 20:13 (7)	20:02			18:48	16:43	16:12
12	08:47	08:01	06:58	06:43	19:39 (6)	05:38			05:03	05:17	06:05	19:50 (7)	07:00			07:54	07:54	08:42
	16:37	17:36	18:31	20:28	22 20:01 (7)	21:23			22:04	22:01	21:12	25 20:15 (7)	19:59			18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	19:38 (6)	05:37			05:03	05:18	06:07	19:48 (7)	07:02			07:56	07:56	08:43
	16:39	17:38	18:33	20:30	24 20:02 (7)	21:25			22:05	22:00	21:09	27 20:15 (7)	19:57			18:44	16:40	16:12
14	08:45	07:57	06:53	06:38	19:39 (6)	05:35			05:02	05:19	06:09	19:47 (7)	07:04			07:58	07:57	08:44
	16:40	17:40	18:34	20:32	25 20:04 (7)	21:27			22:06	21:59	21:07	29 20:16 (7)	19:55			18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	19:39 (6)	05:33			05:02	05:21	06:11	19:45 (7)	07:05			08:00	07:59	08:45
	16:42	17:42	18:36	20:34	27 20:06 (7)	21:28			22:06	21:58	21:05	31 20:16 (7)	19:52			18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	19:38 (6)	05:32			05:02	05:22	06:12	19:45 (7)	07:07			08:02	08:01	08:46
	16:44	17:44	18:38	20:36	29 20:07 (7)	21:30			22:07	21:57	21:03	32 20:17 (7)	19:50			18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	19:38 (7)	05:30			05:02	05:23	06:14	19:44 (7)	07:09			08:04	08:03	08:47
	16:46	17:46	18:40	20:38	31 20:09 (7)	21:32			22:07	21:56	21:01	34 20:18 (7)	19:47			18:34	16:34	16:12
18	08:42	07:49	06:43	06:28	19:38 (7)	05:28			05:02	05:25	06:16	19:43 (7)	07:11			08:05	08:05	08:48
	16:47	17:48	18:42	20:40	33 20:11 (7)	21:33			22:08	21:54	20:59	35 20:18 (7)	19:45			18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	19:38 (7)	05:27			05:02	05:26	06:18	19:43 (7)	07:13			08:07	08:07	08:48
	16:49	17:50	18:44	20:41	35 20:13 (7)	21:35			22:08	21:53	20:56	35 20:18 (7)	19:42			18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	19:37 (7)	05:25			05:02	05:28	06:19	19:42 (7)	07:14			08:09	08:09	08:49
	16:51	17:52	18:46	20:43	36 20:13 (7)	21:36			22:09	21:52	20:54	37 20:19 (7)	19:40			18:27	16:29	16:13
21	08:38	07:42	06:36	06:22	19:37 (7)	05:24			05:02	05:29	06:21	19:41 (7)	07:16			08:11	08:10	08:50
	16:53	17:54	18:48	20:45	36 20:13 (7)	21:38			22:09	21:50	20:52	37 20:18 (7)	19:37			18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	19:37 (7)	05:22			05:02	05:30	06:23	19:41 (7)	07:18			08:13	08:12	08:50
	16:54	17:56	18:50	20:47	36 20:13 (7)	21:40			22:09	21:49	20:50	37 20:18 (7)	19:35			18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	19:37 (7)	05:21			05:02	05:32	06:25	19:41 (7)	07:20			08:15	08:14	08:51
	16:56	17:58	18:51	20:49	36 20:13 (7)	21:41			22:09	21:48	20:47	37 20:18 (7)	19:32			18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	19:37 (7)	05:20			05:03	05:33	06:26	19:41 (7)	07:21			08:17	08:16	08:51
	16:58	18:00	18:53	20:51	36 20:13 (7)	21:43			22:09	21:46	20:45	36 20:17 (7)	19:30			18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	19:37 (7)	05:18			05:03	05:35	06:28	19:41 (7)	07:23			07:19	08:18	08:51
	17:00	18:02	18:55	20:52	35 20:12 (7)	21:44			22:09	21:45	20:43	33 20:14 (7)	19:27			17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	19:38 (7)	05:17			05:04	05:37	06:30	19:41 (7)	07:25			07:21	08:19	08:52
	17:02	18:04	18:57	20:54	33 20:11 (7)	21:46			22:09	21:43	20:40	31 20:12 (7)	19:25			17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	19:38 (7)	05:16			05:04	05:38	06:32	19:41 (6)	07:27			07:23	08:21	08:52
	17:04	18:06	18:59	20:56	33 20:11 (7)	21:47			22:09	21:41	20:38	29 20:10 (7)	19:22			17:12	16:21	16:17
28	08:28	07:27	06:19	06:06	19:39 (7)	05:15			05:05	05:40	06:34	19:40 (6)	07:29			07:25	08:23	08:52
	17:06	18:08	19:01	20:58	31 20:10 (7)	21:48			22:09	21:40	20:36	27 20:07 (7)	19:20			17:10	16:20	16:18
29	08:27		07:16	06:04	19:40 (7)	05:13			05:05	05:41	06:35	19:39 (6)	07:30			07:27	08:24	08:52
	17:08		20:03	21:00	29 20:09 (7)	21:50			22:09	21:38	20:33	26 20:05 (7)	19:17			17:08	16:19	16:19
30	08:25		07:14	06:02	19:41 (7)	05:12			05:06	05:43	06:37	19:39 (6)	07:32			07:28	08:26	08:52
	17:10		20:04	21:02	26 20:07 (7)	21:51			22:09	21:36	20:31	24 20:03 (7)	19:15			17:06	16:18	16:20
31	08:23		07:12			05:11				05:45	06:39	19:38 (6)				07:30		08:52
	17:12		20:06			21:52				21:35	20:29	22 20:00 (7)				17:04		16:21
Potential sun hours	250	273	367	420		494		510	512	460		382		328	259	233
Total, worst case				672		72				675		80				
Sun reduction				0.31		0.31				0.26		0.25				
Oper. time red.				1.00		1.00				1.00		1.00				
Wind dir. red.				0.63		0.63				0.63		0.63				
Total reduction				0.19		0.20				0.16		0.16				
Total, real				130		14				109		13				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** AX - H053

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February			March	April	May	June
1	08:52		15:01 (11)	08:22		16:20 (9)	07:24	07:09	06:00	05:10
	16:22	22	15:23 (11)	17:13	22	16:42 (9)	18:09	20:08	21:03	21:53
2	08:52		15:02 (11)	08:20		16:20 (9)	07:22	07:06	05:57	05:09
	16:23	21	15:23 (11)	17:15	24	16:44 (9)	18:11	20:10	21:05	21:55
3	08:52		15:04 (11)	08:18		16:20 (9)	07:19	07:04	05:55	05:08
	16:24	20	15:24 (11)	17:17	26	16:46 (9)	18:13	20:12	21:07	21:56
4	08:51		15:04 (11)	08:16		16:20 (9)	07:17	07:02	05:53	05:07
	16:26	19	15:23 (11)	17:19	28	16:48 (9)	18:15	20:13	21:09	21:57
5	08:51		15:05 (11)	08:15		16:21 (9)	07:15	06:59	05:51	05:07
	16:27	18	15:23 (11)	17:21	29	16:50 (9)	18:17	20:15	21:11	21:58
6	08:51		15:06 (11)	08:13		16:21 (9)	07:12	06:57	05:49	05:06
	16:28	17	15:23 (11)	17:23	31	16:52 (9)	18:19	20:17	21:12	21:59
7	08:50		15:07 (11)	08:11		16:21 (9)	07:10	06:54	05:47	05:05
	16:30	15	15:22 (11)	17:25	31	16:52 (9)	18:21	20:19	21:14	22:00
8	08:50		15:09 (11)	08:09		16:22 (9)	07:08	06:52	05:46	05:05
	16:31	13	15:22 (11)	17:27	30	16:52 (9)	18:23	20:21	21:16	22:01
9	08:49		15:11 (11)	08:07		16:23 (9)	07:05	06:49	05:44	05:04
	16:32	10	15:21 (11)	17:30	28	16:51 (9)	18:25	20:23	21:18	22:02
10	08:49		15:13 (11)	08:05		16:24 (9)	07:03	06:47	05:42	05:03
	16:34	7	15:20 (11)	17:32	27	16:51 (9)	18:27	20:25	21:20	22:03
11	08:48			08:03		16:25 (9)	07:00	06:45	05:40	05:03
	16:35			17:34	25	16:50 (9)	18:29	20:26	21:21	22:04
12	08:47			08:01		16:26 (9)	06:58	06:42	05:38	05:03
	16:37			17:36	23	16:49 (9)	18:31	20:28	21:23	22:04
13	08:46			07:59		16:27 (9)	06:55	06:40	05:36	05:02
	16:39			17:38	20	16:47 (9)	18:32	20:30	21:25	22:05
14	08:45			07:57		16:29 (9)	06:53	06:38	05:35	05:02
	16:40			17:40	17	17:10 (8)	18:34	20:32	21:26	22:06
15	08:44			07:55		16:33 (9)	06:51	06:35	05:33	05:02
	16:42			17:42	12	17:12 (8)	18:36	20:34	21:28	22:06
16	08:44			07:53		17:08 (8)	06:48	06:33	05:31	05:02
	16:44			17:44	7	17:15 (8)	18:38	20:36	21:30	22:07
17	08:42			07:51		17:07 (8)	06:46	06:31	05:30	05:02
	16:45			17:46	10	17:17 (8)	18:40	20:38	21:32	22:07
18	08:41			07:49		17:06 (8)	06:43	06:28	05:28	05:01
	16:47			17:48	12	17:18 (8)	18:42	20:39	21:33	22:08
19	08:40			07:47		17:07 (8)	06:41	06:26	05:26	05:01
	16:49			17:50	14	17:21 (8)	18:44	20:41	21:35	22:08
20	08:39			07:44		17:07 (8)	06:38	06:24	05:25	05:02
	16:51			17:52	16	17:23 (8)	18:46	20:43	21:36	22:09
21	08:38			07:42		17:07 (8)	06:36	06:21	05:23	05:02
	16:52			17:54	19	17:26 (8)	18:47	20:45	21:38	22:09
22	08:37			07:40		17:07 (8)	06:33	06:19	05:22	05:02
	16:54			17:56	20	17:27 (8)	18:49	20:47	21:39	22:09
23	08:35			07:38		17:08 (8)	06:31	06:17	05:21	05:02
	16:56			17:58	20	17:28 (8)	18:51	20:49	21:41	22:09
24	08:34		16:23 (9)	07:35		17:10 (8)	06:29	06:15	05:19	05:02
	16:58	1	16:24 (9)	18:00	17	17:27 (8)	18:53	20:51	21:43	22:09
25	08:33		16:23 (9)	07:33		17:10 (8)	06:26	06:12	05:18	05:03
	17:00	3	16:26 (9)	18:01	15	17:25 (8)	18:55	20:52	21:44	22:09
26	08:31		16:22 (9)	07:31		17:13 (8)	06:24	06:10	05:17	05:03
	17:02	6	16:28 (9)	18:03	10	17:23 (8)	18:57	20:54	21:45	22:09
27	08:30		16:22 (9)	07:29			06:21	06:08	05:15	05:04
	17:04	9	16:31 (9)	18:05			18:59	20:56	21:47	22:09
28	08:28		16:21 (9)	07:26			06:19	06:06	05:14	05:04
	17:06	12	16:33 (9)	18:07			19:00	20:58	21:48	22:09
29	08:27		16:21 (9)				07:16	06:04	05:13	05:05
	17:08	14	16:35 (9)				20:02	21:00	21:50	22:09
30	08:25		16:20 (9)				07:14	06:02	05:12	05:05
	17:10	17	16:37 (9)				20:04	21:02	21:51	22:09
31	08:23		16:21 (9)				07:11		05:11	
	17:11	19	16:40 (9)				20:06		21:52	
Potential sun hours	250			273			367	420	494	510
Total, worst case		243			533					
Sun reduction		0.16			0.19					
Oper. time red.		1.00			1.00					
Wind dir. red.		0.65			0.64					
Total reduction		0.10			0.13					
Total, real		25			67					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** AX - H053

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August		September		October			November			December		
1	05:06		05:46		06:40		07:34			07:32		15:53 (9)	08:27		
	22:08		21:33		20:26		19:12			17:02	27	16:20 (9)	16:17		
2	05:07		05:48		06:42		07:36			07:34		15:52 (9)	08:29		14:56 (11)
	22:08		21:31		20:24		19:10			17:00	29	16:21 (9)	16:16	7	15:03 (11)
3	05:08		05:49		06:44		07:37			07:36		15:52 (9)	08:30		14:54 (11)
	22:07		21:29		20:21		19:07			16:58	29	16:21 (9)	16:16	10	15:04 (11)
4	05:08		05:51		06:46		07:39			07:38		15:51 (9)	08:32		14:53 (11)
	22:07		21:27		20:19		19:05			16:56	31	16:22 (9)	16:15	13	15:06 (11)
5	05:09		05:53		06:48		07:41			07:40		15:51 (9)	08:33		14:52 (11)
	22:06		21:25		20:16		19:03			16:54	31	16:22 (9)	16:14	15	15:07 (11)
6	05:10		05:55		06:49		07:43			07:42		15:50 (9)	08:35		14:52 (11)
	22:06		21:24		20:14		19:00			16:52	30	16:20 (9)	16:14	17	15:09 (11)
7	05:11		05:56		06:51		07:45			07:44		15:50 (9)	08:36		14:52 (11)
	22:05		21:22		20:12		18:58			16:50	28	16:18 (9)	16:13	18	15:10 (11)
8	05:12		05:58		06:53		07:47			07:46		15:50 (9)	08:37		14:52 (11)
	22:04		21:20		20:09		18:55			16:48	26	16:16 (9)	16:13	19	15:11 (11)
9	05:13		06:00		06:55		07:48			07:48		15:51 (9)	08:38		14:52 (11)
	22:04		21:18		20:07		18:53			16:46	23	16:14 (9)	16:13	20	15:12 (11)
10	05:14		06:01		06:56		07:50			07:50		15:51 (9)	08:40		14:51 (11)
	22:03		21:16		20:04		18:50			16:45	21	16:12 (9)	16:12	21	15:12 (11)
11	05:15		06:03		06:58		07:52			07:52		15:52 (9)	08:41		14:52 (11)
	22:02		21:13		20:02		18:48			16:43	18	16:10 (9)	16:12	22	15:14 (11)
12	05:17		06:05		07:00		07:54			07:54		15:52 (9)	08:42		14:52 (11)
	22:01		21:11		19:59		18:46			16:41	17	16:09 (9)	16:12	22	15:14 (11)
13	05:18		06:07		07:02		07:56			07:55		15:52 (9)	08:43		14:52 (11)
	22:00		21:09		19:57		18:43			16:40	15	16:07 (9)	16:12	23	15:15 (11)
14	05:19		06:08		07:03		07:58			07:57		15:53 (9)	08:44		14:53 (11)
	21:59		21:07		19:54		18:41			16:38	12	16:05 (9)	16:12	22	15:15 (11)
15	05:20		06:10		07:05		08:00		17:49 (8)	07:59		15:54 (9)	08:45		14:53 (11)
	21:58		21:05		19:52		18:39	3	17:52 (8)	16:36	9	16:03 (9)	16:12	23	15:16 (11)
16	05:22		06:12		07:07		08:01		17:44 (8)	08:01		15:55 (9)	08:46		14:53 (11)
	21:57		21:03		19:49		18:36	12	17:56 (8)	16:35	6	16:01 (9)	16:12	24	15:17 (11)
17	05:23		06:14		07:09		08:03		17:42 (8)	08:03		15:56 (9)	08:47		14:53 (11)
	21:56		21:01		19:47		18:34	16	17:58 (8)	16:33	3	15:59 (9)	16:12	24	15:17 (11)
18	05:24		06:16		07:11		08:05		17:40 (8)	08:05		15:57 (9)	08:47		14:54 (11)
	21:54		20:59		19:44		18:32	19	17:59 (8)	16:32	1	15:58 (9)	16:12	23	15:17 (11)
19	05:26		06:17		07:12		08:07		17:39 (8)	08:07			08:48		14:54 (11)
	21:53		20:56		19:42		18:30	21	18:00 (8)	16:31			16:13	24	15:18 (11)
20	05:27		06:19		07:14		08:09		17:38 (8)	08:09			08:49		14:55 (11)
	21:52		20:54		19:39		18:27	20	17:58 (8)	16:29			16:13	24	15:19 (11)
21	05:29		06:21		07:16		08:11		17:38 (8)	08:10			08:49		14:55 (11)
	21:50		20:52		19:37		18:25	17	17:55 (8)	16:28			16:13	24	15:19 (11)
22	05:30		06:23		07:18		08:13		17:37 (8)	08:12			08:50		14:56 (11)
	21:49		20:50		19:35		18:23	16	17:53 (8)	16:27			16:14	24	15:20 (11)
23	05:32		06:24		07:19		08:15		17:37 (8)	08:14			08:50		14:56 (11)
	21:48		20:47		19:32		18:21	14	17:51 (8)	16:25			16:14	24	15:20 (11)
24	05:33		06:26		07:21		08:17		17:37 (8)	08:16			08:51		14:56 (11)
	21:46		20:45		19:30		18:18	11	17:48 (8)	16:24			16:15	24	15:20 (11)
25	05:35		06:28		07:23		07:19		16:37 (8)	08:17			08:51		14:57 (11)
	21:45		20:43		19:27		17:16	9	16:46 (8)	16:23			16:16	24	15:21 (11)
26	05:36		06:30		07:25		07:21		16:37 (8)	08:19			08:52		14:58 (11)
	21:43		20:40		19:25		17:14	6	16:43 (8)	16:22			16:16	23	15:21 (11)
27	05:38		06:32		07:27		07:23		16:01 (9)	08:21			08:52		14:58 (11)
	21:41		20:38		19:22		17:12	14	16:41 (8)	16:21			16:17	24	15:22 (11)
28	05:39		06:33		07:28		07:24		15:58 (9)	08:22			08:52		14:59 (11)
	21:40		20:36		19:20		17:10	18	16:39 (8)	16:20			16:18	23	15:22 (11)
29	05:41		06:35		07:30		07:26		15:56 (9)	08:24			08:52		14:59 (11)
	21:38		20:33		19:17		17:08	20	16:16 (9)	16:19			16:19	23	15:22 (11)
30	05:43		06:37		07:32		07:28		15:54 (9)	08:26			08:52		15:00 (11)
	21:36		20:31		19:15		17:06	24	16:18 (9)	16:18			16:20	23	15:23 (11)
31	05:44		06:39				07:30		15:54 (9)				08:52		15:01 (11)
	21:35		20:29				17:04	26	16:20 (9)				16:21	22	15:23 (11)
Potential sun hours	513		460		382		328			259			233		
Total, worst case								266			356			629	
Sun reduction								0.23			0.20			0.12	
Oper. time red.								1.00			1.00			1.00	
Wind dir. red.								0.65			0.64			0.65	
Total reduction								0.15			0.13			0.08	
Total, real								39			45			49	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** AY - H054

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April			May			June		
1	08:52	08:22	07:24	07:09			06:00		06:28 (11)	05:10		
	16:22	17:14	18:09	20:08			21:03	28	06:56 (11)	21:54		
2	08:52	08:20	07:22	07:07			05:58		06:27 (11)	05:09		
	16:23	17:16	18:11	20:10			21:05	28	06:55 (11)	21:55		
3	08:52	08:18	07:19	07:04			05:56		06:28 (11)	05:08		
	16:25	17:18	18:13	20:12			21:07	27	06:55 (11)	21:56		
4	08:51	08:17	07:17	07:02			05:54		06:28 (11)	05:08		
	16:26	17:20	18:15	20:14			21:09	26	06:54 (11)	21:57		
5	08:51	08:15	07:15	06:59			05:52		06:28 (11)	05:07		
	16:27	17:22	18:17	20:15			21:11	26	06:54 (11)	21:58		
6	08:51	08:13	07:12	06:57			05:50		06:28 (11)	05:06		
	16:28	17:24	18:19	20:17			21:13	25	06:53 (11)	21:59		
7	08:50	08:11	07:10	06:54			05:48		06:29 (11)	05:05		
	16:30	17:26	18:21	20:19			21:14	23	06:52 (11)	22:00		
8	08:50	08:09	07:08	06:52			05:46		06:30 (11)	05:05		05:36 (9)
	16:31	17:28	18:23	20:21			21:16	21	06:51 (11)	22:01	1	05:37 (9)
9	08:49	08:07	07:05	06:50			05:44		06:31 (11)	05:04		05:36 (9)
	16:33	17:30	18:25	20:23			21:18	19	06:50 (11)	22:02	2	05:38 (9)
10	08:49	08:05	07:03	06:47			05:42		06:32 (11)	05:04		05:36 (9)
	16:34	17:32	18:27	20:25			21:20	16	06:48 (11)	22:03	3	05:39 (9)
11	08:48	08:03	07:00	06:45			05:40		06:34 (11)	05:03		05:35 (9)
	16:36	17:34	18:29	20:27			21:21	12	06:46 (11)	22:04	3	05:38 (9)
12	08:47	08:01	06:58	06:42			05:38		06:37 (11)	05:03		05:35 (9)
	16:37	17:36	18:31	20:28			21:23	6	06:43 (11)	22:04	4	05:39 (9)
13	08:46	07:59	06:56	06:40			05:37			05:03		05:35 (9)
	16:39	17:38	18:33	20:30			21:25			22:05	5	05:40 (9)
14	08:45	07:57	06:53	06:38			05:35			05:02		05:35 (9)
	16:40	17:40	18:34	20:32			21:27			22:06	5	05:40 (9)
15	08:45	07:55	06:51	06:35			05:33			05:02		05:35 (9)
	16:42	17:42	18:36	20:34			21:28			22:06	6	05:41 (9)
16	08:44	07:53	06:48	06:33			05:31			05:02		05:34 (9)
	16:44	17:44	18:38	20:36			21:30			22:07	6	05:40 (9)
17	08:43	07:51	06:46	06:31			05:30			05:02		05:34 (9)
	16:45	17:46	18:40	20:38			21:32			22:07	6	05:40 (9)
18	08:41	07:49	06:43	06:28			05:28			05:02		05:34 (9)
	16:47	17:48	18:42	20:40			21:33			22:08	7	05:41 (9)
19	08:40	07:47	06:41	06:26			05:27			05:02		05:35 (9)
	16:49	17:50	18:44	20:41			21:35			22:08	7	05:42 (9)
20	08:39	07:44	06:38	06:24			05:25			05:02		05:35 (9)
	16:51	17:52	18:46	20:43			21:36			22:09	7	05:42 (9)
21	08:38	07:42	06:36	06:22		06:46 (11)	05:24			05:02		05:35 (9)
	16:53	17:54	18:48	20:45	4	06:50 (11)	21:38			22:09	7	05:42 (9)
22	08:37	07:40	06:34	06:19		06:44 (11)	05:22			05:02		05:35 (9)
	16:54	17:56	18:49	20:47	8	06:52 (11)	21:40			22:09	7	05:42 (9)
23	08:35	07:38	06:31	06:17		06:42 (11)	05:21			05:02		05:35 (9)
	16:56	17:58	18:51	20:49	11	06:53 (11)	21:41			22:09	7	05:42 (9)
24	08:34	07:36	06:29	06:15		06:40 (11)	05:19			05:03		05:36 (9)
	16:58	18:00	18:53	20:51	14	06:54 (11)	21:43			22:09	7	05:43 (9)
25	08:33	07:33	06:26	06:13		06:38 (11)	05:18			05:03		05:36 (9)
	17:00	18:02	18:55	20:52	17	06:55 (11)	21:44			22:09	7	05:43 (9)
26	08:31	07:31	06:24	06:10		06:36 (11)	05:17			05:03		05:37 (9)
	17:02	18:04	18:57	20:54	19	06:55 (11)	21:46			22:09	6	05:43 (9)
27	08:30	07:29	06:21	06:08		06:34 (11)	05:16			05:04		05:37 (9)
	17:04	18:06	18:59	20:56	22	06:56 (11)	21:47			22:09	6	05:43 (9)
28	08:28	07:26	06:19	06:06		06:31 (11)	05:14			05:04		05:38 (9)
	17:06	18:08	19:01	20:58	24	06:55 (11)	21:48			22:09	5	05:43 (9)
29	08:27		07:16	06:04		06:29 (11)	05:13			05:05		05:38 (9)
	17:08		20:02	21:00	26	06:55 (11)	21:50			22:09	5	05:43 (9)
30	08:25		07:14	06:02		06:27 (11)	05:12			05:06		05:39 (9)
	17:10		20:04	21:02	28	06:55 (11)	21:51			22:09	4	05:43 (9)
31	08:23		07:11				05:11					
	17:12		20:06				21:52					
Potential sun hours	250	273	367	420			494			510		
Total, worst case					173			257			123	
Sun reduction					0.31			0.31			0.26	
Oper. time red.					1.00			1.00			1.00	
Wind dir. red.					0.65			0.65			0.65	
Total reduction					0.20			0.20			0.17	
Total, real					34			52			21	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** AY - H054

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July			August			September	October	November	December
1	05:06		05:39 (9)	05:46		06:46 (11)	06:41	07:34	07:32	08:27
	22:08	4	05:43 (9)	21:33	9	06:55 (11)	20:26	19:12	17:02	16:17
2	05:07		05:40 (9)	05:48		06:43 (11)	06:42	07:36	07:34	08:29
	22:08	3	05:43 (9)	21:31	14	06:57 (11)	20:24	19:10	17:00	16:17
3	05:08		05:41 (9)	05:50		06:42 (11)	06:44	07:38	07:36	08:30
	22:07	2	05:43 (9)	21:29	17	06:59 (11)	20:21	19:08	16:58	16:16
4	05:09		05:42 (9)	05:51		06:40 (11)	06:46	07:39	07:38	08:32
	22:07	1	05:43 (9)	21:27	20	07:00 (11)	20:19	19:05	16:56	16:15
5	05:09			05:53		06:40 (11)	06:48	07:41	07:40	08:33
	22:06			21:26	21	07:01 (11)	20:17	19:03	16:54	16:15
6	05:10			05:55		06:39 (11)	06:49	07:43	07:42	08:35
	22:06			21:24	23	07:02 (11)	20:14	19:00	16:52	16:14
7	05:11			05:56		06:38 (11)	06:51	07:45	07:44	08:36
	22:05			21:22	24	07:02 (11)	20:12	18:58	16:50	16:14
8	05:12			05:58		06:37 (11)	06:53	07:47	07:46	08:37
	22:04			21:20	26	07:03 (11)	20:09	18:55	16:48	16:13
9	05:13			06:00		06:37 (11)	06:55	07:49	07:48	08:39
	22:04			21:18	27	07:04 (11)	20:07	18:53	16:47	16:13
10	05:15			06:02		06:36 (11)	06:57	07:50	07:50	08:40
	22:03			21:16	28	07:04 (11)	20:04	18:51	16:45	16:13
11	05:16			06:03		06:36 (11)	06:58	07:52	07:52	08:41
	22:02			21:14	28	07:04 (11)	20:02	18:48	16:43	16:12
12	05:17			06:05		06:35 (11)	07:00	07:54	07:54	08:42
	22:01			21:11	28	07:03 (11)	19:59	18:46	16:41	16:12
13	05:18			06:07		06:36 (11)	07:02	07:56	07:56	08:43
	22:00			21:09	28	07:04 (11)	19:57	18:44	16:40	16:12
14	05:19			06:09		06:38 (11)	07:04	07:58	07:57	08:44
	21:59			21:07	26	07:04 (11)	19:54	18:41	16:38	16:12
15	05:21			06:10		06:39 (11)	07:05	08:00	07:59	08:45
	21:58			21:05	24	07:03 (11)	19:52	18:39	16:37	16:12
16	05:22			06:12		06:41 (11)	07:07	08:02	08:01	08:46
	21:57			21:03	21	07:02 (11)	19:50	18:37	16:35	16:12
17	05:23			06:14		06:43 (11)	07:09	08:03	08:03	08:47
	21:56			21:01	19	07:02 (11)	19:47	18:34	16:34	16:12
18	05:25			06:16		06:44 (11)	07:11	08:05	08:05	08:47
	21:54			20:59	16	07:00 (11)	19:45	18:32	16:32	16:13
19	05:26			06:18		06:46 (11)	07:12	08:07	08:07	08:48
	21:53			20:56	14	07:00 (11)	19:42	18:30	16:31	16:13
20	05:27			06:19		06:48 (11)	07:14	08:09	08:09	08:49
	21:52			20:54	11	06:59 (11)	19:40	18:27	16:29	16:13
21	05:29			06:21		06:49 (11)	07:16	08:11	08:10	08:49
	21:50			20:52	7	06:56 (11)	19:37	18:25	16:28	16:14
22	05:30			06:23		06:51 (11)	07:18	08:13	08:12	08:50
	21:49			20:50	3	06:54 (11)	19:35	18:23	16:27	16:14
23	05:32			06:25			07:20	08:15	08:14	08:51
	21:48			20:47			19:32	18:21	16:25	16:15
24	05:33			06:26			07:21	08:17	08:16	08:51
	21:46			20:45			19:30	18:19	16:24	16:15
25	05:35			06:28			07:23	07:19	08:18	08:51
	21:45			20:43			19:27	17:16	16:23	16:16
26	05:36			06:30			07:25	07:21	08:19	08:52
	21:43			20:40			19:25	17:14	16:22	16:16
27	05:38			06:32			07:27	07:23	08:21	08:52
	21:41			20:38			19:22	17:12	16:21	16:17
28	05:40			06:34			07:29	07:25	08:23	08:52
	21:40			20:36			19:20	17:10	16:20	16:18
29	05:41			06:35			07:30	07:26	08:24	08:52
	21:38			20:33			19:17	17:08	16:19	16:19
30	05:43			06:37			07:32	07:28	08:26	08:52
	21:36			20:31			19:15	17:06	16:18	16:20
31	05:45			06:39				07:30		08:52
	21:35			20:29				17:04		16:21
Potential sun hours	512			460			382	328	259	233
Total, worst case		10			434					
Sun reduction		0.22			0.26					
Oper. time red.		1.00			1.00					
Wind dir. red.		0.65			0.65					
Total reduction		0.14			0.17					
Total, real		1			72					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** AZ - H055

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March			April			May			June	
1	08:52		08:22		07:24			07:09			07:33 (6)		06:00		06:26 (5)	05:10
	16:23		17:14		18:10			20:08	9		07:42 (6)		21:04	37	07:03 (5)	21:54
2	08:52		08:20		07:22			07:07			07:31 (6)		05:58		06:25 (5)	05:10
	16:24		17:16		18:12			20:10	13		07:44 (6)		21:06	37	07:02 (5)	21:55
3	08:52		08:19		07:20			07:04			07:28 (6)		05:56		06:25 (5)	05:09
	16:25		17:18		18:14			20:12	16		07:44 (6)		21:07	37	07:02 (5)	21:56
4	08:52		08:17		07:17			07:02			07:26 (6)		05:54		06:25 (5)	05:08
	16:26		17:20		18:16			20:14	18		07:44 (6)		21:09	37	07:02 (5)	21:57
5	08:51		08:15		07:15			06:59			07:23 (6)		05:52		06:25 (5)	05:07
	16:27		17:22		18:17			20:16	21		07:44 (6)		21:11	36	07:01 (5)	21:58
6	08:51		08:13		07:13			06:57			07:21 (6)		05:50		06:25 (5)	05:06
	16:29		17:24		18:19			20:18	23		07:44 (6)		21:13	35	07:00 (5)	21:59
7	08:50		08:11		07:10			06:55			07:18 (6)		05:48		06:26 (5)	05:06
	16:30		17:26		18:21			20:19	25		07:43 (6)		21:15	35	07:01 (5)	22:00
8	08:50		08:09		07:08			06:52			07:16 (6)		05:46		06:27 (5)	05:05
	16:31		17:28		18:23			20:21	27		07:43 (6)		21:16	33	07:00 (5)	22:01
9	08:49		08:07		07:05			06:50			07:16 (6)		05:44		06:27 (5)	05:04
	16:33		17:30		18:25			20:23	27		07:43 (6)		21:18	32	06:59 (5)	22:02
10	08:49		08:05		07:03			06:47			07:15 (6)		05:42		06:27 (5)	05:04
	16:34		17:32		18:27			20:25	27		07:42 (6)		21:20	31	06:58 (5)	22:03
11	08:48		08:04		07:01			06:45			07:16 (6)		05:40		06:29 (5)	05:04
	16:36		17:34		18:29			20:27	25		07:41 (6)		21:22	29	06:58 (5)	22:04
12	08:47		08:02		06:58			06:43			07:17 (6)		05:39		06:29 (5)	05:03
	16:37		17:36		18:31			20:29	23		07:40 (6)		21:23	27	06:56 (5)	22:05
13	08:47		07:59		06:56			06:40			07:17 (6)		05:37		06:30 (5)	05:03
	16:39		17:38		18:33			20:30	21		07:38 (6)		21:25	25	06:55 (5)	22:05
14	08:46		07:57		06:53			06:38			07:19 (6)		05:35		06:32 (5)	05:03
	16:41		17:40		18:35			20:32	17		07:36 (6)		21:27	22	06:54 (5)	22:06
15	08:45		07:55		06:51			06:36			07:21 (6)		05:33		06:33 (5)	05:02
	16:42		17:42		18:37			20:34	13		07:34 (6)		21:28	19	06:52 (5)	22:07
16	08:44		07:53		06:49			06:33			07:24 (6)		05:32		06:35 (5)	05:02
	16:44		17:44		18:38			20:36	7		07:31 (6)		21:30	16	06:51 (5)	22:07
17	08:43		07:51		06:46			06:31					05:30		06:37 (5)	05:02
	16:46		17:46		18:40			20:38					21:32	11	06:48 (5)	22:08
18	08:42		07:49		06:44			06:29					05:29			05:02
	16:47		17:48		18:42			20:40					21:33			22:08
19	08:41		07:47		06:41			06:26			06:51 (5)		05:27			05:02
	16:49		17:50		18:44			20:42	4		06:55 (5)		21:35			22:08
20	08:39		07:45		06:39			06:24			06:49 (5)		05:25			05:02
	16:51		17:52		18:46			20:43	8		06:57 (5)		21:37			22:09
21	08:38		07:42		06:36			06:22			06:46 (5)		05:24			05:02
	16:53		17:54		18:48			20:45	12		06:58 (5)		21:38			22:09
22	08:37		07:40		06:34			06:20			06:44 (5)		05:22			05:02
	16:55		17:56		18:50			20:47	15		06:59 (5)		21:40			22:09
23	08:36		07:38		06:31			06:17			06:42 (5)		05:21			05:03
	16:57		17:58		18:52			20:49	18		07:00 (5)		21:41			22:09
24	08:34		07:36		06:29			06:15			06:40 (5)		05:20			05:03
	16:58		18:00		18:53			20:51	21		07:01 (5)		21:43			22:09
25	08:33		07:34		06:26			06:13			06:38 (5)		05:18			05:03
	17:00		18:02		18:55			20:53	24		07:02 (5)		21:44			22:10
26	08:31		07:31		06:24			06:11			06:36 (5)		05:17			05:04
	17:02		18:04		18:57			20:55	26		07:02 (5)		21:46			22:10
27	08:30		07:29		06:22			06:08			06:34 (5)		05:16			05:04
	17:04		18:06		18:59			20:56	28		07:02 (5)		21:47			22:09
28	08:28		07:27		06:19			06:06			06:32 (5)		05:15			05:05
	17:06		18:08		19:01			20:58	31		07:03 (5)		21:49			22:09
29	08:27				07:17			06:04			06:30 (5)		05:14			05:05
	17:08				20:03			21:00	33		07:03 (5)		21:50			22:09
30	08:25				07:14		07:38 (6)	06:02			06:28 (5)		05:13			05:06
	17:10				20:05	2	07:40 (6)	21:02	35		07:03 (5)		21:51			22:09
31	08:24				07:12		07:35 (6)						05:11			
	17:12				20:06	6	07:41 (6)						21:52			
Potential sun hours	250		273		367			420					494			510
Total, worst case						8			567					499		
Sun reduction						0.22			0.31					0.31		
Oper. time red.						1.00			1.00					1.00		
Wind dir. red.						0.65			0.65					0.65		
Total reduction						0.14			0.20					0.20		
Total, real						1			113					102		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** AZ - H055

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July			August			September			October	November	December
1	05:07			05:46		06:39 (5)	06:41		07:15 (6)	07:34	07:33	08:28
	22:08			21:33	28	07:07 (5)	20:26	25	07:40 (6)	19:13	17:02	16:18
2	05:07			05:48		06:39 (5)	06:43		07:14 (6)	07:36	07:34	08:29
	22:08			21:31	29	07:08 (5)	20:24	27	07:41 (6)	19:10	17:00	16:17
3	05:08			05:50		06:37 (5)	06:44		07:14 (6)	07:38	07:36	08:31
	22:08			21:29	32	07:09 (5)	20:22	27	07:41 (6)	19:08	16:58	16:16
4	05:09			05:52		06:37 (5)	06:46		07:13 (6)	07:40	07:38	08:32
	22:07			21:28	33	07:10 (5)	20:19	27	07:40 (6)	19:05	16:56	16:16
5	05:10			05:53		06:36 (5)	06:48		07:15 (6)	07:41	07:40	08:33
	22:07			21:26	33	07:09 (5)	20:17	25	07:40 (6)	19:03	16:54	16:15
6	05:11			05:55		06:36 (5)	06:50		07:17 (6)	07:43	07:42	08:35
	22:06			21:24	34	07:10 (5)	20:14	23	07:40 (6)	19:00	16:52	16:14
7	05:12			05:57		06:36 (5)	06:51		07:18 (6)	07:45	07:44	08:36
	22:05			21:22	35	07:11 (5)	20:12	21	07:39 (6)	18:58	16:50	16:14
8	05:13			05:58		06:35 (5)	06:53		07:20 (6)	07:47	07:46	08:37
	22:05			21:20	36	07:11 (5)	20:09	18	07:38 (6)	18:56	16:49	16:14
9	05:14			06:00		06:35 (5)	06:55		07:22 (6)	07:49	07:48	08:39
	22:04			21:18	36	07:11 (5)	20:07	16	07:38 (6)	18:53	16:47	16:13
10	05:15			06:02		06:34 (5)	06:57		07:24 (6)	07:51	07:50	08:40
	22:03			21:16	37	07:11 (5)	20:05	13	07:37 (6)	18:51	16:45	16:13
11	05:16			06:04		06:34 (5)	06:59		07:25 (6)	07:52	07:52	08:41
	22:02			21:14	37	07:11 (5)	20:02	10	07:35 (6)	18:48	16:43	16:13
12	05:17			06:05		06:35 (5)	07:00		07:27 (6)	07:54	07:54	08:42
	22:01			21:12	36	07:11 (5)	20:00	6	07:33 (6)	18:46	16:42	16:12
13	05:18			06:07		06:36 (5)	07:02		07:29 (6)	07:56	07:56	08:43
	22:00			21:10	34	07:10 (5)	19:57	2	07:31 (6)	18:44	16:40	16:12
14	05:20			06:09		06:38 (5)	07:04			07:58	07:58	08:44
	21:59			21:07	32	07:10 (5)	19:55			18:41	16:38	16:12
15	05:21			06:11		06:40 (5)	07:06			08:00	08:00	08:45
	21:58			21:05	30	07:10 (5)	19:52			18:39	16:37	16:12
16	05:22			06:12		06:41 (5)	07:07			08:02	08:01	08:46
	21:57			21:03	28	07:09 (5)	19:50			18:37	16:35	16:12
17	05:23			06:14		06:43 (5)	07:09			08:04	08:03	08:47
	21:56			21:01	26	07:09 (5)	19:47			18:34	16:34	16:13
18	05:25			06:16		06:45 (5)	07:11			08:06	08:05	08:48
	21:55			20:59	23	07:08 (5)	19:45			18:32	16:32	16:13
19	05:26			06:18		06:46 (5)	07:13			08:07	08:07	08:48
	21:53			20:57	20	07:06 (5)	19:42			18:30	16:31	16:13
20	05:28			06:20		06:48 (5)	07:14			08:09	08:09	08:49
	21:52			20:54	18	07:06 (5)	19:40			18:28	16:30	16:13
21	05:29			06:21		06:50 (5)	07:16			08:11	08:11	08:50
	21:51			20:52	15	07:05 (5)	19:37			18:25	16:28	16:14
22	05:31			06:23		06:51 (5)	07:18			08:13	08:12	08:50
	21:49			20:50	11	07:02 (5)	19:35			18:23	16:27	16:14
23	05:32			06:25		06:53 (5)	07:20			08:15	08:14	08:51
	21:48			20:48	8	07:01 (5)	19:32			18:21	16:26	16:15
24	05:34			06:27		06:55 (5)	07:22			08:17	08:16	08:51
	21:46			20:45	3	06:58 (5)	19:30			18:19	16:25	16:15
25	05:35			06:28			07:23			07:19	08:18	08:52
	21:45			20:43			19:27			17:17	16:23	16:16
26	05:37		06:49 (5)	06:30			07:25			07:21	08:19	08:52
	21:43	8	06:57 (5)	20:41			19:25			17:14	16:22	16:17
27	05:38		06:46 (5)	06:32		07:26 (6)	07:27			07:23	08:21	08:52
	21:42	14	07:00 (5)	20:38	7	07:33 (6)	19:22			17:12	16:21	16:18
28	05:40		06:44 (5)	06:34		07:21 (6)	07:29			07:25	08:23	08:52
	21:40	18	07:02 (5)	20:36	14	07:35 (6)	19:20			17:10	16:20	16:18
29	05:42		06:42 (5)	06:36		07:19 (6)	07:31			07:27	08:24	08:52
	21:38	21	07:03 (5)	20:34	18	07:37 (6)	19:18			17:08	16:19	16:19
30	05:43		06:41 (5)	06:37		07:18 (6)	07:32			07:29	08:26	08:52
	21:37	24	07:05 (5)	20:31	21	07:39 (6)	19:15			17:06	16:19	16:20
31	05:45		06:40 (5)	06:39		07:16 (6)				07:31		08:52
	21:35	26	07:06 (5)	20:29	23	07:39 (6)				17:04		16:21
Potential sun hours	512			460			382			328	259	233
Total, worst case		111			737			240				
Sun reduction		0.22			0.26			0.25				
Oper. time red.		1.00			1.00			1.00				
Wind dir. red.		0.65			0.65			0.65				
Total reduction		0.15			0.17			0.16				
Total, real		16			122			39				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** BA - H056

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March		April		May			June		July			August			September	October	November	December
1	08:52		08:22		07:24		07:09		06:00			05:11		05:07			05:47		06:17 (3)	06:41	07:34	07:33	08:28
	16:23		17:14		18:10		20:08		21:04			21:54		22:09			21:33	16	06:33 (3)	20:27	19:13	17:02	16:18
2	08:52		08:20		07:22		07:07		05:58			05:10		05:07			05:48		06:19 (3)	06:43	07:36	07:35	08:29
	16:24		17:16		18:12		20:10		21:06			21:55		22:08			21:31	15	06:34 (3)	20:24	19:10	17:00	16:17
3	08:52		08:19		07:20		07:04		05:56			05:09		05:08			05:50		06:20 (3)	06:44	07:38	07:36	08:31
	16:25		17:18		18:14		20:12		21:07			21:56		22:08			21:30	13	06:33 (3)	20:22	19:08	16:58	16:16
4	08:52		08:17		07:17		07:02		05:54		06:20 (3)	05:08		05:09			05:52		06:22 (3)	06:46	07:40	07:38	08:32
	16:26		17:20		18:16		20:14		21:09	2	06:22 (3)	21:57		22:07			21:28	11	06:33 (3)	20:19	19:05	16:56	16:16
5	08:51		08:15		07:15		07:00		05:52		06:18 (3)	05:07		05:10			05:53		06:23 (3)	06:48	07:42	07:40	08:34
	16:27		17:22		18:18		20:16		21:11	4	06:22 (3)	21:58		22:07			21:26	10	06:33 (3)	20:17	19:03	16:54	16:15
6	08:51		08:13		07:13		06:57		05:50		06:16 (3)	05:06		05:11			05:55		06:25 (3)	06:50	07:43	07:42	08:35
	16:29		17:24		18:19		20:18		21:13	6	06:22 (3)	21:59		22:06			21:24	8	06:33 (3)	20:14	19:01	16:52	16:14
7	08:51		08:11		07:10		06:55		05:48		06:15 (3)	05:06		05:12			05:57		06:27 (3)	06:52	07:45	07:44	08:36
	16:30		17:26		18:21		20:19		21:15	8	06:23 (3)	22:00		22:05			21:22	6	06:33 (3)	20:12	18:58	16:51	16:14
8	08:50		08:09		07:08		06:52		05:46		06:13 (3)	05:05		05:13			05:58		06:28 (3)	06:53	07:47	07:46	08:38
	16:31		17:28		18:23		20:21		21:16	10	06:23 (3)	22:01		22:05			21:20	4	06:32 (3)	20:10	18:56	16:49	16:14
9	08:49		08:07		07:06		06:50		05:44		06:11 (3)	05:05		05:14			06:00		06:30 (3)	06:55	07:49	07:48	08:39
	16:33		17:30		18:25		20:23		21:18	12	06:23 (3)	22:02		22:04			21:18	1	06:31 (3)	20:07	18:53	16:47	16:13
10	08:49		08:06		07:03		06:47		05:42		06:09 (3)	05:04		05:15			06:02			06:57	07:51	07:50	08:40
	16:34		17:32		18:27		20:25		21:20	14	06:23 (3)	22:03		22:03			21:16			20:05	18:51	16:45	16:13
11	08:48		08:04		07:01		06:45		05:40		06:08 (3)	05:04		05:16			06:04			06:59	07:53	07:52	08:41
	16:36		17:34		18:29		20:27		21:22	15	06:23 (3)	22:04		22:02			21:14			20:02	18:49	16:43	16:13
12	08:47		08:02		06:58		06:43		05:39		06:06 (3)	05:03		05:17			06:05			07:00	07:54	07:54	08:42
	16:37		17:36		18:31		20:29		21:23	17	06:23 (3)	22:05		22:01			21:12			20:00	18:46	16:42	16:13
13	08:47		08:00		06:56		06:40		05:37		06:04 (3)	05:03		05:18			06:07			07:02	07:56	07:56	08:43
	16:39		17:38		18:33		20:31		21:25	18	06:22 (3)	22:05		22:00			21:10			19:57	18:44	16:40	16:12
14	08:46		07:58		06:53		06:38		05:35		06:03 (3)	05:03		05:20			06:09			07:04	07:58	07:58	08:44
	16:41		17:40		18:35		20:32		21:27	19	06:22 (3)	22:06		21:59			21:08			19:55	18:41	16:39	16:12
15	08:45		07:55		06:51		06:36		05:33		06:01 (3)	05:02		05:21			06:11			07:06	08:00	08:00	08:45
	16:42		17:42		18:37		20:34		21:29	20	06:21 (3)	22:07		21:58			21:05			19:52	18:39	16:37	16:12
16	08:44		07:53		06:49		06:33		05:32		06:00 (3)	05:02		05:22			06:13			07:07	08:02	08:01	08:46
	16:44		17:44		18:39		20:36		21:30	21	06:21 (3)	22:07		21:57			21:03			19:50	18:37	16:35	16:12
17	08:43		07:51		06:46		06:31		05:30		06:01 (3)	05:02		05:24			06:14			07:09	08:04	08:03	08:47
	16:46		17:46		18:40		20:38		21:32	19	06:20 (3)	22:08		21:56			21:01			19:47	18:35	16:34	16:13
18	08:42		07:49		06:44		06:29		05:29		06:02 (3)	05:02		05:25			06:16			07:11	08:06	08:05	08:48
	16:47		17:48		18:42		20:40		21:33	17	06:19 (3)	22:08		21:55			20:59			19:45	18:32	16:32	16:13
19	08:41		07:47		06:41		06:26		05:27		06:04 (3)	05:02		05:26			06:18			07:13	08:08	08:07	08:48
	16:49		17:50		18:44		20:42		21:35	14	06:18 (3)	22:09		21:53			20:57			19:42	18:30	16:31	16:13
20	08:39		07:45		06:39		06:24		05:25		06:04 (3)	05:02		05:28			06:20			07:15	08:09	08:09	08:49
	16:51		17:52		18:46		20:44		21:37	12	06:16 (3)	22:09		21:52			20:54			19:40	18:28	16:30	16:13
21	08:38		07:43		06:36		06:22		05:24		06:06 (3)	05:02		05:29			06:21			07:16	08:11	08:11	08:50
	16:53		17:54		18:48		20:45		21:38	9	06:15 (3)	22:09		21:51			20:52			19:37	18:25	16:28	16:14
22	08:37		07:40		06:34		06:20		05:23			05:02		05:31		06:18 (3)	06:23			07:18	08:13	08:13	08:50
	16:55		17:56		18:50		20:47		21:40			22:09		21:49	5	06:23 (3)	20:50			19:35	18:23	16:27	16:14
23	08:36		07:38		06:31		06:17		05:21			05:03		05:32		06:16 (3)	06:25			07:20	08:15	08:14	08:51
	16:57		17:58		18:52		20:49		21:41			22:09		21:48	10	06:26 (3)	20:48			19:32	18:21	16:26	16:15
24	08:34		07:36		06:29		06:15		05:20			05:03		05:34		06:14 (3)	06:27			07:22	08:17	08:16	08:51
	16:58		18:00		18:53		20:51		21:43			22:10		21:46	13	06:27 (3)	20:45			19:30	18:19	16:25	16:15
25	08:33		07:34		06:26		06:13		05:18			05:03		05:35		06:13 (3)	06:28			07:23	07:19	08:18	08:52
	17:00		18:02		18:55		20:53		21:44			22:10		21:45	16	06:29 (3)	20:43			19:27	17:17	16:23	16:16
26	08:31		07:31		06:24		06:11		05:17			05:04		05:37		06:12 (3)	06:30			07:25	07:21	08:19	08:52
	17:02		18:04		18:57		20:55		21:46			22:10		21:43	18	06:30 (3)	20:41			19:25	17:15	16:22	16:17
27	08:30		07:29		06:22		06:09		05:16			05:04		05:38		06:11 (3)	06:32			07:27	07:23	08:21	08:52
	17:04		18:06		18:59		20:56		21:47			22:09		21:42	19	06:30 (3)	20:38			19:23	17:12	16:21	16:18
28	08:28		07:27		06:19		06:06		05:15			05:05		05:40		06:11 (3)	06:34			07:29	07:25	08:23	08:52
	17:06		18:08		19:01		20:58		21:49			22:09		21:40	21	06:32 (3)	20:36			19:20	17:10	16:20	16:18
29	08:27				07:17		06:04		05:14			05:05		05:42		06:12 (3)	06:36			07:31	07:27	08:24	08:52
	17:08				20:03		21:00		21:50			22:09		21:38	20	06:32 (3)	20:34			19:18	17:08	16:19	16:19
30	08:25				07:14		06:02		05:13			05:06		05:43		06:14 (3)	06:37			07:32	07:29	08:26	08:52
	17:10				20:05		21:02		21:51			22:09		21:37	19	06:33 (3)	20:31			19:15	17:06	16:19	16:20
31	08:24				07:12				05:12					05:45		06:16 (3)	06:39				07:31		08:52
	17:12				20:06				21:53					21:35	17	06:33 (3)	20:29				17:04		16:21
Potential sun hours	250		273		367		420		494			510		512			460			382	328	259	233
Total, worst case										237					158			84					
Sun reduction										0.31					0.22			0.26					
Oper. time red.										1.00					1.00			1.00					
Wind dir. red.										0.65					0.65			0.65					
Total reduction										0.20					0.14			0.17					
Total, real										48					23			14					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** BB - H058

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:16
3	08:52	08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:38	07:36	08:30
	16:24	17:18	18:13	20:12	21:07	21:56	22:08	21:29	20:21	19:07	16:58	16:16
4	08:52	08:17	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11	21:58	22:06	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:49	05:06	05:10	05:55	06:49	07:43	07:42	08:35
	16:28	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:49	07:48	08:39
	16:32	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:14	06:02	06:56	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:12
11	08:48	08:03	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52	08:41
	16:35	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23	22:05	22:01	21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:56	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36	16:12
16	08:44	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:33	16:12
18	08:42	07:49	06:43	06:28	05:28	05:02	05:24	06:16	07:11	08:05	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:12
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:24	05:02	05:29	06:21	07:16	08:11	08:10	08:50
	16:52	17:54	18:48	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:13
22	08:37	07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	16:14
24	08:34	07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24	16:15
25	08:33	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	05:04	05:40	06:33	07:28	07:25	08:23	08:52
	17:06	18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11		05:44	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	513	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** BC - H059

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52 16:22	08:22 17:14	07:24 18:10	07:09 20:08 18 19:14 (7)	06:00 21:04	05:10 21:54	05:06 22:08	05:46 21:33	06:41 20:26	07:34 19:12 3 18:41 (7) 18:44 (7)	07:32 17:02	08:27 16:18
2	08:52 16:23	08:20 17:16	07:22 18:11	07:07 20:10 11 18:58 (7) 19:09 (7)	05:58 21:05	05:09 21:55	05:07 22:08	05:48 21:31	06:42 20:24	07:36 19:10	07:34 17:00	08:29 16:17
3	08:52 16:25	08:18 17:18	07:20 18:13	07:04 20:12	05:56 21:07	05:08 21:56	05:08 22:08	05:50 21:29	06:44 20:21	07:38 19:08	07:36 16:58	08:30 16:16
4	08:52 16:26	08:17 17:20	07:17 18:15	07:02 20:14	05:54 21:09	05:08 21:57	05:09 22:07	05:51 21:27	06:46 20:19	07:39 19:05	07:38 16:56	08:32 16:15
5	08:51 16:27	08:15 17:22	07:15 18:17	06:59 20:15	05:52 21:11	05:07 21:58	05:10 22:06	05:53 21:26	06:48 20:17	07:41 19:03	07:40 16:54	08:33 16:15
6	08:51 16:28	08:13 17:24	07:12 18:19	06:57 20:17	05:50 21:13	05:06 21:59	05:10 22:06	05:55 21:24	06:50 20:14	07:43 19:00	07:42 16:52	08:35 16:14
7	08:50 16:30	08:11 17:26	07:10 18:21	06:54 20:19	05:48 21:14	05:05 22:00	05:11 22:05	05:57 21:22	06:51 20:12	07:45 18:58	07:44 16:50	08:36 16:14
8	08:50 16:31	08:09 17:28	07:08 18:23	06:52 20:21	05:46 21:16	05:05 22:01	05:12 22:04	05:58 21:20	06:53 20:09	07:47 18:55	07:46 16:48	08:37 16:13
9	08:49 16:33	08:07 17:30	07:05 18:25	06:50 20:23	05:44 21:18	05:04 22:02	05:14 22:04	06:00 21:18	06:55 20:07	07:49 18:53	07:48 16:47	08:39 16:13
10	08:49 16:34	08:05 17:32	07:03 18:27	06:47 20:25	05:42 21:20	05:04 22:03	05:15 22:03	06:02 21:16	06:57 20:04 10 18:52 (7) 19:02 (7)	07:50 18:51	07:50 16:45	08:40 16:13
11	08:48 16:36	08:03 17:34	07:00 18:29	06:45 20:27	05:40 21:21	05:03 22:04	05:16 22:02	06:03 21:14	06:58 20:02 17 19:05 (7)	07:52 18:48	07:52 16:43	08:41 16:12
12	08:47 16:37	08:01 17:36	06:58 18:31	06:42 20:28	05:38 21:23	05:03 22:05	05:17 22:01	06:05 21:12	07:00 19:59 25 18:46 (7) 19:11 (6)	07:54 18:46	07:54 16:42	08:42 16:12
13	08:46 16:39	07:59 17:38	06:56 18:33 5 18:01 (7) 18:06 (7)	06:40 20:30	05:37 21:25	05:03 22:05	05:18 22:00	06:07 21:09	07:02 19:57 30 18:43 (7) 19:13 (6)	07:56 18:44	07:56 16:40	08:43 16:12
14	08:45 16:40	07:57 17:40	06:53 18:34 10 17:58 (7) 18:08 (7)	06:38 20:32	05:35 21:27	05:02 22:06	05:19 21:59	06:09 21:07	07:04 19:55 33 18:42 (7) 19:15 (6)	07:58 18:41	07:57 16:38	08:44 16:12
15	08:45 16:42	07:55 17:42	06:51 18:36 13 17:57 (7) 18:10 (7)	06:35 20:34	05:33 21:28	05:02 22:06	05:21 21:58	06:11 21:05	07:05 19:52 36 18:40 (7) 19:16 (6)	08:00 18:39	07:59 16:37	08:45 16:12
16	08:44 16:44	07:53 17:44	06:48 18:38 16 17:55 (7) 18:11 (7)	06:33 20:36	05:32 21:30	05:02 22:07	05:22 21:57	06:12 21:03	07:07 19:50 38 18:39 (7) 19:17 (6)	08:02 18:37	08:01 16:35	08:46 16:12
17	08:43 16:46	07:51 17:46	06:46 18:40 20 17:54 (7) 18:14 (7)	06:31 20:38	05:30 21:32	05:02 22:07	05:23 21:56	06:14 21:01	07:09 19:47 39 18:38 (7) 19:17 (6)	08:04 18:34	08:03 16:34	08:47 16:12
18	08:42 16:47	07:49 17:48	06:43 18:42 23 17:52 (7) 18:15 (7)	06:28 20:40	05:28 21:33	05:02 22:08	05:25 21:54	06:16 20:59	07:11 19:45 39 18:37 (7) 19:16 (6)	08:05 18:32	08:05 16:32	08:48 16:13
19	08:40 16:49	07:47 17:50	06:41 18:44 26 17:52 (7) 18:18 (7)	06:26 20:41	05:27 21:35	05:02 22:08	05:26 21:53	06:18 20:56	07:13 19:42 38 18:36 (7) 19:14 (6)	08:07 18:30	08:07 16:31	08:48 16:13
20	08:39 16:51	07:45 17:52	06:39 18:46 29 17:50 (7) 18:19 (7)	06:24 20:43	05:25 21:36	05:02 22:09	05:27 21:52	06:19 20:54	07:14 19:40 36 18:36 (7) 19:12 (6)	08:09 18:27	08:09 16:29	08:49 16:13
21	08:38 16:53	07:42 17:54	06:36 18:48 31 17:50 (7) 18:21 (7)	06:22 20:45	05:24 21:38	05:02 22:09	05:29 21:50	06:21 20:52	07:16 19:37 34 18:35 (7) 19:09 (7)	08:11 18:25	08:10 16:28	08:50 16:14
22	08:37 16:54	07:40 17:56	06:34 18:50 34 17:49 (7) 18:23 (7)	06:19 20:47	05:22 21:40	05:02 22:09	05:30 21:49	06:23 20:50	07:18 19:35 31 18:35 (7) 19:06 (7)	08:13 18:23	08:12 16:27	08:50 16:14
23	08:35 16:56	07:38 17:58	06:31 18:51 35 17:50 (7) 18:25 (7)	06:17 20:49	05:21 21:41	05:02 22:09	05:32 21:48	06:25 20:47	07:20 19:32 29 18:35 (7) 19:04 (7)	08:15 18:21	08:14 16:26	08:51 16:15
24	08:34 16:58	07:36 18:00	06:29 18:53 37 17:49 (7) 18:26 (6)	06:15 20:51	05:20 21:43	05:03 22:09	05:33 21:46	06:26 20:45	07:21 19:30 27 18:35 (7) 19:02 (7)	08:17 18:19	08:16 16:24	08:51 16:15
25	08:33 17:00	07:33 18:02	06:26 18:55 40 17:49 (7) 18:29 (6)	06:13 20:52	05:18 21:44	05:03 22:09	05:35 21:45	06:28 20:43	07:23 19:27 24 18:35 (7) 18:59 (7)	07:19 17:16	08:18 16:23	08:51 16:16
26	08:31 17:02	07:31 18:04	06:24 18:57 39 17:49 (7) 18:28 (6)	06:10 20:54	05:17 21:46	05:03 22:09	05:37 21:43	06:30 20:40	07:25 19:25 21 18:35 (7) 18:56 (7)	07:21 17:14	08:19 16:22	08:52 16:17
27	08:30 17:04	07:29 18:06	06:21 18:59 38 17:50 (7) 18:28 (6)	06:08 20:56	05:16 21:47	05:04 22:09	05:38 21:41	06:32 20:38	07:27 19:22 18 18:36 (7) 18:54 (7)	07:23 17:12	08:21 16:21	08:52 16:17
28	08:28 17:06	07:27 18:08	06:19 19:01 36 17:51 (7) 18:27 (6)	06:06 20:58	05:15 21:48	05:04 22:09	05:40 21:40	06:34 20:36	07:29 19:20 15 18:37 (7) 18:52 (7)	07:25 17:10	08:23 16:20	08:52 16:18
29	08:27 17:08		07:16 20:03 34 18:51 (7) 19:25 (6)	06:04 21:00	05:13 21:50	05:05 22:09	05:41 21:38	06:35 20:33	07:30 19:17 11 18:38 (7) 18:49 (7)	07:27 17:08	08:24 16:19	08:52 16:19
30	08:25 17:10		07:14 20:04 31 18:52 (7) 19:23 (6)	06:02 21:02	05:12 21:51	05:06 22:09	05:43 21:36	06:37 20:31	07:32 19:15 7 18:40 (7) 18:47 (7)	07:28 17:06	08:26 16:18	08:52 16:20
31	08:23 17:12		07:12 20:06 26 18:53 (7) 19:19 (6)		05:11 21:52		05:45 21:35	06:39 20:29		07:30 17:04		08:52 16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case			523	29					558	3		
Sun reduction			0.22	0.31					0.25	0.23		
Oper. time red.			1.00	1.00					1.00	1.00		
Wind dir. red.			0.65	0.64					0.65	0.64		
Total reduction			0.14	0.20					0.16	0.15		
Total, real			74	6					90	0		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** BD - H060

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	06:26 (3)	05:11	05:07	05:40 (2)	05:47	06:41	07:34	07:33	08:28
	16:23	17:14	18:10	20:08	21:04	13 06:39 (3)	21:54	22:09	11 05:51 (2)	21:33	20:27	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	06:24 (3)	05:10	05:07	05:40 (2)	05:48	06:43	07:36	07:35	08:29
	16:24	17:16	18:12	20:10	21:06	15 06:39 (3)	21:55	22:08	10 05:50 (2)	21:31	20:24	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04	05:56	06:22 (3)	05:09	05:40 (2)	05:08	05:41 (2)	05:50	06:32 (3)	06:44	07:38	07:36	08:31
	16:25	17:18	18:14	20:12	21:07	16 06:38 (3)	21:56	1 05:41 (2)	22:08	9 05:50 (2)	21:30	8 06:40 (3)	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	06:20 (3)	05:08	05:39 (2)	05:09	05:42 (2)	05:52	06:30 (3)	06:46	07:40	07:38	08:32
	16:26	17:20	18:16	20:14	21:09	17 06:37 (3)	21:57	3 05:42 (2)	22:07	8 05:50 (2)	21:28	13 06:43 (3)	20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	07:00	05:52	06:18 (3)	05:07	05:38 (2)	05:10	05:43 (2)	05:53	06:28 (3)	06:48	07:42	07:40	08:34
	16:27	17:22	18:18	20:16	21:11	18 06:36 (3)	21:58	4 05:42 (2)	22:07	7 05:50 (2)	21:26	16 06:44 (3)	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	06:16 (3)	05:06	05:38 (2)	05:11	05:44 (2)	05:55	06:27 (3)	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:18	21:13	19 06:35 (3)	21:59	5 05:43 (2)	22:06	6 05:50 (2)	21:24	18 06:45 (3)	20:14	19:01	16:52	16:14
7	08:51	08:11	07:10	06:55	05:48	06:18 (3)	05:06	05:37 (2)	05:12	05:45 (2)	05:57	06:27 (3)	06:52	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:15	17 06:35 (3)	22:00	6 05:43 (2)	22:05	5 05:50 (2)	21:22	19 06:46 (3)	20:12	18:58	16:51	16:14
8	08:50	08:09	07:08	06:52	05:46	06:19 (3)	05:05	05:37 (2)	05:13	05:46 (2)	05:58	06:28 (3)	06:53	07:47	07:46	08:38
	16:31	17:28	18:23	20:21	21:16	15 06:34 (3)	22:01	8 05:45 (2)	22:05	3 05:49 (2)	21:20	18 06:46 (3)	20:10	18:56	16:49	16:14
9	08:49	08:08	07:06	06:50	05:44	06:20 (3)	05:05	05:36 (2)	05:14	05:47 (2)	06:00	06:30 (3)	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	12 06:32 (3)	22:02	9 05:45 (2)	22:04	2 05:49 (2)	21:18	17 06:47 (3)	20:07	18:53	16:47	16:13
10	08:49	08:06	07:03	06:47	05:42	06:22 (3)	05:04	05:36 (2)	05:15		06:02	06:31 (3)	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	7 06:29 (3)	22:03	9 05:45 (2)	22:03		21:16	16 06:47 (3)	20:05	18:51	16:45	16:13
11	08:48	08:04	07:01	06:45	05:40		05:04	05:36 (2)	05:16		06:04	06:33 (3)	06:59	07:53	07:52	08:41
	16:36	17:34	18:29	20:27	21:22		22:04	10 05:46 (2)	22:02		21:14	14 06:47 (3)	20:02	18:49	16:43	16:13
12	08:47	08:02	06:58	06:43	05:39		05:03	05:35 (2)	05:17		06:05	06:35 (3)	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23		22:05	11 05:46 (2)	22:01		21:12	12 06:47 (3)	20:00	18:46	16:42	16:13
13	08:47	08:00	06:56	06:40	05:37		05:03	05:35 (2)	05:18		06:07	06:36 (3)	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:31	21:25		22:05	12 05:47 (2)	22:00		21:10	11 06:47 (3)	19:57	18:44	16:40	16:12
14	08:46	07:58	06:53	06:38	05:35		05:03	05:35 (2)	05:20		06:09	06:38 (3)	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27		22:06	12 05:47 (2)	21:59		21:08	9 06:47 (3)	19:55	18:41	16:39	16:12
15	08:45	07:55	06:51	06:36	05:33		05:02	05:35 (2)	05:21		06:11	06:40 (3)	07:06	08:00	08:00	08:45
	16:42	17:42	18:37	20:34	21:29		22:07	13 05:48 (2)	21:58		21:05	6 06:46 (3)	19:52	18:39	16:37	16:12
16	08:44	07:53	06:49	06:33	05:32		05:02	05:35 (2)	05:22		06:13	06:41 (3)	07:07	08:02	08:01	08:46
	16:44	17:44	18:39	20:36	21:30		22:07	13 05:48 (2)	21:57		21:03	4 06:45 (3)	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30		05:02	05:35 (2)	05:24		06:14	06:43 (3)	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32		22:08	13 05:48 (2)	21:56		21:01	2 06:45 (3)	19:47	18:35	16:34	16:13
18	08:42	07:49	06:44	06:29	05:29		05:02	05:35 (2)	05:25		06:16		07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40	21:33		22:08	14 05:49 (2)	21:55		20:59		19:45	18:32	16:32	16:13
19	08:41	07:47	06:41	06:26	05:27		05:02	05:35 (2)	05:26		06:18		07:13	08:08	08:07	08:48
	16:49	17:50	18:44	20:42	21:35		22:09	14 05:49 (2)	21:53		20:57		19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25		05:02	05:35 (2)	05:28		06:20		07:15	08:09	08:09	08:49
	16:51	17:52	18:46	20:44	21:37		22:09	14 05:49 (2)	21:52		20:54		19:40	18:28	16:30	16:13
21	08:38	07:43	06:36	06:22	05:24		05:02	05:35 (2)	05:29		06:21		07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38		22:09	14 05:49 (2)	21:51		20:52		19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:20	05:23		05:02	05:35 (2)	05:31		06:23		07:18	08:13	08:13	08:50
	16:55	17:56	18:50	20:47	21:40		22:09	14 05:49 (2)	21:49		20:50		19:35	18:23	16:27	16:14
23	08:36	07:38	06:31	06:17	05:21		05:03	05:36 (2)	05:32		06:25		07:20	08:15	08:14	08:51
	16:57	17:58	18:52	20:49	21:41		22:09	14 05:50 (2)	21:48		20:48		19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20		05:03	05:36 (2)	05:34		06:27		07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43		22:10	14 05:50 (2)	21:46		20:45		19:30	18:19	16:25	16:15
25	08:33	07:34	06:26	06:13	05:18		05:03	05:36 (2)	05:35		06:28		07:23	07:19	08:18	08:52
	17:00	18:02	18:55	20:53	21:44		22:10	14 05:50 (2)	21:45		20:43		19:28	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	06:36 (3)	05:17	05:04	05:37 (2)	05:37		06:30		07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:55	2 06:38 (3)	21:46	22:10	13 05:50 (2)	21:43		20:41		19:25	17:15	16:22	16:17
27	08:30	07:29	06:22	06:09	06:34 (3)	05:16	05:04	05:37 (2)	05:38		06:32		07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	5 06:39 (3)	21:47	22:10	13 05:50 (2)	21:42		20:38		19:23	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	06:32 (3)	05:15	05:05	05:38 (2)	05:40		06:34		07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	7 06:39 (3)	21:49	22:09	12 05:50 (2)	21:40		20:36		19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	06:30 (3)	05:14	05:05	05:38 (2)	05:42		06:36		07:31	07:27	08:24	08:52
	17:08		20:03	21:00	9 06:39 (3)	21:50	22:09	12 05:50 (2)	21:38		20:34		19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	06:28 (3)	05:13	05:06	05:39 (2)	05:43		06:37		07:32	07:29	08:26	08:52
	17:10		20:05	21:02	11 06:39 (3)	21:51	22:09	11 05:50 (2)	21:37		20:31		19:15	17:06	16:19	16:20
31	08:24		07:12			05:12			05:45		06:39			07:31		08:52
	17:12		20:06			21:53			21:35		20:29			17:04		16:21
Potential sun hours	250	273	367	420		494	510		512		460		382	328	259	233
Total, worst case				34		149	302		61		183					
Sun reduction				0.31		0.31	0.26		0.22		0.26					
Oper. time red.				1.00		1.00	1.00		1.00		1.00					
Wind dir. red.				0.65		0.65	0.65		0.65		0.65					
Total reduction				0.20		0.20	0.17		0.14		0.17					
Total, real				7		30	51		9		30					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** BE - H061

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February	March	April	May	June	July	August	September	October	November			December		
1	08:52		15:28 (8)	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:40	07:34	07:32			08:27		15:13 (8)
	16:22	16	15:44 (8)	17:13	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02			16:17	28	15:41 (8)
2	08:52		15:28 (8)	08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34			08:29		15:14 (8)
	16:23	17	15:45 (8)	17:15	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00			16:16	26	15:40 (8)
3	08:52		15:29 (8)	08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:38	07:36			08:30		15:14 (8)
	16:24	18	15:47 (8)	17:17	18:13	20:12	21:07	21:56	22:08	21:29	20:21	19:07	16:58			16:16	25	15:39 (8)
4	08:52		15:29 (8)	08:16	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38			08:32		15:15 (8)
	16:26	19	15:48 (8)	17:19	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56			16:15	24	15:39 (8)
5	08:51		15:30 (8)	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40			08:33		15:15 (8)
	16:27	20	15:50 (8)	17:21	18:17	20:15	21:11	21:58	22:06	21:25	20:17	19:03	16:54			16:14	22	15:37 (8)
6	08:51		15:30 (8)	08:13	07:12	06:57	05:49	05:06	05:10	05:55	06:49	07:43	07:42			08:35		15:16 (8)
	16:28	21	15:51 (8)	17:23	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52			16:14	21	15:37 (8)
7	08:50		15:30 (8)	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44			08:36		15:16 (8)
	16:30	22	15:52 (8)	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50			16:13	20	15:36 (8)
8	08:50		15:31 (8)	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46			08:37		15:17 (8)
	16:31	23	15:54 (8)	17:28	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48			16:13	19	15:36 (8)
9	08:49		15:31 (8)	08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48			08:39		15:17 (8)
	16:32	25	15:56 (8)	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46			16:13	18	15:35 (8)
10	08:49		15:31 (8)	08:05	07:03	06:47	05:42	05:03	05:14	06:02	06:56	07:50	07:50			08:40		15:17 (8)
	16:34	26	15:57 (8)	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45			16:12	18	15:35 (8)
11	08:48		15:31 (8)	08:03	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52			08:41		15:19 (8)
	16:35	28	15:59 (8)	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43			16:12	16	15:35 (8)
12	08:47		15:32 (8)	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54			08:42		15:19 (8)
	16:37	29	16:01 (8)	17:36	18:31	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41			16:12	16	15:35 (8)
13	08:46		15:32 (8)	07:59	06:56	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:56			08:43		15:20 (8)
	16:39	30	16:02 (8)	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40			16:12	14	15:34 (8)
14	08:45		15:33 (8)	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57		15:22 (8)	08:44		15:20 (8)
	16:40	31	16:04 (8)	17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38	5	15:27 (8)	16:12	14	15:34 (8)
15	08:45		15:33 (8)	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59		15:18 (8)	08:45		15:21 (8)
	16:42	31	16:04 (8)	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36	13	15:31 (8)	16:12	13	15:34 (8)
16	08:44		15:34 (8)	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01		15:16 (8)	08:46		15:21 (8)
	16:44	31	16:05 (8)	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	17	15:33 (8)	16:12	13	15:34 (8)
17	08:43		15:34 (8)	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03		15:15 (8)	08:47		15:22 (8)
	16:45	30	16:04 (8)	17:46	18:40	20:38	21:32	22:07	21:56	21:01	19:47	18:34	16:33	20	15:35 (8)	16:12	13	15:35 (8)
18	08:41		15:35 (8)	07:49	06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05	08:05		15:14 (8)	08:48		15:22 (8)
	16:47	29	16:04 (8)	17:48	18:42	20:39	21:33	22:08	21:54	20:59	19:44	18:32	16:32	22	15:36 (8)	16:12	12	15:34 (8)
19	08:40		15:36 (8)	07:47	06:41	06:26	05:26	05:01	05:26	06:17	07:12	08:07	08:07		15:14 (8)	08:48		15:23 (8)
	16:49	29	16:05 (8)	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	24	15:38 (8)	16:13	11	15:34 (8)
20	08:39		15:36 (8)	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09		15:14 (8)	08:49		15:24 (8)
	16:51	28	16:04 (8)	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29	25	15:39 (8)	16:13	11	15:35 (8)
21	08:38		15:37 (8)	07:42	06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11	08:10		15:13 (8)	08:50		15:23 (8)
	16:52	27	16:04 (8)	17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	27	15:40 (8)	16:13	12	15:35 (8)
22	08:37		15:39 (8)	07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12		15:13 (8)	08:50		15:24 (8)
	16:54	25	16:04 (8)	17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	28	15:41 (8)	16:14	12	15:36 (8)
23	08:35		15:39 (8)	07:38	06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15	08:14		15:12 (8)	08:51		15:24 (8)
	16:56	24	16:03 (8)	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	29	15:41 (8)	16:14	12	15:36 (8)
24	08:34		15:41 (8)	07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16		15:12 (8)	08:51		15:25 (8)
	16:58	22	16:03 (8)	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24	29	15:41 (8)	16:15	11	15:36 (8)
25	08:33		15:42 (8)	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17		15:12 (8)	08:51		15:26 (8)
	17:00	20	16:02 (8)	18:02	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	30	15:42 (8)	16:16	12	15:38 (8)
26	08:31		15:44 (8)	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19		15:12 (8)	08:52		15:26 (8)
	17:02	16	16:00 (8)	18:03	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22	31	15:43 (8)	16:16	12	15:38 (8)
27	08:30		15:47 (8)	07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21		15:12 (8)	08:52		15:26 (8)
	17:04	12	15:59 (8)	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	31	15:43 (8)	16:17	13	15:39 (8)
28	08:28		15:50 (8)	07:26	06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24	08:23		15:13 (8)	08:52		15:27 (8)
	17:06	5	15:55 (8)	18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	31	15:44 (8)	16:18	13	15:40 (8)
29	08:27				07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24		15:13 (8)	08:52		15:27 (8)
	17:08				20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	31	15:44 (8)	16:19	14	15:41 (8)
30	08:25				07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26		15:13 (8)	08:52		15:27 (8)
	17:10				20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	29	15:42 (8)	16:20	15	15:42 (8)
31	08:23				07:11		05:11		05:44	06:39		07:30				08:52		15:28 (8)
	17:12				20:06		21:52		21:35	20:29		17:04				16:21	15	15:43 (8)
Potential sun hours	250			273	367	420	494	510	513	460	382	328	259			233		
Total, worst case		654												422			495	
Sun reduction		0.16												0.20			0.12	
Oper. time red.		1.00												1.00			1.00	
Wind dir. red.		0.65												0.65			0.65	
Total reduction		0.11												0.13			0.08	
Total, real		69												54			39	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** BF - H062

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April		May		June	July		August		September	October	November	December
1	08:52	08:22	07:24	07:09		06:00		06:26 (3)	05:11	05:07		05:47		06:25 (3)	06:41	07:34	07:33	08:28
	16:23	17:14	18:10	20:08		21:04	8	06:34 (3)	21:54	22:09		21:33	13	06:38 (3)	20:27	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07		05:58		06:24 (3)	05:10	05:07		05:48		06:24 (3)	06:43	07:36	07:35	08:29
	16:24	17:16	18:12	20:10		21:06	10	06:34 (3)	21:55	22:08		21:31	16	06:40 (3)	20:24	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04		05:56		06:22 (3)	05:09	05:08		05:50		06:22 (3)	06:44	07:38	07:36	08:31
	16:25	17:18	18:14	20:12		21:07	12	06:34 (3)	21:56	22:08		21:30	18	06:40 (3)	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02		05:54		06:20 (3)	05:08	05:09		05:52		06:22 (3)	06:46	07:40	07:38	08:32
	16:26	17:20	18:16	20:14		21:09	14	06:34 (3)	21:57	22:07		21:28	19	06:41 (3)	20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	07:00		05:52		06:18 (3)	05:07	05:10		05:53		06:23 (3)	06:48	07:42	07:40	08:34
	16:27	17:22	18:18	20:16		21:11	15	06:33 (3)	21:58	22:07		21:26	19	06:42 (3)	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57		05:50		06:16 (3)	05:06	05:11		05:55		06:25 (3)	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:18		21:13	17	06:33 (3)	21:59	22:06		21:24	17	06:42 (3)	20:14	19:01	16:52	16:14
7	08:51	08:11	07:10	06:55		05:48		06:15 (3)	05:06	05:12		05:57		06:27 (3)	06:52	07:45	07:44	08:36
	16:30	17:26	18:21	20:19		21:15	18	06:33 (3)	22:00	22:05		21:22	16	06:43 (3)	20:12	18:58	16:51	16:14
8	08:50	08:09	07:08	06:52		05:46		06:13 (3)	05:05	05:13		05:58		06:28 (3)	06:53	07:47	07:46	08:38
	16:31	17:28	18:23	20:21		21:16	19	06:32 (3)	22:01	22:05		21:20	15	06:43 (3)	20:10	18:56	16:49	16:14
9	08:49	08:08	07:06	06:50		05:44		06:11 (3)	05:05	05:14		06:00		06:30 (3)	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23		21:18	20	06:31 (3)	22:02	22:04		21:18	13	06:43 (3)	20:07	18:53	16:47	16:13
10	08:49	08:06	07:03	06:47		05:42		06:12 (3)	05:04	05:15		06:02		06:31 (3)	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25		21:20	18	06:30 (3)	22:03	22:03		21:16	11	06:42 (3)	20:05	18:51	16:45	16:13
11	08:48	08:04	07:01	06:45		05:40		06:14 (3)	05:04	05:16		06:04		06:33 (3)	06:59	07:53	07:52	08:41
	16:36	17:34	18:29	20:27		21:22	15	06:29 (3)	22:04	22:02		21:14	9	06:42 (3)	20:02	18:49	16:43	16:13
12	08:47	08:02	06:58	06:43		05:39		06:15 (3)	05:03	05:17		06:05		06:35 (3)	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29		21:23	12	06:27 (3)	22:05	22:01		21:12	7	06:42 (3)	20:00	18:46	16:42	16:13
13	08:47	08:00	06:56	06:40		05:37		06:17 (3)	05:03	05:18		06:07		06:36 (3)	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:31		21:25	7	06:24 (3)	22:05	22:00		21:10	5	06:41 (3)	19:57	18:44	16:40	16:12
14	08:46	07:58	06:53	06:38		05:35			05:03	05:20		06:09		06:38 (3)	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32		21:27			22:06	21:59		21:08	3	06:41 (3)	19:55	18:41	16:39	16:12
15	08:45	07:55	06:51	06:36		05:33			05:02	05:21		06:11			07:06	08:00	08:00	08:45
	16:42	17:42	18:37	20:34		21:29			22:07	21:58		21:05			19:52	18:39	16:37	16:12
16	08:44	07:53	06:49	06:33		05:32			05:02	05:22		06:13			07:07	08:02	08:01	08:46
	16:44	17:44	18:39	20:36		21:30			22:07	21:57		21:03			19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31		05:30			05:02	05:24		06:14			07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38		21:32			22:08	21:56		21:01			19:47	18:35	16:34	16:13
18	08:42	07:49	06:44	06:29		05:29			05:02	05:25		06:16			07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40		21:33			22:08	21:55		20:59			19:45	18:32	16:32	16:13
19	08:41	07:47	06:41	06:26		05:27			05:02	05:26		06:18			07:13	08:08	08:07	08:48
	16:49	17:50	18:44	20:42		21:35			22:09	21:53		20:57			19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24		05:25			05:02	05:28		06:20			07:15	08:09	08:09	08:49
	16:51	17:52	18:46	20:44		21:37			22:09	21:52		20:54			19:40	18:28	16:30	16:13
21	08:38	07:43	06:36	06:22		05:24			05:02	05:29		06:21			07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45		21:38			22:09	21:51		20:52			19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:20		05:23			05:02	05:31		06:23			07:18	08:13	08:13	08:50
	16:55	17:56	18:50	20:47		21:40			22:09	21:49		20:50			19:35	18:23	16:27	16:14
23	08:36	07:38	06:31	06:17		05:21			05:03	05:32		06:25			07:20	08:15	08:14	08:51
	16:57	17:58	18:52	20:49		21:41			22:09	21:48		20:48			19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15		05:20			05:03	05:34		06:27			07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51		21:43			22:10	21:46		20:45			19:30	18:19	16:25	16:15
25	08:33	07:34	06:26	06:13		05:18			05:03	05:35		06:28			07:23	07:19	08:18	08:52
	17:00	18:02	18:55	20:53		21:44			22:10	21:45		20:43			19:28	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11		05:17			05:04	05:37		06:30			07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:55		21:46			22:10	21:43		20:41			19:25	17:15	16:22	16:17
27	08:30	07:29	06:22	06:09		05:16			05:04	05:38		06:32			07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56		21:47			22:09	21:42		20:38			19:23	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	06:32 (3)	05:15			05:05	05:40		06:34			07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	1 06:33 (3)	21:49			22:09	21:40		20:36			19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	06:30 (3)	05:14			05:05	05:42		06:36			07:31	07:27	08:24	08:52
	17:08		20:03	21:00	3 06:33 (3)	21:50			22:09	21:38		20:34			19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	06:28 (3)	05:13			05:06	05:43	06:31 (3)	06:37			07:32	07:29	08:26	08:52
	17:10		20:05	21:02	6 06:34 (3)	21:51			22:09	21:37	1 06:32 (3)	20:31			19:15	17:06	16:19	16:20
31	08:24		07:12			05:12				05:45	06:27 (3)	06:39				07:31		08:52
	17:12		20:06			21:53				21:35	10 06:37 (3)	20:29				17:04		16:21
Potential sun hours	250	273	367	420		494		510	512		460		382	328	259	233		
Total, worst case				10		185			11		181							
Sun reduction				0.31		0.31			0.22		0.26							
Oper. time red.				1.00		1.00			1.00		1.00							
Wind dir. red.				0.65		0.65			0.65		0.65							
Total reduction				0.20		0.20			0.15		0.17							
Total, real				2		38			2		30							

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** BG - H063

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:10	20:08	21:04	21:54	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:07	05:58	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	05:08	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12	21:07	21:56	22:08	21:29	20:21	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52	05:07	05:09	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	21:58	22:07	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50	05:06	05:10	05:55	06:50	07:43	07:42	08:35
	16:28	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:50	05:44	05:04	05:13	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:00	06:45	05:40	05:03	05:16	06:03	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23	22:05	22:01	21:12	19:59	18:46	16:41	16:12
13	08:46	07:59	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	22:00	21:09	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:58	08:44
	16:40	17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	05:33	05:02	05:21	06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:07	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	08:47
	16:45	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:34	16:12
18	08:42	07:49	06:43	06:28	05:28	05:02	05:25	06:16	07:11	08:05	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:37	22:09	21:52	20:54	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:19	05:03	05:33	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	21:44	22:09	21:45	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:22	17:12	16:21	16:17
28	08:28	07:27	06:19	06:06	05:14	05:04	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:37	20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** BH - H064

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February	March	April	May	June	July	August	September	October	November			December		
1	08:52		14:52 (8)	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:40	07:34	07:32			08:27		14:44 (8)
	16:22	30	15:22 (8)	17:14	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02			16:17	19	15:03 (8)
2	08:52		14:53 (8)	08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34			08:29		14:44 (8)
	16:23	29	15:22 (8)	17:15	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00			16:16	21	15:05 (8)
3	08:52		14:55 (8)	08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:38	07:36			08:30		14:43 (8)
	16:24	28	15:23 (8)	17:17	18:13	20:12	21:07	21:56	22:08	21:29	20:21	19:07	16:58			16:16	23	15:06 (8)
4	08:52		14:55 (8)	08:17	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38			08:32		14:43 (8)
	16:26	27	15:22 (8)	17:19	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56			16:15	24	15:07 (8)
5	08:51		14:56 (8)	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40			08:33		14:42 (8)
	16:27	27	15:23 (8)	17:21	18:17	20:15	21:11	21:58	22:06	21:26	20:17	19:03	16:54			16:15	25	15:07 (8)
6	08:51		14:57 (8)	08:13	07:12	06:57	05:49	05:06	05:10	05:55	06:49	07:43	07:42			08:35		14:43 (8)
	16:28	26	15:23 (8)	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52			16:14	26	15:09 (8)
7	08:50		14:57 (8)	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44			08:36		14:42 (8)
	16:30	25	15:22 (8)	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50			16:13	27	15:09 (8)
8	08:50		14:59 (8)	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46			08:37		14:43 (8)
	16:31	24	15:23 (8)	17:28	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48			16:13	28	15:11 (8)
9	08:49		15:00 (8)	08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:49	07:48			08:39		14:43 (8)
	16:32	23	15:23 (8)	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46			16:13	28	15:11 (8)
10	08:49		15:01 (8)	08:05	07:03	06:47	05:42	05:03	05:14	06:02	06:56	07:50	07:50			08:40		14:43 (8)
	16:34	21	15:22 (8)	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45			16:12	28	15:11 (8)
11	08:48		15:02 (8)	08:03	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52			08:41		14:44 (8)
	16:35	19	15:21 (8)	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43			16:12	29	15:13 (8)
12	08:47		15:04 (8)	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54			08:42		14:44 (8)
	16:37	17	15:21 (8)	17:36	18:31	20:28	21:23	22:05	22:01	21:11	19:59	18:46	16:41			16:12	29	15:13 (8)
13	08:46		15:05 (8)	07:59	06:56	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:56			08:43		14:44 (8)
	16:39	15	15:20 (8)	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40			16:12	30	15:14 (8)
14	08:45		15:08 (8)	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57			08:44		14:44 (8)
	16:40	10	15:18 (8)	17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38			16:12	30	15:14 (8)
15	08:45		15:12 (8)	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59			08:45		14:44 (8)
	16:42	3	15:15 (8)	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36			16:12	31	15:15 (8)
16	08:44			07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01			08:46		14:45 (8)
	16:44			17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35			16:12	31	15:16 (8)
17	08:43			07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03			08:47		14:45 (8)
	16:45			17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:33			16:12	31	15:16 (8)
18	08:41			07:49	06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05	08:05			08:48		14:45 (8)
	16:47			17:48	18:42	20:39	21:33	22:08	21:54	20:59	19:44	18:32	16:32			16:12	31	15:16 (8)
19	08:40			07:47	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07			08:48		14:46 (8)
	16:49			17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31			16:13	31	15:17 (8)
20	08:39			07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09			08:49		14:47 (8)
	16:51			17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29			16:13	31	15:18 (8)
21	08:38			07:42	06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11	08:10			08:50		14:46 (8)
	16:52			17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28			16:13	32	15:18 (8)
22	08:37			07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12			08:50		14:47 (8)
	16:54			17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27			16:14	32	15:19 (8)
23	08:35			07:38	06:31	06:17	05:21	05:02	05:32	06:24	07:20	08:15	08:14			08:51		14:48 (8)
	16:56			17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25			16:14	31	15:19 (8)
24	08:34			07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16			08:51		14:48 (8)
	16:58			18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24			16:15	31	15:19 (8)
25	08:33			07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:18			08:51		14:49 (8)
	17:00			18:02	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23			16:16	31	15:20 (8)
26	08:31			07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19			08:52		14:49 (8)
	17:02			18:03	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22			16:16	31	15:20 (8)
27	08:30			07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21		14:52 (8)	08:52		14:50 (8)
	17:04			18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	1	14:53 (8)	16:17	31	15:21 (8)
28	08:28			07:26	06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24	08:23		14:48 (8)	08:52		14:50 (8)
	17:06			18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	10	14:58 (8)	16:18	31	15:21 (8)
29	08:27				07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24		14:47 (8)	08:52		14:51 (8)
	17:08				20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	14	15:01 (8)	16:19	30	15:21 (8)
30	08:25				07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26		14:45 (8)	08:52		14:52 (8)
	17:10				20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	17	15:02 (8)	16:20	30	15:22 (8)
31	08:23				07:11		05:11		05:44	06:39		07:30				08:52		14:52 (8)
	17:12				20:06		21:52		21:35	20:29		17:04				16:21	30	15:22 (8)
Potential sun hours	250			273	367	420	494	510	513	460	382	328	259			233		
Total, worst case		324												42			893	
Sun reduction		0.16												0.20			0.12	
Oper. time red.		1.00												1.00			1.00	
Wind dir. red.		0.65												0.65			0.65	
Total reduction		0.10												0.13			0.08	
Total, real		34												5			69	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** BI - H065

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March		April			May			June		
1	08:52		08:22		07:24		07:09			06:00		06:26 (2)	05:11		05:41 (1)
	16:23		17:14		18:10		20:08			21:04	29	06:55 (2)	21:54	19	06:00 (1)
2	08:52		08:20		07:22		07:07			05:58		06:24 (2)	05:10		05:40 (1)
	16:24		17:16		18:12		20:10			21:06	31	06:55 (2)	21:55	20	06:00 (1)
3	08:52		08:19		07:20		07:04			05:56		06:22 (2)	05:09		05:40 (1)
	16:25		17:18		18:14		20:12			21:07	33	06:55 (2)	21:56	20	06:00 (1)
4	08:52		08:17		07:17		07:02			05:54		06:20 (2)	05:08		05:39 (1)
	16:26		17:20		18:16		20:14			21:09	35	06:55 (2)	21:57	21	06:00 (1)
5	08:51		08:15		07:15		07:00			05:52		06:18 (2)	05:07		05:39 (1)
	16:27		17:22		18:18		20:16			21:11	37	06:55 (2)	21:58	20	05:59 (1)
6	08:51		08:13		07:13		06:57			05:50		06:16 (2)	05:06		05:41 (1)
	16:29		17:24		18:19		20:18			21:13	38	06:54 (2)	21:59	18	05:59 (1)
7	08:51		08:11		07:10		06:55			05:48		06:15 (2)	05:06		05:41 (1)
	16:30		17:26		18:21		20:19			21:15	40	06:55 (2)	22:00	18	05:59 (1)
8	08:50		08:09		07:08		06:52			05:46		06:13 (2)	05:05		05:42 (1)
	16:31		17:28		18:23		20:21			21:16	42	06:55 (2)	22:01	17	05:59 (1)
9	08:50		08:08		07:06		06:50		07:14 (3)	05:44		06:13 (2)	05:05		05:42 (1)
	16:33		17:30		18:25		20:23	2	07:16 (3)	21:18	41	06:54 (2)	22:02	16	05:58 (1)
10	08:49		08:06		07:03		06:48		07:11 (3)	05:42		06:13 (2)	05:04		05:43 (1)
	16:34		17:32		18:27		20:25	4	07:15 (3)	21:20	40	06:53 (2)	22:03	15	05:58 (1)
11	08:48		08:04		07:01		06:45		07:09 (3)	05:40		06:14 (2)	05:04		05:44 (1)
	16:36		17:34		18:29		20:27	7	07:16 (3)	21:22	39	06:53 (2)	22:04	14	05:58 (1)
12	08:47		08:02		06:58		06:43		07:07 (3)	05:39		06:14 (2)	05:03		05:44 (1)
	16:37		17:36		18:31		20:29	9	07:16 (3)	21:23	39	06:53 (2)	22:05	13	05:57 (1)
13	08:47		08:00		06:56		06:40		07:04 (3)	05:37		06:14 (2)	05:03		05:44 (1)
	16:39		17:38		18:33		20:31	11	07:15 (3)	21:25	38	06:52 (2)	22:05	13	05:57 (1)
14	08:46		07:58		06:53		06:38		07:02 (3)	05:35		06:15 (2)	05:03		05:45 (1)
	16:41		17:40		18:35		20:32	13	07:15 (3)	21:27	37	06:52 (2)	22:06	12	05:57 (1)
15	08:45		07:55		06:51		06:36		07:00 (3)	05:33		06:16 (2)	05:02		05:46 (1)
	16:42		17:42		18:37		20:34	14	07:14 (3)	21:29	35	06:51 (2)	22:07	11	05:57 (1)
16	08:44		07:53		06:49		06:33		06:58 (3)	05:32		06:17 (2)	05:02		05:47 (1)
	16:44		17:44		18:39		20:36	16	07:14 (3)	21:30	33	06:50 (2)	22:07	10	05:57 (1)
17	08:43		07:51		06:46		06:31		06:55 (3)	05:30		06:17 (2)	05:02		05:47 (1)
	16:46		17:46		18:40		20:38	17	07:12 (3)	21:32	32	06:49 (2)	22:08	10	05:57 (1)
18	08:42		07:49		06:44		06:29		06:55 (3)	05:29		05:57 (1)	05:02		05:48 (1)
	16:47		17:48		18:42		20:40	15	07:10 (3)	21:34	33	06:49 (2)	22:08	9	05:57 (1)
19	08:41		07:47		06:41		06:26		06:57 (3)	05:27		05:56 (1)	05:02		05:48 (1)
	16:49		17:50		18:44		20:42	11	07:08 (3)	21:35	32	06:48 (2)	22:09	9	05:57 (1)
20	08:39		07:45		06:39		06:24		07:01 (3)	05:25		05:54 (1)	05:02		05:48 (1)
	16:51		17:52		18:46		20:44	3	07:04 (3)	21:37	32	06:46 (2)	22:09	9	05:57 (1)
21	08:38		07:43		06:36		06:22		06:47 (2)	05:24		05:53 (1)	05:02		05:48 (1)
	16:53		17:54		18:48		20:45	2	06:49 (2)	21:38	30	06:45 (2)	22:09	9	05:57 (1)
22	08:37		07:40		06:34		06:20		06:44 (2)	05:23		05:52 (1)	05:02		05:48 (1)
	16:55		17:56		18:50		20:47	5	06:49 (2)	21:40	30	06:44 (2)	22:09	9	05:57 (1)
23	08:36		07:38		06:31		06:17		06:42 (2)	05:21		05:50 (1)	05:03		05:49 (1)
	16:57		17:58		18:52		20:49	9	06:51 (2)	21:41	28	06:42 (2)	22:10	9	05:58 (1)
24	08:34		07:36		06:29		06:15		06:40 (2)	05:20		05:49 (1)	05:03		05:49 (1)
	16:58		18:00		18:53		20:51	12	06:52 (2)	21:43	26	06:41 (2)	22:10	9	05:58 (1)
25	08:33		07:34		06:26		06:13		06:38 (2)	05:18		05:48 (1)	05:03		05:48 (1)
	17:00		18:02		18:55		20:53	15	06:53 (2)	21:44	22	06:38 (2)	22:10	10	05:58 (1)
26	08:32		07:31		06:24		06:11		06:36 (2)	05:17		05:47 (1)	05:04		05:49 (1)
	17:02		18:04		18:57		20:55	18	06:54 (2)	21:46	14	06:01 (1)	22:10	10	05:59 (1)
27	08:30		07:29		06:22		06:09		06:34 (2)	05:16		05:46 (1)	05:04		05:48 (1)
	17:04		18:06		18:59		20:56	20	06:54 (2)	21:47	15	06:01 (1)	22:10	11	05:59 (1)
28	08:29		07:27		06:19		06:06		06:32 (2)	05:15		05:45 (1)	05:05		05:49 (1)
	17:06		18:08		19:01		20:58	23	06:55 (2)	21:49	16	06:01 (1)	22:09	11	06:00 (1)
29	08:27				07:17		06:04		06:30 (2)	05:14		05:44 (1)	05:05		05:48 (1)
	17:08				20:03		21:00	25	06:55 (2)	21:50	17	06:01 (1)	22:09	12	06:00 (1)
30	08:25				07:14		06:02		06:28 (2)	05:13		05:43 (1)	05:06		05:48 (1)
	17:10				20:05		21:02	27	06:55 (2)	21:51	18	06:01 (1)	22:09	13	06:01 (1)
31	08:24				07:12					05:12		05:42 (1)			
	17:12				20:06					21:53	18	06:00 (1)			
Potential sun hours	250		273		367		420			494			510		
Total, worst case								278			950			397	
Sun reduction								0.31			0.31			0.26	
Oper. time red.								1.00			1.00			1.00	
Wind dir. red.								0.65			0.65			0.64	
Total reduction								0.20			0.20			0.16	
Total, real								55			193			65	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** BI - H065

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August		September		October	November	December
1	05:07		05:48 (1)	05:47		06:24 (2)	06:41	07:08 (3)	07:34	07:33	08:28
	22:09	14	06:02 (1)	21:33	39	07:03 (2)	20:27	7	07:15 (3)	19:13	17:02	16:18
2	05:07		05:47 (1)	05:48		06:24 (2)	06:43		07:10 (3)	07:36	07:35	08:29
	22:08	15	06:02 (1)	21:31	40	07:04 (2)	20:24	4	07:14 (3)	19:10	17:00	16:17
3	05:08		05:47 (1)	05:50		06:23 (2)	06:44		07:12 (3)	07:38	07:37	08:31
	22:08	16	06:03 (1)	21:30	41	07:04 (2)	20:22	2	07:14 (3)	19:08	16:58	16:16
4	05:09		05:47 (1)	05:52		06:23 (2)	06:46			07:40	07:38	08:32
	22:07	17	06:04 (1)	21:28	41	07:04 (2)	20:19			19:05	16:56	16:16
5	05:10		05:47 (1)	05:53		06:23 (2)	06:48			07:42	07:40	08:34
	22:07	18	06:05 (1)	21:26	41	07:04 (2)	20:17			19:03	16:54	16:15
6	05:11		05:47 (1)	05:55		06:25 (2)	06:50			07:43	07:42	08:35
	22:06	19	06:06 (1)	21:24	40	07:05 (2)	20:14			19:01	16:52	16:14
7	05:12		05:47 (1)	05:57		06:27 (2)	06:52			07:45	07:44	08:36
	22:05	19	06:06 (1)	21:22	38	07:05 (2)	20:12			18:58	16:51	16:14
8	05:13		05:47 (1)	05:58		06:28 (2)	06:53			07:47	07:46	08:38
	22:05	20	06:07 (1)	21:20	36	07:04 (2)	20:10			18:56	16:49	16:14
9	05:14		05:47 (1)	06:00		06:30 (2)	06:55			07:49	07:48	08:39
	22:04	20	06:07 (1)	21:18	35	07:05 (2)	20:07			18:53	16:47	16:13
10	05:15		05:48 (1)	06:02		06:31 (2)	06:57			07:51	07:50	08:40
	22:03	20	06:08 (1)	21:16	33	07:04 (2)	20:05			18:51	16:45	16:13
11	05:16		05:49 (1)	06:04		06:33 (2)	06:59			07:53	07:52	08:41
	22:02	19	06:08 (1)	21:14	31	07:04 (2)	20:02			18:49	16:43	16:13
12	05:17		05:50 (1)	06:05		06:35 (2)	07:00			07:54	07:54	08:42
	22:01	19	06:09 (1)	21:12	29	07:04 (2)	20:00			18:46	16:42	16:13
13	05:18		05:51 (1)	06:07		06:36 (2)	07:02			07:56	07:56	08:43
	22:00	18	06:09 (1)	21:10	27	07:03 (2)	19:57			18:44	16:40	16:12
14	05:20		05:52 (1)	06:09		06:38 (2)	07:04			07:58	07:58	08:44
	21:59	17	06:09 (1)	21:08	24	07:02 (2)	19:55			18:41	16:39	16:12
15	05:21		05:53 (1)	06:11		06:40 (2)	07:06			08:00	08:00	08:45
	21:58	16	06:09 (1)	21:05	22	07:02 (2)	19:52			18:39	16:37	16:12
16	05:22		05:54 (1)	06:13		06:41 (2)	07:07			08:02	08:02	08:46
	21:57	15	06:09 (1)	21:03	20	07:01 (2)	19:50			18:37	16:35	16:12
17	05:24		05:56 (1)	06:14		06:43 (2)	07:09			08:04	08:03	08:47
	21:56	14	06:10 (1)	21:01	17	07:00 (2)	19:47			18:35	16:34	16:13
18	05:25		05:57 (1)	06:16		06:45 (2)	07:11			08:06	08:05	08:48
	21:55	17	06:45 (2)	20:59	14	06:59 (2)	19:45			18:32	16:32	16:13
19	05:26		05:58 (1)	06:18		06:46 (2)	07:13			08:08	08:07	08:49
	21:53	24	06:49 (2)	20:57	11	06:57 (2)	19:42			18:30	16:31	16:13
20	05:28		06:00 (1)	06:20		06:48 (2)	07:15			08:09	08:09	08:49
	21:52	27	06:52 (2)	20:54	8	06:56 (2)	19:40			18:28	16:30	16:13
21	05:29		06:01 (1)	06:21		06:50 (2)	07:16			08:11	08:11	08:50
	21:51	29	06:53 (2)	20:52	5	06:55 (2)	19:37			18:25	16:28	16:14
22	05:31		06:02 (1)	06:23		06:51 (2)	07:18			08:13	08:13	08:50
	21:49	30	06:54 (2)	20:50	1	06:52 (2)	19:35			18:23	16:27	16:14
23	05:32		06:04 (1)	06:25		07:04 (3)	07:20			08:15	08:14	08:51
	21:48	32	06:56 (2)	20:48	5	07:09 (3)	19:32			18:21	16:26	16:15
24	05:34		06:05 (1)	06:27		07:01 (3)	07:22			08:17	08:16	08:51
	21:46	32	06:57 (2)	20:45	11	07:12 (3)	19:30			18:19	16:25	16:15
25	05:35		06:07 (1)	06:28		06:58 (3)	07:23			07:19	08:18	08:52
	21:45	32	06:59 (2)	20:43	15	07:13 (3)	19:28			17:17	16:23	16:16
26	05:37		06:08 (1)	06:30		06:58 (3)	07:25			07:21	08:20	08:52
	21:43	32	06:59 (2)	20:41	17	07:15 (3)	19:25			17:15	16:22	16:17
27	05:38		06:27 (2)	06:32		07:00 (3)	07:27			07:23	08:21	08:52
	21:42	33	07:00 (2)	20:38	16	07:16 (3)	19:23			17:12	16:21	16:18
28	05:40		06:27 (2)	06:34		07:01 (3)	07:29			07:25	08:23	08:52
	21:40	34	07:01 (2)	20:36	14	07:15 (3)	19:20			17:10	16:20	16:18
29	05:42		06:26 (2)	06:36		07:03 (3)	07:31			07:27	08:24	08:52
	21:38	35	07:01 (2)	20:34	13	07:16 (3)	19:18			17:08	16:19	16:19
30	05:43		06:25 (2)	06:37		07:05 (3)	07:32			07:29	08:26	08:53
	21:37	37	07:02 (2)	20:31	11	07:16 (3)	19:15			17:06	16:19	16:20
31	05:45		06:25 (2)	06:39		07:07 (3)				07:31		08:53
	21:35	38	07:03 (2)	20:29	9	07:16 (3)				17:04		16:21
Potential sun hours	512			460			382			328	259	233
Total, worst case		728			704			13				
Sun reduction		0.22			0.26			0.25				
Oper. time red.		1.00			1.00			1.00				
Wind dir. red.		0.64			0.65			0.64				
Total reduction		0.14			0.17			0.16				
Total, real		105			117			2				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** BJ - H066

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:10	20:08	21:04	21:54	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:07	05:58	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	05:08	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12	21:07	21:56	22:08	21:29	20:21	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52	05:07	05:09	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	21:58	22:07	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50	05:06	05:10	05:55	06:50	07:43	07:42	08:35
	16:28	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:50	05:44	05:04	05:13	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:00	06:45	05:40	05:03	05:16	06:03	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23	22:05	22:01	21:12	19:59	18:46	16:41	16:12
13	08:46	07:59	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	22:00	21:09	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:58	08:44
	16:40	17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	05:33	05:02	05:21	06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:07	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	08:47
	16:45	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:34	16:12
18	08:42	07:49	06:43	06:28	05:28	05:02	05:25	06:16	07:11	08:05	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:37	22:09	21:52	20:54	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:19	05:03	05:33	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	21:44	22:09	21:45	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:22	17:12	16:21	16:17
28	08:28	07:27	06:19	06:06	05:14	05:04	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:37	20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** BK - H067

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March		April			May			June		
1	08:52		08:22		07:24		07:09			06:00		06:28 (5)	05:10		
	16:23		17:14		18:10		20:08			21:04	29	06:57 (5)	21:54		
2	08:52		08:20		07:22		07:07		07:31 (6)	05:58		06:28 (5)	05:10		
	16:24		17:16		18:12		20:10	3	07:34 (6)	21:06	28	06:56 (5)	21:55		
3	08:52		08:19		07:20		07:04		07:28 (6)	05:56		06:29 (5)	05:09		
	16:25		17:18		18:14		20:12	6	07:34 (6)	21:07	26	06:55 (5)	21:56		
4	08:52		08:17		07:17		07:02		07:26 (6)	05:54		06:29 (5)	05:08		
	16:26		17:20		18:16		20:14	9	07:35 (6)	21:09	25	06:54 (5)	21:57		
5	08:51		08:15		07:15		07:00		07:23 (6)	05:52		06:30 (5)	05:07		
	16:27		17:22		18:17		20:16	12	07:35 (6)	21:11	23	06:53 (5)	21:58		
6	08:51		08:13		07:13		06:57		07:21 (6)	05:50		06:31 (5)	05:06		
	16:29		17:24		18:19		20:18	14	07:35 (6)	21:13	20	06:51 (5)	21:59		
7	08:51		08:11		07:10		06:55		07:19 (6)	05:48		06:33 (5)	05:06		
	16:30		17:26		18:21		20:19	16	07:35 (6)	21:15	17	06:50 (5)	22:00		
8	08:50		08:09		07:08		06:52		07:16 (6)	05:46		06:35 (5)	05:05		05:37 (4)
	16:31		17:28		18:23		20:21	18	07:34 (6)	21:16	13	06:48 (5)	22:01	1	05:38 (4)
9	08:49		08:07		07:05		06:50		07:14 (6)	05:44		06:38 (5)	05:04		05:36 (4)
	16:33		17:30		18:25		20:23	20	07:34 (6)	21:18	6	06:44 (5)	22:02	2	05:38 (4)
10	08:49		08:05		07:03		06:47		07:11 (6)	05:42			05:04		05:36 (4)
	16:34		17:32		18:27		20:25	22	07:33 (6)	21:20			22:03	3	05:39 (4)
11	08:48		08:04		07:01		06:45		07:11 (6)	05:40			05:04		05:36 (4)
	16:36		17:34		18:29		20:27	21	07:32 (6)	21:22			22:04	4	05:40 (4)
12	08:47		08:02		06:58		06:43		07:12 (6)	05:39			05:03		05:35 (4)
	16:37		17:36		18:31		20:29	19	07:31 (6)	21:23			22:05	4	05:39 (4)
13	08:47		07:59		06:56		06:40		07:12 (6)	05:37			05:03		05:35 (4)
	16:39		17:38		18:33		20:30	17	07:29 (6)	21:25			22:05	5	05:40 (4)
14	08:46		07:57		06:53		06:38		07:14 (6)	05:35			05:03		05:35 (4)
	16:41		17:40		18:35		20:32	13	07:27 (6)	21:27			22:06	6	05:41 (4)
15	08:45		07:55		06:51		06:36		07:18 (6)	05:33			05:02		05:35 (4)
	16:42		17:42		18:37		20:34	5	07:23 (6)	21:28			22:07	6	05:41 (4)
16	08:44		07:53		06:49		06:33			05:32			05:02		05:35 (4)
	16:44		17:44		18:38		20:36			21:30			22:07	6	05:41 (4)
17	08:43		07:51		06:46		06:31			05:30			05:02		05:35 (4)
	16:46		17:46		18:40		20:38			21:32			22:08	7	05:42 (4)
18	08:42		07:49		06:44		06:29		06:53 (5)	05:29			05:02		05:35 (4)
	16:47		17:48		18:42		20:40	1	06:54 (5)	21:33			22:08	7	05:42 (4)
19	08:41		07:47		06:41		06:26		06:51 (5)	05:27			05:02		05:35 (4)
	16:49		17:50		18:44		20:42	4	06:55 (5)	21:35			22:08	7	05:42 (4)
20	08:39		07:45		06:39		06:24		06:49 (5)	05:25			05:02		05:35 (4)
	16:51		17:52		18:46		20:43	8	06:57 (5)	21:37			22:09	7	05:42 (4)
21	08:38		07:43		06:36		06:22		06:46 (5)	05:24			05:02		05:35 (4)
	16:53		17:54		18:48		20:45	10	06:56 (5)	21:38			22:09	7	05:42 (4)
22	08:37		07:40		06:34		06:20		06:44 (5)	05:23			05:02		05:35 (4)
	16:55		17:56		18:50		20:47	13	06:57 (5)	21:40			22:09	7	05:42 (4)
23	08:36		07:38		06:31		06:17		06:42 (5)	05:21			05:03		05:36 (4)
	16:57		17:58		18:52		20:49	16	06:58 (5)	21:41			22:09	7	05:43 (4)
24	08:34		07:36		06:29		06:15		06:40 (5)	05:20			05:03		05:36 (4)
	16:58		18:00		18:53		20:51	18	06:58 (5)	21:43			22:10	7	05:43 (4)
25	08:33		07:34		06:26		06:13		06:38 (5)	05:18			05:03		05:36 (4)
	17:00		18:02		18:55		20:53	20	06:58 (5)	21:44			22:10	7	05:43 (4)
26	08:31		07:31		06:24		06:11		06:36 (5)	05:17			05:04		05:37 (4)
	17:02		18:04		18:57		20:55	22	06:58 (5)	21:46			22:10	7	05:44 (4)
27	08:30		07:29		06:22		06:08		06:34 (5)	05:16			05:04		05:37 (4)
	17:04		18:06		18:59		20:56	24	06:58 (5)	21:47			22:09	6	05:43 (4)
28	08:28		07:27		06:19		06:06		06:32 (5)	05:15			05:05		05:38 (4)
	17:06		18:08		19:01		20:58	26	06:58 (5)	21:49			22:09	6	05:44 (4)
29	08:27				07:17		06:04		06:30 (5)	05:14			05:05		05:38 (4)
	17:08				20:03		21:00	28	06:58 (5)	21:50			22:09	5	05:43 (4)
30	08:25				07:14		06:02		06:28 (5)	05:13			05:06		05:39 (4)
	17:10				20:05		21:02	29	06:57 (5)	21:51			22:09	5	05:44 (4)
31	08:24				07:12					05:11					
	17:12				20:06					21:52					
Potential sun hours	250		273		367		420			494			510		
Total, worst case								414			187			129	
Sun reduction								0.31			0.31			0.26	
Oper. time red.								1.00			1.00			1.00	
Wind dir. red.								0.65			0.65			0.65	
Total reduction								0.20			0.20			0.17	
Total, real								82			38			22	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** BK - H067

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July			August			September			October	November	December
1	05:07		05:40 (4)	05:47			06:41		07:10 (6)	07:34	07:33	08:28
	22:08	4	05:44 (4)	21:33			20:26	21	07:31 (6)	19:13	17:02	16:18
2	05:07		05:40 (4)	05:48			06:43		07:10 (6)	07:36	07:34	08:29
	22:08	3	05:43 (4)	21:31			20:24	22	07:32 (6)	19:10	17:00	16:17
3	05:08		05:41 (4)	05:50			06:44		07:12 (6)	07:38	07:36	08:31
	22:08	3	05:44 (4)	21:29			20:22	20	07:32 (6)	19:08	16:58	16:16
4	05:09		05:42 (4)	05:52		06:47 (5)	06:46		07:13 (6)	07:40	07:38	08:32
	22:07	2	05:44 (4)	21:28	9	06:56 (5)	20:19	18	07:31 (6)	19:05	16:56	16:16
5	05:10		05:43 (4)	05:53		06:44 (5)	06:48		07:15 (6)	07:41	07:40	08:33
	22:07	1	05:44 (4)	21:26	14	06:58 (5)	20:17	16	07:31 (6)	19:03	16:54	16:15
6	05:11			05:55		06:42 (5)	06:50		07:17 (6)	07:43	07:42	08:35
	22:06			21:24	18	07:00 (5)	20:14	14	07:31 (6)	19:00	16:52	16:14
7	05:12			05:57		06:41 (5)	06:52		07:18 (6)	07:45	07:44	08:36
	22:05			21:22	21	07:02 (5)	20:12	12	07:30 (6)	18:58	16:51	16:14
8	05:13			05:58		06:39 (5)	06:53		07:20 (6)	07:47	07:46	08:37
	22:05			21:20	23	07:02 (5)	20:09	9	07:29 (6)	18:56	16:49	16:14
9	05:14			06:00		06:39 (5)	06:55		07:22 (6)	07:49	07:48	08:39
	22:04			21:18	25	07:04 (5)	20:07	7	07:29 (6)	18:53	16:47	16:13
10	05:15			06:02		06:37 (5)	06:57		07:24 (6)	07:51	07:50	08:40
	22:03			21:16	27	07:04 (5)	20:05	3	07:27 (6)	18:51	16:45	16:13
11	05:16			06:04		06:37 (5)	06:59			07:53	07:52	08:41
	22:02			21:14	27	07:04 (5)	20:02			18:49	16:43	16:13
12	05:17			06:05		06:36 (5)	07:00			07:54	07:54	08:42
	22:01			21:12	29	07:05 (5)	20:00			18:46	16:42	16:12
13	05:18			06:07		06:36 (5)	07:02			07:56	07:56	08:43
	22:00			21:10	29	07:05 (5)	19:57			18:44	16:40	16:12
14	05:20			06:09		06:38 (5)	07:04			07:58	07:58	08:44
	21:59			21:07	27	07:05 (5)	19:55			18:41	16:38	16:12
15	05:21			06:11		06:40 (5)	07:06			08:00	08:00	08:45
	21:58			21:05	26	07:06 (5)	19:52			18:39	16:37	16:12
16	05:22			06:12		06:41 (5)	07:07			08:02	08:01	08:46
	21:57			21:03	24	07:05 (5)	19:50			18:37	16:35	16:12
17	05:23			06:14		06:43 (5)	07:09			08:04	08:03	08:47
	21:56			21:01	22	07:05 (5)	19:47			18:34	16:34	16:13
18	05:25			06:16		06:45 (5)	07:11			08:06	08:05	08:48
	21:55			20:59	20	07:05 (5)	19:45			18:32	16:32	16:13
19	05:26			06:18		06:46 (5)	07:13			08:07	08:07	08:48
	21:53			20:57	18	07:04 (5)	19:42			18:30	16:31	16:13
20	05:28			06:20		06:48 (5)	07:14			08:09	08:09	08:49
	21:52			20:54	15	07:03 (5)	19:40			18:28	16:30	16:13
21	05:29			06:21		06:50 (5)	07:16			08:11	08:11	08:50
	21:51			20:52	13	07:03 (5)	19:37			18:25	16:28	16:14
22	05:31			06:23		06:51 (5)	07:18			08:13	08:12	08:50
	21:49			20:50	10	07:01 (5)	19:35			18:23	16:27	16:14
23	05:32			06:25		06:53 (5)	07:20			08:15	08:14	08:51
	21:48			20:48	7	07:00 (5)	19:32			18:21	16:26	16:15
24	05:34			06:27		06:55 (5)	07:22			08:17	08:16	08:51
	21:46			20:45	4	06:59 (5)	19:30			18:19	16:25	16:15
25	05:35			06:28			07:23			07:19	08:18	08:52
	21:45			20:43			19:27			17:17	16:23	16:16
26	05:37			06:30			07:25			07:21	08:19	08:52
	21:43			20:41			19:25			17:14	16:22	16:17
27	05:38			06:32			07:27			07:23	08:21	08:52
	21:42			20:38			19:23			17:12	16:21	16:18
28	05:40			06:34		07:19 (6)	07:29			07:25	08:23	08:52
	21:40			20:36	5	07:24 (6)	19:20			17:10	16:20	16:18
29	05:42			06:36		07:15 (6)	07:31			07:27	08:24	08:52
	21:38			20:34	13	07:28 (6)	19:18			17:08	16:19	16:19
30	05:43			06:37		07:13 (6)	07:32			07:29	08:26	08:52
	21:37			20:31	17	07:30 (6)	19:15			17:06	16:19	16:20
31	05:45			06:39		07:12 (6)				07:31		08:52
	21:35			20:29	19	07:31 (6)				17:04		16:21
Potential sun hours	512			460			382			328	259	233
Total, worst case		13			462			142				
Sun reduction		0.22			0.26			0.25				
Oper. time red.		1.00			1.00			1.00				
Wind dir. red.		0.65			0.65			0.64				
Total reduction		0.14			0.17			0.16				
Total, real		2			77			23				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** BL - H068

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May		June		July		August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00		05:10		05:06		05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:10	20:08	21:03		21:54	22	21:19 (6)	22:08	26	21:30 (6)	21:33	20:26	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58		05:09		20:57 (6)	05:07		21:03 (6)	05:48	06:42	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:05		21:55	23	21:20 (6)	22:08	27	21:30 (6)	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56		05:09		20:58 (6)	05:08		21:03 (6)	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12	21:07		21:56	24	21:22 (6)	22:07	27	21:30 (6)	21:29	20:21	19:08	16:58	16:16
4	08:51	08:17	07:17	07:02	05:54		05:08		20:57 (6)	05:09		21:04 (6)	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14	21:09		21:57	25	21:22 (6)	22:07	27	21:31 (6)	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52		05:07		20:57 (6)	05:10		21:04 (6)	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11		21:58	26	21:23 (6)	22:06	27	21:31 (6)	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50		05:06		20:58 (6)	05:11		21:04 (6)	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:17	21:13		21:59	26	21:24 (6)	22:06	27	21:31 (6)	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:55	05:48		05:06		20:58 (6)	05:12		21:04 (6)	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14		22:00	27	21:25 (6)	22:05	25	21:29 (6)	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46		05:05		20:59 (6)	05:13		21:04 (6)	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16		22:01	27	21:26 (6)	22:04	25	21:29 (6)	21:20	20:09	18:56	16:49	16:13
9	08:49	08:07	07:05	06:50	05:44		05:04		20:58 (6)	05:14		21:04 (6)	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18		22:02	27	21:25 (6)	22:04	24	21:28 (6)	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42		05:04		20:59 (6)	05:15		21:04 (6)	06:02	06:57	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20		22:03	27	21:26 (6)	22:03	24	21:28 (6)	21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:01	06:45	05:40		05:03		20:58 (6)	05:16		21:04 (6)	06:04	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21		22:04	27	21:25 (6)	22:02	23	21:27 (6)	21:14	20:02	18:48	16:43	16:13
12	08:47	08:01	06:58	06:43	05:38		05:03		20:59 (6)	05:17		21:05 (6)	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23		22:04	27	21:26 (6)	22:01	22	21:27 (6)	21:12	19:59	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	05:37		05:03		21:00 (6)	05:18		21:05 (6)	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25		22:05	26	21:26 (6)	22:00	21	21:26 (6)	21:09	19:57	18:44	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35		05:02		21:00 (6)	05:19		21:06 (6)	06:09	07:04	07:58	07:57	08:44
	16:41	17:40	18:35	20:32	21:27		22:06	26	21:26 (6)	21:59	19	21:25 (6)	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	05:33		05:02		21:00 (6)	05:21		21:06 (6)	06:11	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28		22:06	27	21:27 (6)	21:58	18	21:24 (6)	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32		05:02		21:01 (6)	05:22		21:06 (6)	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30		22:07	26	21:27 (6)	21:57	16	21:22 (6)	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30		05:02		21:01 (6)	05:23		21:06 (6)	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32		22:07	26	21:27 (6)	21:56	15	21:21 (6)	21:01	19:47	18:34	16:34	16:12
18	08:41	07:49	06:43	06:28	05:28		05:02		21:01 (6)	05:25		21:07 (6)	06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:40	21:33		22:08	26	21:27 (6)	21:54	14	21:21 (6)	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	21:01 (6)	05:02		21:01 (6)	05:26		21:07 (6)	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	1 21:02 (6)	22:08	26	21:27 (6)	21:53	12	21:19 (6)	20:56	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	21:00 (6)	05:02		21:01 (6)	05:28		21:07 (6)	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	4 21:04 (6)	22:09	26	21:27 (6)	21:52	11	21:18 (6)	20:54	19:40	18:28	16:29	16:13
21	08:38	07:42	06:36	06:22	05:24	21:00 (6)	05:02		21:02 (6)	05:29		21:09 (6)	06:21	07:16	08:11	08:10	08:49
	16:53	17:54	18:48	20:45	21:38	5 21:05 (6)	22:09	25	21:27 (6)	21:50	8	21:17 (6)	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	20:58 (6)	05:02		21:02 (6)	05:30		21:09 (6)	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	8 21:06 (6)	22:09	25	21:27 (6)	21:49	7	21:16 (6)	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	20:58 (6)	05:02		21:02 (6)	05:32		21:10 (6)	06:25	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41	10 21:08 (6)	22:09	26	21:28 (6)	21:48	5	21:15 (6)	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	20:58 (6)	05:03		21:02 (6)	05:33		21:11 (6)	06:27	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	11 21:09 (6)	22:09	26	21:28 (6)	21:46	2	21:13 (6)	20:45	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18	20:58 (6)	05:03		21:02 (6)	05:35			06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:52	21:44	13 21:11 (6)	22:09	26	21:28 (6)	21:45			20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	20:57 (6)	05:04		21:03 (6)	05:37			06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	15 21:12 (6)	22:09	26	21:29 (6)	21:43			20:40	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	20:57 (6)	05:04		21:03 (6)	05:38			06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	16 21:13 (6)	22:09	26	21:29 (6)	21:41			20:38	19:22	17:12	16:21	16:17
28	08:28	07:27	06:19	06:06	05:15	20:57 (6)	05:05		21:03 (6)	05:40			06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	18 21:15 (6)	22:09	26	21:29 (6)	21:40			20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	20:57 (6)	05:05		21:03 (6)	05:41			06:35	07:30	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	19 21:16 (6)	22:09	26	21:29 (6)	21:38			20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	20:57 (6)	05:06		21:03 (6)	05:43			06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	20 21:17 (6)	22:09	27	21:30 (6)	21:36			20:31	19:15	17:06	16:18	16:20
31	08:23		07:12		05:11	20:57 (6)				05:45			06:39		07:30		08:52
	17:12		20:06		21:52	21 21:18 (6)				21:35			20:29		17:04		16:21
Potential sun hours	250	273	367	420	494		510			512		460	382	328	259	233	
Total, worst case						161		776		452							
Sun reduction						0.31		0.26		0.22							
Oper. time red.						1.00		1.00		1.00							
Wind dir. red.						0.60		0.60		0.60							
Total reduction						0.19		0.16		0.13							
Total, real						30		121		61							

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** BM - H070

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March	April	May	June	July	August	September	October		November		December
1	08:52		08:22		08:58 (3)	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34		07:33		08:02 (1)	08:28
	16:22		17:14	18	09:16 (3)	18:10	20:08	21:04	21:54	22:09	21:33	20:27	19:13		17:02	12	08:14 (1)	16:18
2	08:52		08:20		08:59 (3)	07:22	07:07	05:58	05:09	05:07	05:48	06:43	07:36		07:35		08:04 (1)	08:29
	16:24		17:16	16	09:15 (3)	18:12	20:10	21:06	21:55	22:08	21:31	20:24	19:10		17:00	9	08:13 (1)	16:17
3	08:52		08:19		09:01 (3)	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38		07:37		08:06 (1)	08:31
	16:25		17:18	12	09:13 (3)	18:14	20:12	21:07	21:56	22:08	21:30	20:22	19:08		16:58	6	08:12 (1)	16:16
4	08:52		08:17		09:03 (3)	07:17	07:02	05:54	05:08	05:09	05:52	06:46	07:40		07:38		08:08 (1)	08:32
	16:26		17:20	8	09:11 (3)	18:16	20:14	21:09	21:57	22:07	21:28	20:19	19:05		16:56	2	08:10 (1)	16:16
5	08:52		08:15			07:15	07:00	05:52	05:07	05:10	05:53	06:48	07:42		07:40			08:34
	16:27		17:22			18:18	20:16	21:11	21:58	22:07	21:26	20:17	19:03		16:54			16:15
6	08:51		08:13			07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43		07:42			08:35
	16:29		17:24			18:19	20:18	21:13	22:00	22:06	21:24	20:14	19:01		16:52			16:14
7	08:51		08:11		08:38 (1)	07:10	06:55	05:48	05:06	05:12	05:57	06:52	07:45		07:44		08:34 (3)	08:36
	16:30		17:26	2	08:40 (1)	18:21	20:19	21:15	22:01	22:06	21:22	20:12	18:58		16:50	8	08:42 (3)	16:14
8	08:50		08:09		08:36 (1)	07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47		07:46		08:31 (3)	08:38
	16:31		17:28	6	08:42 (1)	18:23	20:21	21:16	22:01	22:05	21:20	20:10	18:56		16:49	13	08:44 (3)	16:13
9	08:50		08:08		08:34 (1)	07:06	06:50	05:44	05:04	05:14	06:00	06:55	07:49		07:48		08:30 (3)	08:39
	16:33		17:30	10	08:44 (1)	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53		16:47	16	08:46 (3)	16:13
10	08:49		08:06		08:32 (1)	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51		07:50		08:29 (3)	08:40
	16:34		17:32	13	08:45 (1)	18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51		16:45	18	08:47 (3)	16:13
11	08:48		08:04		08:30 (1)	07:01	06:45	05:40	05:03	05:16	06:04	06:59	07:53		07:52		08:28 (3)	08:41
	16:36		17:34	16	08:46 (1)	18:29	20:27	21:22	22:04	22:02	21:14	20:02	18:49		16:43	20	08:48 (3)	16:13
12	08:47		08:02		08:28 (1)	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54		07:54		08:27 (3)	08:42
	16:37		17:36	19	08:47 (1)	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46		16:42	21	08:48 (3)	16:12
13	08:47		08:00		08:26 (1)	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	08:59 (1)	07:56		08:27 (3)	08:43
	16:39		17:38	21	08:47 (1)	18:33	20:31	21:25	22:06	22:00	21:10	19:57	18:44	7 09:06 (1)	16:40	22	08:49 (3)	16:12
14	08:46		07:58		08:24 (1)	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	08:55 (1)	07:58		08:30 (3)	08:44
	16:41		17:40	24	08:48 (1)	18:35	20:32	21:27	22:06	21:59	21:08	19:55	18:41	15 09:10 (1)	16:38	20	08:50 (3)	16:12
15	08:45		07:55		08:21 (1)	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00	08:52 (1)	08:00		08:32 (3)	08:45
	16:42		17:42	27	08:48 (1)	18:37	20:34	21:29	22:07	21:58	21:05	19:52	18:39	20 09:12 (1)	16:37	19	08:51 (3)	16:12
16	08:44		07:53		08:19 (1)	06:49	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:50 (1)	08:02		08:34 (3)	08:46
	16:44		17:44	29	08:48 (1)	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	24 09:14 (1)	16:35	17	08:51 (3)	16:12
17	08:43		07:51		08:17 (1)	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:49 (1)	08:03		08:36 (3)	08:47
	16:46		17:46	31	08:48 (1)	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	26 09:15 (1)	16:34	15	08:51 (3)	16:13
18	08:42	09:13 (3)	07:49		08:15 (1)	06:44	06:29	05:28	05:02	05:25	06:16	07:11	08:06	08:47 (1)	08:05		08:38 (3)	08:48
	16:47	1 09:14 (3)	17:48	34	08:49 (1)	18:42	20:40	21:34	22:08	21:55	20:59	19:45	18:32	29 09:16 (1)	16:32	13	08:51 (3)	16:13
19	08:41	09:11 (3)	07:47		08:15 (1)	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:08	08:46 (1)	08:07		08:40 (3)	08:49
	16:49	3 09:14 (3)	17:50	34	08:49 (1)	18:44	20:42	21:35	22:09	21:53	20:57	19:42	18:30	31 09:17 (1)	16:31	11	08:51 (3)	16:13
20	08:40	09:10 (3)	07:45		08:14 (1)	06:39	06:24	05:25	05:02	05:28	06:20	07:15	08:09	08:46 (1)	08:09		08:42 (3)	08:49
	16:51	5 09:15 (3)	17:52	33	08:47 (1)	18:46	20:44	21:37	22:09	21:52	20:54	19:40	18:28	31 09:17 (1)	16:30	9	08:51 (3)	16:13
21	08:38	09:08 (3)	07:43		08:15 (1)	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:45 (1)	08:11		08:44 (3)	08:50
	16:53	7 09:15 (3)	17:54	32	08:47 (1)	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	33 09:18 (1)	16:28	7	08:51 (3)	16:14
22	08:37	09:07 (3)	07:40		08:15 (1)	06:34	06:20	05:22	05:02	05:31	06:23	07:18	08:13	08:44 (1)	08:13		08:46 (3)	08:50
	16:55	9 09:16 (3)	17:56	32	08:47 (1)	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	34 09:18 (1)	16:27	5	08:51 (3)	16:14
23	08:36	09:05 (3)	07:38		08:15 (1)	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:44 (1)	08:14		08:48 (3)	08:51
	16:56	11 09:16 (3)	17:58	30	08:45 (1)	18:52	20:49	21:41	22:10	21:48	20:48	19:32	18:21	34 09:18 (1)	16:26	3	08:51 (3)	16:15
24	08:34	09:04 (3)	07:36		08:17 (1)	06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:45 (1)	08:16		08:50 (3)	08:51
	16:58	13 09:17 (3)	18:00	28	08:45 (1)	18:53	20:51	21:43	22:10	21:46	20:45	19:30	18:19	33 09:18 (1)	16:25	1	08:51 (3)	16:15
25	08:33	09:02 (3)	07:34		08:18 (1)	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	07:47 (1)	08:18			08:52
	17:00	15 09:17 (3)	18:02	26	08:44 (1)	18:55	20:53	21:44	22:10	21:45	20:43	19:27	17:17	31 08:18 (1)	16:23			16:16
26	08:32	09:01 (3)	07:31		08:19 (1)	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	07:49 (1)	08:20			08:52
	17:02	17 09:18 (3)	18:04	22	08:41 (1)	18:57	20:55	21:46	22:10	21:43	20:41	19:25	17:14	28 08:17 (1)	16:22			16:17
27	08:30	08:59 (3)	07:29		08:21 (1)	06:22	06:08	05:16	05:04	05:38	06:32	07:27	07:23	07:52 (1)	08:21			08:52
	17:04	19 09:18 (3)	18:06	18	08:39 (1)	18:59	20:56	21:47	22:10	21:42	20:38	19:23	17:12	26 08:18 (1)	16:21			16:17
28	08:29	08:57 (3)	07:27		08:24 (1)	06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	07:54 (1)	08:23			08:52
	17:06	21 09:18 (3)	18:08	12	08:36 (1)	19:01	20:58	21:49	22:09	21:40	20:36	19:20	17:10	24 08:18 (1)	16:20			16:18
29	08:27	08:55 (3)				07:17	06:04	05:14	05:05	05:42	06:36	07:31	07:27	07:56 (1)	08:25			08:53
	17:08	22 09:17 (3)				20:03	21:00	21:50	22:09	21:38	20:34	19:18	17:08	21 08:17 (1)	16:19			16:19
30	08:25	08:56 (3)				07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:29	07:58 (1)	08:26			08:53
	17:10	22 09:18 (3)				20:05	21:02	21:51	22:09	21:37	20:31	19:15	17:06	18 08:16 (1)	16:18			16:20
31	08:24	08:57 (3)				07:12		05:11		05:45	06:39		07:31	08:00 (1)				08:53
	17:12	20 09:17 (3)				20:06		21:53		21:35	20:29		17:04	15 08:15 (1)				16:21
Potential sun hours	250		273		367	420	494	510	512	460	382	328		259				233
Total, worst case		185		553									480		267			
Sun reduction		0.16		0.19									0.23		0.20			
Oper. time red.		1.00		1.00									1.00		1.00			
Wind dir. red.		0.61		0.61									0.61		0.61			
Total reduction		0.10		0.12									0.14		0.12			
Total, real		18		66									67		32			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** BN - H071

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April			May			June			July			August			September	October	November	December
1	08:52	08:22	07:24	07:09			06:00		06:38 (3)	05:11		05:41 (2)	05:07		05:40 (1)	05:47		06:17 (2)	06:41	07:34	07:33	08:28
	16:23	17:14	18:10	20:08			21:04	3	06:41 (3)	21:54	36	06:17 (2)	22:09	43	06:23 (2)	21:33	2	06:19 (2)	20:27	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07			05:58			05:10		05:40 (2)	05:07		05:40 (1)	05:48			06:43	07:36	07:35	08:29
	16:24	17:16	18:12	20:10			21:06			21:55	37	06:17 (2)	22:08	43	06:23 (2)	21:31			20:24	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04			05:56			05:09		05:40 (2)	05:08		05:41 (1)	05:50			06:44	07:38	07:36	08:31
	16:25	17:18	18:14	20:12			21:07			21:56	38	06:18 (2)	22:08	42	06:23 (2)	21:30			20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02			05:54			05:08		05:39 (1)	05:09		05:42 (1)	05:52			06:46	07:40	07:38	08:32
	16:26	17:20	18:16	20:14			21:09			21:57	39	06:18 (2)	22:07	42	06:24 (2)	21:28			20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	07:00			05:52			05:07		05:38 (1)	05:10		05:43 (1)	05:53			06:48	07:42	07:40	08:34
	16:27	17:22	18:18	20:16			21:11			21:58	40	06:18 (2)	22:07	41	06:24 (2)	21:26			20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57			05:50			05:06		05:38 (1)	05:11		05:44 (1)	05:55			06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:18			21:13			21:59	40	06:18 (2)	22:06	40	06:24 (2)	21:24			20:14	19:01	16:52	16:14
7	08:51	08:11	07:10	06:55			05:48			05:06		05:37 (1)	05:12		05:45 (1)	05:57			06:52	07:45	07:44	08:36
	16:30	17:26	18:21	20:19			21:15			22:00	41	06:18 (2)	22:05	40	06:25 (2)	21:22			20:12	18:58	16:51	16:14
8	08:50	08:09	07:08	06:52			05:46			05:05		05:37 (1)	05:13		05:46 (1)	05:58			06:53	07:47	07:46	08:38
	16:31	17:28	18:23	20:21			21:16			22:01	41	06:18 (2)	22:05	39	06:25 (2)	21:20			20:10	18:56	16:49	16:14
9	08:49	08:08	07:06	06:50			05:44			05:05		05:36 (1)	05:14		05:47 (2)	06:00			06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23			21:18			22:02	42	06:18 (2)	22:04	38	06:25 (2)	21:18			20:07	18:53	16:47	16:13
10	08:49	08:06	07:03	06:48			05:42			05:04		05:36 (1)	05:15		05:48 (2)	06:02			06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25			21:20			22:03	42	06:18 (2)	22:03	38	06:26 (2)	21:16			20:05	18:51	16:45	16:13
11	08:48	08:04	07:01	06:45			05:40		06:08 (2)	05:04		05:36 (1)	05:16		05:49 (2)	06:04			06:59	07:53	07:52	08:41
	16:36	17:34	18:29	20:27			21:22	1	06:09 (2)	22:04	43	06:19 (2)	22:02	37	06:26 (2)	21:14			20:02	18:49	16:43	16:13
12	08:47	08:02	06:58	06:43			05:39		06:06 (2)	05:03		05:35 (1)	05:17		05:50 (2)	06:05		06:45 (3)	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29			21:23	4	06:10 (2)	22:05	43	06:18 (2)	22:01	36	06:26 (2)	21:12	6	06:51 (3)	20:00	18:46	16:42	16:13
13	08:47	08:00	06:56	06:40			05:37		06:04 (2)	05:03		05:35 (1)	05:18		05:51 (2)	06:07		06:42 (3)	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:31			21:25	6	06:10 (2)	22:05	44	06:19 (2)	22:00	35	06:26 (2)	21:10	11	06:53 (3)	19:57	18:44	16:40	16:12
14	08:46	07:58	06:53	06:38			05:35		06:03 (2)	05:03		05:35 (1)	05:20		05:52 (2)	06:09		06:40 (3)	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32			21:27	9	06:12 (2)	22:06	44	06:19 (2)	21:59	34	06:26 (2)	21:08	15	06:55 (3)	19:55	18:41	16:39	16:12
15	08:45	07:55	06:51	06:36			05:33		06:01 (2)	05:02		05:35 (1)	05:21		05:53 (2)	06:11		06:40 (3)	07:06	08:00	08:00	08:45
	16:42	17:42	18:37	20:34			21:29	11	06:12 (2)	22:07	44	06:19 (2)	21:58	33	06:26 (2)	21:05	17	06:57 (3)	19:52	18:39	16:37	16:12
16	08:44	07:53	06:49	06:33			05:32		06:00 (2)	05:02		05:35 (1)	05:22		05:54 (2)	06:13		06:41 (3)	07:07	08:02	08:02	08:46
	16:44	17:44	18:39	20:36			21:30	13	06:13 (2)	22:07	44	06:19 (2)	21:57	32	06:26 (2)	21:03	16	06:57 (3)	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31			05:30		05:58 (2)	05:02		05:35 (1)	05:24		05:56 (2)	06:14		06:43 (3)	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38			21:32	15	06:13 (2)	22:08	44	06:19 (2)	21:56	31	06:27 (2)	21:01	14	06:57 (3)	19:47	18:35	16:34	16:13
18	08:42	07:49	06:44	06:29			05:29		05:57 (2)	05:02		05:35 (1)	05:25		05:57 (2)	06:16		06:45 (3)	07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40			21:33	17	06:14 (2)	22:08	45	06:20 (2)	21:55	29	06:26 (2)	20:59	13	06:58 (3)	19:45	18:32	16:32	16:13
19	08:41	07:47	06:41	06:26		06:51 (3)	05:27		05:56 (2)	05:02		05:35 (1)	05:26		05:58 (2)	06:18		06:46 (3)	07:13	08:08	08:07	08:49
	16:49	17:50	18:44	20:42	1	06:52 (3)	21:35	19	06:15 (2)	22:09	45	06:20 (2)	21:53	28	06:26 (2)	20:57	11	06:57 (3)	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24		06:49 (3)	05:25		05:54 (2)	05:02		05:35 (1)	05:28		06:00 (2)	06:20		06:48 (3)	07:15	08:09	08:09	08:49
	16:51	17:52	18:46	20:44	4	06:53 (3)	21:37	21	06:15 (2)	22:09	45	06:20 (2)	21:52	27	06:27 (2)	20:54	10	06:58 (3)	19:40	18:28	16:30	16:13
21	08:38	07:43	06:36	06:22		06:47 (3)	05:24		05:53 (2)	05:02		05:35 (1)	05:29		06:01 (2)	06:21		06:50 (3)	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	6	06:53 (3)	21:38	23	06:16 (2)	22:09	45	06:20 (2)	21:51	25	06:26 (2)	20:52	8	06:58 (3)	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:20		06:44 (3)	05:23		05:52 (2)	05:02		05:35 (1)	05:31		06:02 (2)	06:23		06:51 (3)	07:18	08:13	08:13	08:50
	16:55	17:56	18:50	20:47	8	06:52 (3)	21:40	24	06:16 (2)	22:09	45	06:20 (2)	21:49	24	06:26 (2)	20:50	6	06:57 (3)	19:35	18:23	16:27	16:14
23	08:36	07:38	06:31	06:17		06:42 (3)	05:21		05:50 (2)	05:03		05:36 (1)	05:32		06:04 (2)	06:25		06:53 (3)	07:20	08:15	08:14	08:51
	16:57	17:58	18:52	20:49	10	06:52 (3)	21:41	26	06:16 (2)	22:10	45	06:21 (2)	21:48	22	06:26 (2)	20:48	3	06:56 (3)	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15		06:40 (3)	05:20		05:49 (2)	05:03		05:36 (1)	05:34		06:05 (2)	06:27		06:55 (3)	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	12	06:52 (3)	21:43	27	06:16 (2)	22:10	45	06:21 (2)	21:46	20	06:25 (2)	20:45	1	06:56 (3)	19:30	18:19	16:25	16:15
25	08:33	07:34	06:26	06:13		06:38 (3)	05:18		05:48 (2)	05:03		05:36 (1)	05:35		06:07 (2)	06:28			07:23	07:19	08:18	08:52
	17:00	18:02	18:55	20:53	13	06:51 (3)	21:44	29	06:17 (2)	22:10	45	06:21 (2)	21:45	18	06:25 (2)	20:43			19:28	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11		06:36 (3)	05:17		05:47 (2)	05:04		05:37 (1)	05:37		06:08 (2)	06:30			07:25	07:21	08:20	08:52
	17:02	18:04	18:57	20:55	15	06:51 (3)	21:46	30	06:17 (2)	22:10	44	06:21 (2)	21:43	16	06:24 (2)	20:41			19:25	17:15	16:22	16:17
27	08:30	07:29	06:22	06:09		06:34 (3)	05:16		05:46 (2)	05:04		05:37 (1)	05:38		06:09 (2)	06:32			07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	16	06:50 (3)	21:47	31	06:17 (2)	22:10	44	06:21 (2)	21:42	14	06:23 (2)	20:38			19:23	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06		06:32 (3)	05:15		05:45 (2)	05:05		05:38 (1)	05:40		06:11 (2)	06:34			07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	17	06:49 (3)	21:49	32	06:17 (2)	22:09	44	06:22 (2)	21:40	12	06:23 (2)	20:36			19:20	17:10	16:20	16:18
29	08:27		07:17	06:04		06:33 (3)	05:14		05:44 (2)	05:05		05:38 (1)	05:42		06:12 (2)	06:36			07:31	07:27	08:24	08:52
	17:08		20:03	21:00	14	06:47 (3)	21:50	33	06:17 (2)	22:09	44	06:22 (2)	21:38	10	06:22 (2)	20:34			19:18	17:08	16:19	16:19
30	08:25		07:14	06:02		06:35 (3)	05:13		05:43 (2)	05:06		05:39 (1)	05:43		06:14 (2)	06:37			07:32	07:29	08:26	08:53
	17:10		20:05	21:02	10	06:45 (3)	21:51	34	06:17 (2)	22:09	43	06:22 (2)	21:37	8	06:22 (2)	20:31			19:15	17:06	16:19	16:20
31	08:24		07:12				05:12		05:42 (2)				05:45		06:16 (2)	06:39				07:31		08:52
	17:12		20:06				21:53	35	06:17 (2)				21:35	5	06:21 (2)	20:29				17:04		16:21
Potential sun hours	250	273	367	420			494			510			512			460			382	328	259	233
Total, worst case					126			443			1281			902			133						
Sun reduction					0.31			0.31			0.26			0.22			0.26						
Oper. time red.					1.00			1.00			1.00			1.00			1.00						
Wind dir. red.					0.65			0.64			0.64			0.64			0.65						
Total reduction					0.20			0.20			0.17			0.14			0.17						
Total, real					25			89			212			129			22						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** BO - H072

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:11	05:07	05:47	06:17 (1)	06:41	07:08 (2)	07:34	07:33	08:28
	16:23	17:14	18:10	20:08	21:04	21:54	22:09	21:33	06:36 (1)	20:27	07:37 (2)	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	07:31 (2)	05:58	05:07	05:48	06:19 (1)	06:43	07:10 (2)	07:36	07:35	08:29
	16:24	17:16	18:12	20:10	07:32 (2)	06:24 (1)	05:10	21:31	06:37 (1)	20:24	07:37 (2)	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04	07:28 (2)	06:27 (1)	22:08	18	06:20 (1)	06:44	07:12 (2)	07:38	07:37	08:31
	16:25	17:18	18:14	20:12	07:33 (2)	06:22 (1)	05:09	05:50	06:37 (1)	20:22	07:36 (2)	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	07:26 (2)	06:27 (1)	22:08	21:30	06:22 (1)	06:46	07:13 (2)	07:40	07:38	08:32
	16:26	17:20	18:16	20:14	07:35 (2)	06:20 (1)	05:08	17	06:38 (1)	20:19	07:35 (2)	19:05	16:56	16:16
5	08:51	08:15	07:15	07:00	07:23 (2)	06:27 (1)	05:09	05:52	06:23 (1)	06:48	07:15 (2)	07:42	07:40	08:34
	16:27	17:22	18:18	20:16	07:35 (2)	06:18 (1)	22:07	21:28	06:37 (1)	20:17	07:34 (2)	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	07:21 (2)	06:28 (1)	05:10	16	06:25 (1)	06:50	07:17 (2)	07:43	07:42	08:35
	16:29	17:24	18:19	20:18	07:37 (2)	06:16 (1)	22:07	21:26	06:38 (1)	20:14	07:33 (2)	19:01	16:52	16:14
7	08:51	08:11	07:10	06:55	07:19 (2)	06:27 (1)	05:11	14	06:27 (1)	06:52	07:18 (2)	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	07:38 (2)	06:15 (1)	22:06	21:24	06:38 (1)	20:12	07:31 (2)	18:58	16:51	16:14
8	08:50	08:09	07:08	06:52	07:16 (2)	06:28 (1)	05:12	13	06:27 (1)	06:53	07:20 (2)	07:47	07:46	08:38
	16:31	17:28	18:23	20:21	07:37 (2)	06:13 (1)	22:05	05:57	06:38 (1)	20:10	07:29 (2)	18:56	16:49	16:14
9	08:50	08:08	07:06	06:50	07:14 (2)	06:28 (1)	05:13	11	06:28 (1)	06:53	07:20 (2)	07:47	07:46	08:38
	16:33	17:30	18:25	20:23	07:38 (2)	06:11 (1)	22:05	21:20	06:37 (1)	20:10	07:29 (2)	18:56	16:49	16:14
10	08:49	08:06	07:03	06:48	07:11 (2)	06:27 (1)	05:14	9	06:37 (1)	06:55	07:22 (2)	07:49	07:48	08:39
	16:34	17:32	18:27	20:25	07:38 (2)	06:09 (1)	22:04	21:18	06:37 (1)	20:07	07:28 (2)	18:53	16:47	16:13
11	08:48	08:04	07:01	06:45	07:09 (2)	06:27 (1)	05:15	7	06:37 (1)	06:57	07:24 (2)	07:51	07:50	08:40
	16:36	17:34	18:29	20:27	07:38 (2)	06:08 (1)	22:03	06:02	06:31 (1)	06:57	07:24 (2)	07:51	07:50	08:40
12	08:47	08:02	06:58	06:43	07:07 (2)	06:27 (1)	05:16	5	06:36 (1)	20:05	07:25 (2)	18:51	16:45	16:13
	16:37	17:36	18:31	20:29	07:38 (2)	06:07 (1)	22:03	21:16	06:33 (1)	06:59		07:53	07:52	08:41
13	08:47	08:00	06:56	06:40	07:04 (2)	06:04	05:16	06:04	06:33 (1)	06:59		07:53	07:52	08:41
	16:39	17:38	18:33	20:31	07:37 (2)	06:25 (1)	22:02	21:14	06:35 (1)	20:02		18:49	16:43	16:13
14	08:46	07:58	06:53	06:38	07:02 (2)	06:06 (1)	05:17	06:05		07:00		07:54	07:54	08:42
	16:41	17:40	18:35	20:32	07:37 (2)	06:25 (1)	22:01	21:12		20:00		18:46	16:42	16:13
15	08:45	07:55	06:51	06:36	07:00 (2)	06:07 (1)	05:18	06:07		07:02		07:56	07:56	08:43
	16:42	17:42	18:37	20:34	07:37 (2)	06:23 (1)	22:00	21:10		19:57		18:44	16:40	16:12
16	08:44	07:53	06:49	06:33	07:00 (2)	06:09 (1)	05:20	06:09		07:04		07:58	07:58	08:44
	16:44	17:44	18:39	20:36	07:37 (2)	06:22 (1)	22:00	21:08		19:55		18:41	16:39	16:12
17	08:43	07:51	06:46	06:31	06:59 (2)	06:10 (1)	05:21	06:11		07:06		08:00	08:00	08:45
	16:46	17:46	18:40	20:38	07:35 (2)	06:20 (1)	22:00	21:05		19:52		18:39	16:37	16:12
18	08:42	07:49	06:44	06:29	07:00 (2)	06:13 (1)	05:22	06:13		07:07		08:02	08:02	08:46
	16:47	17:48	18:42	20:40	07:35 (2)	06:18 (1)	21:59	21:03		19:50		18:37	16:35	16:12
19	08:41	07:47	06:41	06:26	07:00 (2)	05:02	05:24	06:14	07:16 (2)	07:09		08:04	08:03	08:47
	16:49	17:50	18:44	20:42	07:34 (2)	22:09	21:56	21:01	07:28 (2)	19:47		18:35	16:34	16:13
20	08:40	07:45	06:39	06:24	07:01 (2)	05:02	05:25	06:16	07:13 (2)	07:11		08:06	08:05	08:48
	16:51	17:52	18:46	20:44	07:33 (2)	22:09	21:55	20:59	07:31 (2)	19:45		18:32	16:32	16:13
21	08:38	07:43	06:36	06:22	07:02 (2)	05:02	05:26	06:18	07:10 (2)	07:13		08:08	08:07	08:49
	16:53	17:54	18:48	20:45	07:32 (2)	22:09	21:53	20:57	07:32 (2)	19:42		18:30	16:31	16:13
22	08:37	07:40	06:34	06:20	07:02 (2)	05:02	05:28	06:20	07:09 (2)	07:15		08:09	08:09	08:49
	16:55	17:56	18:50	20:47	07:30 (2)	22:09	21:52	20:54	07:34 (2)	19:40		18:28	16:30	16:13
23	08:36	07:38	06:31	06:17	07:03 (2)	05:03	05:29	06:21	07:08 (2)	07:16		08:11	08:11	08:50
	16:57	17:58	18:52	20:49	07:28 (2)	22:10	21:51	20:52	07:36 (2)	19:37		18:25	16:28	16:14
24	08:34	07:36	06:29	06:15	07:05 (2)	05:03	05:31	06:23	07:06 (2)	07:18		08:13	08:13	08:50
	16:58	18:00	18:53	20:51	07:26 (2)	22:10	21:49	20:50	07:36 (2)	19:35		18:23	16:27	16:14
25	08:33	07:34	06:26	06:13	07:07 (2)	05:03	05:32	06:25	07:05 (2)	07:20		08:15	08:14	08:51
	17:00	18:02	18:55	20:53	07:24 (2)	22:10	21:48	20:48	07:37 (2)	19:32		18:21	16:26	16:15
26	08:32	07:31	06:24	06:11	07:10 (2)	05:03	05:34	06:27	07:04 (2)	07:22		08:17	08:16	08:51
	17:02	18:04	18:57	20:55	07:21 (2)	22:10	21:46	20:45	07:38 (2)	19:30		18:19	16:25	16:15
27	08:30	07:29	06:22	06:09	05:16	05:04	05:35	06:28	07:02 (2)	07:23		07:19	08:18	08:52
	17:04	18:06	18:59	20:56	21:47	22:10	21:45	20:43	07:38 (2)	19:28		17:17	16:23	16:16
28	08:29	07:27	06:19	06:06	05:15	05:05	05:37	06:22 (1)	06:30	07:02 (2)	07:25	07:21	08:20	08:52
	17:06	18:08	19:01	20:58	21:49	22:09	21:43	8	06:30 (1)	20:41	07:38 (2)	19:25	17:15	16:22	16:17
29	08:27		07:17	06:04	05:14	05:05	05:38	06:19 (1)	06:32	07:02 (2)	07:27	07:23	08:21	08:52
	17:08		20:03	21:00	21:50	22:09	21:42	12	06:31 (1)	20:38	07:39 (2)	19:23	17:12	16:21	16:18
30	08:25		07:14	06:02	05:13	05:06	05:40	06:19 (1)	06:34	07:01 (2)	07:29	07:25	08:23	08:52
	17:10		20:05	21:02	21:51	22:09	21:40	14	06:33 (1)	20:36	07:38 (2)	19:20	17:10	16:20	16:18
31	08:24		07:12		05:12		05:42	06:17 (1)	06:36	07:03 (2)	07:31	07:27	08:25	08:52
	17:12		20:06		21:53		21:38	17	06:34 (1)	20:34	07:38 (2)	19:18	17:08	16:19	16:19
Potential sun hours	250	273	367	420	494	510	512		460		382		328	259	233
Total, worst case				605	220			90		577		166			
Sun reduction				0.31	0.31			0.22		0.26		0.25			
Oper. time red.				1.00	1.00			1.00		1.00		1.00			
Wind dir. red.				0.64	0.65			0.65		0.64		0.64			
Total reduction				0.20	0.20			0.15		0.17		0.16			
Total, real				119	45			13		95		27			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** BP - H073

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April		May		June	July	August		September		October	November	December
1	08:52	08:22	07:24	07:09		06:00		06:47 (2)	05:11	05:07	05:47		06:41	07:08 (2)	07:34	07:33	08:28
	16:23	17:14	18:10	20:08		21:04	24	07:11 (2)	21:54	22:09	21:33		20:27	8 07:16 (2)	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07		05:58		06:49 (2)	05:10	05:07	05:48		06:43	07:10 (2)	07:36	07:35	08:29
	16:24	17:16	18:12	20:10		21:06	20	07:09 (2)	21:55	22:08	21:31		20:24	4 07:14 (2)	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04		05:56		06:51 (2)	05:09	05:08	05:50		06:44		07:38	07:37	08:31
	16:25	17:18	18:14	20:12		21:07	15	07:06 (2)	21:56	22:08	21:30		20:22		19:08	16:58	16:16
4	08:52	08:17	07:17	07:02		05:54		06:54 (2)	05:08	05:09	05:52		06:46		07:40	07:38	08:32
	16:26	17:20	18:16	20:14		21:09	9	07:03 (2)	21:57	22:07	21:28		20:19		19:05	16:56	16:16
5	08:51	08:15	07:15	07:00		05:52			05:07	05:10	05:53		06:48		07:42	07:40	08:34
	16:27	17:22	18:18	20:16		21:11			21:58	22:07	21:26		20:17		19:03	16:54	16:15
6	08:51	08:13	07:13	06:57		05:50			05:06	05:11	05:55		06:50		07:43	07:42	08:35
	16:29	17:24	18:19	20:18		21:13			21:59	22:06	21:24		20:14		19:01	16:52	16:14
7	08:51	08:11	07:10	06:55		05:48			05:06	05:12	05:57		06:52		07:45	07:44	08:36
	16:30	17:26	18:21	20:19		21:15			22:00	22:05	21:22		20:12		18:58	16:51	16:14
8	08:50	08:09	07:08	06:52		05:46			05:05	05:13	05:58		06:53		07:47	07:46	08:38
	16:31	17:28	18:23	20:21		21:16			22:01	22:05	21:20		20:10		18:56	16:49	16:14
9	08:50	08:08	07:06	06:50		05:44			05:05	05:14	06:00	07:02 (2)	06:55		07:49	07:48	08:39
	16:33	17:30	18:25	20:23		21:18			22:02	22:04	21:18	12 07:14 (2)	20:07		18:53	16:47	16:13
10	08:49	08:06	07:03	06:48	07:11 (2)	05:42			05:04	05:15	06:02	06:58 (2)	06:57		07:51	07:50	08:40
	16:34	17:32	18:27	20:25	4 07:15 (2)	21:20			22:03	22:03	21:16	18 07:16 (2)	20:05		18:51	16:45	16:13
11	08:48	08:04	07:01	06:45	07:09 (2)	05:40			05:04	05:16	06:04	06:57 (2)	06:59		07:53	07:52	08:41
	16:36	17:34	18:29	20:27	8 07:17 (2)	21:22			22:04	22:02	21:14	21 07:18 (2)	20:02		18:49	16:43	16:13
12	08:47	08:02	06:58	06:43	07:07 (2)	05:39			05:03	05:17	06:05	06:55 (2)	07:00		07:54	07:54	08:42
	16:37	17:36	18:31	20:29	11 07:18 (2)	21:23			22:05	22:01	21:12	25 07:20 (2)	20:00		18:46	16:42	16:13
13	08:47	08:00	06:56	06:40	07:04 (2)	05:37			05:03	05:18	06:07	06:53 (2)	07:02		07:56	07:56	08:43
	16:39	17:38	18:33	20:31	14 07:18 (2)	21:25			22:05	22:00	21:10	27 07:20 (2)	19:57		18:44	16:40	16:12
14	08:46	07:58	06:53	06:38	07:02 (2)	05:35			05:03	05:20	06:09	06:52 (2)	07:04		07:58	07:58	08:44
	16:41	17:40	18:35	20:32	17 07:19 (2)	21:27			22:06	21:59	21:08	30 07:22 (2)	19:55		18:41	16:39	16:12
15	08:45	07:55	06:51	06:36	07:00 (2)	05:33			05:02	05:21	06:11	06:52 (2)	07:06		08:00	08:00	08:45
	16:42	17:42	18:37	20:34	20 07:20 (2)	21:29			22:07	21:58	21:05	31 07:23 (2)	19:52		18:39	16:37	16:12
16	08:44	07:53	06:49	06:33	06:58 (2)	05:32			05:02	05:22	06:13	06:50 (2)	07:07		08:02	08:02	08:46
	16:44	17:44	18:39	20:36	22 07:20 (2)	21:30			22:07	21:57	21:03	33 07:23 (2)	19:50		18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	06:55 (2)	05:30			05:02	05:24	06:14	06:49 (2)	07:09		08:04	08:03	08:47
	16:46	17:46	18:40	20:38	25 07:20 (2)	21:32			22:08	21:56	21:01	35 07:24 (2)	19:47		18:35	16:34	16:13
18	08:42	07:49	06:44	06:29	06:53 (2)	05:29			05:02	05:25	06:16	06:49 (2)	07:11		08:06	08:05	08:48
	16:47	17:48	18:42	20:40	27 07:20 (2)	21:34			22:08	21:55	20:59	35 07:24 (2)	19:45		18:32	16:32	16:13
19	08:41	07:47	06:41	06:26	06:51 (2)	05:27			05:02	05:26	06:18	06:48 (2)	07:13		08:08	08:07	08:49
	16:49	17:50	18:44	20:42	29 07:20 (2)	21:35			22:09	21:53	20:57	36 07:24 (2)	19:42		18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	06:49 (2)	05:25			05:02	05:28	06:20	06:48 (2)	07:15		08:09	08:09	08:49
	16:51	17:52	18:46	20:44	31 07:20 (2)	21:37			22:09	21:52	20:54	36 07:24 (2)	19:40		18:28	16:30	16:13
21	08:38	07:43	06:36	06:22	06:47 (2)	05:24			05:02	05:29	06:21	06:50 (2)	07:16		08:11	08:11	08:50
	16:53	17:54	18:48	20:45	33 07:20 (2)	21:38			22:09	21:51	20:52	35 07:25 (2)	19:37		18:25	16:28	16:14
22	08:37	07:40	06:34	06:20	06:44 (2)	05:23			05:02	05:31	06:23	06:51 (2)	07:18		08:13	08:13	08:50
	16:55	17:56	18:50	20:47	35 07:19 (2)	21:40			22:09	21:49	20:50	33 07:24 (2)	19:35		18:23	16:27	16:14
23	08:36	07:38	06:31	06:17	06:42 (2)	05:21			05:03	05:32	06:25	06:53 (2)	07:20		08:15	08:14	08:51
	16:57	17:58	18:52	20:49	37 07:19 (2)	21:41			22:10	21:48	20:48	31 07:24 (2)	19:32		18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	06:42 (2)	05:20			05:03	05:34	06:27	06:55 (2)	07:22		08:17	08:16	08:51
	16:58	18:00	18:53	20:51	36 07:18 (2)	21:43			22:10	21:46	20:45	29 07:24 (2)	19:30		18:19	16:25	16:15
25	08:33	07:34	06:26	06:13	06:42 (2)	05:18			05:03	05:35	06:28	06:56 (2)	07:23		07:19	08:18	08:52
	17:00	18:02	18:55	20:53	36 07:18 (2)	21:44			22:10	21:45	20:43	27 07:23 (2)	19:28		17:17	16:23	16:16
26	08:32	07:31	06:24	06:11	06:43 (2)	05:17			05:04	05:37	06:30	06:58 (2)	07:25		07:21	08:20	08:52
	17:02	18:04	18:57	20:55	34 07:17 (2)	21:46			22:10	21:43	20:41	25 07:23 (2)	19:25		17:15	16:22	16:17
27	08:30	07:29	06:22	06:09	06:44 (2)	05:16			05:04	05:38	06:32	07:00 (2)	07:27		07:23	08:21	08:52
	17:04	18:06	18:59	20:56	32 07:16 (2)	21:47			22:10	21:42	20:38	22 07:22 (2)	19:23		17:12	16:21	16:18
28	08:29	07:27	06:19	06:06	06:44 (2)	05:15			05:05	05:40	06:34	07:01 (2)	07:29		07:25	08:23	08:52
	17:06	18:08	19:01	20:58	31 07:15 (2)	21:49			22:09	21:40	20:36	20 07:21 (2)	19:20		17:10	16:20	16:18
29	08:27		07:17	06:04	06:45 (2)	05:14			05:05	05:42	06:36	07:03 (2)	07:31		07:27	08:24	08:52
	17:08		20:03	21:00	29 07:14 (2)	21:50			22:09	21:38	20:34	17 07:20 (2)	19:18		17:08	16:19	16:19
30	08:25		07:14	06:02	06:46 (2)	05:13			05:06	05:43	06:37	07:05 (2)	07:32		07:29	08:26	08:53
	17:10		20:05	21:02	26 07:12 (2)	21:51			22:09	21:37	20:31	14 07:19 (2)	19:15		17:06	16:19	16:20
31	08:24		07:12			05:12				05:45	06:39	07:07 (2)			07:31		08:53
	17:12		20:06			21:53				21:35	20:29	11 07:18 (2)			17:04		16:21
Potential sun hours	250	273	367	420		494		510	512	460		382		328	259	233
Total, worst case				537		68				603		12				
Sun reduction				0.31		0.31				0.26		0.25				
Oper. time red.				1.00		1.00				1.00		1.00				
Wind dir. red.				0.64		0.64				0.64		0.64				
Total reduction				0.20		0.20				0.16		0.16				
Total, real				106		14				99		2				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** BQ - H074

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June		July		August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10		05:06		05:39 (10)	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:09	20:08	21:03	21:53		22:08	7	05:46 (10)	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:07	05:58	05:09		05:07		05:40 (10)	05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05	21:55		22:08	6	05:46 (10)	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:19	07:04	05:56	05:08		05:08		05:41 (10)	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12	21:07	21:56		22:07	5	05:46 (10)	21:29	20:21	19:08	16:58	16:16
4	08:51	08:16	07:17	07:02	05:54	05:08		05:09		05:42 (10)	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57		22:07	5	05:47 (10)	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52	05:07	05:38 (10)	05:09		05:42 (10)	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11	21:58	1 05:39 (10)	22:06	4	05:46 (10)	21:25	20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50	05:06	05:38 (10)	05:10		05:43 (10)	05:55	06:49	07:43	07:42	08:35
	16:28	17:24	18:19	20:17	21:12	21:59	2 05:40 (10)	22:06	3	05:46 (10)	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48	05:05	05:37 (10)	05:11		05:44 (10)	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	3 05:40 (10)	22:05	2	05:46 (10)	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:36 (10)	05:12		05:45 (10)	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	4 05:40 (10)	22:04	1	05:46 (10)	21:20	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:50	05:44	05:04	05:36 (10)	05:13			06:00	06:55	07:49	07:48	08:38
	16:33	17:30	18:25	20:23	21:18	22:02	5 05:41 (10)	22:04			21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:36 (10)	05:15			06:02	06:57	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	6 05:42 (10)	22:03			21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:00	06:45	05:40	05:03	05:35 (10)	05:16			06:03	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21	22:04	6 05:41 (10)	22:02			21:14	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	05:35 (10)	05:17			06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23	22:04	7 05:42 (10)	22:01			21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:56	06:40	05:37	05:02	05:35 (10)	05:18			06:07	07:02	07:56	07:55	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	8 05:43 (10)	22:00			21:09	19:57	18:44	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	05:02	05:35 (10)	05:19			06:09	07:04	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:27	22:06	8 05:43 (10)	21:59			21:07	19:54	18:41	16:38	16:12
15	08:44	07:55	06:51	06:35	05:33	05:02	05:35 (10)	05:21			06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	8 05:43 (10)	21:58			21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:31	05:02	05:34 (10)	05:22			06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	9 05:43 (10)	21:57			21:03	19:49	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:34 (10)	05:23			06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:32	22:07	9 05:43 (10)	21:56			21:01	19:47	18:34	16:34	16:12
18	08:41	07:49	06:43	06:28	05:28	05:02	05:34 (10)	05:25			06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:39	21:33	22:08	9 05:43 (10)	21:54			20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	05:02	05:35 (10)	05:26			06:18	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	9 05:44 (10)	21:53			20:56	19:42	18:30	16:31	16:13
20	08:39	07:44	06:38	06:24	05:25	05:02	05:35 (10)	05:27			06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:09	9 05:44 (10)	21:52			20:54	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:24	05:02	05:35 (10)	05:29			06:21	07:16	08:11	08:10	08:49
	16:53	17:54	18:48	20:45	21:38	22:09	10 05:45 (10)	21:50			20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	05:02	05:35 (10)	05:30			06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:40	22:09	10 05:45 (10)	21:49			20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	05:35 (10)	05:32			06:25	07:20	08:15	08:14	08:50
	16:56	17:58	18:51	20:49	21:41	22:09	9 05:44 (10)	21:48			20:47	19:32	18:21	16:25	16:15
24	08:34	07:36	06:29	06:15	05:19	05:03	05:36 (10)	05:33			06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	9 05:45 (10)	21:46			20:45	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:36 (10)	05:35			06:28	07:23	07:19	08:17	08:51
	17:00	18:02	18:55	20:52	21:44	22:09	9 05:45 (10)	21:45			20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	05:37 (10)	05:36			06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:45	22:09	9 05:46 (10)	21:43			20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:16	05:04	05:37 (10)	05:38			06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	9 05:46 (10)	21:41			20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	05:04	05:38 (10)	05:40			06:33	07:29	07:24	08:23	08:52
	17:06	18:07	19:01	20:58	21:48	22:09	8 05:46 (10)	21:40			20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	05:05	05:38 (10)	05:41			06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:50	22:09	8 05:46 (10)	21:38			20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:06	05:39 (10)	05:43			06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	7 05:46 (10)	21:36			20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11			05:45			06:39		07:30		08:52
	17:12		20:06		21:52			21:35			20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510		512		460	382	328	259	233
Total, worst case						191		33						
Sun reduction						0.26		0.22						
Oper. time red.						1.00		1.00						
Wind dir. red.						0.65		0.65						
Total reduction						0.17		0.14						
Total, real						32		5						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** BR - H075

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June		July		August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10		05:06		05:39 (10)	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:09	20:08	21:03	21:53		22:08	8	05:47 (10)	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:07	05:58	05:09		05:07		05:40 (10)	05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05	21:55		22:08	7	05:47 (10)	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:19	07:04	05:56	05:08		05:39 (10)	05:08	05:41 (10)	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12	21:07	21:56	1	05:40 (10)	22:07	05:48 (10)	21:29	20:21	19:08	16:58	16:16
4	08:51	08:16	07:17	07:02	05:54	05:08		05:39 (10)	05:09	05:42 (10)	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	2	05:41 (10)	22:07	05:48 (10)	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52	05:07		05:38 (10)	05:09	05:42 (10)	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11	21:58	3	05:41 (10)	22:06	05:47 (10)	21:25	20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50	05:06		05:38 (10)	05:10	05:43 (10)	05:55	06:49	07:43	07:42	08:35
	16:28	17:24	18:19	20:17	21:12	21:59	4	05:42 (10)	22:06	05:47 (10)	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48	05:05		05:37 (10)	05:11	05:44 (10)	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	5	05:42 (10)	22:05	05:47 (10)	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05		05:36 (10)	05:12	05:45 (10)	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	6	05:42 (10)	22:04	05:47 (10)	21:20	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:50	05:44	05:04		05:36 (10)	05:13	05:46 (10)	06:00	06:55	07:49	07:48	08:38
	16:33	17:30	18:25	20:23	21:18	22:02	6	05:42 (10)	22:04	05:47 (10)	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04		05:36 (10)	05:15		06:02	06:57	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	7	05:43 (10)	22:03		21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:00	06:45	05:40	05:03		05:35 (10)	05:16		06:03	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21	22:04	8	05:43 (10)	22:02		21:14	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03		05:35 (10)	05:17		06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23	22:04	8	05:43 (10)	22:01		21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:56	06:40	05:37	05:03		05:35 (10)	05:18		06:07	07:02	07:56	07:55	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	9	05:44 (10)	22:00		21:09	19:57	18:44	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	05:02		05:35 (10)	05:19		06:09	07:04	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:27	22:06	9	05:44 (10)	21:59		21:07	19:54	18:41	16:38	16:12
15	08:44	07:55	06:51	06:35	05:33	05:02		05:35 (10)	05:21		06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	10	05:45 (10)	21:58		21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:31	05:02		05:34 (10)	05:22		06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	10	05:44 (10)	21:57		21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02		05:34 (10)	05:23		06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:32	22:07	10	05:44 (10)	21:56		21:01	19:47	18:34	16:34	16:12
18	08:41	07:49	06:43	06:28	05:28	05:02		05:34 (10)	05:25		06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:39	21:33	22:08	11	05:45 (10)	21:54		20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	05:02		05:35 (10)	05:26		06:18	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	11	05:46 (10)	21:53		20:56	19:42	18:30	16:31	16:13
20	08:39	07:44	06:38	06:24	05:25	05:02		05:35 (10)	05:27		06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:09	11	05:46 (10)	21:52		20:54	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:24	05:02		05:35 (10)	05:29		06:21	07:16	08:11	08:10	08:49
	16:53	17:54	18:48	20:45	21:38	22:09	11	05:46 (10)	21:50		20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	05:02		05:35 (10)	05:30		06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:40	22:09	11	05:46 (10)	21:49		20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02		05:35 (10)	05:32		06:25	07:20	08:15	08:14	08:50
	16:56	17:58	18:51	20:49	21:41	22:09	11	05:46 (10)	21:48		20:47	19:32	18:21	16:25	16:15
24	08:34	07:36	06:29	06:15	05:19	05:03		05:36 (10)	05:33		06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	11	05:47 (10)	21:46		20:45	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03		05:36 (10)	05:35		06:28	07:23	07:19	08:17	08:51
	17:00	18:02	18:55	20:52	21:44	22:09	10	05:46 (10)	21:45		20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03		05:37 (10)	05:36		06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:45	22:09	10	05:47 (10)	21:43		20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:16	05:04		05:37 (10)	05:38		06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	10	05:47 (10)	21:41		20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	05:04		05:38 (10)	05:40		06:33	07:29	07:24	08:23	08:52
	17:06	18:07	19:01	20:58	21:48	22:09	9	05:47 (10)	21:40		20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	05:05		05:38 (10)	05:41		06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:50	22:09	9	05:47 (10)	21:38		20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:06		05:39 (10)	05:43		06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	9	05:48 (10)	21:36		20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11				05:45		06:39		07:30		08:52
	17:12		20:06		21:52				21:35		20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510			512		460	382	328	259	233
Total, worst case							232			43					
Sun reduction							0.26			0.22					
Oper. time red.							1.00			1.00					
Wind dir. red.							0.64			0.64					
Total reduction							0.17			0.14					
Total, real							39			6					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** BS - H076

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April		May		June	July	August		September		October	November	December
1	08:52	08:22	07:24	07:09		06:00		06:26 (5)	05:10	05:07		05:47		06:25 (5)	06:41		07:08 (6)	07:34	07:33	08:28
	16:23	17:14	18:10	20:08		21:04	17	06:43 (5)	21:54	22:08		21:33	26	06:51 (5)	20:26	14	07:22 (6)	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07		05:58		06:24 (5)	05:10	05:07		05:48		06:24 (5)	06:43		07:10 (6)	07:36	07:34	08:29
	16:24	17:16	18:12	20:10		21:06	19	06:43 (5)	21:55	22:08		21:31	28	06:52 (5)	20:24	12	07:22 (6)	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04		05:56		06:22 (5)	05:09	05:08		05:50		06:23 (5)	06:44		07:12 (6)	07:38	07:36	08:31
	16:25	17:18	18:14	20:12		21:07	21	06:43 (5)	21:56	22:08		21:29	29	06:52 (5)	20:22	9	07:21 (6)	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02		05:54		06:20 (5)	05:08	05:09		05:52		06:23 (5)	06:46		07:13 (6)	07:40	07:38	08:32
	16:26	17:20	18:16	20:14		21:09	23	06:43 (5)	21:57	22:07		21:28	30	06:53 (5)	20:19	6	07:19 (6)	19:05	16:56	16:16
5	08:51	08:15	07:15	07:00		05:52		06:18 (5)	05:07	05:10		05:53		06:23 (5)	06:48		07:15 (6)	07:41	07:40	08:33
	16:27	17:22	18:17	20:16		21:11	25	06:43 (5)	21:58	22:07		21:26	29	06:52 (5)	20:17	3	07:18 (6)	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57		05:50		06:16 (5)	05:06	05:11		05:55		06:25 (5)	06:50			07:43	07:42	08:35
	16:29	17:24	18:19	20:18		21:13	27	06:43 (5)	21:59	22:06		21:24	28	06:53 (5)	20:14			19:00	16:52	16:14
7	08:51	08:11	07:10	06:55		05:48		06:15 (5)	05:06	05:12		05:57		06:27 (5)	06:52			07:45	07:44	08:36
	16:30	17:26	18:21	20:19	3	21:15	28	06:43 (5)	22:00	22:05		21:22	26	06:53 (5)	20:12			18:58	16:51	16:14
8	08:50	08:09	07:08	06:52		05:46		06:13 (5)	05:05	05:13		05:58		06:28 (5)	06:53			07:47	07:46	08:37
	16:31	17:28	18:23	20:21	6	21:16	30	06:43 (5)	22:01	22:05		21:20	25	06:53 (5)	20:09			18:56	16:49	16:14
9	08:49	08:07	07:05	06:50		05:44		06:13 (5)	05:04	05:14		06:00		06:30 (5)	06:55			07:49	07:48	08:39
	16:33	17:30	18:25	20:23	9	21:18	29	06:42 (5)	22:02	22:04		21:18	23	06:53 (5)	20:07			18:53	16:47	16:13
10	08:49	08:05	07:03	06:47		05:42		06:13 (5)	05:04	05:15		06:02		06:31 (5)	06:57			07:51	07:50	08:40
	16:34	17:32	18:27	20:25	12	21:20	28	06:41 (5)	22:03	22:03		21:16	21	06:52 (5)	20:05			18:51	16:45	16:13
11	08:48	08:04	07:01	06:45		05:40		06:14 (5)	05:04	05:16		06:04		06:33 (5)	06:59			07:53	07:52	08:41
	16:36	17:34	18:29	20:27	14	21:22	27	06:41 (5)	22:04	22:02		21:14	19	06:52 (5)	20:02			18:49	16:43	16:13
12	08:47	08:02	06:58	06:43		05:39		06:14 (5)	05:03	05:17		06:05		06:35 (5)	07:00			07:54	07:54	08:42
	16:37	17:36	18:31	20:29	16	21:23	26	06:40 (5)	22:05	22:01		21:12	17	06:52 (5)	20:00			18:46	16:42	16:12
13	08:47	07:59	06:56	06:40		05:37		06:15 (5)	05:03	05:18		06:07		06:36 (5)	07:02			07:56	07:56	08:43
	16:39	17:38	18:33	20:30	18	21:25	24	06:39 (5)	22:05	22:00		21:10	14	06:50 (5)	19:57			18:44	16:40	16:12
14	08:46	07:57	06:53	06:38		05:35		06:16 (5)	05:03	05:20		06:09		06:38 (5)	07:04			07:58	07:58	08:44
	16:41	17:40	18:35	20:32	20	21:27	23	06:39 (5)	22:06	21:59		21:07	12	06:50 (5)	19:55			18:41	16:38	16:12
15	08:45	07:55	06:51	06:36		05:33		06:17 (5)	05:02	05:21		06:11		06:40 (5)	07:06			08:00	08:00	08:45
	16:42	17:42	18:37	20:34	22	21:28	20	06:37 (5)	22:07	21:58		21:05	9	06:49 (5)	19:52			18:39	16:37	16:12
16	08:44	07:53	06:49	06:33		05:32		06:18 (5)	05:02	05:22		06:12		06:41 (5)	07:07			08:02	08:01	08:46
	16:44	17:44	18:38	20:36	22	21:30	18	06:36 (5)	22:07	21:57		21:03	6	06:47 (5)	19:50			18:37	16:35	16:12
17	08:43	07:51	06:46	06:31		05:30		06:19 (5)	05:02	05:23		06:14		06:43 (5)	07:09			08:04	08:03	08:47
	16:46	17:46	18:40	20:38	20	21:32	15	06:34 (5)	22:08	21:56		21:01	3	06:46 (5)	19:47			18:34	16:34	16:13
18	08:42	07:49	06:44	06:29		05:29		06:22 (5)	05:02	05:25		06:16			07:11			08:06	08:05	08:48
	16:47	17:48	18:42	20:40	18	21:33	11	06:33 (5)	22:08	21:55		20:59			19:45			18:32	16:32	16:13
19	08:41	07:47	06:41	06:26		05:27		06:25 (5)	05:02	05:26		06:18			07:13			08:07	08:07	08:48
	16:49	17:50	18:44	20:42	16	21:35	4	06:29 (5)	22:08	21:53		20:57			19:42			18:30	16:31	16:13
20	08:39	07:45	06:39	06:24		05:25			05:02	05:28		06:20			07:14			08:09	08:09	08:49
	16:51	17:52	18:46	20:43	11	07:14 (6)	21:37		22:09	21:52		20:54			19:40			18:28	16:30	16:13
21	08:38	07:43	06:36	06:22			05:24		05:02	05:29		06:21			07:16			08:11	08:11	08:50
	16:53	17:54	18:48	20:45			21:38		22:09	21:51		20:52			19:37			18:25	16:28	16:14
22	08:37	07:40	06:34	06:20			05:23		05:02	05:31		06:23		07:11 (6)	07:18			08:13	08:12	08:50
	16:55	17:56	18:50	20:47			21:40		22:09	21:49		20:50	3	07:14 (6)	19:35			18:23	16:27	16:14
23	08:36	07:38	06:31	06:17			05:21		05:03	05:32		06:25		07:07 (6)	07:20			08:15	08:14	08:51
	16:57	17:58	18:52	20:49			21:41		22:09	21:48		20:48	12	07:19 (6)	19:32			18:21	16:26	16:15
24	08:34	07:36	06:29	06:15			05:20		05:03	05:34		06:27		07:05 (6)	07:22			08:17	08:16	08:51
	16:58	18:00	18:53	20:51			21:43		22:09	21:46		20:45	16	07:21 (6)	19:30			18:19	16:25	16:15
25	08:33	07:34	06:26	06:13		06:38 (5)	05:18		05:03	05:35	06:34 (5)	06:28		07:03 (6)	07:23			07:19	08:18	08:52
	17:00	18:02	18:55	20:53	1	06:39 (5)	21:44		22:10	21:45	8	06:42 (5)	20:43	18	07:21 (6)	19:27			17:17	16:23	16:16
26	08:31	07:31	06:24	06:11		06:36 (5)	05:17		05:04	05:37	06:31 (5)	06:30		07:02 (6)	07:25			07:21	08:19	08:52
	17:02	18:04	18:57	20:55	4	06:40 (5)	21:46		22:10	21:43	13	06:44 (5)	20:41	20	07:22 (6)	19:25			17:14	16:22	16:17
27	08:30	07:29	06:22	06:08		06:34 (5)	05:16		05:04	05:38	06:29 (5)	06:32		07:01 (6)	07:27			07:23	08:21	08:52
	17:04	18:06	18:59	20:56	7	06:41 (5)	21:47		22:09	21:42	17	06:46 (5)	20:38	22	07:23 (6)	19:23			17:12	16:21	16:18
28	08:28	07:27	06:19	06:06		06:32 (5)	05:15		05:05	05:40	06:28 (5)	06:34		07:01 (6)	07:29			07:25	08:23	08:52
	17:06	18:08	19:01	20:58	10	06:42 (5)	21:49		22:09	21:40	19	06:47 (5)	20:36	22	07:23 (6)	19:20			17:10	16:20	16:18
29	08:27		07:17	06:04		06:30 (5)	05:14		05:05	05:42		06:27 (5)	06:36		07:03 (6)	07:31			07:27	08:24	08:52
	17:08		20:03	21:00	13	06:43 (5)	21:50		22:09	21:38	21	06:48 (5)	20:34	20	07:23 (6)	19:18			17:08	16:19	16:19
30	08:25		07:14	06:02		06:28 (5)	05:13		05:06	05:43		06:26 (5)	06:37		07:05 (6)	07:32			07:29	08:26	08:52
	17:10		20:05	21:02	15	06:43 (5)	21:51		22:09	21:37	24	06:50 (5)	20:31	18	07:23 (6)	19:15			17:06	16:19	16:20
31	08:24		07:12				05:11			05:45		06:25 (5)	06:39		07:07 (6)				07:31		08:52
	17:12		20:06				21:52			21:35	25	06:50 (5)	20:29	16	07:23 (6)				17:04		16:21
Potential sun hours	250	273	367	420			494		510	512			460			382			328	259	233
Total, worst case					257			415			127			512			44				
Sun reduction					0.31			0.31			0.22			0.26			0.25				
Oper. time red.					1.00			1.00			1.00			1.00			1.00				
Wind dir. red.					0.64			0.65			0.65			0.65			0.64				
Total reduction					0.20			0.20			0.15			0.17			0.16				
Total, real					51			85			18			85			7				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** BT - H077

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	06:26 (5)	05:10	05:07	05:47	06:22 (5)	06:41	07:08 (6)	07:34	07:33	08:28
	16:23	17:14	18:10	20:08	21:04 15	06:41 (5)	21:54	22:08	21:33 29	06:51 (5)	20:26 14	07:22 (6)	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	06:24 (5)	05:10	05:07	05:48	06:22 (5)	06:43	07:10 (6)	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:06 18	06:42 (5)	21:55	22:08	21:31 30	06:52 (5)	20:24 11	07:21 (6)	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04	05:56	06:22 (5)	05:09	05:08	05:50	06:21 (5)	06:44	07:12 (6)	07:38	07:36	08:31
	16:25	17:18	18:14	20:12	21:07 20	06:42 (5)	21:56	22:08	21:29 30	06:51 (5)	20:22 8	07:20 (6)	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	06:20 (5)	05:08	05:09	05:52	06:22 (5)	06:46	07:13 (6)	07:40	07:38	08:32
	16:26	17:20	18:16	20:14	21:09 22	06:42 (5)	21:57	22:07	21:28 30	06:52 (5)	20:19 5	07:18 (6)	19:05	16:56	16:16
5	08:51	08:15	07:15	07:00	05:52	06:18 (5)	05:07	05:10	05:53	06:23 (5)	06:48	07:15 (6)	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11 24	06:42 (5)	21:58	22:07	21:26 28	06:51 (5)	20:17 2	07:17 (6)	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	06:16 (5)	05:06	05:11	05:55	06:25 (5)	06:50		07:43	07:42	08:35
	16:29	17:24	18:19	20:18	21:13 26	06:42 (5)	21:59	22:06	21:24 27	06:52 (5)	20:14		19:00	16:52	16:14
7	08:50	08:11	07:10	06:55 07:19 (6)	05:48	06:15 (5)	05:06	05:12	05:57	06:27 (5)	06:51		07:45	07:44	08:36
	16:30	17:26	18:21	20:19 2 07:21 (6)	21:15 27	06:42 (5)	22:00	22:05	21:22 25	06:52 (5)	20:12		18:58	16:51	16:14
8	08:50	08:09	07:08	06:52 07:16 (6)	05:46	06:13 (5)	05:05	05:13	05:58	06:28 (5)	06:53		07:47	07:46	08:37
	16:31	17:28	18:23	20:21 5 07:21 (6)	21:16 29	06:42 (5)	22:01	22:05	21:20 23	06:51 (5)	20:09		18:56	16:49	16:14
9	08:49	08:07	07:05	06:50 07:14 (6)	05:44	06:11 (5)	05:04	05:14	06:00	06:30 (5)	06:55		07:49	07:48	08:39
	16:33	17:30	18:25	20:23 8 07:22 (6)	21:18 30	06:41 (5)	22:02	22:04	21:18 21	06:51 (5)	20:07		18:53	16:47	16:13
10	08:49	08:05	07:03	06:47 07:11 (6)	05:42	06:10 (5)	05:04	05:15	06:02	06:31 (5)	06:57		07:51	07:50	08:40
	16:34	17:32	18:27	20:25 11 07:22 (6)	21:20 31	06:41 (5)	22:03	22:03	21:16 19	06:50 (5)	20:05		18:51	16:45	16:13
11	08:48	08:04	07:01	06:45 07:09 (6)	05:40	06:11 (5)	05:04	05:16	06:04	06:33 (5)	06:59		07:53	07:52	08:41
	16:36	17:34	18:29	20:27 14 07:23 (6)	21:22 30	06:41 (5)	22:04	22:02	21:14 17	06:50 (5)	20:02		18:49	16:43	16:13
12	08:47	08:02	06:58	06:43 07:07 (6)	05:39	06:11 (5)	05:03	05:17	06:05	06:35 (5)	07:00		07:54	07:54	08:42
	16:37	17:36	18:31	20:29 16 07:23 (6)	21:23 29	06:40 (5)	22:05	22:01	21:12 15	06:50 (5)	20:00		18:46	16:42	16:12
13	08:47	07:59	06:56	06:40 07:04 (6)	05:37	06:11 (5)	05:03	05:18	06:07	06:36 (5)	07:02		07:56	07:56	08:43
	16:39	17:38	18:33	20:30 18 07:22 (6)	21:25 28	06:39 (5)	22:05	22:00	21:10 12	06:48 (5)	19:57		18:44	16:40	16:12
14	08:46	07:57	06:53	06:38 07:02 (6)	05:35	06:13 (5)	05:03	05:20	06:09	06:38 (5)	07:04		07:58	07:58	08:44
	16:41	17:40	18:35	20:32 20 07:22 (6)	21:27 26	06:39 (5)	22:06	21:59	21:07 10	06:48 (5)	19:55		18:41	16:38	16:12
15	08:45	07:55	06:51	06:36 07:00 (6)	05:33	06:13 (5)	05:02	05:21	06:11	06:40 (5)	07:06		08:00	08:00	08:45
	16:42	17:42	18:37	20:34 22 07:22 (6)	21:28 25	06:38 (5)	22:07	21:58	21:05 7	06:47 (5)	19:52		18:39	16:37	16:12
16	08:44	07:53	06:49	06:33 06:58 (6)	05:32	06:14 (5)	05:02	05:22	06:12	06:41 (5)	07:07		08:02	08:01	08:46
	16:44	17:44	18:38	20:36 23 07:21 (6)	21:30 24	06:38 (5)	22:07	21:57	21:03 4	06:45 (5)	19:50		18:37	16:35	16:12
17	08:43	07:51	06:46	06:31 06:58 (6)	05:30	06:15 (5)	05:02	05:23	06:14		07:09		08:04	08:03	08:47
	16:46	17:46	18:40	20:38 22 07:20 (6)	21:32 21	06:36 (5)	22:08	21:56	21:01		19:47		18:34	16:34	16:13
18	08:42	07:49	06:44	06:29 06:58 (6)	05:29	06:16 (5)	05:02	05:25	06:16		07:11		08:06	08:05	08:48
	16:47	17:48	18:42	20:40 21 07:19 (6)	21:33 19	06:35 (5)	22:08	21:55	20:59		19:45		18:32	16:32	16:13
19	08:41	07:47	06:41	06:26 07:00 (6)	05:27	06:17 (5)	05:02	05:26	06:18		07:13		08:07	08:07	08:48
	16:49	17:50	18:44	20:42 18 07:18 (6)	21:35 16	06:33 (5)	22:08	21:53	20:57		19:42		18:30	16:31	16:13
20	08:39	07:45	06:39	06:24 07:01 (6)	05:25	06:19 (5)	05:02	05:28	06:20		07:14		08:09	08:09	08:49
	16:51	17:52	18:46	20:43 15 07:16 (6)	21:37 13	06:32 (5)	22:09	21:52	20:54		19:40		18:28	16:30	16:13
21	08:38	07:43	06:36	06:22 07:02 (6)	05:24	06:22 (5)	05:02	05:29	06:21		07:16		08:11	08:11	08:50
	16:53	17:54	18:48	20:45 10 07:12 (6)	21:38 8	06:30 (5)	22:09	21:51	20:52		19:37		18:25	16:28	16:14
22	08:37	07:40	06:34	06:20	05:23	05:02	05:31	06:33 (5)	06:23	07:07 (6)	07:18		08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	21:49 5	06:38 (5)	20:50 11	07:18 (6)	19:35		18:23	16:27	16:14
23	08:36	07:38	06:31	06:17	05:21	05:03	05:32	06:31 (5)	06:25	07:05 (6)	07:20		08:15	08:14	08:51
	16:57	17:58	18:52	20:49	21:41	22:09	21:48 11	06:42 (5)	20:48 15	07:20 (6)	19:32		18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34	06:28 (5)	06:27	07:03 (6)	07:22		08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46 15	06:43 (5)	20:45 18	07:21 (6)	19:30		18:19	16:25	16:15
25	08:33	07:34	06:26	06:13	05:18	05:03	05:35	06:28 (5)	06:28	07:01 (6)	07:23		07:19	08:18	08:52
	17:00	18:02	18:55	20:53	21:44	22:10	21:45 17	06:45 (5)	20:43 21	07:22 (6)	19:27		17:17	16:23	16:16
26	08:31	07:31	06:24	06:11 06:36 (5)	05:17	05:04	05:37	06:26 (5)	06:30	07:00 (6)	07:25		07:21	08:19	08:52
	17:02	18:04	18:57	20:55 1 06:37 (5)	21:46	22:10	21:43 20	06:46 (5)	20:41 23	07:23 (6)	19:25		17:14	16:22	16:17
27	08:30	07:29	06:22	06:08 06:34 (5)	05:16	05:04	05:38	06:25 (5)	06:32	07:00 (6)	07:27		07:23	08:21	08:52
	17:04	18:06	18:59	20:56 4 06:38 (5)	21:47	22:09	21:42 22	06:47 (5)	20:38 23	07:23 (6)	19:23		17:12	16:21	16:18
28	08:28	07:27	06:19	06:06 06:32 (5)	05:15	05:05	05:40	06:24 (5)	06:34	07:01 (6)	07:29		07:25	08:23	08:52
	17:06	18:08	19:01	20:58 8 06:40 (5)	21:49	22:09	21:40 24	06:48 (5)	20:36 22	07:23 (6)	19:20		17:10	16:20	16:18
29	08:27		07:17	06:04 06:30 (5)	05:14	05:05	05:42	06:23 (5)	06:36	07:03 (6)	07:31		07:27	08:24	08:52
	17:08		20:03	21:00 10 06:40 (5)	21:50	22:09	21:38 26	06:49 (5)	20:34 20	07:23 (6)	19:18		17:08	16:19	16:19
30	08:25		07:14	06:02 06:28 (5)	05:13	05:06	05:43	06:23 (5)	06:37	07:05 (6)	07:32		07:29	08:26	08:52
	17:10		20:05	21:02 13 06:41 (5)	21:51	22:09	21:37 27	06:50 (5)	20:31 18	07:23 (6)	19:15		17:06	16:19	16:20
31	08:24		07:12		05:11		05:45	06:22 (5)	06:39	07:07 (6)			07:31		08:52
	17:12		20:06		21:52		21:35 28	06:50 (5)	20:29 16	07:23 (6)			17:04		16:21
Potential sun hours	250	273	367	420	494	510	512		460		382		328	259	233
Total, worst case				261	481		195		514		40				
Sun reduction				0.31	0.31		0.22		0.26		0.25				
Oper. time red.				1.00	1.00		1.00		1.00		1.00				
Wind dir. red.				0.64	0.65		0.65		0.65		0.64				
Total reduction				0.20	0.20		0.15		0.17		0.16				
Total, real				51	98		28		85		6				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** BU - H078

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March	April	May		June	
1	08:52		08:22		16:36 (7)	07:24	07:09		05:10	05:47 (8)
	16:22		17:14	6	16:42 (7)	18:10	20:08		21:54	23 06:10 (8)
2	08:52		08:20		16:35 (7)	07:22	07:07		05:09	05:47 (8)
	16:23		17:16	9	16:44 (7)	18:11	20:10		21:55	22 06:09 (8)
3	08:52		08:18		16:34 (7)	07:20	07:04		05:08	05:48 (8)
	16:25		17:18	12	16:46 (7)	18:13	20:12		21:56	21 06:09 (8)
4	08:52		08:17		16:34 (7)	07:17	07:02		05:08	05:49 (8)
	16:26		17:20	14	16:48 (7)	18:15	20:14		21:57	20 06:09 (8)
5	08:51		08:15		16:34 (7)	07:15	06:59		05:07	05:49 (8)
	16:27		17:22	16	16:50 (7)	18:17	20:15		21:58	20 06:09 (8)
6	08:51		08:13		16:34 (7)	07:12	06:57		05:06	05:50 (8)
	16:28		17:24	19	16:53 (7)	18:19	20:17		21:59	19 06:09 (8)
7	08:50		08:11		16:34 (7)	07:10	06:54		05:05	05:50 (8)
	16:30		17:26	21	16:55 (7)	18:21	20:19		22:00	18 06:08 (8)
8	08:50		08:09		16:34 (7)	07:08	06:52		05:05	05:51 (8)
	16:31		17:28	23	16:57 (7)	18:23	20:21		22:01	17 06:08 (8)
9	08:49		08:07		16:35 (7)	07:05	06:50		05:04	05:51 (8)
	16:33		17:30	23	16:58 (7)	18:25	20:23		22:02	17 06:08 (8)
10	08:49		08:05		16:36 (7)	07:03	06:47		05:04	05:52 (8)
	16:34		17:32	22	16:58 (7)	18:27	20:25		22:03	16 06:08 (8)
11	08:48		08:03		16:36 (7)	07:00	06:45		05:03	05:52 (8)
	16:36		17:34	21	16:57 (7)	18:29	20:27		22:04	15 06:07 (8)
12	08:47		08:01		16:38 (7)	06:58	06:42		05:03	05:53 (8)
	16:37		17:36	18	16:56 (7)	18:31	20:28		22:05	14 06:07 (8)
13	08:46		07:59		16:39 (7)	06:56	06:40		05:37	06:04 (8) 05:03	05:54 (8)
	16:39		17:38	16	16:55 (7)	18:33	20:30		21:25	2 06:06 (8) 22:05	13 06:07 (8)
14	08:46		07:57		16:40 (7)	06:53	06:38		05:35	06:03 (8) 05:02	05:55 (8)
	16:40		17:40	12	16:52 (7)	18:34	20:32		21:27	4 06:07 (8) 22:06	12 06:07 (8)
15	08:45		07:55		16:44 (7)	06:51	06:35		05:33	06:01 (8) 05:02	05:56 (8)
	16:42		17:42	5	16:49 (7)	18:36	20:34		21:28	6 06:07 (8) 22:06	11 06:07 (8)
16	08:44		07:53			06:48	06:33		05:32	06:00 (8) 05:02	05:55 (8)
	16:44		17:44			18:38	20:36		21:30	9 06:09 (8) 22:07	11 06:06 (8)
17	08:43		07:51			06:46	06:31		05:30	05:58 (8) 05:02	05:56 (8)
	16:45		17:46			18:40	20:38		21:32	11 06:09 (8) 22:08	9 06:05 (8)
18	08:42		07:49			06:43	06:28		05:28	05:57 (8) 05:02	05:57 (8)
	16:47		17:48			18:42	20:40		21:33	12 06:09 (8) 22:08	9 06:06 (8)
19	08:40		07:47			06:41	06:26		05:27	05:55 (8) 05:02	05:58 (8)
	16:49		17:50			18:44	20:41		21:35	14 06:09 (8) 22:08	8 06:06 (8)
20	08:39		07:45			06:39	06:24		05:25	05:54 (8) 05:02	05:58 (8)
	16:51		17:52			18:46	20:43		21:36	16 06:10 (8) 22:09	8 06:06 (8)
21	08:38		07:42			06:36	06:22		05:24	05:53 (8) 05:02	05:58 (8)
	16:53		17:54			18:48	20:45		21:38	17 06:10 (8) 22:09	8 06:06 (8)
22	08:37		07:40			06:34	06:19		05:22	05:51 (8) 05:02	05:58 (8)
	16:54		17:56			18:49	20:47		21:40	19 06:10 (8) 22:09	8 06:06 (8)
23	08:35		07:38			06:31	06:17		05:21	05:50 (8) 05:02	05:58 (8)
	16:56		17:58			18:51	20:49		21:41	20 06:10 (8) 22:09	8 06:06 (8)
24	08:34		07:36			06:29	06:15		05:19	05:49 (8) 05:03	05:59 (8)
	16:58		18:00			18:53	20:51		21:43	21 06:10 (8) 22:09	8 06:07 (8)
25	08:33		07:33			06:26	06:13		05:18	05:48 (8) 05:03	05:58 (8)
	17:00		18:02			18:55	20:53		21:44	22 06:10 (8) 22:09	9 06:07 (8)
26	08:31		07:31			06:24	06:10		05:17	05:47 (8) 05:03	05:59 (8)
	17:02		18:04			18:57	20:54		21:46	24 06:11 (8) 22:09	9 06:08 (8)
27	08:30		07:29			06:21	06:08		05:16	05:46 (8) 05:04	05:58 (8)
	17:04		18:06			18:59	20:56		21:47	25 06:11 (8) 22:09	11 06:09 (8)
28	08:28		07:27			06:19	06:06		05:14	05:46 (8) 05:04	05:58 (8)
	17:06		18:08			19:01	20:58		21:48	25 06:11 (8) 22:09	12 06:10 (8)
29	08:27					07:16	06:04		05:13	05:46 (8) 05:05	05:57 (8)
	17:08					20:03	21:00		21:50	24 06:10 (8) 22:09	13 06:10 (8)
30	08:25					07:14	06:02		05:12	05:46 (8) 05:06	05:58 (8)
	17:10					20:04	21:02		21:51	24 06:10 (8) 22:09	13 06:11 (8)
31	08:23	16:36 (7)				07:11			05:11	05:47 (8)	
	17:12	4 16:40 (7)				20:06			21:52	23 06:10 (8)	
Potential sun hours	250		273			367	420		494		510	
Total, worst case		4		237						318		402
Sun reduction		0.16		0.19						0.31		0.26
Oper. time red.		1.00		1.00						1.00		1.00
Wind dir. red.		0.64		0.64						0.64		0.64
Total reduction		0.10		0.12						0.20		0.17
Total, real		0		29						64		67

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** BU - H078

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July			August		September		October			November			December	
1	05:06		05:57 (8)	05:46		06:41		07:34			07:32		16:05 (7)	08:27	
	22:08	14	06:11 (8)	21:33		20:26		19:12			17:02	22	16:27 (7)	16:17	
2	05:07		05:57 (8)	05:48		06:42		07:36			07:34		16:04 (7)	08:29	
	22:08	15	06:12 (8)	21:31		20:24		19:10			17:00	24	16:28 (7)	16:17	
3	05:08		05:57 (8)	05:50		06:44		07:38			07:36		16:04 (7)	08:30	
	22:08	16	06:13 (8)	21:29		20:21		19:08			16:58	22	16:26 (7)	16:16	
4	05:09		05:57 (8)	05:51		06:46		07:39			07:38		16:04 (7)	08:32	
	22:07	16	06:13 (8)	21:27		20:19		19:05			16:56	20	16:24 (7)	16:15	
5	05:10		05:57 (8)	05:53		06:48		07:41			07:40		16:04 (7)	08:33	
	22:06	17	06:14 (8)	21:26		20:17		19:03			16:54	18	16:22 (7)	16:15	
6	05:10		05:56 (8)	05:55		06:50		07:43			07:42		16:04 (7)	08:35	
	22:06	18	06:14 (8)	21:24		20:14		19:00			16:52	16	16:20 (7)	16:14	
7	05:11		05:55 (8)	05:56		06:51		07:45			07:44		16:04 (7)	08:36	
	22:05	20	06:15 (8)	21:22		20:12		18:58			16:50	14	16:18 (7)	16:14	
8	05:12		05:55 (8)	05:58		06:53		07:47			07:46		16:05 (7)	08:37	
	22:05	20	06:15 (8)	21:20		20:09		18:55			16:48	12	16:17 (7)	16:13	
9	05:13		05:55 (8)	06:00		06:55		07:49			07:48		16:06 (7)	08:39	
	22:04	21	06:16 (8)	21:18		20:07		18:53			16:47	9	16:15 (7)	16:13	
10	05:15		05:55 (8)	06:02		06:57		07:50			07:50		16:06 (7)	08:40	
	22:03	21	06:16 (8)	21:16		20:04		18:51			16:45	7	16:13 (7)	16:13	
11	05:16		05:55 (8)	06:03		06:58		07:52			07:52		16:07 (7)	08:41	
	22:02	22	06:17 (8)	21:14		20:02		18:48			16:43	4	16:11 (7)	16:12	
12	05:17		05:54 (8)	06:05		07:00		07:54			07:54		16:08 (7)	08:42	
	22:01	23	06:17 (8)	21:12		19:59		18:46			16:41	1	16:09 (7)	16:12	
13	05:18		05:55 (8)	06:07		07:02		07:56			07:56			08:43	
	22:00	24	06:19 (8)	21:09		19:57		18:44			16:40			16:12	
14	05:19		05:55 (8)	06:09		07:04		07:58			07:57			08:44	
	21:59	24	06:19 (8)	21:07		19:55		18:41			16:38			16:12	
15	05:21		05:54 (8)	06:10		07:05		08:00			07:59			08:45	
	21:58	25	06:19 (8)	21:05		19:52		18:39			16:37			16:12	
16	05:22		05:54 (8)	06:12		07:07		08:02			08:01			08:46	
	21:57	25	06:19 (8)	21:03		19:50		18:37			16:35			16:12	
17	05:23		05:55 (8)	06:14		07:09		08:04			08:03			08:47	
	21:56	24	06:19 (8)	21:01		19:47		18:34			16:34			16:12	
18	05:25		05:57 (8)	06:16		07:11		08:05			08:05			08:48	
	21:54	23	06:20 (8)	20:59		19:45		18:32			16:32			16:13	
19	05:26		05:58 (8)	06:18		07:13		08:07			08:07			08:48	
	21:53	22	06:20 (8)	20:56		19:42		18:30			16:31			16:13	
20	05:27		05:59 (8)	06:19		07:14		08:09			08:09			08:49	
	21:52	21	06:20 (8)	20:54		19:40		18:27			16:29			16:13	
21	05:29		06:01 (8)	06:21		07:16		08:11			08:10			08:50	
	21:51	19	06:20 (8)	20:52		19:37		18:25			16:28			16:14	
22	05:30		06:02 (8)	06:23		07:18		08:13			08:12			08:50	
	21:49	18	06:20 (8)	20:50		19:35		18:23			16:27			16:14	
23	05:32		06:03 (8)	06:25		07:20		08:15			08:14			08:51	
	21:48	17	06:20 (8)	20:47		19:32		18:21			16:26			16:15	
24	05:33		06:05 (8)	06:26		07:21		08:17			08:16			08:51	
	21:46	15	06:20 (8)	20:45		19:30		18:19			16:24			16:15	
25	05:35		06:06 (8)	06:28		07:23		07:19			08:18			08:51	
	21:45	13	06:19 (8)	20:43		19:27		17:16			16:23			16:16	
26	05:37		06:08 (8)	06:30		07:25		07:21			08:19			08:52	
	21:43	12	06:20 (8)	20:40		19:25		17:14			16:22			16:17	
27	05:38		06:09 (8)	06:32		07:27		07:23		16:12 (7)	08:21			08:52	
	21:41	10	06:19 (8)	20:38		19:22		17:12	8	16:20 (7)	16:21			16:17	
28	05:40		06:11 (8)	06:34		07:29		07:25		16:09 (7)	08:23			08:52	
	21:40	8	06:19 (8)	20:36		19:20		17:10	13	16:22 (7)	16:20			16:18	
29	05:41		06:12 (8)	06:35		07:30		07:27		16:07 (7)	08:24			08:52	
	21:38	5	06:17 (8)	20:33		19:17		17:08	17	16:24 (7)	16:19			16:19	
30	05:43		06:14 (8)	06:37		07:32		07:28		16:07 (7)	08:26			08:52	
	21:36	3	06:17 (8)	20:31		19:15		17:06	19	16:26 (7)	16:18			16:20	
31	05:45			06:39				07:30		16:06 (7)				08:52	
	21:35			20:29				17:04	21	16:27 (7)				16:21	
Potential sun hours	512			460		382		328			259			233	
Total, worst case		531							78			169			
Sun reduction		0.22							0.23			0.20			
Oper. time red.		1.00							1.00			1.00			
Wind dir. red.		0.64							0.64			0.64			
Total reduction		0.14							0.14			0.13			
Total, real		76							11			21			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** BV - H079

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March			April			May			June
1	08:52	08:22	07:24			07:09		07:33 (2)	06:00		06:26 (1)	05:11
	16:23	17:14	18:10			20:08	5	07:38 (2)	21:04	5	06:31 (1)	21:54
2	08:52	08:20	07:22			07:07		07:31 (2)	05:58		06:24 (1)	05:10
	16:24	17:16	18:12			20:10	9	07:40 (2)	21:06	8	06:32 (1)	21:55
3	08:52	08:19	07:20			07:04		07:28 (2)	05:56		06:22 (1)	05:09
	16:25	17:18	18:14			20:12	12	07:40 (2)	21:07	10	06:32 (1)	21:56
4	08:52	08:17	07:17			07:02		07:26 (2)	05:54		06:20 (1)	05:08
	16:26	17:20	18:16			20:14	16	07:42 (2)	21:09	12	06:32 (1)	21:57
5	08:51	08:15	07:15			07:00		07:23 (2)	05:52		06:18 (1)	05:07
	16:27	17:22	18:18			20:16	18	07:41 (2)	21:11	13	06:31 (1)	21:58
6	08:51	08:13	07:13			06:57		07:21 (2)	05:50		06:16 (1)	05:06
	16:29	17:24	18:19			20:18	21	07:42 (2)	21:13	15	06:31 (1)	22:00
7	08:51	08:11	07:10			06:55		07:19 (2)	05:48		06:15 (1)	05:06
	16:30	17:26	18:21			20:19	24	07:43 (2)	21:15	16	06:31 (1)	22:01
8	08:50	08:09	07:08			06:52		07:16 (2)	05:46		06:13 (1)	05:05
	16:31	17:28	18:23			20:21	26	07:42 (2)	21:16	18	06:31 (1)	22:01
9	08:50	08:08	07:06			06:50		07:14 (2)	05:44		06:11 (1)	05:04
	16:33	17:30	18:25			20:23	29	07:43 (2)	21:18	19	06:30 (1)	22:02
10	08:49	08:06	07:03			06:48		07:11 (2)	05:42		06:09 (1)	05:04
	16:34	17:32	18:27			20:25	31	07:42 (2)	21:20	20	06:29 (1)	22:03
11	08:48	08:04	07:01			06:45		07:09 (2)	05:40		06:11 (1)	05:04
	16:36	17:34	18:29			20:27	33	07:42 (2)	21:22	18	06:29 (1)	22:04
12	08:47	08:02	06:58			06:43		07:07 (2)	05:39		06:11 (1)	05:03
	16:37	17:36	18:31			20:29	35	07:42 (2)	21:23	16	06:27 (1)	22:05
13	08:47	08:00	06:56			06:40		07:05 (2)	05:37		06:12 (1)	05:03
	16:39	17:38	18:33			20:31	35	07:40 (2)	21:25	14	06:26 (1)	22:06
14	08:46	07:58	06:53			06:38		07:05 (2)	05:35		06:14 (1)	05:03
	16:41	17:40	18:35			20:32	35	07:40 (2)	21:27	10	06:24 (1)	22:06
15	08:45	07:55	06:51			06:36		07:06 (2)	05:33		06:17 (1)	05:02
	16:42	17:42	18:37			20:34	34	07:40 (2)	21:29	4	06:21 (1)	22:07
16	08:44	07:53	06:49			06:33		07:06 (2)	05:32			05:02
	16:44	17:44	18:39			20:36	33	07:39 (2)	21:30			22:07
17	08:43	07:51	06:46			06:31		07:06 (2)	05:30			05:02
	16:46	17:46	18:40			20:38	31	07:37 (2)	21:32			22:08
18	08:42	07:49	06:44			06:29		07:07 (2)	05:29			05:02
	16:47	17:48	18:42			20:40	29	07:36 (2)	21:34			22:08
19	08:41	07:47	06:41			06:26		07:08 (2)	05:27			05:02
	16:49	17:50	18:44			20:42	27	07:35 (2)	21:35			22:09
20	08:40	07:45	06:39			06:24		07:09 (2)	05:25			05:02
	16:51	17:52	18:46			20:44	24	07:33 (2)	21:37			22:09
21	08:38	07:43	06:36			06:22		07:11 (2)	05:24			05:02
	16:53	17:54	18:48			20:45	20	07:31 (2)	21:38			22:09
22	08:37	07:40	06:34			06:20		07:13 (2)	05:23			05:02
	16:55	17:56	18:50			20:47	15	07:28 (2)	21:40			22:09
23	08:36	07:38	06:31			06:17		07:17 (2)	05:21			05:03
	16:57	17:58	18:52			20:49	7	07:24 (2)	21:41			22:10
24	08:34	07:36	06:29			06:15			05:20			05:03
	16:58	18:00	18:53			20:51			21:43			22:10
25	08:33	07:34	06:26			06:13			05:18			05:03
	17:00	18:02	18:55			20:53			21:44			22:10
26	08:32	07:31	06:24			06:11			05:17			05:04
	17:02	18:04	18:57			20:55			21:46			22:10
27	08:30	07:29	06:22			06:09			05:16			05:04
	17:04	18:06	18:59			20:56			21:47			22:10
28	08:29	07:27	06:19			06:06			05:15			05:05
	17:06	18:08	19:01			20:58			21:49			22:09
29	08:27		07:17			06:04			05:14			05:05
	17:08		20:03			21:00			21:50			22:09
30	08:25		07:14			06:02		06:28 (1)	05:13			05:06
	17:10		20:05			21:02	3	06:31 (1)	21:51			22:09
31	08:24		07:12		07:35 (2)				05:12			
	17:12		20:06	1	07:36 (2)				21:53			
Potential sun hours	250	273	367			420			494			510
Total, worst case				1			552			198		
Sun reduction				0.22			0.31			0.31		
Oper. time red.				1.00			1.00			1.00		
Wind dir. red.				0.64			0.64			0.65		
Total reduction				0.14			0.20			0.20		
Total, real				0			109			40		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** BV - H079

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July			August			September			October	November	December
1	05:07			05:47		06:21 (1)	06:41		07:08 (2)	07:34	07:33	08:28
	22:09			21:33	17	06:38 (1)	20:27	33	07:41 (2)	19:13	17:02	16:18
2	05:07			05:48		06:21 (1)	06:43		07:10 (2)	07:36	07:35	08:29
	22:08			21:31	18	06:39 (1)	20:24	31	07:41 (2)	19:10	17:00	16:17
3	05:08			05:50		06:20 (1)	06:44		07:12 (2)	07:38	07:37	08:31
	22:08			21:30	20	06:40 (1)	20:22	29	07:41 (2)	19:08	16:58	16:16
4	05:09			05:52		06:22 (1)	06:46		07:13 (2)	07:40	07:38	08:32
	22:07			21:28	19	06:41 (1)	20:19	26	07:39 (2)	19:05	16:56	16:16
5	05:10			05:53		06:23 (1)	06:48		07:15 (2)	07:42	07:40	08:34
	22:07			21:26	17	06:40 (1)	20:17	24	07:39 (2)	19:03	16:54	16:15
6	05:11			05:55		06:25 (1)	06:50		07:17 (2)	07:43	07:42	08:35
	22:06			21:24	16	06:41 (1)	20:14	21	07:38 (2)	19:01	16:52	16:14
7	05:12			05:57		06:27 (1)	06:52		07:18 (2)	07:45	07:44	08:36
	22:05			21:22	14	06:41 (1)	20:12	19	07:37 (2)	18:58	16:51	16:14
8	05:13			05:58		06:28 (1)	06:53		07:20 (2)	07:47	07:46	08:38
	22:05			21:20	13	06:41 (1)	20:10	16	07:36 (2)	18:56	16:49	16:14
9	05:14			06:00		06:30 (1)	06:55		07:22 (2)	07:49	07:48	08:39
	22:04			21:18	11	06:41 (1)	20:07	13	07:35 (2)	18:53	16:47	16:13
10	05:15			06:02		06:31 (1)	06:57		07:24 (2)	07:51	07:50	08:40
	22:03			21:16	9	06:40 (1)	20:05	9	07:33 (2)	18:51	16:45	16:13
11	05:16			06:04		06:33 (1)	06:59		07:25 (2)	07:53	07:52	08:41
	22:02			21:14	7	06:40 (1)	20:02	6	07:31 (2)	18:49	16:43	16:13
12	05:17			06:05		06:35 (1)	07:00		07:27 (2)	07:54	07:54	08:42
	22:01			21:12	5	06:40 (1)	20:00	1	07:28 (2)	18:46	16:42	16:13
13	05:18			06:07		06:36 (1)	07:02			07:56	07:56	08:43
	22:00			21:10	2	06:38 (1)	19:57			18:44	16:40	16:12
14	05:20			06:09			07:04			07:58	07:58	08:44
	21:59			21:08			19:55			18:42	16:39	16:12
15	05:21			06:11			07:06			08:00	08:00	08:45
	21:58			21:05			19:52			18:39	16:37	16:12
16	05:22			06:13			07:07			08:02	08:02	08:46
	21:57			21:03			19:50			18:37	16:35	16:12
17	05:24			06:14			07:09			08:04	08:03	08:47
	21:56			21:01			19:47			18:35	16:34	16:13
18	05:25			06:16			07:11			08:06	08:05	08:48
	21:55			20:59			19:45			18:32	16:32	16:13
19	05:26			06:18			07:13			08:08	08:07	08:49
	21:53			20:57			19:42			18:30	16:31	16:13
20	05:28			06:20		07:21 (2)	07:15			08:09	08:09	08:49
	21:52			20:54	9	07:30 (2)	19:40			18:28	16:30	16:13
21	05:29			06:21		07:18 (2)	07:16			08:11	08:11	08:50
	21:51			20:52	16	07:34 (2)	19:37			18:25	16:28	16:14
22	05:31			06:23		07:15 (2)	07:18			08:13	08:13	08:50
	21:49			20:50	20	07:35 (2)	19:35			18:23	16:27	16:14
23	05:32			06:25		07:13 (2)	07:20			08:15	08:14	08:51
	21:48			20:48	24	07:37 (2)	19:32			18:21	16:26	16:15
24	05:34			06:27		07:12 (2)	07:22			08:17	08:16	08:51
	21:46			20:45	27	07:39 (2)	19:30			18:19	16:25	16:15
25	05:35			06:28		07:10 (2)	07:23			07:19	08:18	08:52
	21:45			20:43	29	07:39 (2)	19:28			17:17	16:23	16:16
26	05:37			06:30		07:09 (2)	07:25			07:21	08:20	08:52
	21:43			20:41	31	07:40 (2)	19:25			17:15	16:22	16:17
27	05:38			06:32		07:08 (2)	07:27			07:23	08:21	08:52
	21:42			20:38	33	07:41 (2)	19:23			17:12	16:21	16:18
28	05:40			06:34		07:07 (2)	07:29			07:25	08:23	08:52
	21:40			20:36	35	07:42 (2)	19:20			17:10	16:20	16:18
29	05:42		06:26 (1)	06:36		07:06 (2)	07:31			07:27	08:25	08:52
	21:38	7	06:33 (1)	20:34	35	07:41 (2)	19:18			17:08	16:19	16:19
30	05:43		06:24 (1)	06:37		07:05 (2)	07:32			07:29	08:26	08:53
	21:37	12	06:36 (1)	20:31	36	07:41 (2)	19:15			17:06	16:19	16:20
31	05:45		06:23 (1)	06:39		07:07 (2)				07:31		08:53
	21:35	14	06:37 (1)	20:29	35	07:42 (2)				17:04		16:21
Potential sun hours	512			460			382			328	259	233
Total, worst case		33			498			228				
Sun reduction		0.22			0.26			0.25				
Oper. time red.		1.00			1.00			1.00				
Wind dir. red.		0.65			0.65			0.64				
Total reduction		0.15			0.17			0.16				
Total, real		5			82			37				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** BW - H081

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February	March	April	May	June	July	August	September	October	November			December		
1	08:52		15:36 (8)	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:40	07:34	07:32			08:27		15:22 (8)
	16:22	8	15:44 (8)	17:13	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02			16:17	19	15:41 (8)
2	08:52		15:37 (8)	08:20	07:22	07:06	05:57	05:09	05:07	05:48	06:42	07:36	07:34			08:29		15:22 (8)
	16:23	8	15:45 (8)	17:15	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00			16:16	18	15:40 (8)
3	08:52		15:37 (8)	08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:37	07:36			08:30		15:22 (8)
	16:24	10	15:47 (8)	17:17	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58			16:16	17	15:39 (8)
4	08:51		15:37 (8)	08:16	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38			08:32		15:23 (8)
	16:26	11	15:48 (8)	17:19	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56			16:15	16	15:39 (8)
5	08:51		15:38 (8)	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40			08:33		15:23 (8)
	16:27	12	15:50 (8)	17:21	18:17	20:15	21:11	21:58	22:06	21:25	20:17	19:03	16:54			16:14	14	15:37 (8)
6	08:51		15:38 (8)	08:13	07:12	06:57	05:49	05:06	05:10	05:55	06:49	07:43	07:42			08:35		15:24 (8)
	16:28	13	15:51 (8)	17:23	18:19	20:17	21:12	21:59	22:06	21:24	20:14	19:00	16:52			16:14	13	15:37 (8)
7	08:50		15:38 (8)	08:11	07:10	06:54	05:47	05:05	05:11	05:56	06:51	07:45	07:44			08:36		15:24 (8)
	16:30	14	15:52 (8)	17:25	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50			16:13	12	15:36 (8)
8	08:50		15:39 (8)	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46			08:37		15:25 (8)
	16:31	15	15:54 (8)	17:28	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48			16:13	11	15:36 (8)
9	08:49		15:39 (8)	08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48			08:39		15:26 (8)
	16:32	17	15:56 (8)	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46			16:13	9	15:35 (8)
10	08:49		15:39 (8)	08:05	07:03	06:47	05:42	05:03	05:14	06:01	06:56	07:50	07:50			08:40		15:26 (8)
	16:34	18	15:57 (8)	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45			16:12	9	15:35 (8)
11	08:48		15:39 (8)	08:03	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52			08:41		15:27 (8)
	16:35	20	15:59 (8)	17:34	18:29	20:26	21:21	22:04	22:02	21:14	20:02	18:48	16:43			16:12	8	15:35 (8)
12	08:47		15:40 (8)	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54			08:42		15:28 (8)
	16:37	21	16:01 (8)	17:36	18:31	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41			16:12	7	15:35 (8)
13	08:46		15:40 (8)	07:59	06:55	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:56			08:43		15:28 (8)
	16:39	22	16:02 (8)	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40			16:12	6	15:34 (8)
14	08:45		15:41 (8)	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57			08:44		15:29 (8)
	16:40	23	16:04 (8)	17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38			16:12	5	15:34 (8)
15	08:45		15:41 (8)	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59		15:28 (8)	08:45		15:29 (8)
	16:42	25	16:06 (8)	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36	6	15:34 (8)	16:12	5	15:34 (8)
16	08:44		15:42 (8)	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01		15:25 (8)	08:46		15:30 (8)
	16:44	26	16:08 (8)	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	12	15:37 (8)	16:12	4	15:34 (8)
17	08:43		15:42 (8)	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03		15:24 (8)	08:47		15:31 (8)
	16:45	27	16:09 (8)	17:46	18:40	20:38	21:32	22:07	21:56	21:01	19:47	18:34	16:33	15	15:39 (8)	16:12	4	15:35 (8)
18	08:41		15:43 (8)	07:49	06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05	08:05		15:22 (8)	08:48		15:31 (8)
	16:47	26	16:09 (8)	17:48	18:42	20:39	21:33	22:08	21:54	20:59	19:44	18:32	16:32	19	15:41 (8)	16:12	3	15:34 (8)
19	08:40		15:44 (8)	07:47	06:41	06:26	05:26	05:01	05:26	06:17	07:12	08:07	08:07		15:22 (8)	08:48		15:31 (8)
	16:49	25	16:09 (8)	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	21	15:43 (8)	16:13	3	15:34 (8)
20	08:39		15:44 (8)	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09		15:22 (8)	08:49		15:32 (8)
	16:51	25	16:09 (8)	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29	22	15:44 (8)	16:13	3	15:35 (8)
21	08:38		15:45 (8)	07:42	06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11	08:10		15:21 (8)	08:50		15:32 (8)
	16:52	24	16:09 (8)	17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	24	15:45 (8)	16:13	3	15:35 (8)
22	08:37		15:47 (8)	07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12		15:21 (8)	08:50		15:33 (8)
	16:54	22	16:09 (8)	17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	25	15:46 (8)	16:14	3	15:36 (8)
23	08:35		15:47 (8)	07:38	06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15	08:14		15:20 (8)	08:51		15:33 (8)
	16:56	21	16:08 (8)	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	25	15:45 (8)	16:14	3	15:36 (8)
24	08:34		15:49 (8)	07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16		15:20 (8)	08:51		15:33 (8)
	16:58	19	16:08 (8)	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24	26	15:46 (8)	16:15	3	15:36 (8)
25	08:33		15:51 (8)	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17		15:20 (8)	08:51		15:34 (8)
	17:00	15	16:06 (8)	18:02	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	27	15:47 (8)	16:16	4	15:38 (8)
26	08:31		15:52 (8)	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19		15:20 (8)	08:52		15:35 (8)
	17:02	12	16:04 (8)	18:03	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22	26	15:46 (8)	16:16	3	15:38 (8)
27	08:30		15:57 (8)	07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21		15:20 (8)	08:52		15:35 (8)
	17:04	5	16:02 (8)	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	25	15:45 (8)	16:17	4	15:39 (8)
28	08:28			07:26	06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24	08:23		15:21 (8)	08:52		15:35 (8)
	17:06			18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	23	15:44 (8)	16:18	5	15:40 (8)
29	08:27				07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24		15:21 (8)	08:52		15:36 (8)
	17:08				20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	23	15:44 (8)	16:19	5	15:41 (8)
30	08:25				07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26		15:21 (8)	08:52		15:36 (8)
	17:10				20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	21	15:42 (8)	16:20	6	15:42 (8)
31	08:23				07:11		05:11		05:44	06:39		07:30				08:52		15:37 (8)
	17:12				20:06		21:52		21:35	20:29		17:04				16:21	6	15:43 (8)
Potential sun hours	250			273	367	420	494	510	513	460	382	328	259			233		
Total, worst case		484												340			231	
Sun reduction		0.16												0.20			0.12	
Oper. time red.		1.00												1.00			1.00	
Wind dir. red.		0.65												0.65			0.65	
Total reduction		0.11												0.13			0.08	
Total, real		51												44			18	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** BX - H083

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May		June		July		August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00		05:10		05:06		05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:10	20:08	21:03		21:54	24	21:18 (6)	22:08 19	21:33	20:26	19:12	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58		05:09		20:54 (6)	05:07	21:02 (6)	05:48	06:42	07:36	08:29
	16:24	17:16	18:12	20:10	21:05		21:55	24	21:18 (6)	22:08 20	21:22 (6)	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56		05:09		20:55 (6)	05:08	21:02 (6)	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12	21:07		21:56	23	21:18 (6)	22:07 20	21:22 (6)	21:29	20:21	19:08	16:58	16:16
4	08:51	08:17	07:17	07:02	05:54		05:08		20:55 (6)	05:09	21:02 (6)	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14	21:09		21:57	23	21:18 (6)	22:07 21	21:23 (6)	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52		05:07		20:55 (6)	05:10	21:02 (6)	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11		21:58	23	21:18 (6)	22:06 22	21:24 (6)	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50		05:06		20:56 (6)	05:11	21:01 (6)	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:17	21:13		21:59	22	21:18 (6)	22:06 22	21:23 (6)	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48		05:06		20:56 (6)	05:12	21:01 (6)	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14		22:00	22	21:18 (6)	22:05 23	21:24 (6)	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46		05:05		20:57 (6)	05:13	21:01 (6)	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16		22:01	21	21:18 (6)	22:04 23	21:24 (6)	21:20	20:09	18:55	16:49	16:13
9	08:49	08:07	07:05	06:50	05:44		05:04		20:57 (6)	05:14	21:01 (6)	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18		22:02	20	21:17 (6)	22:04 24	21:25 (6)	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42		05:04		20:58 (6)	05:15	21:01 (6)	06:02	06:57	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20		22:03	20	21:18 (6)	22:03 24	21:25 (6)	21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:00	06:45	05:40		05:03		20:57 (6)	05:16	21:01 (6)	06:04	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21		22:04	20	21:17 (6)	22:02 24	21:25 (6)	21:14	20:02	18:48	16:43	16:13
12	08:47	08:01	06:58	06:43	05:38		05:03		20:58 (6)	05:17	21:02 (6)	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23		22:04	19	21:17 (6)	22:01 25	21:27 (6)	21:12	19:59	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	05:37		05:03		20:59 (6)	05:18	21:02 (6)	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25		22:05	18	21:17 (6)	22:00 24	21:26 (6)	21:09	19:57	18:44	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35		05:02		20:59 (6)	05:19	21:02 (6)	06:09	07:04	07:58	07:57	08:44
	16:40	17:40	18:35	20:32	21:27		22:06	19	21:18 (6)	21:59 23	21:25 (6)	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	05:33		05:02		21:00 (6)	05:21	21:02 (6)	06:11	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28		22:06	18	21:18 (6)	21:58 22	21:24 (6)	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32	20:56 (6)	05:02		21:00 (6)	05:22	21:01 (6)	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30 2	20:58 (6)	22:07	18	21:18 (6)	21:57 21	21:22 (6)	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	20:55 (6)	05:02		21:01 (6)	05:23	21:01 (6)	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32 4	20:59 (6)	22:07	17	21:18 (6)	21:56 20	21:21 (6)	21:01	19:47	18:34	16:34	16:12
18	08:41	07:49	06:43	06:28	05:28	20:54 (6)	05:02		21:01 (6)	05:25	21:02 (6)	06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:40	21:33 7	21:01 (6)	22:08	17	21:18 (6)	21:54 19	21:21 (6)	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	20:53 (6)	05:02		21:01 (6)	05:26	21:02 (6)	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35 9	21:02 (6)	22:08	17	21:18 (6)	21:53 17	21:19 (6)	20:56	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	20:53 (6)	05:02		21:02 (6)	05:28	21:02 (6)	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36 11	21:04 (6)	22:09	16	21:18 (6)	21:52 16	21:18 (6)	20:54	19:40	18:28	16:29	16:13
21	08:38	07:42	06:36	06:22	05:24	20:53 (6)	05:02		21:02 (6)	05:29	21:03 (6)	06:21	07:16	08:11	08:10	08:49
	16:53	17:54	18:48	20:45	21:38 12	21:05 (6)	22:09	16	21:18 (6)	21:50 14	21:17 (6)	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	20:52 (6)	05:02		21:02 (6)	05:30	21:03 (6)	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40 14	21:06 (6)	22:09	16	21:18 (6)	21:49 13	21:16 (6)	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	20:52 (6)	05:02		21:02 (6)	05:32	21:04 (6)	06:25	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41 16	21:08 (6)	22:09	17	21:19 (6)	21:48 11	21:15 (6)	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	20:52 (6)	05:03		21:02 (6)	05:33	21:04 (6)	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43 17	21:09 (6)	22:09	17	21:19 (6)	21:46 9	21:13 (6)	20:45	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18	20:53 (6)	05:03		21:02 (6)	05:35	21:04 (6)	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:52	21:44 18	21:11 (6)	22:09	17	21:19 (6)	21:45 8	21:12 (6)	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	20:53 (6)	05:04		21:03 (6)	05:37	21:05 (6)	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:45 19	21:12 (6)	22:09	17	21:20 (6)	21:43 6	21:11 (6)	20:40	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	20:53 (6)	05:04		21:02 (6)	05:38	21:05 (6)	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47 20	21:13 (6)	22:09	18	21:20 (6)	21:41 4	21:09 (6)	20:38	19:22	17:12	16:21	16:17
28	08:28	07:27	06:19	06:06	05:15	20:53 (6)	05:05		21:03 (6)	05:40	21:07 (6)	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48 22	21:15 (6)	22:09	18	21:21 (6)	21:40 1	21:08 (6)	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	20:53 (6)	05:05		21:02 (6)	05:41		06:35	07:30	07:27	08:24	08:52
	17:08		20:03	21:00	21:50 23	21:16 (6)	22:09	18	21:20 (6)	21:38		20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	20:53 (6)	05:06		21:02 (6)	05:43		06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51 24	21:17 (6)	22:09	19	21:21 (6)	21:36		20:31	19:15	17:06	16:18	16:20
31	08:23		07:12		05:11	20:53 (6)				05:45		06:39		07:30		08:52
	17:12		20:06		21:52 25	21:18 (6)				21:35		20:29		17:04		16:21
Potential sun hours	250	273	367	420	494		510		512		460	382	328	259	233	
Total, worst case						243		574		495						
Sun reduction						0.31		0.26		0.22						
Oper. time red.						1.00		1.00		1.00						
Wind dir. red.						0.61		0.61		0.61						
Total reduction						0.19		0.16		0.14						
Total, real						46		90		67						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** BY - H084

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March	April	May	June
1	08:52	15:28 (10)	08:22	16:17 (11)	07:24	07:09	06:00	05:10
	16:22	16 15:44 (10)	17:13	8 16:25 (11)	18:09	20:08	21:03	21:53
2	08:52	15:29 (10)	08:20		07:22	07:06	05:57	05:09
	16:23	17 15:46 (10)	17:15		18:11	20:10	21:05	21:55
3	08:52	15:30 (10)	08:18		07:19	07:04	05:55	05:08
	16:24	17 15:47 (10)	17:17		18:13	20:12	21:07	21:56
4	08:51	15:30 (10)	08:16		07:17	07:02	05:53	05:07
	16:26	18 15:48 (10)	17:19		18:15	20:13	21:09	21:57
5	08:51	15:30 (10)	08:15		07:15	06:59	05:51	05:07
	16:27	20 15:50 (10)	17:21		18:17	20:15	21:11	21:58
6	08:51	15:30 (10)	08:13		07:12	06:57	05:49	05:06
	16:28	21 15:51 (10)	17:23		18:19	20:17	21:12	21:59
7	08:50	15:30 (10)	08:11		07:10	06:54	05:47	05:05
	16:29	22 15:52 (10)	17:25		18:21	20:19	21:14	22:00
8	08:50	15:31 (10)	08:09		07:08	06:52	05:46	05:05
	16:31	23 15:54 (10)	17:27		18:23	20:21	21:16	22:01
9	08:49	15:32 (10)	08:07		07:05	06:49	05:44	05:04
	16:32	24 15:56 (10)	17:29		18:25	20:23	21:18	22:02
10	08:48	15:32 (10)	08:05		07:03	06:47	05:42	05:03
	16:34	25 15:57 (10)	17:31		18:27	20:25	21:20	22:03
11	08:48	15:32 (10)	08:03		07:00	06:45	05:40	05:03
	16:35	27 15:59 (10)	17:34		18:29	20:26	21:21	22:04
12	08:47	15:33 (10)	08:01		06:58	06:42	05:38	05:03
	16:37	28 16:01 (10)	17:36		18:30	20:28	21:23	22:04
13	08:46	15:33 (10)	07:59		06:55	06:40	05:36	05:02
	16:39	29 16:02 (10)	17:38		18:32	20:30	21:25	22:05
14	08:45	15:34 (10)	07:57		06:53	06:38	05:35	05:02
	16:40	30 16:04 (10)	17:40		18:34	20:32	21:26	22:06
15	08:44	15:34 (10)	07:55		06:51	06:35	05:33	05:02
	16:42	32 16:06 (10)	17:42		18:36	20:34	21:28	22:06
16	08:43	15:35 (10)	07:53	17:13 (9)	06:48	06:33	05:31	05:02
	16:43	33 16:08 (11)	17:44	2 17:15 (9)	18:38	20:36	21:30	22:07
17	08:42	15:35 (10)	07:51	17:13 (9)	06:46	06:30	05:30	05:01
	16:45	35 16:10 (11)	17:46	4 17:17 (9)	18:40	20:38	21:31	22:07
18	08:41	15:36 (10)	07:49	17:12 (9)	06:43	06:28	05:28	05:01
	16:47	36 16:12 (11)	17:48	6 17:18 (9)	18:42	20:39	21:33	22:08
19	08:40	15:37 (10)	07:47	17:12 (9)	06:41	06:26	05:26	05:01
	16:49	37 16:14 (11)	17:50	9 17:21 (9)	18:44	20:41	21:35	22:08
20	08:39	15:37 (10)	07:44	17:12 (9)	06:38	06:24	05:25	05:02
	16:51	39 16:16 (11)	17:52	11 17:23 (9)	18:46	20:43	21:36	22:09
21	08:38	15:38 (10)	07:42	17:12 (9)	06:36	06:21	05:23	05:02
	16:52	40 16:18 (11)	17:54	14 17:26 (9)	18:47	20:45	21:38	22:09
22	08:37	15:39 (10)	07:40	17:11 (9)	06:33	06:19	05:22	05:02
	16:54	39 16:19 (11)	17:56	16 17:27 (9)	18:49	20:47	21:39	22:09
23	08:35	15:40 (10)	07:38	17:12 (9)	06:31	06:17	05:21	05:02
	16:56	41 16:22 (11)	17:58	17 17:29 (9)	18:51	20:49	21:41	22:09
24	08:34	15:41 (10)	07:35	17:13 (9)	06:28	06:15	05:19	05:02
	16:58	41 16:24 (11)	17:59	19 17:32 (9)	18:53	20:50	21:42	22:09
25	08:33	15:43 (10)	07:33	17:13 (9)	06:26	06:12	05:18	05:03
	17:00	39 16:26 (11)	18:01	19 17:32 (9)	18:55	20:52	21:44	22:09
26	08:31	15:45 (10)	07:31	17:15 (9)	06:24	06:10	05:17	05:03
	17:02	37 16:28 (11)	18:03	16 17:31 (9)	18:57	20:54	21:45	22:09
27	08:30	15:48 (10)	07:29	17:16 (9)	06:21	06:08	05:15	05:04
	17:04	35 16:31 (11)	18:05	12 17:28 (9)	18:59	20:56	21:47	22:09
28	08:28	15:50 (10)	07:26	17:22 (9)	06:19	06:06	05:14	05:04
	17:06	28 16:30 (11)	18:07	2 17:24 (9)	19:00	20:58	21:48	22:09
29	08:27	16:11 (11)			07:16	06:04	05:13	05:05
	17:08	18 16:29 (11)			20:02	21:00	21:50	22:09
30	08:25	16:12 (11)			07:14	06:02	05:12	05:05
	17:09	16 16:28 (11)			20:04	21:02	21:51	22:09
31	08:23	16:14 (11)			07:11		05:11	
	17:11	12 16:26 (11)			20:06		21:52	
Potential sun hours	250		273		367	420	494	510
Total, worst case		875		155				
Sun reduction		0.16		0.19				
Oper. time red.		1.00		1.00				
Wind dir. red.		0.65		0.65				
Total reduction		0.11		0.13				
Total, real		92		20				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** BY - H084

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August		September		October			November			December		
1	05:06		05:46		06:40		07:34			07:32			08:27		15:14 (10)
	22:08		21:33		20:26		19:12			17:02			16:17	27	15:41 (10)
2	05:07		05:48		06:42		07:36			07:34			08:29		15:15 (10)
	22:08		21:31		20:24		19:10			17:00			16:16	26	15:41 (10)
3	05:08		05:49		06:44		07:37			07:36			08:30		15:15 (10)
	22:07		21:29		20:21		19:07			16:58			16:16	24	15:39 (10)
4	05:08		05:51		06:46		07:39			07:38			08:32		15:16 (10)
	22:07		21:27		20:19		19:05			16:56			16:15	23	15:39 (10)
5	05:09		05:53		06:48		07:41			07:40			08:33		15:15 (10)
	22:06		21:25		20:16		19:02			16:54			16:14	22	15:37 (10)
6	05:10		05:55		06:49		07:43			07:42			08:35		15:16 (10)
	22:06		21:23		20:14		19:00			16:52			16:14	21	15:37 (10)
7	05:11		05:56		06:51		07:45			07:44			08:36		15:16 (10)
	22:05		21:22		20:12		18:58			16:50			16:13	20	15:36 (10)
8	05:12		05:58		06:53		07:47			07:46			08:37		15:18 (10)
	22:04		21:20		20:09		18:55			16:48			16:13	18	15:36 (10)
9	05:13		06:00		06:55		07:48			07:48			08:38		15:18 (10)
	22:04		21:18		20:07		18:53			16:46			16:13	17	15:35 (10)
10	05:14		06:01		06:56		07:50			07:50		15:48 (11)	08:40		15:18 (10)
	22:03		21:16		20:04		18:50			16:45	8	15:56 (11)	16:12	17	15:35 (10)
11	05:15		06:03		06:58		07:52			07:52		15:46 (11)	08:41		15:18 (10)
	22:02		21:13		20:02		18:48			16:43	12	15:58 (11)	16:12	16	15:34 (10)
12	05:17		06:05		07:00		07:54			07:54		15:44 (11)	08:42		15:20 (10)
	22:01		21:11		19:59		18:46			16:41	16	16:00 (11)	16:12	15	15:35 (10)
13	05:18		06:07		07:02		07:56			07:55		15:43 (11)	08:43		15:20 (10)
	22:00		21:09		19:57		18:43			16:40	18	16:01 (11)	16:12	14	15:34 (10)
14	05:19		06:08		07:03		07:58		17:52 (9)	07:57		15:22 (10)	08:44		15:21 (10)
	21:59		21:07		19:54		18:41	8	18:00 (9)	16:38	29	16:02 (11)	16:12	13	15:34 (10)
15	05:20		06:10		07:05		08:00		17:49 (9)	07:59		15:19 (10)	08:45		15:21 (10)
	21:58		21:05		19:52		18:39	13	18:02 (9)	16:36	36	16:03 (11)	16:12	13	15:34 (10)
16	05:22		06:12		07:07		08:01		17:47 (9)	08:01		15:18 (10)	08:46		15:22 (10)
	21:57		21:03		19:49		18:36	17	18:04 (9)	16:35	37	16:01 (11)	16:12	12	15:34 (10)
17	05:23		06:14		07:09		08:03		17:45 (9)	08:03		15:16 (10)	08:47		15:22 (10)
	21:56		21:01		19:47		18:34	20	18:05 (9)	16:33	39	15:59 (11)	16:12	12	15:34 (10)
18	05:24		06:16		07:11		08:05		17:44 (9)	08:05		15:15 (10)	08:47		15:22 (10)
	21:54		20:58		19:44		18:32	18	18:02 (9)	16:32	41	15:58 (11)	16:12	12	15:34 (10)
19	05:26		06:17		07:12		08:07		17:43 (9)	08:07		15:14 (10)	08:48		15:23 (10)
	21:53		20:56		19:42		18:29	17	18:00 (9)	16:30	41	15:56 (11)	16:13	12	15:35 (10)
20	05:27		06:19		07:14		08:09		17:43 (9)	08:09		15:14 (10)	08:49		15:24 (10)
	21:52		20:54		19:39		18:27	15	17:58 (9)	16:29	40	15:55 (11)	16:13	11	15:35 (10)
21	05:29		06:21		07:16		08:11		17:42 (9)	08:10		15:13 (10)	08:49		15:24 (10)
	21:50		20:52		19:37		18:25	13	17:55 (9)	16:28	40	15:53 (11)	16:13	11	15:35 (10)
22	05:30		06:23		07:18		08:13		17:42 (9)	08:12		15:13 (10)	08:50		15:25 (10)
	21:49		20:50		19:34		18:23	11	17:53 (9)	16:27	39	15:52 (11)	16:14	11	15:36 (10)
23	05:32		06:24		07:19		08:15		17:42 (9)	08:14		15:13 (10)	08:50		15:25 (10)
	21:48		20:47		19:32		18:21	9	17:51 (9)	16:25	37	15:50 (11)	16:14	11	15:36 (10)
24	05:33		06:26		07:21		08:17		17:42 (9)	08:16		15:13 (10)	08:51		15:25 (10)
	21:46		20:45		19:30		18:18	6	17:48 (9)	16:24	36	15:49 (11)	16:15	11	15:36 (10)
25	05:35		06:28		07:23		07:19		16:42 (9)	08:17		15:13 (10)	08:51		15:26 (10)
	21:45		20:43		19:27		17:16	4	16:46 (9)	16:23	35	15:48 (11)	16:16	12	15:38 (10)
26	05:36		06:30		07:25		07:21			08:19		15:13 (10)	08:52		15:27 (10)
	21:43		20:40		19:25		17:14			16:22	34	15:47 (11)	16:16	11	15:38 (10)
27	05:38		06:32		07:27		07:22			08:21		15:13 (10)	08:52		15:27 (10)
	21:41		20:38		19:22		17:12			16:21	32	15:45 (10)	16:17	12	15:39 (10)
28	05:39		06:33		07:28		07:24			08:22		15:14 (10)	08:52		15:27 (10)
	21:40		20:36		19:20		17:10			16:20	31	15:45 (10)	16:18	13	15:40 (10)
29	05:41		06:35		07:30		07:26			08:24		15:14 (10)	08:52		15:28 (10)
	21:38		20:33		19:17		17:08			16:19	30	15:44 (10)	16:19	13	15:41 (10)
30	05:43		06:37		07:32		07:28			08:26		15:14 (10)	08:52		15:28 (10)
	21:36		20:31		19:15		17:06			16:18	28	15:42 (10)	16:20	14	15:42 (10)
31	05:44		06:39				07:30						08:52		15:29 (10)
	21:35		20:28				17:04						16:21	14	15:43 (10)
Potential sun hours	513		460		382		328			259			233		
Total, worst case								151			659			478	
Sun reduction								0.23			0.20			0.12	
Oper. time red.								1.00			1.00			1.00	
Wind dir. red.								0.65			0.65			0.65	
Total reduction								0.15			0.13			0.08	
Total, real								22			85			37	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** BZ - H085

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March	April	May	June	July	August	September	October	November		December
1	08:52		08:22	16:02 (1)	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:33		08:28
	16:22		17:14	29 16:31 (1)	18:10	20:08	21:04	21:54	22:09	21:33	20:26	19:13	17:02		16:18
2	08:52		08:20	16:03 (1)	07:22	07:07	05:58	05:09	05:07	05:48	06:43	07:36	07:34		08:29
	16:23		17:16	28 16:31 (1)	18:12	20:10	21:06	21:55	22:08	21:31	20:24	19:10	17:00		16:17
3	08:52		08:19	16:04 (1)	07:20	07:04	05:56	05:08	05:08	05:50	06:44	07:38	07:36	15:45 (1)	08:31
	16:25		17:18	26 16:30 (1)	18:14	20:12	21:07	21:56	22:08	21:29	20:22	19:08	16:58	5 15:50 (1)	16:16
4	08:52		08:17	16:05 (1)	07:17	07:02	05:54	05:08	05:09	05:51	06:46	07:40	07:38	15:40 (1)	08:32
	16:26		17:20	24 16:29 (1)	18:15	20:14	21:09	21:57	22:07	21:28	20:19	19:05	16:56	14 15:54 (1)	16:15
5	08:51		08:15	16:07 (1)	07:15	06:59	05:52	05:07	05:10	05:53	06:48	07:41	07:40	15:38 (1)	08:33
	16:27		17:22	21 16:28 (1)	18:17	20:16	21:11	21:58	22:07	21:26	20:17	19:03	16:54	18 15:56 (1)	16:15
6	08:51		08:13	16:09 (1)	07:13	06:57	05:50	05:06	05:10	05:55	06:50	07:43	07:42	15:37 (1)	08:35
	16:28		17:24	17 16:26 (1)	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	21 15:58 (1)	16:14
7	08:51		08:11	16:11 (1)	07:10	06:55	05:48	05:05	05:11	05:57	06:51	07:45	07:44	15:36 (1)	08:36
	16:30		17:26	13 16:24 (1)	18:21	20:19	21:15	22:00	22:05	21:22	20:12	18:58	16:50	24 16:00 (1)	16:14
8	08:50		08:09		07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	15:35 (1)	08:38
	16:31		17:28		18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:56	16:49	26 16:01 (1)	16:13
9	08:49		08:07		07:05	06:50	05:44	05:04	05:14	06:00	06:55	07:49	07:48	15:34 (1)	08:39
	16:33		17:30		18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	27 16:01 (1)	16:13
10	08:49		08:05		07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51	07:50	15:33 (1)	08:40
	16:34		17:32		18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51	16:45	29 16:02 (1)	16:13
11	08:48		08:04		07:01	06:45	05:40	05:03	05:16	06:04	06:58	07:52	07:52	15:33 (1)	08:41
	16:36		17:34		18:29	20:27	21:22	22:04	22:02	21:14	20:02	18:48	16:43	30 16:03 (1)	16:12
12	08:47	15:59 (1)	08:02		06:58	06:43	05:38	05:03	05:17	06:05	07:00	07:54	07:54	15:32 (1)	08:42
	16:37	2 16:01 (1)	17:36		18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	31 16:03 (1)	16:12
13	08:47	15:59 (1)	07:59		06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	15:32 (1)	08:43
	16:39	3 16:02 (1)	17:38		18:33	20:30	21:25	22:05	22:00	21:10	19:57	18:44	16:40	31 16:03 (1)	16:12
14	08:46	15:59 (1)	07:57		06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:58	15:32 (1)	08:44
	16:40	5 16:04 (1)	17:40		18:35	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38	32 16:04 (1)	16:12
15	08:45	15:59 (1)	07:55		06:51	06:35	05:33	05:02	05:21	06:11	07:06	08:00	08:00	15:33 (1)	08:45
	16:42	7 16:06 (1)	17:42		18:36	20:34	21:28	22:07	21:58	21:05	19:52	18:39	16:37	31 16:04 (1)	16:12
16	08:44	15:59 (1)	07:53		06:48	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:01	15:33 (1)	08:46
	16:44	9 16:08 (1)	17:44		18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	29 16:02 (1)	16:12
17	08:43	15:59 (1)	07:51		06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	15:33 (1)	08:47
	16:46	12 16:11 (1)	17:46		18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:34	27 16:00 (1)	16:12
18	08:42	15:58 (1)	07:49		06:44	06:29	05:28	05:02	05:25	06:16	07:11	08:06	08:05	15:33 (1)	08:48
	16:47	14 16:12 (1)	17:48		18:42	20:40	21:33	22:08	21:55	20:59	19:45	18:32	16:32	26 15:59 (1)	16:13
19	08:41	15:58 (1)	07:47		06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07	15:33 (1)	08:48
	16:49	16 16:14 (1)	17:50		18:44	20:42	21:35	22:09	21:53	20:57	19:42	18:30	16:31	24 15:57 (1)	16:13
20	08:39	15:59 (1)	07:45		06:39	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	15:34 (1)	08:49
	16:51	18 16:17 (1)	17:52		18:46	20:43	21:37	22:09	21:52	20:54	19:40	18:28	16:29	22 15:56 (1)	16:13
21	08:38	15:58 (1)	07:42		06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	15:34 (1)	08:50
	16:53	20 16:18 (1)	17:54		18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	20 15:54 (1)	16:14
22	08:37	15:59 (1)	07:40		06:34	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	15:35 (1)	08:50
	16:54	22 16:21 (1)	17:56		18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	18 15:53 (1)	16:14
23	08:36	15:58 (1)	07:38		06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15	08:14	15:35 (1)	08:51
	16:56	24 16:22 (1)	17:58		18:51	20:49	21:41	22:09	21:48	20:48	19:32	18:21	16:26	16 15:51 (1)	16:15
24	08:34	15:59 (1)	07:36		06:29	06:15	05:20	05:03	05:33	06:27	07:22	08:17	08:16	15:36 (1)	08:51
	16:58	26 16:25 (1)	18:00		18:53	20:51	21:43	22:10	21:46	20:45	19:30	18:19	16:24	14 15:50 (1)	16:15
25	08:33	15:59 (1)	07:34		06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	15:37 (1)	08:52
	17:00	27 16:26 (1)	18:02		18:55	20:53	21:44	22:10	21:45	20:43	19:27	17:17	16:23	12 15:49 (1)	16:16
26	08:31	16:00 (1)	07:31		06:24	06:11	05:17	05:03	05:37	06:30	07:25	07:21	08:19	15:37 (1)	08:52
	17:02	29 16:29 (1)	18:04		18:57	20:55	21:46	22:10	21:43	20:41	19:25	17:14	16:22	10 15:47 (1)	16:17
27	08:30	16:00 (1)	07:29		06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	15:38 (1)	08:52
	17:04	31 16:31 (1)	18:06		18:59	20:56	21:47	22:09	21:42	20:38	19:22	17:12	16:21	7 15:45 (1)	16:17
28	08:28	16:00 (1)	07:27		06:19	06:06	05:15	05:04	05:40	06:34	07:29	07:25	08:23	15:39 (1)	08:52
	17:06	32 16:32 (1)	18:08		19:01	20:58	21:49	22:09	21:40	20:36	19:20	17:10	16:20	6 15:45 (1)	16:18
29	08:27	16:00 (1)			07:17	06:04	05:13	05:05	05:41	06:35	07:31	07:27	08:24	15:40 (1)	08:52
	17:08	32 16:32 (1)			20:03	21:00	21:50	22:09	21:38	20:34	19:17	17:08	16:19	4 15:44 (1)	16:19
30	08:25	16:01 (1)			07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:29	08:26	15:41 (1)	08:52
	17:10	31 16:32 (1)			20:04	21:02	21:51	22:09	21:37	20:31	19:15	17:06	16:18	2 15:43 (1)	16:20
31	08:24	16:02 (1)			07:12		05:11		05:45	06:39		07:31			08:52
	17:12	30 16:32 (1)			20:06		21:53		21:35	20:29		17:04			16:21
Potential sun hours	250		273		367	420	494	510	513	460	382	328	259		233
Total, worst case		390		158										556	
Sun reduction		0.16		0.19										0.20	
Oper. time red.		1.00		1.00										1.00	
Wind dir. red.		0.65		0.65										0.65	
Total reduction		0.10		0.13										0.13	
Total, real		41		20										71	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** CA - H086

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March			April			May	June	July	August			September			October	November	December
1	08:52	08:22	07:24			07:09		19:19 (11)	06:00	05:10	05:06	05:46			06:40		19:46 (10)	07:34	07:32	08:27
	16:22	17:13	18:09			20:08	18	19:37 (11)	21:03	21:53	22:08	21:33			20:26	12	19:58 (10)	19:12	17:02	16:17
2	08:52	08:20	07:22			07:06		19:19 (11)	05:57	05:09	05:07	05:48			06:42		19:46 (10)	07:36	07:34	08:29
	16:23	17:15	18:11			20:10	16	19:35 (11)	21:05	21:55	22:08	21:31			20:24	9	19:55 (10)	19:10	17:00	16:16
3	08:52	08:18	07:19			07:04		19:21 (11)	05:55	05:08	05:08	05:49			06:44		19:48 (10)	07:37	07:36	08:30
	16:24	17:17	18:13			20:12	12	19:33 (11)	21:07	21:56	22:07	21:29			20:21	5	19:53 (10)	19:07	16:58	16:16
4	08:51	08:16	07:17			07:01		19:25 (11)	05:53	05:07	05:08	05:51			06:46		19:49 (10)	07:39	07:38	08:32
	16:26	17:19	18:15			20:13	2	19:27 (11)	21:09	21:57	22:07	21:27			20:19	2	19:51 (10)	19:05	16:56	16:15
5	08:51	08:15	07:15			06:59			05:51	05:07	05:09	05:53			06:48			07:41	07:40	08:33
	16:27	17:21	18:17			20:15			21:11	21:58	22:06	21:25			20:16			19:02	16:54	16:14
6	08:51	08:13	07:12			06:57			05:49	05:06	05:10	05:55			06:49			07:43	07:42	08:34
	16:28	17:23	18:19			20:17			21:12	21:59	22:06	21:23			20:14			19:00	16:52	16:14
7	08:50	08:11	07:10			06:54			05:47	05:05	05:11	05:56			06:51			07:45	07:44	08:36
	16:30	17:25	18:21			20:19			21:14	22:00	22:05	21:21			20:12			18:58	16:50	16:13
8	08:50	08:09	07:07			06:52		19:52 (10)	05:46	05:05	05:12	05:58			06:53			07:47	07:46	08:37
	16:31	17:27	18:23			20:21	2	19:54 (10)	21:16	22:01	22:04	21:19			20:09			18:55	16:48	16:13
9	08:49	08:07	07:05			06:49		19:50 (10)	05:44	05:04	05:13	06:00			06:55		19:15 (11)	07:48	07:48	08:38
	16:32	17:29	18:25			20:23	5	19:55 (10)	21:18	22:02	22:04	21:17			20:07	11	19:26 (11)	18:53	16:46	16:13
10	08:48	08:05	07:03			06:47		19:48 (10)	05:42	05:03	05:14	06:01			06:56		19:13 (11)	07:50	07:50	08:40
	16:34	17:32	18:27			20:25	9	19:57 (10)	21:19	22:03	22:03	21:15			20:04	15	19:28 (11)	18:50	16:45	16:12
11	08:48	08:03	07:00			06:45		19:47 (10)	05:40	05:03	05:15	06:03			06:58		19:11 (11)	07:52	07:52	08:41
	16:35	17:34	18:29			20:26	12	19:59 (10)	21:21	22:04	22:02	21:13			20:02	18	19:29 (11)	18:48	16:43	16:12
12	08:47	08:01	06:58			06:42		19:46 (10)	05:38	05:03	05:17	06:05			07:00		19:10 (11)	07:54	07:53	08:42
	16:37	17:36	18:30			20:28	14	20:00 (10)	21:23	22:04	22:01	21:11			19:59	20	19:30 (11)	18:46	16:41	16:12
13	08:46	07:59	06:55			06:40		19:45 (10)	05:36	05:02	05:18	06:07			07:02		19:08 (11)	07:56	07:55	08:43
	16:39	17:38	18:32			20:30	17	20:02 (10)	21:25	22:05	22:00	21:09			19:57	21	19:29 (11)	18:43	16:40	16:12
14	08:45	07:57	06:53			06:38		19:44 (10)	05:35	05:02	05:19	06:08			07:03		19:08 (11)	07:58	07:57	08:44
	16:40	17:40	18:34			20:32	20	20:04 (10)	21:26	22:06	21:59	21:07			19:54	18	19:26 (11)	18:41	16:38	16:12
15	08:44	07:55	06:51			06:35		19:43 (10)	05:33	05:02	05:20	06:10		20:00 (10)	07:05		19:08 (11)	08:00	07:59	08:45
	16:42	17:42	18:36			20:34	22	20:05 (10)	21:28	22:06	21:58	21:05	7	20:07 (10)	19:52	16	19:24 (11)	18:39	16:36	16:12
16	08:43	07:53	06:48			06:33		19:43 (10)	05:31	05:02	05:22	06:12		19:57 (10)	07:07		19:07 (11)	08:01	08:01	08:46
	16:44	17:44	18:38			20:36	24	20:07 (10)	21:30	22:07	21:57	21:03	14	20:11 (10)	19:49	14	19:21 (11)	18:36	16:35	16:12
17	08:42	07:51	06:46			06:30		19:43 (10)	05:30	05:02	05:23	06:14		19:55 (10)	07:09		19:07 (11)	08:03	08:03	08:47
	16:45	17:46	18:40			20:38	26	20:09 (10)	21:31	22:07	21:55	21:01	18	20:13 (10)	19:47	12	19:19 (11)	18:34	16:33	16:12
18	08:41	07:49	06:43			06:28		19:43 (10)	05:28	05:01	05:24	06:16		19:52 (10)	07:11		19:07 (11)	08:05	08:05	08:47
	16:47	17:48	18:42			20:39	28	20:11 (10)	21:33	22:08	21:54	20:58	22	20:14 (10)	19:44	9	19:16 (11)	18:32	16:32	16:12
19	08:40	07:46	06:41			06:26		19:42 (10)	05:26	05:01	05:26	06:17		19:51 (10)	07:12		19:08 (11)	08:07	08:07	08:48
	16:49	17:50	18:44			20:41	30	20:12 (10)	21:35	22:08	21:53	20:56	24	20:15 (10)	19:42	6	19:14 (11)	18:29	16:31	16:13
20	08:39	07:44	06:38			06:24		19:43 (10)	05:25	05:02	05:27	06:19		19:50 (10)	07:14		19:08 (11)	08:09	08:08	08:49
	16:51	17:52	18:46			20:43	29	20:12 (10)	21:36	22:08	21:52	20:54	26	20:16 (10)	19:39	3	19:11 (11)	18:27	16:29	16:13
21	08:38	07:42	06:36			06:21		19:43 (10)	05:23	05:02	05:29	06:21		19:48 (10)	07:16			08:11	08:10	08:49
	16:52	17:54	18:47			20:45	29	20:12 (10)	21:38	22:09	21:50	20:52	28	20:16 (10)	19:37			18:25	16:28	16:13
22	08:37	07:40	06:33			06:19		19:44 (10)	05:22	05:02	05:30	06:23		19:48 (10)	07:18			08:13	08:12	08:50
	16:54	17:56	18:49			20:47	27	20:11 (10)	21:39	22:09	21:49	20:49	29	20:17 (10)	19:34			18:23	16:27	16:14
23	08:35	07:38	06:31		18:23 (11)	06:17		19:45 (10)	05:21	05:02	05:32	06:24		19:47 (10)	07:19			08:15	08:14	08:50
	16:56	17:57	18:51	2	18:25 (11)	20:49	25	20:10 (10)	21:41	22:09	21:47	20:47	30	20:17 (10)	19:32			18:21	16:25	16:14
24	08:34	07:35	06:28		18:21 (11)	06:15		19:46 (10)	05:19	05:02	05:33	06:26		19:46 (10)	07:21			08:17	08:16	08:51
	16:58	17:59	18:53	5	18:26 (11)	20:50	23	20:09 (10)	21:42	22:09	21:46	20:45	30	20:16 (10)	19:30			18:18	16:24	16:15
25	08:32	07:33	06:26		18:20 (11)	06:12		19:46 (10)	05:18	05:03	05:35	06:28		19:46 (10)	07:23			07:19	08:17	08:51
	17:00	18:01	18:55	9	18:29 (11)	20:52	21	20:07 (10)	21:44	22:09	21:44	20:43	28	20:14 (10)	19:27			17:16	16:23	16:16
26	08:31	07:31	06:24		18:18 (11)	06:10		19:48 (10)	05:17	05:03	05:36	06:30		19:46 (10)	07:25			07:20	08:19	08:51
	17:02	18:03	18:57	12	18:30 (11)	20:54	17	20:05 (10)	21:45	22:09	21:43	20:40	26	20:12 (10)	19:25			17:14	16:22	16:16
27	08:30	07:29	06:21		18:18 (11)	06:08		19:50 (10)	05:15	05:04	05:38	06:32		19:45 (10)	07:27			07:22	08:21	08:52
	17:04	18:05	18:59	14	18:32 (11)	20:56	12	20:02 (10)	21:47	22:09	21:41	20:38	24	20:09 (10)	19:22			17:12	16:21	16:17
28	08:28	07:26	06:19		18:17 (11)	06:06		19:55 (10)	05:14	05:04	05:39	06:33		19:45 (10)	07:28			07:24	08:22	08:52
	17:06	18:07	19:00	16	18:33 (11)	20:58	2	19:57 (10)	21:48	22:09	21:40	20:36	22	20:07 (10)	19:20			17:10	16:20	16:18
29	08:26		07:16		19:17 (11)	06:04			05:13	05:05	05:41	06:35		19:45 (10)	07:30			07:26	08:24	08:52
	17:08		20:02	19	19:36 (11)	21:00			21:50	22:09	21:38	20:33	20	20:05 (10)	19:17			17:08	16:19	16:19
30	08:25		07:14		19:17 (11)	06:02			05:12	05:05	05:43	06:37		19:45 (10)	07:32			07:28	08:26	08:52
	17:10		20:04	20	19:37 (11)	21:01			21:51	22:08	21:36	20:31	17	20:02 (10)	19:15			17:06	16:18	16:20
31	08:23		07:11		19:18 (11)				05:11		05:44	06:39		19:45 (10)				07:30		08:52
	17:11		20:06	20	19:38 (11)				21:52		21:35	20:28	15	20:00 (10)				17:04		16:21
Potential sun hours	250	273	367			420			494	510	512	460			382			328	259	233
Total, worst case				117			442						380			191				
Sun reduction				0.22			0.31						0.26			0.25				
Oper. time red.				1.00			1.00						1.00			1.00				
Wind dir. red.				0.65			0.63						0.63			0.64				
Total reduction				0.14			0.19						0.16			0.16				
Total, real				17			85						61			31				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** CB - H087

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:07	05:47	06:17 (5)	06:41	07:08 (6)	07:34	07:33	08:28
	16:23	17:14	18:10	20:08	21:04	21:54	22:08	21:33	06:42 (5)	20:26	07:12 (6)	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	06:24 (5)	05:10	05:07	05:48	06:19 (5)	06:43	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:06	4 06:28 (5)	21:55	22:08	21:31	24 06:43 (5)	20:24	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04	05:56	06:22 (5)	05:09	05:08	05:50	06:20 (5)	06:44	07:38	07:36	08:31
	16:25	17:18	18:14	20:12	21:07	7 06:29 (5)	21:56	22:08	21:29	22 06:42 (5)	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	06:20 (5)	05:08	05:09	05:52	06:22 (5)	06:46	07:40	07:38	08:32
	16:26	17:20	18:16	20:14	21:09	9 06:29 (5)	21:57	22:07	21:28	20 06:42 (5)	20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	07:00	05:52	06:18 (5)	05:07	05:10	05:53	06:23 (5)	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	12 06:30 (5)	21:58	22:07	21:26	18 06:41 (5)	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	06:16 (5)	05:06	05:11	05:55	06:25 (5)	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:18	21:13	14 06:30 (5)	21:59	22:06	21:24	16 06:41 (5)	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:55	05:48	06:15 (5)	05:06	05:12	05:57	06:27 (5)	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:15	17 06:32 (5)	22:00	22:05	21:22	14 06:41 (5)	20:12	18:58	16:51	16:14
8	08:50	08:09	07:08	06:52	05:46	06:13 (5)	05:05	05:13	05:58	06:28 (5)	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	19 06:32 (5)	22:01	22:05	21:20	11 06:39 (5)	20:09	18:56	16:49	16:14
9	08:49	08:07	07:05	06:50	05:44	06:11 (5)	05:04	05:14	06:00	06:30 (5)	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	21 06:32 (5)	22:02	22:04	21:18	9 06:39 (5)	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	06:09 (5)	05:04	05:15	06:02	06:31 (5)	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	23 06:32 (5)	22:03	22:03	21:16	6 06:37 (5)	20:05	18:51	16:45	16:13
11	08:48	08:04	07:01	06:45	07:09 (6) 05:40	06:08 (5)	05:04	05:16	06:04	06:33 (5)	06:59	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	4 07:13 (6) 21:22	24 06:32 (5)	22:04	22:02	21:14	3 06:36 (5)	20:02	18:49	16:43	16:13
12	08:47	08:02	06:58	06:43	07:07 (6) 05:39	06:06 (5)	05:03	05:17	06:05		07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	7 07:14 (6) 21:23	26 06:32 (5)	22:05	22:01	21:12		20:00	18:46	16:42	16:12
13	08:47	07:59	06:56	06:40	07:04 (6) 05:37	06:04 (5)	05:03	05:18	06:21 (5) 06:07		07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	10 07:14 (6) 21:25	28 06:32 (5)	22:05	22:00	9 06:30 (5) 21:10		19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	07:02 (6) 05:35	06:03 (5)	05:03	05:20	06:19 (5) 06:09		07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	12 07:14 (6) 21:27	29 06:32 (5)	22:06	21:59	12 06:31 (5) 21:07		19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:36	07:00 (6) 05:33	06:01 (5)	05:02	05:21	06:18 (5) 06:11		07:06	08:00	08:00	08:45
	16:42	17:42	18:37	20:34	15 07:15 (6) 21:28	31 06:32 (5)	22:07	21:58	15 06:33 (5) 21:05		19:52	18:39	16:37	16:12
16	08:44	07:53	06:49	06:33	06:58 (6) 05:32	06:01 (5)	05:02	05:22	06:17 (5) 06:12		07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	17 07:15 (6) 21:30	31 06:32 (5)	22:07	21:57	17 06:34 (5) 21:03		19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	06:55 (6) 05:30	06:00 (5)	05:02	05:23	06:17 (5) 06:14	07:04 (6)	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	19 07:14 (6) 21:32	31 06:31 (5)	22:08	21:56	19 06:36 (5) 21:01	5 07:09 (6)	19:47	18:34	16:34	16:13
18	08:42	07:49	06:44	06:29	06:53 (6) 05:29	06:01 (5)	05:02	05:25	06:16 (5) 06:16	07:00 (6)	07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40	21 07:14 (6) 21:33	30 06:31 (5)	22:08	21:55	21 06:37 (5) 20:59	13 07:13 (6)	19:45	18:32	16:32	16:13
19	08:41	07:47	06:41	06:26	06:51 (6) 05:27	06:01 (5)	05:02	05:26	06:15 (5) 06:18	06:58 (6)	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:42	23 07:14 (6) 21:35	29 06:30 (5)	22:08	21:53	22 06:37 (5) 20:57	16 07:14 (6)	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	06:49 (6) 05:25	06:02 (5)	05:02	05:28	06:15 (5) 06:20	06:56 (6)	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	24 07:13 (6) 21:37	28 06:30 (5)	22:09	21:52	24 06:39 (5) 20:54	19 07:15 (6)	19:40	18:28	16:30	16:13
21	08:38	07:43	06:36	06:22	06:49 (6) 05:24	06:03 (5)	05:02	05:29	06:14 (5) 06:21	06:55 (6)	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	23 07:12 (6) 21:38	27 06:30 (5)	22:09	21:51	25 06:39 (5) 20:52	21 07:16 (6)	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:20	06:50 (6) 05:23	06:04 (5)	05:02	05:31	06:13 (5) 06:23	06:54 (6)	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21 07:11 (6) 21:40	26 06:30 (5)	22:09	21:49	26 06:39 (5) 20:50	22 07:16 (6)	19:35	18:23	16:27	16:14
23	08:36	07:38	06:31	06:17	06:51 (6) 05:21	06:04 (5)	05:03	05:32	06:13 (5) 06:25	06:53 (6)	07:20	08:15	08:14	08:51
	16:57	17:58	18:52	20:49	18 07:09 (6) 21:41	24 06:28 (5)	22:09	21:48	28 06:41 (5) 20:48	24 07:17 (6)	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	06:52 (6) 05:20	06:05 (5)	05:03	05:34	06:12 (5) 06:27	06:55 (6)	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	16 07:08 (6) 21:43	23 06:28 (5)	22:09	21:46	29 06:41 (5) 20:45	23 07:18 (6)	19:30	18:19	16:25	16:15
25	08:33	07:34	06:26	06:13	06:54 (6) 05:18	06:06 (5)	05:03	05:35	06:12 (5) 06:28	06:56 (6)	07:23	07:19	08:18	08:52
	17:00	18:02	18:55	20:53	12 07:06 (6) 21:44	21 06:27 (5)	22:10	21:45	30 06:42 (5) 20:43	21 07:17 (6)	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	06:59 (6) 05:17	06:07 (5)	05:04	05:37	06:11 (5) 06:30	06:58 (6)	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:55	2 07:01 (6) 21:46	20 06:27 (5)	22:09	21:43	31 06:42 (5) 20:41	19 07:17 (6)	19:25	17:14	16:22	16:17
27	08:30	07:29	06:22	06:08	05:16	06:08 (5)	05:04	05:38	06:11 (5) 06:32	07:00 (6)	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	18 06:26 (5)	22:09	21:42	31 06:42 (5) 20:38	17 07:17 (6)	19:23	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	05:15	06:09 (5)	05:05	05:40	06:11 (5) 06:34	07:01 (6)	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:49	16 06:25 (5)	22:09	21:40	31 06:42 (5) 20:36	15 07:16 (6)	19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	05:14	06:10 (5)	05:05	05:42	06:12 (5) 06:36	07:03 (6)	07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	14 06:24 (5)	22:09	21:38	30 06:42 (5) 20:34	12 07:15 (6)	19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	05:13	06:12 (5)	05:06	05:43	06:14 (5) 06:37	07:05 (6)	07:32	07:29	08:26	08:52
	17:10		20:05	21:02	21:51	10 06:22 (5)	22:09	21:37	29 06:43 (5) 20:31	10 07:15 (6)	19:15	17:06	16:19	16:20
31	08:24		07:12		05:11	06:14 (5)		05:45	06:15 (5) 06:39	07:07 (6)		07:31		08:52
	17:12		20:06		21:52	6 06:20 (5)		21:35	27 06:42 (5) 20:29	7 07:14 (6)		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case				244	618		456	412	4			
Sun reduction				0.31	0.31		0.22	0.26	0.25			
Oper. time red.				1.00	1.00		1.00	1.00	1.00			
Wind dir. red.				0.64	0.65		0.65	0.64	0.64			
Total reduction				0.20	0.20		0.15	0.17	0.16			
Total, real				48	126		66	68	1			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** CC - H089

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:07	05:46	06:41	07:34	07:32	08:27
	16:23	17:14	18:10	20:08	21:04	21:54	22:08	21:33	20:26	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:10	05:07	05:48	06:43	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:14	20:12	21:07	21:56	22:08	21:29	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:52	06:46	07:40	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:28	20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	06:59	05:52	05:07	05:10	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	21:58	22:07	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:55	05:48	05:06	05:12	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:56	16:49	16:14
9	08:49	08:07	07:05	06:50	05:44	05:04	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51	16:45	16:13
11	08:48	08:03	07:01	06:45	05:40	05:04	05:16	06:04	06:59	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:13
12	08:47	08:01	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	22:00	21:10	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:03	05:20	06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00	07:59	08:45
	16:42	17:42	18:37	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:34	16:13
18	08:42	07:49	06:44	06:29	05:28	05:02	05:25	06:16	07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:42	21:35	22:08	21:53	20:57	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:28	06:20	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:37	22:09	21:52	20:54	19:40	18:28	16:30	16:13
21	08:38	07:42	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	05:02	05:31	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:14	08:51
	16:57	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:19	16:25	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	21:44	22:09	21:45	20:43	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:41	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:22	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	05:14	05:05	05:42	06:35	07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:34	19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	05:13	05:06	05:43	06:37	07:32	07:29	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:37	20:31	19:15	17:06	16:19	16:20
31	08:24		07:12		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** CD - H090

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May		June		July		August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00		05:10		05:06		05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:10	20:08	21:03		21:54	23	21:19 (6)	22:08	20 21:25 (6)	21:33	20:26	19:12	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58		05:09		20:57 (6)	05:07	21:05 (6)	05:48	06:42	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:05		21:55	23	21:20 (6)	22:08	19 21:24 (6)	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56		05:09		20:58 (6)	05:08	21:05 (6)	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12	21:07		21:56	23	21:21 (6)	22:07	20 21:25 (6)	21:29	20:21	19:08	16:58	16:16
4	08:51	08:17	07:17	07:02	05:54		05:08		20:58 (6)	05:09	21:05 (6)	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14	21:09		21:57	22	21:20 (6)	22:07	21 21:26 (6)	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52		05:07		20:58 (6)	05:10	21:05 (6)	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11		21:58	22	21:20 (6)	22:06	21 21:26 (6)	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50		05:06		20:59 (6)	05:11	21:04 (6)	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:17	21:13		21:59	22	21:21 (6)	22:06	22 21:26 (6)	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48		05:06		20:59 (6)	05:12	21:04 (6)	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14		22:00	21	21:20 (6)	22:05	22 21:26 (6)	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46		05:05		20:59 (6)	05:13	21:04 (6)	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16		22:01	21	21:20 (6)	22:04	23 21:27 (6)	21:20	20:09	18:55	16:49	16:13
9	08:49	08:07	07:05	06:50	05:44		05:04		20:59 (6)	05:14	21:04 (6)	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18		22:02	21	21:20 (6)	22:04	23 21:27 (6)	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42		05:04		21:00 (6)	05:15	21:04 (6)	06:02	06:57	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20		22:03	20	21:20 (6)	22:03	23 21:27 (6)	21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:00	06:45	05:40		05:03		21:00 (6)	05:16	21:04 (6)	06:04	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21		22:04	19	21:19 (6)	22:02	23 21:27 (6)	21:14	20:02	18:48	16:43	16:13
12	08:47	08:01	06:58	06:43	05:38		05:03		21:01 (6)	05:17	21:05 (6)	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23		22:04	19	21:20 (6)	22:01	22 21:27 (6)	21:12	19:59	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	05:37		05:03		21:01 (6)	05:18	21:05 (6)	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25		22:05	19	21:20 (6)	22:00	21 21:26 (6)	21:09	19:57	18:44	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35		05:02		21:02 (6)	05:19	21:05 (6)	06:09	07:04	07:58	07:57	08:44
	16:40	17:40	18:35	20:32	21:27		22:06	18	21:20 (6)	21:59	20 21:25 (6)	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	05:33		05:02		21:02 (6)	05:21	21:05 (6)	06:11	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28		22:06	18	21:20 (6)	21:58	19 21:24 (6)	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32		05:02		21:03 (6)	05:22	21:04 (6)	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30		22:07	17	21:20 (6)	21:57	18 21:22 (6)	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	20:58 (6)	05:02		21:03 (6)	05:23	21:04 (6)	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	1 20:59 (6)	22:07	18	21:21 (6)	21:56	17 21:21 (6)	21:01	19:47	18:34	16:34	16:12
18	08:41	07:49	06:43	06:28	05:28	20:58 (6)	05:02		21:04 (6)	05:25	21:05 (6)	06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:40	21:33	3 21:01 (6)	22:08	17	21:21 (6)	21:54	16 21:21 (6)	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	20:57 (6)	05:02		21:04 (6)	05:26	21:05 (6)	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	5 21:02 (6)	22:08	17	21:21 (6)	21:53	14 21:19 (6)	20:56	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	20:57 (6)	05:02		21:04 (6)	05:28	21:05 (6)	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	7 21:04 (6)	22:09	17	21:21 (6)	21:52	13 21:18 (6)	20:54	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:22	05:24	20:56 (6)	05:02		21:04 (6)	05:29	21:06 (6)	06:21	07:16	08:11	08:10	08:49
	16:53	17:54	18:48	20:45	21:38	9 21:05 (6)	22:09	17	21:21 (6)	21:50	11 21:17 (6)	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	20:55 (6)	05:02		21:04 (6)	05:30	21:06 (6)	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	11 21:06 (6)	22:09	17	21:21 (6)	21:49	10 21:16 (6)	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	20:55 (6)	05:02		21:05 (6)	05:32	21:07 (6)	06:25	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41	13 21:08 (6)	22:09	17	21:22 (6)	21:48	8 21:15 (6)	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	20:56 (6)	05:03		21:05 (6)	05:33	21:07 (6)	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	13 21:09 (6)	22:09	17	21:22 (6)	21:46	6 21:13 (6)	20:45	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18	20:56 (6)	05:03		21:04 (6)	05:35	21:07 (6)	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:52	21:44	15 21:11 (6)	22:09	18	21:22 (6)	21:45	5 21:12 (6)	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	20:56 (6)	05:04		21:05 (6)	05:37	21:09 (6)	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:45	16 21:12 (6)	22:09	17	21:22 (6)	21:43	2 21:11 (6)	20:40	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	20:56 (6)	05:04		21:05 (6)	05:38		06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	17 21:13 (6)	22:09	17	21:22 (6)	21:41		20:38	19:22	17:12	16:21	16:17
28	08:28	07:27	06:19	06:06	05:15	20:56 (6)	05:05		21:05 (6)	05:40		06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	19 21:15 (6)	22:09	18	21:23 (6)	21:40		20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	20:56 (6)	05:05		21:05 (6)	05:41		06:35	07:30	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	20 21:16 (6)	22:09	18	21:23 (6)	21:38		20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	20:56 (6)	05:06		21:05 (6)	05:43		06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	21 21:17 (6)	22:09	19	21:24 (6)	21:36		20:31	19:15	17:06	16:18	16:20
31	08:23		07:12		05:11	20:56 (6)				05:45		06:39		07:30		08:52
	17:12		20:06		21:52	22 21:18 (6)				21:35		20:29		17:04		16:21
Potential sun hours	250	273	367	420	494		510		512		460	382	328	259	233	
Total, worst case						192		572		439						
Sun reduction						0.31		0.26		0.22						
Oper. time red.						1.00		1.00		1.00						
Wind dir. red.						0.60		0.60		0.60						
Total reduction						0.19		0.16		0.14						
Total, real						36		89		59						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** CE - H091

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:07	05:46	06:41	07:34	07:32	08:27
	16:23	17:14	18:10	20:08	21:04	21:54	22:08	21:33	20:26	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:10	05:07	05:48	06:43	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:14	20:12	21:07	21:56	22:08	21:29	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:52	06:46	07:40	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:28	20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	06:59	05:52	05:07	05:10	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	21:58	22:06	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:55	05:48	05:06	05:12	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:56	16:49	16:14
9	08:49	08:07	07:05	06:50	05:44	05:04	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51	16:45	16:13
11	08:48	08:03	07:01	06:45	05:40	05:04	05:16	06:04	06:59	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:13
12	08:47	08:01	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	22:00	21:10	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:03	05:20	06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:34	16:13
18	08:42	07:49	06:44	06:29	05:28	05:02	05:25	06:16	07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:42	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:28	06:20	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:37	22:09	21:52	20:54	19:40	18:28	16:30	16:13
21	08:38	07:42	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	05:02	05:31	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:14	08:51
	16:57	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:19	16:25	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	21:44	22:09	21:45	20:43	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:41	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:22	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	05:14	05:05	05:42	06:35	07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:34	19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:29	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:37	20:31	19:15	17:06	16:19	16:20
31	08:24		07:12		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** CF - H093

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52 16:23	08:22 17:14	07:24 18:10	07:09 20:08	06:00 21:04 (12) 06:42 (6)	05:11 21:54 (27) 05:50 (5)	05:07 22:08 (18) 06:01 (5)	05:47 21:33 (9) 06:17 (5)	06:41 20:26	07:34 19:13	07:33 17:02	08:28 16:18
2	08:52 16:24	08:20 17:16	07:22 18:12	07:07 20:10	05:58 21:06 (4) 06:46 (6)	05:10 21:55 (26) 05:51 (5)	05:07 22:08 (19) 06:00 (5)	05:48 21:31 (6) 06:19 (5)	06:43 20:24	07:36 19:10	07:34 17:00	08:29 16:17
3	08:52 16:25	08:19 17:18	07:20 18:14	07:04 20:12	05:56 21:07 (6) 06:50 (6)	05:09 21:56 (25) 05:52 (5)	05:08 22:08 (19) 06:00 (5)	05:50 21:29 (4) 06:20 (5)	06:44 20:22	07:38 19:08	07:36 16:58	08:31 16:16
4	08:52 16:26	08:17 17:20	07:17 18:16	07:02 20:14	05:54 21:09	05:08 21:57 (25) 05:52 (5)	05:09 22:07 (21) 06:00 (5)	05:52 21:28 (1) 06:21 (5)	06:46 20:19 (23) 06:22 (5)	07:40 19:05	07:38 16:56	08:32 16:16
5	08:51 16:27	08:15 17:22	07:15 18:17	07:00 20:16	05:52 21:11	05:07 21:58 (24) 05:52 (5)	05:10 22:07 (22) 06:00 (5)	05:53 21:26	06:48 20:17	07:41 19:03	07:40 16:54	08:33 16:15
6	08:51 16:29	08:13 17:24	07:13 18:19	06:57 20:18	05:50 21:13	05:06 21:59 (22) 05:54 (5)	05:11 22:06 (23) 06:00 (5)	05:55 21:24	06:50 20:14	07:43 19:00	07:42 16:52	08:35 16:14
7	08:50 16:30	08:11 17:26	07:10 18:21	06:55 20:19	05:48 21:15	05:06 22:00 (22) 05:54 (5)	05:12 22:05 (23) 06:00 (5)	05:57 21:22	06:51 20:12	07:45 18:58	07:44 16:51	08:36 16:14
8	08:50 16:31	08:09 17:28	07:08 18:23	06:52 20:21	05:46 21:16	05:05 22:01 (21) 05:55 (5)	05:13 22:05 (24) 06:00 (5)	05:58 21:20	06:53 20:09	07:47 18:56	07:46 16:49	08:37 16:14
9	08:49 16:33	08:07 17:30	07:05 18:25	06:50 20:23	05:44 21:18 (2) 06:11 (5)	05:04 22:02 (20) 05:55 (5)	05:14 22:04 (25) 05:59 (5)	05:59 21:18	06:55 20:07	07:49 18:53	07:48 16:47	08:39 16:13
10	08:49 16:34	08:05 17:32	07:03 18:27	06:47 20:25	05:42 21:20 (5) 06:09 (5)	05:04 22:03 (19) 05:56 (5)	05:15 22:03 (26) 05:59 (5)	06:02 21:16	06:57 20:05	07:51 18:51	07:50 16:45	08:40 16:13
11	08:48 16:36	08:04 17:34	07:01 18:29	06:45 20:27	05:40 21:22 (7) 06:08 (5)	05:04 22:04 (18) 05:57 (5)	05:16 22:02 (26) 05:59 (5)	06:04 21:14 (7) 06:25 (5)	06:53 (6) 06:59 07:00 (6) 20:02	07:52 18:49	07:52 16:43	08:41 16:13
12	08:47 16:37	08:02 17:36	06:58 18:31	06:43 20:29	05:39 21:23 (10) 06:06 (5)	05:03 22:05 (17) 06:14 (5)	05:17 22:01 (27) 05:59 (5)	06:05 21:12 (13) 06:26 (5)	06:50 (6) 07:00 07:03 (6) 20:00	07:54 18:46	07:54 16:42	08:42 16:12
13	08:47 16:39	07:59 17:38	06:56 18:33	06:40 20:30	05:37 21:25 (12) 06:04 (5)	05:03 22:05 (17) 06:14 (5)	05:18 22:00 (28) 05:58 (5)	06:07 21:10 (17) 06:26 (5)	06:47 (6) 07:02 07:04 (6) 19:57	07:56 18:44	07:56 16:40	08:43 16:12
14	08:46 16:41	07:57 17:40	06:53 18:35	06:38 20:32	05:35 21:27 (14) 06:03 (5)	05:03 22:06 (17) 06:15 (5)	05:20 21:59 (28) 05:58 (5)	06:09 21:07 (19) 06:26 (5)	06:46 (6) 07:04 07:05 (6) 19:55	07:58 18:41	07:58 16:38	08:44 16:12
15	08:45 16:42	07:55 17:42	06:51 18:37	06:36 20:34	05:33 21:28 (16) 06:01 (5)	05:02 22:07 (16) 06:15 (5)	05:21 21:58 (29) 05:58 (5)	06:11 21:05 (20) 06:27 (5)	06:46 (6) 07:06 07:06 (6) 19:52	08:00 18:39	08:00 16:37	08:45 16:12
16	08:44 16:44	07:53 17:44	06:49 18:38	06:33 20:36 (2) 06:58 (6) 07:00 (6)	05:32 21:30 (18) 06:00 (5)	05:02 22:07 (16) 06:15 (5)	05:22 21:57 (30) 05:59 (5)	06:12 21:03 (22) 06:27 (5)	06:44 (6) 07:07 07:06 (6) 19:50	08:02 18:37	08:01 16:35	08:46 16:12
17	08:43 16:46	07:51 17:46	06:46 18:40	06:31 20:38 (5) 06:55 (6) 07:00 (6)	05:30 21:32 (20) 06:18 (5)	05:02 22:08 (14) 06:14 (5)	06:00 (5) 05:23 21:56 (30) 06:28 (5)	05:58 (5) 06:14 21:01 (24) 06:43 (6)	07:09 07:07 (6) 19:47	08:04 18:34	08:03 16:34	08:47 16:13
18	08:42 16:47	07:49 17:48	06:44 18:42	06:29 20:40 (8) 06:53 (6) 07:01 (6)	05:29 21:33 (21) 06:18 (5)	05:02 22:08 (14) 06:14 (5)	06:00 (5) 05:25 21:55 (30) 06:28 (5)	05:58 (5) 06:16 20:59 (23) 06:45 (6)	07:11 07:08 (6) 19:45	08:06 18:32	08:05 16:32	08:48 16:13
19	08:41 16:49	07:47 17:50	06:41 18:44	06:26 20:42 (11) 06:51 (6) 07:02 (6)	05:27 21:35 (23) 06:18 (5)	05:02 22:08 (14) 06:14 (5)	06:00 (5) 05:26 21:53 (30) 06:28 (5)	05:58 (5) 06:18 20:57 (21) 06:46 (6)	07:13 07:07 (6) 19:42	08:07 18:30	08:07 16:31	08:48 16:13
20	08:39 16:51	07:45 17:52	06:39 18:46	06:24 20:43 (13) 06:49 (6) 07:02 (6)	05:25 21:37 (24) 06:18 (5)	05:02 22:09 (13) 06:14 (5)	06:01 (5) 05:28 21:52 (29) 06:29 (5)	06:00 (5) 06:20 20:54 (19) 06:48 (6)	07:14 07:07 (6) 19:40	08:09 18:28	08:09 16:30	08:49 16:13
21	08:38 16:53	07:42 17:54	06:36 18:48	06:22 20:45 (15) 06:46 (6) 07:01 (6)	05:24 21:38 (26) 05:53 (5)	05:02 22:09 (13) 06:19 (5)	06:01 (5) 05:29 21:51 (28) 06:14 (5)	06:01 (5) 06:21 20:52 (17) 06:29 (5)	07:16 06:50 (6) 19:37	08:11 18:25	08:11 16:28	08:50 16:14
22	08:37 16:55	07:40 17:56	06:34 18:50	06:20 20:47 (18) 06:44 (6) 07:02 (6)	05:23 21:40 (27) 05:52 (5)	05:02 22:09 (13) 06:19 (5)	06:01 (5) 05:31 21:49 (26) 06:14 (5)	06:02 (5) 06:23 20:50 (15) 06:28 (5)	06:51 (6) 07:18 07:06 (6) 19:35	08:13 18:23	08:12 16:27	08:50 16:14
23	08:36 16:57	07:38 17:58	06:31 18:52	06:17 20:49 (20) 06:42 (6) 07:02 (6)	05:21 21:41 (28) 05:50 (5)	05:03 22:09 (13) 06:18 (5)	06:02 (5) 05:32 21:48 (25) 06:15 (5)	06:04 (5) 06:25 20:48 (13) 06:29 (5)	06:53 (6) 07:20 07:06 (6) 19:32	08:15 18:21	08:14 16:26	08:51 16:15
24	08:34 16:58	07:36 18:00	06:29 18:53	06:15 20:51 (21) 06:40 (6) 07:01 (6)	05:20 21:43 (29) 05:49 (5)	05:03 22:09 (14) 06:18 (5)	06:01 (5) 05:34 21:46 (24) 06:15 (5)	06:05 (5) 06:27 20:45 (10) 06:29 (5)	06:55 (6) 07:22 07:05 (6) 19:30	08:17 18:19	08:16 16:25	08:51 16:15
25	08:33 17:00	07:34 18:02	06:26 18:55	06:13 20:53 (23) 06:38 07:01 (6)	05:18 21:44 (30) 05:48 (5)	05:03 22:10 (14) 06:18 (5)	06:01 (5) 05:35 21:45 (22) 06:15 (5)	06:07 (5) 06:28 20:43 (8) 06:29 (5)	06:56 (6) 07:23 07:04 (6) 19:27	07:19 17:17	08:18 16:23	08:52 16:16
26	08:31 17:02	07:31 18:04	06:24 18:57	06:11 20:55 (23) 06:37 07:00 (6)	05:17 21:46 (30) 05:48 (5)	05:04 22:09 (16) 06:18 (5)	06:01 (5) 05:37 21:43 (21) 06:17 (5)	06:08 (5) 06:30 20:41 (5) 06:29 (5)	06:58 (6) 07:25 07:03 (6) 19:25	07:21 17:14	08:19 16:22	08:52 16:17
27	08:30 17:04	07:29 18:06	06:22 18:59	06:08 20:56 (23) 06:37 07:00 (6)	05:16 21:47 (29) 05:49 (5)	05:04 22:09 (16) 06:17 (5)	06:01 (5) 05:38 21:42 (19) 06:17 (5)	06:09 (5) 06:32 20:38 (2) 06:28 (5)	07:00 (6) 07:27 07:02 (6) 19:23	07:23 17:12	08:21 16:21	08:52 16:18
28	08:28 17:06	07:27 18:08	06:19 19:01	06:06 20:58 (21) 06:38 06:59 (6)	05:15 21:48 (29) 05:49 (5)	05:05 22:09 (17) 06:18 (5)	06:01 (5) 05:40 21:40 (17) 06:18 (5)	06:11 (5) 06:34 20:36	07:29 19:20	07:25 17:10	08:23 16:20	08:52 16:18
29	08:27 17:08		07:17 20:03	06:04 21:00 (18) 06:39 06:57 (6)	05:14 21:50 (29) 05:49 (5)	05:05 22:09 (16) 06:18 (5)	06:01 (5) 05:42 21:38 (15) 06:17 (5)	06:12 (5) 06:36 20:34	07:31 19:18	07:27 17:08	08:24 16:19	08:52 16:19
30	08:25 17:10		07:14 20:05	06:02 21:02 (16) 06:40 06:56 (6)	05:13 21:51 (28) 05:50 (5)	05:06 22:09 (17) 06:18 (5)	06:01 (5) 05:43 21:37 (13) 06:18 (5)	06:14 (5) 06:37 20:31	07:32 19:15	07:29 17:06	08:26 16:19	08:52 16:20
31	08:24 17:12		07:12 20:06		05:11 21:52 (28) 06:18 (5)		05:45 21:35 (11) 06:26 (5)	06:15 (5) 06:39 20:29		07:31 17:04		08:52 16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case				237	501	536	729	275				
Sun reduction				0.31	0.31	0.26	0.22	0.26				
Oper. time red.				1.00	1.00	1.00	1.00	1.00				
Wind dir. red.				0.65	0.64	0.64	0.64	0.65				
Total reduction				0.20	0.20	0.17	0.14	0.17				
Total, real				47	101	89	105	46				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** CG - H094

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	21:16 (11)	05:06	21:18 (11)	05:46	06:40	07:34	07:32	08:27
	16:22	17:14	18:09	20:08	21:03	21:53	3 21:19 (11)	22:08	14 21:32 (11)	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:06	05:58	05:09	21:15 (11)	05:07	21:18 (11)	05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05	21:55	5 21:20 (11)	22:08	14 21:32 (11)	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:19	07:04	05:55	05:08	21:15 (11)	05:08	21:19 (11)	05:49	06:44	07:37	07:36	08:30
	16:24	17:18	18:13	20:12	21:07	21:56	6 21:21 (11)	22:07	13 21:32 (11)	21:29	20:21	19:07	16:58	16:16
4	08:51	08:16	07:17	07:02	05:53	05:07	21:15 (11)	05:08	21:20 (11)	05:51	06:46	07:39	07:38	08:32
	16:26	17:19	18:15	20:13	21:09	21:57	7 21:22 (11)	22:07	12 21:32 (11)	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:51	05:07	21:14 (11)	05:09	21:19 (11)	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11	21:58	9 21:23 (11)	22:06	11 21:30 (11)	21:25	20:16	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:49	05:06	21:14 (11)	05:10	21:20 (11)	05:55	06:49	07:43	07:42	08:34
	16:28	17:24	18:19	20:17	21:12	21:59	9 21:23 (11)	22:06	10 21:30 (11)	21:23	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48	05:05	21:14 (11)	05:11	21:20 (11)	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	11 21:25 (11)	22:05	10 21:30 (11)	21:21	20:12	18:58	16:50	16:14
8	08:50	08:09	07:07	06:52	05:46	05:05	21:13 (11)	05:12	21:21 (11)	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	12 21:25 (11)	22:04	8 21:29 (11)	21:19	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:49	05:44	05:04	21:14 (11)	05:13	21:22 (11)	06:00	06:55	07:48	07:48	08:38
	16:32	17:30	18:25	20:23	21:18	22:02	12 21:26 (11)	22:04	6 21:28 (11)	21:17	20:07	18:53	16:46	16:13
10	08:48	08:05	07:03	06:47	05:42	05:04	21:14 (11)	05:14	21:22 (11)	06:02	06:56	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:19	22:03	14 21:28 (11)	22:03	6 21:28 (11)	21:15	20:04	18:50	16:45	16:12
11	08:48	08:03	07:00	06:45	05:40	05:03	21:14 (11)	05:16	21:23 (11)	06:03	06:58	07:52	07:52	08:41
	16:35	17:34	18:29	20:26	21:21	22:04	14 21:28 (11)	22:02	4 21:27 (11)	21:13	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	21:14 (11)	05:17	21:24 (11)	06:05	07:00	07:54	07:53	08:42
	16:37	17:36	18:30	20:28	21:23	22:04	15 21:29 (11)	22:01	2 21:26 (11)	21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:55	06:40	05:36	05:02	21:14 (11)	05:18		06:07	07:02	07:56	07:55	08:43
	16:39	17:38	18:32	20:30	21:25	22:05	15 21:29 (11)	22:00		21:09	19:57	18:43	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	05:02	21:14 (11)	05:19		06:09	07:03	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:26	22:06	16 21:30 (11)	21:59		21:07	19:54	18:41	16:38	16:12
15	08:44	07:55	06:51	06:35	05:33	05:02	21:14 (11)	05:20		06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	16 21:30 (11)	21:58		21:05	19:52	18:39	16:36	16:12
16	08:43	07:53	06:48	06:33	05:31	05:02	21:14 (11)	05:22		06:12	07:07	08:01	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	16 21:30 (11)	21:57		21:03	19:49	18:36	16:35	16:12
17	08:42	07:51	06:46	06:31	05:30	05:02	21:14 (11)	05:23		06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:31	22:07	17 21:31 (11)	21:55		21:01	19:47	18:34	16:33	16:12
18	08:41	07:49	06:43	06:28	05:28	05:02	21:14 (11)	05:24		06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:39	21:33	22:08	17 21:31 (11)	21:54		20:58	19:44	18:32	16:32	16:12
19	08:40	07:46	06:41	06:26	05:27	05:02	21:14 (11)	05:26		06:17	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	18 21:32 (11)	21:53		20:56	19:42	18:30	16:31	16:13
20	08:39	07:44	06:38	06:24	05:25	05:02	21:15 (11)	05:27		06:19	07:14	08:09	08:08	08:49
	16:51	17:52	18:46	20:43	21:36	22:08	18 21:33 (11)	21:52		20:54	19:39	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:24	05:02	21:15 (11)	05:29		06:21	07:16	08:11	08:10	08:49
	16:52	17:54	18:47	20:45	21:38	22:09	18 21:33 (11)	21:50		20:52	19:37	18:25	16:28	16:13
22	08:37	07:40	06:33	06:19	05:22	05:02	21:15 (11)	05:30		06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:39	22:09	18 21:33 (11)	21:49		20:49	19:34	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	21:15 (11)	05:32		06:24	07:19	08:15	08:14	08:50
	16:56	17:58	18:51	20:49	21:41	22:09	18 21:33 (11)	21:47		20:47	19:32	18:21	16:25	16:14
24	08:34	07:35	06:28	06:15	05:19	05:03	21:16 (11)	05:33		06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:50	21:42	22:09	17 21:33 (11)	21:46		20:45	19:30	18:18	16:24	16:15
25	08:32	07:33	06:26	06:12	05:18	05:03	21:16 (11)	05:35		06:28	07:23	07:19	08:17	08:51
	17:00	18:01	18:55	20:52	21:44	22:09	17 21:33 (11)	21:44		20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	21:16 (11)	05:36		06:30	07:25	07:21	08:19	08:51
	17:02	18:03	18:57	20:54	21:45	22:09	17 21:33 (11)	21:43		20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:16	05:04	21:17 (11)	05:38		06:32	07:27	07:22	08:21	08:52
	17:04	18:05	18:59	20:56	21:47	22:09	16 21:33 (11)	21:41		20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	05:04	21:17 (11)	05:40		06:33	07:28	07:24	08:22	08:52
	17:06	18:07	19:00	20:58	21:48	22:09	16 21:33 (11)	21:40		20:36	19:20	17:10	16:20	16:18
29	08:26		07:16	06:04	05:13	05:05	21:17 (11)	05:41		06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:49	22:09	16 21:33 (11)	21:38		20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:05	21:18 (11)	05:43		06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:01	21:51	22:08	15 21:33 (11)	21:36		20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11	21:17 (11)		05:44		06:39		07:30		08:52
	17:12		20:06		21:52	1 21:18 (11)		21:35		20:28		17:04		16:21
Potential sun hours	250	273	367	420	494	510		512		460	382	328	259	233
Total, worst case					1	418		110						
Sun reduction					0.31	0.26		0.22						
Oper. time red.					1.00	1.00		1.00						
Wind dir. red.					0.60	0.60		0.60						
Total reduction					0.19	0.16		0.13						
Total, real					0	65		15						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** CH - H095

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February			March		April	May	June
1	08:53	09:39 (2)	08:22			07:24	07:49 (1)	07:09	06:00	05:10
	16:23 32	10:11 (2)	17:14			18:10 28	08:17 (1)	20:08	21:04	21:54
2	08:52	09:39 (2)	08:20			07:22	07:49 (1)	07:07	05:58	05:09
	16:24 32	10:11 (2)	17:16			18:12 28	08:17 (1)	20:10	21:06	21:55
3	08:52	09:40 (2)	08:19			07:20	07:49 (1)	07:04	05:56	05:09
	16:25 32	10:12 (2)	17:18			18:14 26	08:15 (1)	20:12	21:07	21:56
4	08:52	09:41 (2)	08:17			07:17	07:50 (1)	07:02	05:54	05:08
	16:26 31	10:12 (2)	17:20			18:16 24	08:14 (1)	20:14	21:09	21:57
5	08:52	09:42 (2)	08:15			07:15	07:51 (1)	07:00	05:52	05:07
	16:27 30	10:12 (2)	17:22			18:18 23	08:14 (1)	20:16	21:11	21:58
6	08:51	09:42 (2)	08:13			07:13	07:52 (1)	06:57	05:50	05:06
	16:29 30	10:12 (2)	17:24			18:19 19	08:11 (1)	20:18	21:13	22:00
7	08:51	09:43 (2)	08:11			07:10	07:54 (1)	06:55	05:48	05:06
	16:30 30	10:13 (2)	17:26			18:21 15	08:09 (1)	20:19	21:15	22:01
8	08:50	09:44 (2)	08:09			07:08	07:56 (1)	06:52	05:46	05:05
	16:31 29	10:13 (2)	17:28			18:23 9	08:05 (1)	20:21	21:16	22:02
9	08:50	09:44 (2)	08:08			07:06		06:50	05:44	05:04
	16:33 28	10:12 (2)	17:30			18:25		20:23	21:18	22:02
10	08:49	09:45 (2)	08:06			07:03		06:47	05:42	05:04
	16:34 27	10:12 (2)	17:32			18:27		20:25	21:20	22:03
11	08:48	09:46 (2)	08:04			07:01		06:45	05:40	05:03
	16:36 26	10:12 (2)	17:34			18:29		20:27	21:22	22:04
12	08:47	09:47 (2)	08:02			06:58		06:43	05:39	05:03
	16:37 25	10:12 (2)	17:36			18:31		20:29	21:23	22:05
13	08:47	09:48 (2)	08:00			06:56		06:40	05:37	05:03
	16:39 23	10:11 (2)	17:38			18:33		20:31	21:25	22:06
14	08:46	09:49 (2)	07:58			06:53		06:38	05:35	05:02
	16:41 22	10:11 (2)	17:40			18:35		20:32	21:27	22:06
15	08:45	09:50 (2)	07:55			06:51		06:36	05:33	05:02
	16:42 20	10:10 (2)	17:42			18:37		20:34	21:29	22:07
16	08:44	09:52 (2)	07:53			06:49		06:33	05:32	05:02
	16:44 18	10:10 (2)	17:44			18:39		20:36	21:30	22:07
17	08:43	09:54 (2)	07:51			06:46		06:31	05:30	05:02
	16:46 15	10:09 (2)	17:46			18:40		20:38	21:32	22:08
18	08:42	09:57 (2)	07:49			06:44		06:29	05:28	05:02
	16:47 10	10:07 (2)	17:48			18:42		20:40	21:34	22:08
19	08:41		07:47			06:41		06:26	05:27	05:02
	16:49		17:50			18:44		20:42	21:35	22:09
20	08:40		07:45		08:10 (1)	06:39		06:24	05:25	05:02
	16:51		17:52	4	08:14 (1)	18:46		20:44	21:37	22:09
21	08:38		07:43		08:08 (1)	06:36		06:22	05:24	05:02
	16:53		17:54	7	08:15 (1)	18:48		20:45	21:38	22:09
22	08:37		07:40		08:06 (1)	06:34		06:20	05:22	05:02
	16:55		17:56	10	08:16 (1)	18:50		20:47	21:40	22:09
23	08:36		07:38		08:03 (1)	06:31		06:17	05:21	05:03
	16:57		17:58	13	08:16 (1)	18:52		20:49	21:41	22:10
24	08:34		07:36		08:01 (1)	06:29		06:15	05:20	05:03
	16:58		18:00	16	08:17 (1)	18:53		20:51	21:43	22:10
25	08:33		07:34		07:59 (1)	06:26		06:13	05:18	05:03
	17:00		18:02	19	08:18 (1)	18:55		20:53	21:44	22:10
26	08:32		07:31		07:56 (1)	06:24		06:11	05:17	05:04
	17:02		18:04	21	08:17 (1)	18:57		20:55	21:46	22:10
27	08:30		07:29		07:54 (1)	06:22		06:08	05:16	05:04
	17:04		18:06	24	08:18 (1)	18:59		20:56	21:47	22:10
28	08:29		07:27		07:52 (1)	06:19		06:06	05:15	05:05
	17:06		18:08	26	08:18 (1)	19:01		20:58	21:49	22:09
29	08:27					07:17		06:04	05:14	05:05
	17:08					20:03		21:00	21:50	22:09
30	08:25					07:14		06:02	05:12	05:06
	17:10					20:05		21:02	21:51	22:09
31	08:24					07:12			05:11	
	17:12					20:06			21:53	
Potential sun hours	250		273			367		420	494	510
Total, worst case	460		140			172				
Sun reduction	0.16		0.19			0.22				
Oper. time red.	1.00		1.00			1.00				
Wind dir. red.	0.61		0.63			0.63				
Total reduction	0.10		0.12			0.14				
Total, real	45		17			24				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** CH - H095

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July	August	September	October			November			December		
1	05:06	05:46	06:41	07:34			07:33			08:28		09:28 (2)
	22:09	21:33	20:27	19:13			17:02			16:18	26	09:54 (2)
2	05:07	05:48	06:43	07:36			07:35			08:29		09:28 (2)
	22:08	21:31	20:24	19:10			17:00			16:17	27	09:55 (2)
3	05:08	05:50	06:44	07:38			07:37			08:31		09:28 (2)
	22:08	21:30	20:22	19:08			16:58			16:16	28	09:56 (2)
4	05:09	05:52	06:46	07:40			07:38			08:32		09:28 (2)
	22:07	21:28	20:19	19:05			16:56			16:16	29	09:57 (2)
5	05:10	05:53	06:48	07:42			07:40			08:34		09:28 (2)
	22:07	21:26	20:17	19:03			16:54			16:15	30	09:58 (2)
6	05:11	05:55	06:50	07:43		08:31 (1)	07:42			08:35		09:28 (2)
	22:06	21:24	20:14	19:01	13	08:44 (1)	16:52			16:14	30	09:58 (2)
7	05:12	05:57	06:52	07:45		08:29 (1)	07:44			08:36		09:29 (2)
	22:06	21:22	20:12	18:58	17	08:46 (1)	16:50			16:14	30	09:59 (2)
8	05:13	05:58	06:53	07:47		08:27 (1)	07:46			08:38		09:28 (2)
	22:05	21:20	20:10	18:56	21	08:48 (1)	16:49			16:13	31	09:59 (2)
9	05:14	06:00	06:55	07:49		08:25 (1)	07:48			08:39		09:28 (2)
	22:04	21:18	20:07	18:53	24	08:49 (1)	16:47			16:13	32	10:00 (2)
10	05:15	06:02	06:57	07:51		08:23 (1)	07:50			08:40		09:29 (2)
	22:03	21:16	20:05	18:51	26	08:49 (1)	16:45			16:13	32	10:01 (2)
11	05:16	06:04	06:59	07:53		08:22 (1)	07:52			08:41		09:29 (2)
	22:02	21:14	20:02	18:49	27	08:49 (1)	16:43			16:13	32	10:01 (2)
12	05:17	06:05	07:00	07:54		08:22 (1)	07:54			08:42		09:30 (2)
	22:01	21:12	20:00	18:46	28	08:50 (1)	16:42			16:12	32	10:02 (2)
13	05:18	06:07	07:02	07:56		08:23 (1)	07:56			08:43		09:30 (2)
	22:00	21:10	19:57	18:44	27	08:50 (1)	16:40			16:12	32	10:02 (2)
14	05:20	06:09	07:04	07:58		08:25 (1)	07:58			08:44		09:30 (2)
	21:59	21:08	19:55	18:41	25	08:50 (1)	16:38			16:12	33	10:03 (2)
15	05:21	06:11	07:06	08:00		08:27 (1)	08:00			08:45		09:31 (2)
	21:58	21:05	19:52	18:39	23	08:50 (1)	16:37			16:12	32	10:03 (2)
16	05:22	06:12	07:07	08:02		08:29 (1)	08:02			08:46		09:31 (2)
	21:57	21:03	19:50	18:37	20	08:49 (1)	16:35			16:12	33	10:04 (2)
17	05:23	06:14	07:09	08:04		08:31 (1)	08:03			08:47		09:32 (2)
	21:56	21:01	19:47	18:35	18	08:49 (1)	16:34			16:13	33	10:05 (2)
18	05:25	06:16	07:11	08:06		08:33 (1)	08:05			08:48		09:32 (2)
	21:55	20:59	19:45	18:32	15	08:48 (1)	16:32			16:13	33	10:05 (2)
19	05:26	06:18	07:13	08:08		08:35 (1)	08:07			08:49		09:32 (2)
	21:53	20:57	19:42	18:30	12	08:47 (1)	16:31			16:13	33	10:05 (2)
20	05:28	06:20	07:15	08:09		08:37 (1)	08:09			08:49		09:33 (2)
	21:52	20:54	19:40	18:28	9	08:46 (1)	16:30			16:13	33	10:06 (2)
21	05:29	06:21	07:16	08:11		08:39 (1)	08:11			08:50		09:33 (2)
	21:51	20:52	19:37	18:25	6	08:45 (1)	16:28			16:14	33	10:06 (2)
22	05:31	06:23	07:18	08:13		08:41 (1)	08:13			08:50		09:34 (2)
	21:49	20:50	19:35	18:23	3	08:44 (1)	16:27			16:14	33	10:07 (2)
23	05:32	06:25	07:20	08:15			08:14			08:51		09:34 (2)
	21:48	20:48	19:32	18:21			16:26			16:15	33	10:07 (2)
24	05:34	06:27	07:22	08:17			08:16		09:34 (2)	08:51		09:35 (2)
	21:46	20:45	19:30	18:19			16:25	10	09:44 (2)	16:15	33	10:08 (2)
25	05:35	06:28	07:23	07:19			08:18		09:32 (2)	08:52		09:35 (2)
	21:45	20:43	19:28	17:17			16:23	15	09:47 (2)	16:16	33	10:08 (2)
26	05:37	06:30	07:25	07:21			08:20		09:31 (2)	08:52		09:36 (2)
	21:43	20:41	19:25	17:14			16:22	18	09:49 (2)	16:17	33	10:09 (2)
27	05:38	06:32	07:27	07:23			08:21		09:30 (2)	08:52		09:36 (2)
	21:42	20:38	19:23	17:12			16:21	19	09:49 (2)	16:17	33	10:09 (2)
28	05:40	06:34	07:29	07:25			08:23		09:29 (2)	08:52		09:36 (2)
	21:40	20:36	19:20	17:10			16:20	22	09:51 (2)	16:18	33	10:09 (2)
29	05:42	06:36	07:31	07:27			08:25		09:29 (2)	08:53		09:37 (2)
	21:38	20:34	19:18	17:08			16:19	23	09:52 (2)	16:19	33	10:10 (2)
30	05:43	06:37	07:32	07:29			08:26		09:29 (2)	08:53		09:38 (2)
	21:37	20:31	19:15	17:06			16:18	25	09:54 (2)	16:20	32	10:10 (2)
31	05:45	06:39		07:31						08:53		09:38 (2)
	21:35	20:29		17:04						16:21	33	10:11 (2)
Potential sun hours	512	460	382	328			259			233		
Total, worst case					314			132			983	
Sun reduction					0.23			0.20			0.12	
Oper. time red.					1.00			1.00			1.00	
Wind dir. red.					0.63			0.61			0.61	
Total reduction					0.14			0.12			0.07	
Total, real					45			16			72	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** CI - H096

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March	April	May	June	July	August	September	October		November		December
1	08:52		08:22		16:19 (1)	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34		07:33	15:54 (1)	08:28
	16:22		17:14	23	16:42 (1)	18:10	20:08	21:04	21:54	22:09	21:33	20:26	19:13		17:02	23 16:17 (1)	16:18
2	08:52		08:20		16:19 (1)	07:22	07:07	05:58	05:09	05:07	05:48	06:43	07:36		07:34	15:52 (1)	08:29
	16:23		17:16	25	16:44 (1)	18:12	20:10	21:06	21:55	22:08	21:31	20:24	19:10		17:00	26 16:18 (1)	16:17
3	08:52		08:19		16:19 (1)	07:20	07:04	05:56	05:08	05:08	05:50	06:44	07:38		07:36	15:52 (1)	08:31
	16:25		17:18	27	16:46 (1)	18:14	20:12	21:07	21:56	22:08	21:29	20:22	19:08		16:58	26 16:18 (1)	16:16
4	08:52		08:17		16:20 (1)	07:17	07:02	05:54	05:08	05:09	05:51	06:46	07:40		07:38	15:51 (1)	08:32
	16:26		17:20	28	16:48 (1)	18:15	20:14	21:09	21:57	22:07	21:28	20:19	19:05		16:56	28 16:19 (1)	16:15
5	08:51		08:15		16:20 (1)	07:15	06:59	05:52	05:07	05:10	05:53	06:48	07:41		07:40	15:50 (1)	08:33
	16:27		17:22	30	16:50 (1)	18:17	20:16	21:11	21:58	22:07	21:26	20:17	19:03		16:54	29 16:19 (1)	16:15
6	08:51		08:13		16:21 (1)	07:13	06:57	05:50	05:06	05:10	05:55	06:50	07:43		07:42	15:51 (1)	08:35
	16:28		17:24	28	16:49 (1)	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00		16:52	29 16:20 (1)	16:14
7	08:51		08:11		16:21 (1)	07:10	06:55	05:48	05:05	05:11	05:57	06:51	07:45		07:44	15:50 (1)	08:36
	16:30		17:26	28	16:49 (1)	18:21	20:19	21:15	22:00	22:05	21:22	20:12	18:58		16:50	29 16:19 (1)	16:14
8	08:50		08:09		16:22 (1)	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47		07:46	15:50 (1)	08:38
	16:31		17:28	26	16:48 (1)	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:56		16:49	27 16:17 (1)	16:13
9	08:49		08:07		16:23 (1)	07:05	06:50	05:44	05:04	05:14	06:00	06:55	07:49		07:48	15:50 (1)	08:39
	16:33		17:30	25	16:48 (1)	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53		16:47	24 16:14 (1)	16:13
10	08:49		08:05		16:24 (1)	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51		07:50	15:50 (1)	08:40
	16:34		17:32	23	16:47 (1)	18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51		16:45	22 16:12 (1)	16:13
11	08:48		08:03		16:26 (1)	07:01	06:45	05:40	05:03	05:16	06:04	06:58	07:52		07:52	15:50 (1)	08:41
	16:36		17:34	20	16:46 (1)	18:29	20:27	21:22	22:04	22:02	21:14	20:02	18:48		16:43	20 16:10 (1)	16:12
12	08:47		08:01		16:28 (1)	06:58	06:43	05:38	05:03	05:17	06:05	07:00	07:54		07:54	15:51 (1)	08:42
	16:37		17:36	16	16:44 (1)	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46		16:42	18 16:09 (1)	16:12
13	08:47		07:59		16:31 (1)	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56		07:56	15:51 (1)	08:43
	16:39		17:38	11	16:42 (1)	18:33	20:30	21:25	22:05	22:00	21:10	19:57	18:44		16:40	16 16:07 (1)	16:12
14	08:46		07:57			06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58		07:58	15:52 (1)	08:44
	16:40		17:40			18:35	20:32	21:27	22:06	21:59	21:07	19:55	18:41		16:38	13 16:05 (1)	16:12
15	08:45		07:55			06:51	06:35	05:33	05:02	05:21	06:11	07:06	08:00		08:00	15:53 (1)	08:45
	16:42		17:42			18:36	20:34	21:28	22:07	21:58	21:05	19:52	18:39		16:37	11 16:04 (1)	16:12
16	08:44		07:53			06:48	06:33	05:32	05:02	05:22	06:12	07:07	08:02		08:01	15:54 (1)	08:46
	16:44		17:44			18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37		16:35	8 16:02 (1)	16:12
17	08:43		07:51			06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04		08:03	15:55 (1)	08:47
	16:46		17:46			18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34		16:34	5 16:00 (1)	16:12
18	08:42		07:49			06:44	06:29	05:28	05:02	05:25	06:16	07:11	08:06		08:05	15:56 (1)	08:48
	16:47		17:48			18:42	20:40	21:33	22:08	21:55	20:59	19:45	18:32		16:32	3 15:59 (1)	16:13
19	08:41		07:47			06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07		08:07		08:48
	16:49		17:50			18:44	20:42	21:35	22:09	21:53	20:57	19:42	18:30		16:31		16:13
20	08:39		07:45			06:39	06:24	05:25	05:02	05:27	06:19	07:14	08:09		08:09		08:49
	16:51		17:52			18:46	20:43	21:37	22:09	21:52	20:54	19:40	18:28		16:29		16:13
21	08:38		07:42			06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11		08:11		08:50
	16:53		17:54			18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25		16:28		16:14
22	08:37		07:40			06:34	06:19	05:22	05:02	05:30	06:23	07:18	08:13		08:12		08:50
	16:54		17:56			18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23		16:27		16:14
23	08:36		07:38			06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15		08:14		08:51
	16:56		17:58			18:51	20:49	21:41	22:09	21:48	20:48	19:32	18:21		16:26		16:15
24	08:34		07:36			06:29	06:15	05:20	05:03	05:33	06:27	07:22	08:17		08:16		08:51
	16:58	3 16:25 (1)	18:00			18:53	20:51	21:43	22:10	21:46	20:45	19:30	18:19		16:24		16:15
25	08:33		07:34			06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19		08:18		08:52
	17:00	5 16:26 (1)	18:02			18:55	20:53	21:44	22:10	21:45	20:43	19:27	17:16		16:23		16:16
26	08:31		07:31			06:24	06:11	05:17	05:03	05:37	06:30	07:25	07:21		08:19		08:52
	17:02	8 16:29 (1)	18:04			18:57	20:55	21:46	22:10	21:43	20:41	19:25	17:14		16:22		16:17
27	08:30		07:29			06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23		08:21		08:52
	17:04	11 16:31 (1)	18:06			18:59	20:56	21:47	22:09	21:42	20:38	19:22	17:12		16:21		16:17
28	08:28		07:27			06:19	06:06	05:15	05:04	05:40	06:34	07:29	07:25		08:23		08:52
	17:06	13 16:33 (1)	18:08			19:01	20:58	21:49	22:09	21:40	20:36	19:20	17:10		16:20		16:18
29	08:27					07:16	06:04	05:13	05:05	05:41	06:35	07:31	07:27	16:00 (1)	08:24		08:52
	17:08	16 16:35 (1)				20:03	21:00	21:50	22:09	21:38	20:34	19:17	17:08	12 16:12 (1)	16:19		16:19
30	08:25					07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:29	15:57 (1)	08:26		08:52
	17:10	18 16:38 (1)				20:04	21:02	21:51	22:09	21:37	20:31	19:15	17:06	17 16:14 (1)	16:18		16:20
31	08:24					07:12		05:11		05:45	06:39		07:31	15:55 (1)			08:52
	17:12	20 16:40 (1)				20:06		21:53		21:35	20:29		17:04	21 16:16 (1)			16:21
Potential sun hours	250		273			367	420	494	510	513	460	382	328		259		233
Total, worst case		94		310										50		357	
Sun reduction		0.16		0.19										0.23		0.20	
Oper. time red.		1.00		1.00										1.00		1.00	
Wind dir. red.		0.64		0.64										0.64		0.64	
Total reduction		0.10		0.13										0.15		0.13	
Total, real		10		39										7		45	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** CJ - H097

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June		July		August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:11		05:07		05:40 (3)	05:47	06:41	07:34	07:33	08:28
	16:23	17:14	18:10	20:08	21:04	21:54		22:09	4	05:44 (3)	21:33	20:27	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:10		05:07		05:40 (3)	05:48	06:43	07:36	07:35	08:29
	16:24	17:16	18:12	20:10	21:06	21:55		22:08	3	05:43 (3)	21:31	20:24	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04	05:56	05:09		05:08		05:41 (3)	05:50	06:44	07:38	07:36	08:31
	16:25	17:18	18:14	20:12	21:07	21:56		22:08	2	05:43 (3)	21:30	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08		05:09		05:42 (3)	05:52	06:46	07:40	07:38	08:32
	16:26	17:20	18:16	20:14	21:09	21:57		22:07	2	05:44 (3)	21:28	20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	07:00	05:52	05:07		05:10		05:43 (3)	05:53	06:48	07:42	07:40	08:34
	16:27	17:22	18:18	20:16	21:11	21:58		22:07	1	05:44 (3)	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06		05:11			05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:18	21:13	21:59		22:06			21:24	20:14	19:01	16:52	16:14
7	08:51	08:11	07:10	06:55	05:48	05:06		05:12			05:57	06:52	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:15	22:00	1	05:38 (3)			21:22	20:12	18:58	16:51	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05		05:37 (3)			05:58	06:53	07:47	07:46	08:38
	16:31	17:28	18:23	20:21	21:16	22:01	1	05:38 (3)			21:20	20:10	18:56	16:49	16:14
9	08:49	08:07	07:06	06:50	05:44	05:05		05:36 (3)			06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	2	05:38 (3)			21:18	20:07	18:53	16:47	16:13
10	08:49	08:06	07:03	06:47	05:42	05:04		05:36 (3)			06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	3	05:39 (3)			21:16	20:05	18:51	16:45	16:13
11	08:48	08:04	07:01	06:45	05:40	05:04		05:36 (3)			06:04	06:59	07:53	07:52	08:41
	16:36	17:34	18:29	20:27	21:22	22:04	3	05:39 (3)			21:14	20:02	18:49	16:43	16:13
12	08:47	08:02	06:58	06:43	05:39	05:03		05:35 (3)			06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	4	05:39 (3)			21:12	20:00	18:46	16:42	16:13
13	08:47	08:00	06:56	06:40	05:37	05:03		05:35 (3)			06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:31	21:25	22:05	5	05:40 (3)			21:10	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:03		05:35 (3)			06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	5	05:40 (3)			21:08	19:55	18:41	16:39	16:12
15	08:45	07:55	06:51	06:36	05:33	05:02		05:35 (3)			06:11	07:06	08:00	08:00	08:45
	16:42	17:42	18:37	20:34	21:28	22:07	5	05:40 (3)			21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:49	06:33	05:32	05:02		05:35 (3)			06:13	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	6	05:41 (3)			21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02		05:35 (3)			06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	6	05:41 (3)			21:01	19:47	18:35	16:34	16:13
18	08:42	07:49	06:44	06:29	05:29	05:02		05:35 (3)			06:16	07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	6	05:41 (3)			20:59	19:45	18:32	16:32	16:13
19	08:41	07:47	06:41	06:26	05:27	05:02		05:35 (3)			06:18	07:13	08:08	08:07	08:48
	16:49	17:50	18:44	20:42	21:35	22:09	6	05:41 (3)			20:57	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02		05:35 (3)			06:20	07:15	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:37	22:09	6	05:41 (3)			20:54	19:40	18:28	16:30	16:13
21	08:38	07:43	06:36	06:22	05:24	05:02		05:35 (3)			06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	6	05:41 (3)			20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:20	05:23	05:02		05:35 (3)			06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	6	05:41 (3)			20:50	19:35	18:23	16:27	16:14
23	08:36	07:38	06:31	06:17	05:21	05:03		05:36 (3)			06:25	07:20	08:15	08:14	08:51
	16:57	17:58	18:52	20:49	21:41	22:09	6	05:42 (3)			20:48	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03		05:36 (3)			06:27	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:10	6	05:42 (3)			20:45	19:30	18:19	16:25	16:15
25	08:33	07:34	06:26	06:13	05:18	05:03		05:36 (3)			06:28	07:23	07:19	08:18	08:52
	17:00	18:02	18:55	20:53	21:44	22:10	6	05:42 (3)			20:43	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04		05:37 (3)			06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:55	21:46	22:10	6	05:43 (3)			20:41	19:25	17:15	16:22	16:17
27	08:30	07:29	06:22	06:09	05:16	05:04		05:37 (3)			06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	5	05:42 (3)			20:38	19:23	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	05:15	05:05		05:38 (3)			06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:49	22:09	5	05:43 (3)			20:36	19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	05:14	05:05		05:38 (3)			06:36	07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	5	05:43 (3)			20:34	19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	05:13	05:06		05:39 (3)			06:37	07:32	07:29	08:26	08:52
	17:10		20:05	21:02	21:51	22:09	4	05:43 (3)			20:31	19:15	17:06	16:19	16:20
31	08:24		07:12		05:12						06:39		07:31		08:52
	17:12		20:06		21:53						20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510		512		460	382	328	259	233	
Total, worst case						114		12							
Sun reduction						0.26		0.22							
Oper. time red.						1.00		1.00							
Wind dir. red.						0.65		0.65							
Total reduction						0.17		0.14							
Total, real						19		2							

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** CK - H098

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March		April	May	June
1	08:53		08:22		08:50 (2)		07:09	06:00	05:10
	16:23		17:14	6	08:56 (2)		20:08	21:04	21:54
2	08:52		08:20		08:48 (2)		07:07	05:58	05:10
	16:24		17:16	9	08:57 (2)		20:10	21:06	21:55
3	08:52		08:19		08:46 (2)		07:04	05:56	05:09
	16:25		17:18	12	08:58 (2)		20:12	21:07	21:56
4	08:52		08:17		08:44 (2)		07:02	05:54	05:08
	16:26		17:20	15	08:59 (2)		20:14	21:09	21:57
5	08:52		08:15		08:42 (2)		07:00	05:52	05:07
	16:27		17:22	18	09:00 (2)		20:16	21:11	21:58
6	08:51		08:13		08:40 (2)		06:57	05:50	05:06
	16:29		17:24	20	09:00 (2)		20:18	21:13	22:00
7	08:51		08:11		08:38 (2)		06:55	05:48	05:06
	16:30		17:26	23	09:01 (2)		20:19	21:15	22:01
8	08:50		08:09		08:36 (2)		06:52	05:46	05:05
	16:31		17:28	25	09:01 (2)		20:21	21:16	22:02
9	08:50		08:08		08:34 (2)		06:50	05:44	05:04
	16:33		17:30	27	09:01 (2)		20:23	21:18	22:02
10	08:49		08:06		08:32 (2)		06:47	05:42	05:04
	16:34		17:32	30	09:02 (2)		20:25	21:20	22:03
11	08:48		08:04		08:30 (2)		06:45	05:40	05:03
	16:36		17:34	32	09:02 (2)		20:27	21:22	22:04
12	08:47		08:02		08:30 (2)		06:43	05:39	05:03
	16:37		17:36	32	09:02 (2)		20:29	21:23	22:05
13	08:47		08:00		08:30 (2)		06:40	05:37	05:03
	16:39		17:38	31	09:01 (2)		20:31	21:25	22:06
14	08:46		07:58		08:31 (2)		06:38	05:35	05:02
	16:41		17:40	30	09:01 (2)		20:32	21:27	22:06
15	08:45		07:55		08:31 (2)		06:36	05:33	05:02
	16:42		17:42	29	09:00 (2)		20:34	21:29	22:07
16	08:44		07:53		08:32 (2)		07:12 (1)	06:33	05:32	05:02
	16:44		17:44	27	08:59 (2)		18:39	1	07:13 (1)	20:36	21:30	22:07
17	08:43		07:51		08:33 (2)		06:46		07:10 (1)	06:31	05:30	05:02
	16:46		17:46	25	08:58 (2)		18:40	4	07:14 (1)	20:38	21:32	22:08
18	08:42		07:49		08:35 (2)		06:44		07:08 (1)	06:29	05:29	05:02
	16:47		17:48	22	08:57 (2)		18:42	8	07:16 (1)	20:40	21:34	22:08
19	08:41		07:47		08:36 (2)		06:41		07:05 (1)	06:26	05:27	05:02
	16:49		17:50	19	08:55 (2)		18:44	10	07:15 (1)	20:42	21:35	22:09
20	08:40		07:45		08:38 (2)		06:39		07:03 (1)	06:24	05:25	05:02
	16:51		17:52	14	08:52 (2)		18:46	13	07:16 (1)	20:44	21:37	22:09
21	08:38		07:43		08:43 (2)		06:36		07:00 (1)	06:22	05:24	05:02
	16:53		17:54	4	08:47 (2)		18:48	15	07:15 (1)	20:45	21:38	22:09
22	08:37		07:40				06:34		06:58 (1)	06:20	05:22	05:02
	16:55		17:56				18:50	18	07:16 (1)	20:47	21:40	22:09
23	08:36		07:38				06:31		06:55 (1)	06:17	05:21	05:03
	16:57		17:58				18:52	20	07:15 (1)	20:49	21:41	22:10
24	08:34		07:36				06:29		06:53 (1)	06:15	05:20	05:03
	16:58		18:00				18:53	21	07:14 (1)	20:51	21:43	22:10
25	08:33		07:34				06:26		06:50 (1)	06:13	05:18	05:03
	17:00		18:02				18:55	23	07:13 (1)	20:53	21:44	22:10
26	08:32		07:31				06:24		06:51 (1)	06:11	05:17	05:04
	17:02		18:04				18:57	21	07:12 (1)	20:55	21:46	22:10
27	08:30		07:29				06:22		06:52 (1)	06:09	05:16	05:04
	17:04		18:06				18:59	18	07:10 (1)	20:56	21:47	22:10
28	08:29		07:27				06:19		06:54 (1)	06:06	05:15	05:05
	17:06		18:08				19:01	14	07:08 (1)	20:58	21:49	22:09
29	08:27						07:17		07:56 (1)	06:04	05:14	05:05
	17:08						20:03	9	08:05 (1)	21:00	21:50	22:09
30	08:25						07:14			06:02	05:12	05:06
	17:10						20:05			21:02	21:51	22:09
31	08:24	08:52 (2)					07:12				05:11	
	17:12	3 08:55 (2)					20:06				21:53	
Potential sun hours	250		273		367			420	494	510		
Total, worst case	3			450		195						
Sun reduction	0.16			0.19		0.22						
Oper. time red.	1.00			1.00		1.00						
Wind dir. red.	0.60			0.60		0.64						
Total reduction	0.10			0.12		0.14						
Total, real	0			53		27						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** CK - H098

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July	August	September		October		November		December
1	05:07	05:47	06:41		07:34		07:33	08:02 (2)	08:28
	22:09	21:33	20:27		19:13		17:02 29	08:31 (2)	16:18
2	05:07	05:48	06:43		07:36		07:35	08:04 (2)	08:29
	22:08	21:31	20:24		19:10		17:00 27	08:31 (2)	16:17
3	05:08	05:50	06:44		07:38		07:37	08:06 (2)	08:31
	22:08	21:30	20:22		19:08		16:58 25	08:31 (2)	16:16
4	05:09	05:52	06:46		07:40		07:38	08:08 (2)	08:32
	22:07	21:28	20:19		19:05		16:56 22	08:30 (2)	16:16
5	05:10	05:53	06:48		07:42		07:40	08:11 (2)	08:34
	22:07	21:26	20:17		19:03		16:54 20	08:31 (2)	16:15
6	05:11	05:55	06:50		07:43		07:42	08:13 (2)	08:35
	22:06	21:24	20:14		19:01		16:52 17	08:30 (2)	16:14
7	05:12	05:57	06:52		07:45		07:44	08:15 (2)	08:36
	22:06	21:22	20:12		18:58		16:51 15	08:30 (2)	16:14
8	05:13	05:58	06:53		07:47		07:46	08:17 (2)	08:38
	22:05	21:20	20:10		18:56		16:49 12	08:29 (2)	16:14
9	05:14	06:00	06:55		07:49		07:48	08:19 (2)	08:39
	22:04	21:18	20:07		18:53		16:47 9	08:28 (2)	16:13
10	05:15	06:02	06:57		07:51		07:50	08:21 (2)	08:40
	22:03	21:16	20:05		18:51		16:45 6	08:27 (2)	16:13
11	05:16	06:04	06:59		07:53		07:52	08:23 (2)	08:41
	22:02	21:14	20:02		18:49		16:43 3	08:26 (2)	16:13
12	05:17	06:05	07:00		07:54		07:54		08:42
	22:01	21:12	20:00		18:46		16:42		16:12
13	05:18	06:07	07:02		07:56		07:56		08:43
	22:00	21:10	19:57		18:44		16:40		16:12
14	05:20	06:09	07:04	07:47 (1)	07:58		07:58		08:44
	21:59	21:08	19:55 7	07:54 (1)	18:41		16:38		16:12
15	05:21	06:11	07:06	07:43 (1)	08:00		08:00		08:45
	21:58	21:05	19:52 14	07:57 (1)	18:39		16:37		16:12
16	05:22	06:12	07:07	07:42 (1)	08:02		08:02		08:46
	21:57	21:03	19:50 17	07:59 (1)	18:37		16:35		16:12
17	05:23	06:14	07:09	07:40 (1)	08:04		08:03		08:47
	21:56	21:01	19:47 20	08:00 (1)	18:35		16:34		16:13
18	05:25	06:16	07:11	07:38 (1)	08:06		08:05		08:48
	21:55	20:59	19:45 22	08:00 (1)	18:32		16:32		16:13
19	05:26	06:18	07:13	07:39 (1)	08:08		08:07		08:49
	21:53	20:57	19:42 22	08:01 (1)	18:30		16:31		16:13
20	05:28	06:20	07:15	07:41 (1)	08:09		08:09		08:49
	21:52	20:54	19:40 20	08:01 (1)	18:28		16:30		16:13
21	05:29	06:21	07:16	07:43 (1)	08:11	09:11 (2)	08:11		08:50
	21:51	20:52	19:37 18	08:01 (1)	18:25 9	09:20 (2)	16:28		16:14
22	05:31	06:23	07:18	07:44 (1)	08:13	09:08 (2)	08:13		08:50
	21:49	20:50	19:35 16	08:00 (1)	18:23 15	09:23 (2)	16:27		16:14
23	05:32	06:25	07:20	07:46 (1)	08:15	09:05 (2)	08:14		08:51
	21:48	20:48	19:32 14	08:00 (1)	18:21 20	09:25 (2)	16:26		16:15
24	05:34	06:27	07:22	07:48 (1)	08:17	09:04 (2)	08:16		08:51
	21:46	20:45	19:30 11	07:59 (1)	18:19 23	09:27 (2)	16:25		16:15
25	05:35	06:28	07:23	07:50 (1)	07:19	08:02 (2)	08:18		08:52
	21:45	20:43	19:28 8	07:58 (1)	17:17 26	08:28 (2)	16:23		16:16
26	05:37	06:30	07:25	07:52 (1)	07:21	08:01 (2)	08:20		08:52
	21:43	20:41	19:25 5	07:57 (1)	17:15 28	08:29 (2)	16:22		16:17
27	05:38	06:32	07:27	07:53 (1)	07:23	08:01 (2)	08:21		08:52
	21:42	20:38	19:23 2	07:55 (1)	17:12 29	08:30 (2)	16:21		16:18
28	05:40	06:34	07:29		07:25	08:00 (2)	08:23		08:52
	21:40	20:36	19:20		17:10 31	08:31 (2)	16:20		16:18
29	05:42	06:36	07:31		07:27	08:00 (2)	08:25		08:53
	21:38	20:34	19:18		17:08 31	08:31 (2)	16:19		16:19
30	05:43	06:37	07:32		07:29	07:59 (2)	08:26		08:53
	21:37	20:31	19:15		17:06 32	08:31 (2)	16:19		16:20
31	05:45	06:39			07:31	08:00 (2)			08:53
	21:35	20:29			17:04 31	08:31 (2)			16:21
Potential sun hours	512	460	382		328		259		233
Total, worst case			196		275		185		
Sun reduction			0.25		0.23		0.20		
Oper. time red.			1.00		1.00		1.00		
Wind dir. red.			0.64		0.60		0.60		
Total reduction			0.16		0.14		0.12		
Total, real			32		38		22		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** CL - H099

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March		April	May	June
1	08:53		08:22	09:06 (2)	07:24		07:09	06:00	05:10
	16:23		17:14	27 09:33 (2)	18:10		20:08	21:04	21:54
2	08:52		08:20	09:07 (2)	07:22		07:07	05:58	05:10
	16:24		17:16	25 09:32 (2)	18:12		20:10	21:06	21:55
3	08:52		08:19	09:09 (2)	07:20		07:04	05:56	05:09
	16:25		17:18	22 09:31 (2)	18:14		20:12	21:07	21:56
4	08:52		08:17	09:10 (2)	07:17		07:02	05:54	05:08
	16:26		17:20	20 09:30 (2)	18:16		20:14	21:09	21:57
5	08:52		08:15	09:12 (2)	07:15		07:40 (1)	07:00	05:52	05:07
	16:27		17:22	16 09:28 (2)	18:18	2	07:42 (1)	20:16	21:11	21:59
6	08:51		08:13	09:15 (2)	07:13		07:37 (1)	06:57	05:50	05:06
	16:29		17:24	10 09:25 (2)	18:19	5	07:42 (1)	20:18	21:13	22:00
7	08:51		08:11		07:10		07:35 (1)	06:55	05:48	05:06
	16:30		17:26		18:21	9	07:44 (1)	20:19	21:15	22:01
8	08:50		08:09		07:08		07:32 (1)	06:52	05:46	05:05
	16:31		17:28		18:23	12	07:44 (1)	20:21	21:16	22:02
9	08:50	09:22 (2)	08:08		07:06		07:30 (1)	06:50	05:44	05:04
	16:33	2 09:24 (2)	17:30		18:25	14	07:44 (1)	20:23	21:18	22:02
10	08:49	09:21 (2)	08:06		07:03		07:27 (1)	06:47	05:42	05:04
	16:34	4 09:25 (2)	17:32		18:27	17	07:44 (1)	20:25	21:20	22:03
11	08:48	09:20 (2)	08:04		07:01		07:25 (1)	06:45	05:40	05:03
	16:36	6 09:26 (2)	17:34		18:29	19	07:44 (1)	20:27	21:22	22:04
12	08:47	09:19 (2)	08:02		06:58		07:22 (1)	06:43	05:39	05:03
	16:37	7 09:26 (2)	17:36		18:31	21	07:43 (1)	20:29	21:23	22:05
13	08:47	09:18 (2)	08:00		06:56		07:20 (1)	06:40	05:37	05:03
	16:39	9 09:27 (2)	17:38		18:33	23	07:43 (1)	20:31	21:25	22:06
14	08:46	09:17 (2)	07:58		06:53		07:17 (1)	06:38	05:35	05:02
	16:41	11 09:28 (2)	17:40		18:35	25	07:42 (1)	20:32	21:27	22:06
15	08:45	09:16 (2)	07:55		06:51		07:18 (1)	06:36	05:33	05:02
	16:42	13 09:29 (2)	17:42		18:37	23	07:41 (1)	20:34	21:29	22:07
16	08:44	09:15 (2)	07:53		06:49		07:19 (1)	06:33	05:32	05:02
	16:44	15 09:30 (2)	17:44		18:39	20	07:39 (1)	20:36	21:30	22:07
17	08:43	09:14 (2)	07:51		06:46		07:20 (1)	06:31	05:30	05:02
	16:46	17 09:31 (2)	17:46		18:40	18	07:38 (1)	20:38	21:32	22:08
18	08:42	09:13 (2)	07:49		06:44		07:22 (1)	06:29	05:28	05:02
	16:47	19 09:32 (2)	17:48		18:42	14	07:36 (1)	20:40	21:34	22:08
19	08:41	09:11 (2)	07:47		06:41		07:25 (1)	06:26	05:27	05:02
	16:49	21 09:32 (2)	17:50		18:44	7	07:32 (1)	20:42	21:35	22:09
20	08:40	09:10 (2)	07:45		06:39			06:24	05:25	05:02
	16:51	23 09:33 (2)	17:52		18:46			20:44	21:37	22:09
21	08:38	09:08 (2)	07:43		06:36			06:22	05:24	05:02
	16:53	25 09:33 (2)	17:54		18:48			20:45	21:38	22:09
22	08:37	09:07 (2)	07:40		06:34			06:20	05:22	05:02
	16:55	27 09:34 (2)	17:56		18:50			20:47	21:40	22:09
23	08:36	09:05 (2)	07:38		06:31			06:17	05:21	05:03
	16:57	29 09:34 (2)	17:58		18:52			20:49	21:41	22:10
24	08:34	09:04 (2)	07:36		06:29			06:15	05:20	05:03
	16:58	31 09:35 (2)	18:00		18:53			20:51	21:43	22:10
25	08:33	09:02 (2)	07:34		06:26			06:13	05:18	05:03
	17:00	32 09:34 (2)	18:02		18:55			20:53	21:44	22:10
26	08:32	09:03 (2)	07:31		06:24			06:11	05:17	05:04
	17:02	32 09:35 (2)	18:04		18:57			20:55	21:46	22:10
27	08:30	09:03 (2)	07:29		06:22			06:08	05:16	05:04
	17:04	32 09:35 (2)	18:06		18:59			20:56	21:47	22:10
28	08:29	09:03 (2)	07:27		06:19			06:06	05:15	05:05
	17:06	31 09:34 (2)	18:08		19:01			20:58	21:49	22:09
29	08:27	09:05 (2)			07:17			06:04	05:14	05:05
	17:08	30 09:35 (2)			20:03			21:00	21:50	22:09
30	08:25	09:05 (2)			07:14			06:02	05:12	05:06
	17:10	29 09:34 (2)			20:05			21:02	21:51	22:09
31	08:24	09:06 (2)			07:12				05:11	
	17:12	28 09:34 (2)			20:06				21:53	
Potential sun hours	250		273		367		420	494	510	
Total, worst case	473		120		229					
Sun reduction	0.16		0.19		0.22					
Oper. time red.	1.00		1.00		1.00					
Wind dir. red.	0.61		0.61		0.63					
Total reduction	0.10		0.12		0.14					
Total, real	47		14		32					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** CL - H099

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July	August	September			October			November			December		
1	05:07	05:47	06:41			07:34		08:01 (1)	07:33			08:28		09:02 (2)
	22:09	21:33	20:27			19:13	22	08:23 (1)	17:02			16:18	6	09:08 (2)
2	05:07	05:48	06:43			07:36		08:02 (1)	07:35			08:29		09:04 (2)
	22:08	21:31	20:24			19:10	20	08:22 (1)	17:00			16:17	4	09:08 (2)
3	05:08	05:50	06:44			07:38		08:04 (1)	07:37			08:31		09:06 (2)
	22:08	21:30	20:22			19:08	18	08:22 (1)	16:58			16:16	2	09:08 (2)
4	05:09	05:52	06:46			07:40		08:06 (1)	07:38			08:32		
	22:07	21:28	20:19			19:05	16	08:22 (1)	16:56			16:16		
5	05:10	05:53	06:48			07:42		08:08 (1)	07:40		08:45 (2)	08:34		
	22:07	21:26	20:17			19:03	13	08:21 (1)	16:54	11	08:56 (2)	16:15		
6	05:11	05:55	06:50			07:43		08:10 (1)	07:42		08:43 (2)	08:35		
	22:06	21:24	20:14			19:01	10	08:20 (1)	16:52	16	08:59 (2)	16:14		
7	05:12	05:57	06:52			07:45		08:12 (1)	07:44		08:41 (2)	08:36		
	22:06	21:22	20:12			18:58	7	08:19 (1)	16:51	20	09:01 (2)	16:14		
8	05:13	05:58	06:53			07:47		08:14 (1)	07:46		08:39 (2)	08:38		
	22:05	21:20	20:10			18:56	4	08:18 (1)	16:49	23	09:02 (2)	16:14		
9	05:14	06:00	06:55			07:49			07:48		08:38 (2)	08:39		
	22:04	21:18	20:07			18:53			16:47	25	09:03 (2)	16:13		
10	05:15	06:02	06:57			07:51			07:50		08:37 (2)	08:40		
	22:03	21:16	20:05			18:51			16:45	27	09:04 (2)	16:13		
11	05:16	06:04	06:59			07:53			07:52		08:37 (2)	08:41		
	22:02	21:14	20:02			18:49			16:43	28	09:05 (2)	16:13		
12	05:17	06:05	07:00			07:54			07:54		08:36 (2)	08:42		
	22:01	21:12	20:00			18:46			16:42	29	09:05 (2)	16:12		
13	05:18	06:07	07:02			07:56			07:56		08:36 (2)	08:43		
	22:00	21:10	19:57			18:44			16:40	30	09:06 (2)	16:12		
14	05:20	06:09	07:04			07:58			07:58		08:36 (2)	08:44		
	21:59	21:08	19:55			18:41			16:38	31	09:07 (2)	16:12		
15	05:21	06:11	07:06			08:00			08:00		08:36 (2)	08:45		
	21:58	21:05	19:52			18:39			16:37	32	09:08 (2)	16:12		
16	05:22	06:12	07:07			08:02			08:02		08:36 (2)	08:46		
	21:57	21:03	19:50			18:37			16:35	32	09:08 (2)	16:12		
17	05:23	06:14	07:09			08:04			08:03		08:36 (2)	08:47		
	21:56	21:01	19:47			18:35			16:34	32	09:08 (2)	16:13		
18	05:25	06:16	07:11			08:06			08:05		08:38 (2)	08:48		
	21:55	20:59	19:45			18:32			16:32	30	09:08 (2)	16:13		
19	05:26	06:18	07:13			08:08			08:07		08:40 (2)	08:49		
	21:53	20:57	19:42			18:30			16:31	29	09:09 (2)	16:13		
20	05:28	06:20	07:15			08:09			08:09		08:42 (2)	08:49		
	21:52	20:54	19:40			18:28			16:30	27	09:09 (2)	16:13		
21	05:29	06:21	07:16			08:11			08:11		08:44 (2)	08:50		
	21:51	20:52	19:37			18:25			16:28	25	09:09 (2)	16:14		
22	05:31	06:23	07:18			08:13			08:13		08:46 (2)	08:50		
	21:49	20:50	19:35			18:23			16:27	23	09:09 (2)	16:14		
23	05:32	06:25	07:20			08:15			08:14		08:48 (2)	08:51		
	21:48	20:48	19:32			18:21			16:26	21	09:09 (2)	16:15		
24	05:34	06:27	07:22			08:17			08:16		08:50 (2)	08:51		
	21:46	20:45	19:30			18:19			16:25	19	09:09 (2)	16:15		
25	05:35	06:28	07:23		08:06 (1)	07:19			08:18		08:52 (2)	08:52		
	21:45	20:43	19:28	12	08:18 (1)	17:17			16:23	17	09:09 (2)	16:16		
26	05:37	06:30	07:25		08:03 (1)	07:21			08:20		08:54 (2)	08:52		
	21:43	20:41	19:25	17	08:20 (1)	17:15			16:22	15	09:09 (2)	16:17		
27	05:38	06:32	07:27		08:01 (1)	07:23			08:21		08:55 (2)	08:52		
	21:42	20:38	19:23	20	08:21 (1)	17:12			16:21	13	09:08 (2)	16:18		
28	05:40	06:34	07:29		07:59 (1)	07:25			08:23		08:57 (2)	08:52		
	21:40	20:36	19:20	23	08:22 (1)	17:10			16:20	11	09:08 (2)	16:18		
29	05:42	06:36	07:31		07:58 (1)	07:27			08:25		08:59 (2)	08:53		
	21:38	20:34	19:18	24	08:22 (1)	17:08			16:19	10	09:09 (2)	16:19		
30	05:43	06:37	07:32		07:59 (1)	07:29			08:26		09:01 (2)	08:53		
	21:37	20:31	19:15	24	08:23 (1)	17:06			16:19	8	09:09 (2)	16:20		
31	05:45	06:39				07:31						08:53		
	21:35	20:29				17:04						16:21		
Potential sun hours	512	460	382			328			259			233		
Total, worst case			120			110			584			12		
Sun reduction			0.25			0.23			0.20			0.12		
Oper. time red.			1.00			1.00			1.00			1.00		
Wind dir. red.			0.63			0.63			0.61			0.61		
Total reduction			0.16			0.14			0.12			0.07		
Total, real			19			16			70			1		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** CM - H100

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February		March	April	May	June	July	August	September	October			November		December
1	08:52	08:22		16:40 (10)	07:24	07:09	06:00	05:10	05:06	05:46	06:40	07:34			07:32	16:10 (10)	08:27
	16:22	17:13	2	16:42 (10)	18:09	20:08	21:03	21:53	22:08	21:33	20:26	19:12			17:02	21	16:31 (10)	16:17
2	08:52	08:20		16:40 (10)	07:22	07:06	05:57	05:09	05:07	05:48	06:42	07:36			07:34		16:09 (10)	08:29
	16:23	17:15	4	16:44 (10)	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10			17:00	20	16:29 (10)	16:16
3	08:52	08:18		16:39 (10)	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:37			07:36		16:09 (10)	08:30
	16:24	17:17	7	16:46 (10)	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07			16:58	17	16:26 (10)	16:16
4	08:51	08:16		16:39 (10)	07:17	07:01	05:53	05:07	05:08	05:51	06:46	07:39			07:38		16:09 (10)	08:32
	16:26	17:19	9	16:48 (10)	18:15	20:13	21:09	21:57	22:07	21:27	20:19	19:05			16:56	15	16:24 (10)	16:15
5	08:51	08:15		16:39 (10)	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41			07:40		16:09 (10)	08:33
	16:27	17:21	11	16:50 (10)	18:17	20:15	21:11	21:58	22:06	21:25	20:16	19:02			16:54	13	16:22 (10)	16:14
6	08:51	08:13		16:39 (10)	07:12	06:57	05:49	05:06	05:10	05:54	06:49	07:43			07:42		16:09 (10)	08:35
	16:28	17:23	14	16:53 (10)	18:19	20:17	21:12	21:59	22:06	21:23	20:14	19:00			16:52	11	16:20 (10)	16:14
7	08:50	08:11		16:39 (10)	07:10	06:54	05:47	05:05	05:11	05:56	06:51	07:45			07:44		16:09 (10)	08:36
	16:29	17:25	16	16:55 (10)	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58			16:50	9	16:18 (10)	16:13
8	08:50	08:09		16:39 (10)	07:07	06:52	05:46	05:04	05:12	05:58	06:53	07:47			07:46		16:09 (10)	08:37
	16:31	17:27	18	16:57 (10)	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55			16:48	7	16:16 (10)	16:13
9	08:49	08:07		16:40 (10)	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48			07:48		16:11 (10)	08:38
	16:32	17:29	19	16:59 (10)	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53			16:46	4	16:15 (10)	16:13
10	08:48	08:05		16:40 (10)	07:03	06:47	05:42	05:03	05:14	06:01	06:56	07:50			07:50		16:11 (10)	08:40
	16:34	17:31	22	17:02 (10)	18:27	20:25	21:20	22:03	22:03	21:15	20:04	18:50			16:45	1	16:12 (10)	16:12
11	08:48	08:03		16:41 (10)	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52			07:52			08:41
	16:35	17:33	23	17:04 (10)	18:29	20:26	21:21	22:04	22:02	21:13	20:02	18:48			16:43			16:12
12	08:47	08:01		16:41 (10)	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54			07:53			08:42
	16:37	17:36	25	17:06 (10)	18:30	20:28	21:23	22:04	22:01	21:11	19:59	18:46			16:41			16:12
13	08:46	07:59		16:41 (10)	06:55	06:40	05:36	05:02	05:18	06:07	07:02	07:56			07:55			08:43
	16:38	17:38	25	17:06 (10)	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43			16:40			16:12
14	08:45	07:57		16:43 (10)	06:53	06:37	05:35	05:02	05:19	06:08	07:03	07:58			07:57			08:44
	16:40	17:40	22	17:05 (10)	18:34	20:32	21:26	22:06	21:59	21:07	19:54	18:41			16:38			16:12
15	08:44	07:55		16:44 (10)	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00			07:59			08:45
	16:42	17:42	20	17:04 (10)	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39			16:36			16:12
16	08:43	07:53		16:47 (10)	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:01			08:01			08:46
	16:43	17:44	15	17:02 (10)	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36			16:35			16:12
17	08:42	07:51		16:50 (10)	06:46	06:30	05:30	05:01	05:23	06:14	07:09	08:03			08:03			08:47
	16:45	17:46	9	16:59 (10)	18:40	20:38	21:31	22:07	21:56	21:01	19:47	18:34			16:33			16:12
18	08:41	07:49			06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05			08:05			08:47
	16:47	17:48			18:42	20:39	21:33	22:08	21:54	20:58	19:44	18:32			16:32			16:12
19	08:40	07:46			06:41	06:26	05:26	05:01	05:26	06:17	07:12	08:07			08:07			08:48
	16:49	17:50			18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:29			16:30			16:13
20	08:39	07:44			06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09			08:08			08:49
	16:51	17:52			18:46	20:43	21:36	22:09	21:52	20:54	19:39	18:27			16:29			16:13
21	08:38	07:42			06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11			08:10			08:49
	16:52	17:54			18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25			16:28			16:13
22	08:37	07:40			06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13			08:12			08:50
	16:54	17:56			18:49	20:47	21:39	22:09	21:49	20:49	19:34	18:23			16:26			16:14
23	08:35	07:38			06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15			08:14			08:50
	16:56	17:57			18:51	20:49	21:41	22:09	21:47	20:47	19:32	18:21			16:25			16:14
24	08:34	07:35			06:28	06:15	05:19	05:02	05:33	06:26	07:21	08:17			08:16			08:51
	16:58	17:59			18:53	20:50	21:42	22:09	21:46	20:45	19:30	18:18			16:24			16:15
25	08:33	07:33			06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19		16:18 (10)	08:17			08:51
	17:00	18:01			18:55	20:52	21:44	22:09	21:44	20:43	19:27	17:16	12	16:30 (10)	16:23			16:16
26	08:31	07:31			06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21		16:15 (10)	08:19			08:52
	17:02	18:03			18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	17	16:32 (10)	16:22			16:16
27	08:30	07:29			06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:22		16:13 (10)	08:21			08:52
	17:04	18:05			18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	21	16:34 (10)	16:21			16:17
28	08:28	07:26			06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24		16:12 (10)	08:22			08:52
	17:06	18:07			19:00	20:58	21:48	22:09	21:40	20:36	19:20	17:10	23	16:35 (10)	16:20			16:18
29	08:27				07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26		16:11 (10)	08:24			08:52
	17:08				20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	25	16:36 (10)	16:19			16:19
30	08:25				07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28		16:10 (10)	08:26			08:52
	17:09				20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	24	16:34 (10)	16:18			16:20
31	08:23				07:11		05:11		05:44	06:39		07:30		16:09 (10)				08:52
	17:11				20:06		21:52		21:35	20:28		17:04	23	16:32 (10)				16:21
Potential sun hours	250	273		367	420	494	510	512	460	382	328			259		233		
Total, worst case			261										145		118			
Sun reduction			0.19										0.23		0.20			
Oper. time red.			1.00										1.00		1.00			
Wind dir. red.			0.64										0.64		0.64			
Total reduction			0.12										0.14		0.13			
Total, real			32										21		15			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** CN - H101

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	21:13 (11)	05:06	21:16 (11)	05:46	06:40	07:34	07:32	08:27
	16:22	17:14	18:09	20:08	21:03	21:53	6 21:19 (11)	22:08	16 21:32 (11)	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:06	05:58	05:09	21:13 (11)	05:07	21:17 (11)	05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05	21:55	7 21:20 (11)	22:08	15 21:32 (11)	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:19	07:04	05:55	05:08	21:12 (11)	05:08	21:17 (11)	05:49	06:44	07:37	07:36	08:30
	16:24	17:17	18:13	20:12	21:07	21:56	9 21:21 (11)	22:07	15 21:32 (11)	21:29	20:21	19:07	16:58	16:16
4	08:51	08:16	07:17	07:02	05:53	05:07	21:13 (11)	05:08	21:18 (11)	05:51	06:46	07:39	07:38	08:32
	16:26	17:19	18:15	20:13	21:09	21:57	9 21:22 (11)	22:07	14 21:32 (11)	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:51	05:07	21:12 (11)	05:09	21:17 (11)	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11	21:58	11 21:23 (11)	22:06	13 21:30 (11)	21:25	20:16	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:49	05:06	21:12 (11)	05:10	21:18 (11)	05:55	06:49	07:43	07:42	08:34
	16:28	17:24	18:19	20:17	21:12	21:59	11 21:23 (11)	22:06	12 21:30 (11)	21:23	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48	05:05	21:12 (11)	05:11	21:18 (11)	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	13 21:25 (11)	22:05	12 21:30 (11)	21:21	20:12	18:58	16:50	16:14
8	08:50	08:09	07:07	06:52	05:46	05:05	21:12 (11)	05:12	21:19 (11)	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	13 21:25 (11)	22:04	10 21:29 (11)	21:19	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:49	05:44	05:04	21:12 (11)	05:13	21:19 (11)	06:00	06:55	07:48	07:48	08:38
	16:32	17:30	18:25	20:23	21:18	22:02	14 21:26 (11)	22:04	9 21:28 (11)	21:17	20:07	18:53	16:46	16:13
10	08:48	08:05	07:03	06:47	05:42	05:04	21:13 (11)	05:14	21:20 (11)	06:02	06:56	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:19	22:03	15 21:28 (11)	22:03	8 21:28 (11)	21:15	20:04	18:50	16:45	16:12
11	08:48	08:03	07:00	06:45	05:40	05:03	21:12 (11)	05:16	21:21 (11)	06:03	06:58	07:52	07:52	08:41
	16:35	17:34	18:29	20:26	21:21	22:04	16 21:28 (11)	22:02	6 21:27 (11)	21:13	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	21:12 (11)	05:17	21:21 (11)	06:05	07:00	07:54	07:53	08:42
	16:37	17:36	18:30	20:28	21:23	22:04	17 21:29 (11)	22:01	5 21:26 (11)	21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:55	06:40	05:36	05:02	21:13 (11)	05:18	21:22 (11)	06:07	07:02	07:56	07:55	08:43
	16:39	17:38	18:32	20:30	21:25	22:05	16 21:29 (11)	22:00	3 21:25 (11)	21:09	19:57	18:43	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	05:02	21:13 (11)	05:19	21:24 (11)	06:09	07:03	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:26	22:06	17 21:30 (11)	21:59	1 21:25 (11)	21:07	19:54	18:41	16:38	16:12
15	08:44	07:55	06:51	06:35	05:33	05:02	21:12 (11)	05:20		06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	18 21:30 (11)	21:58		21:05	19:52	18:39	16:36	16:12
16	08:43	07:53	06:48	06:33	05:31	05:02	21:12 (11)	05:22		06:12	07:07	08:01	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	18 21:30 (11)	21:57		21:03	19:49	18:36	16:35	16:12
17	08:42	07:51	06:46	06:31	05:30	05:02	21:13 (11)	05:23		06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:31	22:07	18 21:31 (11)	21:55		21:01	19:47	18:34	16:33	16:12
18	08:41	07:49	06:43	06:28	05:28	05:02	21:13 (11)	05:24		06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:39	21:33	22:08	18 21:31 (11)	21:54		20:58	19:44	18:32	16:32	16:12
19	08:40	07:46	06:41	06:26	05:27	05:02	21:13 (11)	05:26		06:17	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	19 21:32 (11)	21:53		20:56	19:42	18:30	16:31	16:13
20	08:39	07:44	06:38	06:24	05:25	05:02	21:14 (11)	05:27		06:19	07:14	08:09	08:08	08:49
	16:51	17:52	18:46	20:43	21:36	22:08	19 21:33 (11)	21:52		20:54	19:39	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:24	05:02	21:14 (11)	05:29		06:21	07:16	08:11	08:10	08:49
	16:52	17:54	18:47	20:45	21:38	22:09	19 21:33 (11)	21:50		20:52	19:37	18:25	16:28	16:13
22	08:37	07:40	06:33	06:19	05:22	05:02	21:14 (11)	05:30		06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:39	22:09	19 21:33 (11)	21:49		20:49	19:34	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	21:14 (11)	05:32		06:24	07:19	08:15	08:14	08:50
	16:56	17:58	18:51	20:49	21:41	22:09	19 21:33 (11)	21:47		20:47	19:32	18:21	16:25	16:14
24	08:34	07:35	06:28	06:15	05:19	05:03	21:15 (11)	05:33		06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:50	21:42	22:09	18 21:33 (11)	21:46		20:45	19:30	18:18	16:24	16:15
25	08:32	07:33	06:26	06:12	05:18	05:03	21:15 (11)	05:35		06:28	07:23	07:19	08:17	08:51
	17:00	18:01	18:55	20:52	21:44	22:09	18 21:33 (11)	21:44		20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	21:15 (11)	05:36		06:30	07:25	07:21	08:19	08:51
	17:02	18:03	18:57	20:54	21:45	22:09	18 21:33 (11)	21:43		20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:16	05:04	21:15 (11)	05:38		06:32	07:27	07:22	08:21	08:52
	17:04	18:05	18:59	20:56	21:47	22:09	18 21:33 (11)	21:41		20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	05:04	21:15 (11)	05:40		06:33	07:28	07:24	08:22	08:52
	17:06	18:07	19:00	20:58	21:48	22:09	18 21:33 (11)	21:40		20:36	19:20	17:10	16:20	16:18
29	08:26		07:16	06:04	05:13	21:14 (11)	05:05	21:16 (11)	05:41		06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:49	1 21:15 (11)	22:09	17 21:33 (11)	21:38		20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	21:15 (11)	05:05	21:16 (11)	05:43		06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:01	21:51	2 21:17 (11)	22:08	17 21:33 (11)	21:36		20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11	21:14 (11)			05:44		06:39		07:30		08:52
	17:12		20:06		21:52	4 21:18 (11)			21:35		20:28		17:04		16:21
Potential sun hours	250	273	367	420	494		510		512		460	382	328	259	233
Total, worst case						7		465		139					
Sun reduction						0.31		0.26		0.22					
Oper. time red.						1.00		1.00		1.00					
Wind dir. red.						0.60		0.60		0.60					
Total reduction						0.19		0.16		0.13					
Total, real						1		72		19					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** CO - H102

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:07	05:46	06:41	07:34	07:32	08:27
	16:23	17:14	18:10	20:08	21:04	21:54	22:08	21:33	20:26	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:10	05:07	05:48	06:43	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:14	20:12	21:07	21:56	22:08	21:29	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:52	06:46	07:40	07:38	08:32
	16:26	17:20	18:16	20:14	21:09	21:57	22:07	21:28	20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	06:59	05:52	05:07	05:10	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	21:58	22:07	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:55	05:48	05:06	05:12	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:56	16:49	16:14
9	08:49	08:07	07:05	06:50	05:44	05:04	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51	16:45	16:13
11	08:48	08:03	07:01	06:45	05:40	05:04	05:16	06:04	06:59	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:13
12	08:47	08:01	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	22:00	21:10	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:03	05:20	06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00	07:59	08:45
	16:42	17:42	18:37	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:34	16:13
18	08:42	07:49	06:44	06:29	05:28	05:02	05:25	06:16	07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:42	21:35	22:08	21:53	20:57	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:28	06:20	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:37	22:09	21:52	20:54	19:40	18:28	16:30	16:13
21	08:38	07:42	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	05:02	05:31	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:14	08:51
	16:57	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:19	16:25	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	21:44	22:09	21:45	20:43	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:41	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:22	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	05:14	05:05	05:42	06:35	07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:34	19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	05:13	05:06	05:43	06:37	07:32	07:29	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:37	20:31	19:15	17:06	16:19	16:20
31	08:24		07:12		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** CP - H103

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February	March	April	May	June	July	August	September	October	November			December		
1	08:52		15:25 (1)	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:33			08:28		15:11 (1)
	16:22	20	15:45 (1)	17:14	18:10	20:08	21:04	21:54	22:09	21:33	20:26	19:13	17:02			16:18	30	15:41 (1)
2	08:52		15:25 (1)	08:20	07:22	07:07	05:58	05:09	05:07	05:48	06:43	07:36	07:34			08:29		15:12 (1)
	16:23	20	15:45 (1)	17:16	18:12	20:10	21:06	21:55	22:08	21:31	20:24	19:10	17:00			16:17	29	15:41 (1)
3	08:52		15:26 (1)	08:19	07:20	07:04	05:56	05:08	05:08	05:50	06:44	07:38	07:36			08:31		15:12 (1)
	16:25	21	15:47 (1)	17:18	18:14	20:12	21:07	21:56	22:08	21:30	20:22	19:08	16:58			16:16	28	15:40 (1)
4	08:52		15:26 (1)	08:17	07:17	07:02	05:54	05:08	05:09	05:51	06:46	07:40	07:38			08:32		15:12 (1)
	16:26	22	15:48 (1)	17:20	18:15	20:14	21:09	21:57	22:07	21:28	20:19	19:05	16:56			16:15	27	15:39 (1)
5	08:51		15:27 (1)	08:15	07:15	06:59	05:52	05:07	05:10	05:53	06:48	07:41	07:40			08:34		15:13 (1)
	16:27	23	15:50 (1)	17:22	18:17	20:16	21:11	21:58	22:07	21:26	20:17	19:03	16:54			16:15	25	15:38 (1)
6	08:51		15:27 (1)	08:13	07:13	06:57	05:50	05:06	05:10	05:55	06:50	07:43	07:42			08:35		15:13 (1)
	16:28	24	15:51 (1)	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52			16:14	24	15:37 (1)
7	08:51		15:28 (1)	08:11	07:10	06:55	05:48	05:05	05:11	05:57	06:51	07:45	07:44			08:36		15:14 (1)
	16:30	25	15:53 (1)	17:26	18:21	20:19	21:15	22:00	22:05	21:22	20:12	18:58	16:50			16:14	23	15:37 (1)
8	08:50		15:28 (1)	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46			08:38		15:14 (1)
	16:31	26	15:54 (1)	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:56	16:49			16:13	22	15:36 (1)
9	08:49		15:28 (1)	08:07	07:05	06:50	05:44	05:04	05:14	06:00	06:55	07:49	07:48			08:39		15:14 (1)
	16:33	28	15:56 (1)	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47			16:13	21	15:35 (1)
10	08:49		15:29 (1)	08:05	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51	07:50			08:40		15:15 (1)
	16:34	28	15:57 (1)	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51	16:45			16:13	21	15:36 (1)
11	08:48		15:29 (1)	08:04	07:01	06:45	05:40	05:03	05:16	06:04	06:58	07:52	07:52			08:41		15:16 (1)
	16:36	30	15:59 (1)	17:34	18:29	20:27	21:22	22:04	22:02	21:14	20:02	18:48	16:43			16:12	19	15:35 (1)
12	08:47		15:30 (1)	08:02	06:58	06:43	05:38	05:03	05:17	06:05	07:00	07:54	07:54			08:42		15:16 (1)
	16:37	29	15:59 (1)	17:36	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42			16:12	19	15:35 (1)
13	08:47		15:30 (1)	07:59	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56			08:43		15:16 (1)
	16:39	29	15:59 (1)	17:38	18:33	20:30	21:25	22:05	22:00	21:10	19:57	18:44	16:40			16:12	18	15:34 (1)
14	08:46		15:31 (1)	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:58			08:44		15:17 (1)
	16:40	29	16:00 (1)	17:40	18:35	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38			16:12	17	15:34 (1)
15	08:45		15:32 (1)	07:55	06:51	06:35	05:33	05:02	05:21	06:11	07:06	08:00	08:00			08:45		15:17 (1)
	16:42	28	16:00 (1)	17:42	18:36	20:34	21:28	22:07	21:58	21:05	19:52	18:39	16:37			16:12	17	15:34 (1)
16	08:44		15:33 (1)	07:53	06:48	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:01			08:46		15:18 (1)
	16:44	27	16:00 (1)	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35			16:12	16	15:34 (1)
17	08:43		15:34 (1)	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03		15:21 (1)	08:47		15:19 (1)
	16:46	26	16:00 (1)	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:34	4	15:25 (1)	16:12	16	15:35 (1)
18	08:42		15:34 (1)	07:49	06:44	06:29	05:28	05:02	05:25	06:16	07:11	08:06	08:05		15:17 (1)	08:48		15:19 (1)
	16:47	25	15:59 (1)	17:48	18:42	20:40	21:33	22:08	21:55	20:59	19:45	18:32	16:32	12	15:29 (1)	16:13	16	15:35 (1)
19	08:41		15:35 (1)	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07		15:15 (1)	08:48		15:19 (1)
	16:49	24	15:59 (1)	17:50	18:44	20:42	21:35	22:09	21:53	20:57	19:42	18:30	16:31	16	15:31 (1)	16:13	16	15:35 (1)
20	08:39		15:37 (1)	07:45	06:39	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09		15:14 (1)	08:49		15:20 (1)
	16:51	22	15:59 (1)	17:52	18:46	20:43	21:37	22:09	21:52	20:54	19:40	18:28	16:29	19	15:33 (1)	16:13	15	15:35 (1)
21	08:38		15:37 (1)	07:42	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11		15:13 (1)	08:50		15:20 (1)
	16:53	21	15:58 (1)	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	21	15:34 (1)	16:14	15	15:35 (1)
22	08:37		15:39 (1)	07:40	06:34	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12		15:13 (1)	08:50		15:21 (1)
	16:54	19	15:58 (1)	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	22	15:35 (1)	16:14	15	15:36 (1)
23	08:36		15:40 (1)	07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15	08:14		15:12 (1)	08:51		15:21 (1)
	16:56	16	15:56 (1)	17:58	18:51	20:49	21:41	22:09	21:48	20:48	19:32	18:21	16:26	24	15:36 (1)	16:15	15	15:36 (1)
24	08:34		15:43 (1)	07:36	06:29	06:15	05:20	05:03	05:33	06:27	07:22	08:17	08:16		15:12 (1)	08:51		15:22 (1)
	16:58	12	15:55 (1)	18:00	18:53	20:51	21:43	22:10	21:46	20:45	19:30	18:19	16:24	25	15:37 (1)	16:15	15	15:37 (1)
25	08:33		15:47 (1)	07:34	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18		15:12 (1)	08:52		15:22 (1)
	17:00	4	15:51 (1)	18:02	18:55	20:53	21:44	22:10	21:45	20:43	19:27	17:16	16:23	26	15:38 (1)	16:16	16	15:38 (1)
26	08:31			07:31	06:24	06:11	05:17	05:03	05:37	06:30	07:25	07:21	08:19		15:11 (1)	08:52		15:22 (1)
	17:02			18:04	18:57	20:55	21:46	22:10	21:43	20:41	19:25	17:14	16:22	27	15:38 (1)	16:17	16	15:38 (1)
27	08:30			07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21		15:11 (1)	08:52		15:23 (1)
	17:04			18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:22	17:12	16:21	28	15:39 (1)	16:17	16	15:39 (1)
28	08:28			07:27	06:19	06:06	05:15	05:04	05:40	06:34	07:29	07:25	08:23		15:11 (1)	08:52		15:23 (1)
	17:06			18:08	19:01	20:58	21:49	22:09	21:40	20:36	19:20	17:10	16:20	29	15:40 (1)	16:18	17	15:40 (1)
29	08:27				07:17	06:04	05:13	05:05	05:41	06:35	07:31	07:27	08:24		15:11 (1)	08:52		15:24 (1)
	17:08				20:03	21:00	21:50	22:09	21:38	20:34	19:17	17:08	16:19	30	15:41 (1)	16:19	17	15:41 (1)
30	08:25				07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:29	08:26		15:12 (1)	08:52		15:24 (1)
	17:10				20:04	21:02	21:51	22:09	21:37	20:31	19:15	17:06	16:18	29	15:41 (1)	16:20	18	15:42 (1)
31	08:24				07:12		05:11		05:45	06:39		07:31				08:52		15:25 (1)
	17:12				20:06		21:53		21:35	20:29		17:04				16:21	18	15:43 (1)
Potential sun hours	250			273	367	420	494	510	513	460	382	328	259			233		
Total, worst case		578												312			597	
Sun reduction		0.16												0.20			0.12	
Oper. time red.		1.00												1.00			1.00	
Wind dir. red.		0.65												0.65			0.65	
Total reduction		0.11												0.13			0.08	
Total, real		61												40			47	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** CQ - H104

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52 16:23	08:22 17:14	07:24 18:10	07:09 20:08 29	07:36 (2) 08:05 (2)	06:00 21:04	05:11 21:54	05:07 22:09	05:47 21:33	06:41 20:27	07:34 19:13	07:33 17:02	08:28 16:18
2	08:52 16:24	08:20 17:16	07:22 18:12	07:07 20:10 27	07:37 (2) 08:04 (2)	05:58 21:06	05:10 21:55	05:07 22:08	05:48 21:31	06:43 20:24	07:36 19:10	07:35 17:00	08:29 16:17
3	08:52 16:25	08:19 17:18	07:20 18:14	07:04 20:12 25	07:37 (2) 08:02 (2)	05:56 21:07	05:09 21:56	05:08 22:08	05:50 21:30	06:44 20:22	07:38 19:08	07:37 16:58	08:31 16:16
4	08:52 16:26	08:17 17:20	07:17 18:16	07:02 20:14 22	07:39 (2) 08:01 (2)	05:54 21:09	05:08 21:57	05:09 22:07	05:52 21:28	06:46 20:19	07:40 19:05	07:38 16:56	08:32 16:16
5	08:51 16:27	08:15 17:22	07:15 18:18	07:00 20:16 19	07:39 (2) 07:58 (2)	05:52 21:11	05:07 21:58	05:10 22:07	05:53 21:26	06:48 20:17 4	07:43 (2) 07:47 (2)	07:42 19:03	08:34 16:54	16:15
6	08:51 16:29	08:13 17:24	07:13 18:19	06:57 20:18 14	07:42 (2) 07:56 (2)	05:50 21:13	05:06 22:00	05:11 22:06	05:55 21:24	06:50 20:14 14	07:38 (2) 07:52 (2)	07:43 19:01	07:42 16:52	08:35 16:14
7	08:51 16:30	08:11 17:26	07:10 18:21	06:55 20:19 6	07:46 (2) 07:52 (2)	05:48 21:15	05:06 22:01	05:12 22:06	05:57 21:22	06:52 20:12 18	07:35 (2) 07:53 (2)	07:45 18:58	07:44 16:51	08:36 16:14
8	08:50 16:31	08:09 17:28	07:08 18:23	06:52 20:21		05:46 21:16	05:05 22:01	05:13 22:05	05:58 21:20	06:53 20:10 22	07:33 (2) 07:55 (2)	07:47 18:56	07:46 16:49	08:38 16:14
9	08:50 16:33	08:08 17:30	07:06 18:25	06:50 20:23		05:44 21:18	05:05 22:02	05:14 22:04	06:00 21:18	06:55 20:07 25	07:31 (2) 07:56 (2)	07:49 18:53	07:48 16:47	08:39 16:13
10	08:49 16:34	08:06 17:32	07:03 18:27	06:48 20:25		05:42 21:20	05:04 22:03	05:15 22:03	06:02 21:16	06:57 20:05 27	07:30 (2) 07:57 (2)	07:51 18:51	07:50 16:45	08:40 16:13
11	08:48 16:36	08:04 17:34	07:01 18:29	06:45 20:27		05:40 21:22	05:04 22:04	05:16 22:02	06:04 21:14	06:59 20:02 29	07:28 (2) 07:57 (2)	07:53 18:49	07:52 16:43	08:41 16:13
12	08:47 16:37	08:02 17:36	06:58 18:31	06:43 20:29		05:39 21:23	05:03 22:05	05:17 22:01	06:05 21:12	07:00 20:00 30	07:28 (2) 07:58 (2)	07:54 18:46	07:54 16:42	08:42 16:13
13	08:47 16:39	08:00 17:38	06:56 18:33	06:40 20:31		05:37 21:25	05:03 22:06	05:18 22:00	06:07 21:10 9	06:45 (1) 06:54 (1)	07:02 19:57 29	07:29 (2) 07:58 (2)	07:56 18:44	07:56 16:40	08:43 16:12
14	08:46 16:41	07:58 17:40	06:53 18:35	06:38 20:32		05:35 21:27	05:03 22:06	05:20 21:59	06:09 21:08 13	06:43 (1) 06:56 (1)	07:04 19:55 27	07:30 (2) 07:57 (2)	07:58 18:42	07:58 16:39	08:44 16:12
15	08:45 16:42	07:55 17:42	06:51 18:37	06:36 20:34		05:33 21:29	05:02 22:07	05:21 21:58	06:11 21:05 16	06:42 (1) 06:58 (1)	07:06 19:52 25	07:32 (2) 07:57 (2)	08:00 18:39	08:00 16:37	08:45 16:12
16	08:44 16:44	07:53 17:44	06:49 18:39	06:33 20:36		05:32 21:30	05:02 22:07	05:22 21:57	06:13 21:03 17	06:41 (1) 06:58 (1)	07:07 19:50 23	07:34 (2) 07:57 (2)	08:02 18:37	08:02 16:35	08:46 16:12
17	08:43 16:46	07:51 17:46	06:46 18:40	06:31 20:38		05:30 21:32	05:02 22:08	05:24 21:56	06:14 21:01 16	06:43 (1) 06:59 (1)	07:09 19:47 21	07:36 (2) 07:57 (2)	08:04 18:35	08:03 16:34	08:47 16:13
18	08:42 16:47	07:49 17:48	06:44 18:42	06:29 20:40		05:29 21:34	05:02 22:08	05:25 21:55	06:16 20:59 15	06:45 (1) 07:00 (1)	07:11 19:45 18	07:37 (2) 07:55 (2)	08:06 18:32	08:05 16:32	08:48 16:13
19	08:41 16:49	07:47 17:50	06:41 18:44	06:26 20:42 3	06:51 (1) 06:54 (1)	05:27 21:35	05:02 22:09	05:26 21:53	06:18 20:57 13	06:46 (1) 06:59 (1)	07:13 19:42 16	07:39 (2) 07:55 (2)	08:08 18:30	08:07 16:31	08:49 16:13
20	08:40 16:51	07:45 17:52	06:39 18:46 2	07:03 (2) 07:05 (2) 20:44 5	06:24 06:49 (1) 06:54 (1)	05:25 21:37	05:02 22:09	05:28 21:52	06:20 20:54 11	06:48 (1) 06:59 (1)	07:15 19:40 13	07:41 (2) 07:54 (2)	08:09 18:28	08:09 16:30	08:49 16:13
21	08:38 16:53	07:43 17:54	06:36 18:48 5	07:00 (2) 07:05 (2) 20:45 8	06:22 06:47 (1) 06:55 (1)	05:24 21:38	05:02 22:09	05:29 21:51	06:21 20:52 10	06:50 (1) 07:00 (1)	07:16 19:37 10	07:43 (2) 07:53 (2)	08:11 18:25	08:11 16:28	08:50 16:14
22	08:37 16:55	07:40 17:56	06:34 18:50 9	06:58 (2) 07:07 (2) 20:47 10	06:20 06:44 (1) 06:54 (1)	05:23 21:40	05:02 22:09	05:31 21:49	06:23 20:50 7	06:51 (1) 06:58 (1)	07:18 19:35 6	07:44 (2) 07:50 (2)	08:13 18:23	08:13 16:27	08:50 16:14
23	08:36 16:57	07:38 17:58	06:31 18:52 12	06:55 (2) 07:07 (2) 20:49 12	06:17 06:42 (1) 06:54 (1)	05:21 21:41	05:03 22:10	05:32 21:48	06:25 20:48 5	06:53 (1) 06:58 (1)	07:20 19:32 3	07:46 (2) 07:49 (2)	08:15 18:21	08:14 16:26	08:51 16:15
24	08:34 16:58	07:36 18:00	06:29 18:53 15	06:53 (2) 07:08 (2) 20:51 13	06:15 06:40 (1) 06:53 (1)	05:20 21:43	05:03 22:10	05:34 21:46	06:27 20:45 3	06:55 (1) 06:58 (1)	07:22 19:30		08:17 18:19	08:16 16:25	08:51 16:15
25	08:33 17:00	07:34 18:02	06:27 18:55 18	06:50 (2) 07:08 (2) 20:53 15	06:13 06:38 (1) 06:53 (1)	05:18 21:44	05:03 22:10	05:35 21:45	06:28 20:43		07:23 19:28		07:19 17:17	08:18 16:23	08:52 16:16
26	08:32 17:02	07:31 18:04	06:24 18:57 20	06:48 (2) 07:08 (2) 20:55 16	06:11 06:36 (1) 06:52 (1)	05:17 21:46	05:04 22:10	05:37 21:43	06:30 20:41		07:25 19:25		07:21 17:15	08:20 16:22	08:52 16:17
27	08:30 17:04	07:29 18:06	06:22 18:59 23	06:45 (2) 07:08 (2) 20:56 17	06:09 06:34 (1) 06:51 (1)	05:16 21:47	05:04 22:10	05:38 21:42	06:32 20:38		07:27 19:23		07:23 17:12	08:21 16:21	08:52 16:18
28	08:29 17:06	07:27 18:08	06:19 19:01 25	06:43 (2) 07:08 (2) 20:58 15	06:06 06:35 (1) 06:50 (1)	05:15 21:49	05:05 22:09	05:40 21:40	06:34 20:36		07:29 19:20		07:25 17:10	08:23 16:20	08:52 16:18
29	08:27 17:08		07:17 20:03 27	07:40 (2) 08:07 (2) 21:00 12	06:04 06:36 (1) 06:48 (1)	05:14 21:50	05:05 22:09	05:42 21:38	06:36 20:34		07:31 19:18		07:27 17:08	08:25 16:19	08:53 16:19
30	08:25 17:10		07:14 20:05 29	07:38 (2) 08:07 (2) 21:02 8	06:02 06:38 (1) 06:46 (1)	05:13 21:51	05:06 22:09	05:43 21:37	06:37 20:31		07:32 19:15		07:29 17:06	08:26 16:19	08:53 16:20
31	08:24 17:12		07:12 20:06 30	07:35 (2) 08:05 (2)		05:12 21:53		05:45 21:35	06:39 20:29				07:31 17:04		08:53 16:21
Potential sun hours	250	273	367	420		494	510	512	460	382		328	259	233	
Total, worst case			215	276					135	360					
Sun reduction			0.22	0.31					0.26	0.25					
Oper. time red.			1.00	1.00					1.00	1.00					
Wind dir. red.			0.65	0.65					0.65	0.65					
Total reduction			0.14	0.20					0.17	0.16					
Total, real			30	55					22	58					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** CR - H105

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:16
3	08:52	08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:38	07:36	08:30
	16:24	17:18	18:13	20:12	21:07	21:56	22:08	21:29	20:21	19:07	16:58	16:16
4	08:52	08:17	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11	21:58	22:07	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:49	05:06	05:10	05:55	06:49	07:43	07:42	08:35
	16:28	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:13
8	08:50	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:49	07:48	08:39
	16:32	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46	16:13
10	08:49	08:05	07:03	06:47	05:42	05:03	05:14	06:02	06:56	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:12
11	08:48	08:03	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52	08:41
	16:35	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23	22:05	22:01	21:12	19:59	18:46	16:41	16:12
13	08:46	07:59	06:56	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:07	21:58	21:05	19:52	18:39	16:36	16:12
16	08:44	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:33	16:12
18	08:42	07:49	06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:12
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11	08:10	08:50
	16:52	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:13
22	08:37	07:40	06:34	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	16:14
24	08:34	07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24	16:15
25	08:33	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:25	08:23	08:52
	17:06	18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11		05:44	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	513	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** CS - H106

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June		July		August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:11		05:07		05:47	06:41	07:34	07:33	08:28
	16:23	17:14	18:10	20:08	21:04	21:54		22:09	4	05:44 (3)	21:33	20:27	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:10		05:07		05:40 (3)	05:48	06:43	07:36	07:35	08:29
	16:24	17:16	18:12	20:10	21:06	21:55		22:08	4	05:44 (3)	21:31	20:24	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04	05:56	05:09		05:08		05:41 (3)	05:50	06:44	07:38	07:36	08:31
	16:25	17:18	18:14	20:12	21:07	21:56		22:08	3	05:44 (3)	21:30	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08		05:09		05:42 (3)	05:52	06:46	07:40	07:38	08:32
	16:26	17:20	18:16	20:14	21:09	21:57		22:07	2	05:44 (3)	21:28	20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	07:00	05:52	05:07		05:10		05:43 (3)	05:53	06:48	07:42	07:40	08:34
	16:27	17:22	18:18	20:16	21:11	21:58		22:07	1	05:44 (3)	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06		05:11		05:44 (3)	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:18	21:13	21:59		22:06	1	05:45 (3)	21:24	20:14	19:01	16:52	16:14
7	08:51	08:11	07:10	06:55	05:48	05:06	05:37 (3)	05:12			05:57	06:52	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:15	22:00	1	05:38 (3)	22:05		21:22	20:12	18:58	16:51	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05		05:37 (3)	05:13		05:59	06:53	07:47	07:46	08:38
	16:31	17:28	18:23	20:21	21:16	22:01	2	05:39 (3)	22:05		21:20	20:10	18:56	16:49	16:14
9	08:49	08:07	07:06	06:50	05:44	05:05		05:36 (3)	05:14		06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	3	05:39 (3)	22:04		21:18	20:07	18:53	16:47	16:13
10	08:49	08:06	07:03	06:47	05:42	05:04		05:36 (3)	05:15		06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	3	05:39 (3)	22:03		21:16	20:05	18:51	16:45	16:13
11	08:48	08:04	07:01	06:45	05:40	05:04		05:36 (3)	05:16		06:04	06:59	07:53	07:52	08:41
	16:36	17:34	18:29	20:27	21:22	22:04	4	05:40 (3)	22:02		21:14	20:02	18:49	16:43	16:13
12	08:47	08:02	06:58	06:43	05:39	05:03		05:35 (3)	05:17		06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	4	05:39 (3)	22:01		21:12	20:00	18:46	16:42	16:13
13	08:47	08:00	06:56	06:40	05:37	05:03		05:35 (3)	05:18		06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:31	21:25	22:05	5	05:40 (3)	22:00		21:10	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:03		05:35 (3)	05:20		06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	5	05:40 (3)	21:59		21:08	19:55	18:41	16:39	16:12
15	08:45	07:55	06:51	06:36	05:33	05:02		05:35 (3)	05:21		06:11	07:06	08:00	08:00	08:45
	16:42	17:42	18:37	20:34	21:28	22:07	6	05:41 (3)	21:58		21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:49	06:33	05:32	05:02		05:35 (3)	05:22		06:13	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	6	05:41 (3)	21:57		21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02		05:35 (3)	05:24		06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	6	05:41 (3)	21:56		21:01	19:47	18:35	16:34	16:13
18	08:42	07:49	06:44	06:29	05:29	05:02		05:35 (3)	05:25		06:16	07:11	08:06	08:05	08:48
	16:48	17:48	18:42	20:40	21:33	22:08	6	05:41 (3)	21:55		20:59	19:45	18:32	16:32	16:13
19	08:41	07:47	06:41	06:26	05:27	05:02		05:35 (3)	05:26		06:18	07:13	08:08	08:07	08:48
	16:49	17:50	18:44	20:42	21:35	22:09	7	05:42 (3)	21:53		20:57	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02		05:35 (3)	05:28		06:20	07:15	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:37	22:09	7	05:42 (3)	21:52		20:54	19:40	18:28	16:30	16:13
21	08:38	07:43	06:36	06:22	05:24	05:02		05:35 (3)	05:29		06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	7	05:42 (3)	21:51		20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:20	05:23	05:02		05:35 (3)	05:31		06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	7	05:42 (3)	21:49		20:50	19:35	18:23	16:27	16:14
23	08:36	07:38	06:31	06:17	05:21	05:03		05:36 (3)	05:32		06:25	07:20	08:15	08:14	08:51
	16:57	17:58	18:52	20:49	21:41	22:09	7	05:43 (3)	21:48		20:48	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03		05:36 (3)	05:34		06:27	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:10	6	05:42 (3)	21:46		20:45	19:30	18:19	16:25	16:15
25	08:33	07:34	06:26	06:13	05:18	05:03		05:36 (3)	05:35		06:28	07:23	07:19	08:18	08:52
	17:00	18:02	18:55	20:53	21:44	22:10	6	05:42 (3)	21:45		20:43	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04		05:37 (3)	05:37		06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:55	21:46	22:10	6	05:43 (3)	21:43		20:41	19:25	17:15	16:22	16:17
27	08:30	07:29	06:22	06:09	05:16	05:04		05:37 (3)	05:38		06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	6	05:43 (3)	21:42		20:38	19:23	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	05:15	05:05		05:38 (3)	05:40		06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:49	22:09	5	05:43 (3)	21:40		20:36	19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	05:14	05:05		05:38 (3)	05:42		06:36	07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	5	05:43 (3)	21:38		20:34	19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	05:13	05:06		05:39 (3)	05:43		06:37	07:32	07:29	08:26	08:52
	17:10		20:05	21:02	21:51	22:09	5	05:44 (3)	21:37		20:31	19:15	17:06	16:19	16:20
31	08:24		07:12		05:12				05:45		06:39		07:31		08:52
	17:12		20:06		21:53				21:35		20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510			512		460	382	328	259	233
Total, worst case						125			15						
Sun reduction						0.26			0.22						
Oper. time red.						1.00			1.00						
Wind dir. red.						0.65			0.65						
Total reduction						0.17			0.14						
Total, real						21			2						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** CT - H107

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52 16:23	08:22 17:14	07:24 18:10	07:09 20:08	06:00 21:04	05:11 21:54	05:07 22:09	05:47 21:33	06:41 20:27	07:34 19:13	08:01 (2) 08:05 (2) 4	07:33 17:02	08:28 16:18
2	08:52 16:24	08:20 17:16	07:22 18:12	07:07 20:10	05:58 21:06	05:10 21:55	05:07 22:08	05:48 21:31	06:43 20:24	07:36 19:10		07:35 17:00	08:29 16:17
3	08:52 16:25	08:19 17:18	07:20 18:14	07:04 20:12	05:56 21:07	05:09 21:56	05:08 22:08	05:50 21:30	06:44 20:22	07:38 19:08		07:37 16:58	08:31 16:16
4	08:52 16:26	08:17 17:20	07:17 18:16	07:02 20:14	05:54 21:09	05:08 21:57	05:09 22:07	05:52 21:28	06:46 20:19	07:40 19:05		07:38 16:56	08:32 16:16
5	08:52 16:27	08:15 17:22	07:15 18:18	07:00 20:16	05:52 21:11	05:07 21:58	05:10 22:07	05:53 21:26	06:48 20:17	07:42 19:03		07:40 16:54	08:34 16:15
6	08:51 16:29	08:13 17:24	07:13 18:19	06:57 20:18	05:50 21:13	05:06 22:00	05:11 22:06	05:55 21:24	06:50 20:14	07:43 19:01		07:42 16:52	08:35 16:14
7	08:51 16:30	08:11 17:26	07:10 18:21	06:55 20:19	05:48 21:15	05:06 22:01	05:12 22:06	05:57 21:22	06:52 20:12	07:45 18:58		07:44 16:51	08:36 16:14
8	08:50 16:31	08:09 17:28	07:08 18:23	06:52 20:21	05:46 21:16	05:05 22:01	05:13 22:05	05:58 21:20	06:53 20:10	07:47 18:56		07:46 16:49	08:38 16:14
9	08:50 16:33	08:08 17:30	07:06 18:25	06:50 20:23	05:44 21:18	05:04 22:02	05:14 22:04	06:00 21:18	06:55 20:07	07:49 18:53		07:48 16:47	08:39 16:13
10	08:49 16:34	08:06 17:32	07:03 18:27	06:48 20:25	05:42 21:20	05:04 22:03	05:15 22:03	06:02 21:16	06:57 20:05	07:51 18:51		07:50 16:45	08:40 16:13
11	08:48 16:36	08:04 17:34	07:01 18:29	06:45 20:27	05:40 21:22	05:04 22:04	05:16 22:02	06:04 21:14	06:59 20:02	07:53 18:49		07:52 16:43	08:41 16:13
12	08:47 16:37	08:02 17:36	06:58 18:31 3	07:22 (2) 07:25 (2) 1	06:43 20:29 1	07:07 (1) 07:08 (1)	05:39 21:23	05:03 22:05	05:17 22:01	06:05 21:12	07:00 20:00	07:54 18:46	07:54 16:42	08:42 16:13
13	08:47 16:39	08:00 17:38	06:56 18:33 7	07:20 (2) 07:27 (2) 4	06:40 20:31 4	07:04 (1) 07:08 (1)	05:37 21:25	05:03 22:06	05:18 22:00	06:07 21:10	07:02 19:57	07:56 18:44	07:56 16:40	08:43 16:12
14	08:46 16:41	07:58 17:40	06:53 18:35 10	07:17 (2) 07:27 (2) 7	06:38 20:32 7	07:02 (1) 07:09 (1)	05:35 21:27	05:03 22:06	05:20 21:59	06:09 21:08	07:04 19:55 8	07:56 (2) 08:04 (2)	07:58 18:42	07:58 16:39	08:44 16:12
15	08:45 16:42	07:55 17:42	06:51 18:37 13	07:15 (2) 07:28 (2) 9	06:36 20:34 9	07:00 (1) 07:09 (1)	05:33 21:29	05:02 22:07	05:21 21:58	06:11 21:05	07:06 19:52 15	07:52 (2) 08:07 (2)	08:00 18:39	08:00 16:37	08:45 16:12
16	08:44 16:44	07:53 17:44	06:49 18:39 16	07:13 (2) 07:29 (2) 11	06:33 20:36 11	06:58 (1) 07:09 (1)	05:32 21:30	05:02 22:07	05:22 21:57	06:13 21:03	07:07 19:50 20	07:50 (2) 08:10 (2)	08:02 18:37	08:02 16:35	08:46 16:12
17	08:43 16:46	07:51 17:46	06:46 18:40 19	07:10 (2) 07:29 (2) 13	06:31 20:38 13	06:55 (1) 07:08 (1)	05:30 21:32	05:02 22:08	05:24 21:56	06:14 21:01	07:09 19:47 23	07:48 (2) 08:11 (2)	08:04 18:35	08:03 16:34	08:47 16:13
18	08:42 16:47	07:49 17:48	06:44 18:42 21	07:08 (2) 07:29 (2) 15	06:29 20:40 15	06:53 (1) 07:08 (1)	05:29 21:34	05:02 22:08	05:25 21:55	06:16 20:59	07:11 19:45 25	07:46 (2) 08:11 (2)	08:06 18:32	08:05 16:32	08:48 16:13
19	08:41 16:49	07:47 17:50	06:41 18:44 24	07:05 (2) 07:29 (2) 16	06:26 20:42 16	06:51 (1) 07:07 (1)	05:27 21:35	05:02 22:09	05:26 21:53	06:18 20:57 4	06:59 (1) 07:03 (1)	07:13 19:42 27	07:45 (2) 08:12 (2)	08:08 18:30	08:07 16:31	08:49 16:13
20	08:40 16:51	07:45 17:52	06:39 18:46 26	07:03 (2) 07:29 (2) 17	06:24 20:44 17	06:49 (1) 07:06 (1)	05:25 21:37	05:02 22:09	05:28 21:52	06:20 20:54 11	06:56 (1) 07:07 (1)	07:15 19:40 29	07:44 (2) 08:13 (2)	08:09 18:28	08:09 16:30	08:49 16:13
21	08:38 16:53	07:43 17:54	06:36 18:48 28	07:00 (2) 07:28 (2) 17	06:22 20:45 17	06:48 (1) 07:05 (1)	05:24 21:38	05:02 22:09	05:29 21:51	06:21 20:52 15	06:54 (1) 07:09 (1)	07:16 19:37 30	07:43 (2) 08:13 (2)	08:11 18:25	08:11 16:28	08:50 16:14
22	08:37 16:55	07:40 17:56	06:34 18:50 30	06:58 (2) 07:28 (2) 14	06:20 20:47 14	06:49 (1) 07:03 (1)	05:23 21:40	05:02 22:09	05:31 21:49	06:23 20:50 17	06:52 (1) 07:09 (1)	07:18 19:35 29	07:44 (2) 08:13 (2)	08:13 18:23	08:13 16:27	08:50 16:14
23	08:36 16:57	07:38 17:58	06:31 18:52 29	06:57 (2) 07:26 (2) 11	06:17 20:49 11	06:50 (1) 07:01 (1)	05:21 21:41	05:03 22:10	05:32 21:48	06:25 20:48 17	06:53 (1) 07:10 (1)	07:20 19:32 27	07:46 (2) 08:13 (2)	08:15 18:21	08:14 16:26	08:51 16:15
24	08:34 16:58	07:36 18:00	06:29 18:53 28	06:58 (2) 07:26 (2) 11	06:15 20:51		05:20 21:43	05:03 22:10	05:34 21:46	06:27 20:45 16	06:55 (1) 07:11 (1)	07:22 19:30 24	07:48 (2) 08:12 (2)	08:17 18:19	08:16 16:25	08:51 16:15
25	08:33 17:00	07:34 18:02	06:27 18:55 26	06:58 (2) 07:24 (2) 11	06:13 20:53		05:18 21:44	05:03 22:10	05:35 21:45	06:28 20:43 14	06:56 (1) 07:10 (1)	07:23 19:28 22	07:50 (2) 08:12 (2)	07:19 17:17	08:18 16:23	08:52 16:16
26	08:32 17:02	07:31 18:04	06:24 18:57 24	06:59 (2) 07:23 (2) 11	06:11 20:55		05:17 21:46	05:04 22:10	05:37 21:43	06:30 20:41 13	06:58 (1) 07:11 (1)	07:25 19:25 20	07:52 (2) 08:12 (2)	07:21 17:15	08:20 16:22	08:52 16:17
27	08:30 17:04	07:29 18:06	06:22 18:59 21	07:00 (2) 07:21 (2) 11	06:09 20:56		05:16 21:47	05:04 22:10	05:38 21:42	06:32 20:38 11	07:00 (1) 07:11 (1)	07:27 19:23 17	07:53 (2) 08:10 (2)	07:23 17:12	08:21 16:21	08:52 16:18
28	08:29 17:06	07:27 18:08	06:19 19:01 17	07:02 (2) 07:19 (2) 11	06:06 20:58		05:15 21:49	05:05 22:09	05:40 21:40	06:34 20:36 9	07:02 (1) 07:11 (1)	07:29 19:20 14	07:55 (2) 08:09 (2)	07:25 17:10	08:23 16:20	08:52 16:18
29	08:27 17:08		07:17 20:03 9	08:05 (2) 08:14 (2)	06:04 21:00		05:14 21:50	05:05 22:09	05:42 21:38	06:36 20:34 6	07:03 (1) 07:09 (1)	07:31 19:18 11	07:57 (2) 08:08 (2)	07:27 17:08	08:25 16:19	08:53 16:19
30	08:25 17:10		07:14 20:05		06:02 21:02		05:13 21:51	05:06 22:09	05:43 21:37	06:37 20:31 4	07:05 (1) 07:09 (1)	07:32 19:15 8	07:59 (2) 08:07 (2)	07:29 17:06	08:26 16:19	08:53 16:20
31	08:24 17:12		07:12 20:06				05:11 21:53		05:45 21:35	06:39 20:29 1	07:07 (1) 07:08 (1)			07:31 17:04		08:53 16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328		259	233
Total, worst case			351	135				138	349	4			
Sun reduction			0.22	0.31				0.26	0.25	0.23			
Oper. time red.			1.00	1.00				1.00	1.00	1.00			
Wind dir. red.			0.64	0.64				0.64	0.64	0.64			
Total reduction			0.14	0.20				0.16	0.16	0.14			
Total, real			49	27				23	56	1			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** CU - H108

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:11	06:10 (2)	05:07	05:47	06:17 (2)	06:41	07:34	07:33	08:28
	16:23	17:14	18:10	20:08	21:04	21:54	2 06:12 (2)	22:09	21:33	20 06:37 (2)	20:27	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:10		05:07	05:48	06:19 (2)	06:43	07:36	07:35	08:29
	16:24	17:16	18:12	20:10	21:06	21:55		22:08	21:31	18 06:37 (2)	20:24	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04	05:56	06:22 (2) 05:09		05:08	05:50	06:20 (2)	06:44	07:38	07:37	08:31
	16:25	17:18	18:14	20:12	21:07	1 06:23 (2) 21:56		22:08	21:30	16 06:36 (2)	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	06:20 (2) 05:08		05:09	05:52	06:22 (2)	06:46	07:40	07:38	08:32
	16:26	17:20	18:16	20:14	21:09	4 06:24 (2) 21:57		22:07	21:28	14 06:36 (2)	20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	07:00	05:52	06:18 (2) 05:07		05:10	05:53	06:23 (2)	06:48	07:42	07:40	08:34
	16:27	17:22	18:18	20:16	21:11	6 06:24 (2) 21:58		22:07	21:26	12 06:35 (2)	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	06:16 (2) 05:06		05:11	05:55	06:25 (2)	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:18	21:13	9 06:25 (2) 21:59		22:06	21:24	10 06:35 (2)	20:14	19:01	16:52	16:14
7	08:51	08:11	07:10	06:55	05:48	06:15 (2) 05:06		05:12	05:57	06:27 (2)	06:52	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:15	11 06:26 (2) 22:00		22:05	21:22	8 06:35 (2)	20:12	18:58	16:51	16:14
8	08:50	08:09	07:08	06:52	05:46	06:13 (2) 05:05		05:13	05:59	06:28 (2)	06:53	07:47	07:46	08:38
	16:31	17:28	18:23	20:21	21:16	13 06:26 (2) 22:01		22:05	21:20	6 06:34 (2)	20:10	18:56	16:49	16:14
9	08:50	08:08	07:06	06:50	05:44	06:12 (2) 05:05		05:14	06:00	06:30 (2)	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	15 06:26 (2) 22:02		22:04	21:18	3 06:33 (2)	20:07	18:53	16:47	16:13
10	08:49	08:06	07:03	06:48	05:42	06:09 (2) 05:04		05:15	06:02		06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	17 06:26 (2) 22:03		22:03	21:16		20:05	18:51	16:45	16:13
11	08:48	08:04	07:01	06:45	05:40	06:08 (2) 05:04		05:16	06:04		06:59	07:53	07:52	08:41
	16:36	17:34	18:29	20:27	21:22	19 06:27 (2) 22:04		22:02	21:14		20:02	18:49	16:43	16:13
12	08:47	08:02	06:58	06:43	05:39	06:06 (2) 05:03		05:17 06:16 (2)	06:05		07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	20 06:26 (2) 22:05		22:01 7 06:23 (2)	21:12		20:00	18:46	16:42	16:13
13	08:47	08:00	06:56	06:40	05:37	06:04 (2) 05:03		05:18 06:14 (2)	06:07		07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:31	21:25	22 06:26 (2) 22:05		22:00 11 06:25 (2)	21:10		19:57	18:44	16:40	16:12
14	08:46	07:58	06:53	06:38	05:35	06:03 (2) 05:03		05:20 06:13 (2)	06:09		07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	24 06:27 (2) 22:06		21:59 14 06:27 (2)	21:08		19:55	18:42	16:39	16:12
15	08:45	07:55	06:51	06:36	05:33	06:01 (2) 05:02		05:21 06:11 (2)	06:11		07:06	08:00	08:00	08:45
	16:42	17:42	18:37	20:34	21:29	25 06:26 (2) 22:07		21:58 17 06:28 (2)	21:05		19:52	18:39	16:37	16:12
16	08:44	07:53	06:49	06:33	05:32	06:00 (2) 05:02		05:22 06:10 (2)	06:13		07:07	08:02	08:02	08:46
	16:44	17:44	18:39	20:36	21:30	26 06:26 (2) 22:07		21:57 19 06:29 (2)	21:03		19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:58 (2) 05:02		05:24 06:10 (2)	06:14		07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	27 06:25 (2) 22:08		21:56 21 06:31 (2)	21:01		19:47	18:35	16:34	16:13
18	08:42	07:49	06:44	06:29	05:29	05:57 (2) 05:02		05:25 06:09 (2)	06:16		07:11	08:06	08:05	08:48
	16:48	17:48	18:42	20:40	21:34	29 06:26 (2) 22:08		21:55 22 06:31 (2)	20:59		19:45	18:32	16:32	16:13
19	08:41	07:47	06:41	06:26	05:27	05:56 (2) 05:02		05:26 06:08 (2)	06:18		07:13	08:08	08:07	08:49
	16:49	17:50	18:44	20:42	21:35	30 06:26 (2) 22:09		21:53 24 06:32 (2)	20:57		19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:56 (2) 05:02		05:28 06:08 (2)	06:20		07:15	08:09	08:09	08:49
	16:51	17:52	18:46	20:44	21:37	29 06:25 (2) 22:09		21:52 25 06:33 (2)	20:54		19:40	18:28	16:30	16:13
21	08:38	07:43	06:36	06:22	05:24	05:57 (2) 05:02		05:29 06:07 (2)	06:21		07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	28 06:25 (2) 22:09		21:51 27 06:34 (2)	20:52		19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:20	05:23	05:57 (2) 05:02		05:31 06:07 (2)	06:23		07:18	08:13	08:13	08:50
	16:55	17:56	18:50	20:47	21:40	27 06:24 (2) 22:09		21:49 27 06:34 (2)	20:50		19:35	18:23	16:27	16:14
23	08:36	07:38	06:31	06:17	05:21	05:57 (2) 05:03		05:32 06:07 (2)	06:25		07:20	08:15	08:14	08:51
	16:57	17:58	18:52	20:49	21:41	26 06:23 (2) 22:10		21:48 28 06:35 (2)	20:48		19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:58 (2) 05:03		05:34 06:06 (2)	06:27		07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	25 06:23 (2) 22:10		21:46 29 06:35 (2)	20:45		19:30	18:19	16:25	16:15
25	08:33	07:34	06:27	06:13	05:18	05:59 (2) 05:03		05:35 06:07 (2)	06:28		07:23	07:19	08:18	08:52
	17:00	18:02	18:55	20:53	21:44	23 06:22 (2) 22:10		21:45 29 06:36 (2)	20:43		19:28	17:17	16:24	16:16
26	08:32	07:31	06:24	06:11	05:17	06:00 (2) 05:04		05:37 06:08 (2)	06:30		07:25	07:21	08:20	08:52
	17:02	18:04	18:57	20:55	21:46	21 06:21 (2) 22:10		21:43 28 06:36 (2)	20:41		19:25	17:15	16:22	16:17
27	08:30	07:29	06:22	06:09	05:16	06:01 (2) 05:04		05:38 06:10 (2)	06:32		07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	20 06:21 (2) 22:10		21:42 27 06:37 (2)	20:38		19:23	17:12	16:21	16:18
28	08:29	07:27	06:19	06:06	05:15	06:02 (2) 05:05		05:40 06:11 (2)	06:34		07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:49	18 06:20 (2) 22:09		21:40 26 06:37 (2)	20:36		19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	05:14	06:04 (2) 05:05		05:42 06:12 (2)	06:36		07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	15 06:19 (2) 22:09		21:38 24 06:36 (2)	20:34		19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	05:13	06:05 (2) 05:06		05:43 06:14 (2)	06:37		07:32	07:29	08:26	08:53
	17:10		20:05	21:02	21:51	12 06:17 (2) 22:09		21:37 23 06:37 (2)	20:31		19:15	17:06	16:19	16:20
31	08:24		07:12		05:12	06:07 (2)		05:45 06:16 (2)	06:39			07:31		08:53
	17:12		20:06		21:53	9 06:16 (2)		21:35 21 06:37 (2)	20:29			17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382		328		259	233
Total, worst case					551	2	449	107						
Sun reduction					0.31	0.26	0.22	0.26						
Oper. time red.					1.00	1.00	1.00	1.00						
Wind dir. red.					0.65	0.65	0.65	0.65						
Total reduction					0.20	0.17	0.14	0.17						
Total, real					112	0	65	18						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** CV - H110

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May		June		July		August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00		05:10		20:49 (11)	05:06	21:00 (11)	05:46	06:40	07:34	07:32	08:27
	16:22	17:14	18:09	20:08	21:03		21:53	22	21:11 (11)	22:08	21:12 (11)	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:06	05:58		05:09		20:49 (11)	05:07	20:59 (11)	05:48	06:42	07:36	07:34	08:29
	16:23	17:15	18:11	20:10	21:05		21:55	21	21:10 (11)	22:08	21:13 (11)	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:19	07:04	05:55		05:08		20:50 (11)	05:08	20:59 (11)	05:49	06:44	07:37	07:36	08:30
	16:24	17:17	18:13	20:12	21:07		21:56	20	21:10 (11)	22:07	21:14 (11)	21:29	20:21	19:07	16:58	16:16
4	08:51	08:16	07:17	07:02	05:53		05:07		20:51 (11)	05:08	20:59 (11)	05:51	06:46	07:39	07:38	08:32
	16:26	17:19	18:15	20:13	21:09		21:57	19	21:10 (11)	22:07	21:14 (11)	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:51		05:07		20:51 (11)	05:09	20:58 (11)	05:53	06:48	07:41	07:40	08:33
	16:27	17:21	18:17	20:15	21:11		21:58	19	21:10 (11)	22:06	21:14 (11)	21:25	20:16	19:02	16:54	16:15
6	08:51	08:13	07:12	06:57	05:49		05:06		20:51 (11)	05:10	20:58 (11)	05:55	06:49	07:43	07:42	08:34
	16:28	17:23	18:19	20:17	21:12		21:59	18	21:09 (11)	22:06	21:15 (11)	21:23	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48		05:05		20:53 (11)	05:11	20:58 (11)	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14		22:00	16	21:09 (11)	22:05	21:16 (11)	21:21	20:12	18:58	16:50	16:14
8	08:50	08:09	07:07	06:52	05:46		05:05		20:53 (11)	05:12	20:58 (11)	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16		22:01	15	21:08 (11)	22:04	21:16 (11)	21:19	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:49	05:44		05:04		20:54 (11)	05:13	20:57 (11)	06:00	06:55	07:48	07:48	08:38
	16:32	17:30	18:25	20:23	21:18		22:02	14	21:08 (11)	22:03	21:17 (11)	21:17	20:07	18:53	16:46	16:13
10	08:48	08:05	07:03	06:47	05:42		05:04		20:55 (11)	05:14	20:57 (11)	06:02	06:56	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:19		22:03	14	21:09 (11)	22:03	21:17 (11)	21:15	20:04	18:50	16:45	16:12
11	08:48	08:03	07:00	06:45	05:40		05:03		20:55 (11)	05:16	20:57 (11)	06:03	06:58	07:52	07:52	08:41
	16:35	17:34	18:29	20:26	21:21		22:04	13	21:08 (11)	22:02	21:18 (11)	21:13	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38		05:03		20:56 (11)	05:17	20:56 (11)	06:05	07:00	07:54	07:53	08:42
	16:37	17:36	18:30	20:28	21:23		22:04	12	21:08 (11)	22:01	21:18 (11)	21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:55	06:40	05:36	20:50 (11)	05:02		20:57 (11)	05:18	20:56 (11)	06:07	07:02	07:56	07:55	08:43
	16:39	17:38	18:32	20:30	21:25	3 20:53 (11)	22:05	10	21:07 (11)	22:00	21:19 (11)	21:09	19:57	18:43	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	20:49 (11)	05:02		20:58 (11)	05:19	20:57 (11)	06:09	07:03	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:26	5 20:54 (11)	22:06	9	21:07 (11)	21:59	21:20 (11)	21:07	19:54	18:41	16:38	16:12
15	08:44	07:55	06:51	06:35	05:33	20:48 (11)	05:02		20:58 (11)	05:20	20:56 (11)	06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	8 20:56 (11)	22:06	8	21:06 (11)	21:58	21:20 (11)	21:05	19:52	18:39	16:36	16:12
16	08:43	07:53	06:48	06:33	05:31	20:47 (11)	05:02		20:59 (11)	05:22	20:56 (11)	06:12	07:07	08:01	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	10 20:57 (11)	22:07	7	21:06 (11)	21:57	21:20 (11)	21:03	19:49	18:36	16:35	16:12
17	08:42	07:51	06:46	06:31	05:30	20:47 (11)	05:02		20:59 (11)	05:23	20:56 (11)	06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:31	12 20:59 (11)	22:07	7	21:06 (11)	21:55	21:20 (11)	21:01	19:47	18:34	16:33	16:12
18	08:41	07:49	06:43	06:28	05:28	20:46 (11)	05:02		21:00 (11)	05:24	20:56 (11)	06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:39	21:33	14 21:00 (11)	22:08	5	21:05 (11)	21:54	21:20 (11)	20:58	19:44	18:32	16:32	16:12
19	08:40	07:46	06:41	06:26	05:27	20:46 (11)	05:02		21:01 (11)	05:26	20:56 (11)	06:17	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	16 21:02 (11)	22:08	4	21:05 (11)	21:53	21:20 (11)	20:56	19:42	18:30	16:31	16:13
20	08:39	07:44	06:38	06:24	05:25	20:47 (11)	05:02		21:02 (11)	05:27	20:56 (11)	06:19	07:14	08:09	08:08	08:49
	16:51	17:52	18:46	20:43	21:36	17 21:04 (11)	22:08	4	21:06 (11)	21:52	21:18 (11)	20:54	19:39	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:24	20:46 (11)	05:02		21:02 (11)	05:29	20:56 (11)	06:21	07:16	08:11	08:10	08:49
	16:52	17:54	18:47	20:45	21:38	18 21:04 (11)	22:09	4	21:06 (11)	21:50	21:16 (11)	20:52	19:37	18:25	16:28	16:13
22	08:37	07:40	06:33	06:19	05:22	20:46 (11)	05:02		21:02 (11)	05:30	20:56 (11)	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:39	20 21:06 (11)	22:09	4	21:06 (11)	21:49	21:16 (11)	20:49	19:34	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	20:46 (11)	05:02		21:02 (11)	05:32	20:56 (11)	06:24	07:19	08:15	08:14	08:50
	16:56	17:58	18:51	20:49	21:41	22 21:08 (11)	22:09	4	21:06 (11)	21:47	21:14 (11)	20:47	19:32	18:21	16:25	16:14
24	08:34	07:35	06:28	06:15	05:19	20:47 (11)	05:02		21:02 (11)	05:33	20:57 (11)	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:50	21:42	22 21:09 (11)	22:09	5	21:07 (11)	21:46	21:13 (11)	20:45	19:30	18:18	16:24	16:15
25	08:32	07:33	06:26	06:12	05:18	20:47 (11)	05:03		21:02 (11)	05:35	20:57 (11)	06:28	07:23	07:19	08:17	08:51
	17:00	18:01	18:55	20:52	21:44	24 21:11 (11)	22:09	6	21:08 (11)	21:44	21:12 (11)	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	20:46 (11)	05:03		21:01 (11)	05:36	20:58 (11)	06:30	07:25	07:20	08:19	08:51
	17:02	18:03	18:57	20:54	21:45	25 21:11 (11)	22:09	7	21:08 (11)	21:43	21:11 (11)	20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:15	20:46 (11)	05:04		21:01 (11)	05:38	20:58 (11)	06:32	07:27	07:22	08:21	08:52
	17:04	18:05	18:59	20:56	21:47	25 21:11 (11)	22:09	8	21:09 (11)	21:41	21:09 (11)	20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	20:47 (11)	05:04		21:00 (11)	05:40	20:59 (11)	06:33	07:28	07:24	08:22	08:52
	17:06	18:07	19:00	20:58	21:48	24 21:11 (11)	22:09	9	21:09 (11)	21:40	21:08 (11)	20:36	19:20	17:10	16:20	16:18
29	08:26		07:16	06:04	05:13	20:47 (11)	05:05		21:00 (11)	05:41	20:59 (11)	06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:49	23 21:10 (11)	22:09	10	21:10 (11)	21:38	21:06 (11)	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	20:47 (11)	05:05		21:01 (11)	05:43	21:00 (11)	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:01	21:51	23 21:10 (11)	22:08	11	21:12 (11)	21:36	21:05 (11)	20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11	20:49 (11)				05:44	21:01 (11)	06:39		07:30		08:52
	17:12		20:06		21:52	22 21:11 (11)				21:35	2 21:03 (11)	20:28		17:04		16:21
Potential sun hours	250	273	367	420	494		510			512		460	382	328	259	233
Total, worst case						333		325		532						
Sun reduction						0.31		0.26		0.22						
Oper. time red.						1.00		1.00		1.00						
Wind dir. red.						0.61		0.61		0.61						
Total reduction						0.19		0.16		0.14						
Total, real						64		51		73						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** CW - H111

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:40	07:34	07:32	08:27
	16:22	17:14	18:09	20:08	21:03	21:53	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:19	07:04	05:56	05:08	05:08	05:49	06:44	07:37	07:36	08:30
	16:24	17:18	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58	16:16
4	08:51	08:16	07:17	07:02	05:53	05:07	05:09	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:13	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11	21:58	22:06	21:25	20:16	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50	05:06	05:10	05:55	06:49	07:43	07:42	08:34
	16:28	17:24	18:19	20:17	21:12	21:59	22:06	21:23	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:21	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48	08:38
	16:32	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:48	08:05	07:03	06:47	05:42	05:04	05:14	06:02	06:56	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:19	22:03	22:03	21:15	20:04	18:51	16:45	16:13
11	08:48	08:03	07:00	06:45	05:40	05:03	05:16	06:03	06:58	07:52	07:52	08:41
	16:35	17:34	18:29	20:26	21:21	22:04	22:02	21:13	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:53	08:42
	16:37	17:36	18:31	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:55	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:55	08:43
	16:39	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:03	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:26	22:06	21:59	21:07	19:54	18:41	16:38	16:12
15	08:44	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:43	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:01	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16:12
17	08:42	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:31	22:07	21:55	21:01	19:47	18:34	16:33	16:12
18	08:41	07:49	06:43	06:28	05:28	05:02	05:24	06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:39	21:33	22:08	21:54	20:58	19:44	18:32	16:32	16:12
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:08	08:49
	16:51	17:52	18:46	20:43	21:36	22:08	21:52	20:54	19:39	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:24	05:02	05:29	06:21	07:16	08:11	08:10	08:49
	16:52	17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:13
22	08:37	07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:39	22:09	21:49	20:49	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:19	08:15	08:14	08:50
	16:56	17:58	18:51	20:49	21:41	22:09	21:47	20:47	19:32	18:21	16:25	16:14
24	08:34	07:35	06:29	06:15	05:19	05:03	05:33	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:50	21:42	22:09	21:46	20:45	19:30	18:18	16:24	16:15
25	08:32	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17	08:51
	17:00	18:02	18:55	20:52	21:44	22:09	21:44	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:51
	17:02	18:03	18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:22	08:21	08:52
	17:04	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	05:04	05:40	06:33	07:28	07:24	08:22	08:52
	17:06	18:07	19:00	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:26		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:01	21:51	22:08	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11		05:44	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:28		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** CX - H112

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:07	05:46	06:41	07:34	07:32	08:27
	16:23	17:14	18:10	20:08	21:04	21:54	22:08	21:33	20:26	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:10	05:07	05:48	06:43	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:14	20:12	21:07	21:56	22:08	21:29	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:52	06:46	07:40	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:28	20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	06:59	05:52	05:07	05:10	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	21:58	22:06	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:55	05:48	05:06	05:12	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:56	16:49	16:14
9	08:49	08:07	07:05	06:50	05:44	05:04	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51	16:45	16:13
11	08:48	08:03	07:01	06:45	05:40	05:04	05:16	06:04	06:59	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:13
12	08:47	08:01	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	22:00	21:10	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:03	05:20	06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00	07:59	08:45
	16:42	17:42	18:37	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:34	16:13
18	08:42	07:49	06:44	06:29	05:29	05:02	05:25	06:16	07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:42	21:35	22:08	21:53	20:57	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:28	06:20	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:37	22:09	21:52	20:54	19:40	18:28	16:30	16:13
21	08:38	07:42	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	05:02	05:31	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:14	08:51
	16:57	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:19	16:25	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	21:44	22:09	21:45	20:43	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:41	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:22	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	05:14	05:05	05:42	06:35	07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:34	19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	05:13	05:06	05:43	06:37	07:32	07:29	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:37	20:31	19:15	17:06	16:19	16:20
31	08:24		07:12		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** CY - H113

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February		March	April	May	June	July	August	September	October		November		December	
1	08:53	08:22		07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34		07:33		08:02 (1)	08:28		
	16:23	17:14		18:10	20:08	21:04	21:54	22:09	21:33	20:27	19:13		17:02	12	08:14 (1)	16:18		
2	08:52	08:20		07:22	07:07	05:58	05:09	05:07	05:48	06:43	07:36		07:35		08:04 (1)	08:29		
	16:24	17:16		18:12	20:10	21:06	21:55	22:08	21:31	20:24	19:10		17:00	9	08:13 (1)	16:17		
3	08:52	08:19		07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38		07:37		08:06 (1)	08:31		
	16:25	17:18		18:14	20:12	21:07	21:56	22:08	21:30	20:22	19:08		16:58	7	08:13 (1)	16:16		
4	08:52	08:17		07:17	07:02	05:54	05:08	05:09	05:52	06:46	07:40		07:38		08:08 (1)	08:32		
	16:26	17:20		18:16	20:14	21:09	21:57	22:07	21:28	20:19	19:05		16:56	3	08:11 (1)	16:16		
5	08:52	08:15		07:15	07:00	05:52	05:07	05:10	05:53	06:48	07:42		07:40			08:34		
	16:27	17:22		18:18	20:16	21:11	21:59	22:07	21:26	20:17	19:03		16:54			16:15		
6	08:51	08:13	08:40 (1)	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43		07:42			08:35		
	16:29	17:24	1 08:41 (1)	18:19	20:18	21:13	22:00	22:06	21:24	20:14	19:01		16:52			16:14		
7	08:51	08:11	08:38 (1)	07:10	06:55	05:48	05:06	05:12	05:57	06:52	07:45		07:44			08:36		
	16:30	17:26	4 08:42 (1)	18:21	20:19	21:15	22:01	22:06	21:22	20:12	18:58		16:50			16:14		
8	08:50	08:09	08:36 (1)	07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47		07:46			08:38		
	16:31	17:28	7 08:43 (1)	18:23	20:21	21:16	22:02	22:05	21:20	20:10	18:56		16:49			16:13		
9	08:50	08:08	08:34 (1)	07:06	06:50	05:44	05:04	05:14	06:00	06:55	07:49		07:48			08:39		
	16:33	17:30	10 08:44 (1)	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53		16:47			16:13		
10	08:49	08:06	08:32 (1)	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51		07:50			08:40		
	16:34	17:32	13 08:45 (1)	18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51		16:45			16:13		
11	08:48	08:04	08:30 (1)	07:01	06:45	05:40	05:03	05:16	06:04	06:59	07:53		07:52			08:41		
	16:36	17:34	15 08:45 (1)	18:29	20:27	21:22	22:04	22:02	21:14	20:02	18:49		16:43			16:13		
12	08:47	08:02	08:28 (1)	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54		07:54			08:42		
	16:37	17:36	18 08:46 (1)	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46		16:42			16:12		
13	08:47	08:00	08:26 (1)	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56		07:56			08:43		
	16:39	17:38	20 08:46 (1)	18:33	20:31	21:25	22:06	22:00	21:10	19:57	18:44		16:40			16:12		
14	08:46	07:58	08:24 (1)	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58		07:58			08:44		
	16:41	17:40	22 08:46 (1)	18:35	20:32	21:27	22:06	21:59	21:08	19:55	18:41		16:38			16:12		
15	08:45	07:55	08:21 (1)	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00		08:00			08:45		10:05 (2)
	16:42	17:42	24 08:45 (1)	18:37	20:34	21:29	22:07	21:58	21:05	19:52	18:39		16:37			16:12	4	10:09 (2)
16	08:44	07:53	08:19 (1)	06:49	06:33	05:32	05:02	05:22	06:12	07:07	08:02		08:02			08:46		10:04 (2)
	16:44	17:44	26 08:45 (1)	18:39	20:36	21:30	22:07	21:57	21:03	19:50	18:37		16:35			16:12	7	10:11 (2)
17	08:43	07:51	08:19 (1)	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04		08:03			08:47		10:04 (2)
	16:46	17:46	26 08:45 (1)	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:35		16:34			16:13	8	10:12 (2)
18	08:42	07:49	08:20 (1)	06:44	06:29	05:28	05:02	05:25	06:16	07:11	08:06		08:05			08:48		10:05 (2)
	16:47	17:48	25 08:45 (1)	18:42	20:40	21:34	22:08	21:55	20:59	19:45	18:32		16:32			16:13	8	10:13 (2)
19	08:41	07:47	08:21 (1)	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:08	08:57 (1)	08:07			08:49		10:04 (2)
	16:49	17:50	23 08:44 (1)	18:44	20:42	21:35	22:09	21:53	20:57	19:42	18:30	10 09:07 (1)	16:31			16:13	9	10:13 (2)
20	08:40	07:45	08:21 (1)	06:39	06:24	05:25	05:02	05:28	06:20	07:15	08:09	08:54 (1)	08:09			08:49		10:05 (2)
	16:51	17:52	21 08:42 (1)	18:46	20:44	21:37	22:09	21:52	20:54	19:40	18:28	16 09:10 (1)	16:30			16:13	10	10:15 (2)
21	08:38	07:43	08:23 (1)	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:52 (1)	08:11			08:50		10:04 (2)
	16:53	17:54	18 08:41 (1)	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	19 09:11 (1)	16:28			16:14	11	10:15 (2)
22	08:37	07:40	08:25 (1)	06:34	06:20	05:22	05:02	05:31	06:23	07:18	08:13	08:51 (1)	08:13			08:50		10:05 (2)
	16:55	17:56	14 08:39 (1)	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	22 09:13 (1)	16:27			16:14	11	10:16 (2)
23	08:36	07:38	08:28 (1)	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:50 (1)	08:14			08:51		10:05 (2)
	16:56	17:58	6 08:34 (1)	18:52	20:49	21:41	22:10	21:48	20:48	19:32	18:21	24 09:14 (1)	16:26			16:15	11	10:16 (2)
24	08:34	07:36		06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:49 (1)	08:16			08:51		10:07 (2)
	16:58	18:00		18:53	20:51	21:43	22:10	21:46	20:45	19:30	18:19	25 09:14 (1)	16:25			16:15	10	10:17 (2)
25	08:33	07:34		06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	07:48 (1)	08:18			08:52		10:07 (2)
	17:00	18:02		18:55	20:53	21:44	22:10	21:45	20:43	19:28	17:17	27 08:15 (1)	16:23			16:16	9	10:16 (2)
26	08:32	07:31		06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	07:49 (1)	08:20			08:52		10:08 (2)
	17:02	18:04		18:57	20:55	21:46	22:10	21:43	20:41	19:25	17:14	26 08:15 (1)	16:22			16:17	8	10:16 (2)
27	08:30	07:29		06:22	06:08	05:16	05:04	05:38	06:32	07:27	07:23	07:52 (1)	08:21			08:52		10:09 (2)
	17:04	18:06		18:59	20:56	21:47	22:10	21:42	20:38	19:23	17:12	24 08:16 (1)	16:21			16:17	7	10:16 (2)
28	08:29	07:27		06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	07:54 (1)	08:23			08:52		10:10 (2)
	17:06	18:08		19:01	20:58	21:49	22:09	21:40	20:36	19:20	17:10	22 08:16 (1)	16:20			16:18	6	10:16 (2)
29	08:27			07:17	06:04	05:14	05:05	05:42	06:36	07:31	07:27	07:56 (1)	08:25			08:53		
	17:08			20:03	21:00	21:50	22:09	21:38	20:34	19:18	17:08	20 08:16 (1)	16:19			16:19		
30	08:25			07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:29	07:58 (1)	08:26			08:53		
	17:10			20:05	21:02	21:51	22:09	21:37	20:31	19:15	17:06	17 08:15 (1)	16:18			16:20		
31	08:24			07:12		05:11		05:45	06:39		07:31	08:00 (1)				08:53		
	17:12			20:06		21:53		21:35	20:29		17:04	15 08:15 (1)				16:21		
Potential sun hours	250	273		367	420	494	510	512	460	382	328		259			233		
Total, worst case			293									267		31			119	
Sun reduction			0.19									0.23		0.20			0.12	
Oper. time red.			1.00									1.00		1.00			1.00	
Wind dir. red.			0.61									0.61		0.61			0.61	
Total reduction			0.12									0.14		0.12			0.07	
Total, real			35									37		4			9	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** CZ - H114

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May		June		July		August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00		05:10		21:07 (7)	05:06	21:12 (7)	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:10	20:08	21:03		21:53	12	21:19 (7)	22:08	21	21:33 (7)	21:33	20:26	19:12	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58		05:09		21:07 (7)	05:07	21:12 (7)	05:48	06:42	07:36	07:34	08:29
	16:24	17:16	18:11	20:10	21:05		21:55	13	21:20 (7)	22:08	20	21:32 (7)	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56		05:09		21:07 (7)	05:08	21:12 (7)	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:13	20:12	21:07		21:56	15	21:22 (7)	22:07	20	21:32 (7)	21:29	20:21	19:08	16:58	16:16
4	08:51	08:17	07:17	07:02	05:54		05:08		21:07 (7)	05:09	21:13 (7)	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:14	21:09		21:57	15	21:22 (7)	22:07	19	21:32 (7)	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52		05:07		21:07 (7)	05:10	21:13 (7)	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11		21:58	16	21:23 (7)	22:06	18	21:31 (7)	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50		05:06		21:07 (7)	05:11	21:13 (7)	05:55	06:50	07:43	07:42	08:35
	16:28	17:24	18:19	20:17	21:13		21:59	17	21:24 (7)	22:06	17	21:30 (7)	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48		05:06		21:07 (7)	05:12	21:13 (7)	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14		22:00	18	21:25 (7)	22:05	16	21:29 (7)	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46		05:05		21:07 (7)	05:13	21:13 (7)	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16		22:01	19	21:26 (7)	22:04	16	21:29 (7)	21:20	20:09	18:55	16:49	16:13
9	08:49	08:07	07:05	06:50	05:44		05:04		21:07 (7)	05:14	21:14 (7)	06:00	06:55	07:49	07:48	08:38
	16:33	17:30	18:25	20:23	21:18		22:02	19	21:26 (7)	22:04	14	21:28 (7)	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42		05:04		21:08 (7)	05:15	21:14 (7)	06:02	06:57	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20		22:03	19	21:27 (7)	22:03	14	21:28 (7)	21:16	20:04	18:51	16:45	16:13
11	08:48	08:03	07:00	06:45	05:40		05:03		21:07 (7)	05:16	21:14 (7)	06:04	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21		22:04	21	21:28 (7)	22:02	13	21:27 (7)	21:14	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:43	05:38		05:03		21:07 (7)	05:17	21:15 (7)	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23		22:04	22	21:29 (7)	22:01	12	21:27 (7)	21:12	19:59	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	05:37		05:03		21:08 (7)	05:18	21:16 (7)	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25		22:05	21	21:29 (7)	22:00	10	21:26 (7)	21:09	19:57	18:44	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35		05:02		21:08 (7)	05:19	21:16 (7)	06:09	07:04	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:27		22:06	22	21:30 (7)	21:59	9	21:25 (7)	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	05:33		05:02		21:09 (7)	05:21	21:17 (7)	06:11	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28		22:06	22	21:31 (7)	21:58	7	21:24 (7)	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32		05:02		21:09 (7)	05:22	21:17 (7)	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30		22:07	22	21:31 (7)	21:57	5	21:22 (7)	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30		05:02		21:09 (7)	05:23	21:17 (7)	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32		22:07	23	21:32 (7)	21:56	4	21:21 (7)	21:01	19:47	18:34	16:34	16:12
18	08:41	07:49	06:43	06:28	05:28		05:02		21:09 (7)	05:25	21:19 (7)	06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:40	21:33		22:08	23	21:32 (7)	21:54	2	21:21 (7)	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27		05:02		21:09 (7)	05:26		06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35		22:08	24	21:33 (7)	21:53		20:56	19:42	18:30	16:31	16:13
20	08:39	07:44	06:39	06:24	05:25		05:02		21:10 (7)	05:28		06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36		22:09	23	21:33 (7)	21:52		20:54	19:40	18:27	16:29	16:13
21	08:38	07:42	06:36	06:22	05:24		05:02		21:10 (7)	05:29		06:21	07:16	08:11	08:10	08:49
	16:53	17:54	18:48	20:45	21:38		22:09	23	21:33 (7)	21:50		20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22		05:02		21:10 (7)	05:30		06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:49	20:47	21:40		22:09	23	21:33 (7)	21:49		20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21		05:02		21:10 (7)	05:32		06:25	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41		22:09	24	21:34 (7)	21:48		20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20		05:03		21:10 (7)	05:33		06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43		22:09	23	21:33 (7)	21:46		20:45	19:30	18:19	16:24	16:15
25	08:33	07:33	06:26	06:13	05:18	21:10 (7)	05:03		21:10 (7)	05:35		06:28	07:23	07:19	08:17	08:51
	17:00	18:02	18:55	20:52	21:44	1 21:11 (7)	22:09	23	21:33 (7)	21:45		20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	21:09 (7)	05:04		21:11 (7)	05:37		06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:45	3 21:12 (7)	22:09	23	21:34 (7)	21:43		20:40	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	21:09 (7)	05:04		21:11 (7)	05:38		06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	4 21:13 (7)	22:09	22	21:33 (7)	21:41		20:38	19:22	17:12	16:21	16:17
28	08:28	07:27	06:19	06:06	05:15	21:08 (7)	05:05		21:11 (7)	05:40		06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	7 21:15 (7)	22:09	22	21:33 (7)	21:40		20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	21:08 (7)	05:05		21:11 (7)	05:41		06:35	07:30	07:26	08:24	08:52
	17:08		20:03	21:00	21:50	8 21:16 (7)	22:09	22	21:33 (7)	21:38		20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	21:08 (7)	05:06		21:12 (7)	05:43		06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	9 21:17 (7)	22:09	21	21:33 (7)	21:36		20:31	19:15	17:06	16:18	16:20
31	08:23		07:12		05:11	21:07 (7)				05:45		06:39		07:30		08:52
	17:12		20:06		21:52	11 21:18 (7)				21:35		20:29		17:04		16:21
Potential sun hours	250	273	367	420	494		510			512	460	382	328	259	233	
Total, worst case					43		612			237						
Sun reduction					0.31		0.26			0.22						
Oper. time red.					1.00		1.00			1.00						
Wind dir. red.					0.60		0.60			0.60						
Total reduction					0.19		0.16			0.13						
Total, real					8		95			32						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** DA - H115

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March		April	May	June	July	August	September		October		November	December
1	08:52	08:22	07:24		07:09	06:00	05:11	05:07	05:47	06:41		07:34	08:01 (2)	07:33	08:28
	16:23	17:14	18:10		20:08	21:04	21:54	22:09	21:33	20:27		19:13	8 08:09 (2)	17:02	16:18
2	08:52	08:20	07:22		07:07	05:58	05:10	05:07	05:48	06:43		07:36	08:02 (2)	07:35	08:29
	16:24	17:16	18:12		20:10	21:06	21:55	22:08	21:31	20:24		19:10	5 08:07 (2)	17:00	16:17
3	08:52	08:19	07:20		07:04	05:56	05:09	05:08	05:50	06:44		07:38	08:04 (2)	07:37	08:31
	16:25	17:18	18:14		20:12	21:07	21:56	22:08	21:30	20:22		19:08	1 08:05 (2)	16:58	16:16
4	08:52	08:17	07:17		07:02	05:54	05:08	05:09	05:52	06:46		07:40		07:38	08:32
	16:26	17:20	18:16		20:14	21:09	21:57	22:07	21:28	20:19		19:05		16:56	16:16
5	08:52	08:15	07:15		07:00	05:52	05:07	05:10	05:53	06:48		07:42		07:40	08:34
	16:27	17:22	18:18		20:16	21:11	21:58	22:07	21:26	20:17		19:03		16:54	16:15
6	08:51	08:13	07:13		06:57	05:50	05:06	05:11	05:55	06:50		07:43		07:42	08:35
	16:29	17:24	18:19		20:18	21:13	22:00	22:06	21:24	20:14		19:01		16:52	16:14
7	08:51	08:11	07:10		06:55	05:48	05:06	05:12	05:57	06:52		07:45		07:44	08:36
	16:30	17:26	18:21		20:19	21:15	22:01	22:06	21:22	20:12		18:58		16:51	16:14
8	08:50	08:09	07:08		06:52	05:46	05:05	05:13	05:58	06:53		07:47		07:46	08:38
	16:31	17:28	18:23		20:21	21:16	22:01	22:05	21:20	20:10		18:56		16:49	16:14
9	08:50	08:08	07:06		06:50	05:44	05:04	05:14	06:00	06:55		07:49		07:48	08:39
	16:33	17:30	18:25		20:23	21:18	22:02	22:04	21:18	20:07		18:53		16:47	16:13
10	08:49	08:06	07:03		06:48	05:42	05:04	05:15	06:02	06:57		07:51		07:50	08:40
	16:34	17:32	18:27		20:25	21:20	22:03	22:03	21:16	20:05		18:51		16:45	16:13
11	08:48	08:04	07:01	07:25 (2)	06:45	05:40	05:04	05:16	06:04	06:59		07:53		07:52	08:41
	16:36	17:34	18:29	3 07:28 (2)	20:27	21:22	22:04	22:02	21:14	20:02		18:49		16:43	16:13
12	08:47	08:02	06:58	07:22 (2)	06:43	05:39	05:03	05:17	06:05	07:00		07:54		07:54	08:42
	16:37	17:36	18:31	7 07:29 (2)	20:29	21:23	22:05	22:01	21:12	20:00		18:46		16:42	16:13
13	08:47	08:00	06:56	07:20 (2)	06:40	05:37	05:03	05:18	06:07	07:02		07:56		07:56	08:43
	16:39	17:38	18:33	10 07:30 (2)	20:31	21:25	22:06	22:00	21:10	19:57		18:44		16:40	16:12
14	08:46	07:58	06:53	07:17 (2)	06:38	05:35	05:03	05:20	06:09	07:04		07:58		07:58	08:44
	16:41	17:40	18:35	13 07:30 (2)	20:32	21:27	22:06	21:59	21:08	19:55		18:42		16:39	16:12
15	08:45	07:55	06:51	07:15 (2)	06:36	05:33	05:02	05:21	06:11	07:06		08:00		08:00	08:45
	16:42	17:42	18:37	16 07:31 (2)	20:34	21:29	22:07	21:58	21:05	19:52		18:39		16:37	16:12
16	08:44	07:53	06:49	07:13 (2)	06:33	05:32	05:02	05:22	06:13	07:07		08:02		08:02	08:46
	16:44	17:44	18:39	19 07:32 (2)	20:36	21:30	22:07	21:57	21:03	19:50		18:37		16:35	16:12
17	08:43	07:51	06:46	07:10 (2)	06:31	05:30	05:02	05:24	06:14	07:09	07:56 (2)	08:04		08:03	08:47
	16:46	17:46	18:40	21 07:31 (2)	20:38	21:32	22:08	21:56	21:01	19:47	12 08:08 (2)	18:35		16:34	16:13
18	08:42	07:49	06:44	07:08 (2)	06:29	05:29	05:02	05:25	06:16	07:11	07:52 (2)	08:06		08:05	08:48
	16:47	17:48	18:42	23 07:31 (2)	20:40	21:34	22:08	21:55	20:59	19:45	17 08:09 (2)	18:32		16:32	16:13
19	08:41	07:47	06:41	07:05 (2)	06:26	05:27	05:02	05:26	06:18	07:13	07:50 (2)	08:08		08:07	08:49
	16:49	17:50	18:44	25 07:30 (2)	20:42	21:35	22:09	21:53	20:57	19:42	21 08:11 (2)	18:30		16:31	16:13
20	08:40	07:45	06:39	07:03 (2)	06:24	05:25	05:02	05:28	06:20	07:15	07:49 (2)	08:09		08:09	08:49
	16:51	17:52	18:46	27 07:30 (2)	20:44	21:37	22:09	21:52	20:54	19:40	23 08:12 (2)	18:28		16:30	16:13
21	08:38	07:43	06:36	07:01 (2)	06:22	05:24	05:02	05:29	06:21	07:16	07:48 (2)	08:11		08:11	08:50
	16:53	17:54	18:48	28 07:29 (2)	20:45	21:38	22:09	21:51	20:52	19:37	25 08:13 (2)	18:25		16:28	16:14
22	08:37	07:40	06:34	07:02 (2)	06:20	05:23	05:02	05:31	06:23	07:18	07:46 (2)	08:13		08:13	08:50
	16:55	17:56	18:50	26 07:28 (2)	20:47	21:40	22:09	21:49	20:50	19:35	27 08:13 (2)	18:23		16:27	16:14
23	08:36	07:38	06:31	07:02 (2)	06:17	05:21	05:03	05:32	06:25	07:20	07:46 (2)	08:15		08:14	08:51
	16:57	17:58	18:52	24 07:26 (2)	20:49	21:41	22:10	21:48	20:48	19:32	27 08:13 (2)	18:21		16:26	16:15
24	08:34	07:36	06:29	07:04 (2)	06:15	05:20	05:03	05:34	06:27	07:22	07:48 (2)	08:17		08:16	08:51
	16:58	18:00	18:54	21 07:25 (2)	20:51	21:43	22:10	21:46	20:45	19:30	26 08:14 (2)	18:19		16:25	16:15
25	08:33	07:34	06:27	07:04 (2)	06:13	05:18	05:03	05:35	06:28	07:23	07:50 (2)	07:19		08:18	08:52
	17:00	18:02	18:55	18 07:22 (2)	20:53	21:44	22:10	21:45	20:43	19:28	24 08:14 (2)	17:17		16:23	16:16
26	08:32	07:31	06:24	07:07 (2)	06:11	05:17	05:04	05:37	06:30	07:25	07:52 (2)	07:21		08:20	08:52
	17:02	18:04	18:57	13 07:20 (2)	20:55	21:46	22:10	21:43	20:41	19:25	22 08:14 (2)	17:15		16:22	16:17
27	08:30	07:29	06:22		06:09	05:16	05:04	05:38	06:32	07:27	07:53 (2)	07:23		08:21	08:52
	17:04	18:06	18:59		20:56	21:47	22:10	21:42	20:38	19:23	19 08:12 (2)	17:12		16:21	16:18
28	08:29	07:27	06:19		06:06	05:15	05:05	05:40	06:34	07:29	07:55 (2)	07:25		08:23	08:52
	17:06	18:08	19:01		20:58	21:49	22:09	21:40	20:36	19:20	17 08:12 (2)	17:10		16:20	16:18
29	08:27		07:17		06:04	05:14	05:05	05:42	06:36	07:31	07:57 (2)	07:27		08:25	08:53
	17:08		20:03		21:00	21:50	22:09	21:38	20:34	19:18	14 08:11 (2)	17:08		16:19	16:19
30	08:25		07:14		06:02	05:13	05:06	05:43	06:37	07:32	07:59 (2)	07:29		08:26	08:53
	17:10		20:05		21:02	21:51	22:09	21:37	20:31	19:15	11 08:10 (2)	17:06		16:19	16:20
31	08:24		07:12			05:12		05:45	06:39			07:31			08:53
	17:12		20:07			21:53		21:35	20:29			17:04			16:21
Potential sun hours	250	273	367		420	494	510	512	460	382		328		259	233
Total, worst case				294							285		14		
Sun reduction				0.22							0.25		0.23		
Oper. time red.				1.00							1.00		1.00		
Wind dir. red.				0.64							0.64		0.64		
Total reduction				0.14							0.16		0.14		
Total, real				41							46		2		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** DB - H116

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	07:33 (2)	06:00	05:11	05:07	05:47	06:41	07:08 (2)	07:34	07:33	08:28
	16:23	17:14	18:10	20:08	4 07:37 (2)	21:04	21:54	22:09	21:33	20:27	27 07:35 (2)	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	07:31 (2)	05:58	05:10	05:07	05:48	06:43	07:10 (2)	07:36	07:35	08:29
	16:24	17:16	18:12	20:10	7 07:38 (2)	21:06	21:55	22:08	21:31	20:24	26 07:36 (2)	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04	07:28 (2)	05:56	05:09	05:08	05:50	06:44	07:12 (2)	07:38	07:37	08:31
	16:25	17:18	18:14	20:12	10 07:38 (2)	21:07	21:56	22:08	21:30	20:22	24 07:36 (2)	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	07:26 (2)	05:54	05:08	05:09	05:52	06:46	07:13 (2)	07:40	07:38	08:32
	16:26	17:20	18:16	20:14	13 07:39 (2)	21:09	21:57	22:07	21:28	20:19	22 07:35 (2)	19:05	16:56	16:16
5	08:51	08:15	07:15	07:00	07:23 (2)	05:52	05:07	05:10	05:53	06:48	07:15 (2)	07:42	07:40	08:34
	16:27	17:22	18:18	20:16	16 07:39 (2)	21:11	21:58	22:07	21:26	20:17	20 07:35 (2)	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	07:21 (2)	05:50	05:06	05:11	05:55	06:50	07:17 (2)	07:43	07:42	08:35
	16:29	17:24	18:19	20:18	18 07:39 (2)	21:13	22:00	22:06	21:24	20:14	18 07:35 (2)	19:01	16:52	16:14
7	08:51	08:11	07:10	06:55	07:19 (2)	05:48	05:06	05:12	05:57	06:52	07:18 (2)	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	20 07:39 (2)	21:15	22:01	22:06	21:22	20:12	16 07:34 (2)	18:58	16:51	16:14
8	08:50	08:09	07:08	06:52	07:16 (2)	05:46	05:05	05:13	05:59	06:53	07:20 (2)	07:47	07:46	08:38
	16:31	17:28	18:23	20:21	22 07:38 (2)	21:16	22:01	22:05	21:20	20:10	13 07:33 (2)	18:56	16:49	16:14
9	08:50	08:08	07:06	06:50	07:14 (2)	05:44	05:05	05:14	06:00	06:55	07:22 (2)	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	24 07:38 (2)	21:18	22:02	22:04	21:18	20:07	11 07:33 (2)	18:53	16:47	16:13
10	08:49	08:06	07:03	06:48	07:11 (2)	05:42	05:04	05:15	06:02	06:57	07:24 (2)	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	26 07:37 (2)	21:20	22:03	22:03	21:16	20:05	8 07:32 (2)	18:51	16:45	16:13
11	08:48	08:04	07:01	06:45	07:09 (2)	05:40	05:04	05:16	06:04	06:59	07:25 (2)	07:53	07:52	08:41
	16:36	17:34	18:29	20:27	27 07:36 (2)	21:22	22:04	22:02	21:14	20:02	5 07:30 (2)	18:49	16:43	16:13
12	08:47	08:02	06:58	06:43	07:10 (2)	05:39	05:03	05:17	06:05	07:00	07:27 (2)	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	25 07:35 (2)	21:23	22:05	22:01	21:12	20:00	1 07:28 (2)	18:46	16:42	16:13
13	08:47	08:00	06:56	06:40	07:11 (2)	05:37	05:03	05:18	06:07	07:02		07:56	07:56	08:43
	16:39	17:38	18:33	20:31	23 07:34 (2)	21:25	22:06	22:00	21:10	19:57		18:44	16:40	16:12
14	08:46	07:58	06:53	06:38	07:11 (2)	05:35	05:03	05:20	06:09	07:04		07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21 07:32 (2)	21:27	22:06	21:59	21:08	19:55		18:42	16:39	16:12
15	08:45	07:55	06:51	06:36	07:13 (2)	05:33	05:02	05:21	06:11	07:06		08:00	08:00	08:45
	16:42	17:42	18:37	20:34	17 07:30 (2)	21:29	22:07	21:58	21:05	19:52		18:39	16:37	16:12
16	08:44	07:53	06:49	06:33	07:15 (2)	05:32	05:02	05:22	06:13	07:07		08:02	08:02	08:46
	16:44	17:44	18:39	20:36	13 07:28 (2)	21:30	22:07	21:57	21:03	19:50		18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	07:18 (2)	05:30	05:02	05:24	06:14	07:09		08:04	08:03	08:47
	16:46	17:46	18:40	20:38	5 07:23 (2)	21:32	22:08	21:56	21:01	19:47		18:35	16:34	16:13
18	08:42	07:49	06:44	06:29		05:29	05:02	05:25	06:16	07:11		08:06	08:05	08:48
	16:48	17:48	18:42	20:40		21:34	22:08	21:55	20:59	19:45		18:32	16:32	16:13
19	08:41	07:47	06:41	06:26		05:27	05:02	05:26	06:18	07:13		08:08	08:07	08:49
	16:49	17:50	18:44	20:42		21:35	22:09	21:53	20:57	19:42		18:30	16:31	16:13
20	08:40	07:45	06:39	06:24		05:25	05:02	05:28	06:20	07:15		08:09	08:09	08:49
	16:51	17:52	18:46	20:44		21:37	22:09	21:52	20:54	19:40		18:28	16:30	16:13
21	08:38	07:43	06:36	06:22		05:24	05:02	05:29	06:21	07:16		08:11	08:11	08:50
	16:53	17:54	18:48	20:45		21:38	22:09	21:51	20:52	19:37		18:25	16:28	16:14
22	08:37	07:40	06:34	06:20		05:23	05:02	05:31	06:23	07:18		08:13	08:13	08:50
	16:55	17:56	18:50	20:47		21:40	22:09	21:49	20:50	19:35		18:23	16:27	16:14
23	08:36	07:38	06:31	06:17		05:21	05:03	05:32	06:25	07:20		08:15	08:14	08:51
	16:57	17:58	18:52	20:49		21:41	22:10	21:48	20:48	19:32		18:21	16:26	16:15
24	08:34	07:36	06:29	06:15		05:20	05:03	05:34	06:27	07:22		08:17	08:16	08:51
	16:58	18:00	18:54	20:51		21:43	22:10	21:46	20:45	19:30		18:19	16:25	16:15
25	08:33	07:34	06:27	06:13		05:18	05:03	05:35	06:29	07:23		07:19	08:18	08:52
	17:00	18:02	18:55	20:53		21:44	22:10	21:45	20:43	19:28		17:17	16:23	16:16
26	08:32	07:31	06:24	06:11		05:17	05:04	05:37	06:30	07:20 (2)	07:25		07:21	08:20	08:52
	17:02	18:04	18:57	20:55		21:46	22:10	21:43	20:41	6 07:26 (2)	19:25		17:15	16:22	16:17
27	08:30	07:29	06:22	06:09		05:16	05:04	05:38	06:32	07:16 (2)	07:27		07:23	08:21	08:52
	17:04	18:06	18:59	20:56		21:47	22:10	21:42	20:38	14 07:30 (2)	19:23		17:12	16:21	16:18
28	08:29	07:27	06:19	06:06		05:15	05:05	05:40	06:34	07:14 (2)	07:29		07:25	08:23	08:52
	17:06	18:08	19:01	20:58		21:49	22:09	21:40	20:36	18 07:32 (2)	19:20		17:10	16:20	16:18
29	08:27		07:17	06:04		05:14	05:05	05:42	06:36	07:12 (2)	07:31		07:27	08:25	08:52
	17:08		20:03	21:00		21:50	22:09	21:38	20:34	21 07:33 (2)	19:18		17:08	16:19	16:19
30	08:25		07:14	06:02		05:13	05:06	05:43	06:37	07:11 (2)	07:32		07:29	08:26	08:53
	17:10		20:05	21:02		21:51	22:09	21:37	20:31	23 07:34 (2)	19:15		17:06	16:19	16:20
31	08:24		07:12	07:35 (2)		05:12		05:45	06:39	07:10 (2)			07:31		08:53
	17:12		20:07	1 07:36 (2)		21:53		21:35	20:29	25 07:35 (2)			17:04		16:21
Potential sun hours	250	273	367	420		494	510	512	460	382		328	259	233
Total, worst case			1	291					107	191				
Sun reduction			0.22	0.31					0.26	0.25				
Oper. time red.			1.00	1.00					1.00	1.00				
Wind dir. red.			0.64	0.64					0.64	0.64				
Total reduction			0.14	0.20					0.17	0.16				
Total, real			0	58					18	31				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** DC - H117

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March	April	May	June	July	August	September	October		November		December
1	08:52		08:22		16:32 (10)	07:24	07:09	05:59	05:10	05:06	05:46	06:40	07:34		07:32		16:07 (10)	08:27
	16:22		17:13	10	16:42 (10)	18:09	20:08	21:03	21:53	22:08	21:33	20:26	19:12		17:02	18	16:25 (10)	16:17
2	08:52		08:20		16:32 (10)	07:22	07:06	05:57	05:09	05:07	05:48	06:42	07:36		07:34		16:05 (10)	08:29
	16:23		17:15	12	16:44 (10)	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10		17:00	21	16:26 (10)	16:16
3	08:52		08:18		16:32 (10)	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:37		07:36		16:04 (10)	08:30
	16:24		17:17	14	16:46 (10)	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07		16:58	22	16:26 (10)	16:16
4	08:51		08:16		16:32 (10)	07:17	07:01	05:53	05:07	05:08	05:51	06:46	07:39		07:38		16:03 (10)	08:32
	16:26		17:19	16	16:48 (10)	18:15	20:13	21:09	21:57	22:07	21:27	20:19	19:05		16:56	21	16:24 (10)	16:15
5	08:51		08:15		16:32 (10)	07:15	06:59	05:51	05:07	05:09	05:53	06:47	07:41		07:40		16:03 (10)	08:33
	16:27		17:21	18	16:50 (10)	18:17	20:15	21:11	21:58	22:06	21:25	20:16	19:02		16:54	19	16:22 (10)	16:14
6	08:51		08:13		16:33 (10)	07:12	06:57	05:49	05:06	05:10	05:54	06:49	07:43		07:42		16:02 (10)	08:35
	16:28		17:23	19	16:52 (10)	18:19	20:17	21:12	21:59	22:06	21:23	20:14	19:00		16:52	18	16:20 (10)	16:14
7	08:50		08:11		16:34 (10)	07:10	06:54	05:47	05:05	05:11	05:56	06:51	07:45		07:44		16:02 (10)	08:36
	16:29		17:25	21	16:55 (10)	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58		16:50	16	16:18 (10)	16:13
8	08:50		08:09		16:35 (10)	07:07	06:52	05:46	05:04	05:12	05:58	06:53	07:47		07:46		16:02 (10)	08:37
	16:31		17:27	22	16:57 (10)	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55		16:48	14	16:16 (10)	16:13
9	08:49		08:07		16:36 (10)	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48		07:48		16:02 (10)	08:38
	16:32		17:29	20	16:56 (10)	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53		16:46	12	16:14 (10)	16:13
10	08:48		08:05		16:37 (10)	07:03	06:47	05:42	05:03	05:14	06:01	06:56	07:50		07:50		16:02 (10)	08:40
	16:34		17:31	18	16:55 (10)	18:27	20:25	21:20	22:03	22:03	21:15	20:04	18:50		16:45	10	16:12 (10)	16:12
11	08:48		08:03		16:39 (10)	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52		07:52		16:03 (10)	08:41
	16:35		17:33	14	16:53 (10)	18:29	20:26	21:21	22:04	22:02	21:13	20:02	18:48		16:43	7	16:10 (10)	16:12
12	08:47		08:01		16:42 (10)	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54		07:53		16:03 (10)	08:42
	16:37		17:36	7	16:49 (10)	18:30	20:28	21:23	22:04	22:01	21:11	19:59	18:46		16:41	6	16:09 (10)	16:12
13	08:46		07:59			06:55	06:40	05:36	05:02	05:18	06:07	07:02	07:56		07:55		16:03 (10)	08:43
	16:38		17:38			18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43		16:40	4	16:07 (10)	16:12
14	08:45		07:57			06:53	06:37	05:35	05:02	05:19	06:08	07:03	07:58		07:57		16:04 (10)	08:44
	16:40		17:40			18:34	20:32	21:26	22:06	21:59	21:07	19:54	18:41		16:38	1	16:05 (10)	16:12
15	08:44		07:55			06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00		07:59			08:45
	16:42		17:42			18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39		16:36			16:12
16	08:43		07:53			06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:01		08:01			08:46
	16:43		17:44			18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36		16:35			16:12
17	08:42		07:51			06:46	06:30	05:30	05:01	05:23	06:14	07:09	08:03		08:03			08:47
	16:45		17:46			18:40	20:38	21:31	22:07	21:56	21:01	19:47	18:34		16:33			16:12
18	08:41		07:49			06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05		08:05			08:47
	16:47		17:48			18:42	20:39	21:33	22:08	21:54	20:58	19:44	18:32		16:32			16:12
19	08:40		07:46			06:41	06:26	05:26	05:01	05:26	06:17	07:12	08:07		08:07			08:48
	16:49		17:50			18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:29		16:30			16:13
20	08:39		07:44			06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09		08:08			08:49
	16:50		17:52			18:46	20:43	21:36	22:09	21:52	20:54	19:39	18:27		16:29			16:13
21	08:38		07:42			06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11		08:10			08:49
	16:52		17:54			18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25		16:28			16:13
22	08:37		07:40			06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13		08:12			08:50
	16:54		17:56			18:49	20:47	21:39	22:09	21:49	20:49	19:34	18:23		16:26			16:14
23	08:35		07:38			06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15		08:14			08:50
	16:56		17:57			18:51	20:49	21:41	22:09	21:47	20:47	19:32	18:21		16:25			16:14
24	08:34		07:35			06:28	06:15	05:19	05:02	05:33	06:26	07:21	08:17		08:16			08:51
	16:58		17:59			18:53	20:50	21:42	22:09	21:46	20:45	19:30	18:18		16:24			16:15
25	08:33		07:33			06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19		08:17			08:51
	17:00		18:01			18:55	20:52	21:44	22:09	21:44	20:43	19:27	17:16		16:23			16:16
26	08:31		07:31			06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21		08:19			08:52
	17:02		18:03			18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14		16:22			16:16
27	08:30		07:29			06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:22		08:21			08:52
	17:04		18:05			18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12		16:21			16:17
28	08:28	16:32 (10)	07:26			06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24		08:22			08:52
	17:06	1 16:33 (10)	18:07			19:00	20:58	21:48	22:09	21:40	20:36	19:20	17:10		16:20			16:18
29	08:27	16:31 (10)				07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26		08:24			08:52
	17:08	4 16:35 (10)				20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08		16:19			16:19
30	08:25	16:31 (10)				07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	16:10 (10)	08:26			08:52
	17:09	6 16:37 (10)				20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	10 16:20 (10)	16:18			16:20
31	08:23	16:31 (10)				07:11		05:11		05:44	06:39		07:30	16:08 (10)				08:52
	17:11	8 16:39 (10)				20:06		21:52		21:35	20:28		17:04	14 16:22 (10)				16:21
Potential sun hours	250		273			367	420	494	510	513	460	382	328		259			233
Total, worst case		19		191										24		189		
Sun reduction		0.16		0.19										0.23		0.20		
Oper. time red.		1.00		1.00										1.00		1.00		
Wind dir. red.		0.64		0.64										0.64		0.64		
Total reduction		0.10		0.12										0.14		0.13		
Total, real		2		24										3		24		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** DD - H118

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February		March	April	May	June	July	August	September	October		November		December
1	08:52	08:22		16:40 (10)	07:24	07:09	05:59	05:10	05:06	05:46	06:40	07:34		07:32		16:11 (10)	08:27
	16:22	17:13	2	16:42 (10)	18:09	20:08	21:03	21:53	22:08	21:33	20:26	19:12		17:02	20	16:31 (10)	16:17
2	08:52	08:20		16:40 (10)	07:22	07:06	05:57	05:09	05:07	05:48	06:42	07:36		07:34		16:11 (10)	08:29
	16:23	17:15	4	16:44 (10)	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10		17:00	18	16:29 (10)	16:16
3	08:52	08:18		16:40 (10)	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:37		07:36		16:10 (10)	08:30
	16:24	17:17	6	16:46 (10)	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07		16:58	16	16:26 (10)	16:16
4	08:51	08:16		16:40 (10)	07:17	07:01	05:53	05:07	05:08	05:51	06:46	07:39		07:38		16:10 (10)	08:32
	16:26	17:19	8	16:48 (10)	18:15	20:13	21:09	21:57	22:07	21:27	20:19	19:05		16:56	14	16:24 (10)	16:15
5	08:51	08:15		16:40 (10)	07:15	06:59	05:51	05:07	05:09	05:53	06:47	07:41		07:40		16:09 (10)	08:33
	16:27	17:21	10	16:50 (10)	18:17	20:15	21:11	21:58	22:06	21:25	20:16	19:02		16:54	13	16:22 (10)	16:14
6	08:51	08:13		16:40 (10)	07:12	06:57	05:49	05:06	05:10	05:54	06:49	07:43		07:42		16:09 (10)	08:35
	16:28	17:23	12	16:52 (10)	18:19	20:17	21:12	21:59	22:06	21:23	20:14	19:00		16:52	11	16:20 (10)	16:14
7	08:50	08:11		16:40 (10)	07:10	06:54	05:47	05:05	05:11	05:56	06:51	07:45		07:44		16:09 (10)	08:36
	16:29	17:25	15	16:55 (10)	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58		16:50	9	16:18 (10)	16:13
8	08:50	08:09		16:40 (10)	07:07	06:52	05:46	05:04	05:12	05:58	06:53	07:47		07:46		16:10 (10)	08:37
	16:31	17:27	17	16:57 (10)	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55		16:48	6	16:16 (10)	16:13
9	08:49	08:07		16:41 (10)	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48		07:48		16:11 (10)	08:38
	16:32	17:29	18	16:59 (10)	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53		16:46	3	16:14 (10)	16:13
10	08:48	08:05		16:42 (10)	07:03	06:47	05:42	05:03	05:14	06:01	06:56	07:50		07:50		16:11 (10)	08:40
	16:34	17:31	20	17:02 (10)	18:27	20:25	21:20	22:03	22:03	21:15	20:04	18:50		16:45	1	16:12 (10)	16:12
11	08:48	08:03		16:43 (10)	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52		07:52			08:41
	16:35	17:33	21	17:04 (10)	18:29	20:26	21:21	22:04	22:02	21:13	20:02	18:48		16:43			16:12
12	08:47	08:01		16:43 (10)	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54		07:53			08:42
	16:37	17:36	20	17:03 (10)	18:30	20:28	21:23	22:04	22:01	21:11	19:59	18:46		16:41			16:12
13	08:46	07:59		16:45 (10)	06:55	06:40	05:36	05:02	05:18	06:07	07:02	07:56		07:55			08:43
	16:38	17:38	17	17:02 (10)	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43		16:40			16:12
14	08:45	07:57		16:47 (10)	06:53	06:37	05:35	05:02	05:19	06:08	07:03	07:58		07:57			08:44
	16:40	17:40	13	17:00 (10)	18:34	20:32	21:26	22:06	21:59	21:07	19:54	18:41		16:38			16:12
15	08:44	07:55		16:50 (10)	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00		07:59			08:45
	16:42	17:42	7	16:57 (10)	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39		16:36			16:12
16	08:43	07:53			06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:01		08:01			08:46
	16:43	17:44			18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36		16:35			16:12
17	08:42	07:51			06:46	06:30	05:30	05:01	05:23	06:14	07:09	08:03		08:03			08:47
	16:45	17:46			18:40	20:38	21:31	22:07	21:56	21:01	19:47	18:34		16:33			16:12
18	08:41	07:49			06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05		08:05			08:47
	16:47	17:48			18:42	20:39	21:33	22:08	21:54	20:58	19:44	18:32		16:32			16:12
19	08:40	07:46			06:41	06:26	05:26	05:01	05:26	06:17	07:12	08:07		08:07			08:48
	16:49	17:50			18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:29		16:30			16:13
20	08:39	07:44			06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09		08:08			08:49
	16:50	17:52			18:46	20:43	21:36	22:09	21:52	20:54	19:39	18:27		16:29			16:13
21	08:38	07:42			06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11		08:10			08:49
	16:52	17:54			18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25		16:28			16:13
22	08:37	07:40			06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13		08:12			08:50
	16:54	17:56			18:49	20:47	21:39	22:09	21:49	20:49	19:34	18:23		16:26			16:14
23	08:35	07:38			06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15		08:14			08:50
	16:56	17:57			18:51	20:49	21:41	22:09	21:47	20:47	19:32	18:21		16:25			16:14
24	08:34	07:35			06:28	06:15	05:19	05:02	05:33	06:26	07:21	08:17		08:16			08:51
	16:58	17:59			18:53	20:50	21:42	22:09	21:46	20:45	19:29	18:18		16:24			16:15
25	08:33	07:33			06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19		08:17			08:51
	17:00	18:01			18:55	20:52	21:44	22:09	21:44	20:43	19:27	17:16		16:23			16:16
26	08:31	07:31			06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21		08:19			08:52
	17:02	18:03			18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14		16:22			16:16
27	08:30	07:29			06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:22	16:19 (10)	08:21			08:52
	17:04	18:05			18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	9 16:28 (10)	16:21			16:17
28	08:28	07:26			06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24	16:16 (10)	08:22			08:52
	17:06	18:07			19:00	20:58	21:48	22:09	21:40	20:36	19:20	17:10	14 16:30 (10)	16:20			16:18
29	08:27				07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	16:14 (10)	08:24			08:52
	17:08				20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	18 16:32 (10)	16:19			16:19
30	08:25				07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	16:12 (10)	08:26			08:52
	17:09				20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	21 16:33 (10)	16:18			16:20
31	08:23				07:11		05:11		05:44	06:39		07:30	16:11 (10)				08:52
	17:11				20:06		21:52		21:35	20:28		17:04	21 16:32 (10)				16:21
Potential sun hours	250	273		367	420	494	510	512	460	382	328			259			233
Total, worst case			190										83		111		
Sun reduction			0.19										0.23		0.20		
Oper. time red.			1.00										1.00		1.00		
Wind dir. red.			0.64										0.64		0.64		
Total reduction			0.12										0.14		0.13		
Total, real			24										12		14		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** DE - H119

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February	March	April	May	June	July	August	September	October	November			December		
1	08:52	15:04 (9)	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:40	07:34	07:32			08:27		15:38 (8)
	16:22	4 15:08 (9)	17:13	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02			16:17	3	15:41 (8)
2	08:52		08:20	07:22	07:06	05:57	05:09	05:07	05:48	06:42	07:36	07:34			08:29		15:39 (8)
	16:23		17:15	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00			16:16	1	15:40 (8)
3	08:52		08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:37	07:36			08:30		
	16:24		17:17	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58			16:16		
4	08:51		08:16	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38			08:32		
	16:26		17:19	18:15	20:13	21:09	21:57	22:07	21:27	20:19	19:05	16:56			16:15		
5	08:51		08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40			08:33		
	16:27		17:21	18:17	20:15	21:11	21:58	22:06	21:25	20:16	19:03	16:54			16:14		
6	08:51		08:13	07:12	06:57	05:49	05:06	05:10	05:55	06:49	07:43	07:42			08:35		
	16:28		17:23	18:19	20:17	21:12	21:59	22:06	21:24	20:14	19:00	16:52			16:14		
7	08:50		08:11	07:10	06:54	05:47	05:05	05:11	05:56	06:51	07:45	07:44			08:36		
	16:30		17:25	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50			16:13		
8	08:50		08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46			08:37		
	16:31		17:27	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48			16:13		
9	08:49		08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48			08:39		
	16:32		17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46			16:13		
10	08:49	15:56 (8)	08:05	07:03	06:47	05:42	05:03	05:14	06:01	06:56	07:50	07:50			08:40		
	16:34	1 15:57 (8)	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:50	16:45			16:12		
11	08:48	15:56 (8)	08:03	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52			08:41		14:55 (9)
	16:35	3 15:59 (8)	17:34	18:29	20:26	21:21	22:04	22:02	21:14	20:02	18:48	16:43			16:12	3	14:58 (9)
12	08:47	15:56 (8)	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54			08:42		14:54 (9)
	16:37	5 16:01 (8)	17:36	18:31	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41			16:12	7	15:01 (9)
13	08:46	15:57 (8)	07:59	06:55	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:55			08:43		14:53 (9)
	16:39	5 16:02 (8)	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40			16:12	9	15:02 (9)
14	08:45	15:57 (8)	07:57	06:53	06:38	05:35	05:02	05:19	06:08	07:03	07:58	07:57		15:42 (8)	08:44		14:53 (9)
	16:40	7 16:04 (8)	17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38	6	15:48 (8)	16:12	10	15:03 (9)
15	08:45	15:57 (8)	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59		15:39 (8)	08:45		14:53 (9)
	16:42	9 16:06 (8)	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36	11	15:50 (8)	16:12	11	15:04 (9)
16	08:44	15:58 (8)	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01		15:38 (8)	08:46		14:53 (9)
	16:43	10 16:08 (8)	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	14	15:52 (8)	16:12	12	15:05 (9)
17	08:43	15:57 (8)	07:51	06:46	06:31	05:30	05:01	05:23	06:14	07:09	08:03	08:03		15:37 (8)	08:47		14:53 (9)
	16:45	12 16:09 (8)	17:46	18:40	20:38	21:32	22:07	21:56	21:01	19:47	18:34	16:33	16	15:53 (8)	16:12	13	15:06 (9)
18	08:41	15:58 (8)	07:49	06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05	08:05		15:36 (8)	08:47		14:52 (9)
	16:47	14 16:12 (8)	17:48	18:42	20:39	21:33	22:08	21:54	20:59	19:44	18:32	16:32	18	15:54 (8)	16:12	14	15:06 (9)
19	08:40	15:59 (8)	07:47	06:41	06:26	05:26	05:01	05:26	06:17	07:12	08:07	08:07		15:36 (8)	08:48		14:53 (9)
	16:49	15 16:14 (8)	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	20	15:56 (8)	16:13	14	15:07 (9)
20	08:39	15:59 (8)	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09		15:36 (8)	08:49		14:54 (9)
	16:51	16 16:15 (8)	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:39	18:27	16:29	19	15:55 (8)	16:13	14	15:08 (9)
21	08:38	16:00 (8)	07:42	06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11	08:10		15:36 (8)	08:49		14:53 (9)
	16:52	18 16:18 (8)	17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	18	15:54 (8)	16:13	15	15:08 (9)
22	08:37	16:01 (8)	07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12		15:36 (8)	08:50		14:54 (9)
	16:54	19 16:20 (8)	17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	17	15:53 (8)	16:14	15	15:09 (9)
23	08:35	16:01 (8)	07:38	06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15	08:14		15:35 (8)	08:51		14:54 (9)
	16:56	20 16:21 (8)	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	15	15:50 (8)	16:14	15	15:09 (9)
24	08:34	16:02 (8)	07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16		15:35 (8)	08:51		14:55 (9)
	16:58	18 16:20 (8)	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24	14	15:49 (8)	16:15	14	15:09 (9)
25	08:33	16:04 (8)	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17		15:36 (8)	08:51		14:56 (9)
	17:00	16 16:20 (8)	18:01	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	12	15:48 (8)	16:16	14	15:10 (9)
26	08:31	16:05 (8)	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19		15:36 (8)	08:52		14:57 (9)
	17:02	14 16:19 (8)	18:03	18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	16:22	10	15:46 (8)	16:16	13	15:10 (9)
27	08:30	16:08 (8)	07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21		15:36 (8)	08:52		14:57 (9)
	17:04	10 16:18 (8)	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	9	15:45 (8)	16:17	13	15:10 (9)
28	08:28	16:10 (8)	07:26	06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24	08:23		15:37 (8)	08:52		14:58 (9)
	17:06	5 16:15 (8)	18:07	19:00	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	7	15:44 (8)	16:18	12	15:10 (9)
29	08:27			07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24		15:38 (8)	08:52		14:59 (9)
	17:08			20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	6	15:44 (8)	16:19	11	15:10 (9)
30	08:25			07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26		15:38 (8)	08:52		15:00 (9)
	17:10			20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	4	15:42 (8)	16:20	10	15:10 (9)
31	08:23			07:11		05:11		05:44	06:39		07:30				08:52		15:02 (9)
	17:11			20:06		21:52		21:35	20:29		17:04				16:21	8	15:10 (9)
Potential sun hours	250		273	367	420	494	510	513	460	382	328	259			233		
Total, worst case		221											216			251	
Sun reduction		0.16											0.20			0.12	
Oper. time red.		1.00											1.00			1.00	
Wind dir. red.		0.65											0.65			0.65	
Total reduction		0.11											0.13			0.08	
Total, real		23											28			19	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** DF - H120

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March		April	May	June	July	August	September		October		November	December
1	08:52	08:22	07:24		07:09	06:00	05:11	05:07	05:47	06:41		07:34		08:01 (2)	07:33	08:28
	16:23	17:14	18:10		20:08	21:04	21:54	22:09	21:33	20:27		19:13	15	08:16 (2)	17:02	16:18
2	08:52	08:20	07:22		07:07	05:58	05:10	05:07	05:48	06:43		07:36		08:02 (2)	07:35	08:29
	16:24	17:16	18:12		20:10	21:06	21:55	22:08	21:31	20:24		19:10	12	08:14 (2)	17:00	16:17
3	08:52	08:19	07:20		07:04	05:56	05:09	05:08	05:50	06:44		07:38		08:04 (2)	07:37	08:31
	16:25	17:18	18:14		20:12	21:07	21:56	22:08	21:30	20:22		19:08	9	08:13 (2)	16:58	16:16
4	08:52	08:17	07:17		07:02	05:54	05:08	05:09	05:52	06:46		07:40		08:06 (2)	07:38	08:32
	16:26	17:20	18:16		20:14	21:09	21:57	22:07	21:28	20:19		19:05	6	08:12 (2)	16:56	16:16
5	08:52	08:15	07:15		07:00	05:52	05:07	05:10	05:53	06:48		07:42		08:08 (2)	07:40	08:34
	16:27	17:22	18:18		20:16	21:11	21:58	22:07	21:26	20:17		19:03	2	08:10 (2)	16:54	16:15
6	08:51	08:13	07:13		06:57	05:50	05:06	05:11	05:55	06:50		07:43			07:42	08:35
	16:29	17:24	18:19		20:18	21:13	22:00	22:06	21:24	20:14		19:01			16:52	16:14
7	08:51	08:11	07:10		06:55	05:48	05:06	05:12	05:57	06:52		07:45			07:44	08:36
	16:30	17:26	18:21		20:19	21:15	22:01	22:06	21:22	20:12		18:58			16:51	16:14
8	08:50	08:09	07:08		06:52	05:46	05:05	05:13	05:58	06:53		07:47			07:46	08:38
	16:31	17:28	18:23		20:21	21:16	22:01	22:05	21:20	20:10		18:56			16:49	16:14
9	08:50	08:08	07:06		07:30 (2)	06:50	05:44	05:04	05:14	06:00		07:49			07:48	08:39
	16:33	17:30	18:25	4	07:34 (2)	20:23	21:18	22:02	22:04	21:18		18:53			16:47	16:13
10	08:49	08:06	07:03		07:27 (2)	06:48	05:42	05:04	05:15	06:02		07:51			07:50	08:40
	16:34	17:32	18:27	8	07:35 (2)	20:25	21:20	22:03	22:03	21:16		18:51			16:45	16:13
11	08:48	08:04	07:01		07:25 (2)	06:45	05:40	05:04	05:16	06:04		07:53			07:52	08:41
	16:36	17:34	18:29	11	07:36 (2)	20:27	21:22	22:04	22:02	21:14		18:49			16:43	16:13
12	08:47	08:02	06:58		07:22 (2)	06:43	05:39	05:03	05:17	06:05		07:54			07:54	08:42
	16:37	17:36	18:31	14	07:36 (2)	20:29	21:23	22:05	22:01	21:12		18:46			16:42	16:13
13	08:47	08:00	06:56		07:20 (2)	06:40	05:37	05:03	05:18	06:07		07:56			07:56	08:43
	16:39	17:38	18:33	16	07:36 (2)	20:31	21:25	22:06	22:00	21:10		18:44			16:40	16:12
14	08:46	07:58	06:53		07:17 (2)	06:38	05:35	05:03	05:20	06:09		07:58			07:58	08:44
	16:41	17:40	18:35	19	07:36 (2)	20:32	21:27	22:06	21:59	21:08		18:42			16:39	16:12
15	08:45	07:55	06:51		07:15 (2)	06:36	05:33	05:02	05:21	06:11		08:00			08:00	08:45
	16:42	17:42	18:37	21	07:36 (2)	20:34	21:29	22:07	21:58	21:05		18:39			16:37	16:12
16	08:44	07:53	06:49		07:13 (2)	06:33	05:32	05:02	05:22	06:13		08:02			08:02	08:46
	16:44	17:44	18:39	23	07:36 (2)	20:36	21:30	22:07	21:57	21:03		18:37			16:35	16:12
17	08:43	07:51	06:46		07:10 (2)	06:31	05:30	05:02	05:24	06:14		08:04			08:03	08:47
	16:46	17:46	18:40	25	07:35 (2)	20:38	21:32	22:08	21:56	21:01		18:35			16:34	16:13
18	08:42	07:49	06:44		07:08 (2)	06:29	05:29	05:02	05:25	06:16		08:06			08:05	08:48
	16:47	17:48	18:42	27	07:35 (2)	20:40	21:34	22:08	21:55	20:59		18:32			16:32	16:13
19	08:41	07:47	06:41		07:08 (2)	06:26	05:27	05:02	05:26	06:18		08:08			08:07	08:49
	16:49	17:50	18:44	25	07:33 (2)	20:42	21:35	22:09	21:53	20:57		18:30			16:31	16:13
20	08:40	07:45	06:39		07:09 (2)	06:24	05:25	05:02	05:28	06:20		08:10			08:09	08:49
	16:51	17:52	18:46	23	07:32 (2)	20:44	21:37	22:09	21:52	20:54		18:28			16:30	16:13
21	08:38	07:43	06:36		07:09 (2)	06:22	05:24	05:02	05:29	06:21		08:11			08:11	08:50
	16:53	17:54	18:48	21	07:30 (2)	20:45	21:38	22:09	21:51	20:52		18:25			16:28	16:14
22	08:37	07:40	06:34		07:11 (2)	06:20	05:23	05:02	05:31	06:23		08:13			08:13	08:50
	16:55	17:56	18:50	18	07:29 (2)	20:47	21:40	22:09	21:49	20:50		18:23			16:27	16:14
23	08:36	07:38	06:31		07:13 (2)	06:17	05:21	05:03	05:32	06:25		08:15			08:14	08:51
	16:57	17:58	18:52	12	07:25 (2)	20:49	21:41	22:10	21:48	20:48		18:21			16:26	16:15
24	08:34	07:36	06:29			06:15	05:20	05:03	05:34	06:27		08:17			08:16	08:51
	16:58	18:00	18:54			20:51	21:43	22:10	21:46	20:45		18:19			16:25	16:15
25	08:33	07:34	06:27			06:13	05:18	05:03	05:35	06:28		07:19			08:18	08:52
	17:00	18:02	18:55			20:53	21:44	22:10	21:45	20:43		17:17			16:23	16:16
26	08:32	07:31	06:24			06:11	05:17	05:04	05:37	06:30		07:21			08:20	08:52
	17:02	18:04	18:57			20:55	21:46	22:10	21:43	20:41		17:15			16:22	16:17
27	08:30	07:29	06:22			06:09	05:16	05:04	05:38	06:32		07:23			08:21	08:52
	17:04	18:06	18:59			20:56	21:47	22:10	21:42	20:38		17:12			16:21	16:18
28	08:29	07:27	06:19			06:06	05:15	05:05	05:40	06:34		07:25			08:23	08:52
	17:06	18:08	19:01			20:58	21:49	22:09	21:40	20:36		17:10			16:20	16:18
29	08:27		07:17			06:04	05:14	05:05	05:42	06:36		07:27			08:25	08:53
	17:08		20:03			21:00	21:50	22:09	21:38	20:34		17:08			16:19	16:19
30	08:25		07:14			06:02	05:13	05:06	05:43	06:37		07:29			08:26	08:53
	17:10		20:05			21:02	21:51	22:09	21:37	20:31		17:06			16:19	16:20
31	08:24		07:12				05:12		05:45	06:39		07:31				08:53
	17:12		20:07				21:53		21:35	20:29		17:04				16:21
Potential sun hours	250	273	367		420	494	510	512	460	382		328		259	233	
Total, worst case				267							231		44			
Sun reduction				0.22							0.25		0.23			
Oper. time red.				1.00							1.00		1.00			
Wind dir. red.				0.63							0.63		0.63			
Total reduction				0.14							0.16		0.14			
Total, real				37							37		6			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** DG - H123

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	17:31 (7)	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:32	08:27
	16:22	17:14	18:10	11 17:42 (7)	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	17:30 (7)	07:07	05:58	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	14 17:44 (7)	20:10	21:05	21:55	22:08	21:31	20:24	19:10	11 18:24 (7)	17:00	16:17
3	08:52	08:18	07:20	17:29 (7)	07:04	05:56	05:08	05:08	05:50	06:44	07:38	18:10 (7)	07:36	08:30
	16:25	17:18	18:13	17 17:46 (7)	20:12	21:07	21:56	22:08	21:29	20:21	19:08	16 18:26 (7)	16:58	16:16
4	08:52	08:17	07:17	17:29 (7)	07:02	05:54	05:08	05:09	05:51	06:46	07:39	18:08 (7)	07:38	08:32
	16:26	17:20	18:15	19 17:48 (7)	20:14	21:09	21:57	22:07	21:27	20:19	19:05	19 18:27 (7)	16:56	16:15
5	08:51	08:15	07:15	17:29 (7)	06:59	05:52	05:07	05:10	05:53	06:48	07:41	18:07 (7)	07:40	08:33
	16:27	17:22	18:17	21 17:50 (7)	20:15	21:11	21:58	22:06	21:26	20:17	19:03	21 18:28 (7)	16:54	16:15
6	08:51	08:13	07:12	17:29 (7)	06:57	05:50	05:06	05:10	05:55	06:50	07:43	18:06 (7)	07:42	08:35
	16:28	17:24	18:19	23 17:52 (7)	20:17	21:13	21:59	22:06	21:24	20:14	19:00	23 18:29 (7)	16:52	16:14
7	08:50	08:11	07:10	17:29 (7)	06:54	05:48	05:05	05:11	05:56	06:51	07:45	18:04 (7)	07:44	08:36
	16:30	17:26	18:21	23 17:52 (7)	20:19	21:14	22:00	22:05	21:22	20:12	18:58	24 18:28 (7)	16:50	16:14
8	08:50	08:09	07:08	17:30 (7)	06:52	05:46	05:05	05:12	05:58	06:53	07:47	18:04 (7)	07:46	08:37
	16:31	17:28	18:23	22 17:52 (7)	20:21	21:16	22:01	22:04	21:20	20:09	18:55	22 18:26 (7)	16:48	16:13
9	08:49	08:07	07:05	17:30 (7)	06:50	05:44	05:04	05:13	06:00	06:55	07:49	18:04 (7)	07:48	08:39
	16:33	17:30	18:25	20 17:50 (7)	20:23	21:18	22:02	22:04	21:18	20:07	18:53	20 18:24 (7)	16:47	16:13
10	08:49	08:05	07:03	17:31 (7)	06:47	05:42	05:04	05:15	06:02	06:57	07:50	18:03 (7)	07:50	08:40
	16:34	17:32	18:27	18 17:49 (7)	20:25	21:20	22:03	22:03	21:16	20:04	18:51	18 18:21 (7)	16:45	16:13
11	08:48	08:03	07:00	17:34 (7)	06:45	05:40	05:03	05:16	06:03	06:58	07:52	18:04 (7)	07:52	08:41
	16:36	17:34	18:29	13 17:47 (7)	20:27	21:21	22:04	22:02	21:14	20:02	18:48	15 18:19 (7)	16:43	16:12
12	08:47	08:01	06:58	17:36 (7)	06:42	05:38	05:03	05:17	06:05	07:00	07:54	18:04 (7)	07:54	08:42
	16:37	17:36	18:31	7 17:43 (7)	20:28	21:23	22:04	22:01	21:12	19:59	18:46	13 18:17 (7)	16:42	16:12
13	08:46	07:59	06:56		06:40	05:37	05:03	05:18	06:07	07:02	07:56	18:04 (7)	07:56	08:43
	16:39	17:38	18:33		20:30	21:25	22:05	22:00	21:09	19:57	18:44	10 18:14 (7)	16:40	16:12
14	08:45	07:57	06:53		06:38	05:35	05:02	05:19	06:09	07:04	07:58	18:05 (7)	07:57	08:44
	16:40	17:40	18:34		20:32	21:27	22:06	21:59	21:07	19:55	18:41	7 18:12 (7)	16:38	16:12
15	08:45	07:55	06:51		06:35	05:33	05:02	05:21	06:10	07:05	08:00	18:06 (7)	07:59	08:45
	16:42	17:42	18:36		20:34	21:28	22:06	21:58	21:05	19:52	18:39	4 18:10 (7)	16:37	16:12
16	08:44	07:53	06:48		06:33	05:32	05:02	05:22	06:12	07:07	08:02		08:01	08:46
	16:44	17:44	18:38		20:36	21:30	22:07	21:57	21:03	19:50	18:37		16:35	16:12
17	08:43	07:51	06:46		06:31	05:30	05:02	05:23	06:14	07:09	08:04		08:03	08:47
	16:45	17:46	18:40		20:38	21:32	22:07	21:56	21:01	19:47	18:34		16:34	16:12
18	08:42	07:49	06:43		06:28	05:28	05:02	05:25	06:16	07:11	08:05		08:05	08:48
	16:47	17:48	18:42		20:40	21:33	22:08	21:54	20:59	19:45	18:32		16:32	16:13
19	08:40	07:47	06:41		06:26	05:27	05:02	05:26	06:18	07:13	08:07		08:07	08:48
	16:49	17:50	18:44		20:41	21:35	22:08	21:53	20:56	19:42	18:30		16:31	16:13
20	08:39	07:45	06:39		06:24	05:25	05:02	05:27	06:19	07:14	08:09		08:09	08:49
	16:51	17:52	18:46		20:43	21:36	22:09	21:52	20:54	19:40	18:27		16:29	16:13
21	08:38	07:42	06:36		06:22	05:24	05:02	05:29	06:21	07:16	08:11		08:10	08:50
	16:53	17:54	18:48		20:45	21:38	22:09	21:50	20:52	19:37	18:25		16:28	16:14
22	08:37	07:40	06:34		06:19	05:22	05:02	05:30	06:23	07:18	08:13		08:12	08:50
	16:54	17:56	18:49		20:47	21:40	22:09	21:49	20:50	19:35	18:23		16:27	16:14
23	08:35	07:38	06:31		06:17	05:21	05:02	05:32	06:25	07:20	08:15		08:14	08:51
	16:56	17:58	18:51		20:49	21:41	22:09	21:48	20:47	19:32	18:21		16:26	16:15
24	08:34	07:36	06:29		06:15	05:19	05:03	05:33	06:26	07:21	08:17		08:16	08:51
	16:58	18:00	18:53		20:51	21:43	22:09	21:46	20:45	19:30	18:19		16:24	16:15
25	08:33	07:33	06:26		06:13	05:18	05:03	05:35	06:28	07:23	07:19		08:18	08:51
	17:00	18:02	18:55		20:52	21:44	22:09	21:45	20:43	19:27	17:16		16:23	16:16
26	08:31	07:31	17:35 (7) 06:24		06:10	05:17	05:03	05:37	06:30	07:25	07:21		08:19	08:52
	17:02	18:04	1 17:36 (7) 18:57		20:54	21:46	22:09	21:43	20:40	19:25	17:14		16:22	16:17
27	08:30	07:29	17:34 (7) 06:21		06:08	05:16	05:04	05:38	06:32	07:27	07:23		08:21	08:52
	17:04	18:06	4 17:38 (7) 18:59		20:56	21:47	22:09	21:41	20:38	19:22	17:12		16:21	16:17
28	08:28	07:27	17:32 (7) 06:19		06:06	05:14	05:04	05:40	06:34	07:29	07:25		08:23	08:52
	17:06	18:08	8 17:40 (7) 19:01		20:58	21:48	22:09	21:40	20:36	19:20	17:10		16:20	16:18
29	08:27		07:16		06:04	05:13	05:05	05:41	06:35	07:30	07:27		08:24	08:52
	17:08		20:02		21:00	21:50	22:09	21:38	20:33	19:17	17:08		16:19	16:19
30	08:25		07:14		06:02	05:12	05:06	05:43	06:37	07:32	07:28		08:26	08:52
	17:10		20:04		21:02	21:51	22:09	21:36	20:31	19:15	17:06		16:18	16:20
31	08:23		07:11			05:11		05:45	06:39		07:30			08:52
	17:12		20:06			21:52		21:35	20:29		17:04			16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case		13	208							223		
Sun reduction		0.19	0.22							0.23		
Oper. time red.		1.00	1.00							1.00		
Wind dir. red.		0.65	0.65							0.65		
Total reduction		0.13	0.14							0.15		
Total, real		2	30							33		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** DH - H124

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February	March	April	May	June	July	August	September	October	November		December		
1	08:52	15:04 (9)	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:40	07:34	07:32		08:27		
	16:22	11 15:15 (9)	17:13	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02		16:17		
2	08:52	15:06 (9)	08:20	07:22	07:06	05:57	05:09	05:07	05:48	06:42	07:36	07:34		08:29		
	16:23	8 15:14 (9)	17:15	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00		16:16		
3	08:52	15:09 (9)	08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:37	07:36		08:30		
	16:24	5 15:14 (9)	17:17	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58		16:16		
4	08:51		08:16	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38		08:32		
	16:26		17:19	18:15	20:13	21:09	21:57	22:07	21:27	20:19	19:05	16:56		16:15		
5	08:51		08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40		08:33		
	16:27		17:21	18:17	20:15	21:11	21:58	22:06	21:25	20:16	19:03	16:54		16:14		
6	08:51		08:13	07:12	06:57	05:49	05:06	05:10	05:55	06:49	07:43	07:42		08:35		
	16:28		17:23	18:19	20:17	21:12	21:59	22:06	21:24	20:14	19:00	16:52		16:14		
7	08:50		08:11	07:10	06:54	05:47	05:05	05:11	05:56	06:51	07:45	07:44		08:36		
	16:29		17:25	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50		16:13		
8	08:50		08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46		08:37		
	16:31		17:27	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48		16:13		
9	08:49		08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48		08:39		14:57 (9)
	16:32		17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46		16:13	4	15:01 (9)
10	08:49		08:05	07:03	06:47	05:42	05:03	05:14	06:01	06:56	07:50	07:50		08:40		14:55 (9)
	16:34		17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:50	16:45		16:12	8	15:03 (9)
11	08:48		08:03	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52		08:41		14:55 (9)
	16:35		17:34	18:29	20:26	21:21	22:04	22:02	21:14	20:02	18:48	16:43		16:12	11	15:06 (9)
12	08:47	15:59 (8)	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54		08:42		14:55 (9)
	16:37	2 16:01 (8)	17:36	18:31	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41		16:12	12	15:07 (9)
13	08:46	15:59 (8)	07:59	06:55	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:55		08:43		14:55 (9)
	16:39	3 16:02 (8)	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40		16:12	13	15:08 (9)
14	08:45	15:59 (8)	07:57	06:53	06:38	05:35	05:02	05:19	06:08	07:03	07:58	07:57	15:42 (8)	08:44		14:54 (9)
	16:40	5 16:04 (8)	17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38	10 15:52 (8)	16:12	15	15:09 (9)
15	08:45	16:00 (8)	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59	15:40 (8)	08:45		14:55 (9)
	16:42	6 16:06 (8)	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36	14 15:54 (8)	16:12	15	15:10 (9)
16	08:44	16:00 (8)	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01	15:39 (8)	08:46		14:55 (9)
	16:43	8 16:08 (8)	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16 15:55 (8)	16:12	15	15:10 (9)
17	08:43	16:00 (8)	07:51	06:46	06:31	05:30	05:01	05:23	06:14	07:09	08:03	08:03	15:38 (8)	08:47		14:55 (9)
	16:45	9 16:09 (8)	17:46	18:40	20:38	21:32	22:07	21:56	21:01	19:47	18:34	16:33	18 15:56 (8)	16:12	16	15:11 (9)
18	08:41	16:00 (8)	07:49	06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05	08:05	15:38 (8)	08:47		14:55 (9)
	16:47	12 16:12 (8)	17:48	18:42	20:39	21:33	22:08	21:54	20:59	19:44	18:32	16:32	19 15:57 (8)	16:12	16	15:11 (9)
19	08:40	16:01 (8)	07:47	06:41	06:26	05:26	05:01	05:26	06:17	07:12	08:07	08:07	15:38 (8)	08:48		14:55 (9)
	16:49	13 16:14 (8)	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:30	19 15:57 (8)	16:13	17	15:12 (9)
20	08:39	16:01 (8)	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	15:38 (8)	08:49		14:56 (9)
	16:51	14 16:15 (8)	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:39	18:27	16:29	17 15:55 (8)	16:13	17	15:13 (9)
21	08:38	16:02 (8)	07:42	06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11	08:10	15:38 (8)	08:49		14:56 (9)
	16:52	16 16:18 (8)	17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16 15:54 (8)	16:13	17	15:13 (9)
22	08:37	16:03 (8)	07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	15:38 (8)	08:50		14:57 (9)
	16:54	17 16:20 (8)	17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	15 15:53 (8)	16:14	17	15:14 (9)
23	08:35	16:03 (8)	07:38	06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15	08:14	15:37 (8)	08:51		14:57 (9)
	16:56	19 16:22 (8)	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	13 15:50 (8)	16:14	17	15:14 (9)
24	08:34	16:04 (8)	07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16	15:37 (8)	08:51		14:57 (9)
	16:58	19 16:23 (8)	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24	12 15:49 (8)	16:15	17	15:14 (9)
25	08:33	16:05 (8)	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17	15:38 (8)	08:51		14:58 (9)
	17:00	18 16:23 (8)	18:01	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	10 15:48 (8)	16:16	17	15:15 (9)
26	08:31	16:06 (8)	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	15:38 (8)	08:52		14:59 (9)
	17:02	16 16:22 (8)	18:03	18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	16:22	8 15:46 (8)	16:16	16	15:15 (9)
27	08:30	16:09 (8)	07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21	15:39 (8)	08:52		14:59 (9)
	17:04	13 16:22 (8)	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	6 15:45 (8)	16:17	16	15:15 (9)
28	08:28	16:11 (8)	07:26	06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24	08:23	15:40 (8)	08:52		15:00 (9)
	17:06	9 16:20 (8)	18:07	19:00	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	4 15:44 (8)	16:18	16	15:16 (9)
29	08:27			07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	15:40 (8)	08:52		15:01 (9)
	17:08			20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	4 15:44 (8)	16:19	15	15:16 (9)
30	08:25			07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26	15:40 (8)	08:52		15:02 (9)
	17:10			20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	2 15:42 (8)	16:20	14	15:16 (9)
31	08:23			07:11		05:11		05:44	06:39		07:30			08:52		15:03 (9)
	17:11			20:06		21:52		21:35	20:29		17:04			16:21	13	15:16 (9)
Potential sun hours	250		273	367	420	494	510	513	460	382	328	259		233		
Total, worst case		223											203		334	
Sun reduction		0.16											0.20		0.12	
Oper. time red.		1.00											1.00		1.00	
Wind dir. red.		0.65											0.65		0.65	
Total reduction		0.11											0.13		0.08	
Total, real		23											26		26	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** DI - H125

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March		April	May	June	July	August	September		October		November	December
1	08:52	08:22	07:24		07:09	06:00	05:10	05:06	05:46	06:41		07:34		07:32	08:27
	16:22	17:14	18:10		20:08	21:03	21:54	22:08	21:33	20:26		19:12	24	18:44 (7)	17:02	16:17
2	08:52	08:20	07:22		07:07	05:58	05:09	05:07	05:48	06:42		07:36		18:19 (7)	07:34	08:29
	16:23	17:16	18:11		20:10	21:05	21:55	22:08	21:31	20:24		19:10	22	18:41 (7)	17:00	16:17
3	08:52	08:18	07:20		07:04	05:56	05:08	05:08	05:50	06:44		07:38		18:19 (7)	07:36	08:30
	16:25	17:18	18:13		20:12	21:07	21:56	22:07	21:29	20:21		19:08	20	18:39 (7)	16:58	16:16
4	08:52	08:17	07:17		07:02	05:54	05:08	05:09	05:51	06:46		07:39		18:19 (7)	07:38	08:32
	16:26	17:20	18:15		20:14	21:09	21:57	22:07	21:27	20:19		19:05	18	18:37 (7)	16:56	16:15
5	08:51	08:15	07:15	17:46 (7)	06:59	05:52	05:07	05:10	05:53	06:48		07:41		18:19 (7)	07:40	08:33
	16:27	17:22	18:17	4 17:50 (7)	20:15	21:11	21:58	22:06	21:26	20:17		19:03	15	18:34 (7)	16:54	16:15
6	08:51	08:13	07:12	17:45 (7)	06:57	05:50	05:06	05:10	05:55	06:50		07:43		18:20 (7)	07:42	08:35
	16:28	17:24	18:19	7 17:52 (7)	20:17	21:13	21:59	22:06	21:24	20:14		19:00	12	18:32 (7)	16:52	16:14
7	08:50	08:11	07:10	17:43 (7)	06:54	05:48	05:05	05:11	05:56	06:51		07:45		18:19 (7)	07:44	08:36
	16:30	17:26	18:21	11 17:54 (7)	20:19	21:14	22:00	22:05	21:22	20:12		18:58	10	18:29 (7)	16:50	16:14
8	08:50	08:09	07:08	17:42 (7)	06:52	05:46	05:05	05:12	05:58	06:53		07:47		18:20 (7)	07:46	08:37
	16:31	17:28	18:23	14 17:56 (7)	20:21	21:16	22:01	22:04	21:20	20:09		18:55	6	18:26 (7)	16:48	16:13
9	08:49	08:07	07:05	17:41 (7)	06:50	05:44	05:04	05:13	06:00	06:55		07:49		18:21 (7)	07:48	08:39
	16:33	17:30	18:25	17 17:58 (7)	20:23	21:18	22:02	22:04	21:18	20:07		18:53	3	18:24 (7)	16:47	16:13
10	08:49	08:05	07:03	17:41 (7)	06:47	05:42	05:04	05:15	06:02	06:57		07:50			07:50	08:40
	16:34	17:32	18:27	19 18:00 (7)	20:25	21:20	22:03	22:03	21:16	20:04		18:51			16:45	16:13
11	08:48	08:03	07:00	17:41 (7)	06:45	05:40	05:03	05:16	06:03	06:58		07:52			07:52	08:41
	16:36	17:34	18:29	21 18:02 (7)	20:27	21:21	22:04	22:02	21:14	20:02		18:48			16:43	16:12
12	08:47	08:01	06:58	17:41 (7)	06:42	05:38	05:03	05:17	06:05	07:00		07:54			07:54	08:42
	16:37	17:36	18:31	23 18:04 (7)	20:28	21:23	22:04	22:01	21:12	19:59		18:46			16:42	16:12
13	08:46	07:59	06:56	17:41 (7)	06:40	05:37	05:03	05:18	06:07	07:02		07:56			07:56	08:43
	16:39	17:38	18:33	25 18:06 (7)	20:30	21:25	22:05	22:00	21:09	19:57		18:44			16:40	16:12
14	08:45	07:57	06:53	17:41 (7)	06:38	05:35	05:02	05:19	06:09	07:04		07:58			07:57	08:44
	16:40	17:40	18:34	23 18:04 (7)	20:32	21:27	22:06	21:59	21:07	19:55		18:41			16:38	16:12
15	08:45	07:55	06:51	17:42 (7)	06:35	05:33	05:02	05:21	06:10	07:05		08:00			07:59	08:45
	16:42	17:42	18:36	22 18:04 (7)	20:34	21:28	22:06	21:58	21:05	19:52		18:39			16:37	16:12
16	08:44	07:53	06:48	17:43 (7)	06:33	05:32	05:02	05:22	06:12	07:07		08:02			08:01	08:46
	16:44	17:44	18:38	19 18:02 (7)	20:36	21:30	22:07	21:57	21:03	19:50		18:37			16:35	16:12
17	08:43	07:51	06:46	17:45 (7)	06:31	05:30	05:02	05:23	06:14	07:09		08:04			08:03	08:47
	16:45	17:46	18:40	15 18:00 (7)	20:38	21:32	22:07	21:56	21:01	19:47		18:34			16:34	16:12
18	08:41	07:49	06:43	17:47 (7)	06:28	05:28	05:02	05:25	06:16	07:11		08:05			08:05	08:48
	16:47	17:48	18:42	10 17:57 (7)	20:40	21:33	22:08	21:54	20:59	19:45		18:32			16:32	16:13
19	08:40	07:47	06:41		06:26	05:27	05:02	05:26	06:18	07:13		08:07			08:07	08:48
	16:49	17:50	18:44		20:41	21:35	22:08	21:53	20:56	19:42		18:30			16:31	16:13
20	08:39	07:45	06:39		06:24	05:25	05:02	05:27	06:19	07:14		08:09			08:09	08:49
	16:51	17:52	18:46		20:43	21:36	22:09	21:52	20:54	19:40		18:27			16:29	16:13
21	08:38	07:42	06:36		06:22	05:24	05:02	05:29	06:21	07:16		08:11			08:10	08:50
	16:53	17:54	18:48		20:45	21:38	22:09	21:50	20:52	19:37		18:25			16:28	16:14
22	08:37	07:40	06:34		06:19	05:22	05:02	05:30	06:23	07:18		08:13			08:12	08:50
	16:54	17:56	18:49		20:47	21:40	22:09	21:49	20:50	19:35		18:23			16:27	16:14
23	08:35	07:38	06:31		06:17	05:21	05:02	05:32	06:25	07:20		08:15			08:14	08:51
	16:56	17:58	18:51		20:49	21:41	22:09	21:48	20:47	19:32		18:21			16:26	16:15
24	08:34	07:36	06:29		06:15	05:20	05:03	05:33	06:26	07:21		08:17			08:16	08:51
	16:58	18:00	18:53		20:51	21:43	22:09	21:46	20:45	19:30		18:19			16:24	16:15
25	08:33	07:33	06:26		06:13	05:18	05:03	05:35	06:28	07:23	18:31 (7)	07:19			08:18	08:51
	17:00	18:02	18:55		20:52	21:44	22:09	21:45	20:43	19:27	7 18:38 (7)	17:16			16:23	16:16
26	08:31	07:31	06:24		06:10	05:17	05:03	05:37	06:30	07:25	18:27 (7)	07:21			08:19	08:52
	17:02	18:04	18:57		20:54	21:46	22:09	21:43	20:40	19:25	14 18:41 (7)	17:14			16:22	16:17
27	08:30	07:29	06:21		06:08	05:16	05:04	05:38	06:32	07:27	18:25 (7)	07:23			08:21	08:52
	17:04	18:06	18:59		20:56	21:47	22:09	21:41	20:38	19:22	18 18:43 (7)	17:12			16:21	16:17
28	08:28	07:27	06:19		06:06	05:15	05:04	05:40	06:34	07:29	18:24 (7)	07:25			08:23	08:52
	17:06	18:08	19:01		20:58	21:48	22:09	21:40	20:36	19:20	20 18:44 (7)	17:10			16:20	16:18
29	08:27		07:16		06:04	05:13	05:05	05:41	06:35	07:30	18:22 (7)	07:26			08:24	08:52
	17:08		20:02		21:00	21:50	22:09	21:38	20:33	19:17	23 18:45 (7)	17:08			16:19	16:19
30	08:25		07:14		06:02	05:12	05:06	05:43	06:37	07:32	18:20 (7)	07:28			08:26	08:52
	17:10		20:04		21:02	21:51	22:09	21:36	20:31	19:15	24 18:44 (7)	17:06			16:18	16:20
31	08:23		07:11			05:11		05:45	06:39			07:30				08:52
	17:12		20:06			21:52		21:35	20:29			17:04				16:21
Potential sun hours	250	273	367		420	494	510	512	460	382		328		259	233
Total, worst case				230							106		130		
Sun reduction				0.22							0.25		0.23		
Oper. time red.				1.00							1.00		1.00		
Wind dir. red.				0.64							0.64		0.64		
Total reduction				0.14							0.16		0.15		
Total, real				32							17		19		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** DJ - H126

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:40	07:34	07:32	08:27
	16:22	17:14	18:09	20:08	21:03	21:53	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:37	07:36	08:30
	16:24	17:18	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58	16:16
4	08:51	08:16	07:17	07:02	05:53	05:07	05:09	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:13	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11	21:58	22:06	21:25	20:16	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50	05:06	05:10	05:55	06:49	07:43	07:42	08:34
	16:28	17:24	18:19	20:17	21:12	21:59	22:06	21:23	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:21	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:04	21:19	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48	08:38
	16:32	17:30	18:25	20:23	21:18	22:02	22:04	21:17	20:07	18:53	16:47	16:13
10	08:48	08:05	07:03	06:47	05:42	05:04	05:14	06:02	06:56	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:19	22:03	22:03	21:15	20:04	18:51	16:45	16:12
11	08:48	08:03	07:00	06:45	05:40	05:03	05:16	06:03	06:58	07:52	07:52	08:41
	16:35	17:34	18:29	20:26	21:21	22:04	22:02	21:13	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:53	08:42
	16:37	17:36	18:31	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:55	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:55	08:43
	16:39	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:03	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:26	22:06	21:59	21:07	19:54	18:41	16:38	16:12
15	08:44	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:43	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:01	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16:12
17	08:42	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:31	22:07	21:55	21:01	19:47	18:34	16:33	16:12
18	08:41	07:49	06:43	06:28	05:28	05:02	05:24	06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:39	21:33	22:08	21:54	20:58	19:44	18:32	16:32	16:12
19	08:40	07:46	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:08	08:49
	16:51	17:52	18:46	20:43	21:36	22:08	21:52	20:54	19:39	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:24	05:02	05:29	06:21	07:16	08:11	08:10	08:49
	16:52	17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:13
22	08:37	07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:39	22:09	21:49	20:49	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15	08:14	08:50
	16:56	17:58	18:51	20:49	21:41	22:09	21:47	20:47	19:32	18:21	16:25	16:14
24	08:34	07:35	06:29	06:15	05:19	05:03	05:33	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:50	21:42	22:09	21:46	20:45	19:30	18:18	16:24	16:15
25	08:32	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17	08:51
	17:00	18:02	18:55	20:52	21:44	22:09	21:44	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:51
	17:02	18:03	18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:22	08:21	08:52
	17:04	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	05:04	05:40	06:33	07:28	07:24	08:22	08:52
	17:06	18:07	19:00	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:26		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:49	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:01	21:51	22:08	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11		05:44	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:28		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:

Carrigeen Renewable Energy Development

Licensed user:

Jennings O'Donovan

Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** DK - H128

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:40	07:34	07:32	08:27
	16:22	17:14	18:09	20:08	21:03	21:53	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:06	05:58	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:16	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:37	07:36	08:30
	16:24	17:18	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58	16:16
4	08:51	08:16	07:17	07:02	05:53	05:07	05:09	05:51	06:46	07:39	07:38	08:32
	16:26	17:20	18:15	20:13	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:15	21:11	21:58	22:06	21:25	20:16	19:03	16:54	16:15
6	08:51	08:13	07:12	06:57	05:50	05:06	05:10	05:55	06:49	07:43	07:42	08:34
	16:28	17:24	18:19	20:17	21:12	21:59	22:06	21:23	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:48	05:05	05:11	05:56	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:21	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:04	21:19	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48	08:38
	16:32	17:30	18:25	20:23	21:18	22:02	22:04	21:17	20:07	18:53	16:47	16:13
10	08:48	08:05	07:03	06:47	05:42	05:04	05:14	06:02	06:56	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:19	22:03	22:03	21:15	20:04	18:50	16:45	16:12
11	08:48	08:03	07:00	06:45	05:40	05:03	05:16	06:03	06:58	07:52	07:52	08:41
	16:35	17:34	18:29	20:26	21:21	22:04	22:02	21:13	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:53	08:42
	16:37	17:36	18:31	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:55	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:55	08:43
	16:39	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:03	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:26	22:06	21:59	21:07	19:54	18:41	16:38	16:12
15	08:44	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:43	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:01	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16:12
17	08:42	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:31	22:07	21:55	21:01	19:47	18:34	16:33	16:12
18	08:41	07:49	06:43	06:28	05:28	05:02	05:24	06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:39	21:33	22:08	21:54	20:58	19:44	18:32	16:32	16:12
19	08:40	07:46	06:41	06:26	05:27	05:02	05:26	06:17	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13
20	08:39	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:08	08:49
	16:51	17:52	18:46	20:43	21:36	22:08	21:52	20:54	19:39	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:24	05:02	05:29	06:21	07:16	08:11	08:10	08:49
	16:52	17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:13
22	08:37	07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:39	22:09	21:49	20:49	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15	08:14	08:50
	16:56	17:58	18:51	20:49	21:41	22:09	21:47	20:47	19:32	18:21	16:25	16:14
24	08:34	07:35	06:29	06:15	05:19	05:03	05:33	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:50	21:42	22:09	21:46	20:45	19:30	18:18	16:24	16:15
25	08:32	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17	08:51
	17:00	18:02	18:55	20:52	21:44	22:09	21:44	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:51
	17:02	18:03	18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:22	08:21	08:52
	17:04	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	05:04	05:40	06:33	07:28	07:24	08:22	08:52
	17:06	18:07	19:00	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:26		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:49	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:01	21:51	22:08	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11		05:44	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:28		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** DL - H129

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	17:24 (10)	07:09	05:59	05:10	05:06	05:46	06:40	07:34	07:32	08:27
	16:22	17:13	18:09	17:42 (10)	20:08	21:03	21:53	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	17:24 (10)	07:06	05:57	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:15	18:11	17:44 (10)	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:16
3	08:52	08:18	07:19	17:25 (10)	07:04	05:55	05:08	05:08	05:49	06:44	07:37	07:36	08:30
	16:24	17:17	18:13	17:46 (10)	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58	16:16
4	08:51	08:16	07:17	17:25 (10)	07:01	05:53	05:07	05:08	05:51	06:46	07:39	07:38	08:32
	16:26	17:19	18:15	17:46 (10)	20:13	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	17:26 (10)	06:59	05:51	05:07	05:09	05:53	06:47	07:41	07:40	08:33
	16:27	17:21	18:17	17:46 (10)	20:15	21:11	21:58	22:06	21:25	20:16	19:02	16:54	16:14
6	08:51	08:13	07:12	17:28 (10)	06:57	05:49	05:06	05:10	05:54	06:49	07:43	07:42	08:34
	16:28	17:23	18:19	17:44 (10)	20:17	21:12	21:59	22:06	21:23	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	17:30 (10)	06:54	05:47	05:05	05:11	05:56	06:51	07:45	07:44	08:36
	16:29	17:25	18:21	17:41 (10)	20:19	21:14	22:00	22:05	21:21	20:12	18:58	16:50	16:13
8	08:50	08:09	07:07		06:52	05:46	05:04	05:12	05:58	06:53	07:47	07:46	08:37
	16:31	17:27	18:23		20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05		06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48	08:38
	16:32	17:29	18:25		20:23	21:18	22:02	22:04	21:17	20:07	18:53	16:46	16:13
10	08:48	08:05	07:03		06:47	05:42	05:03	05:14	06:01	06:56	07:50	07:50	08:40
	16:34	17:31	18:27		20:25	21:19	22:03	22:03	21:15	20:04	18:50	16:45	16:12
11	08:48	08:03	07:00		06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52	08:41
	16:35	17:33	18:29		20:26	21:21	22:04	22:02	21:13	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58		06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:53	08:42
	16:37	17:35	18:30		20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:55		06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:55	08:43
	16:38	17:38	18:32		20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12
14	08:45	07:57	06:53		06:37	05:35	05:02	05:19	06:08	07:03	07:58	07:57	08:44
	16:40	17:40	18:34		20:32	21:26	22:06	21:59	21:07	19:54	18:41	16:38	16:12
15	08:44	07:55	06:51		06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36		20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36	16:12
16	08:43	07:53	06:48		06:33	05:31	05:02	05:22	06:12	07:07	08:01	08:01	08:46
	16:43	17:44	18:38		20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16:12
17	08:42	07:51	06:46		06:30	05:30	05:01	05:23	06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40		20:38	21:31	22:07	21:55	21:01	19:47	18:34	16:33	16:12
18	08:41	07:49	06:43		06:28	05:28	05:01	05:24	06:16	07:10	08:05	08:05	08:47
	16:47	17:48	18:42		20:39	21:33	22:08	21:54	20:58	19:44	18:32	16:32	16:12
19	08:40	07:46	06:41		06:26	05:26	05:01	05:26	06:17	07:12	08:07	08:07	08:48
	16:49	17:50	18:44		20:41	21:35	22:08	21:53	20:56	19:42	18:29	16:30	16:13
20	08:39	07:44	06:38		06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:08	08:49
	16:50	17:52	18:46		20:43	21:36	22:08	21:52	20:54	19:39	18:27	16:29	16:13
21	08:38	07:42	06:36		06:21	05:23	05:02	05:29	06:21	07:16	08:11	08:10	08:49
	16:52	17:54	18:47		20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:13
22	08:37	07:40	06:33		06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:55	18:49		20:47	21:39	22:09	21:49	20:49	19:34	18:23	16:26	16:14
23	08:35	07:38	17:27 (10) 06:31		06:17	05:21	05:02	05:32	06:24	07:19	08:15	08:14	08:50
	16:56	17:57	2 17:29 (10) 18:51		20:49	21:41	22:09	21:47	20:47	19:32	18:21	16:25	16:14
24	08:34	07:35	17:26 (10) 06:28		06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16	08:51
	16:58	17:59	6 17:32 (10) 18:53		20:50	21:42	22:09	21:46	20:45	19:29	18:18	16:24	16:15
25	08:32	07:33	17:25 (10) 06:26		06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17	08:51
	17:00	18:01	8 17:33 (10) 18:55		20:52	21:44	22:09	21:44	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	17:25 (10) 06:24		06:10	05:17	05:03	05:36	06:30	07:25	07:20	08:19	08:51
	17:02	18:03	11 17:36 (10) 18:57		20:54	21:45	22:09	21:43	20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	17:24 (10) 06:21		06:08	05:15	05:04	05:38	06:32	07:27	07:22	08:21	08:52
	17:04	18:05	13 17:37 (10) 18:59		20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	17:24 (10) 06:19		06:06	05:14	05:04	05:39	06:33	07:28	07:24	08:22	08:52
	17:06	18:07	16 17:40 (10) 19:00		20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:26		07:16		06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52
	17:08		20:02		21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14		06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26	08:52
	17:09		20:04		21:01	21:51	22:08	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:11			05:11		05:44	06:39		07:30		08:52
	17:11		20:06			21:52		21:35	20:28		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233	
Total, worst case		56	127							191			
Sun reduction		0.19	0.22							0.23			
Oper. time red.		1.00	1.00							1.00			
Wind dir. red.		0.65	0.65							0.65			
Total reduction		0.13	0.14							0.15			
Total, real		7	18							28			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** DM - H130

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March		April	May	June	July	August	September		October	November	December
1	08:52	08:22	07:24		07:09	06:00	05:10	05:06	05:46	06:41		07:34	07:32	08:27
	16:22	17:14	18:10		20:08	21:03	21:54	22:08	21:33	20:26		19:12	17:02	16:17
2	08:52	08:20	07:22		07:07	05:58	05:09	05:07	05:48	06:42		07:36	07:34	08:29
	16:23	17:16	18:11		20:10	21:05	21:55	22:08	21:31	20:24		19:10	17:00	16:17
3	08:52	08:18	07:20		07:04	05:56	05:08	05:08	05:50	06:44		07:38	07:36	08:30
	16:25	17:18	18:13		20:12	21:07	21:56	22:07	21:29	20:21		19:08	16:58	16:16
4	08:52	08:17	07:17		07:02	05:54	05:08	05:09	05:51	06:46		07:39	07:38	08:32
	16:26	17:20	18:15		20:14	21:09	21:57	22:07	21:27	20:19		19:05	16:56	16:15
5	08:51	08:15	07:15		06:59	05:52	05:07	05:10	05:53	06:48		07:41	07:40	08:33
	16:27	17:22	18:17		20:15	21:11	21:58	22:06	21:26	20:17		19:03	16:54	16:15
6	08:51	08:13	07:12		06:57	05:50	05:06	05:10	05:55	06:50		07:43	07:42	08:35
	16:28	17:24	18:19		20:17	21:13	21:59	22:06	21:24	20:14		19:00	16:52	16:14
7	08:50	08:11	07:10		06:54	05:48	05:05	05:11	05:57	06:51		07:45	07:44	08:36
	16:30	17:26	18:21		20:19	21:14	22:00	22:05	21:22	20:12		18:58	16:50	16:14
8	08:50	08:09	07:08		06:52	05:46	05:05	05:12	05:58	06:53		07:47	07:46	08:37
	16:31	17:28	18:23		20:21	21:16	22:01	22:04	21:20	20:09		18:55	16:48	16:13
9	08:49	08:07	07:05		06:50	05:44	05:04	05:13	06:00	06:55		07:49	07:48	08:39
	16:33	17:30	18:25		20:23	21:18	22:02	22:04	21:18	20:07		18:53	16:47	16:13
10	08:49	08:05	07:03		06:47	05:42	05:04	05:15	06:02	06:57		07:50	07:50	08:40
	16:34	17:32	18:27		20:25	21:20	22:03	22:03	21:16	20:04		18:51	16:45	16:13
11	08:48	08:03	07:00		06:45	05:40	05:03	05:16	06:03	06:58		07:52	07:52	08:41
	16:36	17:34	18:29		20:27	21:21	22:04	22:02	21:14	20:02		18:48	16:43	16:12
12	08:47	08:01	06:58		06:42	05:38	05:03	05:17	06:05	07:00		07:54	07:54	08:42
	16:37	17:36	18:31		20:28	21:23	22:04	22:01	21:12	19:59		18:46	16:42	16:12
13	08:46	07:59	06:56		06:40	05:37	05:03	05:18	06:07	07:02		07:56	07:56	08:43
	16:39	17:38	18:33		20:30	21:25	22:05	22:00	21:09	19:57		18:44	16:40	16:12
14	08:45	07:57	06:53		06:38	05:35	05:02	05:19	06:09	07:04		07:58	07:57	08:44
	16:40	17:40	18:34		20:32	21:27	22:06	21:59	21:07	19:55		18:41	16:38	16:12
15	08:45	07:55	06:51		18:08 (7)	06:35	05:33	05:02	05:21	06:10	07:05	18:58 (7)	08:00	07:59	08:45
	16:42	17:42	18:36	2	18:10 (7)	20:34	21:28	22:06	21:58	21:05	19:52	9	19:07 (7)	18:39	16:37	16:12
16	08:44	07:53	06:48		18:06 (7)	06:33	05:32	05:02	05:22	06:12	07:07		18:55 (7)	08:02	08:01	08:46
	16:44	17:44	18:38	5	18:11 (7)	20:36	21:30	22:07	21:57	21:03	19:50	14	19:09 (7)	18:37	16:35	16:12
17	08:43	07:51	06:46		18:05 (7)	06:31	05:30	05:02	05:23	06:14	07:09		18:52 (7)	08:04	08:03	08:47
	16:45	17:46	18:40	9	18:14 (7)	20:38	21:32	22:07	21:56	21:01	19:47	18	19:10 (7)	18:34	16:34	16:12
18	08:41	07:49	06:43		18:03 (7)	06:28	05:28	05:02	05:25	06:16	07:11		18:51 (7)	08:05	08:05	08:47
	16:47	17:48	18:42	12	18:15 (7)	20:40	21:33	22:08	21:54	20:59	19:45	20	19:11 (7)	18:32	16:32	16:13
19	08:40	07:47	06:41		18:03 (7)	06:26	05:27	05:02	05:26	06:18	07:13		18:50 (7)	08:07	08:07	08:48
	16:49	17:50	18:44	15	18:18 (7)	20:41	21:35	22:08	21:53	20:56	19:42	22	19:12 (7)	18:30	16:31	16:13
20	08:39	07:44	06:39		18:02 (7)	06:24	05:25	05:02	05:27	06:19	07:14		18:49 (7)	08:09	08:09	08:49
	16:51	17:52	18:46	17	18:19 (7)	20:43	21:36	22:09	21:52	20:54	19:40	23	19:12 (7)	18:27	16:29	16:13
21	08:38	07:42	06:36		18:02 (7)	06:22	05:24	05:02	05:29	06:21	07:16		18:47 (7)	08:11	08:10	08:50
	16:53	17:54	18:48	19	18:21 (7)	20:45	21:38	22:09	21:50	20:52	19:37	22	19:09 (7)	18:25	16:28	16:14
22	08:37	07:40	06:34		18:02 (7)	06:19	05:22	05:02	05:30	06:23	07:18		18:47 (7)	08:13	08:12	08:50
	16:54	17:56	18:49	21	18:23 (7)	20:47	21:40	22:09	21:49	20:50	19:35	19	19:06 (7)	18:23	16:27	16:14
23	08:35	07:38	06:31		18:02 (7)	06:17	05:21	05:02	05:32	06:25	07:20		18:47 (7)	08:15	08:14	08:51
	16:56	17:58	18:51	23	18:25 (7)	20:49	21:41	22:09	21:48	20:47	19:32	17	19:04 (7)	18:21	16:26	16:15
24	08:34	07:36	06:29		18:02 (7)	06:15	05:20	05:03	05:33	06:26	07:21		18:47 (7)	08:17	08:16	08:51
	16:58	18:00	18:53	23	18:25 (7)	20:51	21:43	22:09	21:46	20:45	19:30	15	19:02 (7)	18:19	16:24	16:15
25	08:33	07:33	06:26		18:03 (7)	06:13	05:18	05:03	05:35	06:28	07:23		18:46 (7)	07:19	08:18	08:51
	17:00	18:02	18:55	21	18:24 (7)	20:52	21:44	22:09	21:45	20:43	19:27	13	18:59 (7)	17:16	16:23	16:16
26	08:31	07:31	06:24		18:03 (7)	06:10	05:17	05:03	05:37	06:30	07:25		18:46 (7)	07:21	08:19	08:52
	17:02	18:04	18:57	19	18:22 (7)	20:54	21:46	22:09	21:43	20:40	19:25	10	18:56 (7)	17:14	16:22	16:17
27	08:30	07:29	06:21		18:05 (7)	06:08	05:16	05:04	05:38	06:32	07:27		18:47 (7)	07:23	08:21	08:52
	17:04	18:06	18:59	15	18:20 (7)	20:56	21:47	22:09	21:41	20:38	19:22	7	18:54 (7)	17:12	16:21	16:17
28	08:28	07:26	06:19		18:08 (7)	06:06	05:15	05:04	05:40	06:34	07:29		18:48 (7)	07:25	08:23	08:52
	17:06	18:08	19:01	10	18:18 (7)	20:58	21:48	22:09	21:40	20:36	19:20	4	18:52 (7)	17:10	16:20	16:18
29	08:27		07:16			06:04	05:13	05:05	05:41	06:35	07:30			07:26	08:24	08:52
	17:08		20:02			21:00	21:50	22:09	21:38	20:33	19:17			17:08	16:19	16:19
30	08:25		07:14			06:02	05:12	05:06	05:43	06:37	07:32			07:28	08:26	08:52
	17:10		20:04			21:02	21:51	22:09	21:36	20:31	19:15			17:06	16:18	16:20
31	08:23		07:11				05:11		05:45	06:39				07:30		08:52
	17:12		20:06				21:52		21:35	20:29				17:04		16:21
Potential sun hours	250	273	367		420	494	510	512	460	382		328	259	233
Total, worst case				211							213			
Sun reduction				0.22							0.25			
Oper. time red.				1.00							1.00			
Wind dir. red.				0.65							0.65			
Total reduction				0.14							0.16			
Total, real				30							35			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** DN - H131

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February	March	April	May	June	July	August	September	October	November			December		
1	08:52		15:26 (9)	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:40	07:34	07:32			08:27		15:15 (9)
	16:22	18	15:44 (9)	17:13	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02			16:17	21	15:36 (9)
2	08:52		15:27 (9)	08:20	07:22	07:06	05:57	05:09	05:07	05:48	06:42	07:36	07:34			08:29		15:15 (9)
	16:23	18	15:45 (9)	17:15	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00			16:16	22	15:37 (9)
3	08:52		15:27 (9)	08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:37	07:36			08:30		15:14 (9)
	16:24	20	15:47 (9)	17:17	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58			16:16	23	15:37 (9)
4	08:51		15:27 (9)	08:16	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38			08:32		15:15 (9)
	16:26	21	15:48 (9)	17:19	18:15	20:13	21:09	21:57	22:07	21:27	20:19	19:05	16:56			16:15	23	15:38 (9)
5	08:51		15:29 (9)	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40			08:33		15:14 (9)
	16:27	21	15:50 (9)	17:21	18:17	20:15	21:11	21:58	22:06	21:25	20:16	19:03	16:54			16:14	23	15:37 (9)
6	08:51		15:29 (9)	08:13	07:12	06:57	05:49	05:06	05:10	05:55	06:49	07:43	07:42			08:35		15:15 (9)
	16:28	22	15:51 (9)	17:23	18:19	20:17	21:12	21:59	22:06	21:24	20:14	19:00	16:52			16:14	22	15:37 (9)
7	08:50		15:29 (9)	08:11	07:10	06:54	05:47	05:05	05:11	05:56	06:51	07:45	07:44			08:36		15:15 (9)
	16:29	23	15:52 (9)	17:25	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50			16:13	21	15:36 (9)
8	08:50		15:30 (9)	08:09	07:08	06:52	05:46	05:04	05:12	05:58	06:53	07:47	07:46			08:37		15:16 (9)
	16:31	24	15:54 (9)	17:27	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48			16:13	20	15:36 (9)
9	08:49		15:31 (9)	08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48			08:38		15:16 (9)
	16:32	23	15:54 (9)	17:29	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46			16:13	19	15:35 (9)
10	08:49		15:32 (9)	08:05	07:03	06:47	05:42	05:03	05:14	06:01	06:56	07:50	07:50			08:40		15:16 (9)
	16:34	22	15:54 (9)	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:50	16:45			16:12	19	15:35 (9)
11	08:48		15:32 (9)	08:03	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52			08:41		15:17 (9)
	16:35	22	15:54 (9)	17:34	18:29	20:26	21:21	22:04	22:02	21:14	20:02	18:48	16:43			16:12	18	15:35 (9)
12	08:47		15:33 (9)	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54			08:42		15:17 (9)
	16:37	20	15:53 (9)	17:36	18:31	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41			16:12	18	15:35 (9)
13	08:46		15:34 (9)	07:59	06:55	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:55			08:43		15:17 (9)
	16:39	19	15:53 (9)	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40			16:12	17	15:34 (9)
14	08:45		15:36 (9)	07:57	06:53	06:38	05:35	05:02	05:19	06:08	07:03	07:58	07:57			08:44		15:18 (9)
	16:40	17	15:53 (9)	17:40	18:34	20:32	21:26	22:06	21:59	21:07	19:54	18:41	16:38			16:12	16	15:34 (9)
15	08:45		15:37 (9)	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59			08:45		15:18 (9)
	16:42	15	15:52 (9)	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36			16:12	16	15:34 (9)
16	08:44		15:39 (9)	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:01	08:01			08:46		15:19 (9)
	16:43	13	15:52 (9)	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35			16:12	15	15:34 (9)
17	08:43		15:40 (9)	07:51	06:46	06:31	05:30	05:01	05:23	06:14	07:09	08:03	08:03			08:47		15:18 (9)
	16:45	10	15:50 (9)	17:46	18:40	20:38	21:32	22:07	21:56	21:01	19:47	18:34	16:33			16:12	16	15:34 (9)
18	08:41		15:45 (9)	07:49	06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05	08:05			08:47		15:19 (9)
	16:47	1	15:46 (9)	17:48	18:42	20:39	21:33	22:08	21:54	20:59	19:44	18:32	16:32			16:12	15	15:34 (9)
19	08:40			07:47	06:41	06:26	05:26	05:01	05:26	06:17	07:12	08:07	08:07			08:48		15:20 (9)
	16:49			17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:29	16:30			16:13	14	15:34 (9)
20	08:39			07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09			08:49		15:21 (9)
	16:51			17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:39	18:27	16:29			16:13	14	15:35 (9)
21	08:38			07:42	06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11	08:10			08:49		15:20 (9)
	16:52			17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28			16:13	15	15:35 (9)
22	08:37			07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12			08:50		15:21 (9)
	16:54			17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27			16:14	15	15:36 (9)
23	08:35			07:38	06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15	08:14			08:51		15:22 (9)
	16:56			17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25			16:14	14	15:36 (9)
24	08:34			07:35	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16			08:51		15:22 (9)
	16:58			17:59	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24			16:15	14	15:36 (9)
25	08:33			07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17		15:18 (9)	08:51		15:23 (9)
	17:00			18:01	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	10	15:28 (9)	16:16	15	15:38 (9)
26	08:31			07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19		15:17 (9)	08:52		15:23 (9)
	17:02			18:03	18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	16:22	13	15:30 (9)	16:16	15	15:38 (9)
27	08:30			07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21		15:16 (9)	08:52		15:24 (9)
	17:04			18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	15	15:31 (9)	16:17	15	15:39 (9)
28	08:28			07:26	06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24	08:23		15:16 (9)	08:52		15:24 (9)
	17:06			18:07	19:00	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	17	15:33 (9)	16:18	16	15:40 (9)
29	08:27				07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24		15:15 (9)	08:52		15:24 (9)
	17:08				20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	19	15:34 (9)	16:19	17	15:41 (9)
30	08:25				07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26		15:14 (9)	08:52		15:25 (9)
	17:09				20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	20	15:34 (9)	16:20	17	15:42 (9)
31	08:23				07:11		05:11		05:44	06:39		07:30				08:52		15:26 (9)
	17:11				20:06		21:52		21:35	20:29		17:04				16:21	17	15:43 (9)
Potential sun hours	250			273	367	420	494	510	513	460	382	328	259			233		
Total, worst case		329												94			542	
Sun reduction		0.16												0.20			0.12	
Oper. time red.		1.00												1.00			1.00	
Wind dir. red.		0.65												0.65			0.65	
Total reduction		0.11												0.13			0.08	
Total, real		35												12			42	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** DO - H132

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:07	05:47	06:41	07:34	07:32	08:27
	16:23	17:14	18:10	20:08	21:04	21:54	22:08	21:33	20:26	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:10	05:07	05:48	06:43	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:14	20:12	21:07	21:56	22:08	21:29	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:52	06:46	07:40	07:38	08:32
	16:26	17:20	18:16	20:14	21:09	21:57	22:07	21:28	20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	06:59	05:52	05:07	05:10	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	21:58	22:07	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:55	05:48	05:06	05:12	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:56	16:49	16:14
9	08:49	08:07	07:05	06:50	05:44	05:04	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51	16:45	16:13
11	08:48	08:03	07:01	06:45	05:40	05:04	05:16	06:04	06:59	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:13
12	08:47	08:01	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	22:00	21:10	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:03	05:20	06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00	07:59	08:45
	16:42	17:42	18:37	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:34	16:13
18	08:42	07:49	06:44	06:29	05:29	05:02	05:25	06:16	07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:42	21:35	22:08	21:53	20:57	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:28	06:20	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:37	22:09	21:52	20:54	19:40	18:28	16:30	16:13
21	08:38	07:42	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:23	05:02	05:31	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:14	08:51
	16:57	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:19	16:25	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	21:44	22:09	21:45	20:43	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:41	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:22	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	05:14	05:05	05:42	06:36	07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:34	19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	05:13	05:06	05:43	06:37	07:32	07:29	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:37	20:31	19:15	17:06	16:19	16:20
31	08:24		07:12		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** DP - H133

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34	07:33	08:28
	16:22	17:14	18:10	20:08	21:04	21:54	22:09	21:33	20:26	19:13	17:02	16:17
2	08:52	08:20	07:22	07:07	05:58	05:09	05:07	05:48	06:43	07:36	07:34	08:29
	16:23	17:16	18:12	20:10	21:06	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04	05:56	05:08	05:08	05:50	06:44	07:38	07:36	08:31
	16:25	17:18	18:14	20:12	21:07	21:56	22:08	21:30	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:51	06:46	07:40	07:38	08:32
	16:26	17:20	18:15	20:14	21:09	21:57	22:07	21:28	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:52	05:07	05:10	05:53	06:48	07:41	07:40	08:34
	16:27	17:22	18:17	20:16	21:11	21:58	22:07	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:10	05:55	06:50	07:43	07:42	08:35
	16:28	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:51	08:11	07:10	06:55	05:48	05:05	05:11	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:15	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:38
	16:31	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:56	16:49	16:13
9	08:49	08:07	07:05	06:50	05:44	05:04	05:13	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51	16:45	16:13
11	08:48	08:04	07:01	06:45	05:40	05:03	05:16	06:04	06:58	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:22	22:04	22:02	21:14	20:02	18:48	16:43	16:12
12	08:47	08:02	06:58	06:43	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:12
13	08:47	07:59	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	22:00	21:10	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:58	08:44
	16:40	17:40	18:35	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	05:33	05:02	05:21	06:11	07:06	08:00	08:00	08:45
	16:42	17:42	18:36	20:34	21:28	22:07	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:34	16:12
18	08:42	07:49	06:44	06:28	05:28	05:02	05:25	06:16	07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:55	20:59	19:45	18:32	16:32	16:13
19	08:41	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:42	21:35	22:09	21:53	20:57	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:37	22:09	21:52	20:54	19:40	18:28	16:29	16:13
21	08:38	07:42	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:36	07:38	06:31	06:17	05:21	05:02	05:32	06:25	07:20	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:48	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:33	06:27	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:10	21:46	20:45	19:30	18:19	16:24	16:15
25	08:33	07:34	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:52
	17:00	18:02	18:55	20:53	21:44	22:10	21:45	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:55	21:46	22:10	21:43	20:41	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:22	17:12	16:21	16:17
28	08:28	07:27	06:19	06:06	05:15	05:04	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:49	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	05:05	05:41	06:35	07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:34	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:29	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:37	20:31	19:15	17:06	16:18	16:20
31	08:24		07:12		05:11		05:45	06:39		07:31		08:52
	17:12		20:06		21:53		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	513	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** DQ - H135

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December		
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:40	07:34	07:32	08:27		
	16:22	17:13	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02	16:17		
2	08:52	08:20	07:22	07:06	05:57	05:09	05:07	05:48	06:42	07:36	07:34	08:29		
	16:23	17:15	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:16		
3	08:52	08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:37	07:36	08:30		
	16:24	17:17	18:13	20:12	21:07	21:56	22:08	21:29	20:21	19:07	16:58	16:16		
4	08:52	08:17	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38	08:32		
	16:26	17:19	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15		
5	08:51	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40	08:33		
	16:27	17:21	18:17	20:15	21:11	21:58	22:06	21:25	20:17	19:03	16:54	16:14		
6	08:51	08:13	07:12	06:57	05:49	05:06	05:10	05:55	06:49	07:43	07:42	08:35		
	16:28	17:23	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14		
7	08:50	08:11	07:10	06:54	05:47	05:05	05:11	05:56	06:51	07:45	07:44	08:36		
	16:30	17:25	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:13		
8	08:50	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37		
	16:31	17:27	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48	16:13		
9	08:49	08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48	08:39		
	16:32	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46	16:13		
10	08:49	08:05	07:03	06:47	05:42	05:03	05:14	06:01	06:56	07:50	07:50	08:40		
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:51	16:45	16:12		
11	08:48	08:03	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52	08:41		
	16:35	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:12		
12	08:47	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42		
	16:37	17:36	18:31	20:28	21:23	22:05	22:01	21:11	19:59	18:46	16:41	16:12		
13	08:46	07:59	06:56	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:56	08:43		
	16:39	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12		
14	08:45	07:57	06:53	06:38	05:35	05:02	05:19	06:09	07:04	07:58	07:57	08:44		
	16:40	17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38	16:12		
15	08:45	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59	08:45		
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36	16:12		
16	08:44	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01	08:46		15:08 (8)
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16:12	3	15:11 (8)
17	08:43	07:51	06:46	06:31	05:30	05:01	05:23	06:14	07:09	08:03	08:03	08:47		15:07 (8)
	16:45	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:33	16:12	5	15:12 (8)
18	08:41	07:49	06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05	08:05	08:48		15:06 (8)
	16:47	17:48	18:42	20:39	21:33	22:08	21:54	20:59	19:44	18:32	16:32	16:12	7	15:13 (8)
19	08:40	07:47	06:41	06:26	05:26	05:01	05:26	06:17	07:12	08:07	08:07	08:48		15:07 (8)
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:31	16:13	7	15:14 (8)
20	08:39	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49		15:07 (8)
	16:51	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:40	18:27	16:29	16:13	8	15:15 (8)
21	08:38	07:42	06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11	08:10	08:50		15:07 (8)
	16:52	17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:13	8	15:15 (8)
22	08:37	07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50		15:08 (8)
	16:54	17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14	8	15:16 (8)
23	08:35	07:38	06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15	08:14	08:51		15:08 (8)
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	16:14	8	15:16 (8)
24	08:34	07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16	08:51		15:09 (8)
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24	16:15	7	15:16 (8)
25	08:33	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51		15:10 (8)
	17:00	18:01	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	16:16	7	15:17 (8)
26	08:31	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:52		15:11 (8)
	17:02	18:03	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22	16:16	6	15:17 (8)
27	08:30	07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21	08:52		15:12 (8)
	17:04	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17	4	15:16 (8)
28	08:28	07:26	06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24	08:23	08:52		
	17:06	18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18		
29	08:27		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52		
	17:08		20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19		
30	08:25		07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26	08:52		
	17:10		20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20		
31	08:23		07:11		05:11		05:44	06:39		07:30		08:52		
	17:11		20:06		21:52		21:35	20:29		17:04		16:21		
Potential sun hours	250	273	367	420	494	510	513	460	382	328	259	233		
Total, worst case													78	
Sun reduction													0.12	
Oper. time red.													1.00	
Wind dir. red.													0.65	
Total reduction													0.08	
Total, real													6	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** DR - H136

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:11	05:07	05:47	06:41	07:34	07:33	08:28
	16:23	17:14	18:10	20:08	21:04	21:54	22:09	21:33	20:27	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:10	05:07	05:48	06:43	07:36	07:35	08:29
	16:24	17:16	18:12	20:10	21:06	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38	07:36	08:31
	16:25	17:18	18:14	20:12	21:07	21:56	22:08	21:30	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:52	06:46	07:40	07:38	08:32
	16:26	17:20	18:16	20:14	21:09	21:57	22:07	21:28	20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	07:00	05:52	05:07	05:10	05:53	06:48	07:42	07:40	08:34
	16:27	17:22	18:18	20:16	21:11	21:58	22:07	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:18	21:13	21:59	22:06	21:24	20:14	19:01	16:52	16:14
7	08:51	08:11	07:10	06:55	05:48	05:06	05:12	05:57	06:52	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:15	22:00	22:05	21:22	20:12	18:58	16:51	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:13	05:59	06:53	07:47	07:46	08:38
	16:31	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:10	18:56	16:49	16:14
9	08:49	08:07	07:06	06:50	05:44	05:05	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:06	07:03	06:48	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51	16:45	16:13
11	08:48	08:04	07:01	06:45	05:41	05:04	05:16	06:04	06:59	07:53	07:52	08:41
	16:36	17:34	18:29	20:27	21:22	22:04	22:02	21:14	20:02	18:49	16:43	16:13
12	08:47	08:02	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:13
13	08:47	08:00	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:31	21:25	22:05	22:00	21:10	19:57	18:44	16:40	16:12
14	08:46	07:58	06:53	06:38	05:35	05:03	05:20	06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	21:59	21:08	19:55	18:42	16:39	16:12
15	08:45	07:55	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00	08:00	08:45
	16:42	17:42	18:37	20:34	21:28	22:07	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:49	06:33	05:32	05:02	05:22	06:13	07:07	08:02	08:01	08:46
	16:44	17:44	18:39	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:13
17	08:43	07:51	06:46	06:31	05:30	05:02	05:24	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:35	16:34	16:13
18	08:42	07:49	06:44	06:29	05:29	05:02	05:25	06:16	07:11	08:06	08:05	08:48
	16:48	17:48	18:42	20:40	21:33	22:08	21:55	20:59	19:45	18:32	16:32	16:13
19	08:41	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:08	08:07	08:48
	16:49	17:50	18:44	20:42	21:35	22:09	21:53	20:57	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:28	06:20	07:15	08:09	08:09	08:49
	16:51	17:52	18:46	20:44	21:37	22:09	21:52	20:54	19:40	18:28	16:30	16:13
21	08:38	07:43	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:20	05:23	05:02	05:31	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:36	07:38	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:14	08:51
	16:57	17:58	18:52	20:49	21:41	22:09	21:48	20:48	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:10	21:46	20:45	19:30	18:19	16:25	16:15
25	08:33	07:34	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:52
	17:00	18:02	18:55	20:53	21:44	22:10	21:45	20:43	19:28	17:17	16:24	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:55	21:46	22:10	21:43	20:41	19:25	17:15	16:22	16:17
27	08:30	07:29	06:22	06:09	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:23	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:49	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	05:14	05:05	05:42	06:36	07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:34	19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	05:13	05:06	05:43	06:37	07:32	07:29	08:26	08:52
	17:10		20:05	21:02	21:51	22:09	21:37	20:31	19:15	17:06	16:19	16:20
31	08:24		07:12		05:12		05:45	06:39		07:31		08:52
	17:12		20:06		21:53		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** DS - H137

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:11	05:07	05:47	06:41	07:34	07:32	08:27
	16:23	17:14	18:10	20:08	21:04	21:54	22:08	21:33	20:26	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:10	05:07	05:48	06:43	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:14	20:12	21:07	21:56	22:08	21:29	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:52	06:46	07:40	07:38	08:32
	16:26	17:20	18:16	20:14	21:09	21:57	22:07	21:28	20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	06:59	05:52	05:07	05:10	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	21:58	22:07	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:55	05:48	05:06	05:12	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:56	16:49	16:14
9	08:49	08:07	07:05	06:50	05:44	05:05	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51	16:45	16:13
11	08:48	08:03	07:01	06:45	05:40	05:04	05:16	06:04	06:59	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:13
12	08:47	08:01	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	22:00	21:10	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:03	05:20	06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00	07:59	08:45
	16:42	17:42	18:37	20:34	21:28	22:07	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:24	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:34	16:13
18	08:42	07:49	06:44	06:29	05:29	05:02	05:25	06:16	07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:42	21:35	22:08	21:53	20:57	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:28	06:20	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:37	22:09	21:52	20:54	19:40	18:28	16:30	16:13
21	08:38	07:42	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:23	05:02	05:31	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:14	08:51
	16:57	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:19	16:25	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	21:44	22:09	21:45	20:43	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:41	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:22	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	05:14	05:05	05:42	06:36	07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:34	19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	05:13	05:06	05:43	06:37	07:32	07:29	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:37	20:31	19:15	17:06	16:19	16:20
31	08:24		07:12		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** DT - H138

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June		July		August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:11		05:07		05:40 (6)	05:47	06:41	07:34	07:32	08:27
	16:23	17:14	18:10	20:08	21:04	21:54		22:08	4	05:44 (6)	21:33	20:26	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:10		05:07		05:40 (6)	05:48	06:43	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:05	21:55		22:08	3	05:43 (6)	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	05:09		05:08		05:41 (6)	05:50	06:44	07:38	07:36	08:31
	16:25	17:18	18:14	20:12	21:07	21:56		22:08	2	05:43 (6)	21:29	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08		05:09		05:42 (6)	05:52	06:46	07:40	07:38	08:32
	16:26	17:20	18:16	20:14	21:09	21:57		22:07	1	05:43 (6)	21:28	20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	06:59	05:52	05:07		05:10			05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	21:58		22:07			21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06		05:11			05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:18	21:13	21:59		22:06			21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:55	05:48	05:06		05:12			05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00		22:05			21:22	20:12	18:58	16:51	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05		05:13			05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01		22:05			21:20	20:09	18:56	16:49	16:14
9	08:49	08:07	07:05	06:50	05:44	05:05		05:36 (6)		05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	1	05:37 (6)		22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04		05:36 (6)		05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	2	05:38 (6)		22:03	21:16	20:05	18:51	16:45	16:13
11	08:48	08:03	07:01	06:45	05:40	05:04		05:36 (6)		05:16	06:04	06:59	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:22	22:04	3	05:39 (6)		22:02	21:14	20:02	18:49	16:43	16:13
12	08:47	08:01	06:58	06:43	05:39	05:03		05:35 (6)		05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	4	05:39 (6)		22:01	21:12	20:00	18:46	16:42	16:13
13	08:46	07:59	06:56	06:40	05:37	05:03		05:35 (6)		05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	5	05:40 (6)		22:00	21:10	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:03		05:35 (6)		05:20	06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	5	05:40 (6)		21:59	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:36	05:33	05:02		05:35 (6)		05:21	06:11	07:06	08:00	08:00	08:45
	16:42	17:42	18:37	20:34	21:28	22:07	6	05:41 (6)		21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:49	06:33	05:32	05:02		05:35 (6)		05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	6	05:41 (6)		21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02		05:35 (6)		05:24	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	7	05:42 (6)		21:56	21:01	19:47	18:34	16:34	16:13
18	08:42	07:49	06:44	06:29	05:29	05:02		05:35 (6)		05:25	06:16	07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	7	05:42 (6)		21:55	20:59	19:45	18:32	16:32	16:13
19	08:41	07:47	06:41	06:26	05:27	05:02		05:35 (6)		05:26	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:42	21:35	22:08	7	05:42 (6)		21:53	20:57	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02		05:35 (6)		05:28	06:20	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:37	22:09	7	05:42 (6)		21:52	20:54	19:40	18:28	16:30	16:13
21	08:38	07:42	06:36	06:22	05:24	05:02		05:35 (6)		05:29	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	7	05:42 (6)		21:51	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:20	05:23	05:02		05:35 (6)		05:31	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	7	05:42 (6)		21:49	20:50	19:35	18:23	16:27	16:14
23	08:36	07:38	06:31	06:17	05:21	05:03		05:36 (6)		05:32	06:25	07:20	08:15	08:14	08:51
	16:57	17:58	18:52	20:49	21:41	22:09	7	05:43 (6)		21:48	20:48	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03		05:36 (6)		05:34	06:27	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	7	05:43 (6)		21:46	20:45	19:30	18:19	16:25	16:15
25	08:33	07:34	06:26	06:13	05:18	05:03		05:36 (6)		05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	21:44	22:09	7	05:43 (6)		21:45	20:43	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04		05:37 (6)		05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	6	05:43 (6)		21:43	20:41	19:25	17:14	16:22	16:17
27	08:30	07:29	06:22	06:08	05:16	05:04		05:37 (6)		05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	6	05:43 (6)		21:42	20:38	19:22	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	05:15	05:05		05:38 (6)		05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	22:09	6	05:44 (6)		21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	05:14	05:05		05:38 (6)		05:42	06:36	07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	5	05:43 (6)		21:38	20:34	19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	05:13	05:06		05:39 (6)		05:43	06:37	07:32	07:29	08:26	08:52
	17:10		20:05	21:02	21:51	22:09	4	05:43 (6)		21:37	20:31	19:15	17:06	16:19	16:20
31	08:24		07:12		05:12					05:45	06:39		07:31		08:52
	17:12		20:06		21:52					21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510		512			460	382	328	259	233
Total, worst case						122			10						
Sun reduction						0.26			0.22						
Oper. time red.						1.00			1.00						
Wind dir. red.						0.65			0.65						
Total reduction						0.17			0.14						
Total, real						20			1						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** DU - H139

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March		April	May	June	July	August	September		October		November	December
1	08:53	08:22	07:25		07:09	06:00	05:11	05:07	05:47	06:41		07:34	08:01 (2)	07:33	08:28
	16:23	17:14	18:10		20:08	21:04	21:54	22:09	21:33	20:27		19:13	8 08:09 (2)	17:02	16:18
2	08:52	08:20	07:22		07:07	05:58	05:10	05:07	05:48	06:43		07:36	08:02 (2)	07:35	08:29
	16:24	17:16	18:12		20:10	21:06	21:55	22:08	21:31	20:24		19:10	4 08:06 (2)	17:00	16:17
3	08:52	08:19	07:20		07:04	05:56	05:09	05:08	05:50	06:44		07:38	08:04 (2)	07:37	08:31
	16:25	17:18	18:14		20:12	21:07	21:56	22:08	21:30	20:22		19:08	1 08:05 (2)	16:58	16:16
4	08:52	08:17	07:17		07:02	05:54	05:08	05:09	05:52	06:46		07:40		07:38	08:32
	16:26	17:20	18:16		20:14	21:09	21:57	22:07	21:28	20:19		19:05		16:56	16:16
5	08:52	08:15	07:15		07:00	05:52	05:07	05:10	05:53	06:48		07:42		07:40	08:34
	16:27	17:22	18:18		20:16	21:11	21:58	22:07	21:26	20:17		19:03		16:54	16:15
6	08:51	08:13	07:13		06:57	05:50	05:06	05:11	05:55	06:50		07:43		07:42	08:35
	16:29	17:24	18:20		20:18	21:13	22:00	22:06	21:24	20:14		19:01		16:52	16:14
7	08:51	08:11	07:10		06:55	05:48	05:06	05:12	05:57	06:52		07:45		07:44	08:36
	16:30	17:26	18:21		20:19	21:15	22:01	22:06	21:22	20:12		18:58		16:51	16:14
8	08:50	08:09	07:08		06:52	05:46	05:05	05:13	05:59	06:53		07:47		07:46	08:38
	16:31	17:28	18:23		20:21	21:16	22:02	22:05	21:20	20:10		18:56		16:49	16:14
9	08:50	08:08	07:06		06:50	05:44	05:05	05:14	06:00	06:55		07:49		07:48	08:39
	16:33	17:30	18:25		20:23	21:18	22:02	22:04	21:18	20:07		18:53		16:47	16:13
10	08:49	08:06	07:03		06:48	05:42	05:04	05:15	06:02	06:57		07:51		07:50	08:40
	16:34	17:32	18:27		20:25	21:20	22:03	22:03	21:16	20:05		18:51		16:45	16:13
11	08:48	08:04	07:01	07:25 (2)	06:45	05:40	05:04	05:16	06:04	06:59		07:53		07:52	08:41
	16:36	17:34	18:29	3 07:28 (2)	20:27	21:22	22:04	22:02	21:14	20:02		18:49		16:43	16:13
12	08:47	08:02	06:58	07:22 (2)	06:43	05:39	05:03	05:17	06:05	07:00		07:54		07:54	08:42
	16:37	17:36	18:31	6 07:28 (2)	20:29	21:23	22:05	22:01	21:12	20:00		18:46		16:42	16:13
13	08:47	08:00	06:56	07:20 (2)	06:40	05:37	05:03	05:18	06:07	07:02		07:56		07:56	08:43
	16:39	17:38	18:33	9 07:29 (2)	20:31	21:25	22:06	22:00	21:10	19:57		18:44		16:40	16:12
14	08:46	07:58	06:54	07:17 (2)	06:38	05:35	05:03	05:20	06:09	07:04		07:58		07:58	08:44
	16:41	17:40	18:35	12 07:29 (2)	20:32	21:27	22:06	21:59	21:08	19:55		18:42		16:39	16:12
15	08:45	07:55	06:51	07:15 (2)	06:36	05:33	05:02	05:21	06:11	07:06		08:00		08:00	08:45
	16:42	17:42	18:37	15 07:30 (2)	20:34	21:29	22:07	21:58	21:05	19:52		18:39		16:37	16:12
16	08:44	07:53	06:49	07:13 (2)	06:33	05:32	05:02	05:22	06:13	07:07		08:02		08:02	08:46
	16:44	17:44	18:39	17 07:30 (2)	20:36	21:30	22:07	21:57	21:03	19:50		18:37		16:35	16:12
17	08:43	07:51	06:46	07:10 (2)	06:31	05:30	05:02	05:24	06:14	07:09		08:04		08:03	08:47
	16:46	17:46	18:40	19 07:29 (2)	20:38	21:32	22:08	21:56	21:01	19:47		18:35		16:34	16:13
18	08:42	07:49	06:44	07:08 (2)	06:29	05:29	05:02	05:25	06:16	07:11		08:06		08:05	08:48
	16:47	17:48	18:42	21 07:29 (2)	20:40	21:34	22:08	21:55	20:59	19:45		18:32		16:32	16:13
19	08:41	07:47	06:41	07:05 (2)	06:26	05:27	05:02	05:26	06:18	07:13	07:56 (2)	08:08		08:07	08:49
	16:49	17:50	18:44	23 07:28 (2)	20:42	21:35	22:09	21:53	20:57	19:42	9 08:05 (2)	18:30		16:31	16:13
20	08:40	07:45	06:39	07:03 (2)	06:24	05:25	05:02	05:28	06:20	07:15	07:53 (2)	08:10		08:09	08:49
	16:51	17:52	18:46	24 07:27 (2)	20:44	21:37	22:09	21:52	20:54	19:40	15 08:08 (2)	18:28		16:30	16:13
21	08:38	07:43	06:36	07:04 (2)	06:22	05:24	05:02	05:29	06:21	07:16	07:51 (2)	08:11		08:11	08:50
	16:53	17:54	18:48	22 07:26 (2)	20:45	21:38	22:09	21:51	20:52	19:37	19 08:10 (2)	18:25		16:28	16:14
22	08:37	07:40	06:34	07:05 (2)	06:20	05:23	05:02	05:31	06:23	07:18	07:48 (2)	08:13		08:13	08:50
	16:55	17:56	18:50	19 07:24 (2)	20:47	21:40	22:09	21:49	20:50	19:35	22 08:10 (2)	18:23		16:27	16:14
23	08:36	07:38	06:31	07:06 (2)	06:17	05:21	05:03	05:32	06:25	07:20	07:47 (2)	08:15		08:14	08:51
	16:57	17:58	18:52	16 07:22 (2)	20:49	21:41	22:10	21:48	20:48	19:32	24 08:11 (2)	18:21		16:26	16:15
24	08:34	07:36	06:29	07:09 (2)	06:15	05:20	05:03	05:34	06:27	07:22	07:48 (2)	08:17		08:16	08:51
	16:58	18:00	18:54	10 07:19 (2)	20:51	21:43	22:10	21:46	20:45	19:30	23 08:11 (2)	18:19		16:25	16:15
25	08:33	07:34	06:27		06:13	05:18	05:03	05:35	06:29	07:24	07:50 (2)	07:19		08:18	08:52
	17:00	18:02	18:55		20:53	21:44	22:10	21:45	20:43	19:28	22 08:12 (2)	17:17		16:23	16:16
26	08:32	07:31	06:24		06:11	05:17	05:04	05:37	06:30	07:25	07:52 (2)	07:21		08:20	08:52
	17:02	18:04	18:57		20:55	21:46	22:10	21:43	20:41	19:25	20 08:12 (2)	17:15		16:22	16:17
27	08:30	07:29	06:22		06:09	05:16	05:04	05:38	06:32	07:27	07:53 (2)	07:23		08:21	08:52
	17:04	18:06	18:59		20:56	21:47	22:10	21:42	20:38	19:23	18 08:11 (2)	17:12		16:21	16:18
28	08:29	07:27	06:19		06:06	05:15	05:05	05:40	06:34	07:29	07:55 (2)	07:25		08:23	08:52
	17:06	18:08	19:01		20:58	21:49	22:09	21:40	20:36	19:20	16 08:11 (2)	17:10		16:20	16:18
29	08:27		07:17		06:04	05:14	05:05	05:42	06:36	07:31	07:57 (2)	07:27		08:25	08:53
	17:08		20:03		21:00	21:50	22:09	21:38	20:34	19:18	13 08:10 (2)	17:08		16:19	16:19
30	08:25		07:14		06:02	05:13	05:06	05:43	06:37	07:32	07:59 (2)	07:29		08:26	08:53
	17:10		20:05		21:02	21:51	22:09	21:37	20:31	19:15	10 08:09 (2)	17:06		16:19	16:20
31	08:24		07:12			05:12		05:45	06:39			07:31			08:53
	17:12		20:07			21:53		21:35	20:29			17:04			16:21
Potential sun hours	250	273	367		420	494	510	512	460	382		328		259	233
Total, worst case				216							211		13		
Sun reduction				0.22							0.25		0.23		
Oper. time red.				1.00							1.00		1.00		
Wind dir. red.				0.64							0.64		0.64		
Total reduction				0.14							0.16		0.14		
Total, real				30							34		2		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** DV - H140

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March	April	May	June	July	August	September	October		November		December		
1	08:53		09:55 (2)		08:22		07:24	07:09	06:00	05:10	05:06	05:46	06:41	07:34		07:33		08:02 (1)	08:28		
	16:23	12	10:07 (2)		17:14		18:10	20:08	21:04	21:54	22:09	21:33	20:27	19:13		17:02	8	08:10 (1)	16:18		
2	08:52		09:55 (2)		08:20		07:22	07:07	05:58	05:09	05:07	05:48	06:43	07:36		07:35		08:04 (1)	08:29		
	16:24	11	10:06 (2)		17:16		18:12	20:10	21:06	21:55	22:08	21:31	20:24	19:10		17:00	5	08:09 (1)	16:17		
3	08:52		09:57 (2)		08:19		07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38		07:37		08:06 (1)	08:31		
	16:25	9	10:06 (2)		17:18		18:14	20:12	21:07	21:56	22:08	21:30	20:22	19:08		16:58	3	08:09 (1)	16:16		
4	08:52		10:00 (2)		08:17		07:17	07:02	05:54	05:08	05:09	05:52	06:46	07:40		07:38			08:32		
	16:26	5	10:05 (2)		17:20		18:16	20:14	21:09	21:57	22:07	21:28	20:19	19:05		16:56			16:16		
5	08:52				08:15		07:15	07:00	05:52	05:07	05:10	05:53	06:48	07:42		07:40			08:34		
	16:27				17:22		18:18	20:16	21:11	21:59	22:07	21:26	20:17	19:03		16:54			16:15		
6	08:51				08:13		07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43		07:42			08:35		
	16:29				17:24		18:19	20:18	21:13	22:00	22:06	21:24	20:14	19:01		16:52			16:14		
7	08:51				08:11		07:10	06:55	05:48	05:06	05:12	05:57	06:52	07:45		07:44			08:36		
	16:30				17:26		18:21	20:19	21:15	22:01	22:06	21:22	20:12	18:58		16:50			16:14		
8	08:50				08:09	08:36 (1)	07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47		07:46			08:38		09:47 (2)
	16:31				17:28	08:39 (1)	18:23	20:21	21:16	22:02	22:05	21:20	20:10	18:56		16:49			16:13	4	09:51 (2)
9	08:50				08:08	08:34 (1)	07:06	06:50	05:44	05:04	05:14	06:00	06:55	07:49		07:48			08:39		09:46 (2)
	16:33				17:30	08:40 (1)	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53		16:47			16:13	7	09:53 (2)
10	08:49				08:06	08:32 (1)	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51		07:50			08:40		09:46 (2)
	16:34				17:32	08:41 (1)	18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51		16:45			16:13	10	09:56 (2)
11	08:48				08:04	08:30 (1)	07:01	06:45	05:40	05:03	05:16	06:04	06:59	07:53		07:52			08:41		09:45 (2)
	16:36				17:34	08:41 (1)	18:29	20:27	21:22	22:04	22:02	21:14	20:02	18:49		16:43			16:13	12	09:57 (2)
12	08:47				08:02	08:28 (1)	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54		07:54			08:42		09:45 (2)
	16:37				17:36	08:42 (1)	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46		16:42			16:12	13	09:58 (2)
13	08:47				08:00	08:26 (1)	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56		07:56			08:43		09:44 (2)
	16:39				17:38	08:42 (1)	18:33	20:31	21:25	22:06	22:00	21:10	19:57	18:44		16:40			16:12	15	09:59 (2)
14	08:46				07:58	08:24 (1)	06:53	06:38	05:35	05:02	05:20	06:09	07:04	07:58		07:58			08:44		09:44 (2)
	16:41				17:40	08:42 (1)	18:35	20:32	21:27	22:06	21:59	21:08	19:55	18:41		16:38			16:12	16	10:00 (2)
15	08:45				07:55	08:21 (1)	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00		08:00			08:45		09:45 (2)
	16:42				17:42	08:41 (1)	18:37	20:34	21:29	22:07	21:58	21:05	19:52	18:39		16:37			16:12	16	10:01 (2)
16	08:44				07:53	08:19 (1)	06:49	06:33	05:32	05:02	05:22	06:12	07:07	08:02		08:02			08:46		09:45 (2)
	16:44				17:44	08:41 (1)	18:39	20:36	21:30	22:07	21:57	21:03	19:50	18:37		16:35			16:12	16	10:01 (2)
17	08:43				07:51	08:18 (1)	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04		08:03			08:47		09:45 (2)
	16:46				17:46	08:41 (1)	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:35		16:34			16:13	17	10:02 (2)
18	08:42				07:49	08:19 (1)	06:44	06:29	05:28	05:02	05:25	06:16	07:11	08:06		08:05			08:48		09:46 (2)
	16:47				17:48	08:40 (1)	18:42	20:40	21:34	22:08	21:55	20:59	19:45	18:32		16:32			16:13	17	10:03 (2)
19	08:41				07:47	08:20 (1)	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:08		08:07			08:49		09:45 (2)
	16:49				17:50	08:39 (1)	18:44	20:42	21:35	22:09	21:54	20:57	19:42	18:30		16:31			16:13	18	10:03 (2)
20	08:40				07:45	08:21 (1)	06:39	06:24	05:25	05:02	05:28	06:20	07:15	08:09	08:56 (1)	08:09			08:49		09:46 (2)
	16:51				17:52	08:37 (1)	18:46	20:44	21:37	22:09	21:52	20:54	19:40	18:28	7 09:03 (1)	16:30			16:13	18	10:04 (2)
21	08:38				07:43	08:23 (1)	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:53 (1)	08:11			08:50		09:47 (2)
	16:53				17:54	08:35 (1)	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	13 09:06 (1)	16:28			16:14	18	10:05 (2)
22	08:37				07:40		06:34	06:20	05:22	05:02	05:31	06:23	07:18	08:13	08:51 (1)	08:13			08:50		09:47 (2)
	16:55				17:56		18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	17 09:08 (1)	16:27			16:14	18	10:05 (2)
23	08:36				07:38		06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:49 (1)	08:14			08:51		09:47 (2)
	16:57				17:58		18:52	20:49	21:41	22:10	21:48	20:48	19:32	18:21	20 09:09 (1)	16:26			16:15	18	10:05 (2)
24	08:34				07:36		06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:48 (1)	08:16			08:51		09:48 (2)
	16:58				18:00		18:53	20:51	21:43	22:10	21:46	20:45	19:30	18:19	22 09:10 (1)	16:25			16:15	18	10:06 (2)
25	08:33				07:34		06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	07:47 (1)	08:18			08:52		09:49 (2)
	17:00				18:02		18:55	20:53	21:44	22:10	21:45	20:43	19:28	17:17	23 08:10 (1)	16:23			16:16	17	10:06 (2)
26	08:32				07:31		06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	07:49 (1)	08:20			08:52		09:49 (2)
	17:02				18:04		18:57	20:55	21:46	22:10	21:43	20:41	19:25	17:14	22 08:11 (1)	16:22			16:17	17	10:06 (2)
27	08:30				07:29		06:22	06:08	05:16	05:04	05:38	06:32	07:27	07:23	07:52 (1)	08:21			08:52		09:50 (2)
	17:04				18:06		18:59	20:56	21:47	22:10	21:42	20:38	19:23	17:12	20 08:12 (1)	16:21			16:17	16	10:06 (2)
28	08:29				07:27		06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	07:54 (1)	08:23			08:52		09:50 (2)
	17:06				18:08		19:01	20:58	21:49	22:09	21:40	20:36	19:20	17:10	18 08:12 (1)	16:20			16:18	16	10:06 (2)
29	08:27						07:17	06:04	05:14	05:05	05:42	06:36	07:31	07:27	07:56 (1)	08:25			08:53		09:51 (2)
	17:08						20:03	21:00	21:50	22:09	21:38	20:34	19:18	17:08	16 08:12 (1)	16:19			16:19	16	10:07 (2)
30	08:25						07:14	06:02	05:12	05:06	05:43	06:37	07:32	07:29	07:58 (1)	08:26			08:53		09:52 (2)
	17:10						20:05	21:02	21:51	22:09	21:37	20:31	19:15	17:06	13 08:11 (1)	16:18			16:20	15	10:07 (2)
31	08:24						07:12		05:11		05:45	06:39		07:31	08:00 (1)				08:53		09:53 (2)
	17:12						20:06		21:53		21:35	20:29		17:04	11 08:11 (1)				16:21	14	10:07 (2)
Potential sun hours	250		273		367	420	494	510	513	460	382	328		259		233					
Total, worst case		37		210									202		16			362			
Sun reduction		0.16		0.19									0.23		0.20			0.12			
Oper. time red.		1.00		1.00									1.00		1.00			1.00			
Wind dir. red.		0.61		0.61									0.61		0.61			0.61			
Total reduction		0.10		0.12									0.14		0.12			0.07			
Total, real		4		25									28		2			26			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** DW - H141

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:11	05:07	05:47	06:41	07:34	07:32	08:27
	16:23	17:14	18:10	20:08	21:04	21:54	22:08	21:33	20:26	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:10	05:07	05:48	06:43	07:36	07:34	08:29
	16:24	17:16	18:12	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:18	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38	07:36	08:30
	16:25	17:18	18:14	20:12	21:07	21:56	22:08	21:29	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:52	06:46	07:40	07:38	08:32
	16:26	17:20	18:16	20:14	21:09	21:57	22:07	21:28	20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	06:59	05:52	05:07	05:10	05:53	06:48	07:41	07:40	08:33
	16:27	17:22	18:17	20:16	21:11	21:58	22:07	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:17	21:13	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:55	05:48	05:06	05:12	05:57	06:51	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47	07:46	08:37
	16:31	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:09	18:56	16:49	16:14
9	08:49	08:07	07:05	06:50	05:44	05:04	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:05	07:03	06:47	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51	16:45	16:13
11	08:48	08:03	07:01	06:45	05:40	05:04	05:16	06:04	06:59	07:52	07:52	08:41
	16:36	17:34	18:29	20:27	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:13
12	08:47	08:01	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:12
13	08:46	07:59	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:30	21:25	22:05	22:00	21:10	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:03	05:20	06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	21:59	21:07	19:55	18:41	16:38	16:12
15	08:45	07:55	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00	07:59	08:45
	16:42	17:42	18:37	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:48	06:33	05:32	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:44	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:34	16:34	16:13
18	08:42	07:49	06:44	06:29	05:29	05:02	05:25	06:16	07:11	08:06	08:05	08:48
	16:47	17:48	18:42	20:40	21:33	22:08	21:54	20:59	19:45	18:32	16:32	16:13
19	08:40	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:07	08:07	08:48
	16:49	17:50	18:44	20:42	21:35	22:08	21:53	20:57	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:28	06:20	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:37	22:09	21:52	20:54	19:40	18:28	16:30	16:13
21	08:38	07:42	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:19	05:23	05:02	05:31	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:14	08:51
	16:57	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:19	16:25	16:15
25	08:33	07:33	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:51
	17:00	18:02	18:55	20:53	21:44	22:09	21:45	20:43	19:27	17:17	16:23	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:54	21:46	22:09	21:43	20:41	19:25	17:14	16:22	16:17
27	08:30	07:29	06:21	06:08	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:22	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	05:14	05:05	05:42	06:36	07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:34	19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	05:13	05:06	05:43	06:37	07:32	07:29	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:37	20:31	19:15	17:06	16:19	16:20
31	08:24		07:12		05:11		05:45	06:39		07:30		08:52
	17:12		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** DX - H142

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February	March	April	May	June	July	August	September	October	November		December		
1	08:52		08:22	07:24	07:09	05:59	05:10	05:06	05:46	06:40	07:34	07:32		08:27		15:38 (10)
	16:22		17:13	18:09	20:08	21:03	21:53	22:08	21:33	20:26	19:12	17:02		16:17	3	15:41 (10)
2	08:52		08:20	07:22	07:06	05:57	05:09	05:07	05:48	06:42	07:36	07:34		08:29		15:39 (10)
	16:23		17:15	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00		16:16	2	15:41 (10)
3	08:52		08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:37	07:36		08:30		
	16:24		17:17	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58		16:16		
4	08:51		08:16	07:17	07:01	05:53	05:07	05:08	05:51	06:46	07:39	07:38		08:32		
	16:26		17:19	18:15	20:13	21:09	21:57	22:07	21:27	20:19	19:05	16:56		16:15		
5	08:51		08:15	07:15	06:59	05:51	05:06	05:09	05:53	06:47	07:41	07:40		08:33		
	16:27		17:21	18:17	20:15	21:11	21:58	22:06	21:25	20:16	19:02	16:54		16:14		
6	08:51		08:13	07:12	06:57	05:49	05:06	05:10	05:54	06:49	07:43	07:42		08:35		
	16:28		17:23	18:19	20:17	21:12	21:59	22:06	21:23	20:14	19:00	16:52		16:14		
7	08:50		08:11	07:10	06:54	05:47	05:05	05:11	05:56	06:51	07:45	07:44		08:36		
	16:29		17:25	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50		16:13		
8	08:50		08:09	07:07	06:52	05:46	05:04	05:12	05:58	06:53	07:47	07:46		08:37		
	16:31		17:27	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48		16:13		
9	08:49		08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48		08:38		
	16:32		17:29	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46		16:13		
10	08:48	15:56 (10)	08:05	07:03	06:47	05:42	05:03	05:14	06:01	06:56	07:50	07:50		08:40		
	16:34	1 15:57 (10)	17:31	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:50	16:45		16:12		
11	08:48	15:56 (10)	08:03	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52		08:41		
	16:35	3 15:59 (10)	17:33	18:29	20:26	21:21	22:04	22:02	21:13	20:02	18:48	16:43		16:12		
12	08:47	15:56 (10)	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54		08:42		
	16:37	5 16:01 (10)	17:36	18:30	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41		16:12		
13	08:46	15:56 (10)	07:59	06:55	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:55		08:43		
	16:38	6 16:02 (10)	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40		16:12		
14	08:45	15:57 (10)	07:57	06:53	06:37	05:35	05:02	05:19	06:08	07:03	07:58	07:57	15:41 (10)	08:44		
	16:40	7 16:04 (10)	17:40	18:34	20:32	21:26	22:06	21:59	21:07	19:54	18:41	16:38	9 15:50 (10)	16:12		
15	08:44	15:57 (10)	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59	15:39 (10)	08:45		
	16:42	9 16:06 (10)	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36	14 15:53 (10)	16:12		
16	08:43	15:58 (10)	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:01	08:01	15:38 (10)	08:46		
	16:43	10 16:08 (10)	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16 15:54 (10)	16:12		
17	08:42	15:57 (10)	07:51	06:46	06:30	05:30	05:01	05:23	06:14	07:09	08:03	08:03	15:37 (10)	08:47		
	16:45	13 16:10 (10)	17:46	18:40	20:38	21:31	22:07	21:56	21:01	19:47	18:34	16:33	18 15:55 (10)	16:12		
18	08:41	15:58 (10)	07:49	06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05	08:05	15:36 (10)	08:47		
	16:47	14 16:12 (10)	17:48	18:42	20:39	21:33	22:08	21:54	20:58	19:44	18:32	16:32	20 15:56 (10)	16:12		
19	08:40	15:59 (10)	07:47	06:41	06:26	05:26	05:01	05:26	06:17	07:12	08:07	08:07	15:35 (10)	08:48		
	16:49	15 16:14 (10)	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:29	16:30	21 15:56 (10)	16:13		
20	08:39	15:59 (10)	07:44	06:38	06:24	05:25	05:01	05:27	06:19	07:14	08:09	08:09	15:35 (10)	08:49		
	16:50	16 16:15 (10)	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:39	18:27	16:29	20 15:55 (10)	16:13		
21	08:38	16:00 (10)	07:42	06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11	08:10	15:35 (10)	08:49		
	16:52	18 16:18 (10)	17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	18 15:53 (10)	16:13		
22	08:37	16:00 (10)	07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	15:35 (10)	08:50		
	16:54	19 16:19 (10)	17:56	18:49	20:47	21:39	22:09	21:49	20:49	19:34	18:23	16:26	17 15:52 (10)	16:14		
23	08:35	16:01 (10)	07:38	06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15	08:14	15:35 (10)	08:50		
	16:56	21 16:22 (10)	17:57	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	15 15:50 (10)	16:14		
24	08:34	16:02 (10)	07:35	06:28	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16	15:35 (10)	08:51		
	16:58	20 16:22 (10)	17:59	18:53	20:50	21:42	22:09	21:46	20:45	19:30	18:18	16:24	14 15:49 (10)	16:15		
25	08:33	16:04 (10)	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17	15:35 (10)	08:51		
	17:00	18 16:22 (10)	18:01	18:55	20:52	21:44	22:09	21:44	20:43	19:27	17:16	16:23	13 15:48 (10)	16:15		
26	08:31	16:05 (10)	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	15:36 (10)	08:52		
	17:02	16 16:21 (10)	18:03	18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	16:22	11 15:47 (10)	16:16		
27	08:30	16:07 (10)	07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:22	08:21	15:36 (10)	08:52		
	17:04	14 16:21 (10)	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	9 15:45 (10)	16:17		
28	08:28	16:09 (10)	07:26	06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24	08:22	15:37 (10)	08:52		
	17:06	9 16:18 (10)	18:07	19:00	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	7 15:44 (10)	16:18		
29	08:27			07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	15:37 (10)	08:52		
	17:08			20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	7 15:44 (10)	16:19		
30	08:25			07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26	15:37 (10)	08:52		
	17:09			20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	5 15:42 (10)	16:20		
31	08:23			07:11		05:11		05:44	06:39		07:30			08:52		
	17:11			20:06		21:52		21:35	20:28		17:04			16:21		
Potential sun hours	250		273	367	420	494	510	513	460	382	328	259		233		
Total, worst case		234											234			5
Sun reduction		0.16											0.20			0.12
Oper. time red.		1.00											1.00			1.00
Wind dir. red.		0.65											0.65			0.65
Total reduction		0.11											0.13			0.08
Total, real		25											30			0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** DY - H143

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February	March	April	May	June	July	August	September	October	November			December		
1	08:52		15:25 (9)	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:40	07:34	07:32			08:27		15:14 (9)
	16:22	19	15:44 (9)	17:13	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02			16:17	19	15:33 (9)
2	08:52		15:26 (9)	08:20	07:22	07:06	05:57	05:09	05:07	05:48	06:42	07:36	07:34			08:29		15:15 (9)
	16:23	19	15:45 (9)	17:15	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00			16:16	19	15:34 (9)
3	08:52		15:27 (9)	08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:37	07:36			08:30		15:14 (9)
	16:24	20	15:47 (9)	17:17	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58			16:16	20	15:34 (9)
4	08:51		15:27 (9)	08:16	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38			08:32		15:14 (9)
	16:26	21	15:48 (9)	17:19	18:15	20:13	21:09	21:57	22:07	21:27	20:19	19:05	16:56			16:15	21	15:35 (9)
5	08:51		15:28 (9)	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40			08:33		15:14 (9)
	16:27	22	15:50 (9)	17:21	18:17	20:15	21:11	21:58	22:06	21:25	20:16	19:03	16:54			16:14	22	15:36 (9)
6	08:51		15:28 (9)	08:13	07:12	06:57	05:49	05:06	05:10	05:55	06:49	07:43	07:42			08:35		15:14 (9)
	16:28	23	15:51 (9)	17:23	18:19	20:17	21:12	21:59	22:06	21:24	20:14	19:00	16:52			16:14	23	15:37 (9)
7	08:50		15:29 (9)	08:11	07:10	06:54	05:47	05:05	05:11	05:56	06:51	07:45	07:44			08:36		15:14 (9)
	16:29	21	15:50 (9)	17:25	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50			16:13	22	15:36 (9)
8	08:50		15:30 (9)	08:09	07:08	06:52	05:46	05:04	05:12	05:58	06:53	07:47	07:46			08:37		15:15 (9)
	16:31	21	15:51 (9)	17:27	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48			16:13	21	15:36 (9)
9	08:49		15:31 (9)	08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48			08:38		15:15 (9)
	16:32	20	15:51 (9)	17:29	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46			16:13	20	15:35 (9)
10	08:49		15:31 (9)	08:05	07:03	06:47	05:42	05:03	05:14	06:01	06:56	07:50	07:50			08:40		15:15 (9)
	16:34	20	15:51 (9)	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:50	16:45			16:12	20	15:35 (9)
11	08:48		15:32 (9)	08:03	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52			08:41		15:16 (9)
	16:35	19	15:51 (9)	17:34	18:29	20:26	21:21	22:04	22:02	21:14	20:02	18:48	16:43			16:12	19	15:35 (9)
12	08:47		15:33 (9)	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54			08:42		15:16 (9)
	16:37	17	15:50 (9)	17:36	18:30	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41			16:12	19	15:35 (9)
13	08:46		15:35 (9)	07:59	06:55	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:55			08:43		15:16 (9)
	16:38	15	15:50 (9)	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40			16:12	18	15:34 (9)
14	08:45		15:36 (9)	07:57	06:53	06:38	05:35	05:02	05:19	06:08	07:03	07:58	07:57			08:44		15:17 (9)
	16:40	13	15:49 (9)	17:40	18:34	20:32	21:26	22:06	21:59	21:07	19:54	18:41	16:38			16:12	17	15:34 (9)
15	08:45		15:38 (9)	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59			08:45		15:17 (9)
	16:42	10	15:48 (9)	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36			16:12	17	15:34 (9)
16	08:44		15:41 (9)	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:01	08:01			08:46		15:18 (9)
	16:43	5	15:46 (9)	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35			16:12	16	15:34 (9)
17	08:43			07:51	06:46	06:31	05:30	05:01	05:23	06:14	07:09	08:03	08:03			08:47		15:17 (9)
	16:45			17:46	18:40	20:38	21:32	22:07	21:56	21:01	19:47	18:34	16:33			16:12	17	15:34 (9)
18	08:41			07:49	06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05	08:05			08:47		15:18 (9)
	16:47			17:48	18:42	20:39	21:33	22:08	21:54	20:59	19:44	18:32	16:32			16:12	16	15:34 (9)
19	08:40			07:47	06:41	06:26	05:26	05:01	05:26	06:17	07:12	08:07	08:07			08:48		15:19 (9)
	16:49			17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:29	16:30			16:13	15	15:34 (9)
20	08:39			07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09			08:49		15:20 (9)
	16:51			17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:39	18:27	16:29			16:13	15	15:35 (9)
21	08:38			07:42	06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11	08:10			08:49		15:20 (9)
	16:52			17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28			16:13	15	15:35 (9)
22	08:37			07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12			08:50		15:21 (9)
	16:54			17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:26			16:14	15	15:36 (9)
23	08:35			07:38	06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15	08:14			08:51		15:21 (9)
	16:56			17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25			16:14	15	15:36 (9)
24	08:34			07:35	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16			08:51		15:21 (9)
	16:58			17:59	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24			16:15	15	15:36 (9)
25	08:33			07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17			08:51		15:22 (9)
	17:00			18:01	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23			16:16	16	15:38 (9)
26	08:31			07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19		15:20 (9)	08:52		15:22 (9)
	17:02			18:03	18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	16:22	4	15:24 (9)	16:16	16	15:38 (9)
27	08:30			07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21		15:17 (9)	08:52		15:23 (9)
	17:04			18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	10	15:27 (9)	16:17	16	15:39 (9)
28	08:28			07:26	06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24	08:23		15:16 (9)	08:52		15:23 (9)
	17:06			18:07	19:00	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	13	15:29 (9)	16:18	17	15:40 (9)
29	08:27				07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24		15:16 (9)	08:52		15:24 (9)
	17:08				20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	15	15:31 (9)	16:19	17	15:41 (9)
30	08:25				07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26		15:15 (9)	08:52		15:24 (9)
	17:09				20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16	15:31 (9)	16:20	18	15:42 (9)
31	08:23				07:11		05:11		05:44	06:39		07:30				08:52		15:25 (9)
	17:11				20:06		21:52		21:35	20:29		17:04				16:21	18	15:43 (9)
Potential sun hours	250			273	367	420	494	510	513	460	382	328	259			233		
Total, worst case		285												58			554	
Sun reduction		0.16												0.20			0.12	
Oper. time red.		1.00												1.00			1.00	
Wind dir. red.		0.65												0.65			0.65	
Total reduction		0.11												0.13			0.08	
Total, real		30												7			43	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** DZ - H144

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February		March		April	May	June	July	August	September	October		November	December
1	08:53	08:22		07:25	07:57 (2)	07:09	06:00	05:10	05:07	05:47	06:41	07:34		07:33	08:28
	16:23	17:14		18:10	19 08:16 (2)	20:08	21:04	21:54	22:09	21:33	20:27	19:13		17:02	16:18
2	08:52	08:20		07:22	07:59 (2)	07:07	05:58	05:10	05:07	05:48	06:43	07:36		07:35	08:29
	16:24	17:16		18:12	16 08:15 (2)	20:10	21:06	21:55	22:08	21:31	20:24	19:10		17:00	16:17
3	08:52	08:19		07:20	08:00 (2)	07:04	05:56	05:09	05:08	05:50	06:44	07:38		07:37	08:31
	16:25	17:18		18:14	12 08:12 (2)	20:12	21:07	21:56	22:08	21:30	20:22	19:08		16:58	16:16
4	08:52	08:17		07:17		07:02	05:54	05:08	05:09	05:52	06:46	07:40		07:39	08:32
	16:26	17:20		18:16		20:14	21:09	21:57	22:07	21:28	20:19	19:05		16:56	16:16
5	08:52	08:15		07:15		07:00	05:52	05:07	05:10	05:53	06:48	07:42		07:40	08:34
	16:27	17:22		18:18		20:16	21:11	21:59	22:07	21:26	20:17	19:03		16:54	16:15
6	08:51	08:13		07:13		06:57	05:50	05:06	05:11	05:55	06:50	07:43		07:42	08:35
	16:29	17:24		18:19		20:18	21:13	22:00	22:06	21:24	20:14	19:01		16:52	16:14
7	08:51	08:11		07:10		06:55	05:48	05:06	05:12	05:57	06:52	07:45		07:44	08:36
	16:30	17:26		18:21		20:19	21:15	22:01	22:06	21:22	20:12	18:58		16:51	16:14
8	08:50	08:09		07:08		06:52	05:46	05:05	05:13	05:58	06:53	07:47		07:46	08:38
	16:31	17:28		18:23		20:21	21:16	22:02	22:05	21:20	20:10	18:56		16:49	16:14
9	08:50	08:08		07:06		06:50	05:44	05:04	05:14	06:00	06:55	07:49		07:48	08:39
	16:33	17:30		18:25		20:23	21:18	22:02	22:04	21:18	20:07	18:53		16:47	16:13
10	08:49	08:06		07:03		06:48	05:42	05:04	05:15	06:02	06:57	07:51	08:38 (2)	07:50	08:40
	16:34	17:32		18:27		20:25	21:20	22:03	22:03	21:16	20:05	18:51	7 08:45 (2)	16:45	16:13
11	08:48	08:04		07:01		06:45	05:40	05:04	05:16	06:04	06:59	07:53	08:33 (2)	07:52	08:41
	16:36	17:34		18:29		20:27	21:22	22:04	22:02	21:14	20:02	18:49	14 08:47 (2)	16:43	16:13
12	08:47	08:02		06:58		06:43	05:39	05:03	05:17	06:05	07:00	07:54	08:31 (2)	07:54	08:42
	16:37	17:36		18:31		20:29	21:23	22:05	22:01	21:12	20:00	18:46	18 08:49 (2)	16:42	16:12
13	08:47	08:00		06:56		06:40	05:37	05:03	05:18	06:07	07:02	07:56	08:29 (2)	07:56	08:43
	16:39	17:38		18:33		20:31	21:25	22:06	22:00	21:10	19:57	18:44	21 08:50 (2)	16:40	16:12
14	08:46	07:58		06:53		06:38	05:35	05:03	05:20	06:09	07:04	07:58	08:28 (2)	07:58	08:44
	16:41	17:40		18:35		20:32	21:27	22:06	21:59	21:08	19:55	18:42	23 08:51 (2)	16:38	16:12
15	08:45	07:56		06:51		06:36	05:33	05:02	05:21	06:11	07:06	08:00	08:27 (2)	08:00	08:45
	16:42	17:42		18:37		20:34	21:29	22:07	21:58	21:05	19:52	18:39	24 08:51 (2)	16:37	16:12
16	08:44	07:53		06:49		06:33	05:32	05:02	05:22	06:13	07:07	08:02	08:29 (2)	08:02	08:46
	16:44	17:44		18:39		20:36	21:30	22:07	21:57	21:03	19:50	18:37	23 08:52 (2)	16:35	16:12
17	08:43	07:51	08:17 (2)	06:46		06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:31 (2)	08:03	08:47
	16:46	17:46	1 08:18 (2)	18:40		20:38	21:32	22:08	21:56	21:01	19:47	18:35	21 08:52 (2)	16:34	16:13
18	08:42	07:49	08:15 (2)	06:44		06:29	05:29	05:02	05:25	06:16	07:11	08:06	08:33 (2)	08:05	08:48
	16:47	17:48	4 08:19 (2)	18:42		20:40	21:34	22:08	21:55	20:59	19:45	18:32	19 08:52 (2)	16:32	16:13
19	08:41	07:47	08:13 (2)	06:41		06:26	05:27	05:02	05:26	06:18	07:13	08:08	08:35 (2)	08:07	08:49
	16:49	17:50	7 08:20 (2)	18:44		20:42	21:35	22:09	21:54	20:57	19:42	18:30	17 08:52 (2)	16:31	16:13
20	08:40	07:45	08:10 (2)	06:39		06:24	05:25	05:02	05:28	06:20	07:15	08:10	08:37 (2)	08:09	08:49
	16:51	17:52	10 08:20 (2)	18:46		20:44	21:37	22:09	21:52	20:54	19:40	18:28	14 08:51 (2)	16:30	16:13
21	08:38	07:43	08:08 (2)	06:36		06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:39 (2)	08:11	08:50
	16:53	17:54	13 08:21 (2)	18:48		20:45	21:38	22:09	21:51	20:52	19:37	18:25	12 08:51 (2)	16:28	16:14
22	08:37	07:40	08:06 (2)	06:34		06:20	05:23	05:02	05:31	06:23	07:18	08:13	08:41 (2)	08:13	08:50
	16:55	17:56	15 08:21 (2)	18:50		20:47	21:40	22:09	21:49	20:50	19:35	18:23	9 08:50 (2)	16:27	16:14
23	08:36	07:38	08:03 (2)	06:31		06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:43 (2)	08:14	08:51
	16:57	17:58	18 08:21 (2)	18:52		20:49	21:41	22:10	21:48	20:48	19:32	18:21	6 08:49 (2)	16:26	16:15
24	08:34	07:36	08:01 (2)	06:29		06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:45 (2)	08:16	08:51
	16:58	18:00	20 08:21 (2)	18:54		20:51	21:43	22:10	21:46	20:45	19:30	18:19	3 08:48 (2)	16:25	16:15
25	08:33	07:34	07:59 (2)	06:27		06:13	05:18	05:03	05:35	06:28	07:23	07:19		08:18	08:52
	17:00	18:02	22 08:21 (2)	18:55		20:53	21:44	22:10	21:45	20:43	19:28	17:17		16:23	16:16
26	08:32	07:31	07:56 (2)	06:24		06:11	05:17	05:04	05:37	06:30	07:25	07:21		08:20	08:52
	17:02	18:04	23 08:19 (2)	18:57		20:55	21:46	22:10	21:43	20:41	19:25	17:15		16:22	16:17
27	08:30	07:29	07:55 (2)	06:22		06:09	05:16	05:04	05:38	06:32	07:27	07:23		08:21	08:52
	17:04	18:06	24 08:19 (2)	18:59		20:56	21:47	22:10	21:42	20:38	19:23	17:12		16:21	16:18
28	08:29	07:27	07:56 (2)	06:19		06:06	05:15	05:05	05:40	06:34	07:29	07:25		08:23	08:52
	17:06	18:08	22 08:18 (2)	19:01		20:58	21:49	22:09	21:40	20:36	19:20	17:10		16:20	16:18
29	08:27			07:17		06:04	05:14	05:05	05:42	06:36	07:31	07:27		08:25	08:53
	17:08			20:03		21:00	21:50	22:09	21:38	20:34	19:18	17:08		16:19	16:19
30	08:25			07:14		06:02	05:13	05:06	05:43	06:37	07:32	07:29		08:26	08:53
	17:10			20:05		21:02	21:51	22:09	21:37	20:31	19:15	17:06		16:19	16:20
31	08:24			07:12			05:11		05:45	06:39		07:31			08:53
	17:12			20:07			21:53		21:35	20:29		17:04			16:21
Potential sun hours	250	273		367		420	494	510	512	460	382	328		259	233
Total, worst case			179		47								231		
Sun reduction			0.19		0.22								0.23		
Oper. time red.			1.00		1.00								1.00		
Wind dir. red.			0.62		0.62								0.62		
Total reduction			0.12		0.14								0.14		
Total, real			22		6								33		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** EA - H145

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:40	07:34	07:32	08:27
	16:22	17:13	18:09	20:08	21:03	21:53	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:06	05:57	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:15	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:16
3	08:52	08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:37	07:36	08:30
	16:24	17:17	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58	16:16
4	08:51	08:16	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38	08:32
	16:26	17:19	18:15	20:13	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40	08:33
	16:27	17:21	18:17	20:15	21:11	21:58	22:06	21:25	20:16	19:03	16:54	16:14
6	08:51	08:13	07:12	06:57	05:49	05:06	05:10	05:54	06:49	07:43	07:42	08:35
	16:28	17:23	18:19	20:17	21:12	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:47	05:05	05:11	05:56	06:51	07:45	07:44	08:36
	16:29	17:25	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:13
8	08:50	08:09	07:08	06:52	05:46	05:04	05:12	05:58	06:53	07:47	07:46	08:37
	16:31	17:27	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48	08:38
	16:32	17:29	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46	16:13
10	08:49	08:05	07:03	06:47	05:42	05:03	05:14	06:01	06:56	07:50	07:50	08:40
	16:34	17:31	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:50	16:45	16:12
11	08:48	08:03	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52	08:41
	16:35	17:34	18:29	20:26	21:21	22:04	22:02	21:13	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:30	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:55	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:55	08:43
	16:38	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	05:02	05:19	06:08	07:03	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:26	22:06	21:59	21:07	19:54	18:41	16:38	16:12
15	08:44	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36	16:12
16	08:44	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:01	08:01	08:46
	16:43	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16:12
17	08:43	07:51	06:46	06:30	05:30	05:01	05:23	06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:32	22:07	21:56	21:01	19:47	18:34	16:33	16:12
18	08:41	07:49	06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05	08:05	08:47
	16:47	17:48	18:42	20:39	21:33	22:08	21:54	20:59	19:44	18:32	16:32	16:12
19	08:40	07:47	06:41	06:26	05:26	05:01	05:26	06:17	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:29	16:30	16:13
20	08:39	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:39	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11	08:10	08:49
	16:52	17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:13
22	08:37	07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:26	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	16:14
24	08:34	07:35	06:28	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16	08:51
	16:58	17:59	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24	16:15
25	08:33	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17	08:51
	17:00	18:01	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:52
	17:02	18:03	18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24	08:23	08:52
	17:06	18:07	19:00	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26	08:52
	17:09		20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11		05:44	06:39		07:30		08:52
	17:11		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	513	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** EB - H146

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February		March		April	May	June	July	August	September	October		November	December
1	08:52	08:22		07:24		17:27 (10)	07:09	05:59	05:10	05:06	05:46	06:40	07:34		07:32	08:27
	16:22	17:13		18:09	15	17:42 (10)	20:08	21:03	21:53	22:08	21:33	20:26	19:12		17:02	16:17
2	08:52	08:20		07:22		17:27 (10)	07:06	05:57	05:09	05:07	05:48	06:42	07:36		07:34	08:29
	16:23	17:15		18:11	17	17:44 (10)	20:10	21:05	21:55	22:08	21:31	20:24	19:10		17:00	16:16
3	08:52	08:18		07:19		17:28 (10)	07:04	05:55	05:08	05:08	05:49	06:44	07:37		07:36	08:30
	16:24	17:17		18:13	18	17:46 (10)	20:12	21:07	21:56	22:07	21:29	20:21	19:07		16:58	16:16
4	08:51	08:16		07:17		17:28 (10)	07:01	05:53	05:07	05:08	05:51	06:46	07:39		07:38	08:32
	16:26	17:19		18:15	18	17:46 (10)	20:13	21:09	21:57	22:07	21:27	20:19	19:05		16:56	16:15
5	08:51	08:15		07:15		17:30 (10)	06:59	05:51	05:07	05:09	05:53	06:47	07:41		07:40	08:33
	16:27	17:21		18:17	15	17:45 (10)	20:15	21:11	21:58	22:06	21:25	20:16	19:02		16:54	16:14
6	08:51	08:13		07:12		17:33 (10)	06:57	05:49	05:06	05:10	05:54	06:49	07:43		07:42	08:34
	16:28	17:23		18:19	9	17:42 (10)	20:17	21:12	21:59	22:06	21:23	20:14	19:00		16:52	16:14
7	08:50	08:11		07:10			06:54	05:47	05:05	05:11	05:56	06:51	07:45	18:10 (10)	07:44	08:36
	16:29	17:25		18:21			20:19	21:14	22:00	22:05	21:21	20:12	18:58	5 18:15 (10)	16:50	16:13
8	08:50	08:09		07:07			06:52	05:46	05:04	05:12	05:58	06:53	07:47	18:06 (10)	07:46	08:37
	16:31	17:27		18:23			20:21	21:16	22:01	22:04	21:19	20:09	18:55	13 18:19 (10)	16:48	16:13
9	08:49	08:07		07:05			06:49	05:44	05:04	05:13	06:00	06:55	07:48	18:04 (10)	07:48	08:38
	16:32	17:29		18:25			20:23	21:18	22:02	22:04	21:17	20:07	18:53	16 18:20 (10)	16:46	16:13
10	08:48	08:05		07:03			06:47	05:42	05:03	05:14	06:01	06:56	07:50	18:02 (10)	07:50	08:40
	16:34	17:31		18:27			20:25	21:19	22:03	22:03	21:15	20:04	18:50	19 18:21 (10)	16:45	16:12
11	08:48	08:03		07:00			06:45	05:40	05:03	05:15	06:03	06:58	07:52	18:01 (10)	07:52	08:41
	16:35	17:33		18:29			20:26	21:21	22:04	22:02	21:13	20:02	18:48	18 18:19 (10)	16:43	16:12
12	08:47	08:01		06:58			06:42	05:38	05:03	05:17	06:05	07:00	07:54	18:00 (10)	07:53	08:42
	16:37	17:35		18:30			20:28	21:23	22:04	22:01	21:11	19:59	18:46	17 18:17 (10)	16:41	16:12
13	08:46	07:59		06:55			06:40	05:36	05:02	05:18	06:07	07:02	07:56	18:00 (10)	07:55	08:43
	16:38	17:38		18:32			20:30	21:25	22:05	22:00	21:09	19:57	18:43	14 18:14 (10)	16:40	16:12
14	08:45	07:57		06:53			06:37	05:35	05:02	05:19	06:08	07:03	07:58	17:59 (10)	07:57	08:44
	16:40	17:40		18:34			20:32	21:26	22:06	21:59	21:07	19:54	18:41	13 18:12 (10)	16:38	16:12
15	08:44	07:55		06:51			06:35	05:33	05:02	05:20	06:10	07:05	08:00	17:59 (10)	07:59	08:45
	16:42	17:42		18:36			20:34	21:28	22:06	21:58	21:05	19:52	18:39	11 18:10 (10)	16:36	16:12
16	08:43	07:53		06:48			06:33	05:31	05:02	05:22	06:12	07:07	08:01	17:59 (10)	08:01	08:46
	16:43	17:44		18:38			20:36	21:30	22:07	21:57	21:03	19:49	18:36	8 18:07 (10)	16:35	16:12
17	08:42	07:51		06:46			06:30	05:30	05:01	05:23	06:14	07:09	08:03	17:59 (10)	08:03	08:47
	16:45	17:46		18:40			20:37	21:31	22:07	21:55	21:01	19:47	18:34	6 18:05 (10)	16:33	16:12
18	08:41	07:49		06:43			06:28	05:28	05:01	05:24	06:16	07:10	08:05	18:00 (10)	08:05	08:47
	16:47	17:48		18:42			20:39	21:33	22:08	21:54	20:58	19:44	18:32	2 18:02 (10)	16:32	16:12
19	08:40	07:46		06:41			06:26	05:26	05:01	05:26	06:17	07:12	08:07		08:07	08:48
	16:49	17:50		18:44			20:41	21:35	22:08	21:53	20:56	19:42	18:29		16:30	16:13
20	08:39	07:44		06:38			06:24	05:25	05:02	05:27	06:19	07:14	08:09		08:08	08:49
	16:50	17:52		18:46			20:43	21:36	22:08	21:52	20:54	19:39	18:27		16:29	16:13
21	08:38	07:42		06:36			06:21	05:23	05:02	05:29	06:21	07:16	08:11		08:10	08:49
	16:52	17:54		18:47			20:45	21:38	22:09	21:50	20:52	19:37	18:25		16:28	16:13
22	08:37	07:40		06:33			06:19	05:22	05:02	05:30	06:23	07:18	08:13		08:12	08:50
	16:54	17:55		18:49			20:47	21:39	22:09	21:49	20:49	19:34	18:23		16:26	16:14
23	08:35	07:38		06:31			06:17	05:21	05:02	05:32	06:24	07:19	08:15		08:14	08:50
	16:56	17:57		18:51			20:49	21:41	22:09	21:47	20:47	19:32	18:21		16:25	16:14
24	08:34	07:35	17:28 (10)	06:28			06:15	05:19	05:02	05:33	06:26	07:21	08:17		08:16	08:51
	16:58	17:59	4 17:32 (10)	18:53			20:50	21:42	22:09	21:46	20:45	19:29	18:18		16:24	16:15
25	08:32	07:33	17:27 (10)	06:26			06:12	05:18	05:03	05:35	06:28	07:23	07:19		08:17	08:51
	17:00	18:01	6 17:33 (10)	18:55			20:52	21:44	22:09	21:44	20:43	19:27	17:16		16:23	16:16
26	08:31	07:31	17:27 (10)	06:24			06:10	05:17	05:03	05:36	06:30	07:25	07:20		08:19	08:51
	17:02	18:03	9 17:36 (10)	18:57			20:54	21:45	22:09	21:43	20:40	19:25	17:14		16:22	16:16
27	08:30	07:29	17:26 (10)	06:21			06:08	05:15	05:04	05:38	06:31	07:27	07:22		08:21	08:52
	17:04	18:05	11 17:37 (10)	18:59			20:56	21:47	22:09	21:41	20:38	19:22	17:12		16:21	16:17
28	08:28	07:26	17:26 (10)	06:19			06:06	05:14	05:04	05:39	06:33	07:28	07:24		08:22	08:52
	17:06	18:07	14 17:40 (10)	19:00			20:58	21:48	22:09	21:40	20:36	19:20	17:10		16:20	16:18
29	08:26			07:16			06:04	05:13	05:05	05:41	06:35	07:30	07:26		08:24	08:52
	17:08			20:02			21:00	21:50	22:09	21:38	20:33	19:17	17:08		16:19	16:19
30	08:25			07:14			06:02	05:12	05:05	05:43	06:37	07:32	07:28		08:26	08:52
	17:09			20:04			21:01	21:51	22:08	21:36	20:31	19:15	17:06		16:18	16:20
31	08:23			07:11				05:11		05:44	06:39		07:30			08:52
	17:11			20:06				21:52		21:35	20:28		17:04			16:21
Potential sun hours	250	273		367			420	494	510	512	460	382	328		259	233
Total, worst case			44		92									142		
Sun reduction			0.19		0.22									0.23		
Oper. time red.			1.00		1.00									1.00		
Wind dir. red.			0.65		0.65									0.65		
Total reduction			0.13		0.14									0.15		
Total, real			6		13									21		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** EC - H147

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March		April	May	June	July	August	September		October	November	December
1	08:53	08:22	07:25		07:09	06:00	05:11	05:07	05:47	06:41		07:34	07:33	08:28
	16:23	17:14	18:10		20:08	21:04	21:54	22:09	21:33	20:27		19:13	17:02	16:18
2	08:52	08:20	07:22		07:07	05:58	05:10	05:07	05:48	06:43		07:36	07:35	08:29
	16:24	17:16	18:12		20:10	21:06	21:55	22:08	21:31	20:24		19:10	17:00	16:17
3	08:52	08:19	07:20		07:04	05:56	05:09	05:08	05:50	06:44		07:38	07:37	08:31
	16:25	17:18	18:14		20:12	21:07	21:56	22:08	21:30	20:22		19:08	16:58	16:16
4	08:52	08:17	07:17		07:02	05:54	05:08	05:09	05:52	06:46		07:40	07:38	08:32
	16:26	17:20	18:16		20:14	21:09	21:57	22:07	21:28	20:19		19:05	16:56	16:16
5	08:52	08:15	07:15		07:00	05:52	05:07	05:10	05:53	06:48		07:42	07:40	08:34
	16:27	17:22	18:18		20:16	21:11	21:58	22:07	21:26	20:17		19:03	16:54	16:15
6	08:51	08:13	07:13		06:57	05:50	05:06	05:11	05:55	06:50		07:43	07:42	08:35
	16:29	17:24	18:20		20:18	21:13	22:00	22:06	21:24	20:14		19:01	16:52	16:14
7	08:51	08:11	07:10		06:55	05:48	05:06	05:12	05:57	06:52		07:45	07:44	08:36
	16:30	17:26	18:21		20:19	21:15	22:01	22:06	21:22	20:12		18:58	16:51	16:14
8	08:50	08:09	07:08		06:52	05:46	05:05	05:13	05:59	06:53		07:47	07:46	08:38
	16:31	17:28	18:23		20:21	21:16	22:02	22:05	21:20	20:10		18:56	16:49	16:14
9	08:50	08:08	07:06		06:50	05:44	05:05	05:14	06:00	06:55		07:49	07:48	08:39
	16:33	17:30	18:25		20:23	21:18	22:02	22:04	21:18	20:07		18:53	16:47	16:13
10	08:49	08:06	07:03		06:48	05:42	05:04	05:15	06:02	06:57		07:51	07:50	08:40
	16:34	17:32	18:27		20:25	21:20	22:03	22:03	21:16	20:05		18:51	16:45	16:13
11	08:48	08:04	07:01		06:45	05:40	05:04	05:16	06:04	06:59		07:53	07:52	08:41
	16:36	17:34	18:29		20:27	21:22	22:04	22:02	21:14	20:02		18:49	16:43	16:13
12	08:47	08:02	06:58		06:43	05:39	05:03	05:17	06:05	07:00		07:54	07:54	08:42
	16:37	17:36	18:31		20:29	21:23	22:05	22:01	21:12	20:00		18:46	16:42	16:13
13	08:47	08:00	06:56	07:20 (2)	06:40	05:37	05:03	05:18	06:07	07:02		07:56	07:56	08:43
	16:39	17:38	18:33	1 07:21 (2)	20:31	21:25	22:06	22:00	21:10	19:57		18:44	16:40	16:12
14	08:46	07:58	06:54	07:17 (2)	06:38	05:35	05:03	05:20	06:09	07:04		07:58	07:58	08:44
	16:41	17:40	18:35	4 07:21 (2)	20:32	21:27	22:06	21:59	21:08	19:55		18:42	16:39	16:12
15	08:45	07:55	06:51	07:15 (2)	06:36	05:33	05:02	05:21	06:11	07:06		08:00	08:00	08:45
	16:42	17:42	18:37	7 07:22 (2)	20:34	21:29	22:07	21:58	21:05	19:52		18:39	16:37	16:12
16	08:44	07:53	06:49	07:13 (2)	06:33	05:32	05:02	05:22	06:13	07:07		08:02	08:02	08:46
	16:44	17:44	18:39	10 07:23 (2)	20:36	21:30	22:07	21:57	21:03	19:50		18:37	16:35	16:12
17	08:43	07:51	06:46	07:10 (2)	06:31	05:30	05:02	05:24	06:14	07:09	07:51 (2)	08:04	08:03	08:47
	16:46	17:46	18:40	13 07:23 (2)	20:38	21:32	22:08	21:56	21:01	19:47	9 08:00 (2)	18:35	16:34	16:13
18	08:42	07:49	06:44	07:08 (2)	06:29	05:29	05:02	05:25	06:16	07:11	07:47 (2)	08:06	08:05	08:48
	16:48	17:48	18:42	15 07:23 (2)	20:40	21:34	22:08	21:55	20:59	19:45	15 08:02 (2)	18:32	16:32	16:13
19	08:41	07:47	06:41	07:05 (2)	06:26	05:27	05:02	05:26	06:18	07:13	07:45 (2)	08:08	08:07	08:49
	16:49	17:50	18:44	17 07:22 (2)	20:42	21:35	22:09	21:53	20:57	19:42	19 08:04 (2)	18:30	16:31	16:13
20	08:40	07:45	06:39	07:03 (2)	06:24	05:25	05:02	05:28	06:20	07:15	07:44 (2)	08:10	08:09	08:49
	16:51	17:52	18:46	19 07:22 (2)	20:44	21:37	22:09	21:52	20:54	19:40	21 08:05 (2)	18:28	16:30	16:13
21	08:38	07:43	06:36	07:00 (2)	06:22	05:24	05:02	05:29	06:21	07:16	07:43 (2)	08:11	08:11	08:50
	16:53	17:54	18:48	21 07:21 (2)	20:45	21:38	22:09	21:51	20:52	19:37	23 08:06 (2)	18:25	16:28	16:14
22	08:37	07:40	06:34	06:58 (2)	06:20	05:23	05:02	05:31	06:23	07:18	07:44 (2)	08:13	08:13	08:50
	16:55	17:56	18:50	23 07:21 (2)	20:47	21:40	22:09	21:49	20:50	19:35	22 08:06 (2)	18:23	16:27	16:14
23	08:36	07:38	06:31	06:57 (2)	06:17	05:21	05:03	05:32	06:25	07:20	07:46 (2)	08:15	08:14	08:51
	16:57	17:58	18:52	22 07:19 (2)	20:49	21:41	22:10	21:48	20:48	19:33	20 08:06 (2)	18:21	16:26	16:15
24	08:34	07:36	06:29	06:59 (2)	06:15	05:20	05:03	05:34	06:27	07:22	07:48 (2)	08:17	08:16	08:51
	16:58	18:00	18:54	19 07:18 (2)	20:51	21:43	22:10	21:46	20:45	19:30	18 08:06 (2)	18:19	16:25	16:15
25	08:33	07:34	06:27	06:59 (2)	06:13	05:18	05:03	05:35	06:29	07:24	07:50 (2)	07:19	08:18	08:52
	17:00	18:02	18:55	16 07:15 (2)	20:53	21:44	22:10	21:45	20:43	19:28	16 08:06 (2)	17:17	16:23	16:16
26	08:32	07:31	06:24	07:02 (2)	06:11	05:17	05:04	05:37	06:30	07:25	07:52 (2)	07:21	08:20	08:52
	17:02	18:04	18:57	11 07:13 (2)	20:55	21:46	22:10	21:43	20:41	19:25	14 08:06 (2)	17:15	16:22	16:17
27	08:30	07:29	06:22		06:09	05:16	05:04	05:38	06:32	07:27	07:53 (2)	07:23	08:21	08:52
	17:04	18:06	18:59		20:56	21:47	22:10	21:42	20:38	19:23	11 08:04 (2)	17:12	16:21	16:18
28	08:29	07:27	06:19		06:06	05:15	05:05	05:40	06:34	07:29	07:55 (2)	07:25	08:23	08:52
	17:06	18:08	19:01		20:58	21:49	22:09	21:40	20:36	19:20	9 08:04 (2)	17:10	16:20	16:18
29	08:27		07:17		06:04	05:14	05:05	05:42	06:36	07:31	07:57 (2)	07:27	08:25	08:53
	17:08		20:03		21:00	21:50	22:09	21:38	20:34	19:18	6 08:03 (2)	17:08	16:19	16:19
30	08:25		07:14		06:02	05:13	05:06	05:43	06:37	07:32	07:59 (2)	07:29	08:26	08:53
	17:10		20:05		21:02	21:51	22:09	21:37	20:31	19:15	2 08:01 (2)	17:06	16:19	16:20
31	08:24		07:12			05:12		05:45	06:39			07:31		08:53
	17:12		20:07			21:53		21:35	20:29			17:04		16:21
Potential sun hours	250	273	367		420	494	510	512	460	382		328	259	233
Total, worst case				198							205			
Sun reduction				0.22							0.25			
Oper. time red.				1.00							1.00			
Wind dir. red.				0.64							0.64			
Total reduction				0.14							0.16			
Total, real				28							33			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** ED - H148

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:10	05:06	05:46	06:40	07:34	07:32	08:27
	16:22	17:13	18:09	20:08	21:03	21:54	22:08	21:33	20:26	19:12	17:02	16:17
2	08:52	08:20	07:22	07:06	05:57	05:09	05:07	05:48	06:42	07:36	07:34	08:29
	16:23	17:15	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:16
3	08:52	08:18	07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:37	07:36	08:30
	16:24	17:17	18:13	20:12	21:07	21:56	22:08	21:29	20:21	19:07	16:58	16:16
4	08:52	08:16	07:17	07:02	05:53	05:07	05:08	05:51	06:46	07:39	07:38	08:32
	16:26	17:19	18:15	20:14	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15
5	08:51	08:15	07:15	06:59	05:51	05:07	05:09	05:53	06:48	07:41	07:40	08:33
	16:27	17:21	18:17	20:15	21:11	21:58	22:06	21:25	20:17	19:03	16:54	16:14
6	08:51	08:13	07:12	06:57	05:49	05:06	05:10	05:55	06:49	07:43	07:42	08:35
	16:28	17:23	18:19	20:17	21:12	21:59	22:06	21:24	20:14	19:00	16:52	16:14
7	08:50	08:11	07:10	06:54	05:47	05:05	05:11	05:56	06:51	07:45	07:44	08:36
	16:29	17:25	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:13
8	08:50	08:09	07:08	06:52	05:46	05:05	05:12	05:58	06:53	07:47	07:46	08:37
	16:31	17:27	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48	16:13
9	08:49	08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48	08:39
	16:32	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46	16:13
10	08:49	08:05	07:03	06:47	05:42	05:03	05:14	06:01	06:56	07:50	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:50	16:45	16:12
11	08:48	08:03	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52	08:41
	16:35	17:34	18:29	20:26	21:21	22:04	22:02	21:14	20:02	18:48	16:43	16:12
12	08:47	08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41	16:12
13	08:46	07:59	06:55	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12
14	08:45	07:57	06:53	06:38	05:35	05:02	05:19	06:08	07:03	07:58	07:57	08:44
	16:40	17:40	18:34	20:32	21:27	22:06	21:59	21:07	19:54	18:41	16:38	16:12
15	08:45	07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59	08:45
	16:42	17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36	16:12
16	08:44	07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:02	08:01	08:46
	16:43	17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16:12
17	08:43	07:51	06:46	06:31	05:30	05:01	05:23	06:14	07:09	08:03	08:03	08:47
	16:45	17:46	18:40	20:38	21:32	22:07	21:56	21:01	19:47	18:34	16:33	16:12
18	08:41	07:49	06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05	08:05	08:48
	16:47	17:48	18:42	20:39	21:33	22:08	21:54	20:59	19:44	18:32	16:32	16:12
19	08:40	07:47	06:41	06:26	05:26	05:01	05:26	06:17	07:12	08:07	08:07	08:48
	16:49	17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:30	16:30	16:13
20	08:39	07:44	06:38	06:24	05:25	05:02	05:27	06:19	07:14	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:39	18:27	16:29	16:13
21	08:38	07:42	06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11	08:10	08:50
	16:52	17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:13
22	08:37	07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50
	16:54	17:56	18:49	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:35	07:38	06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15	08:14	08:51
	16:56	17:58	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	16:14
24	08:34	07:36	06:29	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:09	21:46	20:45	19:30	18:18	16:24	16:15
25	08:33	07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17	08:51
	17:00	18:01	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	16:16
26	08:31	07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:52
	17:02	18:03	18:57	20:54	21:46	22:09	21:43	20:40	19:25	17:14	16:22	16:16
27	08:30	07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17
28	08:28	07:26	06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24	08:23	08:52
	17:06	18:07	19:01	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52
	17:08		20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19
30	08:25		07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26	08:52
	17:10		20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20
31	08:23		07:11		05:11		05:44	06:39		07:30		08:52
	17:11		20:06		21:52		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	513	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** EE - H149

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March		April		May	June	July	August	September		October	November	December
1	08:52	08:22	07:24		07:09		19:26 (7)	06:00	05:10	05:06	05:46	06:41		07:34	07:32	08:27
	16:22	17:14	18:10		20:08	15	19:41 (7)	21:03	21:54	22:08	21:33	20:26		19:12	17:02	16:17
2	08:52	08:20	07:22		07:07		19:26 (7)	05:58	05:09	05:07	05:48	06:42		07:36	07:34	08:29
	16:23	17:16	18:11		20:10	17	19:43 (7)	21:05	21:55	22:08	21:31	20:24		19:10	17:00	16:17
3	08:52	08:18	07:20		07:04		19:26 (7)	05:56	05:08	05:08	05:50	06:44		07:38	07:36	08:30
	16:25	17:18	18:13		20:12	19	19:45 (7)	21:07	21:56	22:07	21:29	20:21		19:08	16:58	16:16
4	08:51	08:17	07:17		07:02		19:26 (7)	05:54	05:08	05:09	05:51	06:46	19:27 (7)	07:39	07:38	08:32
	16:26	17:20	18:15		20:14	20	19:46 (7)	21:09	21:57	22:07	21:27	20:19	11 19:38 (7)	19:05	16:56	16:15
5	08:51	08:15	07:15		06:59		19:26 (7)	05:52	05:07	05:10	05:53	06:48	19:25 (7)	07:41	07:40	08:33
	16:27	17:22	18:17		20:15	21	19:47 (7)	21:11	21:58	22:06	21:26	20:17	16 19:41 (7)	19:03	16:54	16:15
6	08:51	08:13	07:12		06:57		19:28 (7)	05:50	05:06	05:10	05:55	06:50	19:23 (7)	07:43	07:42	08:35
	16:28	17:24	18:19		20:17	18	19:46 (7)	21:13	21:59	22:06	21:24	20:14	18 19:41 (7)	19:00	16:52	16:14
7	08:50	08:11	07:10		06:54		19:28 (7)	05:48	05:05	05:11	05:57	06:51	19:22 (7)	07:45	07:44	08:36
	16:30	17:26	18:21		20:19	16	19:44 (7)	21:14	22:00	22:05	21:22	20:12	20 19:42 (7)	18:58	16:50	16:14
8	08:50	08:09	07:08		06:52		19:30 (7)	05:46	05:05	05:12	05:58	06:53	19:21 (7)	07:47	07:46	08:37
	16:31	17:28	18:23		20:21	11	19:41 (7)	21:16	22:01	22:04	21:20	20:09	20 19:41 (7)	18:55	16:48	16:13
9	08:49	08:07	07:05		06:50			05:44	05:04	05:14	06:00	06:55	19:20 (7)	07:49	07:48	08:39
	16:33	17:30	18:25		20:23			21:18	22:02	22:04	21:18	20:07	19 19:39 (7)	18:53	16:47	16:13
10	08:49	08:05	07:03		06:47			05:42	05:04	05:15	06:02	06:57	19:19 (7)	07:50	07:50	08:40
	16:34	17:32	18:27		20:25			21:20	22:03	22:03	21:16	20:04	17 19:36 (7)	18:51	16:45	16:13
11	08:48	08:03	07:00		06:45			05:40	05:03	05:16	06:03	06:58	19:19 (7)	07:52	07:52	08:41
	16:36	17:34	18:29		20:27			21:21	22:04	22:02	21:14	20:02	15 19:34 (7)	18:48	16:43	16:12
12	08:47	08:01	06:58		06:42			05:38	05:03	05:17	06:05	07:00	19:19 (7)	07:54	07:54	08:42
	16:37	17:36	18:31		20:28			21:23	22:04	22:01	21:11	19:59	13 19:32 (7)	18:46	16:42	16:12
13	08:46	07:59	06:56		06:40			05:37	05:03	05:18	06:07	07:02	19:18 (7)	07:56	07:56	08:43
	16:39	17:38	18:33		20:30			21:25	22:05	22:00	21:09	19:57	11 19:29 (7)	18:44	16:40	16:12
14	08:45	07:57	06:53		06:38			05:35	05:02	05:19	06:09	07:04	19:18 (7)	07:58	07:57	08:44
	16:40	17:40	18:34		20:32			21:27	22:06	21:59	21:07	19:55	8 19:26 (7)	18:41	16:38	16:12
15	08:45	07:55	06:51		06:35			05:33	05:02	05:21	06:10	07:05	19:19 (7)	08:00	07:59	08:45
	16:42	17:42	18:36		20:34			21:28	22:06	21:58	21:05	19:52	5 19:24 (7)	18:39	16:37	16:12
16	08:44	07:53	06:48		06:33			05:32	05:02	05:22	06:12	07:07	19:20 (7)	08:02	08:01	08:46
	16:44	17:44	18:38		20:36			21:30	22:07	21:57	21:03	19:50	2 19:22 (7)	18:37	16:35	16:12
17	08:43	07:51	06:46		06:31			05:30	05:02	05:23	06:14	07:09		08:03	08:03	08:47
	16:45	17:46	18:40		20:38			21:32	22:07	21:56	21:01	19:47		18:34	16:34	16:12
18	08:41	07:49	06:43		06:28			05:28	05:02	05:25	06:16	07:11		08:05	08:05	08:47
	16:47	17:48	18:42		20:40			21:33	22:08	21:54	20:59	19:45		18:32	16:32	16:13
19	08:40	07:47	06:41		06:26			05:27	05:02	05:26	06:18	07:13		08:07	08:07	08:48
	16:49	17:50	18:44		20:41			21:35	22:08	21:53	20:56	19:42		18:30	16:31	16:13
20	08:39	07:44	06:39		06:24			05:25	05:02	05:27	06:19	07:14		08:09	08:09	08:49
	16:51	17:52	18:46		20:43			21:36	22:09	21:52	20:54	19:40		18:27	16:29	16:13
21	08:38	07:42	06:36		06:22			05:24	05:02	05:29	06:21	07:16		08:11	08:10	08:49
	16:53	17:54	18:48		20:45			21:38	22:09	21:50	20:52	19:37		18:25	16:28	16:14
22	08:37	07:40	06:34		06:19			05:22	05:02	05:30	06:23	07:18		08:13	08:12	08:50
	16:54	17:56	18:49		20:47			21:40	22:09	21:49	20:50	19:35		18:23	16:27	16:14
23	08:35	07:38	06:31		06:17			05:21	05:02	05:32	06:25	07:20		08:15	08:14	08:51
	16:56	17:58	18:51		20:49			21:41	22:09	21:48	20:47	19:32		18:21	16:26	16:15
24	08:34	07:36	06:29		06:15			05:20	05:03	05:33	06:26	07:21		08:17	08:16	08:51
	16:58	18:00	18:53		20:51			21:43	22:09	21:46	20:45	19:30		18:19	16:24	16:15
25	08:33	07:33	06:26		06:13			05:18	05:03	05:35	06:28	07:23		07:19	08:17	08:51
	17:00	18:02	18:55		20:52			21:44	22:09	21:45	20:43	19:27		17:16	16:23	16:16
26	08:31	07:31	06:24		06:10			05:17	05:03	05:37	06:30	07:25		07:21	08:19	08:52
	17:02	18:04	18:57		20:54			21:45	22:09	21:43	20:40	19:25		17:14	16:22	16:17
27	08:30	07:29	06:21	18:31 (7)	06:08			05:16	05:04	05:38	06:32	07:27		07:23	08:21	08:52
	17:04	18:06	18:59	1 18:32 (7)	20:56			21:47	22:09	21:41	20:38	19:22		17:12	16:21	16:17
28	08:28	07:26	06:19	18:30 (7)	06:06			05:15	05:04	05:40	06:34	07:29		07:25	08:23	08:52
	17:06	18:08	19:01	4 18:34 (7)	20:58			21:48	22:09	21:40	20:36	19:20		17:10	16:20	16:18
29	08:27		07:16	19:28 (7)	06:04			05:13	05:05	05:41	06:35	07:30		07:26	08:24	08:52
	17:08		20:02	8 19:36 (7)	21:00			21:50	22:09	21:38	20:33	19:17		17:08	16:19	16:19
30	08:25		07:14	19:28 (7)	06:02			05:12	05:06	05:43	06:37	07:32		07:28	08:26	08:52
	17:10		20:04	10 19:38 (7)	21:02			21:51	22:09	21:36	20:31	19:15		17:06	16:18	16:20
31	08:23		07:11	19:26 (7)				05:11		05:45	06:39			07:30		08:52
	17:12		20:06	13 19:39 (7)				21:52		21:35	20:29			17:04		16:21
Potential sun hours	250	273	367		420			494	510	512	460	382		328	259	233
Total, worst case				36		137							175			
Sun reduction				0.22		0.31							0.25			
Oper. time red.				1.00		1.00							1.00			
Wind dir. red.				0.64		0.64							0.64			
Total reduction				0.14		0.20							0.16			
Total, real				5		27							28			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** EF - H151

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February		March	April	May	June	July	August	September	October		November		December
1	08:52	08:22		07:24	07:09	05:59	05:10	05:06	05:46	06:40	07:34		07:32	16:19 (10)	08:27
	16:22	17:13		18:09	20:08	21:03	21:53	22:08	21:33	20:26	19:12		17:02	12 16:31 (10)	16:17
2	08:52	08:20		07:22	07:06	05:57	05:09	05:07	05:48	06:42	07:36		07:34	16:18 (10)	08:29
	16:23	17:15		18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10		17:00	11 16:29 (10)	16:16
3	08:52	08:18		07:19	07:04	05:55	05:08	05:08	05:49	06:44	07:37		07:36	16:18 (10)	08:30
	16:24	17:17		18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07		16:58	8 16:26 (10)	16:16
4	08:51	08:16		07:17	07:01	05:53	05:07	05:08	05:51	06:46	07:39		07:38	16:18 (10)	08:32
	16:26	17:19		18:15	20:13	21:09	21:57	22:07	21:27	20:19	19:05		16:56	6 16:24 (10)	16:15
5	08:51	08:15	16:49 (10)	07:15	06:59	05:51	05:06	05:09	05:53	06:47	07:41		07:40	16:18 (10)	08:33
	16:27	17:21	1 16:50 (10)	18:17	20:15	21:11	21:58	22:06	21:25	20:16	19:02		16:54	4 16:22 (10)	16:14
6	08:51	08:13	16:49 (10)	07:12	06:57	05:49	05:06	05:10	05:54	06:49	07:43		07:42	16:19 (10)	08:35
	16:28	17:23	3 16:52 (10)	18:19	20:17	21:12	21:59	22:06	21:23	20:14	19:00		16:52	1 16:20 (10)	16:14
7	08:50	08:11	16:49 (10)	07:10	06:54	05:47	05:05	05:11	05:56	06:51	07:45		07:44		08:36
	16:29	17:25	6 16:55 (10)	18:21	20:19	21:14	22:00	22:05	21:21	20:12	18:58		16:50		16:13
8	08:50	08:09	16:49 (10)	07:07	06:52	05:46	05:04	05:12	05:58	06:53	07:47		07:46		08:37
	16:31	17:27	8 16:57 (10)	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55		16:48		16:13
9	08:49	08:07	16:49 (10)	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48		07:48		08:38
	16:32	17:29	10 16:59 (10)	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53		16:46		16:13
10	08:48	08:05	16:49 (10)	07:03	06:47	05:42	05:03	05:14	06:01	06:56	07:50		07:50		08:40
	16:34	17:31	13 17:02 (10)	18:27	20:25	21:19	22:03	22:03	21:15	20:04	18:50		16:45		16:12
11	08:48	08:03	16:49 (10)	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52		07:52		08:41
	16:35	17:33	15 17:04 (10)	18:29	20:26	21:21	22:04	22:02	21:13	20:02	18:48		16:43		16:12
12	08:47	08:01	16:49 (10)	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54		07:53		08:42
	16:37	17:35	16 17:05 (10)	18:30	20:28	21:23	22:04	22:01	21:11	19:59	18:46		16:41		16:12
13	08:46	07:59	16:50 (10)	06:55	06:40	05:36	05:02	05:18	06:07	07:02	07:56		07:55		08:43
	16:38	17:38	17 17:07 (10)	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43		16:40		16:12
14	08:45	07:57	16:51 (10)	06:53	06:37	05:35	05:02	05:19	06:08	07:03	07:58		07:57		08:44
	16:40	17:40	19 17:10 (10)	18:34	20:32	21:26	22:06	21:59	21:07	19:54	18:41		16:38		16:12
15	08:44	07:55	16:53 (10)	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00		07:59		08:45
	16:42	17:42	16 17:09 (10)	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39		16:36		16:12
16	08:43	07:53	16:55 (10)	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:01		08:01		08:46
	16:43	17:44	12 17:07 (10)	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36		16:35		16:12
17	08:42	07:51	16:59 (10)	06:46	06:30	05:30	05:01	05:23	06:14	07:09	08:03		08:03		08:47
	16:45	17:46	4 17:03 (10)	18:40	20:38	21:31	22:07	21:56	21:01	19:47	18:34		16:33		16:12
18	08:41	07:49		06:43	06:28	05:28	05:01	05:24	06:16	07:10	08:05		08:05		08:47
	16:47	17:48		18:42	20:39	21:33	22:08	21:54	20:58	19:44	18:32		16:32		16:12
19	08:40	07:46		06:41	06:26	05:26	05:01	05:26	06:17	07:12	08:07		08:07		08:48
	16:49	17:50		18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:29		16:30		16:13
20	08:39	07:44		06:38	06:24	05:25	05:01	05:27	06:19	07:14	08:09		08:08		08:49
	16:50	17:52		18:46	20:43	21:36	22:08	21:52	20:54	19:39	18:27		16:29		16:13
21	08:38	07:42		06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11		08:10		08:49
	16:52	17:54		18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25		16:28		16:13
22	08:37	07:40		06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13		08:12		08:50
	16:54	17:55		18:49	20:47	21:39	22:09	21:49	20:49	19:34	18:23		16:26		16:14
23	08:35	07:38		06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15		08:14		08:50
	16:56	17:57		18:51	20:49	21:41	22:09	21:47	20:47	19:32	18:21		16:25		16:14
24	08:34	07:35		06:28	06:15	05:19	05:02	05:33	06:26	07:21	08:17		08:16		08:51
	16:58	17:59		18:53	20:50	21:42	22:09	21:46	20:45	19:29	18:18		16:24		16:15
25	08:33	07:33		06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	16:27 (10)	08:17		08:51
	17:00	18:01		18:55	20:52	21:44	22:09	21:44	20:43	19:27	17:16	7 16:34 (10)	16:23		16:15
26	08:31	07:31		06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	16:24 (10)	08:19		08:52
	17:02	18:03		18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	13 16:37 (10)	16:22		16:16
27	08:30	07:29		06:21	06:08	05:15	05:04	05:38	06:31	07:27	07:22	16:22 (10)	08:21		08:52
	17:04	18:05		18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	17 16:39 (10)	16:21		16:17
28	08:28	07:26		06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24	16:21 (10)	08:22		08:52
	17:06	18:07		19:00	20:58	21:48	22:09	21:40	20:36	19:20	17:10	18 16:39 (10)	16:20		16:18
29	08:26			07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	16:19 (10)	08:24		08:52
	17:07			20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	18 16:37 (10)	16:19		16:19
30	08:25			07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	16:19 (10)	08:26		08:52
	17:09			20:04	21:01	21:51	22:09	21:36	20:31	19:15	17:06	15 16:34 (10)	16:18		16:20
31	08:23			07:11		05:11		05:44	06:39		07:30	16:18 (10)			08:52
	17:11			20:06		21:52		21:35	20:28		17:04	14 16:32 (10)			16:21
Potential sun hours	250	273		367	420	494	510	513	460	382	328		259		233
Total, worst case			140									102		42	
Sun reduction			0.19									0.23		0.20	
Oper. time red.			1.00									1.00		1.00	
Wind dir. red.			0.64									0.64		0.64	
Total reduction			0.12									0.15		0.13	
Total, real			17									15		5	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** EG - H152

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January			February	March	April	May	June	July	August	September	October	November	December		
1	08:52		15:20 (10)	08:22	07:24	07:09	05:59	05:10	05:06	05:46	06:40	07:34	07:32	08:27		
	16:22	21	15:41 (10)	17:13	18:09	20:08	21:03	21:53	22:08	21:33	20:26	19:12	17:02	16:17		
2	08:52		15:21 (10)	08:20	07:22	07:06	05:57	05:09	05:07	05:48	06:42	07:36	07:34	08:29		15:14 (10)
	16:23	20	15:41 (10)	17:15	18:11	20:10	21:05	21:55	22:08	21:31	20:24	19:10	17:00	16:16	7	15:21 (10)
3	08:52		15:22 (10)	08:18	07:19	07:04	05:55	05:08	05:07	05:49	06:44	07:37	07:36	08:30		15:12 (10)
	16:24	20	15:42 (10)	17:17	18:13	20:12	21:07	21:56	22:07	21:29	20:21	19:07	16:58	16:16	11	15:23 (10)
4	08:51		15:23 (10)	08:16	07:17	07:01	05:53	05:07	05:08	05:51	06:46	07:39	07:38	08:32		15:12 (10)
	16:26	18	15:41 (10)	17:19	18:15	20:13	21:09	21:57	22:07	21:27	20:19	19:05	16:56	16:15	13	15:25 (10)
5	08:51		15:24 (10)	08:15	07:15	06:59	05:51	05:06	05:09	05:53	06:48	07:41	07:40	08:33		15:11 (10)
	16:27	18	15:42 (10)	17:21	18:17	20:15	21:11	21:58	22:06	21:25	20:16	19:02	16:54	16:14	15	15:26 (10)
6	08:51		15:25 (10)	08:13	07:12	06:57	05:49	05:06	05:10	05:54	06:49	07:43	07:42	08:35		15:11 (10)
	16:28	16	15:41 (10)	17:23	18:19	20:17	21:12	21:59	22:06	21:23	20:14	19:00	16:52	16:14	16	15:27 (10)
7	08:50		15:26 (10)	08:11	07:10	06:54	05:47	05:05	05:11	05:56	06:51	07:45	07:44	08:36		15:10 (10)
	16:29	15	15:41 (10)	17:25	18:21	20:19	21:14	22:00	22:05	21:22	20:12	18:58	16:50	16:13	18	15:28 (10)
8	08:50		15:28 (10)	08:09	07:07	06:52	05:46	05:04	05:12	05:58	06:53	07:47	07:46	08:37		15:11 (10)
	16:31	13	15:41 (10)	17:27	18:23	20:21	21:16	22:01	22:04	21:20	20:09	18:55	16:48	16:13	18	15:29 (10)
9	08:49		15:29 (10)	08:07	07:05	06:49	05:44	05:04	05:13	06:00	06:55	07:48	07:48	08:38		15:11 (10)
	16:32	11	15:40 (10)	17:29	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:46	16:13	19	15:30 (10)
10	08:48		15:31 (10)	08:05	07:03	06:47	05:42	05:03	05:14	06:01	06:56	07:50	07:50	08:40		15:10 (10)
	16:34	8	15:39 (10)	17:31	18:27	20:25	21:20	22:03	22:03	21:16	20:04	18:50	16:45	16:12	20	15:30 (10)
11	08:48			08:03	07:00	06:45	05:40	05:03	05:15	06:03	06:58	07:52	07:52	08:41		15:10 (10)
	16:35			17:33	18:29	20:26	21:21	22:04	22:02	21:13	20:02	18:48	16:43	16:12	21	15:31 (10)
12	08:47			08:01	06:58	06:42	05:38	05:03	05:17	06:05	07:00	07:54	07:54	08:42		15:11 (10)
	16:37			17:36	18:30	20:28	21:23	22:04	22:01	21:11	19:59	18:46	16:41	16:12	21	15:32 (10)
13	08:46			07:59	06:55	06:40	05:36	05:02	05:18	06:07	07:02	07:56	07:55	08:43		15:11 (10)
	16:38			17:38	18:32	20:30	21:25	22:05	22:00	21:09	19:57	18:43	16:40	16:12	22	15:33 (10)
14	08:45			07:57	06:53	06:37	05:35	05:02	05:19	06:08	07:03	07:58	07:57	08:44		15:12 (10)
	16:40			17:40	18:34	20:32	21:26	22:06	21:59	21:07	19:54	18:41	16:38	16:12	21	15:33 (10)
15	08:44			07:55	06:51	06:35	05:33	05:02	05:20	06:10	07:05	08:00	07:59	08:45		15:12 (10)
	16:42			17:42	18:36	20:34	21:28	22:06	21:58	21:05	19:52	18:39	16:36	16:12	22	15:34 (10)
16	08:43			07:53	06:48	06:33	05:31	05:02	05:22	06:12	07:07	08:01	08:01	08:46		15:12 (10)
	16:43			17:44	18:38	20:36	21:30	22:07	21:57	21:03	19:49	18:36	16:35	16:12	22	15:34 (10)
17	08:42			07:51	06:46	06:30	05:30	05:01	05:23	06:14	07:09	08:03	08:03	08:47		15:12 (10)
	16:45			17:46	18:40	20:38	21:31	22:07	21:56	21:01	19:47	18:34	16:33	16:12	22	15:34 (10)
18	08:41			07:49	06:43	06:28	05:28	05:01	05:24	06:16	07:11	08:05	08:05	08:47		15:13 (10)
	16:47			17:48	18:42	20:39	21:33	22:08	21:54	20:58	19:44	18:32	16:32	16:12	21	15:34 (10)
19	08:40			07:47	06:41	06:26	05:26	05:01	05:26	06:17	07:12	08:07	08:07	08:48		15:13 (10)
	16:49			17:50	18:44	20:41	21:35	22:08	21:53	20:56	19:42	18:29	16:30	16:13	21	15:34 (10)
20	08:39			07:44	06:38	06:24	05:25	05:01	05:27	06:19	07:14	08:09	08:09	08:49		15:14 (10)
	16:50			17:52	18:46	20:43	21:36	22:09	21:52	20:54	19:39	18:27	16:29	16:13	21	15:35 (10)
21	08:38			07:42	06:36	06:21	05:23	05:02	05:29	06:21	07:16	08:11	08:10	08:49		15:14 (10)
	16:52			17:54	18:47	20:45	21:38	22:09	21:50	20:52	19:37	18:25	16:28	16:13	21	15:35 (10)
22	08:37			07:40	06:33	06:19	05:22	05:02	05:30	06:23	07:18	08:13	08:12	08:50		15:15 (10)
	16:54			17:56	18:49	20:47	21:39	22:09	21:49	20:50	19:34	18:23	16:26	16:14	21	15:36 (10)
23	08:35			07:38	06:31	06:17	05:21	05:02	05:32	06:24	07:19	08:15	08:14	08:50		15:15 (10)
	16:56			17:57	18:51	20:49	21:41	22:09	21:48	20:47	19:32	18:21	16:25	16:14	21	15:36 (10)
24	08:34			07:35	06:28	06:15	05:19	05:02	05:33	06:26	07:21	08:17	08:16	08:51		15:15 (10)
	16:58			17:59	18:53	20:50	21:43	22:09	21:46	20:45	19:30	18:18	16:24	16:15	21	15:36 (10)
25	08:33			07:33	06:26	06:12	05:18	05:03	05:35	06:28	07:23	07:19	08:17	08:51		15:16 (10)
	17:00			18:01	18:55	20:52	21:44	22:09	21:45	20:43	19:27	17:16	16:23	16:15	22	15:38 (10)
26	08:31			07:31	06:24	06:10	05:17	05:03	05:36	06:30	07:25	07:21	08:19	08:52		15:17 (10)
	17:02			18:03	18:57	20:54	21:45	22:09	21:43	20:40	19:25	17:14	16:22	16:16	21	15:38 (10)
27	08:30			07:29	06:21	06:08	05:15	05:04	05:38	06:32	07:27	07:22	08:21	08:52		15:17 (10)
	17:04			18:05	18:59	20:56	21:47	22:09	21:41	20:38	19:22	17:12	16:21	16:17	22	15:39 (10)
28	08:28			07:26	06:19	06:06	05:14	05:04	05:39	06:33	07:28	07:24	08:22	08:52		15:18 (10)
	17:06			18:07	19:00	20:58	21:48	22:09	21:40	20:36	19:20	17:10	16:20	16:18	22	15:40 (10)
29	08:27				07:16	06:04	05:13	05:05	05:41	06:35	07:30	07:26	08:24	08:52		15:18 (10)
	17:08				20:02	21:00	21:50	22:09	21:38	20:33	19:17	17:08	16:19	16:19	22	15:40 (10)
30	08:25				07:14	06:02	05:12	05:05	05:43	06:37	07:32	07:28	08:26	08:52		15:19 (10)
	17:09				20:04	21:02	21:51	22:09	21:36	20:31	19:15	17:06	16:18	16:20	22	15:41 (10)
31	08:23				07:11		05:11		05:44	06:39		07:30		08:52		15:20 (10)
	17:11				20:06		21:52		21:35	20:28		17:04		16:21	21	15:41 (10)
Potential sun hours	250			273	367	420	494	510	513	460	382	328	259	233		
Total, worst case		160													587	
Sun reduction		0.16													0.12	
Oper. time red.		1.00													1.00	
Wind dir. red.		0.65													0.65	
Total reduction		0.11													0.08	
Total, real		17													46	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** EH - H153

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February		March	April	May	June	July	August	September	October		November	December
1	08:53	08:22		07:25	07:09	06:00	05:10	05:07	05:47	06:41	07:34		07:33	08:28
	16:23	17:14		18:10	20:08	21:04	21:54	22:09	21:33	20:27	19:13		17:02	16:18
2	08:52	08:20		07:22	07:07	05:58	05:10	05:07	05:48	06:43	07:36		07:35	08:29
	16:24	17:16		18:12	20:10	21:06	21:55	22:08	21:31	20:24	19:10		17:00	16:17
3	08:52	08:19		07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38		07:37	08:31
	16:25	17:18		18:14	20:12	21:07	21:56	22:08	21:30	20:22	19:08		16:58	16:16
4	08:52	08:17		07:17	07:02	05:54	05:08	05:09	05:52	06:46	07:40		07:39	08:32
	16:26	17:20		18:16	20:14	21:09	21:57	22:07	21:28	20:19	19:05		16:56	16:16
5	08:52	08:15		07:15	07:00	05:52	05:07	05:10	05:53	06:48	07:42		07:40	08:34
	16:27	17:22		18:18	20:16	21:11	21:59	22:07	21:26	20:17	19:03		16:54	16:15
6	08:51	08:13		07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43		07:42	08:35
	16:29	17:24		18:19	20:18	21:13	22:00	22:06	21:24	20:14	19:01		16:52	16:14
7	08:51	08:11		07:10	06:55	05:48	05:06	05:12	05:57	06:52	07:45		07:44	08:36
	16:30	17:26		18:21	20:19	21:15	22:01	22:06	21:22	20:12	18:58		16:51	16:14
8	08:50	08:09		07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47		07:46	08:38
	16:31	17:28		18:23	20:21	21:16	22:02	22:05	21:20	20:10	18:56		16:49	16:14
9	08:50	08:08		07:06	06:50	05:44	05:04	05:14	06:00	06:55	07:49		07:48	08:39
	16:33	17:30		18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53		16:47	16:13
10	08:49	08:06		07:03	06:48	05:42	05:04	05:15	06:02	06:57	07:51		07:50	08:40
	16:34	17:32		18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51		16:45	16:13
11	08:48	08:04		07:01	06:45	05:40	05:04	05:16	06:04	06:59	07:53		07:52	08:41
	16:36	17:34		18:29	20:27	21:22	22:04	22:02	21:14	20:02	18:49		16:43	16:13
12	08:47	08:02		06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54		07:54	08:42
	16:37	17:36		18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46		16:42	16:12
13	08:47	08:00	08:26 (2)	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56		07:56	08:43
	16:39	17:38	2 08:28 (2)	18:33	20:31	21:25	22:06	22:00	21:10	19:57	18:44		16:40	16:12
14	08:46	07:58	08:24 (2)	06:53	06:38	05:35	05:03	05:20	06:09	07:04	07:58		07:58	08:44
	16:41	17:40	5 08:29 (2)	18:35	20:32	21:27	22:06	21:59	21:08	19:55	18:42		16:38	16:12
15	08:45	07:56	08:21 (2)	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00	08:44 (2)	08:00	08:45
	16:42	17:42	8 08:29 (2)	18:37	20:34	21:29	22:07	21:58	21:05	19:52	18:39	9 08:53 (2)	16:37	16:12
16	08:44	07:53	08:19 (2)	06:49	06:33	05:32	05:02	05:22	06:13	07:07	08:02	08:41 (2)	08:02	08:46
	16:44	17:44	10 08:29 (2)	18:39	20:36	21:30	22:07	21:57	21:03	19:50	18:37	14 08:55 (2)	16:35	16:12
17	08:43	07:51	08:17 (2)	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:39 (2)	08:03	08:47
	16:46	17:46	13 08:30 (2)	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:35	18 08:57 (2)	16:34	16:13
18	08:42	07:49	08:15 (2)	06:44	06:29	05:29	05:02	05:25	06:16	07:11	08:06	08:38 (2)	08:05	08:48
	16:47	17:48	15 08:30 (2)	18:42	20:40	21:34	22:08	21:55	20:59	19:45	18:32	20 08:58 (2)	16:32	16:13
19	08:41	07:47	08:13 (2)	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:08	08:36 (2)	08:07	08:49
	16:49	17:50	17 08:30 (2)	18:44	20:42	21:35	22:09	21:54	20:57	19:42	18:30	23 08:59 (2)	16:31	16:13
20	08:40	07:45	08:10 (2)	06:39	06:24	05:25	05:02	05:28	06:20	07:15	08:10	08:37 (2)	08:09	08:49
	16:51	17:52	19 08:29 (2)	18:46	20:44	21:37	22:09	21:52	20:55	19:40	18:28	22 08:59 (2)	16:30	16:13
21	08:38	07:43	08:08 (2)	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:39 (2)	08:11	08:50
	16:53	17:54	21 08:29 (2)	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	21 09:00 (2)	16:28	16:14
22	08:37	07:40	08:06 (2)	06:34	06:20	05:23	05:02	05:31	06:23	07:18	08:13	08:41 (2)	08:13	08:50
	16:55	17:56	23 08:29 (2)	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	19 09:00 (2)	16:27	16:14
23	08:36	07:38	08:05 (2)	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:43 (2)	08:14	08:51
	16:57	17:58	22 08:27 (2)	18:52	20:49	21:41	22:10	21:48	20:48	19:32	18:21	17 09:00 (2)	16:26	16:15
24	08:34	07:36	08:07 (2)	06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:45 (2)	08:16	08:51
	16:58	18:00	20 08:27 (2)	18:54	20:51	21:43	22:10	21:46	20:45	19:30	18:19	15 09:00 (2)	16:25	16:15
25	08:33	07:34	08:08 (2)	06:27	06:13	05:18	05:03	05:35	06:28	07:23	07:19	07:47 (2)	08:18	08:52
	17:00	18:02	17 08:25 (2)	18:55	20:53	21:44	22:10	21:45	20:43	19:28	17:17	12 07:59 (2)	16:23	16:16
26	08:32	07:31	08:10 (2)	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	07:49 (2)	08:20	08:52
	17:02	18:04	12 08:22 (2)	18:57	20:55	21:46	22:10	21:43	20:41	19:25	17:15	10 07:59 (2)	16:22	16:17
27	08:30	07:29	08:14 (2)	06:22	06:09	05:16	05:04	05:38	06:32	07:27	07:23	07:52 (2)	08:21	08:52
	17:04	18:06	4 08:18 (2)	18:59	20:56	21:47	22:10	21:42	20:38	19:23	17:12	7 07:59 (2)	16:21	16:18
28	08:29	07:27		06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	07:54 (2)	08:23	08:52
	17:06	18:08		19:01	20:58	21:49	22:09	21:40	20:36	19:20	17:10	4 07:58 (2)	16:20	16:18
29	08:27			07:17	06:04	05:14	05:05	05:42	06:36	07:31	07:27	07:56 (2)	08:25	08:53
	17:08			20:03	21:00	21:50	22:09	21:39	20:34	19:18	17:08	1 07:57 (2)	16:19	16:19
30	08:25			07:14	06:02	05:13	05:06	05:43	06:37	07:32	07:29		08:26	08:53
	17:10			20:05	21:02	21:51	22:09	21:37	20:31	19:15	17:06		16:19	16:20
31	08:24			07:12		05:11		05:45	06:39		07:31			08:53
	17:12			20:07		21:53		21:35	20:29		17:04			16:21
Potential sun hours	250	273		367	420	494	510	512	460	382	328		259	233
Total, worst case			208									212		
Sun reduction			0.19									0.23		
Oper. time red.			1.00									1.00		
Wind dir. red.			0.62									0.62		
Total reduction			0.12									0.14		
Total, real			25									30		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** EI - H156

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February		March	April	May	June	July	August	September	October		November		December
1	08:53	08:22		07:25	07:09	06:00	05:10	05:07	05:47	06:41	07:34		07:33		08:02 (2)	08:28
	16:23	17:14		18:10	20:08	21:04	21:54	22:09	21:33	20:27	19:13		17:02	9	08:11 (2)	16:18
2	08:52	08:20		07:22	07:07	05:58	05:10	05:07	05:48	06:43	07:36		07:35		08:04 (2)	08:29
	16:24	17:16		18:12	20:10	21:06	21:55	22:08	21:31	20:24	19:10		17:00	7	08:11 (2)	16:17
3	08:52	08:19		07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38		07:37		08:06 (2)	08:31
	16:25	17:18		18:14	20:12	21:07	21:56	22:08	21:30	20:22	19:08		16:58	4	08:10 (2)	16:16
4	08:52	08:17		07:17	07:02	05:54	05:08	05:09	05:52	06:46	07:40		07:39		08:08 (2)	08:32
	16:26	17:20		18:16	20:14	21:09	21:57	22:07	21:28	20:19	19:05		16:56	1	08:09 (2)	16:16
5	08:52	08:15		07:15	07:00	05:52	05:07	05:10	05:53	06:48	07:42		07:40			08:34
	16:27	17:22		18:18	20:16	21:11	21:59	22:07	21:26	20:17	19:03		16:54			16:15
6	08:51	08:13		07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43		07:42			08:35
	16:29	17:24		18:19	20:18	21:13	22:00	22:06	21:24	20:14	19:01		16:52			16:14
7	08:51	08:11		08:38 (2)	07:10	06:55	05:48	05:06	05:12	05:57	06:52	07:45		07:44			08:36
	16:30	17:26	2	08:40 (2)	18:21	20:19	21:15	22:01	22:06	21:22	20:12	18:58		16:51			16:14
8	08:50	08:10		08:36 (2)	07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47		07:46			08:38
	16:31	17:28	4	08:40 (2)	18:23	20:21	21:16	22:02	22:05	21:20	20:10	18:56		16:49			16:14
9	08:50	08:08		08:34 (2)	07:06	06:50	05:44	05:04	05:14	06:00	06:55	07:49		07:48			08:39
	16:33	17:30	7	08:41 (2)	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53		16:47			16:13
10	08:49	08:06		08:32 (2)	07:03	06:48	05:42	05:04	05:15	06:02	06:57	07:51		07:50			08:40
	16:34	17:32	10	08:42 (2)	18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51		16:45			16:13
11	08:48	08:04		08:30 (2)	07:01	06:45	05:40	05:04	05:16	06:04	06:59	07:53		07:52			08:41
	16:36	17:34	12	08:42 (2)	18:29	20:27	21:22	22:04	22:02	21:14	20:02	18:49		16:43			16:13
12	08:48	08:02		08:28 (2)	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54		07:54			08:42
	16:37	17:36	15	08:43 (2)	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46		16:42			16:12
13	08:47	08:00		08:26 (2)	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56		07:56			08:43
	16:39	17:38	17	08:43 (2)	18:33	20:31	21:25	22:06	22:00	21:10	19:57	18:44		16:40			16:12
14	08:46	07:58		08:24 (2)	06:54	06:38	05:35	05:03	05:20	06:09	07:04	07:58		07:58			08:44
	16:41	17:40	19	08:43 (2)	18:35	20:32	21:27	22:06	21:59	21:08	19:55	18:42		16:38			16:12
15	08:45	07:56		08:21 (2)	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00		08:00			08:45
	16:42	17:42	20	08:41 (2)	18:37	20:34	21:29	22:07	21:58	21:06	19:52	18:39		16:37			16:12
16	08:44	07:53		08:19 (2)	06:49	06:33	05:32	05:02	05:22	06:13	07:07	08:02		08:02			08:46
	16:44	17:44	22	08:41 (2)	18:39	20:36	21:30	22:07	21:57	21:03	19:50	18:37		16:35			16:12
17	08:43	07:51		08:19 (2)	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04		08:03			08:47
	16:46	17:46	22	08:41 (2)	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:35		16:34			16:13
18	08:42	07:49		08:21 (2)	06:44	06:29	05:29	05:02	05:25	06:16	07:11	08:06		08:05			08:48
	16:47	17:48	19	08:40 (2)	18:42	20:40	21:34	22:08	21:55	20:59	19:45	18:32		16:32			16:13
19	08:41	07:47		08:22 (2)	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:08		08:07			08:49
	16:49	17:50	16	08:38 (2)	18:44	20:42	21:35	22:09	21:54	20:57	19:42	18:30		16:31			16:13
20	08:40	07:45		08:23 (2)	06:39	06:24	05:25	05:02	05:28	06:20	07:15	08:10		08:09			08:49
	16:51	17:52	13	08:36 (2)	18:46	20:44	21:37	22:09	21:52	20:55	19:40	18:28		16:30			16:13
21	08:38	07:43		08:28 (2)	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:56 (2)	08:11			08:50
	16:53	17:54	3	08:31 (2)	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	8 09:04 (2)	16:28			16:14
22	08:37	07:40			06:34	06:20	05:23	05:02	05:31	06:23	07:18	08:13	08:53 (2)	08:13			08:50
	16:55	17:56			18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	14 09:07 (2)	16:27			16:14
23	08:36	07:38			06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:51 (2)	08:14			08:51
	16:57	17:58			18:52	20:49	21:41	22:10	21:48	20:48	19:32	18:21	17 09:08 (2)	16:26			16:15
24	08:34	07:36			06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:50 (2)	08:16			08:51
	16:58	18:00			18:54	20:51	21:43	22:10	21:47	20:45	19:30	18:19	19 09:09 (2)	16:25			16:15
25	08:33	07:34			06:27	06:13	05:18	05:03	05:35	06:28	07:23	07:19	07:49 (2)	08:18			08:52
	17:00	18:02			18:55	20:53	21:44	22:10	21:45	20:43	19:28	17:17	21 08:10 (2)	16:23			16:16
26	08:32	07:31			06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	07:50 (2)	08:20			08:52
	17:02	18:04			18:57	20:55	21:46	22:10	21:43	20:41	19:25	17:15	22 08:12 (2)	16:22			16:17
27	08:30	07:29			06:22	06:09	05:16	05:04	05:38	06:32	07:27	07:23	07:52 (2)	08:21			08:52
	17:04	18:06			18:59	20:57	21:47	22:10	21:42	20:38	19:23	17:12	20 08:12 (2)	16:21			16:18
28	08:29	07:27			06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	07:54 (2)	08:23			08:52
	17:06	18:08			19:01	20:58	21:49	22:09	21:40	20:36	19:20	17:10	18 08:12 (2)	16:20			16:18
29	08:27				07:17	06:04	05:14	05:05	05:42	06:36	07:31	07:27	07:56 (2)	08:25			08:53
	17:08				20:03	21:00	21:50	22:09	21:39	20:34	19:18	17:08	16 08:12 (2)	16:19			16:19
30	08:25				07:14	06:02	05:13	05:06	05:43	06:37	07:32	07:29	07:58 (2)	08:26			08:53
	17:10				20:05	21:02	21:51	22:09	21:37	20:31	19:15	17:06	14 08:12 (2)	16:19			16:20
31	08:24				07:12		05:11		05:45	06:39		07:31	08:00 (2)				08:53
	17:12				20:07		21:53		21:35	20:29		17:04	12 08:12 (2)				16:21
Potential sun hours	250	273		367	420	494	510	512	460	382	328		259			233
Total, worst case			201									181		21		
Sun reduction			0.19									0.23		0.20		
Oper. time red.			1.00									1.00		1.00		
Wind dir. red.			0.61									0.61		0.61		
Total reduction			0.12									0.14		0.12		
Total, real			24									25		3		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** EJ - H157

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March		April		May	June	July	August	September		October	November	December
1	08:52	08:22	07:25		07:09		07:33 (2)	06:00	05:11	05:07	05:47	06:41		07:34	07:33	08:28
	16:23	17:14	18:10		20:08	10	07:43 (2)	21:04	21:54	22:09	21:33	20:27		19:13	17:02	16:18
2	08:52	08:20	07:22		07:07		07:31 (2)	05:58	05:10	05:07	05:48	06:43	07:22 (2)	07:36	07:35	08:29
	16:24	17:16	18:12		20:10	12	07:43 (2)	21:06	21:55	22:08	21:31	20:24	9 07:31 (2)	19:10	17:00	16:17
3	08:52	08:19	07:20		07:04		07:28 (2)	05:56	05:09	05:08	05:50	06:45	07:19 (2)	07:38	07:37	08:31
	16:25	17:18	18:14		20:12	15	07:43 (2)	21:07	21:56	22:08	21:30	20:22	15 07:34 (2)	19:08	16:58	16:16
4	08:52	08:17	07:17		07:02		07:26 (2)	05:54	05:08	05:09	05:52	06:46	07:16 (2)	07:40	07:38	08:32
	16:26	17:20	18:16		20:14	16	07:42 (2)	21:09	21:57	22:07	21:28	20:19	19 07:35 (2)	19:05	16:56	16:16
5	08:52	08:15	07:15		07:00		07:23 (2)	05:52	05:07	05:10	05:53	06:48	07:15 (2)	07:42	07:40	08:34
	16:27	17:22	18:18		20:16	18	07:41 (2)	21:11	21:58	22:07	21:26	20:17	21 07:36 (2)	19:03	16:54	16:15
6	08:51	08:13	07:13		06:57		07:21 (2)	05:50	05:06	05:11	05:55	06:50	07:17 (2)	07:43	07:42	08:35
	16:29	17:24	18:20		20:18	20	07:41 (2)	21:13	22:00	22:06	21:24	20:14	20 07:37 (2)	19:01	16:52	16:14
7	08:51	08:11	07:10		06:55		07:19 (2)	05:48	05:06	05:12	05:57	06:52	07:18 (2)	07:45	07:44	08:36
	16:30	17:26	18:21		20:19	21	07:40 (2)	21:15	22:01	22:06	21:22	20:12	18 07:36 (2)	18:58	16:51	16:14
8	08:50	08:09	07:08		06:52		07:19 (2)	05:46	05:05	05:13	05:59	06:53	07:20 (2)	07:47	07:46	08:38
	16:31	17:28	18:23		20:21	19	07:38 (2)	21:16	22:01	22:05	21:20	20:10	17 07:37 (2)	18:56	16:49	16:14
9	08:50	08:08	07:06		06:50		07:21 (2)	05:44	05:05	05:14	06:00	06:55	07:22 (2)	07:49	07:48	08:39
	16:33	17:30	18:25		20:23	15	07:36 (2)	21:18	22:02	22:04	21:18	20:07	15 07:37 (2)	18:53	16:47	16:13
10	08:49	08:06	07:03		06:48		07:24 (2)	05:42	05:04	05:15	06:02	06:57	07:24 (2)	07:51	07:50	08:40
	16:34	17:32	18:27		20:25	9	07:33 (2)	21:20	22:03	22:03	21:16	20:05	13 07:37 (2)	18:51	16:45	16:13
11	08:48	08:04	07:01		06:45			05:41	05:04	05:16	06:04	06:59	07:25 (2)	07:53	07:52	08:41
	16:36	17:34	18:29		20:27			21:22	22:04	22:02	21:14	20:02	10 07:35 (2)	18:49	16:43	16:13
12	08:47	08:02	06:58		06:43			05:39	05:03	05:17	06:06	07:00	07:27 (2)	07:54	07:54	08:42
	16:37	17:36	18:31		20:29			21:23	22:05	22:01	21:12	20:00	8 07:35 (2)	18:46	16:42	16:13
13	08:47	08:00	06:56		06:40			05:37	05:03	05:18	06:07	07:02	07:29 (2)	07:56	07:56	08:43
	16:39	17:38	18:33		20:31			21:25	22:06	22:00	21:10	19:57	5 07:34 (2)	18:44	16:40	16:12
14	08:46	07:58	06:54		06:38			05:35	05:03	05:20	06:09	07:04	07:30 (2)	07:58	07:58	08:44
	16:41	17:40	18:35		20:32			21:27	22:06	21:59	21:08	19:55	2 07:32 (2)	18:42	16:39	16:12
15	08:45	07:55	06:51		06:36			05:33	05:02	05:21	06:11	07:06		08:00	08:00	08:45
	16:42	17:42	18:37		20:34			21:29	22:07	21:58	21:05	19:52		18:39	16:37	16:12
16	08:44	07:53	06:49		06:33			05:32	05:02	05:22	06:13	07:08		08:02	08:02	08:46
	16:44	17:44	18:39		20:36			21:30	22:07	21:57	21:03	19:50		18:37	16:35	16:12
17	08:43	07:51	06:46		06:31			05:30	05:02	05:24	06:14	07:09		08:04	08:03	08:47
	16:46	17:46	18:40		20:38			21:32	22:08	21:56	21:01	19:47		18:35	16:34	16:13
18	08:42	07:49	06:44		06:29			05:29	05:02	05:25	06:16	07:11		08:06	08:05	08:48
	16:48	17:48	18:42		20:40			21:34	22:08	21:55	20:59	19:45		18:32	16:32	16:13
19	08:41	07:47	06:41		06:26			05:27	05:02	05:26	06:18	07:13		08:08	08:07	08:49
	16:49	17:50	18:44		20:42			21:35	22:09	21:53	20:57	19:42		18:30	16:31	16:13
20	08:40	07:45	06:39		06:24			05:25	05:02	05:28	06:20	07:15		08:10	08:09	08:49
	16:51	17:52	18:46		20:44			21:37	22:09	21:52	20:54	19:40		18:28	16:30	16:13
21	08:38	07:43	06:36		06:22			05:24	05:02	05:29	06:21	07:16		08:11	08:11	08:50
	16:53	17:54	18:48		20:45			21:38	22:09	21:51	20:52	19:37		18:26	16:28	16:14
22	08:37	07:40	06:34		06:20			05:23	05:02	05:31	06:23	07:18		08:13	08:13	08:50
	16:55	17:56	18:50		20:47			21:40	22:09	21:49	20:50	19:35		18:23	16:27	16:14
23	08:36	07:38	06:31		06:17			05:21	05:03	05:32	06:25	07:20		08:15	08:14	08:51
	16:57	17:58	18:52		20:49			21:41	22:10	21:48	20:48	19:33		18:21	16:26	16:15
24	08:34	07:36	06:29		06:15			05:20	05:03	05:34	06:27	07:22		08:17	08:16	08:51
	16:58	18:00	18:54		20:51			21:43	22:10	21:46	20:45	19:30		18:19	16:25	16:15
25	08:33	07:34	06:27		06:13			05:18	05:03	05:35	06:29	07:24		07:19	08:18	08:52
	17:00	18:02	18:55		20:53			21:44	22:10	21:45	20:43	19:28		17:17	16:24	16:16
26	08:32	07:31	06:24		06:11			05:17	05:04	05:37	06:30	07:25		07:21	08:20	08:52
	17:02	18:04	18:57		20:55			21:46	22:10	21:43	20:41	19:25		17:15	16:22	16:17
27	08:30	07:29	06:22		06:09			05:16	05:04	05:38	06:32	07:27		07:23	08:21	08:52
	17:04	18:06	18:59		20:56			21:47	22:10	21:42	20:38	19:23		17:12	16:21	16:18
28	08:29	07:27	06:19		06:06			05:15	05:05	05:40	06:34	07:29		07:25	08:23	08:52
	17:06	18:08	19:01		20:58			21:49	22:09	21:40	20:36	19:20		17:10	16:20	16:18
29	08:27		07:17	07:40 (2)	06:04			05:14	05:05	05:42	06:36	07:31		07:27	08:25	08:53
	17:08		20:03	2 07:42 (2)	21:00			21:50	22:09	21:38	20:34	19:18		17:08	16:19	16:19
30	08:25		07:14	07:38 (2)	06:02			05:13	05:06	05:43	06:37	07:32		07:29	08:26	08:53
	17:10		20:05	5 07:43 (2)	21:02			21:51	22:09	21:37	20:31	19:15		17:06	16:19	16:20
31	08:24		07:12	07:35 (2)				05:12		05:45	06:39			07:31		08:53
	17:12		20:07	8 07:43 (2)				21:53		21:35	20:29			17:04		16:21
Potential sun hours	250	273	367		420			494	510	512	460	382		328	259	233
Total, worst case				15		155							172			
Sun reduction				0.22		0.31							0.25			
Oper. time red.				1.00		1.00							1.00			
Wind dir. red.				0.65		0.65							0.65			
Total reduction				0.14		0.20							0.16			
Total, real				2		31							28			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** EK - H158

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:53	08:22	07:25	07:09	06:00	05:10	05:07	05:47	06:41	07:34	07:33	08:28
	16:23	17:14	18:10	20:08	21:04	21:54	22:09	21:33	20:27	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:10	05:07	05:48	06:43	07:36	07:35	08:29
	16:24	17:16	18:12	20:10	21:06	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38	07:37	08:31
	16:25	17:18	18:14	20:12	21:07	21:56	22:08	21:30	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:52	06:46	07:40	07:39	08:32
	16:26	17:20	18:16	20:14	21:09	21:57	22:07	21:28	20:19	19:05	16:56	16:16
5	08:52	08:15	07:15	07:00	05:52	05:07	05:10	05:53	06:48	07:42	07:40	08:34
	16:27	17:22	18:18	20:16	21:11	21:59	22:07	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:18	21:13	22:00	22:06	21:24	20:14	19:01	16:52	16:14
7	08:51	08:11	07:10	06:55	05:48	05:06	05:12	05:57	06:52	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:15	22:01	22:06	21:22	20:12	18:58	16:51	16:14
8	08:50	08:10	07:08	06:52	05:46	05:05	05:13	05:58	06:53	07:47	07:46	08:38
	16:31	17:28	18:23	20:21	21:16	22:02	22:05	21:20	20:10	18:56	16:49	16:14
9	08:50	08:08	07:06	06:50	05:44	05:04	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:06	08:32 (2)	07:03	06:48	05:42	05:04	05:15	06:02	06:57	07:50	08:40
	16:34	17:32 2	08:34 (2)	18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51	16:45	16:13
11	08:48	08:04	08:30 (2)	07:01	06:45	05:40	05:04	05:16	06:04	06:59	07:53	07:52	08:41
	16:36	17:34 5	08:35 (2)	18:29	20:27	21:22	22:04	22:02	21:14	20:02	18:49	16:43	16:13
12	08:48	08:02	08:28 (2)	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36 8	08:36 (2)	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:12
13	08:47	08:00	08:26 (2)	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38 10	08:36 (2)	18:33	20:31	21:25	22:06	22:00	21:10	19:57	18:44	16:40	16:12
14	08:46	07:58	08:24 (2)	06:54	06:38	05:35	05:03	05:20	06:09	07:04	07:58	07:58	08:44
	16:41	17:40 13	08:37 (2)	18:35	20:32	21:27	22:06	21:59	21:08	19:55	18:42	16:38	16:12
15	08:45	07:56	08:21 (2)	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00	08:00	08:45
	16:42	17:42 15	08:36 (2)	18:37	20:34	21:29	22:07	21:58	21:06	19:52	18:39	16:37	16:12
16	08:44	07:53	08:19 (2)	06:49	06:33	05:32	05:02	05:22	06:13	07:07	08:02	08:02	08:46
	16:44	17:44 17	08:36 (2)	18:39	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:12
17	08:43	07:51	08:17 (2)	06:46	06:31	05:30	05:02	05:23	06:14	07:09	08:04	08:03	08:47
	16:46	17:46 19	08:36 (2)	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:35	16:34	16:13
18	08:42	07:49	08:15 (2)	06:44	06:29	05:29	05:02	05:25	06:16	07:11	08:06	08:05	08:48
	16:47	17:48 21	08:36 (2)	18:42	20:40	21:34	22:08	21:55	20:59	19:45	18:32	16:32	16:13
19	08:41	07:47	08:14 (2)	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:08	08:49 (2)	08:07	08:49
	16:49	17:50 21	08:35 (2)	18:44	20:42	21:35	22:09	21:54	20:57	19:42	18:30 11	09:00 (2)	16:31	16:13
20	08:40	07:45	08:14 (2)	06:39	06:24	05:25	05:02	05:28	06:20	07:15	08:10	08:47 (2)	08:09	08:49
	16:51	17:52 20	08:34 (2)	18:46	20:44	21:37	22:09	21:52	20:55	19:40	18:28 15	09:02 (2)	16:30	16:13
21	08:38	07:43	08:15 (2)	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:45 (2)	08:11	08:50
	16:53	17:54 18	08:33 (2)	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25 18	09:03 (2)	16:28	16:14
22	08:37	07:40	08:17 (2)	06:34	06:20	05:23	05:02	05:31	06:23	07:18	08:13	08:44 (2)	08:13	08:50
	16:55	17:56 14	08:31 (2)	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23 20	09:04 (2)	16:27	16:14
23	08:36	07:38	08:19 (2)	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:43 (2)	08:14	08:51
	16:57	17:58 8	08:27 (2)	18:52	20:49	21:41	22:10	21:48	20:48	19:32	18:21 22	09:05 (2)	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:45 (2)	08:16	08:51
	16:58	18:00	18:54	20:51	21:43	22:10	21:47	20:45	19:30	18:19 20	09:05 (2)	16:25	16:15
25	08:33	07:34	06:27	06:13	05:18	05:03	05:35	06:28	07:24	07:19	07:47 (2)	08:18	08:52
	17:00	18:02	18:55	20:53	21:44	22:10	21:45	20:43	19:28	17:17 19	08:06 (2)	16:23	16:16
26	08:32	07:31	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	07:50 (2)	08:20	08:52
	17:02	18:04	18:57	20:55	21:46	22:10	21:43	20:41	19:25	17:15 17	08:07 (2)	16:22	16:17
27	08:30	07:29	06:22	06:09	05:16	05:04	05:38	06:32	07:27	07:23	07:52 (2)	08:21	08:52
	17:04	18:06	18:59	20:57	21:47	22:10	21:42	20:38	19:23	17:12 15	08:07 (2)	16:21	16:18
28	08:29	07:27	06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	07:54 (2)	08:23	08:52
	17:06	18:08	19:01	20:58	21:49	22:09	21:40	20:36	19:20	17:10 12	08:06 (2)	16:20	16:18
29	08:27		07:17	06:04	05:14	05:05	05:42	06:36	07:31	07:27	07:56 (2)	08:25	08:53
	17:08		20:03	21:00	21:50	22:09	21:39	20:34	19:18	17:08 10	08:06 (2)	16:19	16:19
30	08:25		07:14	06:02	05:13	05:06	05:43	06:37	07:32	07:29	07:58 (2)	08:26	08:53
	17:10		20:05	21:02	21:51	22:09	21:37	20:31	19:15	17:06 7	08:05 (2)	16:19	16:20
31	08:24		07:12		05:11		05:45	06:39		07:31	08:00 (2)		08:53
	17:12		20:07		21:53		21:35	20:29		17:04 5	08:05 (2)		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case		191								191	2	
Sun reduction		0.19								0.23	0.20	
Oper. time red.		1.00								1.00	1.00	
Wind dir. red.		0.62								0.62	0.62	
Total reduction		0.12								0.14	0.12	
Total, real		23								27	0	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** EL - H159

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:52	08:22	07:24	07:09	06:00	05:11	05:07	05:47	06:41	07:34	07:33	08:28
	16:23	17:14	18:10	20:08	21:04	21:54	22:09	21:33	20:27	19:13	17:02	16:18
2	08:52	08:20	07:22	07:07	05:58	05:10	05:07	05:48	06:43	07:36	07:35	08:29
	16:24	17:16	18:12	20:10	21:06	21:55	22:08	21:31	20:24	19:10	17:00	16:17
3	08:52	08:19	07:20	07:04	05:56	05:09	05:08	05:50	06:44	07:38	07:36	08:31
	16:25	17:18	18:14	20:12	21:07	21:56	22:08	21:30	20:22	19:08	16:58	16:16
4	08:52	08:17	07:17	07:02	05:54	05:08	05:09	05:52	06:46	07:40	07:38	08:32
	16:26	17:20	18:16	20:14	21:09	21:57	22:07	21:28	20:19	19:05	16:56	16:16
5	08:51	08:15	07:15	07:00	05:52	05:07	05:10	05:53	06:48	07:42	07:40	08:33
	16:27	17:22	18:18	20:16	21:11	21:58	22:07	21:26	20:17	19:03	16:54	16:15
6	08:51	08:13	07:13	06:57	05:50	05:06	05:11	05:55	06:50	07:43	07:42	08:35
	16:29	17:24	18:19	20:18	21:13	21:59	22:06	21:24	20:14	19:01	16:52	16:15
7	08:51	08:11	07:10	06:55	05:48	05:06	05:12	05:57	06:52	07:45	07:44	08:36
	16:30	17:26	18:21	20:19	21:15	22:00	22:05	21:22	20:12	18:58	16:51	16:14
8	08:50	08:09	07:08	06:52	05:46	05:05	05:13	05:59	06:53	07:47	07:46	08:38
	16:31	17:28	18:23	20:21	21:16	22:01	22:05	21:20	20:10	18:56	16:49	16:14
9	08:49	08:07	07:06	06:50	05:44	05:05	05:14	06:00	06:55	07:49	07:48	08:39
	16:33	17:30	18:25	20:23	21:18	22:02	22:04	21:18	20:07	18:53	16:47	16:13
10	08:49	08:06	07:03	06:48	05:42	05:04	05:15	06:02	06:57	07:51	07:50	08:40
	16:34	17:32	18:27	20:25	21:20	22:03	22:03	21:16	20:05	18:51	16:45	16:13
11	08:48	08:04	07:01	06:45	05:41	05:04	05:16	06:04	06:59	07:53	07:52	08:41
	16:36	17:34	18:29	20:27	21:22	22:04	22:02	21:14	20:02	18:49	16:43	16:13
12	08:47	08:02	06:58	06:43	05:39	05:03	05:17	06:05	07:00	07:54	07:54	08:42
	16:37	17:36	18:31	20:29	21:23	22:05	22:01	21:12	20:00	18:46	16:42	16:13
13	08:47	08:00	06:56	06:40	05:37	05:03	05:18	06:07	07:02	07:56	07:56	08:43
	16:39	17:38	18:33	20:31	21:25	22:05	22:00	21:10	19:57	18:44	16:40	16:12
14	08:46	07:57	06:53	06:38	05:35	05:03	05:20	06:09	07:04	07:58	07:58	08:44
	16:41	17:40	18:35	20:32	21:27	22:06	21:59	21:08	19:55	18:41	16:39	16:12
15	08:45	07:55	06:51	06:36	05:33	05:02	05:21	06:11	07:06	08:00	08:00	08:45
	16:42	17:42	18:37	20:34	21:28	22:07	21:58	21:05	19:52	18:39	16:37	16:12
16	08:44	07:53	06:49	06:33	05:32	05:02	05:22	06:13	07:07	08:02	08:01	08:46
	16:44	17:44	18:39	20:36	21:30	22:07	21:57	21:03	19:50	18:37	16:35	16:13
17	08:43	07:51	06:46	06:31	05:30	05:02	05:24	06:14	07:09	08:04	08:03	08:47
	16:46	17:46	18:40	20:38	21:32	22:08	21:56	21:01	19:47	18:35	16:34	16:13
18	08:42	07:49	06:44	06:29	05:29	05:02	05:25	06:16	07:11	08:06	08:05	08:48
	16:48	17:48	18:42	20:40	21:33	22:08	21:55	20:59	19:45	18:32	16:32	16:13
19	08:41	07:47	06:41	06:26	05:27	05:02	05:26	06:18	07:13	08:08	08:07	08:48
	16:49	17:50	18:44	20:42	21:35	22:09	21:53	20:57	19:42	18:30	16:31	16:13
20	08:39	07:45	06:39	06:24	05:25	05:02	05:28	06:20	07:15	08:09	08:09	08:49
	16:51	17:52	18:46	20:43	21:37	22:09	21:52	20:54	19:40	18:28	16:30	16:13
21	08:38	07:43	06:36	06:22	05:24	05:02	05:29	06:21	07:16	08:11	08:11	08:50
	16:53	17:54	18:48	20:45	21:38	22:09	21:51	20:52	19:37	18:25	16:28	16:14
22	08:37	07:40	06:34	06:20	05:23	05:02	05:31	06:23	07:18	08:13	08:12	08:50
	16:55	17:56	18:50	20:47	21:40	22:09	21:49	20:50	19:35	18:23	16:27	16:14
23	08:36	07:38	06:31	06:17	05:21	05:03	05:32	06:25	07:20	08:15	08:14	08:51
	16:57	17:58	18:52	20:49	21:41	22:09	21:48	20:48	19:32	18:21	16:26	16:15
24	08:34	07:36	06:29	06:15	05:20	05:03	05:34	06:27	07:22	08:17	08:16	08:51
	16:58	18:00	18:53	20:51	21:43	22:10	21:46	20:45	19:30	18:19	16:25	16:15
25	08:33	07:34	06:26	06:13	05:18	05:03	05:35	06:28	07:23	07:19	08:18	08:52
	17:00	18:02	18:55	20:53	21:44	22:10	21:45	20:43	19:28	17:17	16:24	16:16
26	08:31	07:31	06:24	06:11	05:17	05:04	05:37	06:30	07:25	07:21	08:19	08:52
	17:02	18:04	18:57	20:55	21:46	22:10	21:43	20:41	19:25	17:15	16:22	16:17
27	08:30	07:29	06:22	06:09	05:16	05:04	05:38	06:32	07:27	07:23	08:21	08:52
	17:04	18:06	18:59	20:56	21:47	22:09	21:42	20:38	19:23	17:12	16:21	16:18
28	08:28	07:27	06:19	06:06	05:15	05:05	05:40	06:34	07:29	07:25	08:23	08:52
	17:06	18:08	19:01	20:58	21:49	22:09	21:40	20:36	19:20	17:10	16:20	16:18
29	08:27		07:17	06:04	05:14	05:05	05:42	06:36	07:31	07:27	08:24	08:52
	17:08		20:03	21:00	21:50	22:09	21:38	20:34	19:18	17:08	16:19	16:19
30	08:25		07:14	06:02	05:13	05:06	05:43	06:37	07:32	07:29	08:26	08:52
	17:10		20:05	21:02	21:51	22:09	21:37	20:31	19:15	17:06	16:19	16:20
31	08:24		07:12		05:12		05:45	06:39		07:31		08:52
	17:12		20:06		21:53		21:35	20:29		17:04		16:21
Potential sun hours	250	273	367	420	494	510	512	460	382	328	259	233
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** EM - H161

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March		April	May	June	July	August	September		October		November	December
1	08:53	08:22	07:25		07:09	06:00	05:11	05:07	05:47	06:41		07:34	08:01 (2)	07:33	08:28
	16:23	17:14	18:10		20:08	21:04	21:54	22:09	21:33	20:27		19:13	3 08:04 (2)	17:02	16:18
2	08:52	08:20	07:22		07:07	05:58	05:10	05:07	05:48	06:43		07:36		07:35	08:29
	16:24	17:16	18:12		20:10	21:06	21:55	22:08	21:31	20:24		19:10		17:00	16:17
3	08:52	08:19	07:20		07:04	05:56	05:09	05:08	05:50	06:44		07:38		07:37	08:31
	16:25	17:18	18:14		20:12	21:07	21:56	22:08	21:30	20:22		19:08		16:58	16:16
4	08:52	08:17	07:17		07:02	05:54	05:08	05:09	05:52	06:46		07:40		07:39	08:32
	16:26	17:20	18:16		20:14	21:09	21:57	22:07	21:28	20:19		19:05		16:56	16:16
5	08:52	08:15	07:15		07:00	05:52	05:07	05:10	05:53	06:48		07:42		07:40	08:34
	16:27	17:22	18:18		20:16	21:11	21:59	22:07	21:26	20:17		19:03		16:54	16:15
6	08:51	08:13	07:13		06:57	05:50	05:06	05:11	05:55	06:50		07:43		07:42	08:35
	16:29	17:24	18:20		20:18	21:13	22:00	22:06	21:24	20:15		19:01		16:52	16:14
7	08:51	08:11	07:10		06:55	05:48	05:06	05:12	05:57	06:52		07:45		07:44	08:36
	16:30	17:26	18:21		20:20	21:15	22:01	22:06	21:22	20:12		18:58		16:51	16:14
8	08:50	08:09	07:08		06:52	05:46	05:05	05:13	05:59	06:53		07:47		07:46	08:38
	16:31	17:28	18:23		20:21	21:16	22:02	22:05	21:20	20:10		18:56		16:49	16:14
9	08:50	08:08	07:06		06:50	05:44	05:05	05:14	06:00	06:55		07:49		07:48	08:39
	16:33	17:30	18:25		20:23	21:18	22:02	22:04	21:18	20:07		18:53		16:47	16:13
10	08:49	08:06	07:03		06:48	05:42	05:04	05:15	06:02	06:57		07:51		07:50	08:40
	16:34	17:32	18:27		20:25	21:20	22:03	22:03	21:16	20:05		18:51		16:45	16:13
11	08:48	08:04	07:01		06:45	05:40	05:04	05:16	06:04	06:59		07:53		07:52	08:41
	16:36	17:34	18:29		20:27	21:22	22:04	22:02	21:14	20:02		18:49		16:43	16:13
12	08:47	08:02	06:58	07:22 (2)	06:43	05:39	05:03	05:17	06:05	07:00		07:54		07:54	08:42
	16:37	17:36	18:31	2 07:24 (2)	20:29	21:23	22:05	22:01	21:12	20:00		18:46		16:42	16:13
13	08:47	08:00	06:56	07:20 (2)	06:40	05:37	05:03	05:18	06:07	07:02		07:56		07:56	08:43
	16:39	17:38	18:33	5 07:25 (2)	20:31	21:25	22:06	22:00	21:10	19:57		18:44		16:40	16:12
14	08:46	07:58	06:54	07:17 (2)	06:38	05:35	05:03	05:20	06:09	07:04		07:58		07:58	08:44
	16:41	17:40	18:35	8 07:25 (2)	20:32	21:27	22:06	21:59	21:08	19:55		18:42		16:39	16:12
15	08:45	07:56	06:51	07:15 (2)	06:36	05:33	05:02	05:21	06:11	07:06		08:00		08:00	08:45
	16:42	17:42	18:37	11 07:26 (2)	20:34	21:29	22:07	21:58	21:05	19:52		18:39		16:37	16:12
16	08:44	07:53	06:49	07:13 (2)	06:33	05:32	05:02	05:22	06:13	07:08		08:02		08:02	08:46
	16:44	17:44	18:39	13 07:26 (2)	20:36	21:30	22:07	21:57	21:03	19:50		18:37		16:35	16:12
17	08:43	07:51	06:46	07:10 (2)	06:31	05:30	05:02	05:24	06:14	07:09		08:04		08:03	08:47
	16:46	17:46	18:40	15 07:25 (2)	20:38	21:32	22:08	21:56	21:01	19:47		18:35		16:34	16:13
18	08:42	07:49	06:44	07:08 (2)	06:29	05:29	05:02	05:25	06:16	07:11		08:06		08:05	08:48
	16:48	17:48	18:42	17 07:25 (2)	20:40	21:34	22:08	21:55	20:59	19:45		18:32		16:32	16:13
19	08:41	07:47	06:41	07:05 (2)	06:26	05:27	05:02	05:26	06:18	07:13	07:56 (2)	08:08		08:07	08:49
	16:49	17:50	18:44	19 07:24 (2)	20:42	21:35	22:09	21:53	20:57	19:42	3 07:59 (2)	18:30		16:31	16:13
20	08:40	07:45	06:39	07:03 (2)	06:24	05:25	05:02	05:28	06:20	07:15	07:51 (2)	08:10		08:09	08:49
	16:51	17:52	18:46	20 07:23 (2)	20:44	21:37	22:09	21:52	20:55	19:40	12 08:03 (2)	18:28		16:30	16:13
21	08:38	07:43	06:36	07:02 (2)	06:22	05:24	05:02	05:29	06:21	07:16	07:49 (2)	08:11		08:11	08:50
	16:53	17:54	18:48	20 07:22 (2)	20:45	21:38	22:09	21:51	20:52	19:37	16 08:05 (2)	18:26		16:28	16:14
22	08:37	07:40	06:34	07:03 (2)	06:20	05:23	05:02	05:31	06:23	07:18	07:47 (2)	08:13		08:13	08:50
	16:55	17:56	18:50	17 07:20 (2)	20:47	21:40	22:09	21:49	20:50	19:35	19 08:06 (2)	18:23		16:27	16:14
23	08:36	07:38	06:31	07:04 (2)	06:17	05:21	05:03	05:32	06:25	07:20	07:46 (2)	08:15		08:14	08:51
	16:57	17:58	18:52	14 07:18 (2)	20:49	21:41	22:10	21:48	20:48	19:33	21 08:07 (2)	18:21		16:26	16:15
24	08:34	07:36	06:29	07:08 (2)	06:15	05:20	05:03	05:34	06:27	07:22	07:48 (2)	08:17		08:16	08:51
	16:58	18:00	18:54	6 07:14 (2)	20:51	21:43	22:10	21:46	20:45	19:30	19 08:07 (2)	18:19		16:25	16:15
25	08:33	07:34	06:27		06:13	05:18	05:03	05:35	06:29	07:24	07:50 (2)	07:19		08:18	08:52
	17:00	18:02	18:55		20:53	21:44	22:10	21:45	20:43	19:28	18 08:08 (2)	17:17		16:23	16:16
26	08:32	07:31	06:24		06:11	05:17	05:04	05:37	06:30	07:25	07:52 (2)	07:21		08:20	08:52
	17:02	18:04	18:57		20:55	21:46	22:10	21:43	20:41	19:25	16 08:08 (2)	17:15		16:22	16:17
27	08:30	07:29	06:22		06:09	05:16	05:04	05:38	06:32	07:27	07:53 (2)	07:23		08:21	08:52
	17:04	18:06	18:59		20:56	21:47	22:10	21:42	20:38	19:23	14 08:07 (2)	17:12		16:21	16:18
28	08:29	07:27	06:19		06:06	05:15	05:05	05:40	06:34	07:29	07:55 (2)	07:25		08:23	08:52
	17:06	18:08	19:01		20:58	21:49	22:09	21:40	20:36	19:20	11 08:06 (2)	17:10		16:20	16:18
29	08:27		07:17		06:04	05:14	05:05	05:42	06:36	07:31	07:57 (2)	07:27		08:25	08:53
	17:08		20:03		21:00	21:50	22:09	21:38	20:34	19:18	9 08:06 (2)	17:08		16:19	16:19
30	08:25		07:14		06:02	05:13	05:06	05:43	06:37	07:32	07:59 (2)	07:29		08:26	08:53
	17:10		20:05		21:02	21:51	22:09	21:37	20:31	19:15	6 08:05 (2)	17:06		16:19	16:20
31	08:24		07:12			05:12		05:45	06:39			07:31			08:53
	17:12		20:07			21:53		21:35	20:29			17:04			16:21
Potential sun hours	250	273	367		420	494	510	512	460	382		328		259	233
Total, worst case				167							164		3		
Sun reduction				0.22							0.25		0.23		
Oper. time red.				1.00							1.00		1.00		
Wind dir. red.				0.64							0.64		0.64		
Total reduction				0.14							0.16		0.14		
Total, real				23							26		0		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** EN - H165

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March		April	May	June	July	August	September		October		November	December
1	08:53	08:22	07:25		07:09	06:00	05:11	05:07	05:47	06:41		07:34		08:01 (2)	07:33	08:28
	16:23	17:14	18:10		20:08	21:04	21:54	22:09	21:33	20:27		19:13	12	08:13 (2)	17:02	16:18
2	08:52	08:20	07:22		07:07	05:58	05:10	05:07	05:48	06:43		07:36		08:02 (2)	07:35	08:29
	16:24	17:16	18:12		20:10	21:06	21:55	22:08	21:31	20:24		19:10	10	08:12 (2)	17:00	16:17
3	08:52	08:19	07:20		07:04	05:56	05:09	05:08	05:50	06:44		07:38		08:04 (2)	07:37	08:31
	16:25	17:18	18:14		20:12	21:07	21:56	22:08	21:30	20:22		19:08	7	08:11 (2)	16:58	16:16
4	08:52	08:17	07:17		07:02	05:54	05:08	05:09	05:52	06:46		07:40		08:06 (2)	07:39	08:32
	16:26	17:20	18:16		20:14	21:09	21:57	22:07	21:28	20:19		19:05	4	08:10 (2)	16:56	16:16
5	08:52	08:15	07:15		07:00	05:52	05:07	05:10	05:53	06:48		07:42		08:08 (2)	07:40	08:34
	16:27	17:22	18:18		20:16	21:11	21:59	22:07	21:26	20:17		19:03	1	08:09 (2)	16:54	16:15
6	08:51	08:13	07:13		06:57	05:50	05:06	05:11	05:55	06:50		07:43			07:42	08:35
	16:29	17:24	18:20		20:18	21:13	22:00	22:06	21:24	20:15		19:01			16:52	16:14
7	08:51	08:11	07:10		06:55	05:48	05:06	05:12	05:57	06:52		07:45			07:44	08:36
	16:30	17:26	18:21		20:20	21:15	22:01	22:06	21:22	20:12		18:58			16:51	16:14
8	08:50	08:10	07:08		06:52	05:46	05:05	05:13	05:59	06:53		07:47			07:46	08:38
	16:31	17:28	18:23		20:21	21:16	22:02	22:05	21:20	20:10		18:56			16:49	16:14
9	08:50	08:08	07:06	07:30 (2)	06:50	05:44	05:05	05:14	06:00	06:55		07:49			07:48	08:39
	16:33	17:30	18:25	3 07:33 (2)	20:23	21:18	22:02	22:04	21:18	20:07		18:53			16:47	16:13
10	08:49	08:06	07:03	07:27 (2)	06:48	05:42	05:04	05:15	06:02	06:57		07:51			07:50	08:40
	16:34	17:32	18:27	6 07:33 (2)	20:25	21:20	22:03	22:03	21:16	20:05		18:51			16:45	16:13
11	08:48	08:04	07:01	07:25 (2)	06:45	05:40	05:04	05:16	06:04	06:59		07:53			07:52	08:41
	16:36	17:34	18:29	9 07:34 (2)	20:27	21:22	22:04	22:02	21:14	20:02		18:49			16:43	16:13
12	08:47	08:02	06:58	07:22 (2)	06:43	05:39	05:03	05:17	06:05	07:00		07:54			07:54	08:42
	16:37	17:36	18:31	11 07:33 (2)	20:29	21:23	22:05	22:01	21:12	20:00		18:46			16:42	16:13
13	08:47	08:00	06:56	07:20 (2)	06:40	05:37	05:03	05:18	06:07	07:02		07:56			07:56	08:43
	16:39	17:38	18:33	14 07:34 (2)	20:31	21:25	22:06	22:00	21:10	19:57		18:44			16:40	16:12
14	08:46	07:58	06:54	07:17 (2)	06:38	05:35	05:03	05:20	06:09	07:04		07:58			07:58	08:44
	16:41	17:40	18:35	16 07:33 (2)	20:32	21:27	22:06	21:59	21:08	19:55		18:42			16:39	16:12
15	08:45	07:56	06:51	07:15 (2)	06:36	05:33	05:02	05:21	06:11	07:06		08:00			08:00	08:45
	16:42	17:42	18:37	17 07:32 (2)	20:34	21:29	22:07	21:58	21:06	19:52		18:39			16:37	16:12
16	08:44	07:53	06:49	07:13 (2)	06:33	05:32	05:02	05:22	06:13	07:08		08:02			08:02	08:46
	16:44	17:44	18:39	19 07:32 (2)	20:36	21:30	22:07	21:57	21:03	19:50		18:37			16:35	16:12
17	08:43	07:51	06:46	07:11 (2)	06:31	05:30	05:02	05:24	06:14	07:09		08:04			08:03	08:47
	16:46	17:46	18:40	19 07:30 (2)	20:38	21:32	22:08	21:56	21:01	19:47		18:35			16:34	16:13
18	08:42	07:49	06:44	07:12 (2)	06:29	05:29	05:02	05:25	06:16	07:11		08:06			08:05	08:48
	16:48	17:48	18:42	17 07:29 (2)	20:40	21:34	22:08	21:55	20:59	19:45		18:32			16:32	16:13
19	08:41	07:47	06:41	07:13 (2)	06:26	05:27	05:02	05:26	06:18	07:13		08:08			08:07	08:49
	16:49	17:50	18:44	13 07:26 (2)	20:42	21:35	22:09	21:54	20:57	19:42		18:30			16:31	16:13
20	08:40	07:45	06:39	07:16 (2)	06:24	05:25	05:02	05:28	06:20	07:15		08:10			08:09	08:49
	16:51	17:52	18:46	7 07:23 (2)	20:44	21:37	22:09	21:52	20:55	19:40		18:28			16:30	16:13
21	08:38	07:43	06:36		06:22	05:24	05:02	05:29	06:21	07:16		08:11			08:11	08:50
	16:53	17:54	18:48		20:45	21:38	22:09	21:51	20:52	19:37		18:26			16:28	16:14
22	08:37	07:40	06:34		06:20	05:23	05:02	05:31	06:23	07:18		08:13			08:13	08:50
	16:55	17:56	18:50		20:47	21:40	22:09	21:49	20:50	19:35		18:23			16:27	16:14
23	08:36	07:38	06:31		06:17	05:21	05:03	05:32	06:25	07:20	08:02 (2)	08:15			08:14	08:51
	16:57	17:58	18:52		20:49	21:41	22:10	21:48	20:48	19:33	3 08:05 (2)	18:21			16:26	16:15
24	08:34	07:36	06:29		06:15	05:20	05:03	05:34	06:27	07:22	07:57 (2)	08:17			08:16	08:51
	16:58	18:00	18:54		20:51	21:43	22:10	21:46	20:45	19:30	12 08:09 (2)	18:19			16:25	16:15
25	08:33	07:34	06:27		06:13	05:18	05:03	05:35	06:29	07:24	07:55 (2)	07:19			08:18	08:52
	17:00	18:02	18:55		20:53	21:44	22:10	21:45	20:43	19:28	16 08:11 (2)	17:17			16:23	16:16
26	08:32	07:31	06:24		06:11	05:17	05:04	05:37	06:30	07:25	07:54 (2)	07:21			08:20	08:52
	17:02	18:04	18:57		20:55	21:46	22:10	21:43	20:41	19:25	19 08:13 (2)	17:15			16:22	16:17
27	08:30	07:29	06:22		06:09	05:16	05:04	05:38	06:32	07:27	07:53 (2)	07:23			08:21	08:52
	17:04	18:06	18:59		20:57	21:47	22:10	21:42	20:38	19:23	19 08:12 (2)	17:12			16:21	16:18
28	08:29	07:27	06:19		06:06	05:15	05:05	05:40	06:34	07:29	07:55 (2)	07:25			08:23	08:52
	17:06	18:08	19:01		20:58	21:49	22:09	21:40	20:36	19:20	18 08:13 (2)	17:10			16:20	16:18
29	08:27		07:17		06:04	05:14	05:05	05:42	06:36	07:31	07:57 (2)	07:27			08:25	08:53
	17:08		20:03		21:00	21:50	22:09	21:38	20:34	19:18	16 08:13 (2)	17:08			16:19	16:19
30	08:25		07:14		06:02	05:13	05:06	05:43	06:37	07:33	07:59 (2)	07:29			08:26	08:53
	17:10		20:05		21:02	21:51	22:09	21:37	20:31	19:15	14 08:13 (2)	17:06			16:19	16:20
31	08:24		07:12			05:12		05:45	06:39			07:31				08:53
	17:12		20:07			21:53		21:35	20:29			17:04				16:21
Potential sun hours	250	273	367		420	494	510	512	460	382		328		259	233	
Total, worst case				151							117		34			
Sun reduction				0.22							0.25		0.23			
Oper. time red.				1.00							1.00		1.00			
Wind dir. red.				0.63							0.63		0.63			
Total reduction				0.14							0.16		0.14			
Total, real				21							19		5			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar

Calculation: Worst Case Analysis **Shadow receptor:** EO - H235

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March		April	May	June	July	August	September		October	November	December
1	08:53	08:22	07:25		07:09	06:00	05:11	05:07	05:47	06:41		07:34	07:33	08:28
	16:23	17:14	18:10		20:08	21:04	21:54	22:09	21:33	20:27		19:13	17:02	16:18
2	08:52	08:20	07:22		07:07	05:58	05:10	05:07	05:48	06:43		07:36	07:35	08:29
	16:24	17:16	18:12		20:10	21:06	21:55	22:08	21:31	20:24		19:10	17:00	16:17
3	08:52	08:19	07:20		07:04	05:56	05:09	05:08	05:50	06:44		07:38	07:37	08:31
	16:25	17:18	18:14		20:12	21:07	21:56	22:08	21:30	20:22		19:08	16:58	16:16
4	08:52	08:17	07:17		07:02	05:54	05:08	05:09	05:52	06:46		07:40	07:39	08:32
	16:26	17:20	18:16		20:14	21:09	21:57	22:07	21:28	20:19		19:05	16:56	16:16
5	08:52	08:15	07:15		07:00	05:52	05:07	05:10	05:53	06:48		07:42	07:40	08:34
	16:27	17:22	18:18		20:16	21:11	21:58	22:07	21:26	20:17		19:03	16:54	16:15
6	08:51	08:13	07:13		06:57	05:50	05:06	05:11	05:55	06:50		07:43	07:42	08:35
	16:29	17:24	18:20		20:18	21:13	22:00	22:06	21:24	20:14		19:01	16:52	16:14
7	08:51	08:11	07:10		06:55	05:48	05:06	05:12	05:57	06:52		07:45	07:44	08:36
	16:30	17:26	18:21		20:19	21:15	22:01	22:06	21:22	20:12		18:58	16:51	16:14
8	08:50	08:09	07:08		06:52	05:46	05:05	05:13	05:59	06:53		07:47	07:46	08:38
	16:31	17:28	18:23		20:21	21:16	22:02	22:05	21:20	20:10		18:56	16:49	16:14
9	08:50	08:08	07:06		06:50	05:44	05:05	05:14	06:00	06:55		07:49	07:48	08:39
	16:33	17:30	18:25		20:23	21:18	22:02	22:04	21:18	20:07		18:53	16:47	16:13
10	08:49	08:06	07:03		06:48	05:42	05:04	05:15	06:02	06:57		07:51	07:50	08:40
	16:34	17:32	18:27		20:25	21:20	22:03	22:03	21:16	20:05		18:51	16:45	16:13
11	08:48	08:04	07:01		06:45	05:40	05:04	05:16	06:04	06:59		07:53	07:52	08:41
	16:36	17:34	18:29		20:27	21:22	22:04	22:02	21:14	20:02		18:49	16:43	16:13
12	08:47	08:02	06:58		06:43	05:39	05:03	05:17	06:05	07:00		07:54	07:54	08:42
	16:37	17:36	18:31		20:29	21:23	22:05	22:01	21:12	20:00		18:46	16:42	16:13
13	08:47	08:00	06:56		06:40	05:37	05:03	05:18	06:07	07:02		07:56	07:56	08:43
	16:39	17:38	18:33		20:31	21:25	22:06	22:00	21:10	19:57		18:44	16:40	16:12
14	08:46	07:58	06:54		06:38	05:35	05:03	05:20	06:09	07:04		07:58	07:58	08:44
	16:41	17:40	18:35		20:32	21:27	22:06	21:59	21:08	19:55		18:42	16:39	16:12
15	08:45	07:56	06:51		07:15 (2)	06:36	05:02	05:21	06:11	07:06		08:00	08:00	08:45
	16:42	17:42	18:37	2	07:17 (2)	20:34	21:29	22:07	21:58	21:05	19:52		18:39	16:37	16:12
16	08:44	07:53	06:49		07:13 (2)	06:33	05:32	05:02	05:22	06:13	07:08		08:02	08:02	08:46
	16:44	17:44	18:39	5	07:18 (2)	20:36	21:30	22:07	21:57	21:03	19:50	10	07:57 (2)	18:37	16:35	16:12
17	08:43	07:51	06:46		07:10 (2)	06:31	05:30	05:02	05:24	06:14	07:09		07:44 (2)	08:04	08:03	08:47
	16:46	17:46	18:40	8	07:18 (2)	20:38	21:32	22:08	21:56	21:01	19:47	16	08:00 (2)	18:35	16:34	16:13
18	08:42	07:49	06:44		07:08 (2)	06:29	05:29	05:02	05:25	06:16	07:11		07:42 (2)	08:06	08:05	08:48
	16:48	17:48	18:42	11	07:19 (2)	20:40	21:34	22:08	21:55	20:59	19:45	18	08:00 (2)	18:32	16:32	16:13
19	08:41	07:47	06:41		07:05 (2)	06:26	05:27	05:02	05:26	06:18	07:13		07:40 (2)	08:08	08:07	08:49
	16:49	17:50	18:44	13	07:18 (2)	20:42	21:35	22:09	21:53	20:57	19:42	21	08:01 (2)	18:30	16:31	16:13
20	08:40	07:45	06:39		07:03 (2)	06:24	05:25	05:02	05:28	06:20	07:15		07:41 (2)	08:10	08:09	08:49
	16:51	17:52	18:46	15	07:18 (2)	20:44	21:37	22:09	21:52	20:54	19:40	21	08:02 (2)	18:28	16:30	16:13
21	08:38	07:43	06:36		07:00 (2)	06:22	05:24	05:02	05:29	06:21	07:16		07:43 (2)	08:11	08:11	08:50
	16:53	17:54	18:48	17	07:17 (2)	20:45	21:38	22:09	21:51	20:52	19:37	20	08:03 (2)	18:26	16:28	16:14
22	08:37	07:40	06:34		06:58 (2)	06:20	05:23	05:02	05:31	06:23	07:18		07:44 (2)	08:13	08:13	08:50
	16:55	17:56	18:50	19	07:17 (2)	20:47	21:40	22:09	21:49	20:50	19:35	18	08:02 (2)	18:23	16:27	16:14
23	08:36	07:38	06:31		06:55 (2)	06:17	05:21	05:03	05:32	06:25	07:20		07:46 (2)	08:15	08:14	08:51
	16:57	17:58	18:52	21	07:16 (2)	20:49	21:41	22:10	21:48	20:48	19:33	16	08:02 (2)	18:21	16:26	16:15
24	08:34	07:36	06:29		06:54 (2)	06:15	05:20	05:03	05:34	06:27	07:22		07:48 (2)	08:17	08:16	08:51
	16:58	18:00	18:54	21	07:15 (2)	20:51	21:43	22:10	21:46	20:45	19:30	14	08:02 (2)	18:19	16:25	16:15
25	08:33	07:34	06:27		06:54 (2)	06:13	05:18	05:03	05:35	06:29	07:24		07:50 (2)	07:19	08:18	08:52
	17:00	18:02	18:55	19	07:13 (2)	20:53	21:44	22:10	21:45	20:43	19:28	11	08:01 (2)	17:17	16:23	16:16
26	08:32	07:31	06:24		06:56 (2)	06:11	05:17	05:04	05:37	06:30	07:25		07:52 (2)	07:21	08:20	08:52
	17:02	18:04	18:57	16	07:12 (2)	20:55	21:46	22:10	21:43	20:41	19:25	9	08:01 (2)	17:15	16:22	16:17
27	08:30	07:29	06:22		06:57 (2)	06:09	05:16	05:04	05:38	06:32	07:27		07:53 (2)	07:23	08:21	08:52
	17:04	18:06	18:59	11	07:08 (2)	20:56	21:47	22:10	21:42	20:38	19:23	6	07:59 (2)	17:12	16:21	16:18
28	08:29	07:27	06:19			06:06	05:15	05:05	05:40	06:34	07:29		07:55 (2)	07:25	08:23	08:52
	17:06	18:08	19:01			20:58	21:49	22:09	21:40	20:36	19:20	3	07:58 (2)	17:10	16:20	16:18
29	08:27		07:17			06:04	05:14	05:05	05:42	06:36	07:31			07:27	08:25	08:53
	17:08		20:03			21:00	21:50	22:09	21:38	20:34	19:18			17:08	16:19	16:19
30	08:25		07:14			06:02	05:13	05:06	05:43	06:37	07:32			07:29	08:26	08:53
	17:10		20:05			21:02	21:51	22:09	21:37	20:31	19:15			17:06	16:19	16:20
31	08:24		07:12				05:12		05:45	06:39				07:31		08:53
	17:12		20:07				21:53		21:35	20:29				17:04		16:21
Potential sun hours	250	273	367		420	494	510	512	460	382		328	259	233
Total, worst case				178							183			
Sun reduction				0.22							0.25			
Oper. time red.				1.00							1.00			
Wind dir. red.				0.64							0.64			
Total reduction				0.14							0.16			
Total, real				25							29			

Table layout: For each day in each month the following matrix apply

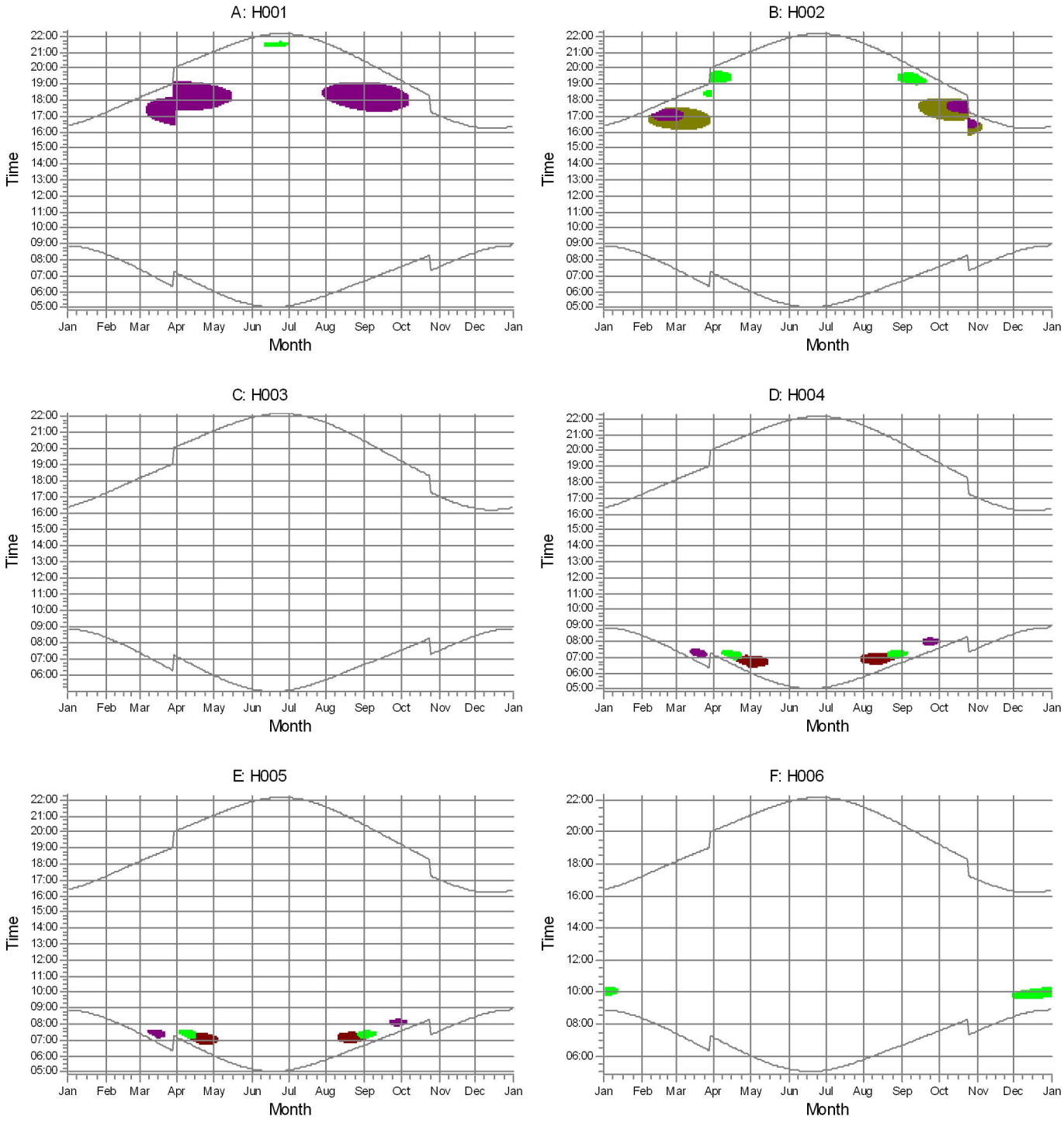
Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar, graphical

Calculation: Worst Case Analysis



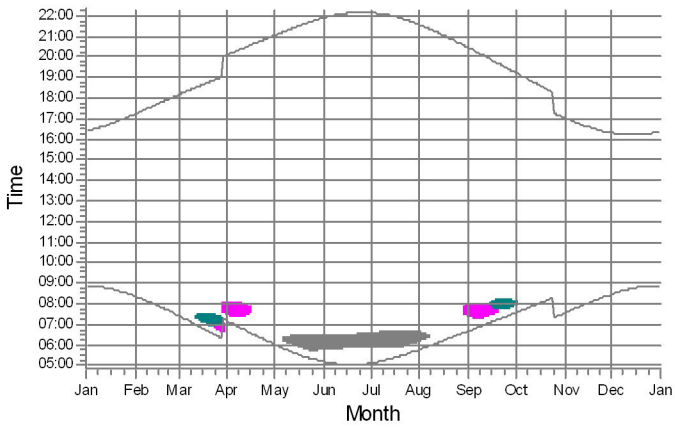
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

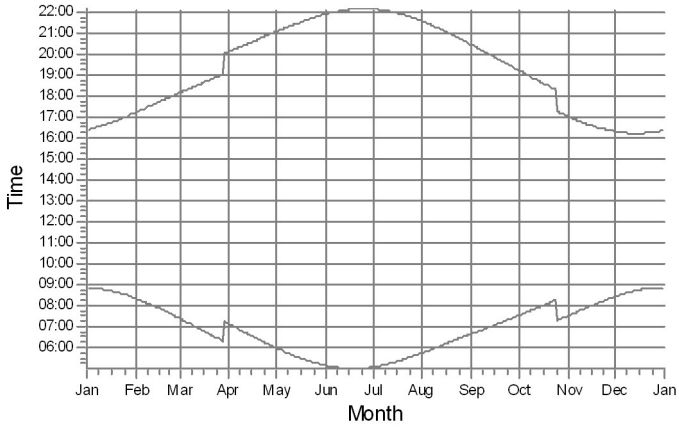
SHADOW - Calendar, graphical

Calculation: Worst Case Analysis

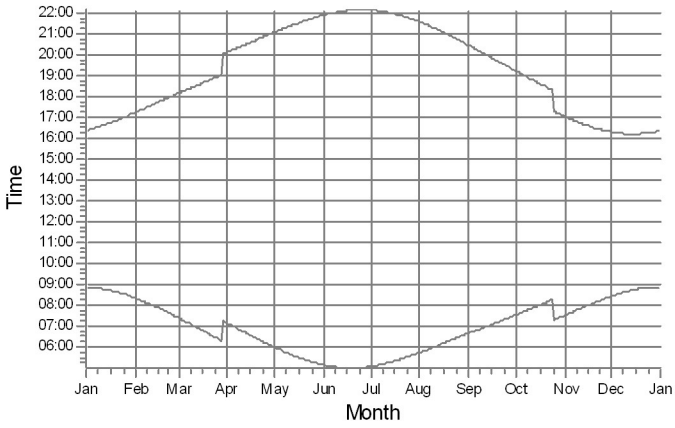
G: H007



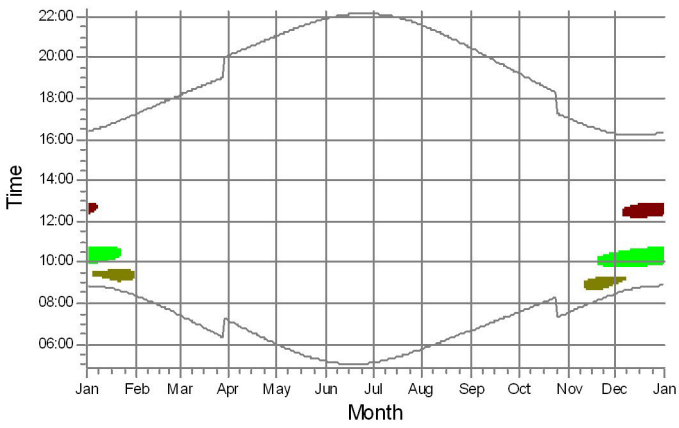
H: H008



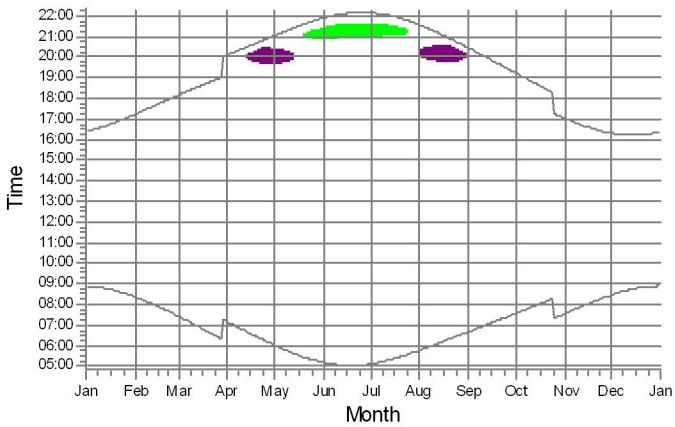
I: H009



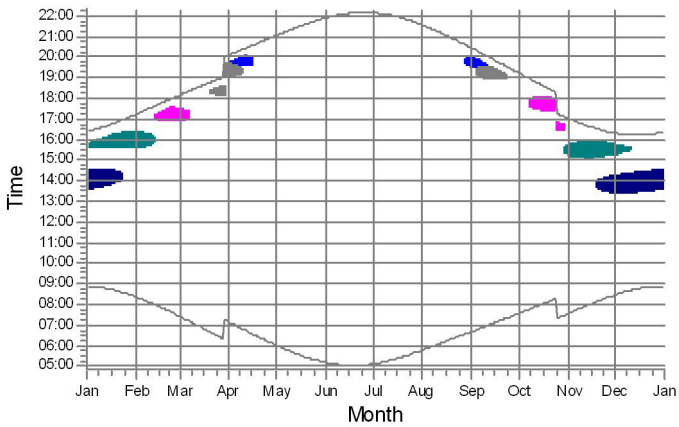
J: H010



K: H011



L: H012



WTGs

3: T03	6: T06	9: T09
4: T04	7: T07	10: T10
5: T05	8: T08	11: T11

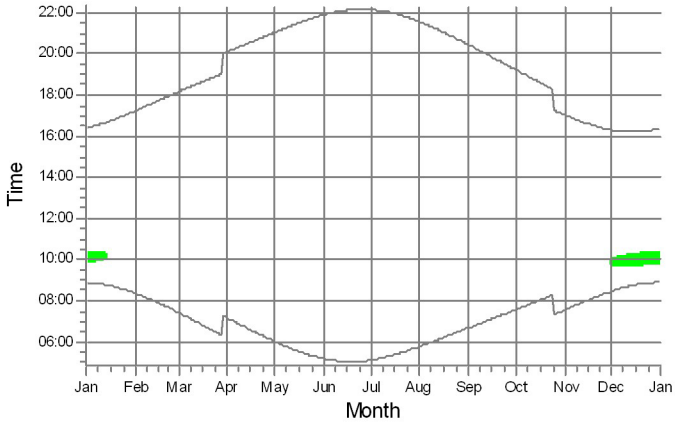
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

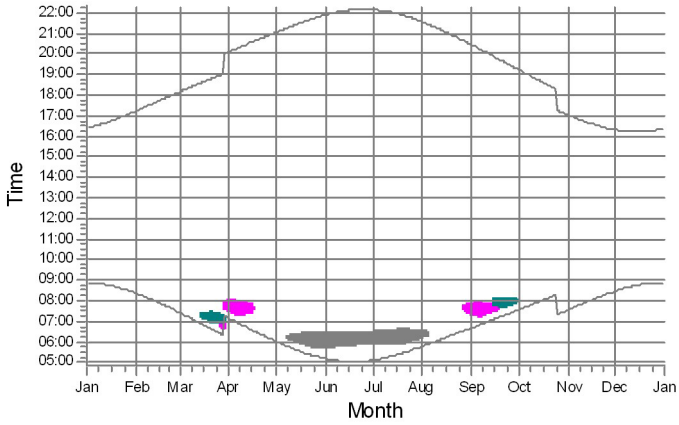
SHADOW - Calendar, graphical

Calculation: Worst Case Analysis

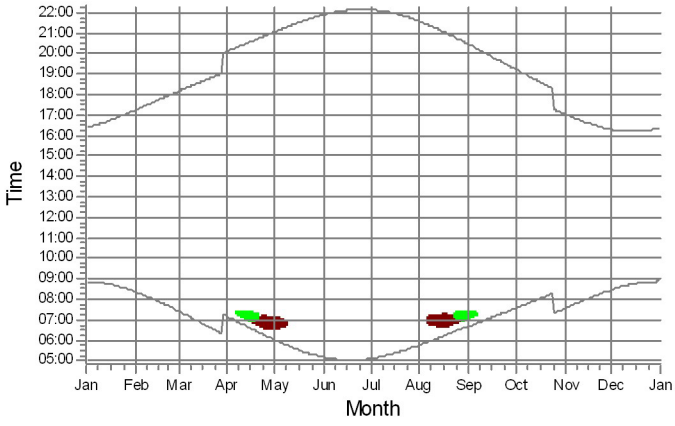
M: H013



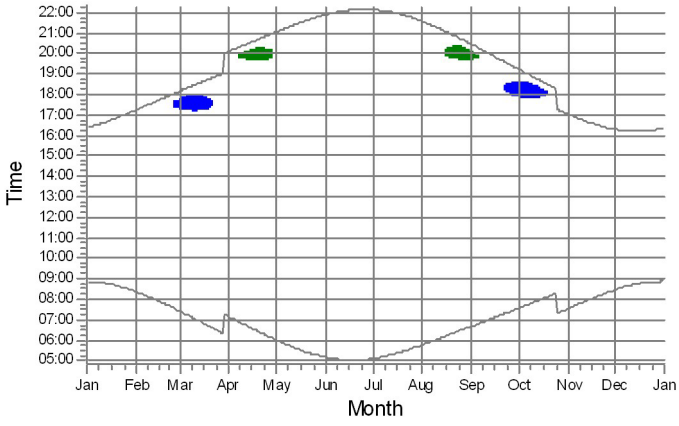
N: H014



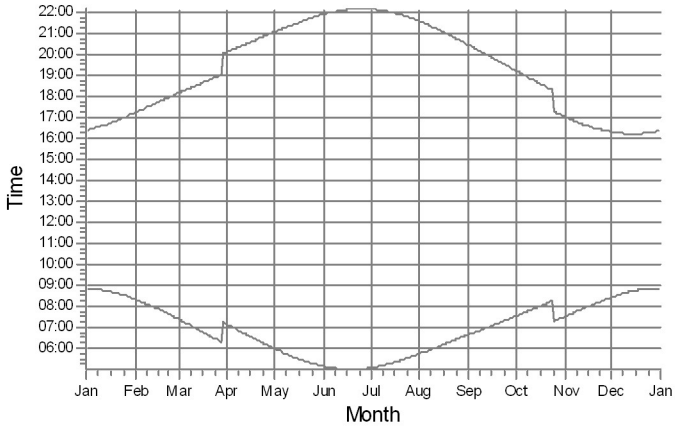
O: H015



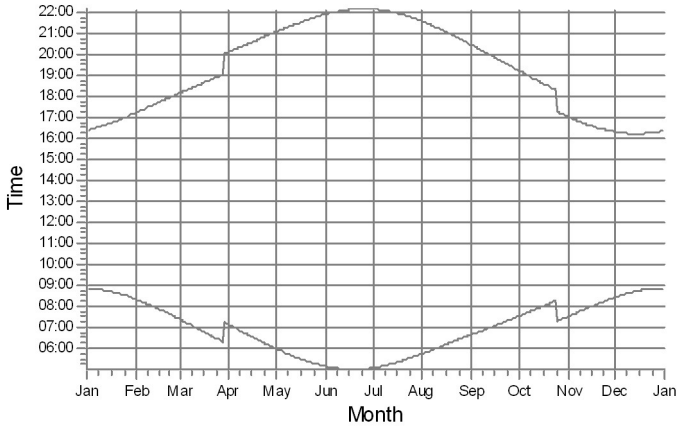
P: H016



Q: H018



R: H019



WTGs

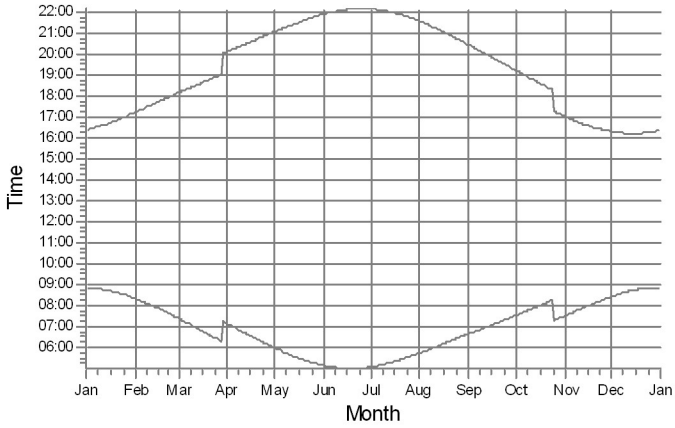
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

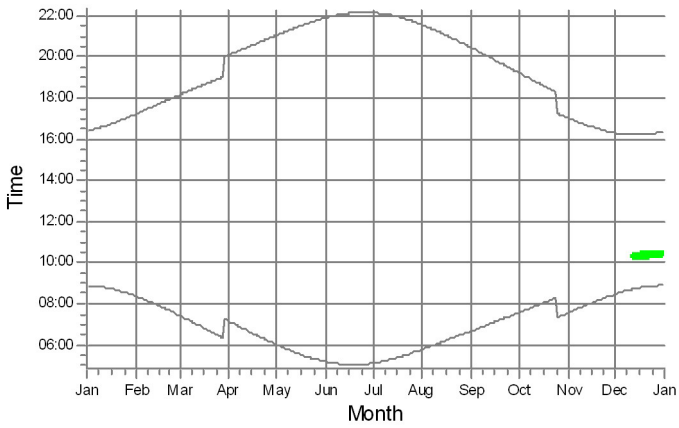
SHADOW - Calendar, graphical

Calculation: Worst Case Analysis

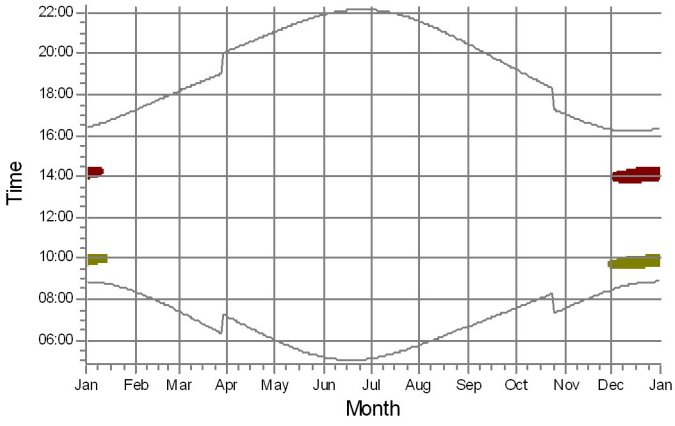
S: H020



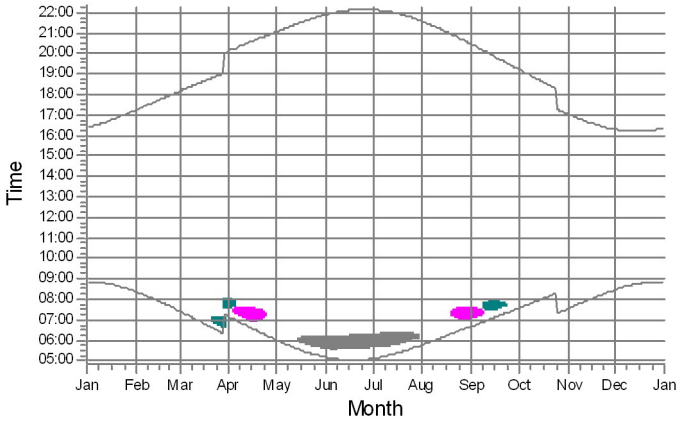
T: H021



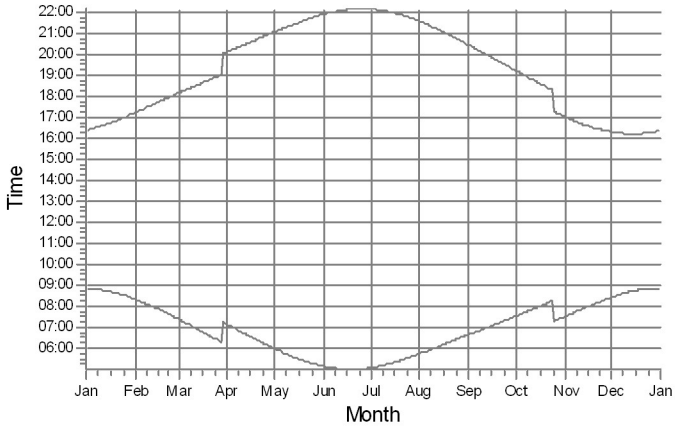
U: H022



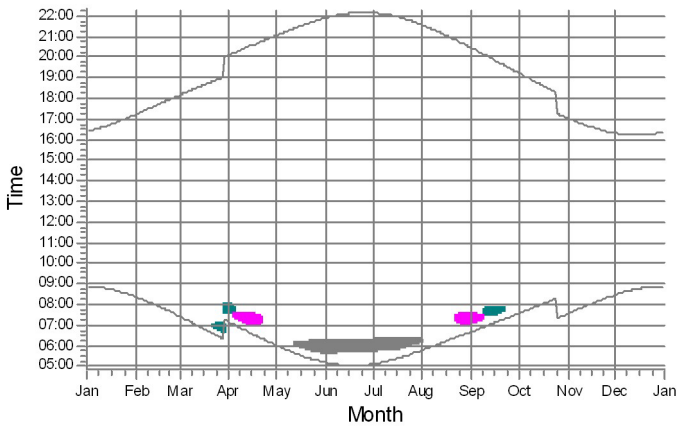
V: H023



W: H024



X: H025



WTGs

4: T04	6: T06	9: T09
5: T05	8: T08	10: T10

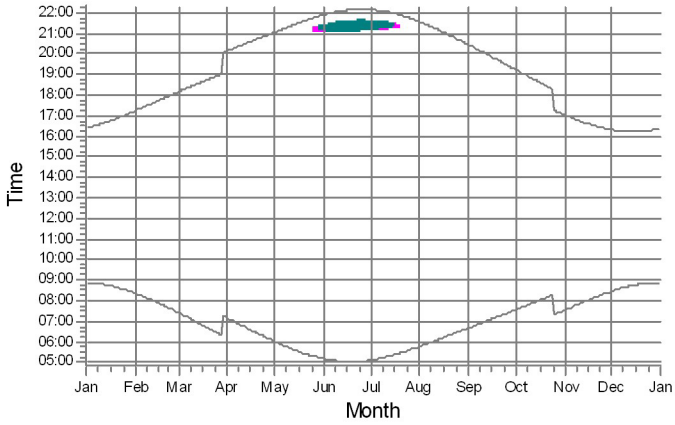
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

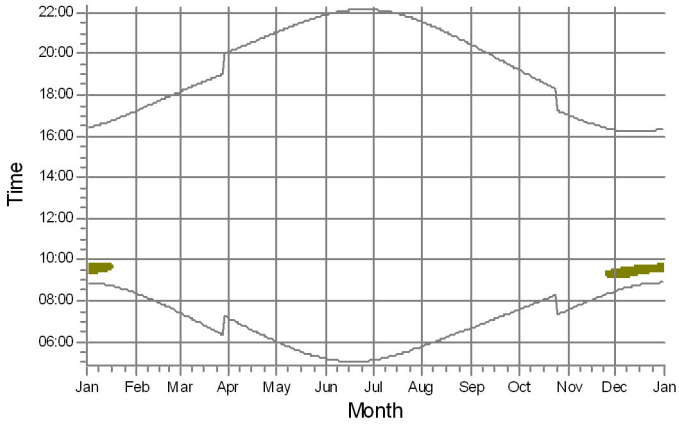
SHADOW - Calendar, graphical

Calculation: Worst Case Analysis

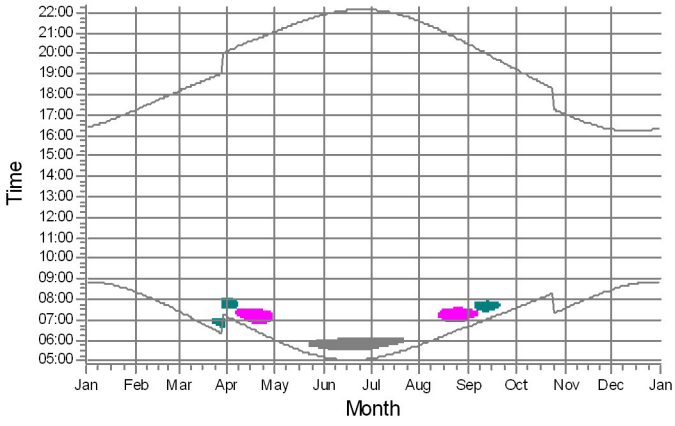
Y: H027



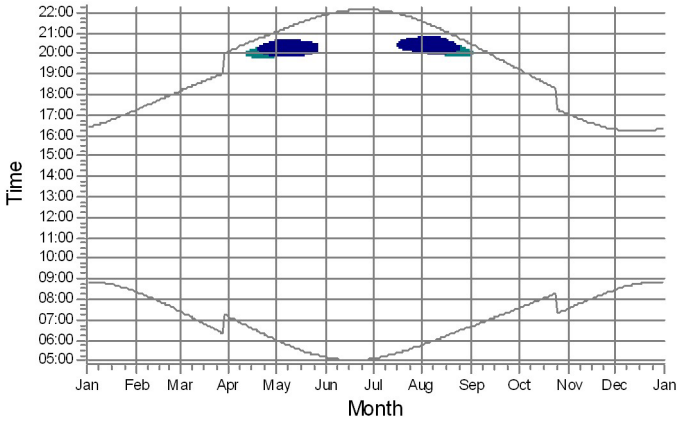
Z: H028



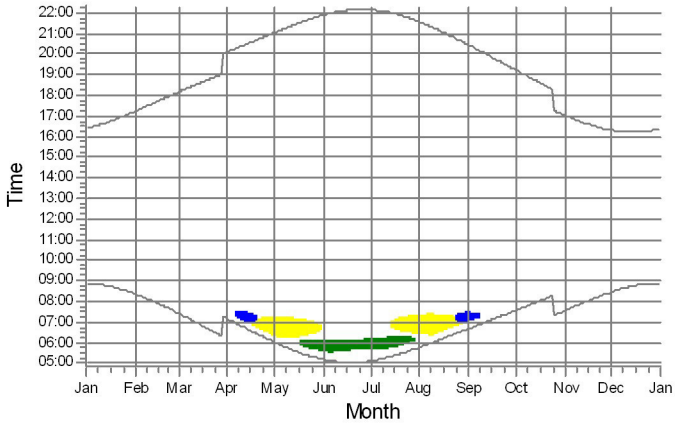
AA: H029



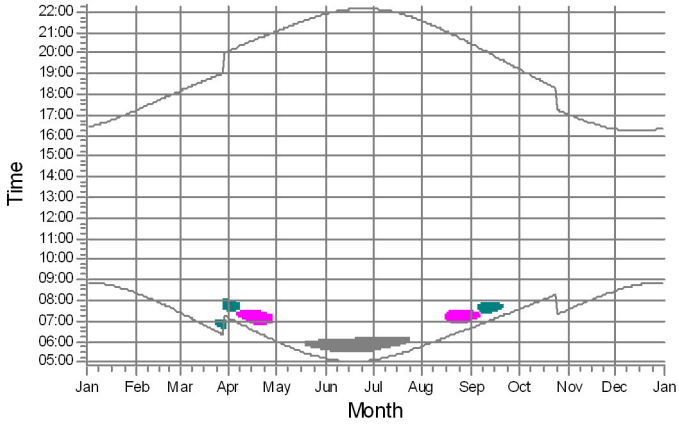
AB: H030



AC: H031



AD: H032



WTGs

	1: T01		3: T03		5: T05		7: T07
	2: T02		4: T04		6: T06		10: T10

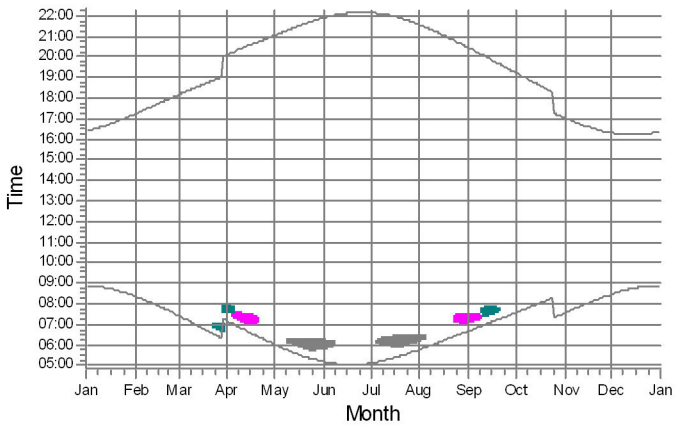
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

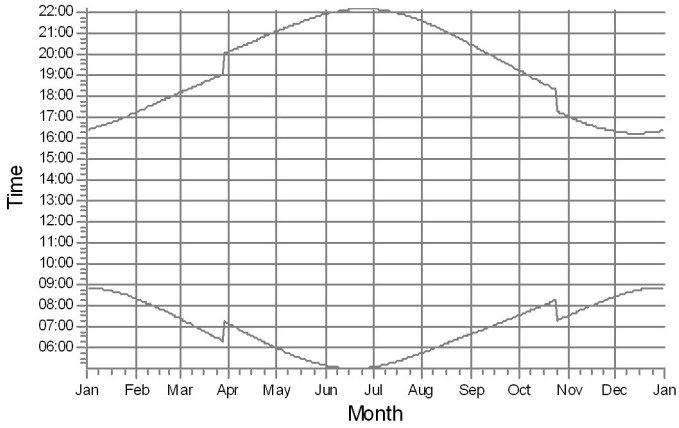
SHADOW - Calendar, graphical

Calculation: Worst Case Analysis

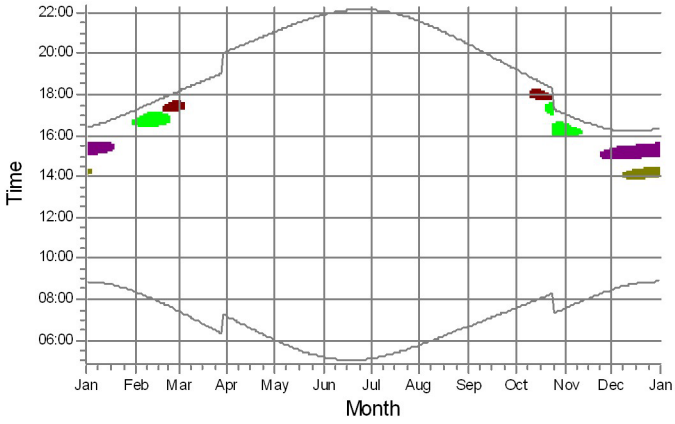
AE: H033



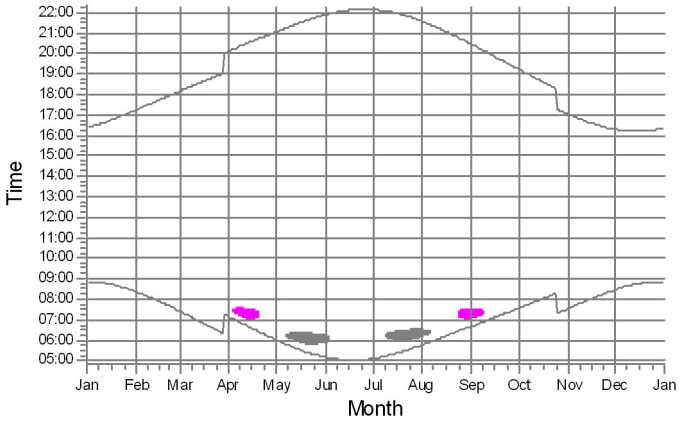
AF: H034



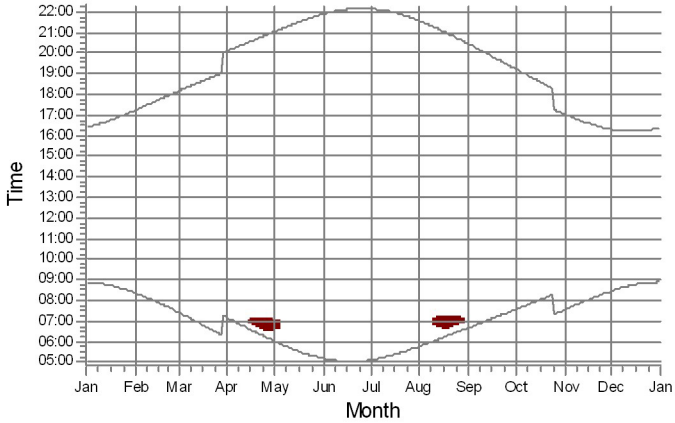
AG: H035



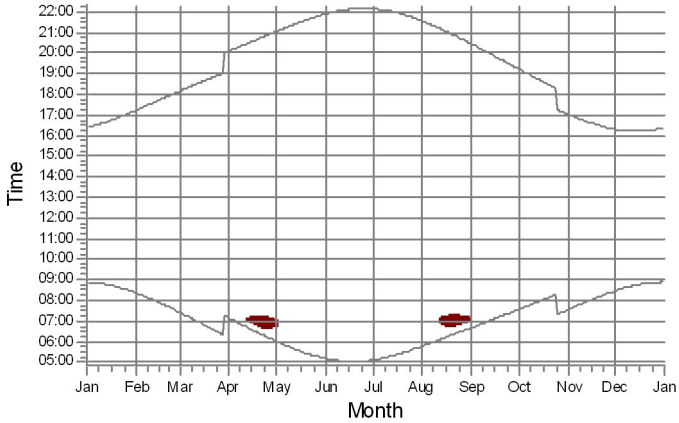
AH: H036



AI: H037



AJ: H038



WTGs

	4: T04		6: T06		9: T09		11: T11
	5: T05		8: T08		10: T10		

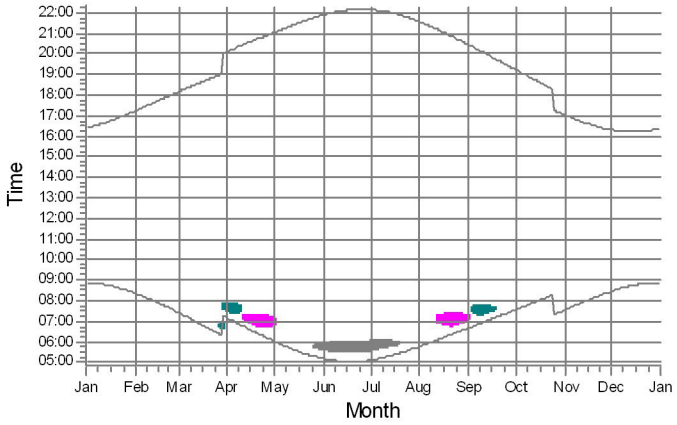
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

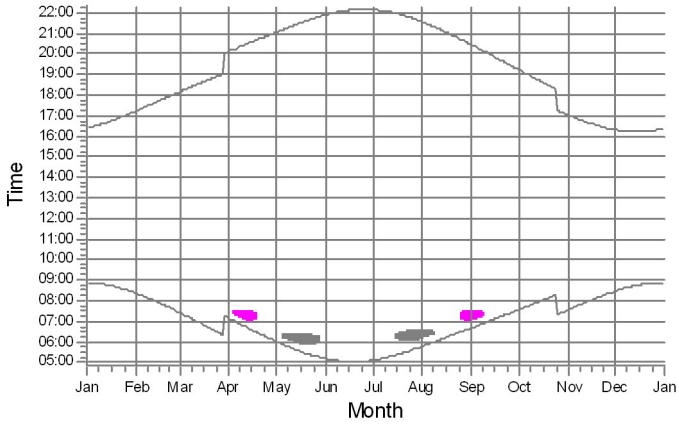
SHADOW - Calendar, graphical

Calculation: Worst Case Analysis

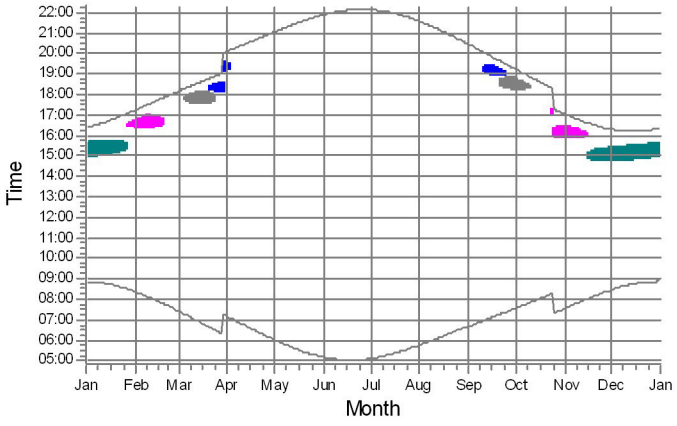
AK: H039



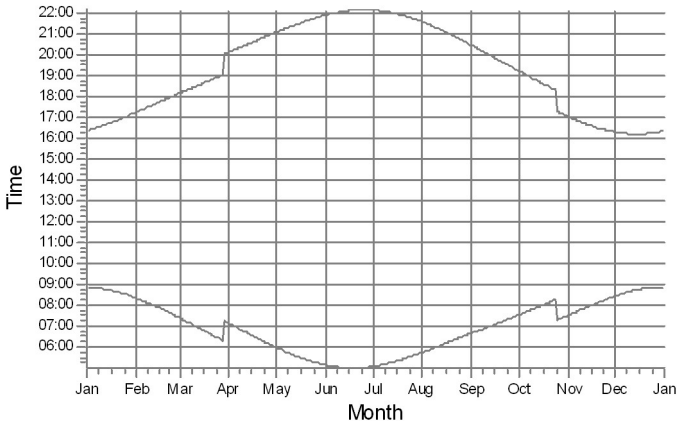
AL: H040



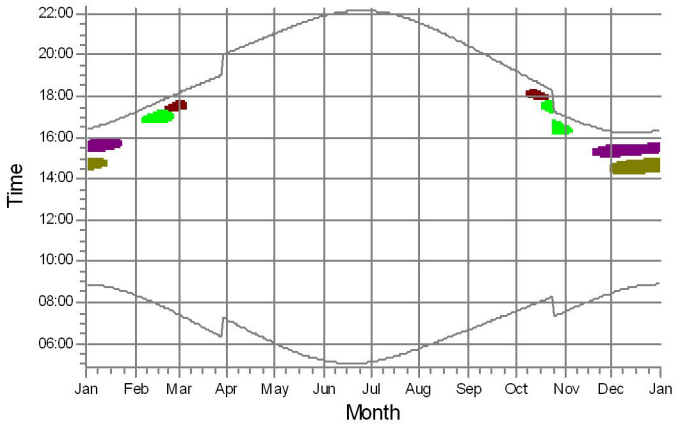
AM: H041



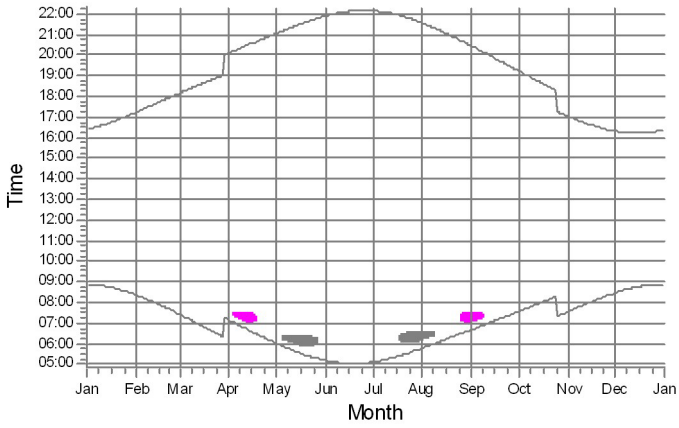
AN: H042



AO: H043



AP: H044



WTGs

	3: T03		5: T05		8: T08		10: T10
	4: T04		6: T06		9: T09		11: T11

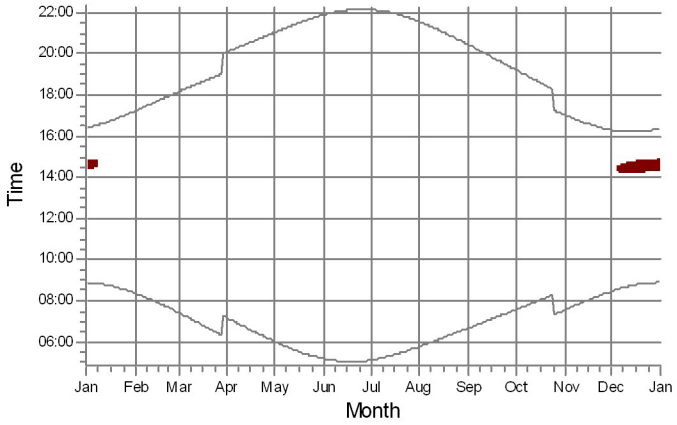
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

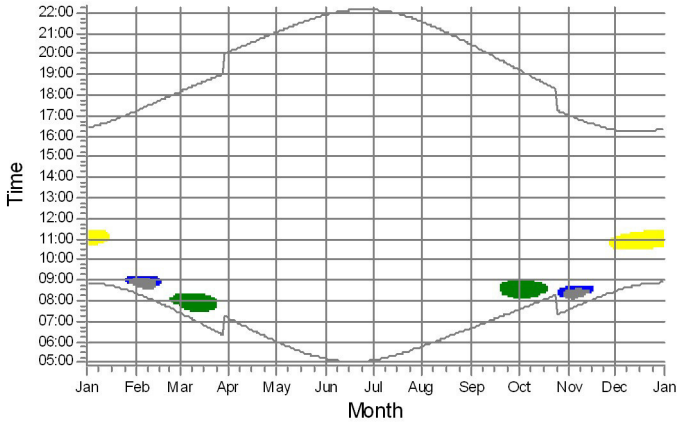
SHADOW - Calendar, graphical

Calculation: Worst Case Analysis

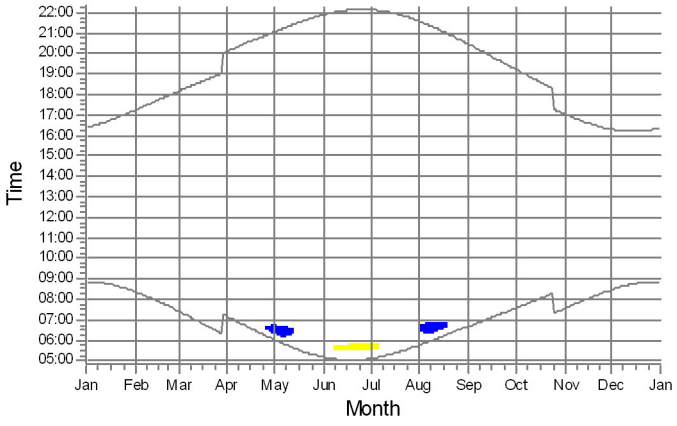
AQ: H045



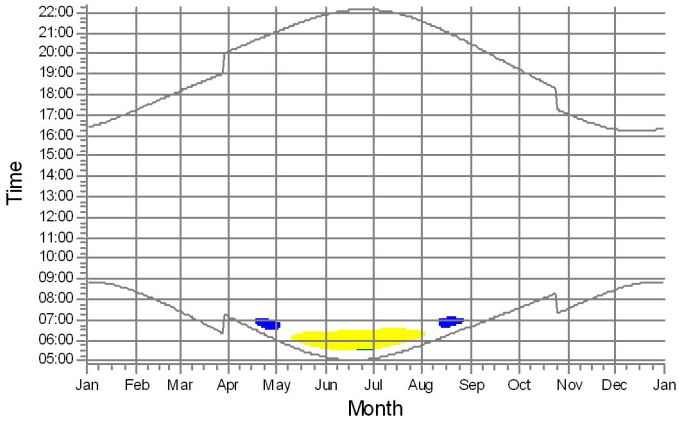
AR: H046



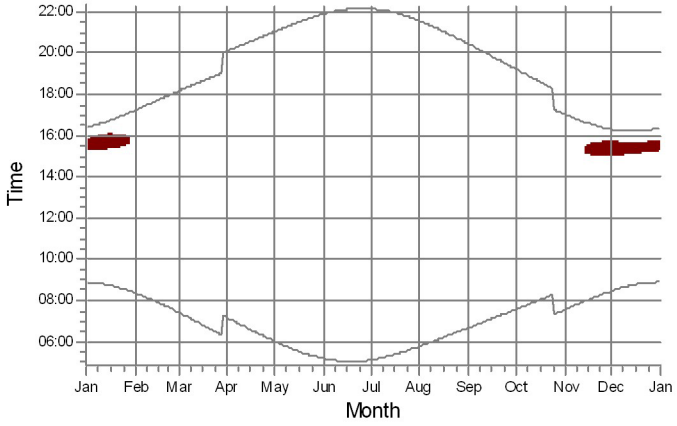
AS: H047



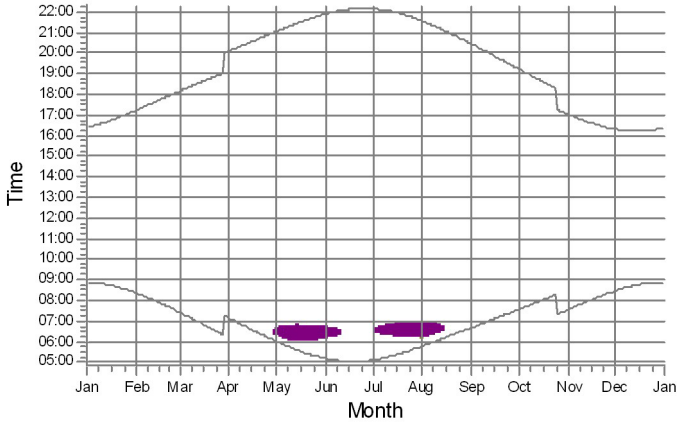
AT: H048



AU: H049



AV: H050



WTGs

	1: T01		3: T03		8: T08		11: T11
	2: T02		4: T04		10: T10		

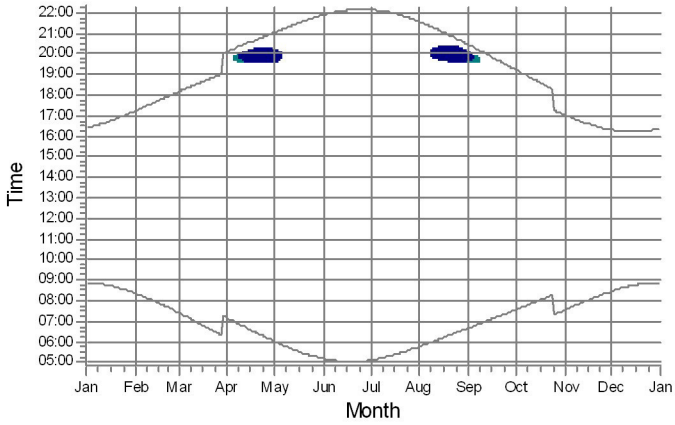
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

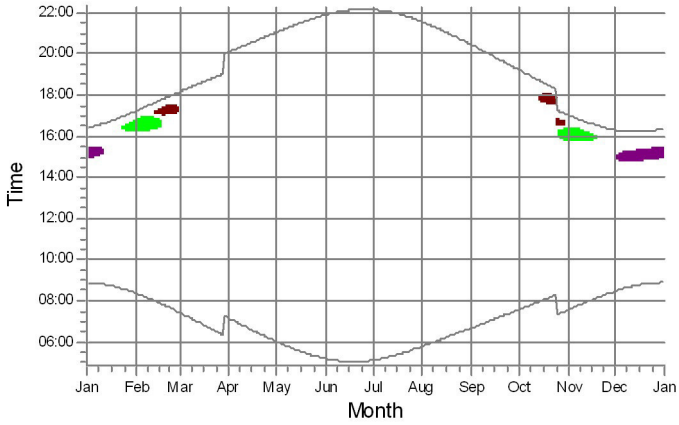
SHADOW - Calendar, graphical

Calculation: Worst Case Analysis

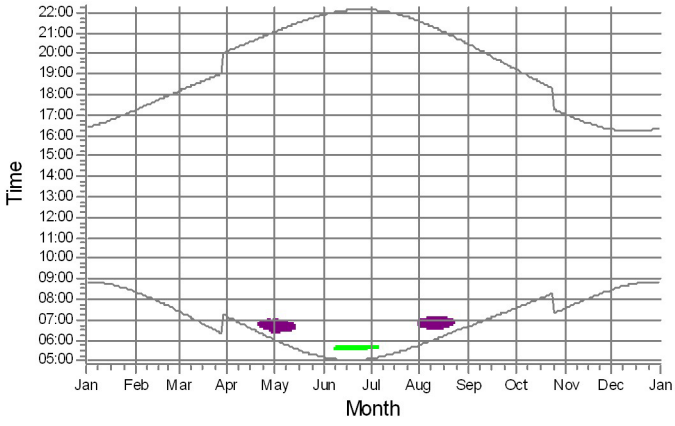
AW: H052



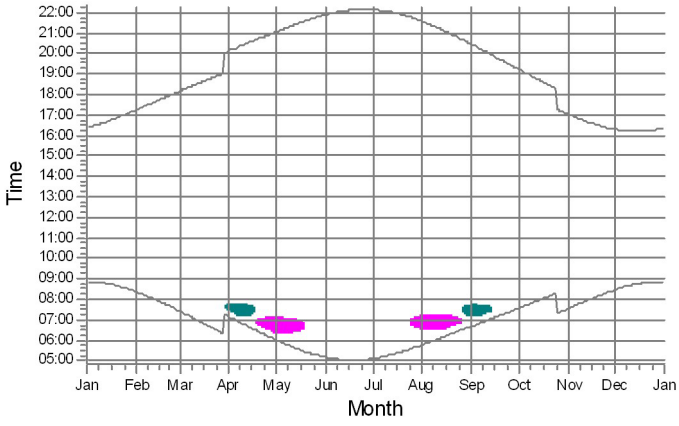
AX: H053



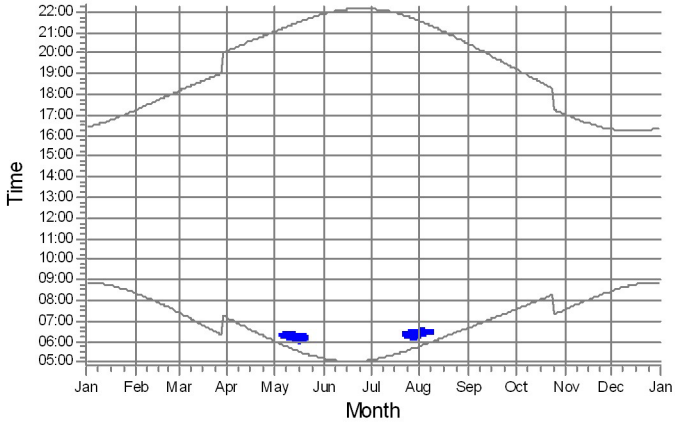
AY: H054



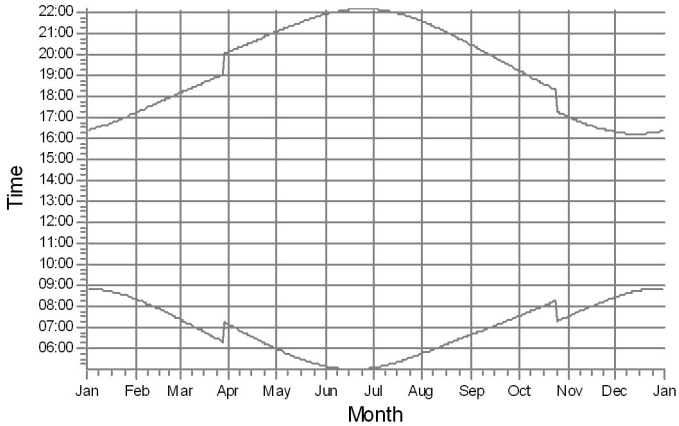
AZ: H055



BA: H056



BB: H058



WTGs

	3: T03		6: T06		8: T08		11: T11
	5: T05		7: T07		9: T09		

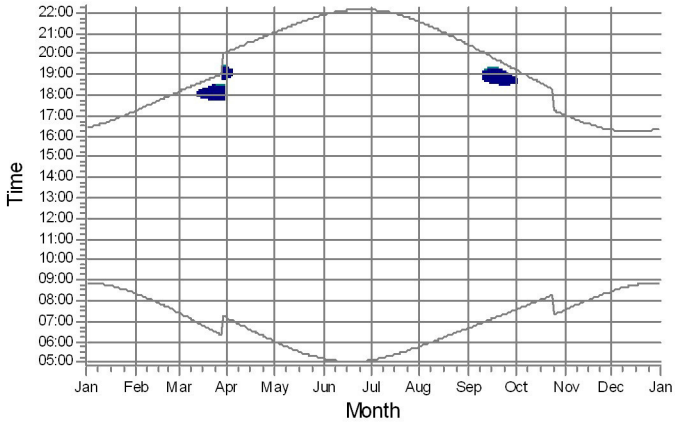
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

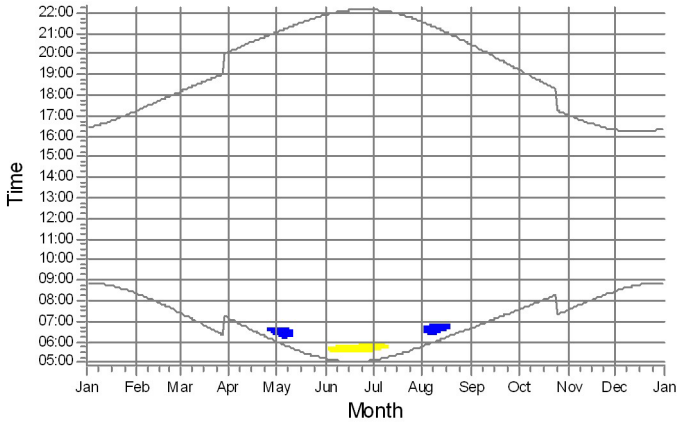
SHADOW - Calendar, graphical

Calculation: Worst Case Analysis

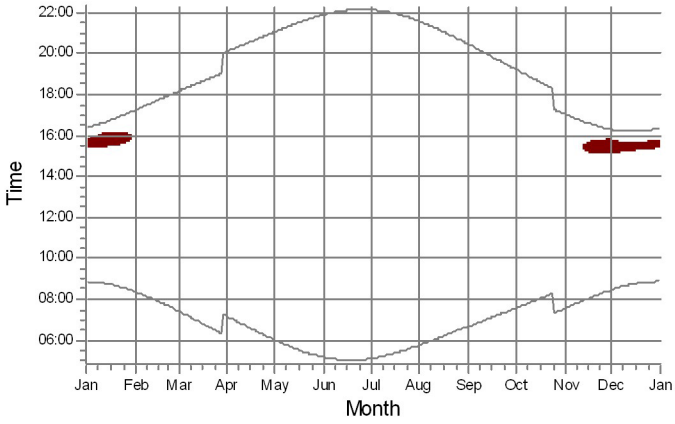
BC: H059



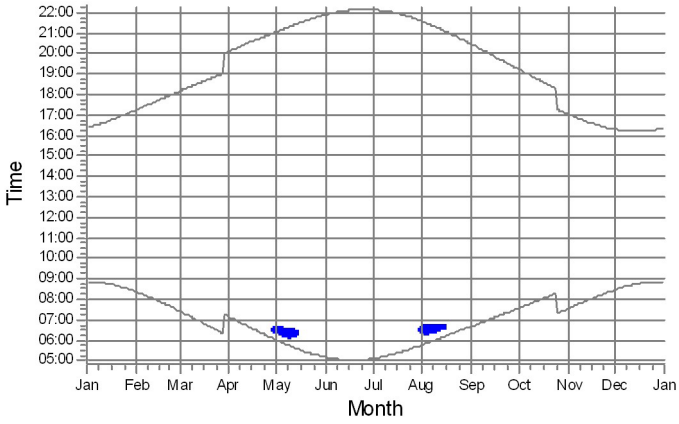
BD: H060



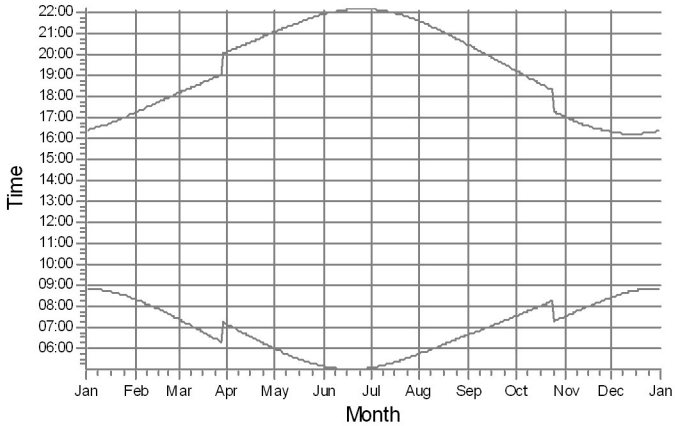
BE: H061



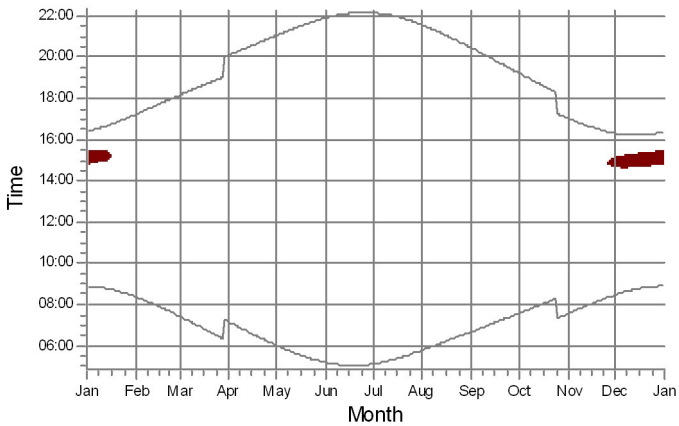
BF: H062



BG: H063



BH: H064



WTGs

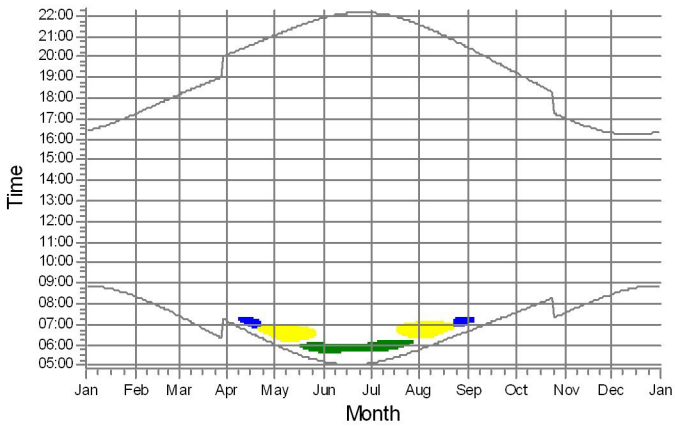
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

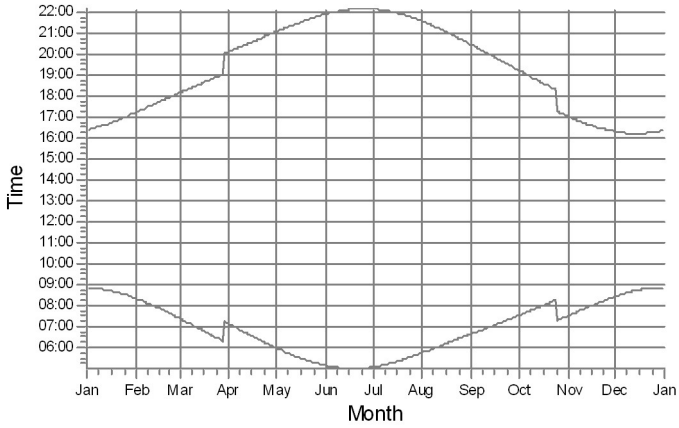
SHADOW - Calendar, graphical

Calculation: Worst Case Analysis

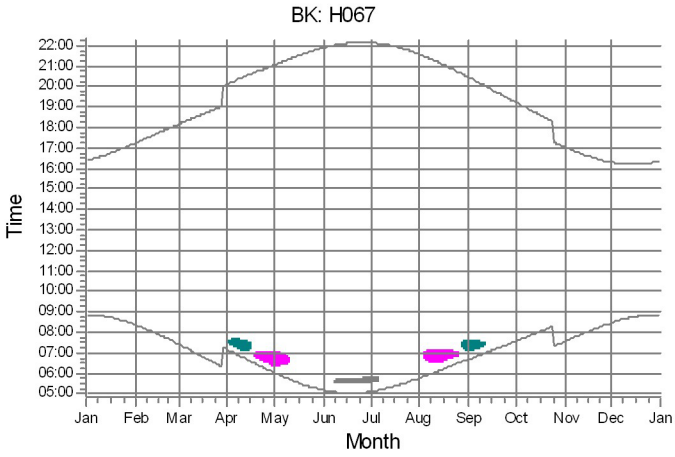
BI: H065



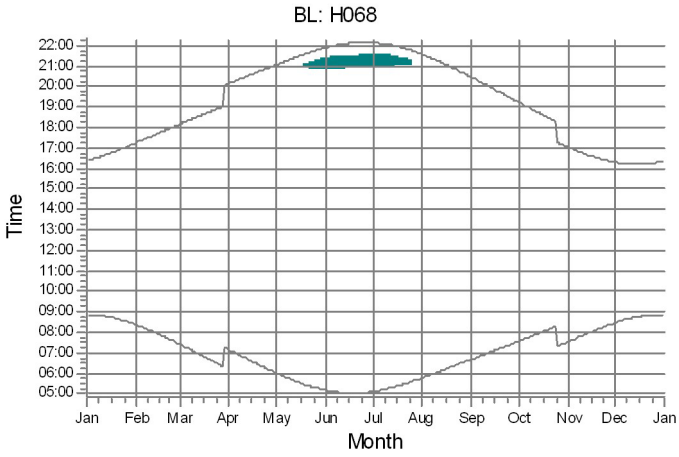
BJ: H066



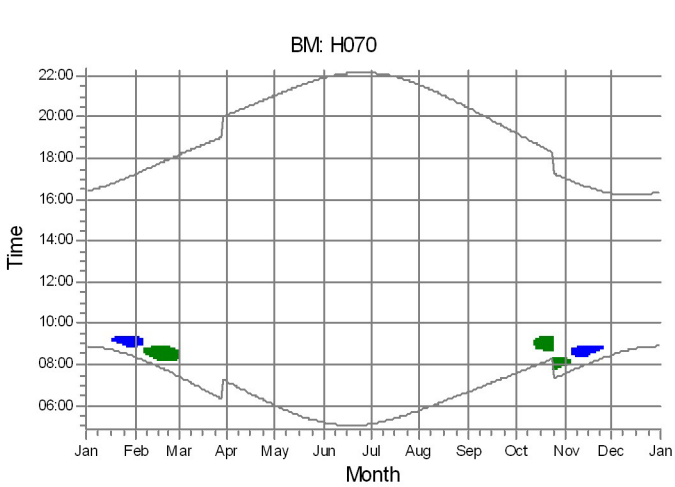
BK: H067



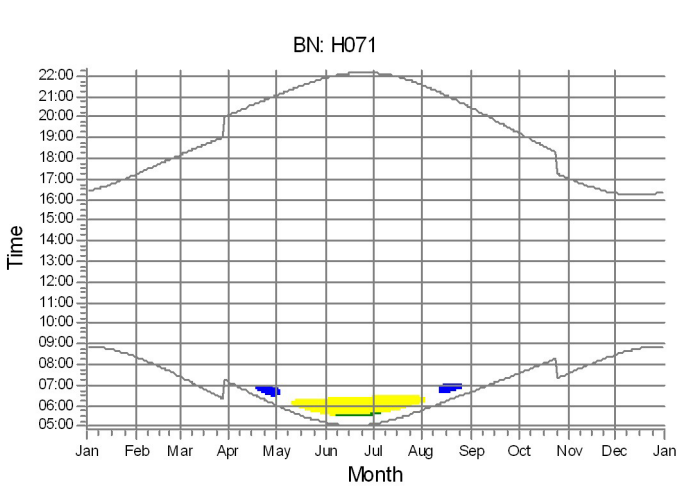
BL: H068



BM: H070



BN: H071



WTGs

	1: T01		3: T03		5: T05
	2: T02		4: T04		6: T06

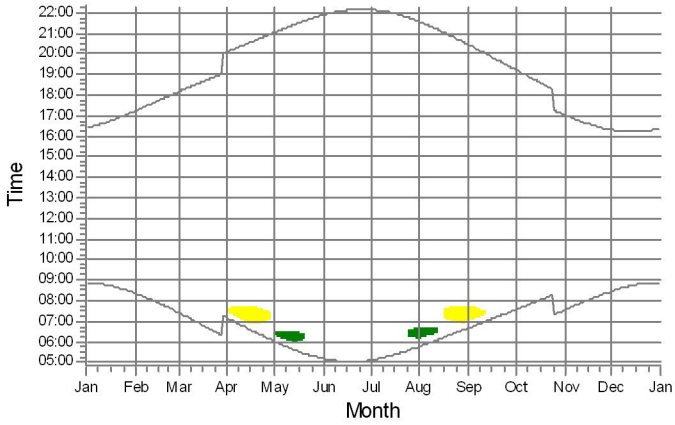
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

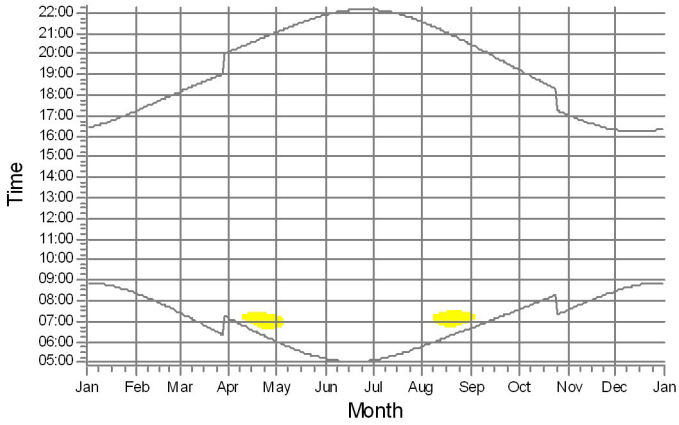
SHADOW - Calendar, graphical

Calculation: Worst Case Analysis

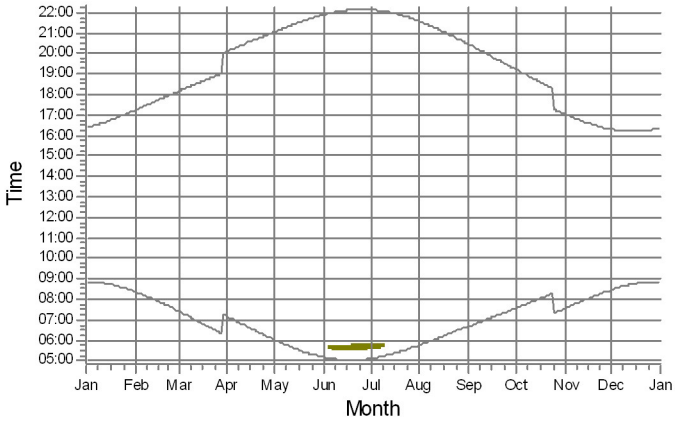
BO: H072



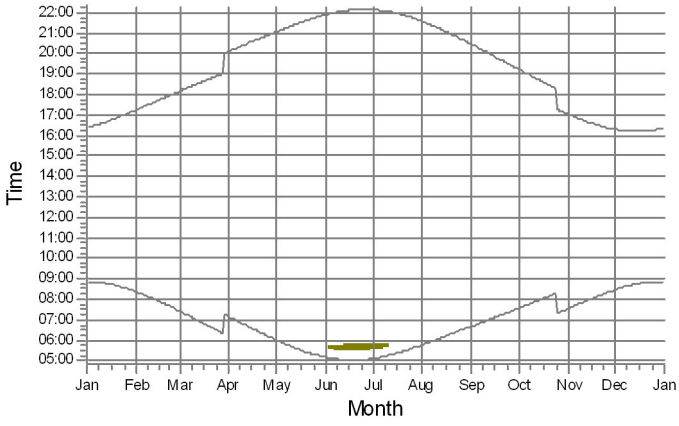
BP: H073



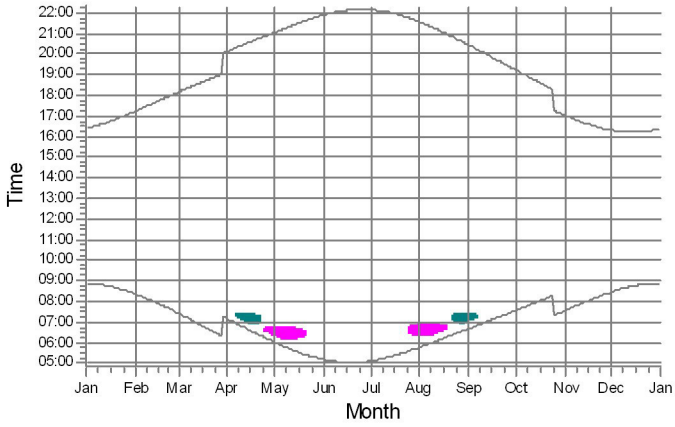
BQ: H074



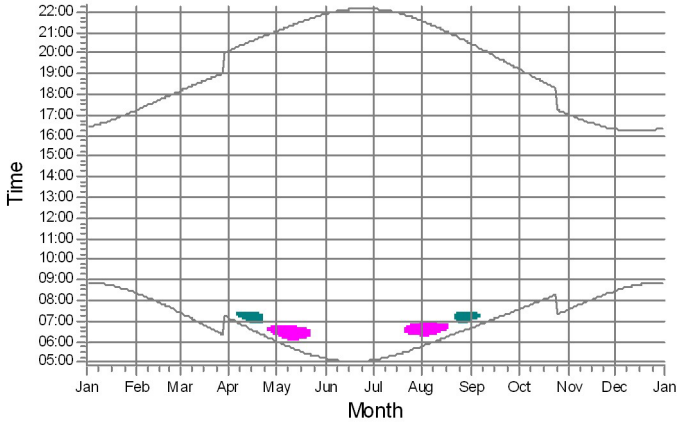
BR: H075



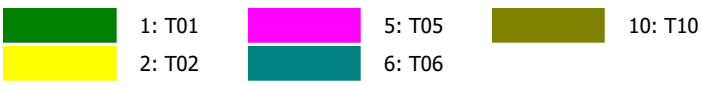
BS: H076



BT: H077



WTGs



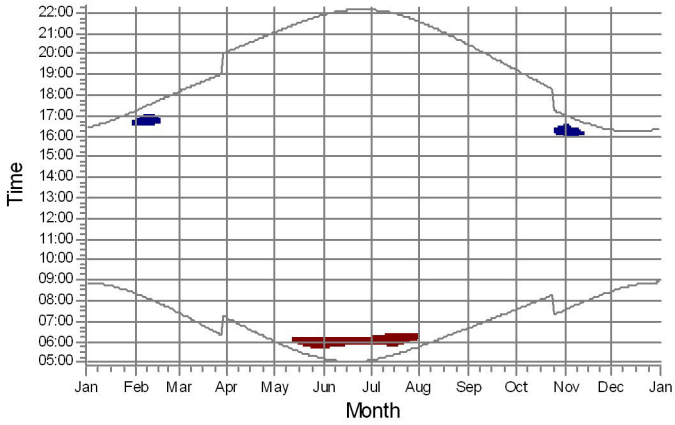
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

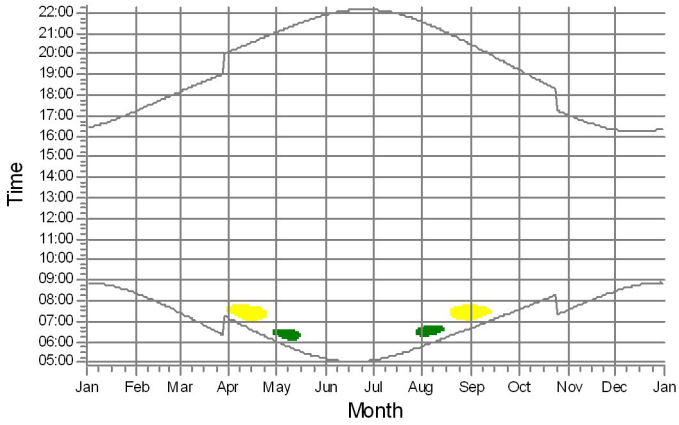
SHADOW - Calendar, graphical

Calculation: Worst Case Analysis

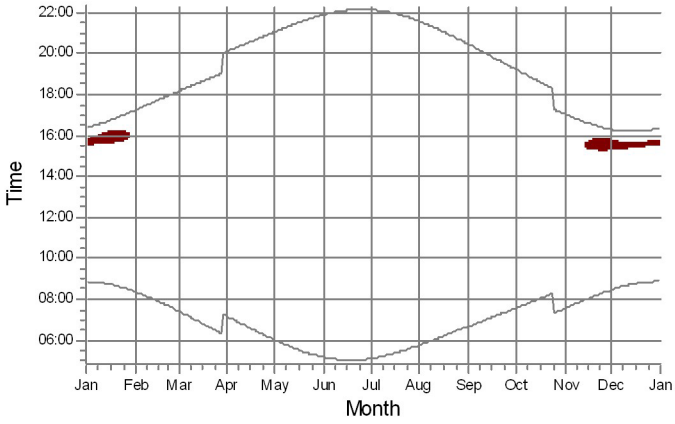
BU: H078



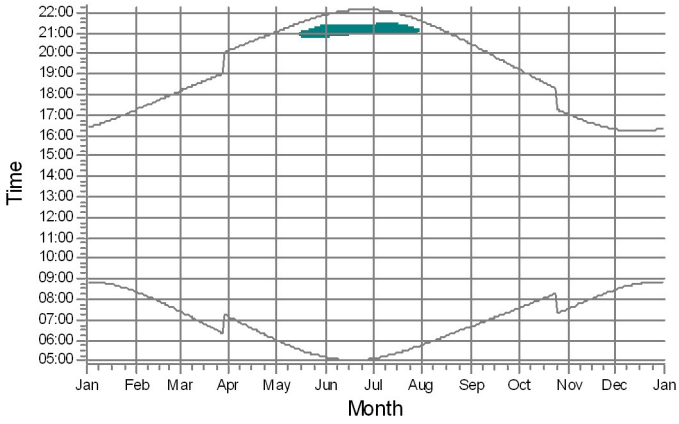
BV: H079



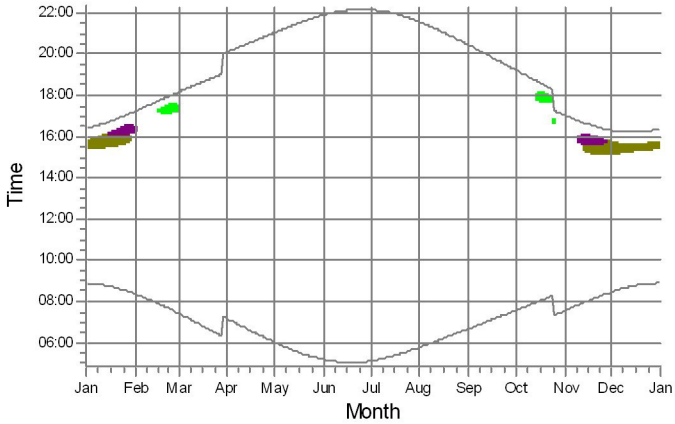
BW: H081



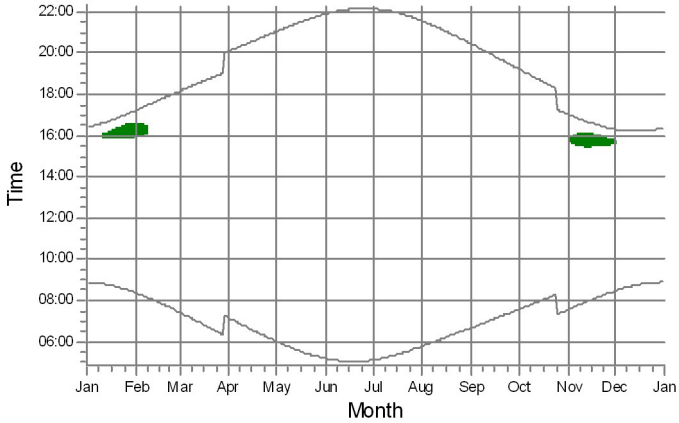
BX: H083



BY: H084



BZ: H085



WTGs

	1: T01		6: T06		8: T08		10: T10
	2: T02		7: T07		9: T09		11: T11

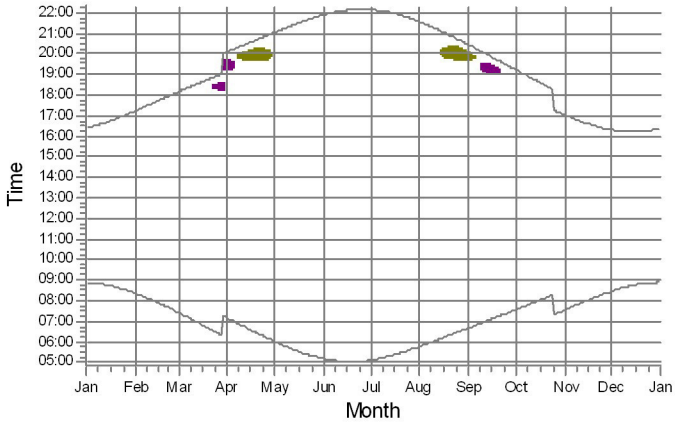
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

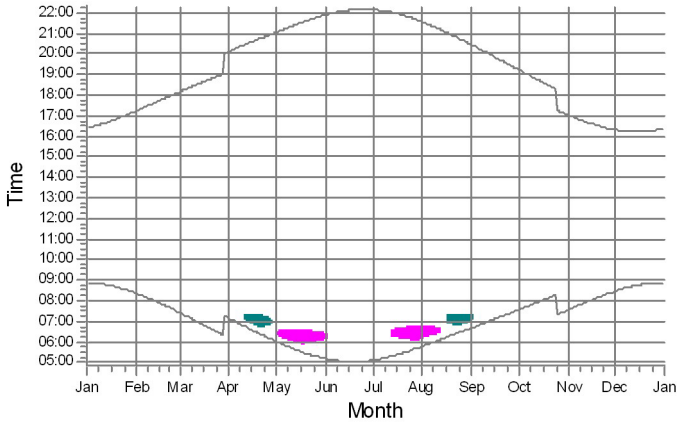
SHADOW - Calendar, graphical

Calculation: Worst Case Analysis

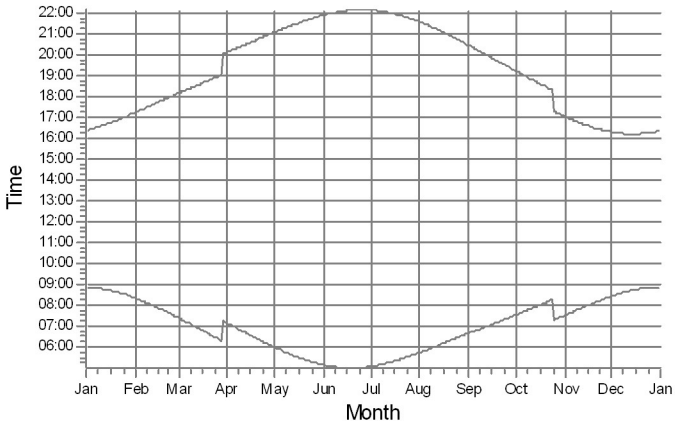
CA: H086



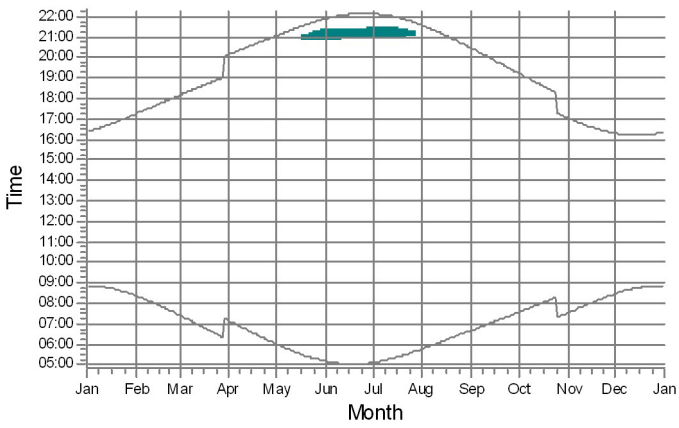
CB: H087



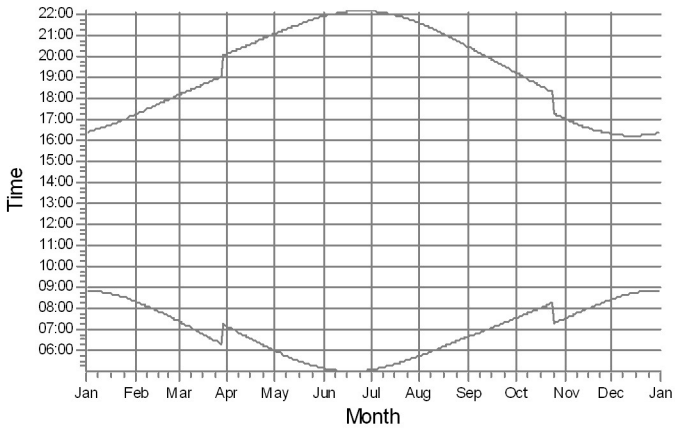
CC: H089



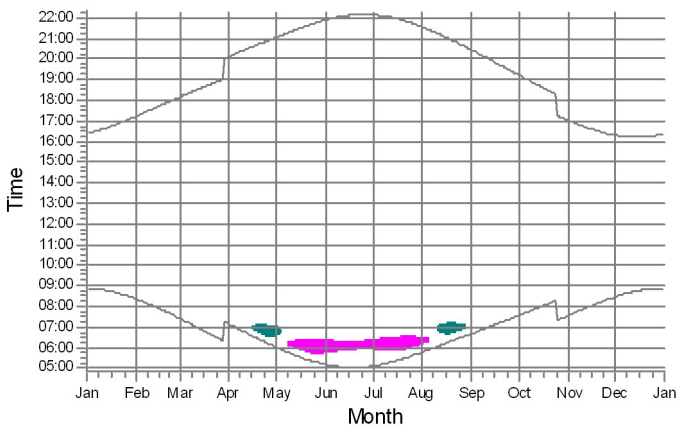
CD: H090



CE: H091



CF: H093



WTGs

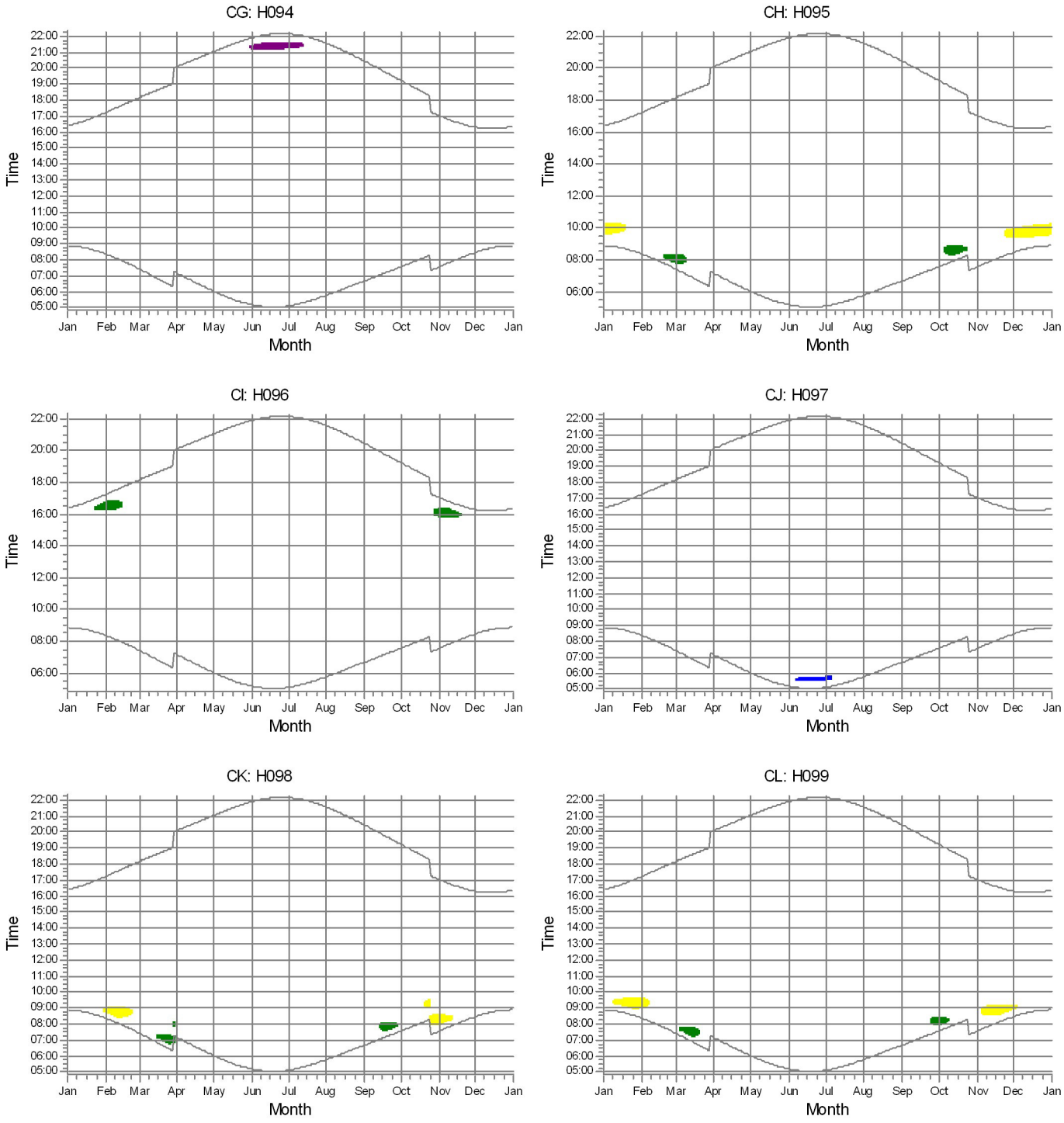
5: T05 6: T06 10: T10 11: T11

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar, graphical

Calculation: Worst Case Analysis



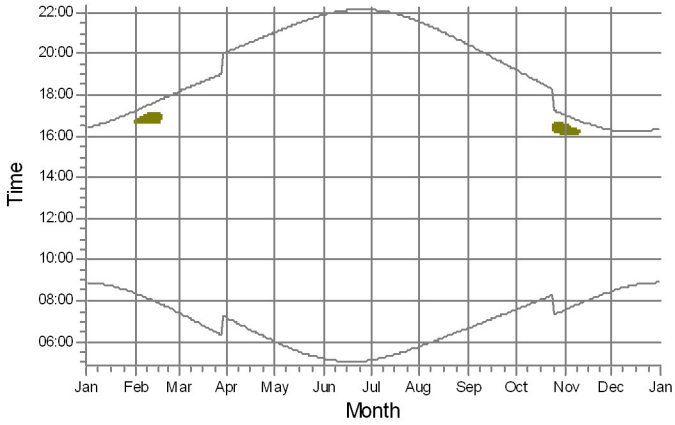
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

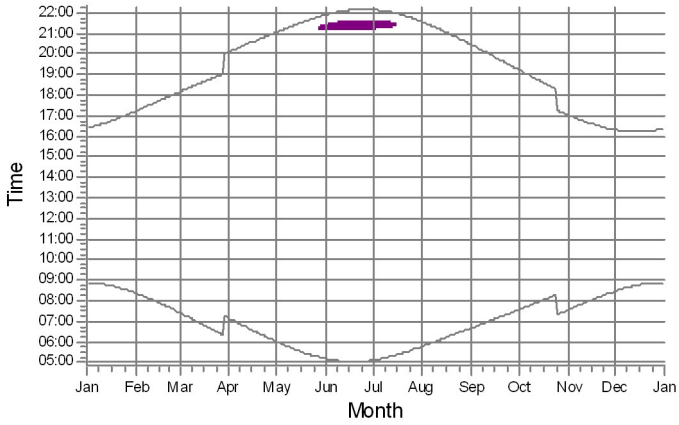
SHADOW - Calendar, graphical

Calculation: Worst Case Analysis

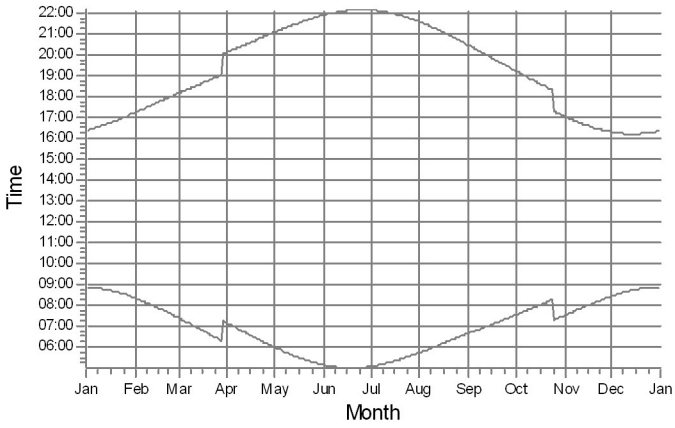
CM: H100



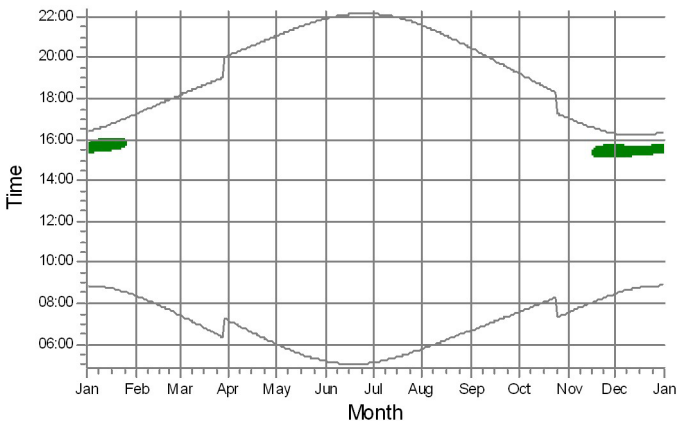
CN: H101



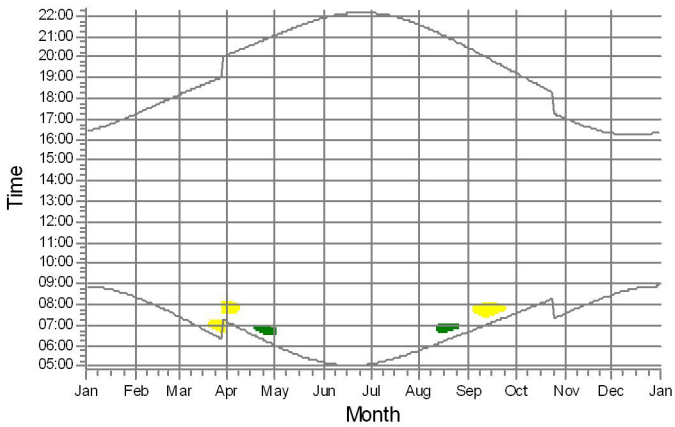
CO: H102



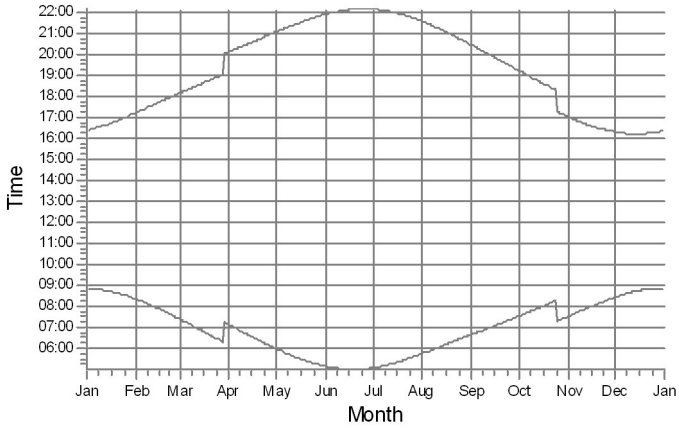
CP: H103



CQ: H104



CR: H105



WTGs

1: T01 2: T02 10: T10 11: T11

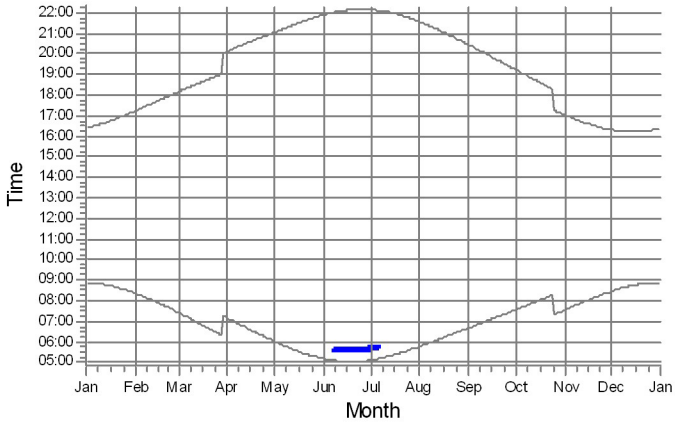
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

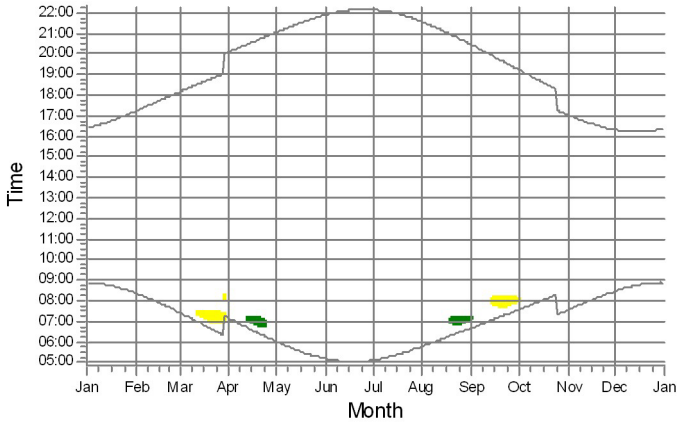
SHADOW - Calendar, graphical

Calculation: Worst Case Analysis

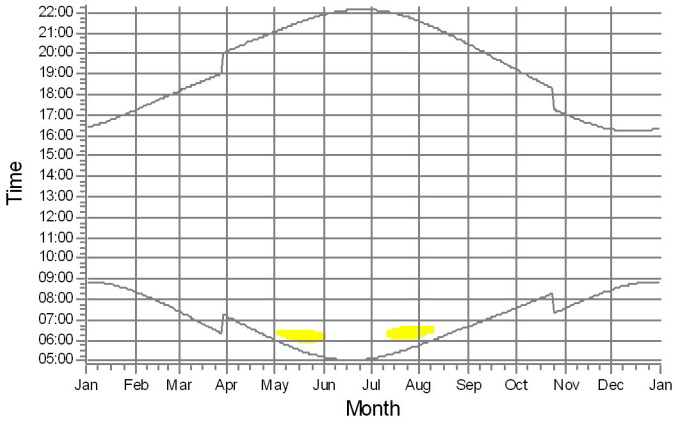
CS: H106



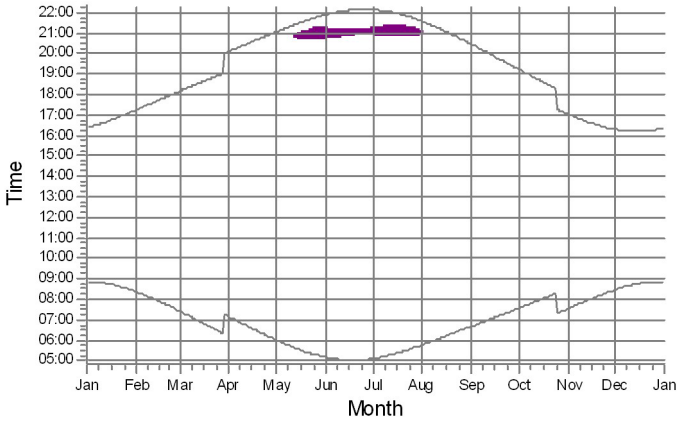
CT: H107



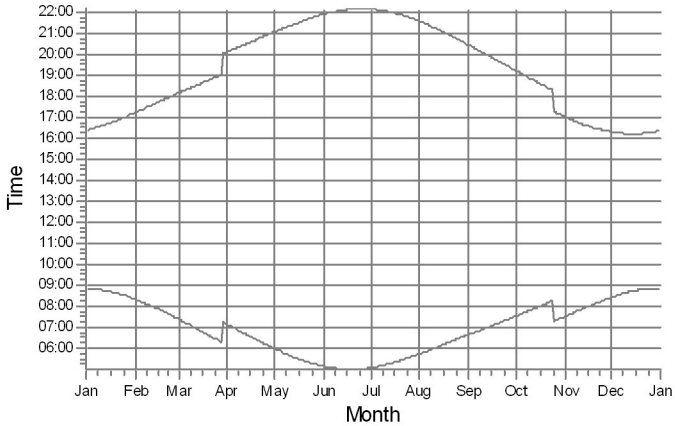
CU: H108



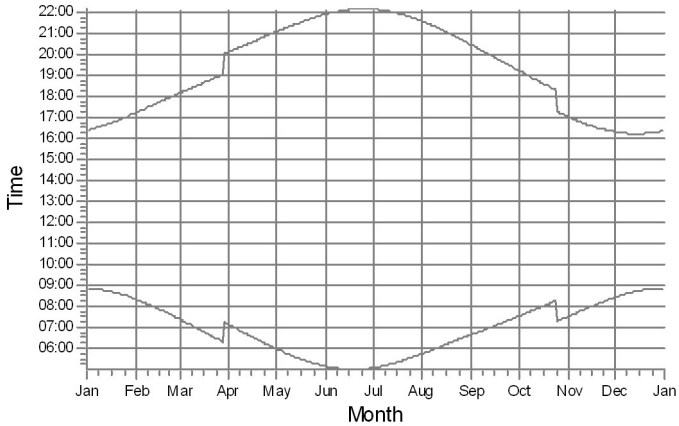
CV: H110



CW: H111



CX: H112



WTGs

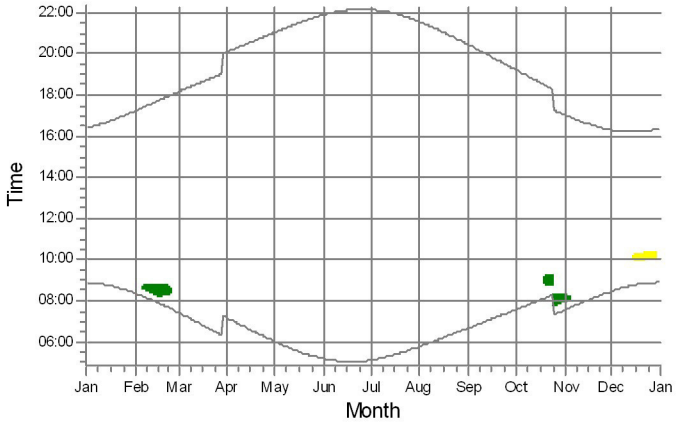
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

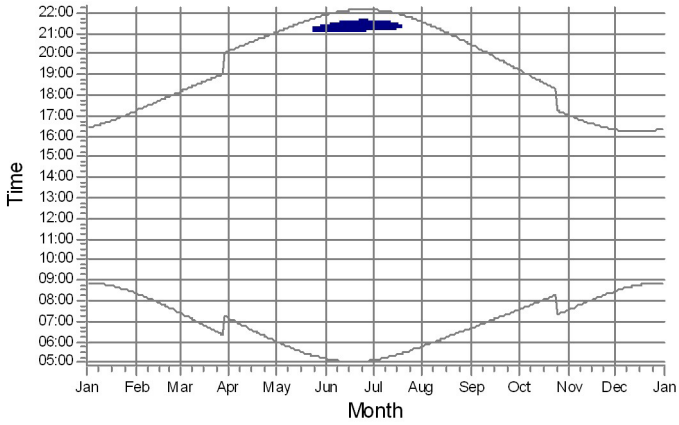
SHADOW - Calendar, graphical

Calculation: Worst Case Analysis

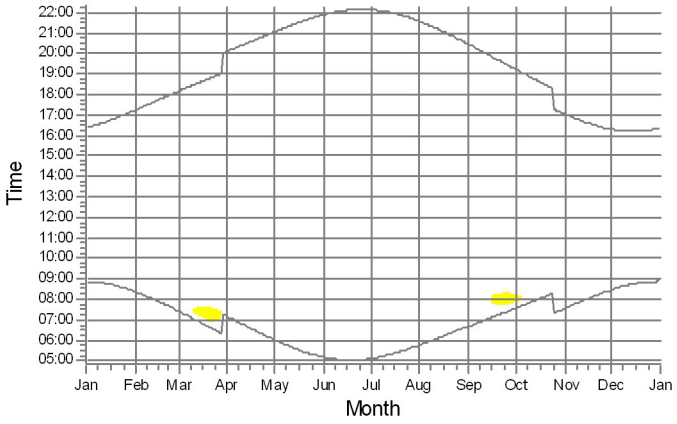
CY: H113



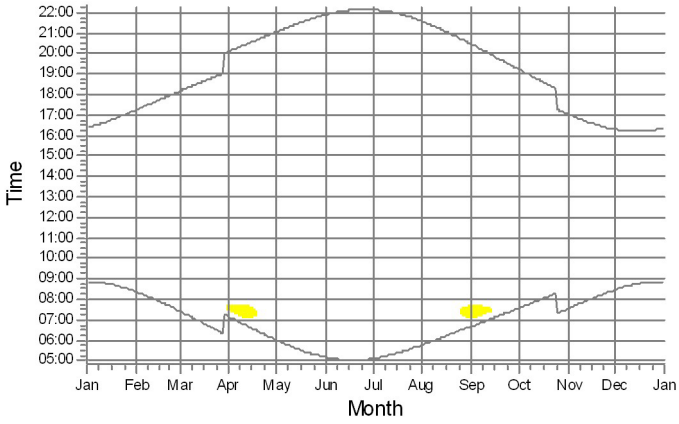
CZ: H114



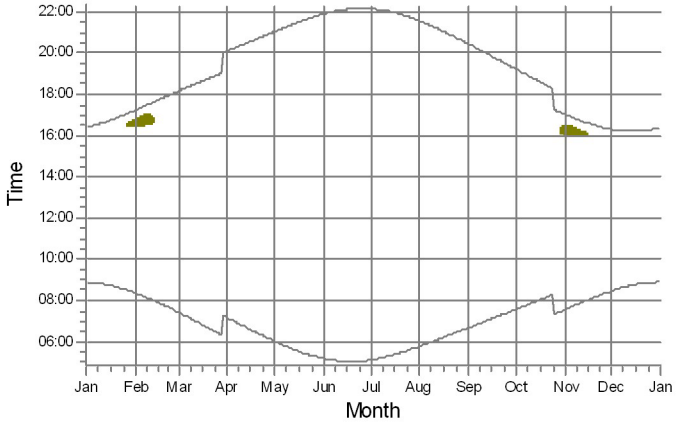
DA: H115



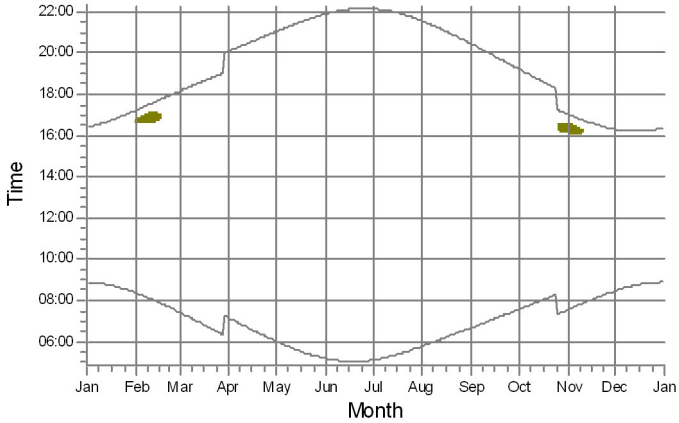
DB: H116



DC: H117



DD: H118



WTGs

1: T01 2: T02 7: T07 10: T10

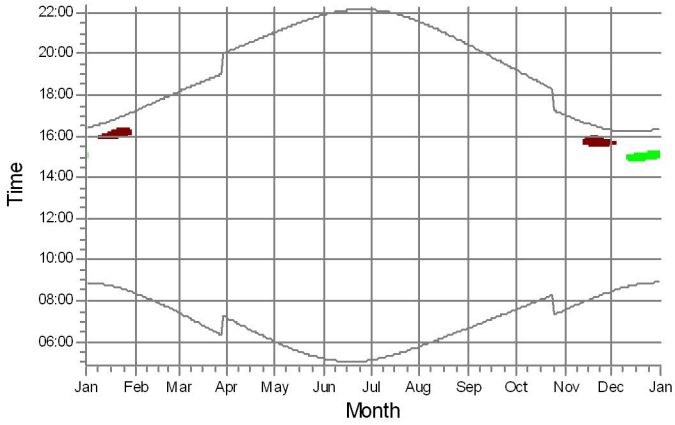
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

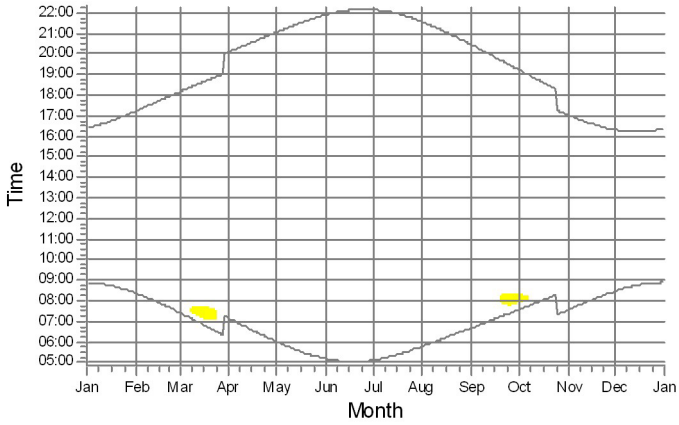
SHADOW - Calendar, graphical

Calculation: Worst Case Analysis

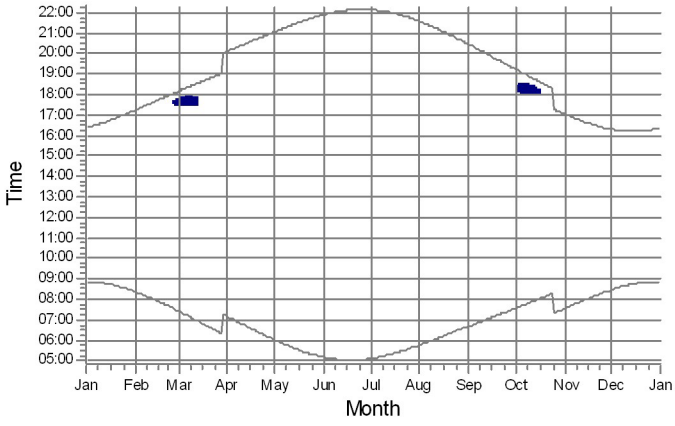
DE: H119



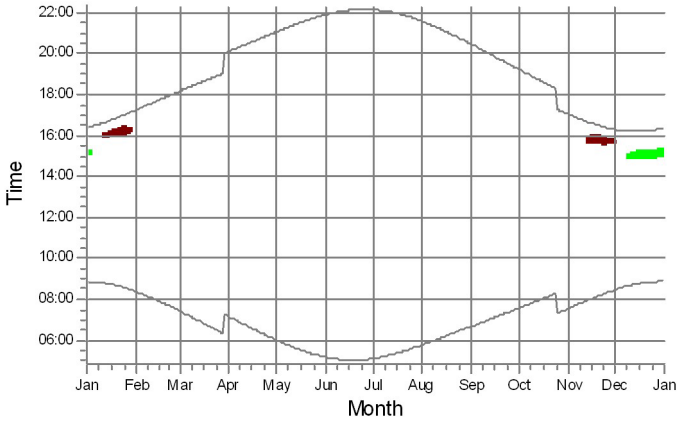
DF: H120



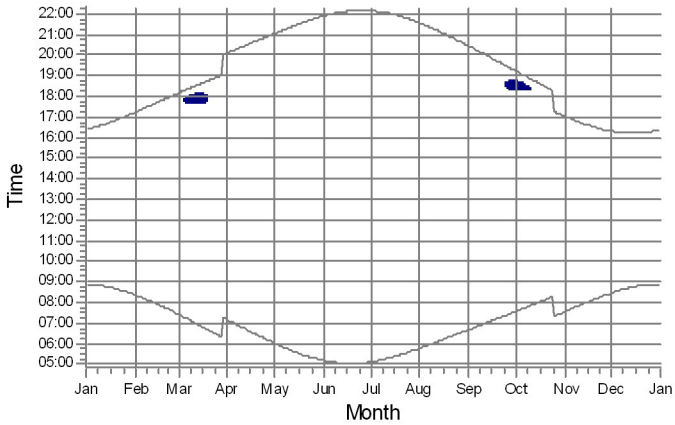
DG: H123



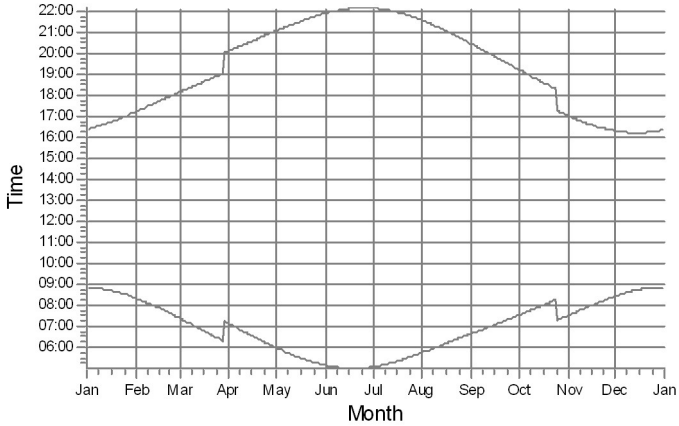
DH: H124



DI: H125



DJ: H126



WTGs

2: T02 7: T07 8: T08 9: T09

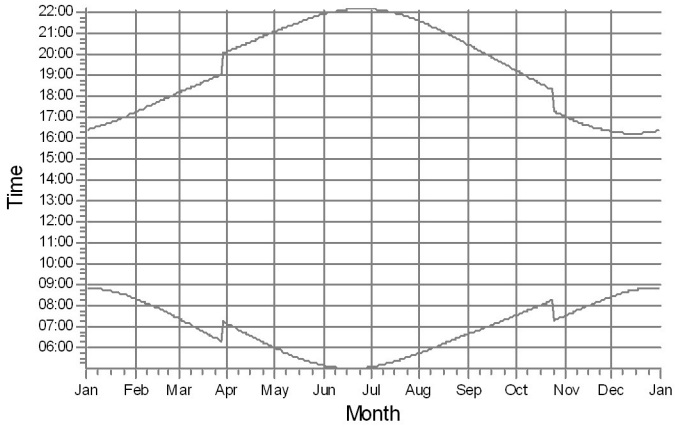
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

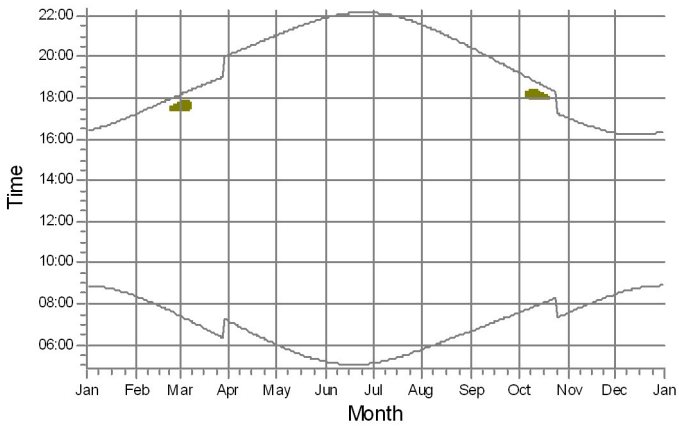
SHADOW - Calendar, graphical

Calculation: Worst Case Analysis

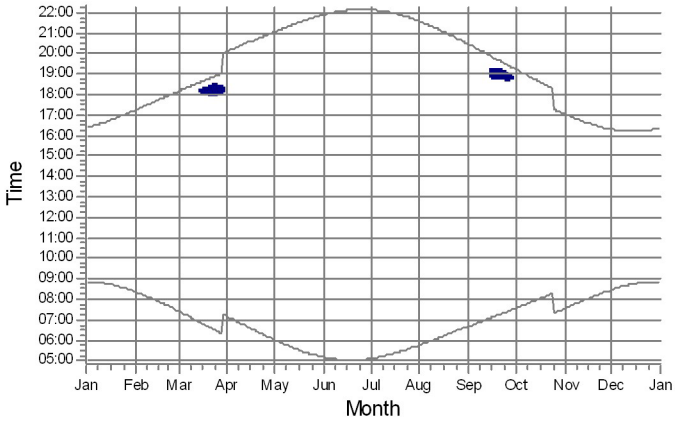
DK: H128



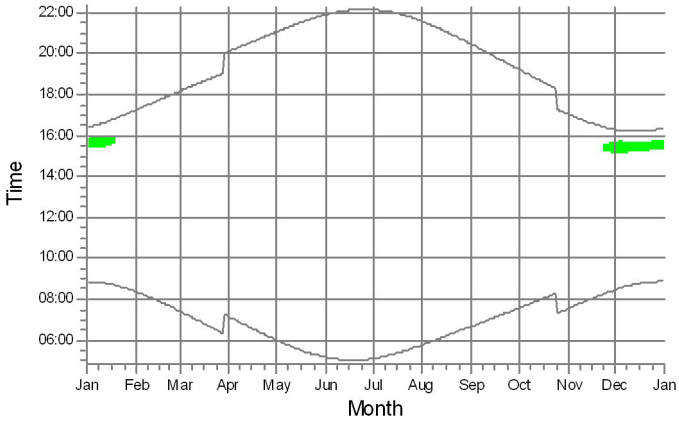
DL: H129



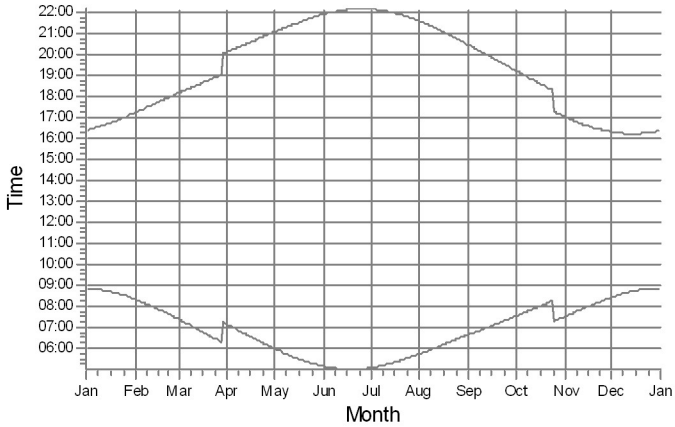
DM: H130



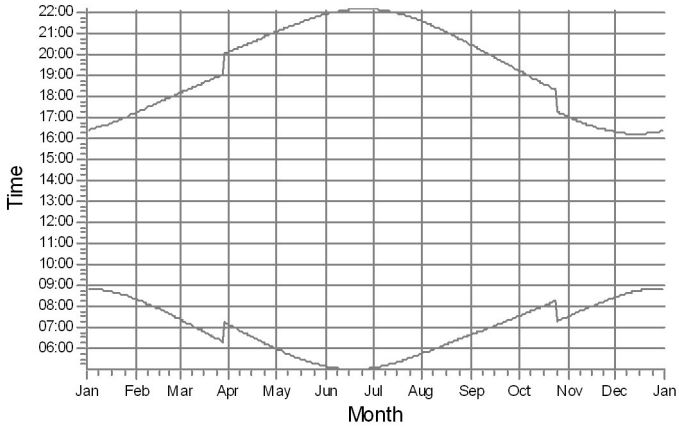
DN: H131



DO: H132



DP: H133



WTGs

7: T07 9: T09 10: T10

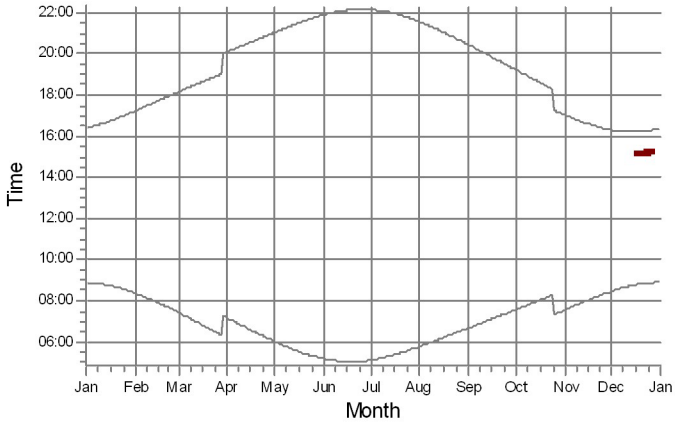
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

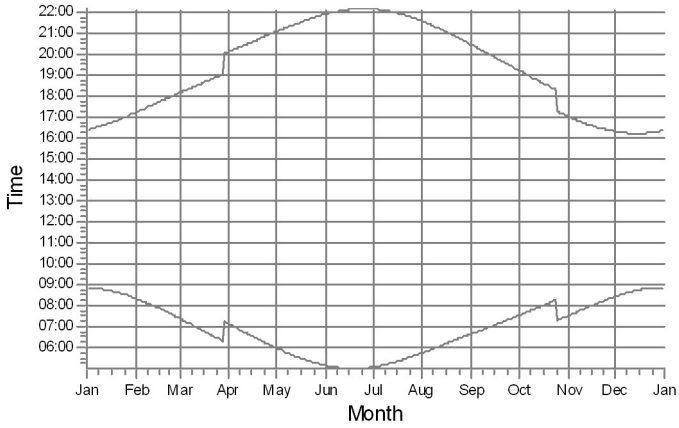
SHADOW - Calendar, graphical

Calculation: Worst Case Analysis

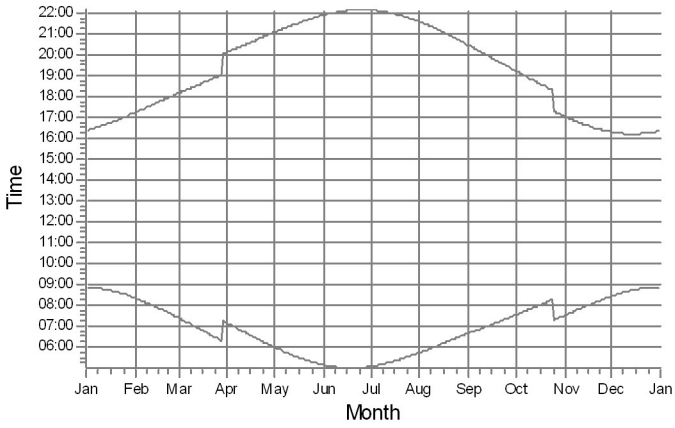
DQ: H135



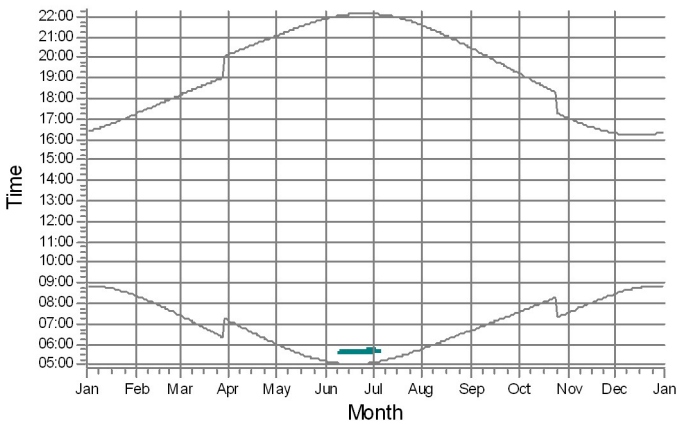
DR: H136



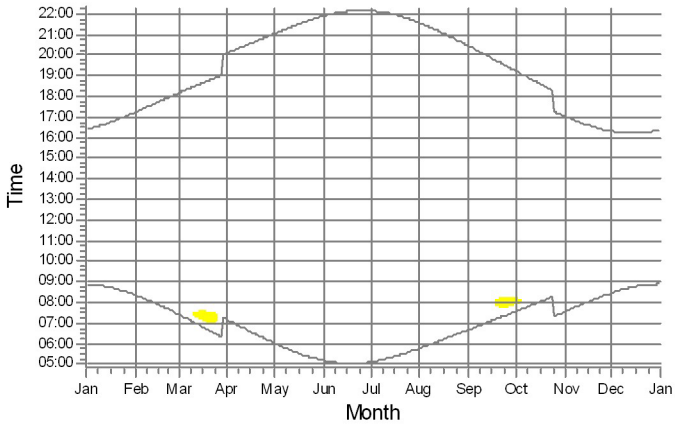
DS: H137



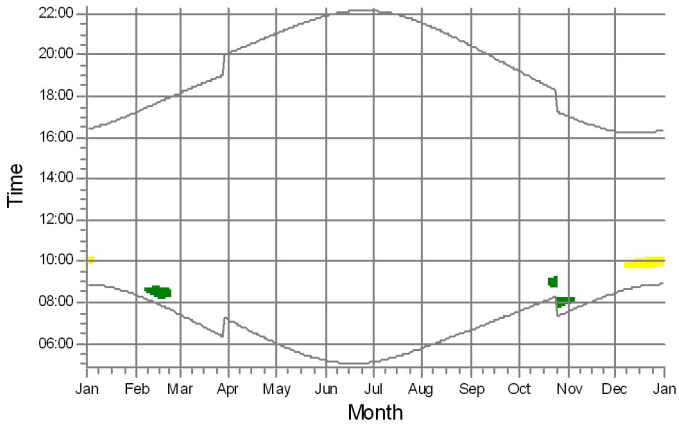
DT: H138



DU: H139



DV: H140



WTGs

1: T01 2: T02 6: T06 8: T08

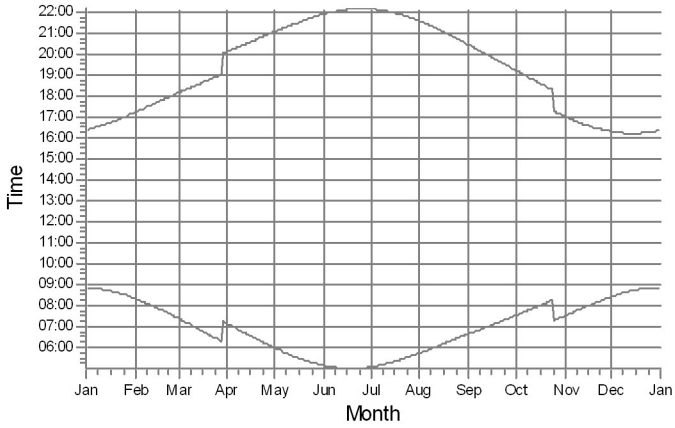
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

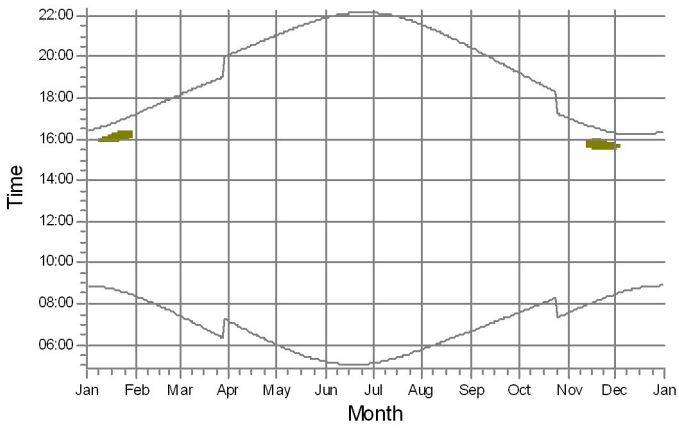
SHADOW - Calendar, graphical

Calculation: Worst Case Analysis

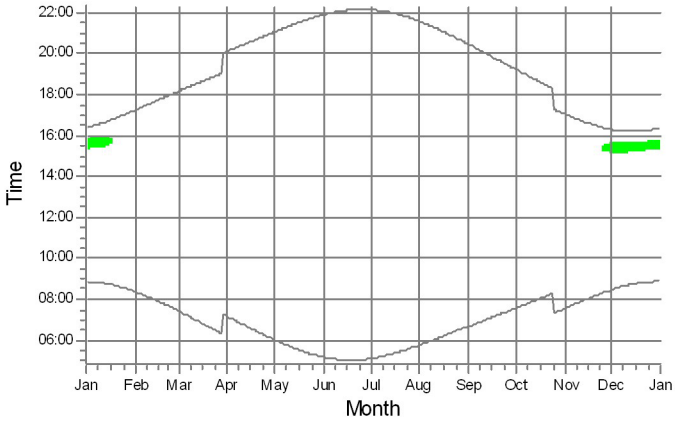
DW: H141



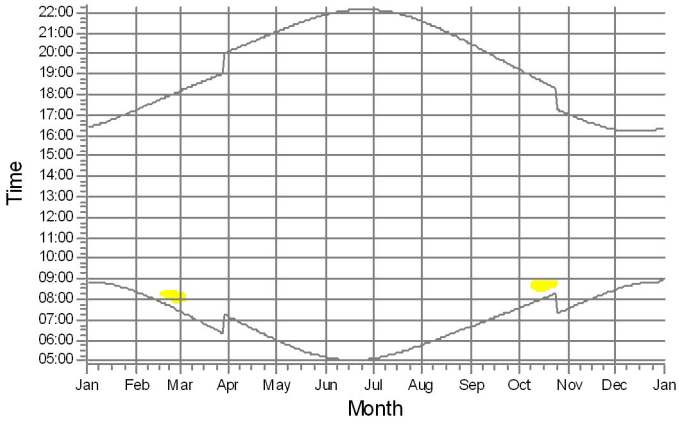
DX: H142



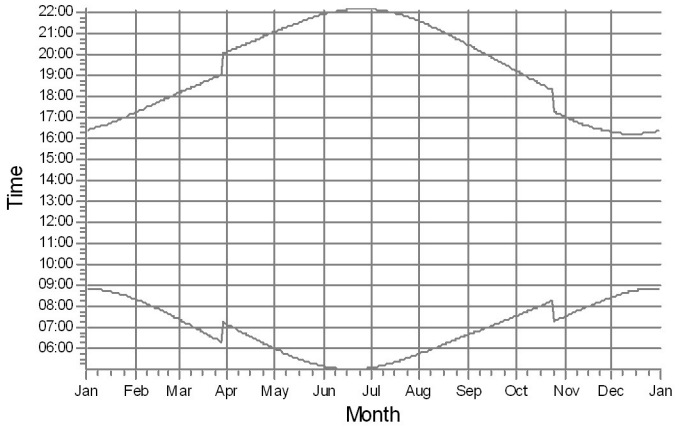
DY: H143



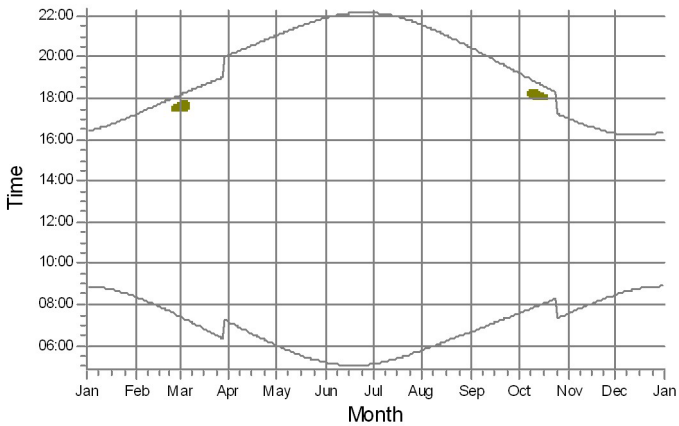
DZ: H144



EA: H145



EB: H146



WTGs

2: T02 9: T09 10: T10

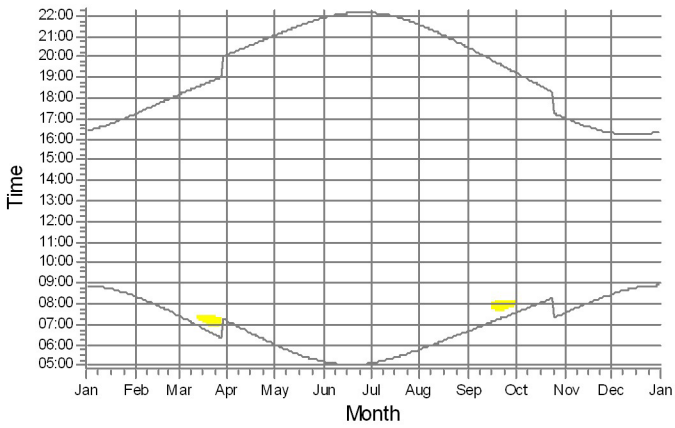
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

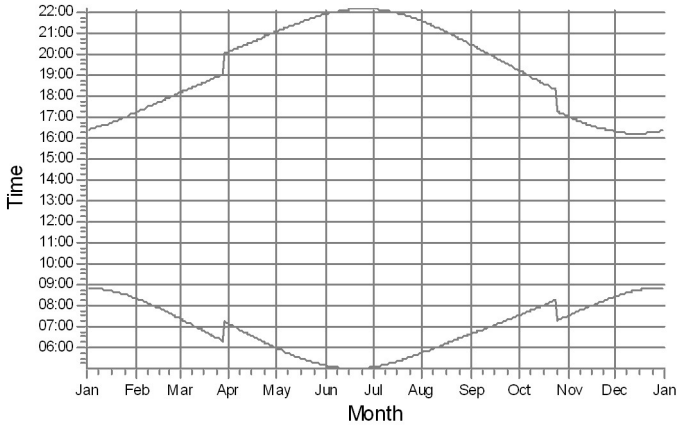
SHADOW - Calendar, graphical

Calculation: Worst Case Analysis

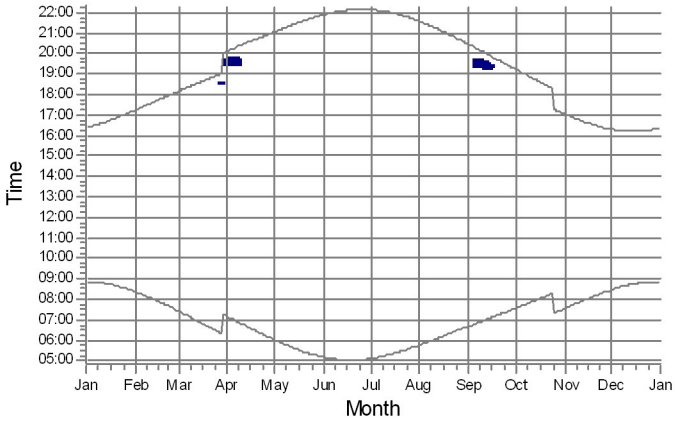
EC: H147



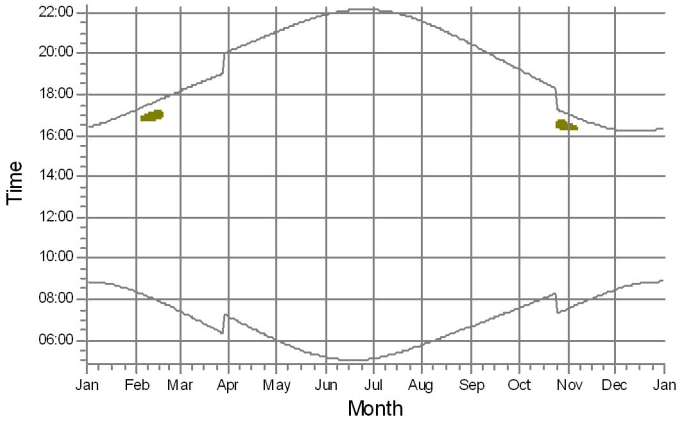
ED: H148



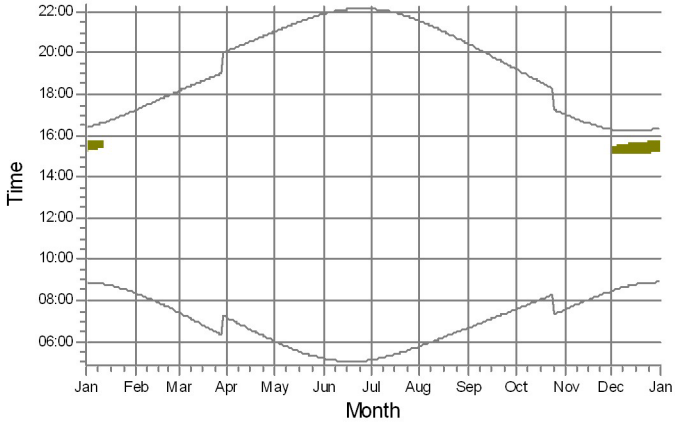
EE: H149



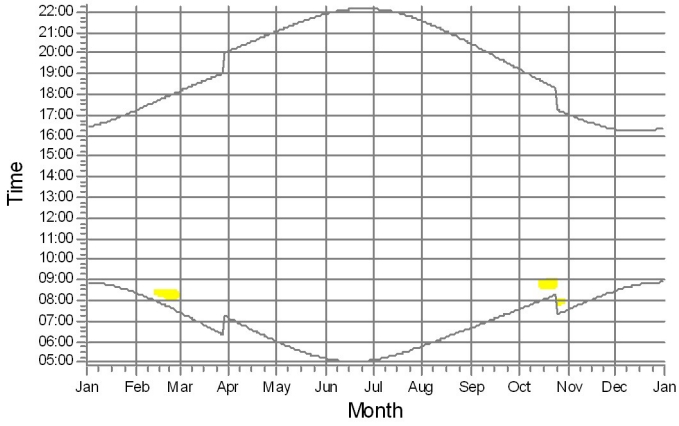
EF: H151



EG: H152



EH: H153



WTGs

2: T02 7: T07 10: T10

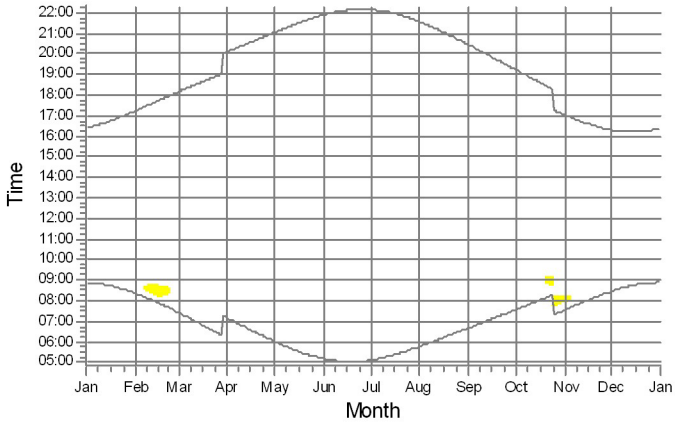
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

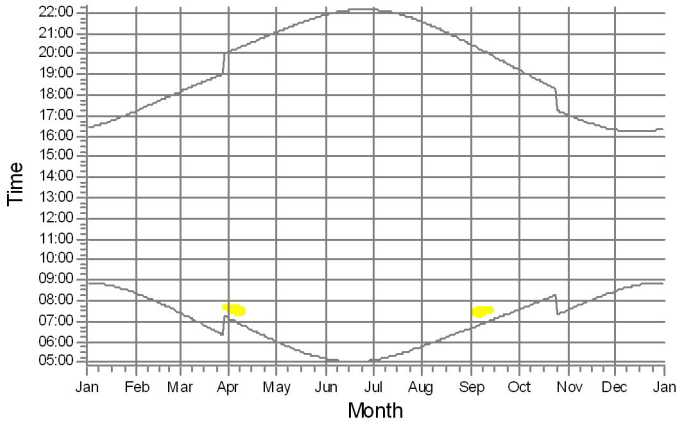
SHADOW - Calendar, graphical

Calculation: Worst Case Analysis

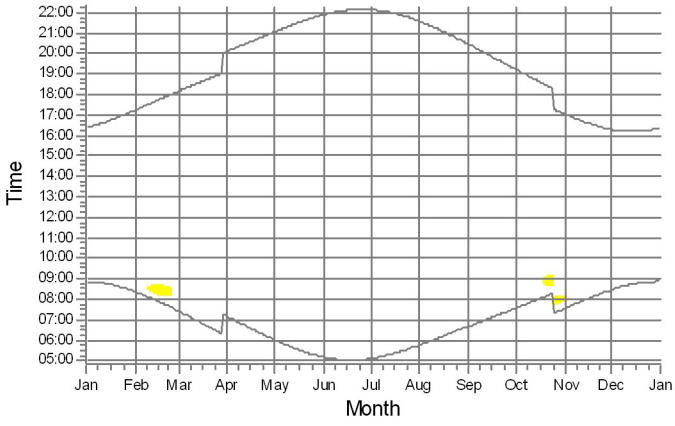
EI: H156



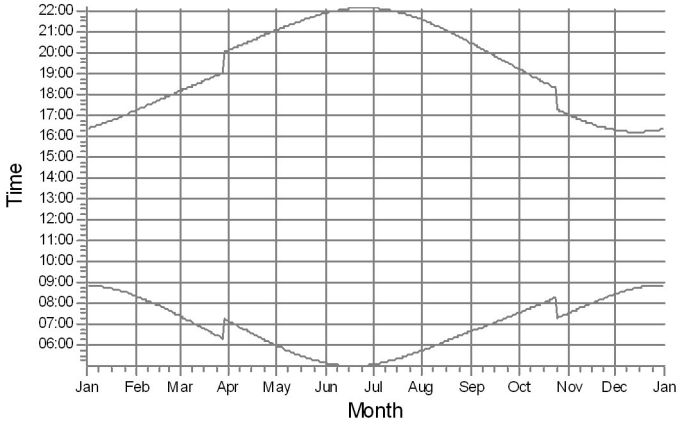
EJ: H157



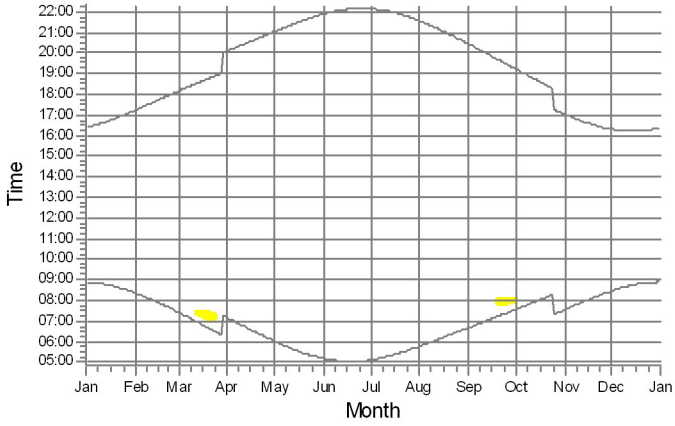
EK: H158



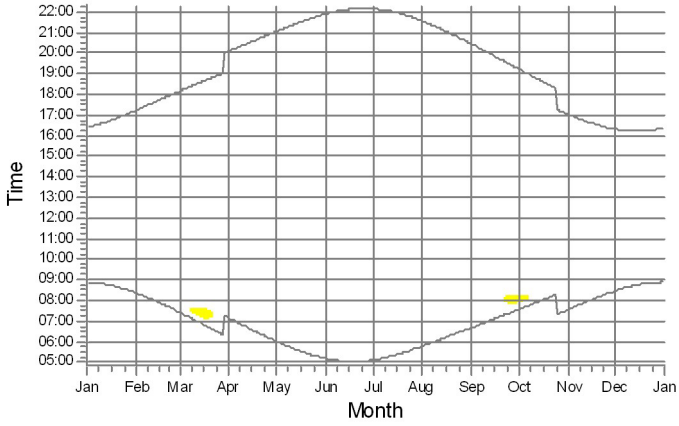
EL: H159



EM: H161



EN: H165



WTGs

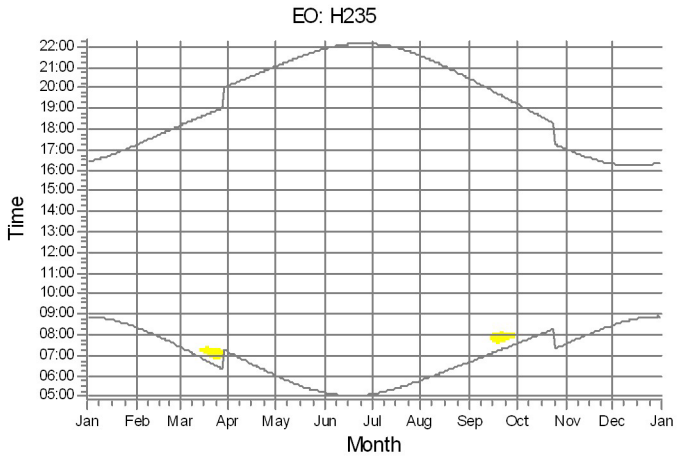
2: T02

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar, graphical

Calculation: Worst Case Analysis



WTGs

2: T02

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar per WTG

Calculation: Worst Case Analysis **WTG:** 1 - T01

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June
1	08:52 15:25-15:45/20 16:22	08:22 16:02-16:42/40 17:14	07:24 07:49-08:17/28 18:10	07:09 20:08	06:00 06:26-06:31/5 21:04	05:10 05:41-06:03/22 21:54
2	08:52 15:25-15:45/20 16:24	08:20 16:03-16:44/41 17:16	07:22 07:47-08:17/30 18:12	07:07 20:10	05:58 06:24-06:32/8 21:06	05:09 05:40-06:03/23 21:55
3	08:52 15:26-15:47/21 16:25	08:19 16:04-16:46/42 17:18	07:20 07:44-08:17/33 18:14	07:04 20:12	05:56 06:22-06:32/10 21:07	05:09 05:40-06:03/23 21:56
4	08:52 15:26-15:48/22 16:26	08:17 16:05-16:48/43 17:20	07:17 07:42-08:18/36 18:16	07:02 20:14	05:54 06:20-06:32/12 21:09	05:08 05:39-06:03/24 21:57
5	08:51 15:27-15:50/23 16:27	08:15 16:07-16:50/43 17:22	07:15 07:39-08:18/39 18:17	06:59 20:16	05:52 06:18-06:31/13 21:11	05:07 05:38-06:03/25 21:58
6	08:51 15:27-15:51/24 16:29	08:13 08:40-08:41/1 17:24 16:09-16:49/40	07:13 07:37-08:18/41 18:19	06:57 20:18	05:50 06:16-06:31/15 21:13	05:06 05:38-06:03/25 21:59
7	08:51 15:28-15:53/25 16:30	08:11 08:38-08:42/4 17:26 16:11-16:49/38	07:10 07:35-08:19/44 18:21	06:55 20:19	05:48 06:15-06:31/16 21:15	05:06 05:37-06:03/26 22:00
8	08:50 15:28-15:54/26 16:31	08:09 08:36-08:43/7 17:28 16:22-16:48/26	07:08 07:32-08:18/46 18:23	06:52 19:53-19:54/1 20:21	05:46 06:13-06:31/18 21:16	05:05 05:37-06:03/26 22:01
9	08:49 15:28-15:56/28 16:33	08:07 08:34-08:44/10 17:30 16:23-16:48/25	07:05 07:30-08:19/49 18:25	06:50 19:51-19:56/5 20:23	05:44 06:11-06:30/19 21:18	05:04 05:36-06:02/26 22:02
10	08:49 15:29-15:57/28 16:34	08:06 08:32-08:45/13 17:32 16:24-16:47/23	07:03 07:27-08:18/51 18:27	06:47 19:49-19:57/8 20:25	05:42 06:09-06:29/20 21:20	05:04 05:36-06:03/27 22:03
11	08:48 15:29-15:59/30 16:36	08:04 08:30-08:46/16 17:34 16:26-16:46/20	07:01 07:25-08:18/53 18:29	06:45 19:48-19:59/11 20:27	05:40 06:08-06:29/21 21:22	05:03 05:36-06:03/27 22:04
12	08:47 15:30-16:01/31 16:37	08:02 08:28-08:47/19 17:36 16:28-16:44/16	06:58 07:22-08:17/55 18:31	06:43 07:07-07:08/1 20:29 19:47-20:01/14	05:39 06:06-06:27/21 21:23	05:03 05:35-06:02/27 22:05
13	08:47 15:30-16:02/32 16:39	08:00 08:26-08:47/21 17:38 16:31-16:42/11	06:56 07:20-08:16/56 18:33	06:40 07:04-07:08/4 20:31 19:46-20:02/16	05:37 06:05-06:26/21 21:25	05:03 05:35-06:02/27 22:05
14	08:46 15:31-16:04/33 16:41	07:57 08:24-08:48/24 17:40	06:53 07:17-08:15/58 18:35	06:38 07:02-07:09/7 20:32 19:45-20:04/19	05:35 06:06-06:25/19 21:27	05:02 05:35-06:02/27 22:06
15	08:45 15:32-16:06/34 16:42	07:55 08:21-08:48/27 17:42	06:51 07:18-08:15/57 18:37	06:36 07:00-07:09/9 20:34 19:45-20:06/21	05:33 06:07-06:23/16 21:28	05:02 05:35-06:03/28 22:07
16	08:44 15:33-16:08/35 16:44	07:53 08:19-08:48/29 17:44	06:49 07:19-08:13/54 18:38 07:12-07:13/1	06:33 06:58-07:09/11 20:36 19:44-20:07/23	05:32 06:09-06:22/13 21:30	05:02 05:35-06:03/28 22:07
17	08:43 15:34-16:11/37 16:46	07:51 08:17-08:48/31 17:46	06:46 07:20-08:12/52 18:40 07:10-07:14/4	06:31 06:55-07:08/13 20:38 19:44-20:09/25	05:30 06:10-06:20/10 21:32 05:58-06:00/2	05:02 05:35-05:43/8 22:08 05:44-06:03/19
18	08:42 15:34-16:12/38 16:47	07:49 08:15-08:49/34 17:48	06:44 07:22-08:10/48 18:42 07:08-07:16/8	06:29 06:53-07:08/15 20:40 19:44-20:11/27	05:28 06:13-06:18/5 21:33 05:57-06:01/4	05:02 05:35-06:03/28 22:08
19	08:41 15:35-16:14/39 16:49	07:47 08:15-08:49/34 17:50	06:41 07:25-07:32/7 07:36-08:09/33 18:44 07:05-07:15/10	06:26 06:51-07:07/16 20:42 19:44-20:13/29	05:27 05:56-06:02/6 21:35	05:02 05:35-06:03/28 22:09
20	08:39 15:37-16:17/40 16:51	07:45 08:10-08:47/37 17:52	06:39 07:03-07:16/13 18:46 07:38-08:07/29	06:24 06:49-07:06/17 20:43 19:44-20:13/29	05:25 05:54-06:02/8 21:37	05:02 05:35-06:03/28 22:09
21	08:38 15:37-16:18/41 16:53	07:43 08:08-08:47/39 17:54	06:36 07:00-07:15/15 18:48 07:39-08:04/25	06:22 06:47-07:05/18 20:45 19:44-20:11/27	05:24 05:53-06:02/9 21:38	05:02 05:35-06:03/28 22:09
22	08:37 15:39-15:58/19 16:55 15:59-16:21/22	07:40 08:06-08:47/41 17:56	06:34 06:58-07:16/18 18:50 07:41-08:02/21	06:19 06:44-07:03/19 20:47 19:45-20:11/26	05:22 05:52-06:03/11 21:40	05:02 05:35-06:03/28 22:09
23	08:36 15:40-15:56/16 16:56 15:58-16:22/24	07:38 08:03-08:45/42 17:58	06:31 06:55-07:15/20 18:52 07:44-07:57/13	06:17 06:42-07:01/19 20:49 19:46-20:10/24	05:21 05:50-06:02/12 21:41	05:03 05:36-06:04/28 22:09
24	08:34 15:43-15:55/12 16:58 15:59-16:25/26	07:36 08:01-08:45/44 18:00	06:29 06:53-07:14/21 18:53	06:15 06:40-06:53/13 20:51 19:47-20:08/21	05:20 05:49-06:03/14 21:43	05:03 05:36-06:04/28 22:10
25	08:33 15:47-15:51/4 17:00 15:59-16:26/27	07:34 07:59-08:44/45 18:02	06:26 06:50-07:13/23 18:55	06:13 06:38-06:53/15 20:53 19:48-20:07/19	05:18 05:48-06:03/15 21:44	05:03 05:36-06:04/28 22:10
26	08:31 16:00-16:29/29 17:02	07:31 07:56-08:17/21 18:04 08:19-08:41/22	06:24 06:51-07:12/21 18:57	06:11 06:36-06:52/16 20:55 19:50-20:05/15	05:17 05:47-06:03/16 21:46	05:04 05:37-05:45/8 22:10 05:46-06:05/19
27	08:30 16:00-16:31/31 17:04	07:29 07:54-08:18/24 18:06 08:21-08:39/18	06:21 06:52-07:10/18 18:59	06:08 06:34-06:51/17 20:56 19:53-20:02/9	05:16 05:46-06:03/17 21:47	05:04 05:37-06:05/28 22:09
28	08:28 16:00-16:33/33 17:06	07:27 07:52-08:18/26 18:08 08:24-08:36/12	06:19 06:54-07:08/14 19:01	06:06 06:35-06:50/15 20:58	05:15 05:45-06:03/18 21:49	05:05 05:38-06:06/28 22:09
29	08:27 16:00-16:35/35 17:08		07:17 07:56-08:05/9 20:03	06:04 06:36-06:48/12 21:00	05:13 05:44-06:03/19 21:50	05:05 05:38-06:05/27 22:09
30	08:25 16:01-16:38/37 17:10		07:14 20:05	06:02 06:38-06:46/8 21:02 06:28-06:31/3	05:12 05:43-06:03/20 21:51	05:06 05:39-06:06/27 22:09
31	08:24 16:02-16:40/38 17:12		07:12 20:06		05:11 05:42-06:03/21 21:53	
Potential sun hours	250	273	367	420	494	510
Sum of minutes with flicker	980	1049	1153	617	454	799

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar per WTG

Calculation: Worst Case Analysis **WTG:** 1 - T01

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August		September		October		November		December	
1	05:06	05:40-06:07/27	05:46	06:17-06:38/21	06:41	19:47-19:58/11	07:34	08:01-08:56/55	07:33	08:02-08:14/12	08:28	15:11-15:41/30
	22:09		21:33		20:26		19:13		17:02	15:54-16:17/23	16:18	
2	05:07	05:40-06:07/27	05:48	06:19-06:39/20	06:43	19:48-19:56/8	07:36	08:02-08:56/54	07:34	08:04-08:13/9	08:29	15:12-15:41/29
	22:08		21:31		20:24		19:10		17:00	15:52-16:18/26	16:17	
3	05:08	05:41-06:07/26	05:50	06:20-06:40/20	06:44	19:48-19:53/5	07:38	08:04-08:56/52	07:36	08:06-08:13/7 15:45-15:50/5	08:31	15:12-15:40/28
	22:08		21:30		20:22		19:08		16:58	15:52-16:18/26	16:16	
4	05:09	05:42-06:08/26	05:51	06:22-06:41/19	06:46	19:50-19:51/1	07:40	08:06-08:55/49	07:38	08:08-08:11/3	08:32	15:12-15:39/27
	22:07		21:28		20:19		19:05		16:56	15:40-16:19/39	16:15	
5	05:10	05:43-06:09/26	05:53	06:23-06:40/17	06:48		07:41	08:08-08:55/47	07:40	15:38-16:19/41	08:34	15:13-15:38/25
	22:07		21:26		20:17		19:03		16:54		16:15	
6	05:11	05:44-06:09/25	05:55	06:25-06:41/16	06:50		07:43	08:10-08:55/45	07:42	15:37-16:20/43	08:35	15:13-15:37/24
	22:06		21:24		20:14		19:00		16:52		16:14	
7	05:12	05:45-06:10/25	05:57	06:27-06:41/14	06:51		07:45	08:12-08:55/43	07:44	15:36-16:19/43	08:36	15:14-15:37/23
	22:05		21:22		20:12		18:58		16:50		16:14	
8	05:13	05:46-06:10/24	05:58	06:28-06:41/13	06:53		07:47	08:14-08:54/40	07:46	15:35-16:17/42	08:38	15:14-15:36/22
	22:05		21:20		20:09		18:56		16:49		16:13	
9	05:14	05:47-06:11/24	06:00	06:30-06:41/11	06:55		07:49	08:16-08:53/37	07:48	15:34-16:14/40	08:39	15:14-15:35/21
	22:04		21:18		20:07		18:53		16:47		16:13	
10	05:15	05:48-06:11/23	06:02	06:31-06:40/9	06:57		07:51	08:17-08:52/35	07:50	15:33-16:12/39	08:40	15:15-15:36/21
	22:03		21:16		20:05		18:51		16:45		16:13	
11	05:16	05:49-06:11/22	06:04	06:33-06:40/7	06:59		07:53	08:19-08:51/32	07:52	15:33-16:10/37	08:41	15:16-15:35/19
	22:02		21:14		20:02		18:48		16:43		16:13	
12	05:17	05:50-06:12/22	06:05	06:35-06:40/5	07:00		07:54	08:21-08:50/29	07:54	15:32-16:09/37	08:42	15:16-15:35/19
	22:01		21:12		20:00		18:46		16:42		16:12	
13	05:18	05:51-06:12/21	06:07	06:45-06:54/9	07:02		07:56	08:23-08:50/27	07:56	15:32-16:07/35	08:43	15:16-15:34/18
	22:00		21:10	06:36-06:38/2	19:57		18:44	08:59-09:06/7	16:40		16:12	
14	05:19	05:52-06:12/20	06:09	06:43-06:56/13	07:04	07:47-07:54/7	07:58	08:25-08:50/25	07:58	15:32-16:05/33	08:44	15:17-15:34/17
	21:59		21:08		19:55		18:41	08:55-09:10/15	16:38		16:12	
15	05:21	05:53-06:12/19	06:11	06:42-06:58/16	07:06	07:43-07:57/14	08:00	08:27-08:50/23	08:00	15:33-16:04/31	08:45	15:17-15:34/17
	21:58		21:05		19:52		18:39	08:52-09:12/20	16:37		16:12	
16	05:22	05:54-06:12/18	06:12	06:41-06:58/17	07:07	07:42-07:59/17	08:02	08:29-08:49/20	08:01	15:33-16:02/29	08:46	15:18-15:34/16
	21:57		21:03	19:58-20:09/11	19:50		18:37	08:50-09:14/24	16:35		16:12	
17	05:23	05:56-06:13/17	06:14	06:43-06:59/16	07:09	07:40-08:00/20	08:04	08:31-09:15/44	08:03	15:21-15:25/4	08:47	15:19-15:35/16
	21:56		21:01	19:56-20:12/16	19:47		18:34		16:34	15:33-16:00/27	16:12	
18	05:25	05:57-06:13/16	06:16	06:45-07:00/15	07:11	07:38-08:00/22	08:06	08:33-09:16/43	08:05	15:17-15:29/12	08:48	15:19-15:35/16
	21:55		20:59	19:54-20:14/20	19:45		18:32		16:32	15:33-15:59/26	16:13	
19	05:26	05:58-06:12/14	06:18	06:46-07:03/17	07:13	07:39-08:01/22	08:07	08:35-09:17/42	08:07	15:15-15:31/16	08:48	15:19-15:35/16
	21:53		20:57	19:52-20:14/22	19:42		18:30		16:31	15:33-15:57/24	16:13	
20	05:28	06:00-06:13/13	06:19	06:48-07:07/19	07:14	07:41-08:01/20	08:09	08:37-09:17/40	08:09	15:14-15:33/19	08:49	15:20-15:35/15
	21:52		20:54	19:51-20:15/24	19:40	08:32-08:42/10	18:28		16:30	15:34-15:56/22	16:13	
21	05:29	06:01-06:13/12	06:21	06:50-07:09/19	07:16	07:43-08:01/18	08:11	08:39-09:18/39	08:11	15:13-15:54/41	08:50	15:20-15:35/15
	21:51		20:52	19:50-20:16/26	19:37	08:28-08:47/19	18:25		16:28		16:14	
22	05:31	06:02-06:12/10	06:23	06:51-07:09/18	07:18	07:44-08:00/16	08:13	08:41-09:18/37	08:12	15:13-15:53/40	08:50	15:21-15:36/15
	21:49		20:50	19:49-20:16/27	19:35	08:24-08:48/24	18:23		16:27		16:14	
23	05:32	06:04-06:13/9	06:25	06:53-07:10/17	07:20	07:46-08:00/14	08:15	08:44-09:18/34	08:14	15:12-15:51/39	08:51	15:21-15:36/15
	21:48		20:48	19:48-20:17/29	19:32	08:22-08:50/28	18:21		16:26		16:15	
24	05:34	06:05-06:12/7	06:27	06:55-07:11/16	07:22	07:48-07:59/11	08:17	08:45-09:18/33	08:16	15:12-15:50/38	08:51	15:22-15:37/15
	21:46		20:45	19:48-20:17/29	19:30	08:20-08:52/32	18:19		16:24		16:15	
25	05:35	06:07-06:12/5	06:28	06:56-07:10/14	07:23	08:06-08:18/12 08:19-08:53/34	07:19	07:47-08:18/31	08:18	15:12-15:49/37	08:52	15:22-15:38/16
	21:45		20:43	19:47-20:14/27	19:27	07:50-07:58/8	17:17		16:23		16:16	
26	05:37	06:22-06:30/8	06:30	06:58-07:11/13	07:25	08:03-08:54/51	07:21	07:49-08:17/28	08:19	15:11-15:47/36	08:52	15:22-15:38/16
	21:43	06:08-06:11/3	20:41	19:47-20:12/25	19:25	07:52-07:57/5	17:14		16:22		16:17	
27	05:38	06:19-06:31/12	06:32	07:00-07:11/11	07:27	08:01-08:54/53	07:23	07:52-08:18/26	08:21	15:11-15:45/34	08:52	15:23-15:39/16
	21:42	06:09-06:10/1	20:38	19:47-20:10/23	19:22	07:53-07:55/2	17:12		16:21		16:17	
28	05:40	06:19-06:33/14	06:34	07:02-07:11/9	07:29	07:59-08:55/56	07:25	07:54-08:18/24	08:23	15:11-15:45/34	08:52	15:23-15:40/17
	21:40		20:36	19:46-20:07/21	19:20		17:10		16:20		16:18	
29	05:41	06:17-06:34/17	06:35	07:03-07:09/6	07:31	07:58-08:56/58	07:27	07:56-08:17/21	08:24	15:11-15:44/33	08:52	15:24-15:41/17
	21:38		20:34	19:46-20:05/19	19:18		17:08	16:00-16:12/12	16:19		16:19	
30	05:43	06:16-06:36/20	06:37	07:05-07:09/4	07:32	07:59-08:56/57	07:29	07:58-08:16/18	08:26	15:12-15:43/31	08:52	15:24-15:42/18
	21:37		20:31	19:47-20:03/16	19:15		17:06	15:57-16:14/17	16:18		16:20	
31	05:45	06:16-06:37/21	06:39	07:07-07:08/1			07:31	08:00-08:15/15			08:52	15:25-15:43/18
	21:35		20:29	19:46-20:00/14			17:04	15:55-16:16/21			16:21	
Potential sun hours	512		460		382		328		259		233	
Sum of minutes with flicker		574		773		655		1204		1113		597

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar per WTG

Calculation: Worst Case Analysis **WTG:** 2 - T02

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June
1	08:52 09:39-10:11/32 16:23 10:44-11:21/37	08:22 09:06-09:33/27 17:14 08:50-08:56/6	07:24 07:57-08:16/19 18:10	07:09 07:33-08:05/32 20:08	06:00 06:26-07:11/45 21:04	05:10 05:41-06:21/40 21:54
2	08:52 09:39-10:11/32 16:24 10:44-11:20/36	08:20 09:07-09:32/25 17:16 08:48-08:57/9	07:22 07:59-08:15/16 18:12	07:07 07:31-08:04/33 20:10	05:58 06:24-07:10/46 21:06	05:10 05:40-06:21/41 21:55
3	08:52 09:40-10:12/32 16:25 10:46-11:21/35	08:19 09:09-09:31/22 17:18 08:46-08:58/12	07:20 08:00-08:12/12 18:14	07:04 07:28-08:02/34 20:12	05:56 06:22-07:09/47 21:07	05:09 05:40-06:22/42 21:56
4	08:52 09:41-10:12/31 16:26 10:46-11:20/34	08:17 09:10-09:30/20 17:20 08:44-08:59/15	07:17 18:16	07:02 07:26-08:01/35 20:14	05:54 06:20-07:09/49 21:09	05:08 05:39-06:21/42 21:57
5	08:51 09:42-10:12/30 16:27 10:47-11:21/34	08:15 09:12-09:28/16 17:22 08:42-09:00/18	07:15 18:17	06:59 07:23-07:58/35 20:16	05:52 06:18-07:09/51 21:11	05:07 05:38-06:21/43 21:58
6	08:51 09:42-10:12/30 16:29 10:48-11:20/32	08:13 09:15-09:25/10 17:24 08:40-09:00/20	07:13 18:19	06:57 07:21-07:56/35 20:18	05:50 06:16-07:08/52 21:13	05:06 05:38-06:22/44 21:59
7	08:51 09:43-10:13/30 16:30 10:50-11:20/30	08:11 08:38-09:01/23 17:26	07:10 18:21	06:55 07:19-07:43/24 20:19 07:46-07:52/6	05:48 06:15-07:09/54 21:15	05:06 05:37-06:22/45 22:00
8	08:50 09:44-10:13/29 16:31 10:51-11:20/29	08:09 08:36-09:01/25 17:28	07:08 18:23	06:52 07:16-07:42/26 20:21	05:46 06:13-07:08/55 21:16	05:05 05:37-06:22/45 22:01
9	08:49 09:22-09:24/2 10:52-11:19/27 16:33 09:44-10:12/28	08:07 08:34-09:01/27 17:30	07:06 07:30-07:34/4 18:25	06:50 07:14-07:43/29 20:23	05:44 06:11-07:08/57 21:18	05:04 05:36-06:22/46 22:02
10	08:49 09:21-09:25/4 10:53-11:18/25 16:34 09:45-10:12/27	08:06 08:32-09:02/30 17:32	07:03 07:27-07:35/8 18:27	06:47 07:11-07:42/31 20:25	05:42 06:09-07:07/58 21:20	05:04 05:36-06:23/47 22:03
11	08:48 09:20-09:26/6 10:55-11:17/22 16:36 09:46-10:12/26	08:04 08:30-09:02/32 17:34	07:01 07:25-07:36/11 18:29	06:45 07:09-07:42/33 20:27	05:40 06:08-07:07/59 21:22	05:03 05:36-06:23/47 22:04
12	08:47 09:19-09:26/7 10:57-11:16/19 16:37 09:47-10:12/25	08:02 08:28-09:02/34 17:36	06:58 07:22-07:36/14 18:31	06:43 07:07-07:42/35 20:29	05:39 06:06-07:06/60 21:23	05:03 05:35-06:23/48 22:05
13	08:47 09:18-09:27/9 10:59-11:14/15 16:39 09:48-10:11/23	08:00 08:26-09:01/35 17:38	06:56 07:20-07:36/16 18:33	06:40 07:04-07:40/36 20:31	05:37 06:04-07:05/61 21:25	05:03 05:35-06:23/48 22:05
14	08:46 09:17-09:28/11 11:03-11:11/8 16:41 09:49-10:11/22	07:57 08:24-09:01/37 17:40	06:53 07:17-07:36/19 18:35	06:38 07:02-07:40/38 20:32	05:35 06:03-07:05/62 21:27	05:02 05:35-06:23/48 22:06
15	08:45 09:16-09:29/13 16:42 09:50-10:10/20	07:55 08:21-09:00/39 17:42	06:51 07:15-07:36/21 18:37	06:36 07:00-07:40/40 20:34	05:33 06:01-07:04/63 21:28	05:02 05:35-06:24/49 22:07
16	08:44 09:15-09:30/15 16:44 09:52-10:10/18	07:53 08:19-08:59/40 17:44	06:49 07:13-07:36/23 18:38	06:33 06:58-07:39/41 20:36	05:32 06:00-07:04/64 21:30	05:02 05:35-06:24/49 22:07
17	08:43 09:14-09:31/17 16:46 09:54-10:09/15	07:51 08:17-08:58/41 17:46	06:46 07:10-07:35/25 18:40	06:31 06:55-07:37/42 20:38	05:30 05:58-07:03/65 21:32	05:02 05:35-06:24/49 22:08
18	08:42 09:13-09:32/19 16:47 09:57-10:07/10	07:49 08:15-08:57/42 17:48	06:44 07:08-07:35/27 18:42	06:29 06:53-07:36/43 20:40	05:28 05:57-07:03/66 21:33	05:02 05:35-06:24/49 22:08
19	08:41 09:11-09:32/21 16:49	07:47 08:13-08:55/42 17:50	06:41 07:05-07:33/28 18:44	06:26 06:51-07:35/44 20:42	05:27 05:56-07:02/66 21:35	05:02 05:35-06:24/49 22:09
20	08:39 09:10-09:33/23 16:51	07:45 08:10-08:36/26 17:52 08:38-08:52/14	06:39 07:03-07:32/29 18:46	06:24 06:49-07:33/44 20:43	05:25 05:54-07:01/67 21:37	05:02 05:35-06:24/49 22:09
21	08:38 09:08-09:33/25 16:53	07:43 08:08-08:33/25 17:54 08:43-08:47/4	06:36 07:00-07:30/30 18:48	06:22 06:47-07:32/45 20:45	05:24 05:53-07:00/67 21:38	05:02 05:35-06:24/49 22:09
22	08:37 09:07-09:34/27 16:55	07:40 08:06-08:31/25 17:56	06:34 06:58-07:29/31 18:50	06:20 06:44-07:30/46 20:47	05:22 05:52-06:59/67 21:40	05:02 05:35-06:24/49 22:09
23	08:36 09:05-09:34/29 16:56	07:38 08:03-08:27/24 17:58	06:31 06:55-07:26/31 18:52	06:17 06:42-07:28/46 20:49	05:21 05:50-06:23/33 21:41 06:24-06:57/33	05:03 05:36-06:25/49 22:09
24	08:34 09:04-09:35/31 16:58	07:36 08:01-08:27/26 18:00	06:29 06:53-07:26/33 18:53	06:15 06:40-07:26/46 20:51	05:20 05:49-06:23/34 21:43 06:26-06:56/30	05:03 05:36-06:25/49 22:10
25	08:33 09:02-09:34/32 17:00	07:34 07:59-08:25/26 18:02	06:26 06:50-07:24/34 18:55	06:13 06:38-07:24/46 20:53	05:18 05:48-06:22/34 21:44 06:29-06:55/26	05:03 05:36-06:25/49 22:10
26	08:31 09:03-09:35/32 17:02	07:31 07:56-08:22/26 18:04	06:24 06:48-07:23/35 18:57	06:11 06:36-07:21/45 20:55	05:17 05:47-06:21/34 21:46 06:34-06:54/20	05:04 05:37-06:26/49 22:10
27	08:30 09:03-09:35/32 17:04	07:29 07:55-08:19/24 18:06	06:22 06:45-07:21/36 18:59	06:08 06:34-07:16/42 20:56	05:16 05:46-06:21/35 21:47 06:36-06:52/16	05:04 05:37-06:26/49 22:09
28	08:28 09:03-09:34/31 17:06	07:27 07:56-08:18/22 18:08	06:19 06:43-07:19/36 19:01	06:06 06:32-07:15/43 20:58	05:15 05:45-06:20/35 21:49 06:38-06:50/12	05:05 05:38-06:26/48 22:09
29	08:27 09:05-09:35/30 17:08		07:17 07:40-08:14/34 20:03	06:04 06:30-07:14/44 21:00	05:14 05:44-06:20/36 21:50 06:43-06:45/2	05:05 05:38-06:26/48 22:09
30	08:25 09:05-09:34/29 17:10		07:14 07:38-08:07/29 20:05	06:02 06:28-07:12/44 21:02	05:12 05:43-06:21/38 21:51	05:06 05:39-06:27/48 22:09
31	08:24 09:06-09:34/28 17:12 08:52-08:55/3		07:12 07:35-08:05/30 20:06		05:11 05:42-06:21/39 21:53	
Potential sun hours	250	273	367	420	494	510
Sum of minutes with flicker	1319	889	631	1163	1738	1407

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar per WTG

Calculation: Worst Case Analysis **WTG:** 2 - T02

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July	August	September	October	November	December
1	05:07 05:40-06:27/47 22:09	05:46 06:17-07:17/60 21:33	06:41 07:08-07:41/33 20:26	07:34 08:01-08:16/15 19:13	07:33 08:02-08:31/29 17:02	08:28 09:02-09:08/6 10:37-10:59/22 16:18 09:28-09:54/26
2	05:07 05:40-06:27/47 22:08	05:48 06:19-07:18/59 21:31	06:43 07:10-07:41/31 20:24	07:36 08:02-08:14/12 19:10	07:35 08:04-08:31/27 17:00	08:29 09:04-09:08/4 10:36-11:01/25 16:17 09:28-09:55/27
3	05:08 05:41-06:27/46 22:08	05:50 06:20-07:18/58 21:30	06:44 07:12-07:41/29 20:22	07:38 08:04-08:13/9 19:08	07:36 08:06-08:31/25 16:58	08:31 09:06-09:08/2 10:36-11:03/27 16:16 09:28-09:56/28
4	05:09 05:42-06:28/46 22:07	05:52 06:22-07:18/56 21:28	06:46 07:13-07:39/26 20:19	07:40 08:06-08:12/6 19:05	07:38 08:08-08:30/22 16:56	08:32 09:28-09:57/29 16:16 10:35-11:04/29
5	05:10 05:43-06:28/45 22:07	05:53 06:23-07:18/55 21:26	06:48 07:15-07:39/24 20:17 07:43-07:47/4	07:41 08:08-08:10/2 19:03	07:40 08:45-08:56/11 16:54 08:11-08:31/20	08:34 09:28-09:58/30 16:15 10:35-11:05/30
6	05:11 05:44-06:28/44 22:06	05:55 06:25-07:18/53 21:24	06:50 07:17-07:52/35 20:14	07:43 19:00	07:42 08:43-08:59/16 16:52 08:13-08:30/17	08:35 09:28-09:58/30 16:14 10:34-11:06/32
7	05:12 05:45-06:29/44 22:05	05:57 06:27-07:19/52 21:22	06:51 07:18-07:53/35 20:12	07:45 18:58	07:44 08:41-09:01/20 16:50 08:15-08:30/15	08:36 09:29-09:59/30 16:14 10:35-11:08/33
8	05:13 05:46-06:29/43 22:05	05:58 06:28-07:18/50 21:20	06:53 07:20-07:55/35 20:10	07:47 18:56	07:46 08:39-09:02/23 16:49 08:17-08:29/12	08:38 09:28-09:59/31 16:13 10:34-11:08/34
9	05:14 05:47-06:29/42 22:04	06:00 06:30-07:19/49 21:18	06:55 07:22-07:56/34 20:07	07:49 18:53	07:48 08:38-09:03/25 16:47 08:19-08:28/9	08:39 09:28-10:00/32 16:13 10:34-11:09/35
10	05:15 05:48-06:29/41 22:03	06:02 06:31-07:18/47 21:16	06:57 07:24-07:57/33 20:05	07:51 08:38-08:45/7 18:51	07:50 08:37-09:04/27 16:45 08:21-08:27/6	08:40 09:29-10:01/32 16:13 10:35-11:10/35
11	05:16 05:49-06:29/40 22:02	06:04 06:33-07:18/45 21:14	06:59 07:25-07:57/32 20:02	07:53 08:33-08:47/14 18:49	07:52 08:37-09:05/28 16:43 08:23-08:26/3	08:41 09:29-10:01/32 16:13 10:34-11:11/37
12	05:17 05:50-06:29/39 22:01	06:05 06:35-07:20/45 21:12	07:00 07:27-07:58/31 20:00	07:54 08:31-08:49/18 18:46	07:54 08:36-09:05/29 16:42	08:42 09:30-10:02/32 16:12 10:34-11:12/38
13	05:18 05:51-06:29/38 22:00	06:07 06:36-07:20/44 21:10	07:02 07:29-07:58/29 19:57	07:56 08:29-08:50/21 18:44	07:56 08:36-09:06/30 16:40	08:43 09:30-10:02/32 16:12 10:34-11:12/38
14	05:20 05:52-06:29/37 21:59	06:09 06:38-07:22/44 21:08	07:04 07:30-08:04/34 19:55	07:58 08:28-08:51/23 18:41	07:58 08:36-09:07/31 16:38	08:44 09:30-10:03/33 16:12 10:35-11:13/38
15	05:21 05:53-06:29/36 21:58 06:48-06:57/9	06:11 06:40-07:23/43 21:05	07:06 07:32-08:07/35 19:52	08:00 08:27-08:53/26 18:39	08:00 08:36-09:08/32 16:37	08:45 09:31-10:03/32 10:35-11:14/39 16:12 10:05-10:09/4
16	05:22 05:54-06:29/35 21:57 06:45-07:00/15	06:12 06:41-07:23/42 21:03	07:07 07:34-08:10/36 19:50	08:02 08:29-08:55/26 18:37	08:01 08:36-09:08/32 16:35	08:46 09:31-10:11/40 16:12 10:35-11:14/39
17	05:23 05:56-06:31/35 21:56 06:44-07:03/19	06:14 06:43-07:28/45 21:01	07:09 07:36-08:11/35 19:47	08:04 08:31-08:57/26 18:34	08:03 08:36-09:08/32 16:34	08:47 09:32-10:12/40 16:13 10:36-11:15/39
18	05:25 05:57-06:31/34 21:55 06:41-07:04/23	06:16 06:45-07:31/46 20:59	07:11 07:37-08:11/34 19:45	08:06 08:33-08:58/25 18:32	08:05 08:38-09:08/30 16:32	08:48 09:32-10:13/41 16:13 10:36-11:16/40
19	05:26 05:58-06:32/34 21:53 06:37-07:05/28	06:18 06:46-07:32/46 20:57	07:13 07:39-08:12/33 19:42	08:08 08:35-09:00/25 18:30	08:07 08:40-09:09/29 16:31	08:48 09:32-10:13/41 16:13 10:36-11:16/40
20	05:28 06:00-06:33/33 21:52 06:36-07:07/31	06:20 06:48-07:34/46 20:54	07:15 07:41-08:13/32 19:40	08:09 08:37-09:02/25 18:28	08:09 08:42-09:09/27 16:30	08:49 09:33-10:15/42 16:13 10:37-11:17/40
21	05:29 06:01-07:08/67 21:51	06:21 06:50-07:36/46 20:52	07:16 07:43-08:14/31 19:37	08:11 08:39-09:04/25 18:25 09:11-09:20/9	08:11 08:44-09:09/25 16:28	08:50 09:33-10:15/42 16:14 10:37-11:17/40
22	05:31 06:02-07:09/67 21:49	06:23 06:51-07:36/45 20:50	07:18 07:44-08:14/30 19:35	08:13 08:41-09:07/26 18:23 09:08-09:23/15	08:12 08:46-09:09/23 16:27	08:50 09:34-10:16/42 16:14 10:38-11:18/40
23	05:32 06:04-07:11/67 21:48	06:25 06:53-07:37/44 20:48	07:20 07:46-08:16/30 19:32	08:15 08:43-09:25/42 18:21	08:14 08:48-09:09/21 16:26	08:51 09:34-10:16/42 16:15 10:38-11:18/40
24	05:34 06:05-07:11/66 21:46	06:27 06:55-07:39/44 20:45	07:22 07:48-08:17/29 19:30	08:17 08:45-09:27/42 18:19	08:16 08:50-09:09/19 16:25 09:34-09:44/10	08:51 09:35-10:17/42 16:15 10:39-11:19/40
25	05:35 06:07-07:13/66 21:45	06:28 06:56-07:39/43 20:43	07:23 07:50-08:17/27 19:27	07:19 07:47-08:28/41 17:17	08:18 08:52-09:09/17 16:23 09:32-09:47/15	08:52 09:35-10:16/41 16:16 10:39-11:19/40
26	05:37 06:08-07:13/65 21:43	06:30 06:58-07:40/42 20:41	07:25 07:52-08:18/26 19:25	07:21 07:49-08:29/40 17:14	08:19 08:54-09:09/15 16:22 09:31-09:49/18	08:52 09:36-10:16/40 16:17 10:40-11:19/39
27	05:38 06:09-07:14/65 21:42	06:32 07:00-07:41/41 20:38	07:27 07:53-08:17/24 19:23	07:23 07:52-08:30/38 17:12	08:21 08:55-09:08/13 16:21 09:30-09:49/19	08:52 09:36-10:16/40 16:17 10:40-11:19/39
28	05:40 06:11-07:15/64 21:40	06:34 07:01-07:42/41 20:36	07:29 07:55-08:17/22 19:20	07:25 07:54-08:31/37 17:10	08:23 08:57-09:08/11 10:44-10:50/6 16:20 09:29-09:51/22	08:52 09:36-10:09/33 10:41-11:20/39 16:18 10:10-10:16/6
29	05:42 06:12-07:15/63 21:38	06:36 07:03-07:41/38 20:34	07:31 07:57-08:17/20 19:18	07:27 07:56-08:31/35 17:08	08:24 08:59-09:09/10 10:41-10:55/14 16:19 09:29-09:52/23	08:52 09:37-10:10/33 16:19 10:41-11:20/39
30	05:43 06:14-07:16/62 21:37	06:37 07:05-07:41/36 20:31	07:32 07:59-08:16/17 19:15	07:29 07:58-08:31/33 17:06	08:26 09:01-09:09/8 10:39-10:58/19 16:18 09:29-09:54/25	08:52 09:38-10:10/32 16:20 10:42-11:20/38
31	05:45 06:16-07:17/61 21:35	06:39 07:07-07:42/35 20:29		07:31 08:00-08:31/31 17:04		08:52 09:38-10:11/33 16:21 10:43-11:21/38
Potential sun hours	512	460	382	328	259	233
Sum of minutes with flicker	1644	1440	906	694	940	2224

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar per WTG

Calculation: Worst Case Analysis **WTG:** 3 - T03

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March		April		May		June	
1	08:52		08:22	08:50-09:16/26	07:24	17:23-17:42/19	07:09	19:18-19:28/10	06:00	06:26-06:41/15	05:10	
	16:22		17:14		18:10		20:08		21:04	06:42-06:45/3	21:54	
2	08:52		08:20	08:48-09:15/27	07:22	17:22-17:45/23	07:07	19:42-19:43/1	05:58	06:24-06:39/15	05:09	
	16:24		17:16		18:12		20:10		21:06		21:55	
3	08:52		08:19	08:46-09:13/27	07:20	17:20-17:46/26	07:04	19:40-19:45/5	05:56	06:22-06:39/17	05:09	
	16:25		17:18		18:14		20:12		21:07		21:56	
4	08:52		08:17	08:44-09:11/27	07:17	17:20-17:48/28	07:02	19:40-19:47/7	05:54	06:20-06:38/18	05:08	
	16:26		17:20		18:16		20:14		21:09		21:57	
5	08:51		08:15	08:42-09:09/27	07:15	17:19-17:50/31	06:59	19:38-19:48/10	05:52	06:18-06:37/19	05:07	
	16:27		17:22		18:17		20:16		21:11		21:58	
6	08:51		08:13	08:40-09:09/29	07:13	17:19-17:52/33	06:57	07:21-07:24/3	05:50	06:16-06:37/21	05:06	
	16:29		17:24		18:19		20:18	19:38-19:50/12	21:13		21:59	
7	08:51		08:11	08:40-09:09/29	07:10	17:18-17:54/36	06:55	07:19-07:25/6	05:48	06:15-06:36/21	05:06	05:37-05:38/1
	16:30		17:26		18:21		20:19	19:37-19:52/15	21:15		22:00	
8	08:50		08:09	08:41-09:08/27	07:08	17:18-17:56/38	06:52	07:16-07:25/9	05:46	06:13-06:35/22	05:05	05:37-05:39/2
	16:31		17:28		18:23		20:21	19:37-19:54/17	21:16		22:01	
9	08:49		08:07	08:42-09:08/26	07:05	17:18-17:56/38	06:50	07:14-07:25/11	05:44	06:11-06:33/22	05:04	05:36-05:39/3
	16:33		17:30		18:25		20:23	19:37-19:56/19	21:18		22:02	
10	08:49		08:05	08:43-09:07/24	07:03	17:17-17:55/38	06:47	07:11-07:24/13	05:42	06:09-06:31/22	05:04	05:36-05:39/3
	16:34		17:32		18:27		20:25	19:37-19:57/20	21:20		22:03	
11	08:48		08:04	08:44-09:07/23	07:01	17:18-17:55/37	06:45	07:09-07:24/15	05:40	06:08-06:29/21	05:03	05:36-05:40/4
	16:36		17:34		18:29		20:27	19:38-19:59/21	21:22		22:04	
12	08:47		08:02	08:45-09:05/20	06:58	17:18-17:54/36	06:43	07:07-07:24/17	05:39	06:06-06:27/21	05:03	05:35-05:39/4
	16:37		17:36		18:31		20:29	19:39-19:58/19	21:23		22:05	
13	08:47		07:59	08:47-09:04/17	06:56	17:18-17:54/36	06:40	07:04-07:22/18	05:37	06:04-06:24/20	05:03	05:35-05:40/5
	16:39		17:38		18:33		20:30	19:39-19:56/17	21:25		22:05	
14	08:46		07:57	08:49-09:02/13	06:53	17:18-17:52/34	06:38	07:02-07:22/20	05:35	06:03-06:22/19	05:02	05:35-05:40/5
	16:41		17:40		18:35		20:32	19:41-19:54/13	21:27		22:06	
15	08:45		07:55	08:53-08:56/3	06:51	17:20-17:51/31	06:36	07:00-07:21/21	05:33	06:01-06:21/20	05:02	05:35-05:41/6
	16:42		17:42		18:37		20:34	19:44-19:51/7	21:28		22:07	
16	08:44		07:53		06:48	17:20-17:49/29	06:33	06:58-07:19/21	05:32	06:00-06:21/21	05:02	05:35-05:41/6
	16:44		17:44		18:38		20:36		21:30		22:07	
17	08:43		07:51		06:46	17:22-17:48/26	06:31	06:55-07:16/21	05:30	06:01-06:20/19	05:02	05:35-05:41/6
	16:46		17:46		18:40		20:38		21:32		22:08	
18	08:42	09:13-09:14/1	07:49		06:44	17:23-17:45/22	06:29	06:53-07:13/20	05:28	06:02-06:19/17	05:02	05:35-05:41/6
	16:47		17:48		18:42		20:40		21:33		22:08	
19	08:41	09:11-09:14/3	07:47		06:41	17:26-17:43/17	06:26	06:51-07:08/17	05:27	06:04-06:18/14	05:02	05:35-05:42/7
	16:49		17:50		18:44		20:42		21:35		22:08	
20	08:39	09:10-09:15/5	07:45		06:39	18:18-18:19/1	06:24	06:49-06:57/8	05:25	06:04-06:16/12	05:02	05:35-05:42/7
	16:51		17:52		18:46	17:29-17:38/9	20:43	07:01-07:04/3	21:37		22:09	
21	08:38	09:08-09:15/7	07:42		06:36	18:16-18:21/5	06:22	06:47-06:57/10	05:24	06:06-06:15/9	05:02	05:35-05:42/7
	16:53		17:54		18:48		20:45		21:38		22:09	
22	08:37	09:07-09:16/9	07:40		06:34	18:15-18:23/8	06:19	06:44-06:56/12	05:22		05:02	05:35-05:42/7
	16:55		17:56		18:50		20:47		21:40		22:09	
23	08:36	09:05-09:16/11	07:38		06:31	18:14-18:25/11	06:17	06:42-06:56/14	05:21		05:03	05:36-05:43/7
	16:56		17:58		18:52		20:49		21:41		22:09	
24	08:34	09:04-09:17/13	07:36		06:29	18:13-18:26/13	06:15	06:40-06:56/16	05:20		05:03	05:36-05:42/6
	16:58		18:00		18:53		20:51		21:43		22:10	
25	08:33	09:02-09:17/15	07:34	17:30-17:33/3	06:26	18:13-18:29/16	06:13	06:38-06:55/17	05:18		05:03	05:36-05:42/6
	17:00		18:02		18:55		20:53		21:44		22:10	
26	08:31	09:01-09:18/17	07:31	17:28-17:36/8	06:24	18:13-18:31/18	06:11	06:36-06:55/19	05:17		05:04	05:37-05:43/6
	17:02		18:04		18:57		20:55		21:46		22:10	
27	08:30	08:59-09:18/19	07:29	17:26-17:38/12	06:21	18:13-18:32/19	06:08	06:34-06:54/20	05:16		05:04	05:37-05:43/6
	17:04		18:06		18:59		20:56		21:47		22:09	
28	08:28	08:57-09:18/21	07:27	17:24-17:40/16	06:19	18:13-18:34/21	06:06	06:32-06:53/21	05:15		05:05	05:38-05:43/5
	17:06		18:08		19:01		20:58		21:49		22:09	
29	08:27	08:55-09:17/22			07:17	19:13-19:34/21	06:04	06:30-06:51/21	05:14		05:05	05:38-05:43/5
	17:08				20:03		21:00		21:50		22:09	
30	08:25	08:54-09:18/24			07:14	19:14-19:33/19	06:02	06:28-06:49/21	05:12		05:06	05:39-05:44/5
	17:10				20:05		21:02		21:51		22:09	
31	08:24	08:52-09:17/25			07:12	19:15-19:31/16			05:11			
	17:12				20:06				21:52			
Potential sun hours	250		273		367		420		494		510	
Sum of minutes with flicker	192		384		755		587		388		125	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar per WTG

Calculation: Worst Case Analysis **WTG:** 3 - T03

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August		September		October		November		December
1	05:06	05:40-05:44/4	05:46	06:17-06:38/21	06:41	07:08-07:23/15	07:34	17:57-18:33/36	07:33	08:12-08:37/25	08:28
	22:09		21:33		20:26	19:36-19:58/22	19:13		17:02		16:18
2	05:07	05:40-05:44/4	05:48	06:19-06:41/22	06:43	07:10-07:23/13	07:36	17:56-18:33/37	07:34	08:11-08:38/27	08:29
	22:08		21:31		20:24	19:36-19:56/20	19:10		17:00		16:17
3	05:08	05:41-05:44/3	05:50	06:20-06:43/23	06:44	07:12-07:23/11	07:38	17:55-18:33/38	07:36	08:11-08:38/27	08:31
	22:08		21:29		20:22	19:34-19:53/19	19:08		16:58		16:16
4	05:09	05:42-05:44/2	05:51	06:22-06:44/22	06:46	07:13-07:22/9	07:40	17:55-18:33/38	07:38	08:10-08:38/28	08:32
	22:07		21:28		20:19	19:34-19:51/17	19:05		16:56		16:15
5	05:10	05:43-05:44/1	05:53	06:23-06:45/22	06:48	07:15-07:21/6	07:41	17:55-18:33/38	07:40	08:10-08:39/29	08:33
	22:07		21:26		20:17	19:34-19:49/15	19:03		16:54		16:15
6	05:11	05:44-05:45/1	05:55	06:25-06:46/21	06:50	07:17-07:21/4	07:43	17:55-18:32/37	07:42	08:13-08:40/27	08:35
	22:06		21:24		20:14	19:34-19:47/13	19:00		16:52		16:14
7	05:12		05:57	06:27-06:47/20	06:51	19:33-19:44/11	07:45	17:55-18:30/35	07:44	08:15-08:42/27	08:36
	22:05		21:22		20:12		18:58		16:50		16:14
8	05:13		05:58	06:28-06:47/19	06:53	19:34-19:41/7	07:47	17:54-18:26/32	07:46	08:17-08:44/27	08:37
	22:05		21:20		20:09		18:56		16:49		16:13
9	05:14		06:00	06:30-06:48/18	06:55	19:35-19:39/4	07:49	17:54-18:24/30	07:48	08:19-08:46/27	08:39
	22:04		21:18		20:07		18:53		16:47		16:13
10	05:15		06:02	06:31-06:47/16	06:57	19:35-19:36/1	07:51	17:54-18:21/27	07:50	08:21-08:47/26	08:40
	22:03		21:16		20:05		18:51		16:45		16:13
11	05:16		06:04	06:33-06:48/15	06:59	19:10-19:20/10	07:52	17:55-18:19/24	07:52	08:23-08:48/25	08:41
	22:02		21:14		20:02		18:48		16:43		16:13
12	05:17		06:05	06:35-06:55/20	07:00	19:08-19:23/15	07:54	17:55-18:17/22	07:54	08:25-08:48/23	08:42
	22:01		21:12		20:00		18:46		16:42		16:12
13	05:18		06:07	06:36-06:57/21	07:02	19:06-19:24/18	07:56	17:56-18:14/18	07:56	08:27-08:49/22	08:43
	22:00		21:10		19:57		18:44		16:40		16:12
14	05:19		06:09	06:38-06:59/21	07:04	19:04-19:24/20	07:58	17:57-18:12/15	07:58	08:30-08:50/20	08:44
	21:59		21:07		19:55		18:41		16:38		16:12
15	05:21		06:11	06:40-07:00/20	07:06	19:03-19:24/21	08:00	17:59-18:10/11	08:00	08:32-08:51/19	08:45
	21:58		21:05		19:52		18:39		16:37		16:12
16	05:22		06:12	06:41-07:01/20	07:07	19:02-19:22/20	08:02	18:01-18:07/6	08:01	08:34-08:51/17	08:46
	21:57		21:03		19:50		18:37		16:35		16:12
17	05:23		06:14	06:43-07:01/18	07:09	19:01-19:19/18	08:04	18:03-18:05/2	08:03	08:36-08:51/15	08:47
	21:56		21:01		19:47		18:34		16:34		16:12
18	05:25		06:16	06:45-07:02/17	07:11	19:00-19:16/16	08:06		08:05	08:38-08:51/13	08:48
	21:55		20:59		19:45		18:32		16:32		16:13
19	05:26		06:18	06:46-07:02/16	07:13	19:00-19:14/14	08:07		08:07	08:40-08:51/11	08:48
	21:53		20:57		19:42		18:30		16:31		16:13
20	05:28		06:19	06:48-07:02/14	07:14	19:01-19:12/11	08:09		08:09	08:42-08:51/9	08:49
	21:52		20:54		19:40		18:28		16:30		16:13
21	05:29		06:21	06:50-07:02/12	07:16	19:00-19:09/9	08:11		08:11	08:44-08:51/7	08:50
	21:51		20:52		19:37		18:25		16:28		16:14
22	05:31	06:18-06:23/5	06:23	06:51-07:01/10	07:18	19:01-19:06/5	08:13		08:12	08:46-08:51/5	08:50
	21:49		20:50		19:35		18:23		16:27		16:14
23	05:32	06:16-06:26/10	06:25	06:53-07:01/8	07:20	19:02-19:04/2	08:15		08:14	08:48-08:51/3	08:51
	21:48		20:48	07:04-07:09/5	19:32	18:17-18:19/2	18:21		16:26		16:15
24	05:34	06:14-06:27/13	06:27	06:55-07:00/5	07:22	18:11-18:26/15	08:17		08:16	08:50-08:51/1	08:51
	21:46		20:45	07:01-07:12/11	19:30		18:19		16:24		16:15
25	05:35	06:13-06:29/16	06:28	06:56-07:16/20	07:23	18:08-18:28/20	07:19		08:18		08:52
	21:45		20:43		19:27		17:17		16:23		16:16
26	05:37	06:12-06:30/18	06:30	06:58-07:19/21	07:25	18:04-18:29/25	07:21		08:19		08:52
	21:43		20:41		19:25		17:14		16:22		16:17
27	05:38	06:11-06:30/19	06:32	07:00-07:21/21	07:27	18:02-18:31/29	07:23	08:22-08:29/7	08:21		08:52
	21:42		20:38		19:22		17:12		16:21		16:17
28	05:40	06:11-06:32/21	06:34	07:01-07:22/21	07:29	18:01-18:32/31	07:25	08:18-08:32/14	08:23		08:52
	21:40		20:36	19:44-19:52/8	19:20		17:10		16:20		16:18
29	05:41	06:12-06:32/20	06:35	07:03-07:23/20	07:31	18:00-18:32/32	07:27	08:16-08:34/18	08:24		08:52
	21:38		20:34	19:41-19:55/14	19:18		17:08		16:19		16:19
30	05:43	06:14-06:33/19	06:37	07:05-07:23/18	07:32	17:59-18:33/34	07:29	08:14-08:35/21	08:26		08:52
	21:37		20:31	19:40-19:57/17	19:15		17:06		16:18		16:20
31	05:45	06:16-06:37/21	06:39	07:07-07:24/17			07:31	08:13-08:36/23			08:52
	21:35		20:29	19:37-19:57/20			17:04				16:21
Potential sun hours	512		460		382		328		259		233
Sum of minutes with flicker		177		634		554		529		460	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar per WTG

Calculation: Worst Case Analysis **WTG:** 4 - T04

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June
1	08:52 16:22	08:22 08:50-08:59/9 17:14	07:24 18:10	07:09 19:08-19:38/30 20:08	06:00 21:04	05:10 05:41-06:27/46 21:54
2	08:52 16:24	08:20 08:48-09:00/12 17:16	07:22 18:12	07:07 19:07-19:36/29 20:10	05:58 21:05	05:09 05:40-06:27/47 21:55
3	08:52 16:25	08:18 08:46-09:00/14 17:18	07:20 18:14	07:04 19:08-19:36/28 20:12	05:56 21:07	05:09 05:40-06:27/47 21:56
4	08:52 16:26	08:17 08:44-09:00/16 17:20	07:17 18:15	07:02 19:09-19:35/26 20:14	05:54 21:09	05:08 05:39-06:27/48 21:57
5	08:51 16:27	08:15 08:42-09:00/18 17:22	07:15 17:46-17:50/4 18:17	06:59 19:10-19:33/23 20:16	05:52 21:11	05:07 05:38-06:27/49 21:58
6	08:51 16:29	08:13 08:40-09:00/20 17:24	07:13 17:44-17:52/8 18:19	06:57 19:11-19:31/20 20:17	05:50 06:16-06:19/3 21:13	05:06 05:38-06:27/49 21:59
7	08:50 16:30	08:11 08:39-08:59/20 17:26	07:10 17:42-17:54/12 18:21	06:55 19:13-19:28/15 20:19	05:48 06:15-06:20/5 21:15	05:06 05:37-06:27/50 22:00
8	08:50 16:31	08:09 08:39-08:59/20 17:28	07:08 17:41-17:56/15 18:23	06:52 19:16-19:25/9 20:21	05:46 06:13-06:21/8 21:16	05:05 05:37-06:27/50 22:01
9	08:49 16:33	08:07 08:40-08:58/18 17:30	07:05 17:40-17:59/19 18:25	06:50 20:23	05:44 06:11-06:21/10 21:18	05:04 05:36-06:27/51 22:02
10	08:49 16:34	08:05 08:41-08:57/16 17:32	07:03 17:39-18:00/21 18:27	06:47 20:25	05:42 06:09-06:21/12 21:20	05:04 05:36-06:27/51 22:03
11	08:48 16:36	08:03 08:43-08:56/13 17:34	07:01 17:39-18:02/23 18:29	06:45 20:27	05:40 06:08-06:23/15 21:22	05:03 05:36-06:27/51 22:04
12	08:47 16:37	08:01 08:46-08:53/7 17:36	06:58 17:38-18:04/26 18:31	06:43 20:29	05:39 06:06-06:23/17 21:23	05:03 05:35-06:26/51 22:05
13	08:46 16:39	07:59 17:38	06:56 17:38-18:06/28 18:33	06:40 20:30	05:37 06:04-06:23/19 21:25	05:03 05:35-06:27/52 22:05
14	08:46 16:41	07:57 17:40	06:53 17:37-18:07/30 18:35	06:38 20:32	05:35 06:03-06:25/22 21:27	05:02 05:35-06:27/52 22:06
15	08:45 16:42	07:55 17:42	06:51 17:38-18:07/29 18:37	06:36 20:34	05:33 06:01-06:25/24 21:28	05:02 05:35-06:27/52 22:07
16	08:44 16:44	07:53 17:44	06:48 17:37-18:06/29 18:38	06:33 20:36	05:32 06:00-06:26/26 21:30	05:02 05:35-06:27/52 22:07
17	08:43 16:46	07:51 17:46	06:46 17:38-18:05/27 18:40	06:31 20:38	05:30 05:58-06:25/27 21:32	05:02 05:35-06:27/52 22:08
18	08:42 16:47	07:49 17:48	06:44 17:38-18:04/26 18:42	06:29 20:40	05:28 05:57-06:26/29 21:33	05:02 05:35-06:28/53 22:08
19	08:41 16:49	07:47 17:50	06:41 17:40-18:03/23 18:44	06:26 20:42	05:27 05:55-06:26/31 21:35	05:02 05:35-06:28/53 22:08
20	08:39 16:51	07:45 17:52	06:39 17:40-18:00/20 18:46	06:24 20:43	05:25 05:54-06:26/32 21:37	05:02 05:35-06:28/53 22:09
21	08:38 16:53	07:42 17:54	06:36 17:43-17:58/15 18:48 18:18-18:21/3	06:22 20:45	05:24 05:53-06:27/34 21:38	05:02 05:35-06:28/53 22:09
22	08:37 16:55	07:40 17:56	06:34 17:45-17:54/9 18:50 18:15-18:23/8	06:19 20:47	05:22 05:52-06:27/35 21:40	05:02 05:35-06:28/53 22:09
23	08:36 16:56	07:38 17:58	06:31 18:14-18:25/11 18:51	06:17 20:49	05:21 05:50-06:27/37 21:41	05:03 05:36-06:29/53 22:09
24	08:34 16:58	07:36 18:00	06:29 18:12-18:26/14 18:53	06:15 20:51	05:20 05:49-06:27/38 21:43	05:03 05:36-06:29/53 22:09
25	08:33 17:00	07:34 18:02	06:26 18:11-18:29/18 18:55	06:13 20:53	05:18 05:48-06:27/39 21:44	05:03 05:36-06:28/52 22:10
26	08:31 17:02	07:31 18:04	06:24 18:10-18:31/21 18:57	06:11 20:54	05:17 05:47-06:27/40 21:46	05:04 05:37-06:29/52 22:09
27	08:30 17:04	07:29 18:06	06:21 18:09-18:32/23 18:59	06:08 20:56	05:16 05:46-06:27/41 21:47	05:04 05:37-06:29/52 22:09
28	08:28 17:06	07:27 18:08	06:19 18:09-18:34/25 19:01	06:06 20:58	05:15 05:45-06:27/42 21:48	05:05 05:38-06:30/52 22:09
29	08:27 08:55-08:56/1 17:08		07:17 19:08-19:36/28 20:03	06:04 21:00	05:13 05:44-06:27/43 21:50	05:05 05:38-06:30/52 22:09
30	08:25 08:54-08:58/4 17:10		07:14 19:08-19:38/30 20:04	06:02 21:02	05:12 05:43-06:27/44 21:51	05:06 05:39-06:31/52 22:09
31	08:24 08:52-08:59/7 17:12		07:12 19:07-19:38/31 20:06		05:11 05:42-06:27/45 21:52	
Potential sun hours	250	273	367	420	494	510
Sum of minutes with flicker	12	183	576	180	718	1533

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar per WTG

Calculation: Worst Case Analysis **WTG:** 4 - T04

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July		August		September		October		November		December
1	05:06	05:40-06:31/51	05:46	06:17-06:33/16	06:41		07:34	18:17-18:44/27	07:32	08:11-08:27/16	08:28
	22:08		21:33		20:26		19:13		17:02		16:18
2	05:07	05:40-06:31/51	05:48	06:19-06:33/14	06:43		07:36	18:17-18:41/24	07:34	08:10-08:28/18	08:29
	22:08		21:31		20:24		19:10		17:00		16:17
3	05:08	05:41-06:32/51	05:50	06:20-06:31/11	06:44		07:38	18:17-18:39/22	07:36	08:09-08:29/20	08:31
	22:08		21:29		20:22		19:08		16:58		16:16
4	05:09	05:42-06:32/50	05:51	06:22-06:31/9	06:46	19:14-19:22/8	07:40	18:17-18:37/20	07:38	08:08-08:29/21	08:32
	22:07		21:28		20:19		19:05		16:56		16:15
5	05:10	05:43-06:33/50	05:53	06:23-06:30/7	06:48	19:10-19:25/15	07:41	18:18-18:34/16	07:40	08:10-08:30/20	08:33
	22:07		21:26		20:17		19:03		16:54		16:15
6	05:11	05:44-06:33/49	05:55	06:25-06:30/5	06:50	19:08-19:27/19	07:43	18:19-18:32/13	07:42	08:13-08:31/18	08:35
	22:06		21:24		20:14		19:00		16:52		16:14
7	05:12	05:45-06:34/49	05:57	06:27-06:29/2	06:51	19:05-19:28/23	07:45	18:20-18:30/10	07:44	08:15-08:31/16	08:36
	22:05		21:22		20:12		18:58		16:50		16:14
8	05:13	05:46-06:33/47	05:58		06:53	19:04-19:29/25	07:47	18:20-18:26/6	07:46	08:17-08:31/14	08:37
	22:05		21:20		20:09		18:56		16:49		16:13
9	05:14	05:46-06:34/48	06:00		06:55	19:03-19:30/27	07:49	18:22-18:24/2	07:48	08:19-08:30/11	08:39
	22:04		21:18		20:07		18:53		16:47		16:13
10	05:15	05:48-06:35/47	06:02		06:57	19:01-19:29/28	07:51		07:50	08:21-08:30/9	08:40
	22:03		21:16		20:05		18:51		16:45		16:13
11	05:16	05:49-06:35/46	06:04		06:59	19:00-19:30/30	07:52		07:52	08:23-08:29/6	08:41
	22:02		21:14		20:02		18:48		16:43		16:13
12	05:17	05:50-06:36/46	06:05		07:00	19:00-19:30/30	07:54		07:54	08:25-08:29/4	08:42
	22:01		21:12		20:00		18:46		16:42		16:12
13	05:18	05:51-06:36/45	06:07		07:02	18:59-19:30/31	07:56		07:56	08:27-08:28/1	08:43
	22:00		21:10		19:57		18:44		16:40		16:12
14	05:19	05:52-06:36/44	06:09		07:04	18:58-19:26/28	07:58		07:58		08:44
	21:59		21:07		19:55		18:41		16:38		16:12
15	05:21	05:53-06:36/43	06:11		07:06	18:58-19:24/26	08:00		08:00		08:45
	21:58		21:05		19:52		18:39		16:37		16:12
16	05:22	05:54-06:36/42	06:12		07:07	18:58-19:22/24	08:02		08:01		08:46
	21:57		21:03		19:50		18:37		16:35		16:12
17	05:23	05:56-06:37/41	06:14		07:09	18:58-19:19/21	08:04		08:03		08:47
	21:56		21:01		19:47		18:34		16:34		16:12
18	05:25	05:57-06:37/40	06:16		07:11	18:58-19:16/18	08:06		08:05		08:48
	21:55		20:59		19:45		18:32		16:32		16:13
19	05:26	05:58-06:37/39	06:18		07:13	18:59-19:14/15	08:07		08:07		08:48
	21:53		20:57		19:42		18:30		16:31		16:13
20	05:28	06:00-06:37/37	06:19		07:14	19:00-19:12/12	08:09		08:09		08:49
	21:52		20:54		19:40		18:28		16:30		16:13
21	05:29	06:01-06:37/36	06:21		07:16	18:33-18:38/5	08:11		08:11		08:50
	21:51		20:52		19:37	19:00-19:09/9	18:25		16:28		16:14
22	05:31	06:02-06:37/35	06:23		07:18	18:28-18:42/14	08:13		08:12		08:50
	21:49		20:50		19:35	19:02-19:06/4	18:23		16:27		16:14
23	05:32	06:04-06:37/33	06:25		07:20	18:26-18:44/18	08:15		08:14		08:51
	21:48		20:48		19:32		18:21		16:26		16:15
24	05:34	06:05-06:37/32	06:27		07:22	18:24-18:46/22	08:17		08:16		08:51
	21:46		20:45		19:30		18:19		16:24		16:15
25	05:35	06:06-06:36/30	06:28		07:23	18:22-18:47/25	07:19		08:18		08:52
	21:45		20:43		19:27		17:17		16:23		16:16
26	05:37	06:08-06:36/28	06:30		07:25	18:20-18:47/27	07:21		08:19		08:52
	21:43		20:41		19:25		17:14		16:22		16:17
27	05:38	06:09-06:36/27	06:32		07:27	18:19-18:47/28	07:23		08:21		08:52
	21:42		20:38		19:22		17:12		16:21		16:17
28	05:40	06:11-06:36/25	06:34		07:29	18:19-18:48/29	07:25		08:23		08:52
	21:40		20:36		19:20		17:10		16:20		16:18
29	05:41	06:12-06:35/23	06:35		07:31	18:18-18:48/30	07:27		08:24		08:52
	21:38		20:34		19:18		17:08		16:19		16:19
30	05:43	06:14-06:35/21	06:37		07:32	18:18-18:47/29	07:29	08:15-08:23/8	08:26		08:52
	21:37		20:31		19:15		17:06		16:18		16:20
31	05:45	06:15-06:34/19	06:39				07:31	08:12-08:26/14			08:52
	21:35		20:29				17:04				16:21
Potential sun hours	512		460		382		328		259		233
Sum of minutes with flicker	1225		64		620		162		174		0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar per WTG

Calculation: Worst Case Analysis **WTG:** 5 - T05

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June
1	08:52	08:22 16:27-16:42/15	07:24 16:58-17:26/28	07:09 07:33-08:02/29	06:00 06:26-07:03/37	05:10 05:50-06:17/27
	16:22	17:14	18:10	20:08	21:04 20:12-20:25/13	21:54 21:08-21:19/11
2	08:52	08:20 16:27-16:44/17	07:22 16:59-17:25/26	07:07 07:31-08:02/31	05:58 06:24-07:02/38	05:09 05:51-06:17/26
	16:24	17:16	18:12	20:10	21:05 20:14-20:23/9	21:55 21:08-21:20/12
3	08:52	08:18 16:26-16:46/20	07:20 17:00-17:23/23	07:04 07:28-08:02/34	05:56 06:22-07:02/40	05:09 05:52-06:17/25
	16:25	17:18	18:14	20:12	21:07	21:56 21:09-21:22/13
4	08:52	08:17 16:26-16:48/22	07:17 17:02-17:21/19	07:02 07:26-08:02/36	05:54 06:20-07:02/42	05:08 05:52-06:17/25
	16:26	17:20	18:15	20:14	21:09	21:57 21:09-21:22/13
5	08:51	08:15 16:25-16:50/25	07:15 17:04-17:18/14	06:59 07:23-08:01/38	05:52 06:18-07:01/43	05:07 05:52-06:16/24
	16:27	17:22	18:17	20:16	21:11	21:58 21:08-21:23/15
6	08:51	08:13 16:25-16:53/28	07:13 17:10-17:12/2	06:57 07:21-08:00/39	05:50 06:16-07:00/44	05:06 05:54-06:16/22
	16:29	17:24	18:19	20:17	21:13	21:59 21:09-21:24/15
7	08:50	08:11 16:25-16:55/30	07:10	06:55 07:19-08:00/41	05:48 06:15-07:01/46	05:06 05:54-06:16/22
	16:30	17:26	18:21	20:19	21:14	22:00 21:09-21:25/16
8	08:50	08:09 16:25-16:55/30	07:08	06:52 07:16-07:58/42	05:46 06:13-07:00/47	05:05 05:55-06:16/21
	16:31	17:28	18:23	20:21	21:16	22:01 21:09-21:26/17
9	08:49	08:07 16:25-16:56/31	07:05	06:50 07:14-07:57/43	05:44 06:11-06:59/48	05:04 05:55-06:15/20
	16:33	17:30	18:25	20:23	21:18	22:02 21:09-21:26/17
10	08:49	08:05 16:26-16:55/29	07:03	06:47 07:11-07:55/44	05:42 06:09-06:58/49	05:04 05:56-06:15/19
	16:34	17:32	18:27	20:25	21:20	22:03 21:09-21:28/19
11	08:48	08:03 16:26-16:55/29	07:01	06:45 07:09-07:54/45	05:40 06:08-06:58/50	05:03 05:57-06:15/18
	16:36	17:34	18:29	20:27	21:22	22:04 21:09-21:28/19
12	08:47	08:01 16:27-16:55/28	06:58	06:43 07:07-07:53/46	05:39 06:06-06:56/50	05:03 05:57-06:14/17
	16:37	17:36	18:31	20:29	21:23	22:05 21:09-21:29/20
13	08:46	07:59 16:28-16:54/26	06:56	06:40 07:04-07:49/45	05:37 06:04-06:55/51	05:03 05:57-06:14/17
	16:39	17:38 17:06-17:09/3	18:33	20:30	21:25	22:05 21:10-21:29/19
14	08:46	07:57 16:28-16:53/25	06:53	06:38 07:02-07:46/44	05:35 06:03-06:54/51	05:02 05:58-06:15/17
	16:41	17:40 17:03-17:10/7	18:35	20:32	21:27	22:06 21:10-21:30/20
15	08:45	07:55 16:29-16:52/23	06:51	06:36 07:00-07:44/44	05:33 06:01-06:52/51	05:02 05:59-06:15/16
	16:42	17:42 17:02-17:12/10	18:36	20:34	21:28	22:07 21:11-21:31/20
16	08:44	07:53 16:31-16:51/20	06:48	06:33 06:58-07:31/33	05:32 06:00-06:51/51	05:02 05:59-06:15/16
	16:44	17:44 17:01-17:15/14	18:38	20:36 07:35-07:38/3	21:30	22:07 21:11-21:31/20
17	08:43	07:51 16:33-16:49/16	06:46	06:31 06:55-07:29/34	05:30 05:58-06:36/38	05:02 06:00-06:14/14
	16:46	17:46 17:00-17:17/17	18:40	20:38	21:32 06:37-06:48/11	22:08 21:11-21:32/21
18	08:42	07:49 16:36-16:47/11	06:44	06:29 06:53-07:28/35	05:28 05:57-06:35/38	05:02 06:00-06:14/14
	16:47	17:48 16:59-17:19/20	18:42	20:40	21:33	22:08 21:11-21:32/21
19	08:41	07:47 16:58-17:21/23	06:41	06:26 06:51-07:27/36	05:27 05:55-06:33/38	05:02 06:00-06:14/14
	16:49	17:50	18:44	20:42 20:12-20:13/1	21:35	22:08 21:12-21:33/21
20	08:39	07:45 16:57-17:23/26	06:39	06:24 06:49-07:26/37	05:25 05:54-06:32/38	05:02 06:01-06:14/13
	16:51	17:52	18:46	20:43 20:10-20:14/4	21:37	22:09 21:12-21:33/21
21	08:38	07:42 16:57-17:26/29	06:36	06:22 06:46-07:24/38	05:24 05:53-06:30/37	05:02 06:01-06:14/13
	16:53	17:54	18:48	20:45 20:09-20:16/7	21:38	22:09 21:12-21:33/21
22	08:37	07:40 16:56-17:27/31	06:34	06:19 06:44-07:24/40	05:22 05:52-06:30/38	05:02 06:01-06:14/13
	16:55	17:56	18:50	20:47 20:09-20:18/9	21:40	22:09 21:12-21:33/21
23	08:36	07:38 16:56-17:29/33	06:31	06:17 06:42-07:23/41	05:21 05:50-06:28/38	05:03 06:02-06:15/13
	16:56	17:58	18:51	20:49 20:08-20:20/12	21:41	22:09 21:13-21:34/21
24	08:34	07:36 16:56-17:29/33	06:29 06:53-06:55/2	06:15 06:40-07:22/42	05:20 05:49-06:28/39	05:03 06:01-06:15/14
	16:58	18:00	18:53	20:51 20:08-20:22/14	21:43	22:09 21:12-21:33/21
25	08:33	07:34 16:56-17:28/32	06:26 06:50-06:57/7	06:13 06:38-07:20/42	05:18 05:48-06:27/39	05:03 06:01-06:15/14
	17:00	18:02	18:55	20:53 20:08-20:24/16	21:44	22:09 21:12-21:33/21
26	08:31	07:31 16:56-17:28/32	06:24 06:48-06:59/11	06:11 06:36-07:19/43	05:17 05:48-06:27/39	05:04 06:01-06:17/16
	17:02	18:04	18:57	20:54 20:08-20:25/17	21:46 21:10-21:12/2	22:09 21:13-21:34/21
27	08:30	07:29 16:57-17:28/31	06:21 06:45-07:00/15	06:08 06:34-07:17/43	05:16 05:49-06:26/37	05:04 06:01-06:17/16
	17:04	18:06	18:59	20:56 20:08-20:27/19	21:47 21:10-21:13/3	22:09 21:13-21:33/20
28	08:28 16:31-16:33/2	07:27 16:57-17:26/29	06:19 06:43-07:01/18	06:06 06:32-07:14/42	05:15 05:49-06:25/36	05:05 06:01-06:18/17
	17:06	18:08	19:01	20:58 20:09-20:29/20	21:48 21:10-21:15/5	22:09 21:13-21:33/20
29	08:27 16:29-16:35/6		07:17 07:40-08:01/21	06:04 06:30-07:07/37	05:14 05:49-06:24/35	05:05 06:01-06:17/16
	17:08		20:03	21:00 20:10-20:28/18	21:50 21:09-21:16/7	22:09 21:13-21:33/20
30	08:25 16:28-16:37/9		07:14 07:38-08:02/24	06:02 06:28-07:05/37	05:12 05:50-06:22/32	05:06 06:01-06:18/17
	17:10		20:04	21:02 20:10-20:27/17	21:51 21:09-21:17/8	22:09 21:14-21:33/19
31	08:24 16:28-16:40/12		07:12 07:35-08:02/27		05:11 05:50-06:20/30	
	17:12		20:06		21:52 21:09-21:18/9	
Potential sun hours	250	273	367	420	494	510
Sum of minutes with flicker	29	795	237	1338	1357	1091

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar per WTG

Calculation: Worst Case Analysis **WTG:** 5 - T05

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July	August	September	October	November	December
1	05:06 06:01-06:19/18	05:46 06:17-07:07/50	06:41 07:08-07:53/45	07:34	07:32 15:55-16:25/30	08:27
	22:08 21:14-21:33/19	21:33	20:26	19:13	17:02	16:18
2	05:07 06:00-06:19/19	05:48 06:19-07:08/49	06:43 07:10-07:54/44	07:36	07:34 15:55-16:25/30	08:29
	22:08 21:14-21:32/18	21:31	20:24	19:10	17:00	16:17
3	05:08 06:00-06:20/20	05:50 06:20-07:09/49	06:44 07:12-07:55/43	07:38	07:36 15:55-16:25/30	08:31
	22:08 21:14-21:32/18	21:29	20:22	19:08	16:58	16:16
4	05:09 06:00-06:21/21	05:51 06:22-07:10/48	06:46 07:13-07:55/42	07:40	07:38 15:55-16:24/29	08:32
	22:07 21:15-21:32/17	21:28	20:19	19:05	16:56	16:15
5	05:10 06:00-06:22/22	05:53 06:23-07:09/46	06:48 07:15-07:56/41	07:41	07:40 15:55-16:22/27	08:33
	22:07 21:15-21:31/16	21:26	20:17	19:03	16:54	16:15
6	05:11 06:00-06:23/23	05:55 06:25-07:10/45	06:50 07:17-07:56/39	07:43	07:42 15:55-16:20/25	08:35
	22:06 21:15-21:31/16	21:24	20:14	19:00	16:52	16:14
7	05:12 06:00-06:23/23	05:57 06:27-07:11/44	06:51 07:18-07:56/38	07:45	07:44 15:56-16:19/23	08:36
	22:05 21:15-21:30/15	21:22	20:12	18:58	16:50	16:14
8	05:13 06:00-06:24/24	05:58 06:28-07:11/43	06:53 07:20-07:56/36	07:47 17:41-17:51/10	07:46 15:57-16:17/20	08:37
	22:05 21:15-21:29/14	21:20	20:09	18:56	16:49	16:13
9	05:14 05:59-06:24/25	06:00 06:30-07:11/41	06:55 07:22-07:56/34	07:49 17:38-17:54/16	07:48 15:57-16:15/18	08:39
	22:04 21:15-21:28/13	21:18	20:07	18:53	16:47	16:13
10	05:15 05:59-06:25/26	06:02 06:31-07:11/40	06:57 07:24-07:56/32	07:51 17:35-17:56/21	07:50 15:58-16:13/15	08:40
	22:03 21:15-21:28/13	21:16 20:24-20:29/5	20:05	18:51	16:45	16:13
11	05:16 05:59-06:25/26	06:04 06:33-07:11/38	06:58 07:25-07:54/29	07:52 17:33-17:57/24	07:52 15:59-16:11/12	08:41
	22:02 21:16-21:27/11	21:14 20:21-20:32/11	20:02	18:48	16:43	16:13
12	05:17 05:59-06:26/27	06:05 06:35-07:11/36	07:00 07:27-07:54/27	07:54 17:32-17:58/26	07:54 16:00-16:09/9	08:42
	22:01 21:17-21:27/10	21:12 20:20-20:34/14	20:00	18:46	16:42	16:12
13	05:18 05:58-06:30/32	06:07 06:36-07:13/37	07:02 07:29-07:53/24	07:56 17:31-17:59/28	07:56 16:01-16:07/6	08:43
	22:00 21:17-21:26/9	21:10 20:18-20:34/16	19:57	18:44	16:40	16:12
14	05:19 05:58-06:31/33	06:09 06:38-07:18/40	07:04 07:30-07:52/22	07:58 17:30-18:00/30	07:58 16:03-16:05/2	08:44
	21:59 21:18-21:25/7	21:07 20:17-20:35/18	19:55	18:41	16:38	16:12
15	05:21 05:58-06:33/35	06:11 06:40-07:22/42	07:06 07:32-07:51/19	08:00 17:29-18:00/31	07:59	08:45
	21:58 21:18-21:24/6	21:05 20:15-20:35/20	19:52	18:39	16:37	16:12
16	05:22 05:57-06:34/37	06:12 06:41-07:24/43	07:07 07:34-07:49/15	08:02 17:28-18:00/32	08:01	08:46
	21:57 21:18-21:22/4	21:03 20:15-20:33/18	19:50	18:37	16:35	16:12
17	05:23 05:58-06:36/38	06:14 06:43-07:26/43	07:09 07:36-07:48/12	08:04 17:28-18:00/32	08:03	08:47
	21:56 21:20-21:22/2	21:01 20:15-20:32/17	19:47	18:34	16:34	16:12
18	05:25 05:58-06:37/39	06:16 06:45-07:27/42	07:11 07:37-07:45/8	08:06 17:28-18:00/32	08:05	08:48
	21:55 21:20-21:21/1	20:59 20:14-20:29/15	19:45	18:32	16:32	16:13
19	05:26 05:58-06:37/39	06:18 06:46-07:28/42	07:13 07:39-07:42/3	08:07 17:27-18:00/33	08:07	08:48
	21:53	20:57 20:14-20:27/13	19:42	18:30	16:31	16:13
20	05:28 06:00-06:39/39	06:19 06:48-07:29/41	07:14	08:09 17:27-17:58/31	08:09	08:49
	21:52	20:54 20:14-20:25/11	19:40	18:28	16:30	16:13
21	05:29 06:01-06:39/38	06:21 06:50-07:29/39	07:16	08:11 17:27-17:55/28	08:11	08:50
	21:51	20:52 20:14-20:22/8	19:37	18:25	16:28	16:14
22	05:31 06:02-06:39/37	06:23 06:51-07:29/38	07:18	08:13 17:28-17:53/25	08:12	08:50
	21:49	20:50 20:14-20:21/7	19:35	18:23	16:27	16:14
23	05:32 06:04-06:42/38	06:25 06:53-07:30/37	07:20	08:15 17:28-17:51/23	08:14	08:51
	21:48	20:48 20:15-20:19/4	19:32	18:21	16:26	16:15
24	05:34 06:05-06:43/38	06:27 06:55-07:31/36	07:22	08:17 17:04-17:17/13	08:16	08:51
	21:46	20:45 20:16-20:17/1	19:30	18:19 17:29-17:48/19	16:24	16:15
25	05:35 06:07-06:45/38	06:28 06:56-07:31/35	07:23	07:19 16:02-16:19/17	08:18	08:51
	21:45	20:43	19:27	17:17 16:29-16:46/17	16:23	16:16
26	05:37 06:08-06:46/38	06:30 06:58-07:32/34	07:25	07:21 16:00-16:21/21	08:19	08:52
	21:43 06:49-06:57/8	20:41	19:25	17:14 16:30-16:44/14	16:22	16:17
27	05:38 06:09-07:00/51	06:32 07:00-07:32/32	07:27	07:23 15:58-16:22/24	08:21	08:52
	21:42	20:38 07:36-07:41/5	19:22	17:12 16:32-16:41/9	16:21	16:17
28	05:40 06:11-07:02/51	06:34 07:01-07:45/44	07:29	07:25 15:57-16:23/26	08:23	08:52
	21:40	20:36	19:20	17:10 16:33-16:39/6	16:20	16:18
29	05:41 06:12-07:03/51	06:35 07:03-07:47/44	07:31	07:27 15:57-16:24/27	08:24	08:52
	21:38	20:34	19:18	17:08 16:37-16:38/1	16:19	16:19
30	05:43 06:14-07:05/51	06:37 07:05-07:50/45	07:32	07:29 15:56-16:25/29	08:26	08:52
	21:37	20:31	19:15	17:06	16:18	16:20
31	05:45 06:15-07:06/51	06:39 07:07-07:53/46		07:31 15:56-16:25/29		08:52
	21:35	20:29		17:04		16:21
Potential sun hours	512	460	382	328	259	233
Sum of minutes with flicker	1265	1472	553	674	276	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar per WTG

Calculation: Worst Case Analysis **WTG:** 6 - T06

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June
1	08:52 15:02-15:36/34 16:22	08:22 15:40-16:19/39 17:14	07:24 18:10	07:09 07:33-07:59/26 20:08	06:00 06:42-06:54/12 21:04 19:59-20:06/7	05:10 20:54-21:19/25 21:54
2	08:52 15:02-15:37/35 16:24 15:44-15:46/2	08:20 15:40-16:18/38 17:16	07:22 18:12	07:07 07:31-07:58/27 20:10	05:58 06:46-06:50/4 21:05	05:09 20:54-21:20/26 21:55
3	08:52 15:03-15:38/35 16:25 15:44-15:47/3	08:18 15:41-16:18/37 17:18	07:20 18:14	07:04 07:28-07:56/28 20:12	05:56 21:07	05:09 20:55-21:22/27 21:56
4	08:52 15:03-15:38/35 16:26 15:43-15:48/5	08:17 15:42-16:17/35 17:20	07:17 18:15	07:02 07:26-07:55/29 20:14	05:54 21:09	05:08 20:55-21:22/27 21:57
5	08:51 15:04-15:39/35 16:27 15:42-15:50/8	08:15 15:43-16:17/34 17:22	07:15 18:17	06:59 07:23-07:52/29 20:16 19:47-19:48/1	05:52 21:11	05:07 20:55-21:23/28 21:58
6	08:51 15:04-15:39/35 16:29 15:41-15:51/10	08:13 15:43-16:16/33 17:24	07:13 18:19	06:57 07:21-07:50/29 20:17 19:45-19:50/5	05:50 21:13	05:06 20:56-21:24/28 21:59
7	08:50 15:04-15:39/35 16:30 15:41-15:52/11	08:11 15:45-16:15/30 17:26	07:10 18:21	06:55 07:18-07:45/27 20:19 19:43-19:52/9	05:48 21:14	05:06 20:56-21:25/29 22:00
8	08:50 15:05-15:40/35 16:31 15:41-15:55/14	08:09 15:46-16:14/28 17:28	07:08 18:23	06:52 07:16-07:43/27 20:21 19:42-19:54/12	05:46 21:16	05:05 20:57-21:26/29 22:01
9	08:49 15:06-15:56/50 16:33	08:07 15:48-16:13/25 17:30	07:05 18:25	06:50 07:14-07:43/29 20:23 19:41-19:56/15	05:44 21:18	05:04 05:36-05:37/1 22:02 20:57-21:26/29
10	08:49 15:06-15:58/52 16:34	08:05 15:50-16:11/21 17:32	07:03 18:27	06:47 07:11-07:42/31 20:25 19:40-19:57/17	05:42 21:20	05:04 05:36-05:38/2 22:03 20:58-21:28/30
11	08:48 15:06-15:59/53 16:36	08:03 15:53-16:09/16 17:34	07:01 18:29	06:45 07:09-07:41/32 20:27 19:39-19:59/20	05:40 21:22	05:03 05:36-05:39/3 22:04 20:57-21:28/31
12	08:47 15:07-16:01/54 16:37	08:01 15:57-16:05/8 17:36	06:58 07:22-07:23/1 18:31	06:43 07:07-07:40/33 20:29 19:39-20:01/22	05:39 21:23	05:03 05:35-05:39/4 22:05 20:58-21:29/31
13	08:46 15:07-16:03/56 16:39	07:59 17:38	06:56 07:20-07:25/5 18:33	06:40 07:04-07:38/34 20:30 19:38-20:02/24	05:37 21:25	05:03 05:35-05:40/5 22:05 20:59-21:29/30
14	08:46 15:08-16:05/57 16:41	07:57 17:40	06:53 07:17-07:25/8 18:35	06:38 07:02-07:36/34 20:32 19:39-20:04/25	05:35 21:27	05:02 05:35-05:40/5 22:06 20:59-21:30/31
15	08:45 15:09-16:07/58 16:42	07:55 17:42	06:51 07:15-07:27/12 18:36	06:36 07:00-07:34/34 20:34 19:39-20:06/27	05:33 21:28	05:02 05:35-05:41/6 22:07 21:00-21:31/31
16	08:44 15:10-16:09/59 16:44	07:53 17:44	06:48 07:12-07:27/15 18:38	06:33 06:58-07:21/23 19:38-20:07/29 20:36 07:24-07:31/7	05:32 20:56-20:58/2 21:30	05:02 05:35-05:41/6 22:07 21:00-21:31/31
17	08:43 15:11-16:11/60 16:46	07:51 17:46	06:46 18:13-18:14/1 18:40 07:10-07:27/17	06:31 06:55-07:20/25 20:38 19:39-20:09/30	05:30 20:55-20:59/4 21:32	05:02 05:35-05:42/7 22:08 21:01-21:32/31
18	08:42 15:11-16:12/61 16:47	07:49 17:48	06:44 18:10-18:15/5 18:42 07:07-07:27/20	06:29 06:53-07:19/26 20:40 19:40-20:11/31	05:28 20:54-21:01/7 21:33	05:02 05:35-05:42/7 22:08 21:01-21:32/31
19	08:40 15:12-16:14/62 16:49	07:47 17:50	06:41 18:09-18:18/9 18:44 07:05-07:27/22	06:26 06:51-07:18/27 20:42 19:42-20:13/31	05:27 20:53-21:02/9 21:35	05:02 05:35-05:42/7 22:08 21:01-21:33/32
20	08:39 15:13-16:15/62 16:51	07:45 17:52	06:39 18:07-18:19/12 18:46 07:03-07:27/24	06:24 06:49-07:16/27 20:43 19:42-20:14/32	05:25 20:53-21:04/11 21:37	05:02 05:35-05:42/7 22:09 21:01-21:33/32
21	08:38 15:14-16:15/61 16:53	07:42 17:54	06:36 18:07-18:21/14 18:48 07:00-07:26/26	06:22 06:46-07:12/26 20:45 19:45-20:16/31	05:24 20:53-21:05/12 21:38	05:02 05:35-05:42/7 22:09 21:02-21:33/31
22	08:37 15:16-16:16/60 16:55	07:40 17:56	06:34 18:06-18:23/17 18:50 06:58-07:26/28	06:19 06:44-07:11/27 20:47 19:49-20:17/28	05:22 20:52-21:06/14 21:40	05:02 05:35-05:42/7 22:09 21:02-21:33/31
23	08:36 15:17-16:16/59 16:56	07:38 17:58	06:31 18:06-18:25/19 18:51 06:55-07:24/29	06:17 06:42-07:09/27 20:49 19:50-20:17/27	05:21 20:52-21:08/16 21:41	05:03 05:36-05:43/7 22:09 21:02-21:34/32
24	08:34 15:19-16:18/59 16:58	07:36 18:00	06:29 18:05-18:26/21 18:53 06:53-07:23/30	06:15 06:40-07:08/28 20:51 19:50-20:17/27	05:20 20:52-21:09/17 21:43	05:03 05:36-05:43/7 22:09 21:02-21:33/31
25	08:33 15:20-15:36/16 17:00 15:38-16:18/40	07:33 18:02	06:26 18:05-18:29/24 18:55 06:50-07:21/31	06:13 06:38-07:06/28 20:53 19:50-20:16/26	05:18 20:53-21:11/18 21:44	05:03 05:36-05:43/7 22:09 21:02-21:33/31
26	08:31 15:23-15:34/11 17:02 15:38-16:18/40	07:31 18:04	06:24 18:05-18:28/23 18:57 06:48-07:19/31	06:11 06:37-07:01/24 20:54 19:51-20:15/24	05:17 20:53-21:12/19 21:46	05:04 05:37-05:43/6 22:09 21:03-21:34/31
27	08:30 15:38-16:18/40 17:04	07:29 18:06	06:21 18:06-18:28/22 18:59 06:45-07:15/30	06:08 06:37-07:00/23 20:56 19:52-20:14/22	05:16 20:53-21:13/20 21:47	05:04 05:37-05:43/6 22:09 21:02-21:33/31
28	08:28 15:38-16:18/40 17:06	07:27 18:08	06:19 18:07-18:27/20 07:03-07:12/9 19:01 06:43-07:02/19	06:06 06:38-06:59/21 20:58 19:53-20:13/20	05:15 20:53-21:15/22 21:48	05:05 05:38-05:44/6 22:09 21:03-21:33/30
29	08:27 15:38-16:18/40 17:08		07:17 19:07-19:25/18 20:03 07:40-08:01/21	06:04 06:39-06:57/18 21:00 19:54-20:11/17	05:13 20:53-21:16/23 21:50	05:05 05:38-05:43/5 22:09 21:02-21:33/31
30	08:25 15:39-16:18/39 17:10		07:14 19:09-19:23/14 20:04 07:38-08:01/23	06:02 06:40-06:56/16 21:02 19:56-20:09/13	05:12 20:53-21:17/24 21:51	05:06 05:39-05:43/4 22:09 21:02-21:33/31
31	08:24 15:40-16:19/39 17:12		07:12 19:11-19:19/8 20:06 07:35-07:59/24		05:11 20:53-21:18/25 21:52	
Potential sun hours	250	273	367	420	494	510
Sum of minutes with flicker	1560	344	652	1387	266	1021

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar per WTG

Calculation: Worst Case Analysis **WTG:** 6 - T06

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July	August	September	October	November	December
1	05:06 05:40-05:44/4	05:46	06:41 07:08-07:40/32	07:34 08:01-08:03/2	07:32 15:19-15:41/22	08:27 14:48-15:41/53
	22:08 21:03-21:33/30	21:33	20:26 19:38-19:58/20	19:13	17:02	16:18
2	05:07 05:40-05:43/3	05:48	06:43 07:10-07:41/31	07:36	07:34 15:17-15:43/26	08:29 14:49-15:41/52
	22:08 21:02-21:32/30	21:31	20:24 19:39-19:56/17	19:10	17:00	16:17
3	05:08 05:41-05:43/2	05:50	06:44 07:12-07:41/29	07:38	07:36 15:15-15:44/29	08:30 14:49-15:39/50
	22:08 21:02-21:32/30	21:29	20:22 19:38-19:53/15	19:08	16:58	16:16
4	05:09 05:42-05:43/1	05:51	06:46 07:13-07:40/27	07:40	07:38 15:14-15:45/31	08:32 14:49-15:24/35
	22:07 21:02-21:32/30	21:28	20:19 19:39-19:51/12	19:05	16:56	16:15 15:25-15:39/14
5	05:10 21:02-21:31/29	05:53	06:48 07:15-07:41/26	07:41	07:40 15:13-15:46/33	08:33 14:50-15:25/35
	22:07	21:26	20:17 19:40-19:49/9	19:03	16:54	16:15 15:27-15:39/12
6	05:11 21:01-21:31/30	05:55	06:50 07:17-07:46/29	07:43	07:42 15:12-15:47/35	08:35 14:50-15:25/35
	22:06	21:24	20:14 19:41-19:47/6	19:00	16:52	16:14 15:27-15:37/10
7	05:12 21:01-21:30/29	05:57	06:51 07:18-07:47/29	07:45	07:44 15:12-15:48/36	08:36 14:50-15:25/35
	22:05	21:22	20:12 19:42-19:43/1	18:58	16:50	16:14 15:28-15:36/8
8	05:13 21:01-21:29/28	05:58	06:53 07:20-07:49/29	07:47	07:46 15:12-15:49/37	08:37 14:51-15:26/35
	22:05	21:20	20:09	18:56	16:49	16:13 15:31-15:36/5
9	05:14 21:01-21:28/27	06:00	06:55 07:22-07:50/28	07:49	07:48 15:11-15:49/38	08:39 14:51-15:26/35
	22:04	21:18	20:07	18:53	16:47	16:13 15:32-15:36/4
10	05:15 21:01-21:28/27	06:02	06:57 07:24-07:51/27	07:51	07:50 15:11-15:49/38	08:40 14:51-15:26/35
	22:03	21:16	20:04	18:51	16:45	16:13 15:33-15:35/2
11	05:16 21:01-21:27/26	06:04 06:53-07:00/7	06:58 07:25-07:51/26	07:52	07:52 15:11-15:50/39	08:41 14:53-15:27/34
	22:02	21:14	20:02	18:48	16:43	16:13
12	05:17 21:02-21:27/25	06:05 06:50-07:03/13	07:00 19:04-19:11/7	07:54	07:54 15:10-15:50/40	08:42 14:53-15:27/34
	22:01	21:12 20:07-20:15/8	20:00 07:27-07:51/24	18:46	16:42	16:12
13	05:18 21:02-21:26/24	06:07 06:47-07:04/17	07:02 19:00-19:13/13	07:56	07:56 15:10-15:50/40	08:43 14:53-15:28/35
	22:00	21:10 20:03-20:17/14	19:57 07:29-07:52/23	18:44	16:40	16:12
14	05:19 21:02-21:25/23	06:09 06:46-07:05/19	07:04 18:58-19:15/17	07:58	07:58 15:10-15:50/40	08:44 14:54-15:28/34
	21:59	21:07 20:01-20:19/18	19:55 07:30-07:51/21	18:41	16:38	16:12
15	05:21 21:02-21:24/22	06:11 06:46-07:06/20	07:06 18:56-19:16/20 07:54-08:01/7	08:00	07:59 15:10-15:50/40	08:45 14:54-15:29/35
	21:58	21:05 19:59-20:20/21	19:52 07:32-07:52/20	18:39	16:37	16:12
16	05:22 21:01-21:22/21	06:12 06:44-07:06/22	07:07 18:55-19:17/22	08:02	08:01 14:57-15:08/11	08:46 14:55-15:29/34
	21:57	21:03 19:58-20:21/23	19:50 07:34-08:04/30	18:37	16:35 15:11-15:50/39	16:12
17	05:23 21:01-21:21/20	06:14 06:43-07:09/26	07:09 18:53-19:17/24	08:04	08:03 14:54-15:10/16	08:47 14:56-15:30/34
	21:56	21:01 19:57-20:22/25	19:47 07:36-08:07/31	18:34	16:34 15:12-15:51/39	16:12
18	05:25 21:02-21:21/19	06:16 06:45-07:13/28	07:11 18:53-19:16/23	08:06	08:05 14:53-15:51/58	08:48 14:55-15:29/34
	21:55	20:59 19:56-20:22/26	19:45 07:37-08:08/31	18:32	16:32	16:13
19	05:26 21:02-21:19/17	06:18 06:46-07:14/28	07:13 18:52-19:14/22	08:07	08:07 14:52-15:51/59	08:48 14:56-15:30/34
	21:53	20:57 19:55-20:22/27	19:42 07:39-08:09/30	18:30	16:31	16:13
20	05:28 21:02-21:18/16	06:19 06:48-07:15/27	07:14 18:52-19:12/20	08:09	08:09 14:51-15:51/60	08:49 14:57-15:31/34
	21:52	20:54 19:55-20:23/28	19:40 07:41-08:10/29	18:28	16:30	16:13
21	05:29 21:03-21:17/14	06:21 06:50-07:16/26	07:16 18:51-19:09/18	08:11	08:11 14:50-15:51/61	08:50 14:57-15:31/34
	21:51	20:52 19:54-20:22/28	19:37 07:43-08:11/28	18:25	16:28	16:14
22	05:31 21:03-21:16/13	06:23 06:51-07:18/27	07:18 18:51-19:06/15	08:13	08:12 14:49-15:51/62	08:50 14:58-15:32/34
	21:49	20:50 19:49-20:21/32	19:35 07:44-08:11/27	18:23	16:27	16:14
23	05:32 21:04-21:15/11	06:25 06:53-07:20/27	07:20 18:52-19:04/12	08:15	08:14 14:49-15:51/62	08:51 14:58-15:32/34
	21:48	20:47 19:47-20:19/32	19:32 07:46-08:11/25	18:21	16:26	16:15
24	05:34 21:04-21:13/9	06:27 06:55-07:21/26	07:22 18:53-19:02/9	08:17	08:16 14:49-15:50/61	08:51 14:58-15:32/34
	21:46	20:45 19:45-20:17/32	19:30 07:48-08:11/23	18:19	16:24	16:15
25	05:35 21:04-21:12/8	06:28 06:56-07:22/26	07:23 18:53-18:59/6	07:19	08:18 14:48-15:48/60	08:51 14:59-15:33/34
	21:45	20:43 19:43-20:14/31	19:27 07:50-08:11/21	17:17	16:23	16:16
26	05:37 21:05-21:11/6	06:30 06:58-07:23/25	07:25 18:54-18:56/2	07:21	08:19 14:48-15:47/59	08:52 15:00-15:34/34
	21:43	20:41 19:42-20:12/30	19:25 07:51-08:09/18	17:14	16:22	16:17
27	05:38 21:05-21:09/4	06:32 07:00-07:23/23 19:41-20:10/29	07:27 07:53-08:09/16	07:23	08:21 14:48-15:46/58	08:52 15:00-15:34/34
	21:42	20:38 07:26-07:33/7	19:22	17:12	16:21	16:17
28	05:40 21:07-21:08/1	06:34 07:01-07:35/34	07:29 07:55-08:08/13	07:25	08:23 14:48-15:45/57	08:52 15:00-15:34/34
	21:40	20:36 19:40-20:07/27	19:20	17:10	16:20	16:18
29	05:41	06:35 07:03-07:37/34	07:30 07:57-08:07/10	07:27	08:24 14:48-15:44/56	08:52 15:01-15:35/34
	21:38	20:34 19:39-20:05/26	19:17	17:08	16:19	16:19
30	05:43	06:37 07:05-07:39/34	07:32 07:59-08:05/6	07:29 15:25-15:36/11	08:26 14:48-15:42/54	08:52 15:01-15:35/34
	21:37	20:31 19:39-20:03/24	19:15	17:06	16:18	16:20
31	05:45	06:39 07:07-07:39/32		07:30 15:22-15:39/17		08:52 15:02-15:36/34
	21:35	20:29 19:38-20:00/22		17:04		16:21
Potential sun hours	512	460	382	328	259	233
Sum of minutes with flicker	579	1031	1056	30	1396	1171

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar per WTG

Calculation: Worst Case Analysis **WTG:** 7 - T07

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January		February		March		April		May		June	
1	08:52	13:39-14:28/49	08:22	16:36-16:42/6	07:24	17:31-17:42/11	07:09	19:26-19:41/15	06:00	19:42-20:34/52	05:10	21:07-21:19/12
	16:22		17:14		18:10		20:08	18:56-19:14/18	21:04		21:54	
2	08:52	13:40-14:29/49	08:20	16:35-16:44/9	07:22	17:30-17:44/14	07:07	19:26-19:43/17	05:58	19:44-20:36/52	05:09	21:07-21:20/13
	16:24		17:16		18:12		20:10	18:58-19:09/11	21:05		21:55	
3	08:52	13:41-14:30/49	08:18	16:34-16:46/12	07:20	17:29-17:46/17	07:04	19:26-19:45/19	05:56	19:45-20:37/52	05:09	21:07-21:22/15
	16:25		17:18		18:13		20:12		21:07		21:56	
4	08:52	13:41-14:29/48	08:17	16:34-16:48/14	07:17	17:29-17:48/19	07:02	19:26-19:46/20	05:54	19:48-20:36/48	05:08	21:07-21:22/15
	16:26		17:20		18:15		20:14		21:09		21:57	
5	08:51	13:42-14:30/48	08:15	16:34-16:50/16	07:15	17:29-17:50/21	06:59	19:26-19:47/21	05:52	19:54-20:36/42	05:07	21:07-21:23/16
	16:27		17:22		18:17		20:16		21:11		21:58	
6	08:51	13:43-14:30/47	08:13	16:34-16:53/19	07:13	17:29-17:52/23	06:57	19:28-19:46/18	05:50	19:54-20:36/42	05:06	21:07-21:24/17
	16:29		17:24		18:19		20:17		21:13		21:59	
7	08:50	13:43-14:30/47	08:11	16:34-16:55/21	07:10	17:29-17:54/25	06:55	19:28-19:44/16	05:48	19:54-20:36/42	05:06	21:07-21:25/18
	16:30		17:26		18:21		20:19		21:14		22:00	
8	08:50	13:45-14:30/45	08:09	16:34-16:57/23	07:08	17:30-17:56/26	06:52	19:30-19:41/11	05:46	19:55-20:36/41	05:05	21:07-21:26/19
	16:31		17:28		18:23		20:21		21:16		22:01	
9	08:49	13:45-14:30/45	08:07	16:35-16:58/23	07:05	17:30-17:58/28	06:50	19:51-19:56/5	05:44	19:55-20:36/41	05:04	21:07-21:26/19
	16:33		17:30		18:25		20:23		21:18		22:02	
10	08:49	13:46-14:30/44	08:05	16:36-16:58/22	07:03	17:31-18:00/29	06:47	19:48-19:57/9	05:42	19:55-20:35/40	05:04	21:08-21:27/19
	16:34		17:32		18:27		20:25		21:20		22:03	
11	08:48	13:47-14:30/43	08:03	16:36-16:57/21	07:01	17:34-18:02/28	06:45	19:46-19:59/13	05:40	19:55-20:34/39	05:03	21:07-21:28/21
	16:36		17:34		18:29		20:27		21:21		22:04	
12	08:47	13:48-14:29/41	08:01	16:38-16:56/18	06:58	17:36-18:04/28	06:43	19:44-20:01/17	05:39	19:56-20:34/38	05:03	21:07-21:29/22
	16:37		17:36		18:31		20:29		21:23		22:05	
13	08:46	13:49-14:29/40	07:59	16:39-16:55/16	06:56	17:41-18:06/25	06:40	19:42-20:02/20	05:37	19:56-20:34/38	05:03	21:08-21:29/21
	16:39		17:38		18:33		20:30		21:25		22:05	
14	08:46	13:50-14:29/39	07:57	16:40-16:52/12	06:53	17:41-18:08/27	06:38	19:41-20:04/23	05:35	19:57-20:34/37	05:02	21:08-21:30/22
	16:41		17:40		18:35		20:32		21:27		22:06	
15	08:45	13:52-14:29/37	07:55	16:44-16:49/5	06:51	17:42-18:10/28	06:35	19:40-20:06/26	05:33	19:57-20:33/36	05:02	21:09-21:31/22
	16:42		17:42		18:36		20:34		21:28		22:07	
16	08:44	13:53-14:28/35	07:53		06:48	17:43-18:11/28	06:33	19:39-20:07/28	05:32	19:58-20:32/34	05:02	21:09-21:31/22
	16:44		17:44		18:38		20:36		21:30		22:07	
17	08:43	13:55-14:28/33	07:51		06:46	17:45-18:14/29	06:31	19:38-20:09/31	05:30	19:58-20:31/33	05:02	21:09-21:32/23
	16:46		17:46		18:40		20:38		21:32		22:08	
18	08:42	13:56-14:26/30	07:49		06:44	17:47-18:15/28	06:29	19:38-20:11/33	05:28	20:00-20:31/31	05:02	21:09-21:32/23
	16:47		17:48		18:42		20:40		21:33		22:08	
19	08:40	13:58-14:25/27	07:47		06:41	17:52-18:18/26	06:26	19:38-20:13/35	05:27	20:00-20:30/30	05:02	21:09-21:33/24
	16:49		17:50		18:44		20:41		21:35		22:08	
20	08:39	14:01-14:24/23	07:45		06:39	17:50-18:19/29	06:24	19:37-20:14/37	05:25	20:01-20:29/28	05:02	21:10-21:33/23
	16:51		17:52		18:46		20:43		21:37		22:09	
21	08:38	14:03-14:22/19	07:42		06:36	17:50-18:21/31	06:22	19:37-20:16/39	05:24	20:03-20:28/25	05:02	21:10-21:33/23
	16:53		17:54		18:48		20:45		21:38		22:09	
22	08:37	14:07-14:19/12	07:40		06:34	17:49-18:23/34	06:19	19:37-20:18/41	05:22	20:03-20:27/24	05:02	21:10-21:33/23
	16:55		17:56		18:50		20:47		21:40		22:09	
23	08:35		07:38		06:31	17:50-18:25/35	06:17	19:37-20:20/43	05:21	20:05-20:26/21	05:02	21:10-21:34/24
	16:56		17:58		18:51		20:49		21:41		22:09	
24	08:34		07:36		06:29	17:49-18:25/36	06:15	19:37-20:22/45	05:20	20:07-20:24/17	05:03	21:10-21:33/23
	16:58		18:00		18:53		20:51		21:43		22:09	
25	08:33		07:33		06:26	17:49-18:24/35	06:13	19:37-20:24/47	05:18	21:10-21:11/1	05:03	21:10-21:33/23
	17:00		18:02		18:55		20:53		21:44	20:09-20:23/14	22:09	
26	08:31		07:31	17:35-17:36/1	06:24	17:49-18:22/33	06:11	19:38-20:25/47	05:17	21:09-21:12/3	05:04	21:11-21:34/23
	17:02		18:04		18:57		20:54		21:46	20:12-20:20/8	22:09	
27	08:30		07:29	17:34-17:38/4	06:21	18:31-18:32/1	06:08	19:38-20:27/49	05:16	21:09-21:13/4	05:04	21:11-21:33/22
	17:04		18:06		18:59	17:50-18:22/32	20:56		21:47		22:09	
28	08:28		07:27	17:32-17:40/8	06:19	18:30-18:34/4	06:06	19:39-20:29/50	05:15	21:08-21:15/7	05:05	21:11-21:33/22
	17:06		18:08		19:01	17:51-18:21/30	20:58		21:48		22:09	
29	08:27				07:16	19:28-19:36/8	06:04	19:40-20:31/51	05:13	21:08-21:16/8	05:05	21:11-21:33/22
	17:08				20:03	18:51-19:19/28	21:00		21:50		22:09	
30	08:25				07:14	19:28-19:38/10	06:02	19:41-20:32/51	05:12	21:08-21:17/9	05:06	21:12-21:33/21
	17:10				20:04	18:52-19:18/26	21:02		21:51		22:09	
31	08:24	16:36-16:40/4			07:12	19:26-19:39/13			05:11	21:07-21:18/11		
	17:12				20:06	18:53-19:16/23			21:52			
Potential sun hours	250		273		367		420		494		510	
Sum of minutes with flicker		854		250		868		906		948		612

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar per WTG

Calculation: Worst Case Analysis **WTG:** 7 - T07

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July	August	September	October	November	December
1	05:06 21:12-21:33/21 22:08	05:46 20:06-20:45/39 21:33	06:41 19:45-19:58/13 20:26	07:34 18:20-18:44/24 19:13	07:32 16:05-16:27/22 17:02	08:27 13:29-14:12/43 16:18
2	05:07 21:12-21:32/20 22:08	05:48 20:05-20:45/40 21:31	06:43 19:47-19:56/9 20:24	07:36 18:13-18:41/28 19:10	07:34 16:04-16:28/24 17:00	08:29 13:29-14:13/44 16:17
3	05:08 21:12-21:32/20 22:08	05:50 20:05-20:45/40 21:29	06:44 19:48-19:53/5 20:22	07:38 18:10-18:39/29 19:08	07:36 16:04-16:26/22 16:58	08:30 13:29-14:13/44 16:16
4	05:09 21:13-21:32/19 22:07	05:51 20:05-20:46/41 21:28	06:46 19:27-19:38/11 20:19	07:40 18:08-18:37/29 19:05	07:38 16:04-16:24/20 16:56	08:32 13:29-14:14/45 16:15
5	05:10 21:13-21:31/18 22:07	05:53 20:04-20:46/42 21:26	06:48 19:25-19:41/16 20:17	07:41 18:07-18:34/27 19:03	07:40 16:04-16:22/18 16:54	08:33 13:29-14:16/47 16:15
6	05:11 21:13-21:30/17 22:06	05:55 20:04-20:46/42 21:24	06:50 19:23-19:41/18 20:14	07:43 18:06-18:32/26 19:00	07:42 16:04-16:20/16 16:52	08:35 13:29-14:16/47 16:14
7	05:12 21:13-21:29/16 22:05	05:57 20:03-20:45/42 21:22	06:51 19:22-19:42/20 20:12	07:45 18:04-18:29/25 18:58	07:44 16:04-16:18/14 16:50	08:36 13:29-14:16/47 16:14
8	05:13 21:13-21:29/16 22:05	05:58 20:04-20:46/42 21:20	06:53 19:21-19:41/20 20:09	07:47 18:04-18:26/22 18:56	07:46 16:05-16:17/12 16:49	08:37 13:29-14:17/48 16:13
9	05:14 21:14-21:28/14 22:04	06:00 19:57-20:46/49 21:18	06:55 19:20-19:39/19 20:07	07:49 18:04-18:24/20 18:53	07:48 16:06-16:15/9 16:47	08:39 13:29-14:18/49 16:13
10	05:15 21:14-21:28/14 22:03	06:02 19:53-20:45/52 21:16	06:57 19:19-19:36/17 20:04 18:52-19:02/10	07:51 18:03-18:21/18 18:51	07:50 16:06-16:13/7 16:45	08:40 13:29-14:18/49 16:13
11	05:16 21:14-21:27/13 22:02	06:04 19:52-20:44/52 21:14	06:58 19:19-19:34/15 20:02 18:48-19:05/17	07:52 18:04-18:19/15 18:48	07:52 16:07-16:11/4 16:43	08:41 13:30-14:20/50 16:13
12	05:17 21:15-21:27/12 22:01	06:05 19:50-20:42/52 21:12	07:00 19:19-19:32/13 20:00 18:46-19:08/22	07:54 18:04-18:17/13 18:46	07:54 16:08-16:09/1 16:42	08:42 13:30-14:20/50 16:12
13	05:18 21:16-21:26/10 22:00	06:07 19:48-20:39/51 21:10	07:02 19:18-19:29/11 19:57 18:43-19:08/25	07:56 18:04-18:14/10 18:44	07:56 16:40	08:43 13:30-14:20/50 16:12
14	05:19 21:16-21:25/9 21:59	06:09 19:47-20:38/51 21:07	07:04 19:18-19:26/8 19:55 18:42-19:09/27	07:58 18:05-18:12/7 18:41	07:58 16:38	08:44 13:31-14:21/50 16:12
15	05:21 21:17-21:24/7 21:58	06:11 19:45-20:35/50 21:05	07:06 19:19-19:24/5 19:52 18:40-19:10/30	08:00 18:06-18:10/4 18:39	07:59 16:37	08:45 13:31-14:22/51 16:12
16	05:22 21:17-21:22/5 21:57	06:12 19:45-20:33/48 21:03	07:07 19:20-19:22/2 19:50 18:39-19:11/32	08:02 18:37	08:01 16:35	08:46 13:32-14:22/50 16:12
17	05:23 21:17-21:21/4 21:56 20:24-20:26/2	06:14 19:44-20:32/48 21:01	07:09 18:38-19:10/32 19:47	08:04 18:34	08:03 16:34	08:47 13:32-14:23/51 16:12
18	05:25 21:19-21:21/2 21:54 20:20-20:31/11	06:16 19:43-20:29/46 20:59	07:11 18:37-19:11/34 19:45	08:05 18:32	08:05 16:32	08:48 13:32-14:23/51 16:13
19	05:26 20:18-20:33/15 21:53	06:18 19:43-20:27/44 20:56	07:13 18:36-19:12/36 19:42	08:07 18:30	08:07 16:31	08:48 13:32-14:24/52 16:13
20	05:28 20:16-20:34/18 21:52	06:19 19:42-20:25/43 20:54	07:14 18:36-19:12/36 19:40	08:09 18:28	08:09 13:42-13:54/12 16:29	08:49 13:33-14:24/51 16:13
21	05:29 20:15-20:37/22 21:51	06:21 19:41-20:22/41 20:52	07:16 18:35-19:09/34 19:37	08:11 18:25	08:11 13:39-13:58/19 16:28	08:50 13:33-14:24/51 16:14
22	05:30 20:13-20:37/24 21:49	06:23 19:41-20:21/40 20:50	07:18 18:35-19:06/31 19:35	08:13 18:23	08:12 13:37-14:00/23 16:27	08:50 13:34-14:25/51 16:14
23	05:32 20:12-20:38/26 21:48	06:25 19:41-20:19/38 20:47	07:20 18:35-19:04/29 19:32	08:15 18:21	08:14 13:35-14:02/27 16:26	08:51 13:34-14:25/51 16:15
24	05:34 20:11-20:40/29 21:46	06:27 19:41-20:17/36 20:45	07:21 18:35-19:02/27 19:30	08:17 18:19	08:16 13:34-14:04/30 16:24	08:51 13:34-14:25/51 16:15
25	05:35 20:10-20:40/30 21:45	06:28 19:41-20:14/33 20:43	07:23 18:31-18:59/28 19:27	07:19 17:17	08:18 13:32-14:05/33 16:23	08:51 13:36-14:27/51 16:16
26	05:37 20:10-20:42/32 21:43	06:30 19:41-20:12/31 20:41	07:25 18:27-18:56/29 19:25	07:21 17:14	08:19 13:31-14:06/35 16:22	08:52 13:36-14:27/51 16:17
27	05:38 20:08-20:42/34 21:42	06:32 19:42-20:10/28 20:38	07:27 18:25-18:54/29 19:22	07:23 16:12-16:20/8 17:12	08:21 13:31-14:08/37 16:21	08:52 13:36-14:27/51 16:17
28	05:40 20:08-20:43/35 21:40	06:34 19:41-20:07/26 20:36	07:29 18:24-18:52/28 19:20	07:25 16:09-16:22/13 17:10	08:23 13:30-14:09/39 16:20	08:52 13:37-14:27/50 16:18
29	05:41 20:07-20:43/36 21:38	06:35 19:42-20:05/23 20:33	07:30 18:22-18:49/27 19:17	07:27 16:07-16:24/17 17:08	08:24 13:30-14:10/40 16:19	08:52 13:37-14:28/51 16:19
30	05:43 20:07-20:44/37 21:37	06:37 19:43-20:03/20 20:31	07:32 18:20-18:47/27 19:15	07:29 16:07-16:26/19 17:06	08:26 13:29-14:11/42 16:18	08:52 13:38-14:28/50 16:20
31	05:45 20:06-20:44/38 21:35	06:39 19:43-20:00/17 20:29		07:30 16:06-16:27/21 17:04		08:52 13:39-14:29/50 16:21
Potential sun hours	512	460	382	328	259	233
Sum of minutes with flicker	626	1247	792	375	506	1527

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar per WTG

Calculation: Worst Case Analysis **WTG:** 8 - T08

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June
1	08:52 14:52-15:44/52 13:55-14:24/29 16:22 14:27-14:47/20 12:27-12:50/23	08:22 17:14	07:24 17:18-17:42/24 18:09	07:09 19:25-19:41/16 20:08	06:00 06:27-07:08/41 21:03	05:10 05:47-06:10/23 21:54
2	08:52 14:53-15:45/52 13:56-14:25/29 16:23 14:28-14:47/19 12:28-12:50/22	08:20 17:16	07:22 17:19-17:42/23 18:11	07:07 19:24-19:43/19 20:10	05:58 06:27-07:04/37 21:05	05:09 05:47-06:09/22 21:55
3	08:52 14:55-15:47/52 13:58-14:25/27 16:24 14:30-14:47/17 12:30-12:49/19	08:18 17:18	07:19 17:22-17:40/18 18:13	07:04 19:24-19:45/21 20:12	05:56 06:27-07:01/34 21:07	05:08 05:48-06:09/21 21:56
4	08:52 14:55-15:48/53 13:58-14:24/26 16:26 14:31-14:46/15 12:32-12:48/16	08:17 17:20	07:17 17:28-17:38/10 18:15	07:02 19:24-19:46/22 20:14	05:54 06:27-07:00/33 21:09	05:07 05:49-06:09/20 21:57
5	08:51 14:56-15:50/54 14:00-14:24/24 16:27 14:33-14:45/12 12:35-12:47/12	08:15 17:22	07:15 18:17	06:59 19:25-19:46/21 20:15	05:52 06:27-06:59/32 21:11	05:07 05:49-06:09/20 21:58
6	08:51 14:57-15:51/54 14:01-14:23/22 16:28 14:35-14:44/9 12:40-12:42/2	08:13 17:24	07:12 18:19	06:57 19:26-19:45/19 20:17	05:50 06:28-06:58/30 21:13	05:06 05:50-06:09/19 21:59
7	08:50 15:23-15:52/29 14:02-14:22/20 16:30 14:57-15:22/25	08:11 17:26	07:10 18:21	06:54 19:27-19:42/15 20:19	05:48 06:28-06:57/29 21:14	05:05 05:50-06:08/18 22:00
8	08:50 15:24-15:54/30 14:05-14:22/17 16:31 14:59-15:23/24	08:09 17:28	07:08 18:23	06:52 19:29-19:40/11 20:21	05:46 06:29-06:57/28 21:16	05:05 05:51-06:08/17 22:01
9	08:49 15:25-15:56/31 14:07-14:21/14 16:32 15:00-15:23/23	08:07 17:30	07:05 18:25	06:50 20:23	05:44 06:30-06:56/26 21:18	05:04 05:51-06:08/17 22:02
10	08:49 15:25-15:57/32 14:10-14:18/8 16:34 15:01-15:22/21	08:05 17:32	07:03 18:27	06:47 07:11-07:14/3 20:25	05:42 06:31-06:54/23 21:20	05:04 05:52-06:08/16 22:03
11	08:48 15:25-15:59/34 16:35 15:02-15:21/19	08:03 17:34	07:00 18:29	06:45 07:09-07:16/7 20:27	05:40 06:32-06:53/21 21:21	05:03 05:52-06:07/15 22:04
12	08:47 15:26-16:01/35 16:37 15:04-15:21/17	08:01 17:36	06:58 18:31	06:42 07:07-07:17/10 20:28	05:38 06:34-06:52/18 21:23	05:03 05:53-06:07/14 22:04
13	08:46 15:26-16:02/36 16:39 15:05-15:20/15	07:59 17:38	06:56 18:32	06:40 07:04-07:18/14 20:30	05:37 06:04-06:06/2 21:25 06:35-06:49/14	05:02 05:54-06:07/13 22:05
14	08:45 15:27-16:04/37 16:40 15:08-15:18/10	07:57 17:09-17:10/1 17:40	06:53 18:34	06:38 07:02-07:19/17 20:32	05:35 06:03-06:07/4 21:27 06:39-06:47/8	05:02 05:55-06:07/12 22:06
15	08:45 15:27-16:06/39 16:42 15:12-15:15/3	07:55 17:08-17:12/4 17:42	06:51 18:36	06:35 07:00-07:19/19 20:34	05:33 06:01-06:07/6 21:28	05:02 05:56-06:07/11 22:06
16	08:44 15:28-16:08/40 16:44	07:53 17:08-17:15/7 17:44	06:48 18:38	06:33 06:57-07:19/22 20:36	05:31 06:00-06:09/9 21:30	05:02 05:55-06:06/11 22:07
17	08:43 15:28-16:09/41 16:45	07:51 17:07-17:17/10 17:46	06:46 18:40	06:31 06:55-07:19/24 20:38	05:30 05:58-06:09/11 21:32	05:02 05:56-06:05/9 22:07
18	08:41 15:29-16:12/43 16:47	07:49 17:06-17:18/12 17:48	06:43 18:42	06:28 06:53-07:20/27 20:40	05:28 05:57-06:09/12 21:33	05:02 05:57-06:06/9 22:08
19	08:40 15:30-16:14/44 16:49	07:47 17:07-17:21/14 17:50	06:41 18:44	06:26 06:51-07:20/29 20:41	05:27 05:55-06:09/14 21:35	05:02 05:58-06:06/8 22:08
20	08:39 15:30-16:15/45 16:51	07:44 17:07-17:23/16 17:52	06:38 18:46	06:24 06:48-07:19/31 20:43	05:25 05:54-06:10/16 21:36	05:02 05:58-06:06/8 22:09
21	08:38 15:32-16:18/46 16:52	07:42 17:07-17:26/19 17:54	06:36 18:48	06:21 06:46-07:19/33 20:45	05:24 05:53-06:10/17 21:38	05:02 05:58-06:06/8 22:09
22	08:37 15:33-16:20/47 16:54	07:40 17:07-17:27/20 17:56	06:34 18:49	06:19 06:44-07:18/34 20:47	05:22 05:51-06:10/19 21:40	05:02 05:58-06:06/8 22:09
23	08:35 15:34-16:22/48 16:56	07:38 17:08-17:29/21 17:58	06:31 18:51	06:17 06:42-07:18/36 20:49	05:21 05:50-06:10/20 21:41	05:02 05:58-06:06/8 22:09
24	08:34 15:36-16:23/47 16:58	07:36 17:10-17:32/22 18:00	06:29 18:53	06:15 06:40-07:18/38 20:51	05:19 05:49-06:10/21 21:43	05:03 05:59-06:07/8 22:09
25	08:33 15:37-16:23/46 17:00	07:33 17:10-17:33/23 18:02	06:26 18:55	06:13 06:38-07:17/39 20:52	05:18 05:48-06:10/22 21:44	05:03 05:58-06:07/9 22:09
26	08:31 16:05-16:22/17 17:02 15:39-16:04/25	07:31 17:13-17:36/23 18:04	06:24 18:57	06:10 06:36-07:16/40 20:54	05:17 05:47-06:11/24 21:46	05:03 05:59-06:08/9 22:09
27	08:30 16:08-16:22/14 17:04 15:43-16:02/19	07:29 17:17-17:38/21 18:06	06:21 18:29-18:32/3 18:59	06:08 06:34-07:15/41 20:56	05:16 05:46-06:11/25 21:47	05:04 05:58-06:09/11 22:09
28	08:28 16:10-16:20/10 17:06 15:50-15:55/5	07:26 17:17-17:40/23 18:07	06:19 18:27-18:33/6 19:01	06:06 06:31-07:13/42 20:58	05:14 05:46-06:11/25 21:48	05:04 05:58-06:10/12 22:09
29	08:27 17:08		07:16 19:26-19:36/10 20:02	06:04 06:29-07:11/42 21:00	05:13 05:46-06:10/24 21:50	05:05 05:57-06:10/13 22:09
30	08:25 17:10		07:14 19:25-19:37/12 20:04	06:02 06:27-07:09/42 21:02	05:12 05:46-06:10/24 21:51	05:05 05:58-06:11/13 22:09
31	08:23 17:12		07:11 19:25-19:39/14 20:06		05:11 05:47-06:10/23 21:52	
Potential sun hours	250	273	367	420	494	510
Sum of minutes with flicker	1716	236	120	734	692	402

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar per WTG

Calculation: Worst Case Analysis **WTG:** 8 - T08

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July	August	September	October	November	December
1	05:06 05:57-06:11/14 22:08	05:46 06:43-07:03/20 21:33	06:41 07:08-07:15/7 20:26	07:34 19:12	07:32 17:02	08:27 15:07-15:41/34 16:17 14:44-15:03/19
2	05:07 05:57-06:12/15 22:08	05:48 06:41-07:03/22 21:31	06:42 07:10-07:13/3 20:24	07:36 19:10	07:34 17:00	08:29 15:08-15:40/32 13:54-14:01/7 16:17 14:44-15:05/21
3	05:08 05:57-06:13/16 22:07	05:50 06:41-07:05/24 21:29	06:44 20:21	07:38 19:07	07:36 16:58	08:30 15:08-15:39/31 13:50-14:04/14 16:16 14:43-15:06/23
4	05:09 05:57-06:13/16 22:07	05:51 06:39-07:06/27 21:27	06:46 19:26-19:37/11 20:19	07:39 19:05	07:38 16:56	08:32 15:08-15:39/31 13:49-14:06/17 16:15 14:43-15:07/24
5	05:09 05:57-06:14/17 22:06	05:53 06:39-07:07/28 21:26	06:48 19:24-19:39/15 20:17	07:41 19:03	07:40 16:54	08:33 15:08-15:37/29 13:48-14:08/20 16:15 14:42-15:07/25
6	05:10 05:56-06:14/18 22:06	05:55 06:38-07:08/30 21:24	06:49 19:21-19:40/19 20:14	07:43 19:00	07:42 16:52	08:35 14:43-15:37/54 13:47-14:09/22 16:14 14:21-14:30/9
7	05:11 05:55-06:15/20 22:05	05:56 06:37-07:08/31 21:22	06:51 19:20-19:41/21 20:12	07:45 18:58	07:44 16:50	08:36 14:42-15:36/54 13:46-14:10/24 16:14 14:19-14:31/12 12:21-12:32/11
8	05:12 05:55-06:15/20 22:04	05:58 06:36-07:09/33 21:20	06:53 19:19-19:41/22 20:09	07:47 18:55	07:46 16:48	08:37 14:43-15:36/53 13:46-14:12/26 16:13 14:19-14:34/15 12:20-12:36/16
9	05:13 05:55-06:16/21 22:04	06:00 06:36-07:09/33 21:18	06:55 19:18-19:38/20 20:07	07:49 18:04-18:10/6 18:53	07:48 16:47	08:39 14:43-15:35/52 13:46-14:13/27 16:13 14:18-14:35/17 12:19-12:37/18
10	05:14 05:55-06:16/21 22:03	06:02 06:35-07:10/35 21:16	06:56 19:17-19:36/19 20:04	07:50 18:01-18:13/12 18:51	07:50 16:45	08:40 14:43-15:35/52 13:45-14:14/29 16:13 14:17-14:36/19 12:18-12:39/21
11	05:16 05:55-06:17/22 22:02	06:03 06:35-07:14/39 21:14	06:58 19:17-19:34/17 20:02	07:52 17:55-18:15/20 18:48	07:52 16:43	08:41 14:44-15:35/51 13:46-14:15/29 16:12 14:18-14:38/20 12:18-12:41/23
12	05:17 05:54-06:17/23 22:01	06:05 06:34-07:16/42 21:11	07:00 19:17-19:32/15 19:59	07:54 17:53-18:16/23 18:46	07:54 16:41	08:42 14:44-15:35/51 13:46-14:16/30 16:12 14:18-14:39/21 12:17-12:42/25
13	05:18 05:55-06:19/24 22:00	06:07 06:36-07:18/42 21:09	07:02 19:16-19:29/13 19:57	07:56 17:51-18:14/23 18:43	07:56 16:40	08:43 14:44-15:34/50 12:17-12:43/26 16:12 13:46-14:39/53
14	05:19 05:55-06:19/24 21:59	06:09 06:38-07:20/42 21:07	07:04 19:17-19:26/9 19:54	07:58 17:50-18:12/22 18:41	07:57 15:42-15:52/10 16:38 15:22-15:27/5	08:44 14:44-15:34/50 12:17-12:44/27 16:12 13:46-14:40/54
15	05:20 05:54-06:19/25 21:58	06:10 06:39-07:21/42 21:05	07:05 19:17-19:24/7 19:52	08:00 17:49-18:09/20 18:39	07:59 15:39-15:54/15 16:37 15:15-15:34/19	08:45 14:44-15:34/50 12:17-12:45/28 16:12 13:46-14:41/55
16	05:22 05:54-06:19/25 21:57	06:12 06:41-07:22/41 21:03	07:07 19:17-19:21/4 19:49	08:02 17:44-18:07/23 18:36	08:01 15:38-15:55/17 16:35 15:12-15:37/25	08:46 14:45-15:34/49 12:17-12:46/29 16:12 13:46-14:42/56
17	05:23 05:55-06:19/24 21:56	06:14 06:43-07:23/40 21:01	07:09 19:18-19:19/1 19:47	08:03 17:42-18:05/23 18:34	08:03 15:10-15:56/46 16:33	08:47 14:45-15:35/50 12:17-12:47/30 16:12 13:47-14:43/56
18	05:24 05:57-06:20/23 21:54	06:16 06:44-07:23/39 20:59	07:11 19:45	08:05 17:40-18:02/22 18:32	08:05 15:09-15:57/48 16:32	08:48 14:45-15:34/49 12:17-12:47/30 16:12 13:46-14:43/57
19	05:26 05:58-06:20/22 21:53	06:17 06:46-07:23/37 20:56	07:12 19:42	08:07 17:39-18:00/21 18:30	08:07 15:09-15:57/48 16:31	08:48 14:46-15:34/48 12:17-12:48/31 16:13 13:47-14:43/56
20	05:27 05:59-06:20/21 21:52	06:19 06:48-07:24/36 20:54	07:14 19:40	08:09 17:38-17:58/20 18:27	08:09 15:08-15:55/47 16:29	08:49 14:47-15:35/48 12:18-12:49/31 16:13 13:48-14:44/56
21	05:29 06:01-06:20/19 21:50	06:21 06:49-07:23/34 20:52	07:16 19:37	08:11 17:38-17:55/17 18:25	08:10 15:08-15:54/46 16:28	08:50 14:46-15:35/49 12:18-12:49/31 16:13 13:48-14:44/56
22	05:30 06:02-06:20/18 21:49	06:23 06:51-07:23/32 20:50	07:18 19:35	08:13 17:37-17:53/16 18:23	08:12 15:07-15:53/46 16:27	08:50 14:47-15:36/49 12:19-12:50/31 16:14 13:48-14:45/57
23	05:32 06:03-06:20/17 21:48	06:25 06:53-07:24/31 20:47	07:20 19:32	08:15 17:37-17:51/14 18:21	08:14 15:06-15:50/44 16:25	08:51 14:48-15:36/48 12:19-12:50/31 16:14 13:49-14:45/56
24	05:33 06:05-06:20/15 21:46	06:26 06:54-07:23/29 20:45	07:21 19:30	08:17 17:37-17:48/11 18:18	08:16 15:06-15:49/43 16:24	08:51 14:48-15:36/48 12:19-12:50/31 16:15 13:49-14:45/56
25	05:35 06:06-06:19/13 21:45	06:28 06:56-07:22/26 20:43	07:23 19:27	08:19 16:37-16:46/9 17:16	08:18 15:06-15:48/42 16:23	08:51 14:49-15:38/49 12:21-12:51/30 16:16 13:50-14:47/57
26	05:36 06:08-06:20/12 21:43	06:30 06:58-07:22/24 20:40	07:25 19:25	08:21 16:37-16:43/6 17:14	08:19 15:06-15:46/40 16:22	08:52 14:49-15:38/49 12:21-12:51/30 16:16 13:51-14:47/56
27	05:38 06:09-06:19/10 21:41	06:32 07:00-07:22/22 20:38	07:27 19:22	08:23 16:38-16:41/3 17:12	08:21 15:07-15:45/38 16:21 14:52-14:53/1	08:52 14:50-15:39/49 12:22-12:51/29 16:17 13:51-14:47/56
28	05:40 06:11-06:19/8 21:40	06:33 07:01-07:20/19 20:36	07:29 19:20	08:25 16:38-16:39/1 17:10	08:23 15:07-15:44/37 16:20 14:48-14:58/10	08:52 14:50-15:40/50 12:23-12:51/28 16:18 13:52-14:47/55
29	05:41 06:12-06:17/5 21:38	06:35 07:03-07:19/16 20:33	07:30 19:17	08:26 17:08	08:24 15:07-15:44/37 16:19 14:47-15:01/14	08:52 14:51-15:41/50 12:23-12:51/28 16:19 13:52-14:47/55
30	05:43 06:14-06:17/3 21:36 06:48-06:59/11	06:37 07:05-07:18/13 20:31	07:32 19:15	08:28 17:06	08:26 15:07-15:42/35 16:18 14:45-15:02/17	08:52 14:52-15:42/50 12:25-12:51/26 16:20 13:53-14:47/54
31	05:44 06:45-07:00/15 21:35	06:39 07:06-07:16/10 20:29		08:30 17:04		08:52 14:52-15:43/51 13:54-14:25/31 16:21 14:26-14:48/22 12:26-12:51/25
Potential sun hours	512	460	382	328	259	233
Sum of minutes with flicker	557	939	203	312	730	3650

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar per WTG

Calculation: Worst Case Analysis **WTG:** 9 - T09

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June
1	08:52 15:25-15:44/19 09:48-10:41/53	08:22 16:20-16:42/22	07:24	07:09 19:12-19:41/29	06:00	05:10 20:59-21:19/20
	16:22 15:04-15:15/11	17:14	18:09	20:08	21:03	21:54
2	08:52 15:26-15:45/19 09:49-10:42/53	08:20 16:20-16:44/24	07:22	07:06 19:11-19:43/32	05:58	05:09 20:59-21:20/21
	16:23 15:06-15:14/8	17:16	18:11	20:10	21:05	21:55
3	08:52 15:27-15:47/20 09:50-10:43/53	08:18 16:20-16:46/26	07:19	07:04 07:28-07:30/2	05:56	05:08 20:58-21:21/23
	16:24 15:09-15:14/5	17:18	18:13	20:12 19:11-19:45/34	21:07	21:56
4	08:51 15:27-15:48/21	08:16 16:20-16:48/28	07:17	07:02 07:25-07:30/5	05:53	05:07 20:59-21:22/23
	16:26 09:50-10:42/52	17:20	18:15	20:14 19:10-19:44/34	21:09	21:57
5	08:51 15:28-15:50/22	08:15 16:21-16:50/29	07:15	06:59 07:23-07:31/8	05:51	05:07 20:59-21:23/24
	16:27 09:52-10:43/51	17:22	18:17	20:15 19:10-19:44/34	21:11	21:58
6	08:51 15:28-15:51/23	08:13 16:21-16:52/31	07:12	06:57 07:21-07:32/11	05:50	05:06 20:59-21:23/24
	16:28 09:52-10:43/51	17:24	18:19	20:17 19:11-19:44/33	21:12	21:59
7	08:50 15:29-15:52/23	08:11 16:21-16:55/34	07:10	06:54 07:18-07:31/13	05:48	05:05 21:00-21:25/25
	16:30 09:53-10:43/50	17:26	18:21	20:19 19:11-19:42/31	21:14	22:00
8	08:50 15:30-15:54/24	08:09 16:22-16:57/35	07:08	06:52 07:16-07:32/16	05:46	05:05 05:36-05:37/1
	16:31 09:55-10:43/48	17:28	18:23	20:21 19:12-19:42/30	21:16	22:01 20:59-21:25/26
9	08:49 15:31-15:54/23	08:07 16:23-16:59/36	07:05	06:50 07:14-07:32/18	05:44	05:04 05:36-05:38/2
	16:32 09:57-10:43/46	17:30	18:25	20:23 19:12-19:40/28	21:18	22:02 21:00-21:26/26
10	08:49 15:31-15:54/23	08:05 16:24-17:02/38	07:03	06:47 07:11-07:30/19	05:42	05:04 05:36-05:39/3
	16:34 09:58-10:43/45	17:32	18:27	20:25 19:13-19:38/25	21:20	22:03 21:01-21:28/27
11	08:48 15:32-15:54/22	08:03 16:25-17:04/39	07:00	06:45 07:09-07:30/21	05:40	05:03 05:35-05:38/3
	16:35 10:01-10:43/42	17:34	18:29	20:27 19:15-19:37/22	21:21	22:04 21:00-21:28/28
12	08:47 15:33-15:53/20	08:01 16:26-17:06/40	06:58	06:42 07:07-07:29/22	05:38	05:03 05:35-05:39/4
	16:37 10:07-10:43/36	17:36	18:31	20:28 19:16-19:34/18	21:23	22:04 21:01-21:29/28
13	08:46 15:34-15:53/19	07:59 16:27-17:07/40	06:56	06:40 07:04-07:27/23	05:36	05:02 05:35-05:40/5
	16:39 10:08-10:42/34	17:38	18:32	20:30 19:19-19:31/12	21:25	22:05 21:01-21:30/29
14	08:45 15:36-15:53/17	07:57 16:29-17:10/41	06:53	06:38 07:02-07:26/24	05:35	05:02 05:35-05:40/5
	16:40 10:10-10:42/32	17:40	18:34	20:32	21:27	22:06 21:02-21:30/28
15	08:45 15:37-15:52/15	07:55 16:33-17:12/39	06:51	06:35 07:00-07:24/24	05:33	05:02 05:35-05:41/6
	16:42 10:11-10:42/31	17:42	18:36	20:34	21:28	22:06 21:01-21:30/29
16	08:44 15:39-15:52/13	07:53 16:35-17:15/40	06:48	06:33 06:57-07:18/21	05:31	05:02 05:34-05:40/6
	16:44 10:12-10:41/29	17:44	18:38	20:36	21:30	22:07 21:01-21:31/30
17	08:43 15:40-15:50/10	07:51 16:36-17:17/41	06:46	06:31 06:55-07:17/22	05:30	05:02 05:34-05:40/6
	16:45 10:14-10:41/27	17:46	18:40	20:38	21:32	22:07 21:02-21:31/29
18	08:41 15:45-15:46/1	07:49 16:36-17:18/42	06:43	06:28 06:55-07:16/21	05:28	05:02 05:34-05:41/7
	16:47 10:15-10:39/24	17:48	18:42	20:39	21:33	22:08 21:02-21:31/29
19	08:40 10:17-10:38/21	07:47 16:38-17:21/43	06:41	06:26 06:56-07:15/19	05:27	05:02 05:35-05:42/7
	16:49	17:50	18:44	20:41	21:35	22:08 21:02-21:32/30
20	08:39 10:19-10:37/18	07:44 16:40-17:23/43	06:38	06:24 06:56-07:13/17	05:25 21:02-21:04/2	05:02 05:35-05:42/7
	16:51	17:52	18:46	20:43	21:36	22:09 21:03-21:33/30
21	08:38 10:22-10:34/12	07:42 16:44-17:26/42	06:36	06:21 06:58-07:11/13	05:24 21:01-21:04/3	05:02 05:35-05:42/7
	16:52	17:54	18:48	20:45	21:38	22:09 21:03-21:33/30
22	08:37	07:40 17:11-17:27/16	06:33	06:19 07:00-07:09/9	05:22 21:00-21:06/6	05:02 05:35-05:42/7
	16:54	17:56 16:51-17:09/18	18:49	20:47	21:40	22:09 21:03-21:33/30
23	08:35	07:38 17:12-17:29/17	06:31	06:17	05:21 21:00-21:08/8	05:02 05:35-05:42/7
	16:56	17:58 16:53-17:07/14	18:51	20:49	21:41	22:09 21:03-21:33/30
24	08:34 16:23-16:24/1	07:36 17:13-17:32/19	06:29 18:21-18:26/5	06:15	05:19 21:00-21:09/9	05:03 05:36-05:43/7
	16:58	18:00 16:58-17:03/5	18:53	20:51	21:43	22:09 21:04-21:34/30
25	08:33 16:23-16:26/3	07:33 17:13-17:32/19	06:26 18:19-18:29/10	06:12	05:18 21:00-21:11/11	05:03 05:36-05:43/7
	17:00	18:02	18:55	20:52	21:44	22:09 21:04-21:33/29
26	08:31 16:22-16:28/6	07:31 17:15-17:31/16	06:24 18:17-18:30/13	06:10	05:17 20:58-21:11/13	05:03 05:37-05:43/6
	17:02	18:04	18:57	20:54	21:45	22:09 21:04-21:33/29
27	08:30 16:22-16:31/9	07:29 17:16-17:28/12	06:21 18:16-18:32/16	06:08	05:16 20:58-21:12/14	05:04 05:37-05:43/6
	17:04	18:05	18:59	20:56	21:47	22:09 21:04-21:33/29
28	08:28 16:21-16:33/12	07:26 17:22-17:24/2	06:19 18:14-18:33/19	06:06	05:14 20:58-21:14/16	05:04 05:38-05:43/5
	17:06	18:07	19:01	20:58	21:48	22:09 21:04-21:33/29
29	08:27 16:21-16:35/14		07:16 19:13-19:36/23	06:04	05:13 20:58-21:15/17	05:05 05:38-05:43/5
	17:08		20:02	21:00	21:50	22:09 21:04-21:33/29
30	08:25 16:20-16:37/17		07:14 19:12-19:37/25	06:02	05:12 20:58-21:16/18	05:05 05:39-05:43/4
	17:10		20:04	21:02	21:51	22:09 21:05-21:33/28
31	08:23 16:21-16:40/19		07:11 19:12-19:39/27		05:11 20:59-21:18/19	
	17:12		20:06		21:52	
Potential sun hours	250	273	367	420	494	510
Sum of minutes with flicker	1247	891	138	690	136	945

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar per WTG

Calculation: Worst Case Analysis **WTG:** 9 - T09

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July	August	September	October	November	December
1	05:06 05:39-05:43/4	05:46	06:41 07:08-07:29/21	07:34	07:32 15:53-16:31/38	08:27 15:14-15:36/22
	22:08 21:04-21:32/28	21:33	20:26 19:14-19:36/22	19:12	17:02	16:17 09:44-10:25/41
2	05:07 05:40-05:43/3	05:48	06:42 07:10-07:29/19	07:36	07:34 15:52-16:28/36	08:29 15:15-15:37/22
	22:08 21:05-21:32/27	21:31	20:24 19:11-19:36/25	19:10	17:00	16:17 09:42-10:26/44
3	05:08 05:41-05:43/2	05:49	06:44 07:11-07:29/18	07:38	07:36 15:52-16:26/34	08:30 15:14-15:37/23
	22:07 21:05-21:32/27	21:29	20:21 19:10-19:38/28	19:07	16:58	16:16 09:40-10:26/46
4	05:08 05:42-05:43/1	05:51	06:46 07:13-07:29/16	07:39	07:38 15:51-16:24/33	08:32 15:14-15:38/24
	22:07 21:06-21:32/26	21:27	20:19 19:09-19:39/30	19:05	16:56	16:15 09:39-10:27/48
5	05:09 21:05-21:30/25	05:53	06:48 07:15-07:28/13	07:41	07:40 15:51-16:22/31	08:33 15:14-15:37/23
	22:06	21:25	20:17 19:08-19:39/31	19:03	16:54	16:15 09:39-10:29/50
6	05:10 21:05-21:30/25	05:55	06:49 07:16-07:27/11	07:43	07:42 15:50-16:20/30	08:35 15:14-15:37/23
	22:06	21:24	20:14 19:06-19:39/33	19:00	16:52	16:14 09:39-10:29/50
7	05:11 21:05-21:30/25	05:56	06:51 07:18-07:27/9	07:45	07:44 15:50-16:18/28	08:36 15:14-15:36/22
	22:05	21:22	20:12 19:06-19:39/33	18:58	16:50	16:14 09:38-10:29/51
8	05:12 21:06-21:29/23	05:58	06:53 07:20-07:26/6	07:47	07:46 15:50-16:16/26	08:37 15:15-15:36/21
	22:04	21:20	20:09 19:05-19:39/34	18:55	16:48	16:13 09:38-10:30/52
9	05:13 21:06-21:28/22	06:00	06:55 07:22-07:25/3	07:49	07:48 15:51-16:14/23	08:38 15:15-15:35/20 09:38-10:31/53
	22:04	21:18	20:07 19:04-19:38/34	18:53	16:47	16:13 14:57-15:01/4
10	05:14 21:06-21:28/22	06:02	06:56 19:04-19:36/32	07:50	07:50 15:51-16:12/21	08:40 15:15-15:35/20 09:38-10:31/53
	22:03	21:16	20:04	18:51	16:45	16:12 14:55-15:03/8
11	05:16 21:06-21:27/21	06:03	06:58 19:04-19:34/30	07:52	07:52 15:52-16:10/18	08:41 15:16-15:35/19 09:39-10:32/53
	22:02	21:14	20:02	18:48	16:43	16:12 14:55-15:06/11
12	05:17 21:06-21:26/20	06:05	07:00 19:04-19:32/28	07:54	07:54 15:52-16:09/17	08:42 15:16-15:35/19 09:39-10:33/54
	22:01	21:11	19:59	18:46	16:41	16:12 14:54-15:07/13
13	05:18 21:06-21:25/19	06:07	07:02 19:03-19:29/26	07:56	07:55 15:52-16:07/15	08:43 15:16-15:34/18 09:39-10:33/54
	22:00	21:09	19:57	18:43	16:40	16:12 14:53-15:08/15
14	05:19 21:08-21:25/17	06:09	07:04 19:04-19:26/22	07:58 17:52-18:00/8	07:57 15:53-16:05/12	08:44 15:17-15:34/17 09:39-10:34/55
	21:59	21:07	19:54	18:41	16:38	16:12 14:53-15:09/16
15	05:20 21:08-21:24/16	06:10	07:05 19:04-19:24/20	08:00 17:49-18:02/13	07:59 15:54-16:03/9	08:45 15:17-15:34/17 09:39-10:34/55
	21:58	21:05	19:52	18:39	16:37	16:12 14:53-15:10/17
16	05:22 21:08-21:23/15	06:12	07:07 19:04-19:21/17	08:02 17:47-18:04/17	08:01 15:55-16:01/6	08:46 15:18-15:34/16 09:40-10:35/55
	21:57	21:03	19:49	18:36	16:35	16:12 14:53-15:10/17
17	05:23 21:08-21:21/13	06:14	07:09 19:05-19:19/14	08:03 17:45-18:05/20	08:03 15:56-15:59/3	08:47 15:17-15:34/17 09:40-10:36/56
	21:56	21:01	19:47	18:34	16:33	16:12 14:53-15:11/18
18	05:24 21:08-21:20/12	06:16	07:11 19:07-19:16/9	08:05 17:44-18:02/18	08:05 15:57-15:58/1	08:47 15:18-15:34/16 09:40-10:35/55
	21:54	20:59	19:45	18:32 17:27-17:36/9	16:32	16:12 14:52-15:11/19
19	05:26 21:09-21:20/11	06:17	07:12 19:08-19:14/6	08:07 17:43-18:00/17	08:07	08:48 15:19-15:34/15 09:41-10:36/55
	21:53	20:56	19:42	18:30 17:24-17:39/15	16:31	16:13 14:53-15:12/19
20	05:27 21:09-21:18/9	06:19	07:14 19:10-19:11/1	08:09 17:43-17:58/15	08:09	08:49 15:20-15:35/15 09:41-10:37/56
	21:52	20:54	19:40	18:27 17:21-17:41/20	16:29	16:13 14:54-15:13/19
21	05:29 21:10-21:17/7	06:21 07:04-07:14/10	07:16	08:11 17:13-17:55/42	08:10 09:58-10:10/12	08:49 15:20-15:35/15 09:41-10:37/56
	21:50	20:52	19:37	18:25	16:28	16:13 14:53-15:13/20
22	05:30 21:11-21:16/5	06:23 07:02-07:16/14	07:18	08:13 17:10-17:53/43	08:12 09:55-10:13/18	08:50 15:21-15:36/15 09:42-10:38/56
	21:49	20:50	19:35	18:23	16:27	16:14 14:54-15:14/20
23	05:32 21:12-21:14/2	06:25 07:01-07:18/17	07:20	08:15 17:08-17:51/43	08:14 09:54-10:15/21	08:51 15:21-15:36/15 09:42-10:38/56
	21:48	20:47	19:32	18:21	16:25	16:14 14:54-15:14/20
24	05:33	06:26 06:58-07:18/20	07:21	08:17 17:06-17:48/42	08:16 09:52-10:16/24	08:51 15:21-15:36/15 09:43-10:38/55
	21:46	20:45	19:30	18:18	16:24	16:15 14:55-15:14/19
25	05:35	06:28 06:58-07:19/21	07:23	07:19 16:05-16:46/41	08:17 15:18-15:28/10	08:51 15:22-15:38/16 09:44-10:39/55
	21:45	20:43	19:27	17:16	16:23 09:51-10:18/27	16:16 14:56-15:15/19
26	05:36	06:30 06:58-07:20/22	07:25	07:21 16:04-16:43/39	08:19 15:17-15:30/13	08:52 15:22-15:38/16 09:44-10:40/56
	21:43	20:40	19:25	17:14	16:22 09:50-10:19/29	16:16 14:57-15:15/18
27	05:38	06:32 07:00-07:22/22	07:27	07:23 16:01-16:41/40	08:21 15:16-15:31/15	08:52 15:23-15:39/16 09:45-10:40/55
	21:41	20:38	19:22	17:12	16:21 09:50-10:21/31	16:17 14:57-15:15/18
28	05:40	06:33 07:01-07:25/24	07:28	07:24 15:58-16:39/41	08:23 15:16-15:33/17	08:52 15:23-15:40/17 09:45-10:40/55
	21:40	20:36	19:20	17:10	16:20 09:50-10:22/32	16:18 14:58-15:16/18
29	05:41	06:35 07:03-07:27/24	07:30	07:26 15:56-16:37/41	08:24 15:15-15:34/19	08:52 15:24-15:41/17 09:46-10:41/55
	21:38	20:33	19:17	17:08	16:19 09:50-10:23/33	16:19 14:59-15:16/17
30	05:43	06:37 07:05-07:28/23	07:32	07:28 15:54-16:34/40	08:26 15:14-15:34/20	08:52 15:24-15:42/18 09:47-10:41/54
	21:36	20:31 19:18-19:31/13	19:15	17:06	16:18 09:49-10:24/35	16:20 15:00-15:16/16
31	05:44	06:39 07:06-07:28/22		07:30 15:54-16:33/39		08:52 15:25-15:43/18 09:47-10:42/55
	21:35	20:29 19:16-19:34/18		17:04		16:21 15:02-15:16/14
Potential sun hours	512	460	382	328	259	233
Sum of minutes with flicker	427	250	591	603	737	2586

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar per WTG

Calculation: Worst Case Analysis **WTG:** 10 - T10

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June
1	08:52 15:20-15:44/24 14:06-14:19/13 16:22 14:26-14:56/30 09:26-10:07/41	08:22 16:32-16:42/10 17:14	07:24 16:14-17:42/88 18:09	07:09 20:08	06:00 21:03	05:10 21:53
2	08:52 15:21-15:46/25 14:09-14:19/10 16:23 14:27-14:57/30 09:26-10:08/42	08:20 16:32-16:44/12 17:16	07:22 16:13-17:44/91 18:11	07:06 20:10	05:58 06:24-06:27/3 21:05	05:09 21:55
3	08:52 15:22-15:47/25 14:12-14:17/5 16:24 14:29-14:57/28 09:26-10:08/42	08:18 16:32-16:46/14 17:18	07:19 16:13-17:46/93 18:13	07:04 20:12	05:55 06:22-06:28/6 21:07	05:08 05:39-05:40/1 21:56
4	08:51 15:23-15:48/25 09:25-10:08/43 16:26 14:29-14:57/28	08:16 16:32-16:48/16 17:20	07:17 16:13-17:46/93 18:15	07:02 20:13	05:53 06:20-06:28/8 21:09	05:07 05:39-05:41/2 21:57
5	08:51 15:24-15:50/26 09:25-10:09/44 16:27 14:31-14:57/26	08:15 16:32-16:50/18 17:22	07:15 16:13-17:46/93 18:17	06:59 20:15	05:51 06:18-06:28/10 21:11	05:07 05:38-05:41/3 21:58
6	08:51 15:25-15:51/26 09:24-10:08/44 16:28 14:31-14:56/25	08:13 16:33-16:53/20 17:24	07:12 17:28-17:44/16 18:19 16:13-17:26/73	06:57 20:17	05:49 06:16-06:28/12 21:12	05:06 05:38-05:42/4 21:59
7	08:50 15:26-15:52/26 09:23-10:08/45 16:30 14:32-14:56/24	08:11 16:34-16:55/21 17:26	07:10 17:30-17:41/11 18:21 16:12-17:25/73	06:54 20:19	05:48 06:14-06:28/14 21:14	05:05 05:37-05:42/5 22:00
8	08:50 15:28-15:54/26 09:23-09:47/24 16:31 14:34-14:56/22 09:48-10:08/20	08:09 16:35-16:57/22 17:28	07:08 16:13-17:25/72 18:23	06:52 19:52-19:54/2 20:21	05:46 06:12-06:28/16 21:16	05:05 05:36-05:42/6 22:01
9	08:49 15:29-15:56/27 09:22-09:46/24 16:32 14:36-14:55/19 09:49-10:08/19	08:07 16:36-16:59/23 17:30	07:05 16:12-17:24/72 18:25	06:49 19:50-19:55/5 20:23	05:44 06:11-06:29/18 21:18	05:04 05:36-05:42/6 22:02
10	08:48 15:31-15:57/26 09:21-09:46/25 16:34 14:37-14:54/17 09:50-10:07/17	08:05 16:35-17:02/27 17:32	07:03 16:13-17:24/71 18:27	06:47 19:48-19:57/9 20:25	05:42 06:09-06:28/19 21:20	05:04 05:36-05:43/7 22:03
11	08:48 15:32-15:59/27 09:20-09:46/26 16:35 14:39-14:53/14 09:51-10:06/15	08:03 16:33-17:04/31 17:34	07:00 16:13-17:23/70 18:29	06:45 19:47-19:59/12 20:26	05:40 06:07-06:28/21 21:21	05:03 05:35-05:43/8 22:04
12	08:47 15:33-16:01/28 09:19-09:46/27 16:37 14:42-14:51/9 09:53-10:05/12	08:01 16:31-17:06/35 17:36	06:58 16:14-17:23/69 18:31	06:42 19:46-20:00/14 20:28	05:38 06:06-06:28/22 21:23	05:03 05:35-05:43/8 22:04
13	08:46 15:33-16:02/29 09:55-10:04/9 16:39 09:31-09:45/14 09:18-09:30/12	07:59 16:28-17:08/40 17:38	06:55 16:13-17:21/68 18:32	06:40 19:45-20:02/17 20:30	05:36 06:06-06:27/21 21:25	05:02 05:35-05:44/9 22:05
14	08:45 15:34-16:04/30 09:17-09:31/14 16:40 09:32-09:45/13	07:57 16:27-17:10/43 17:40	06:53 16:14-17:21/67 18:34	06:38 19:44-20:04/20 20:32	05:35 06:07-06:27/20 21:26	05:02 05:35-05:44/9 22:06
15	08:44 15:34-16:06/32 09:16-09:32/16 16:42 09:34-09:44/10	07:55 16:26-17:12/46 17:42	06:51 16:15-17:20/65 18:36	06:35 19:43-20:05/22 20:34	05:33 06:07-06:26/19 21:28	05:02 05:35-05:45/10 22:06
16	08:43 15:35-16:08/33 09:15-09:32/17 16:44 09:37-09:42/5	07:53 16:24-17:15/51 17:44	06:48 16:16-17:19/63 18:38	06:33 19:43-20:07/24 20:36	05:31 06:07-06:25/18 21:30	05:02 05:34-05:44/10 22:07
17	08:42 15:35-16:10/35 16:45 09:14-09:33/19	07:51 16:23-17:17/54 17:46	06:46 16:17-17:18/61 18:40	06:31 19:43-20:09/26 20:38	05:30 06:09-06:24/15 21:31	05:02 05:34-05:44/10 22:07
18	08:41 15:36-16:12/36 16:47 09:12-09:33/21	07:49 16:21-17:18/57 17:48	06:43 16:17-17:16/59 18:42	06:28 19:43-20:11/28 20:39	05:28 06:10-06:23/13 21:33	05:02 05:34-05:45/11 22:08
19	08:40 15:37-16:14/37 16:49 09:11-09:33/22	07:47 16:21-17:21/60 17:50	06:41 16:19-17:15/56 18:44	06:26 19:42-20:12/30 20:41	05:27 06:12-06:21/9 21:35	05:02 05:35-05:46/11 22:08
20	08:39 15:37-16:15/38 16:51 09:10-09:34/24	07:44 16:20-17:23/63 17:52	06:38 16:20-17:13/53 18:46	06:24 19:43-20:12/29 20:43	05:25 06:16-06:18/2 21:36	05:02 05:35-05:46/11 22:09
21	08:38 15:38-16:18/40 16:52 09:08-09:33/25	07:42 16:19-17:24/65 17:54	06:36 16:22-17:12/50 18:47	06:21 19:43-20:12/29 20:45	05:24 21:38	05:02 05:35-05:46/11 22:09
22	08:37 15:39-16:19/40 16:54 09:09-09:34/25	07:40 16:18-17:24/66 17:56	06:33 16:23-17:09/46 18:49	06:19 19:44-20:11/27 20:47	05:22 21:39	05:02 05:35-05:46/11 22:09
23	08:35 15:40-16:22/42 16:56 09:09-09:33/24	07:38 17:27-17:29/2 17:58 16:17-17:25/68	06:31 16:25-17:08/43 18:51	06:17 19:45-20:10/25 20:49	05:21 21:41	05:02 05:35-05:46/11 22:09
24	08:34 15:41-16:22/41 16:58 09:10-09:34/24	07:35 16:17-17:32/75 18:00	06:29 16:27-17:05/38 18:53	06:15 19:46-20:09/23 20:51	05:19 21:43	05:02 05:36-05:47/11 22:09
25	08:33 15:43-16:22/39 17:00 09:11-09:33/22	07:33 16:16-17:33/77 18:02	06:26 16:30-17:02/32 18:55	06:12 19:46-20:07/21 20:52	05:18 21:44	05:03 05:36-05:46/10 22:09
26	08:31 16:05-16:21/16 09:11-09:32/21 17:02 15:45-16:03/18	07:31 16:15-17:36/81 18:03	06:24 16:33-16:58/25 18:57	06:10 19:48-20:05/17 20:54	05:17 21:45	05:03 05:37-05:47/10 22:09
27	08:30 16:07-16:21/14 09:13-09:32/19 17:04 15:48-16:02/14	07:29 16:14-17:37/83 18:05	06:21 16:38-16:53/15 18:59	06:08 19:50-20:02/12 20:56	05:15 21:47	05:04 05:37-05:47/10 22:09
28	08:28 16:09-16:18/9 15:50-15:59/9 17:06 16:32-16:33/1 09:14-09:30/16	07:26 16:14-17:40/86 18:07	06:19 19:00	06:06 19:55-19:57/2 20:58	05:14 21:48	05:04 05:38-05:47/9 22:09
29	08:27 16:31-16:35/4 17:08 09:16-09:29/13		07:16 20:02	06:04 21:00	05:13 21:50	05:05 05:38-05:47/9 22:09
30	08:25 16:31-16:37/6 17:10 09:19-09:26/7		07:14 20:04	06:02 21:02	05:12 21:51	05:05 05:39-05:48/9 22:09
31	08:23 16:31-16:39/8 17:12		07:11 20:06		05:11 21:52	
Potential sun hours	250	273	367	420	494	510
Sum of minutes with flicker	2084	1266	1726	394	266	232

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Project:
Carrigeen Renewable Energy Development

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar per WTG

Calculation: Worst Case Analysis **WTG:** 10 - T10

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July	August	September	October	November	December
1	05:06 05:39-05:47/8 22:08	05:46 06:17-06:38/21 21:33	06:40 19:46-19:58/12 20:26	07:34 16:53-18:01/68 19:12	07:32 16:06-16:31/25 17:02	08:27 15:14-15:41/27 09:02-09:28/26 16:17 14:22-14:35/13 09:33-09:48/15
2	05:07 05:40-05:47/7 22:08	05:48 06:18-06:38/20 21:31	06:42 19:46-19:55/9 20:24	07:36 16:52-18:02/70 19:10	07:34 16:05-16:29/24 17:00	08:29 15:14-15:41/27 09:04-09:29/25 16:17 14:20-14:37/17 09:33-09:50/17
3	05:08 05:41-05:48/7 22:07	05:49 06:20-06:39/19 21:29	06:44 19:48-19:53/5 20:21	07:37 16:51-18:02/71 19:07	07:36 16:04-16:26/22 16:58	08:30 15:12-15:39/27 09:05-09:30/25 16:16 14:19-14:38/19 09:32-09:51/19
4	05:08 05:42-05:48/6 22:07	05:51 06:21-06:38/17 21:27	06:46 19:49-19:51/2 20:19	07:39 16:51-18:02/71 19:05	07:38 16:03-16:24/21 16:56	08:32 15:12-15:39/27 09:07-09:31/24 16:15 14:18-14:40/22 09:32-09:52/20
5	05:09 05:42-05:47/5 22:06	05:53 06:23-06:38/15 21:25	06:48 20:16	07:41 16:50-18:02/72 19:03	07:40 16:03-16:22/19 16:54	08:33 15:11-15:37/26 09:09-09:54/45 16:15 14:17-14:41/24
6	05:10 05:43-05:47/4 22:06	05:55 06:25-06:39/14 21:24	06:49 20:14	07:43 18:07-18:15/8 19:00 16:49-18:01/72	07:42 16:02-16:20/18 16:52	08:35 15:11-15:37/26 09:10-09:54/44 16:14 14:17-14:43/26
7	05:11 05:44-05:47/3 22:05	05:56 06:26-06:38/12 21:22	06:51 20:12	07:45 18:04-18:18/14 18:58 16:48-18:01/73	07:44 16:02-16:18/16 16:50	08:36 15:10-15:36/26 09:11-09:55/44 16:14 14:17-14:43/26
8	05:12 05:45-05:47/2 22:04	05:58 06:28-06:38/10 21:20	06:53 20:09	07:47 18:02-18:20/18 18:55 16:48-18:01/73	07:46 16:02-16:16/14 16:48	08:37 15:11-15:36/25 09:13-09:56/43 16:13 14:17-14:45/28
9	05:13 05:46-05:47/1 22:04	06:00 06:30-06:37/7 21:18	06:55 20:07	07:48 16:47-18:21/94 18:53	07:48 16:02-16:15/13 16:46	08:38 15:11-15:35/24 14:00-14:05/5 16:13 14:17-14:45/28 09:14-09:57/43
10	05:14 22:03	06:02 06:31-06:36/5 21:16	06:56 20:04	07:50 16:47-18:21/94 18:51	07:50 16:02-16:12/10 16:45	08:40 15:10-15:35/25 13:58-14:08/10 16:12 14:16-14:46/30 09:15-09:57/42
11	05:16 22:02	06:03 06:33-06:35/2 21:13	06:58 20:02	07:52 16:47-18:19/92 18:48	07:52 16:03-16:10/7 16:43	08:41 15:10-15:34/24 13:58-14:10/12 16:12 14:17-14:48/31 09:17-09:58/41
12	05:17 22:01	06:05 21:11	07:00 19:59	07:54 16:47-18:17/90 18:46	07:54 16:03-16:09/6 16:41 08:50-08:58/8	08:42 15:11-15:35/24 13:57-14:12/15 16:12 14:17-14:48/31 09:18-09:59/41
13	05:18 22:00	06:07 21:09	07:02 19:57	07:56 16:47-18:14/87 18:43	07:55 16:03-16:07/4 16:40 08:48-09:01/13	08:43 15:11-15:34/23 13:56-14:13/17 16:12 14:17-14:49/32 09:19-09:59/40
14	05:19 21:59	06:09 21:07	07:04 19:54	07:58 16:47-18:12/85 18:41	07:57 15:41-15:50/9 15:22-15:31/9 16:38 16:04-16:05/1 08:46-09:02/16	08:44 15:12-15:34/22 13:56-14:14/18 16:12 14:17-14:49/32 09:20-10:00/40
15	05:20 21:58	06:10 20:00-20:07/7 21:05	07:05 19:52	08:00 16:47-18:10/83 18:39	07:59 15:39-15:53/14 08:45-09:04/19 16:36 15:19-15:34/15	08:45 15:12-15:34/22 13:56-14:15/19 16:12 14:18-14:50/32 09:21-10:01/40
16	05:22 21:57	06:12 19:57-20:11/14 21:03	07:07 17:29-17:40/11 19:49	08:02 16:48-18:07/79 18:36	08:01 15:38-15:54/16 08:44-09:05/21 16:35 15:18-15:36/18	08:46 15:12-15:34/22 13:56-14:16/20 16:12 14:18-14:51/33 09:22-10:01/39
17	05:23 21:56	06:14 19:55-20:13/18 21:01	07:09 17:22-17:46/24 19:47	08:03 16:48-18:05/77 18:34	08:03 15:16-15:55/39 16:33 08:44-09:06/22	08:47 15:12-15:34/22 13:55-14:16/21 16:12 14:18-14:51/33 09:23-10:02/39
18	05:24 21:54	06:16 19:52-20:14/22 20:59	07:11 17:18-17:49/31 19:44	08:05 17:58-18:02/4 18:32 16:48-17:57/69	08:05 15:15-15:56/41 16:32 08:44-09:08/24	08:47 15:13-15:34/21 13:56-14:17/21 16:12 14:18-14:51/33 09:23-10:02/39
19	05:26 21:53	06:17 19:51-20:15/24 20:56	07:12 17:15-17:52/37 19:42	08:07 17:59-18:00/1 18:30 16:49-17:56/67	08:07 15:14-15:56/42 16:31 08:44-09:08/24	08:48 15:13-15:35/22 13:56-14:18/22 16:13 14:19-14:52/33 09:24-10:03/39
20	05:27 21:52	06:19 19:50-20:16/26 20:54	07:14 17:11-17:53/42 19:39	08:09 16:49-17:55/66 18:27	08:09 15:14-15:55/41 16:29 08:44-09:09/25	08:49 15:14-15:35/21 13:57-14:19/22 16:13 14:20-14:53/33 09:25-10:04/39
21	05:29 21:50	06:21 19:48-20:16/28 20:52	07:16 17:09-17:55/46 19:37	08:11 16:50-17:54/64 18:25	08:10 15:13-15:53/40 16:28 08:44-09:09/25	08:49 15:14-15:35/21 09:25-10:03/38 16:13 13:57-14:53/56
22	05:30 21:49	06:23 19:48-20:17/29 20:50	07:18 17:07-17:56/49 19:35	08:13 16:51-17:53/62 18:23	08:12 15:13-15:52/39 16:27 08:46-09:10/24	08:50 15:15-15:36/21 09:26-10:04/38 16:14 13:58-14:54/56
23	05:32 21:48	06:24 19:47-20:17/30 20:47	07:19 17:05-17:57/52 19:32	08:15 16:51-17:51/60 18:21	08:14 15:13-15:50/37 16:25 08:48-09:10/22	08:50 15:15-15:36/21 13:58-14:20/22 16:14 14:21-14:54/33 09:26-10:04/38
24	05:33 06:24-06:30/6 21:46	06:26 19:46-20:16/30 20:45	07:21 17:03-17:59/56 19:30	08:17 16:52-17:48/56 18:18	08:16 15:13-15:49/36 16:24 08:49-09:10/21	08:51 15:15-15:36/21 13:58-14:20/22 16:15 14:21-14:54/33 09:26-10:05/39
25	05:35 06:21-06:32/11 21:45	06:28 19:46-20:14/28 20:43	07:23 17:01-17:59/58 19:27	07:19 15:53-16:46/53 17:16	08:17 15:13-15:48/35 16:23 08:51-09:10/19	08:51 15:16-15:38/22 13:59-14:21/22 16:16 14:22-14:55/33 09:27-10:06/39
26	05:36 06:20-06:34/14 21:43	06:30 19:46-20:12/26 20:40	07:25 16:59-17:59/60 19:25	07:21 15:54-16:44/50 17:14	08:19 15:13-15:47/34 08:53-09:10/17 16:22 09:15-09:20/5	08:52 15:17-15:38/21 14:00-14:21/21 16:16 14:22-14:56/34 09:27-10:06/39
27	05:38 06:19-06:35/16 21:41	06:32 19:45-20:09/24 20:38	07:27 16:58-18:00/62 19:22	07:23 15:55-16:41/46 17:12	08:21 15:13-15:45/32 08:55-09:11/16 16:21 09:13-09:23/10	08:52 15:17-15:39/22 14:01-14:21/20 16:17 14:23-14:56/33 09:27-10:06/39
28	05:40 06:18-06:36/18 21:40	06:33 19:45-20:07/22 20:36	07:28 16:57-18:01/64 19:20	07:24 15:57-16:39/42 17:10	08:22 15:14-15:45/31 08:57-09:11/14 16:20 09:12-09:25/13	08:52 15:18-15:40/22 14:01-14:21/20 16:18 14:23-14:56/33 09:27-10:07/40
29	05:41 06:17-06:37/20 21:38	06:35 19:45-20:05/20 20:33	07:30 16:56-18:02/66 19:17	07:26 15:58-16:37/39 17:08	08:24 15:14-15:44/30 09:37-09:45/8 16:19 08:59-09:26/27	08:52 15:18-15:41/23 14:02-14:21/19 16:19 14:24-14:56/32 09:27-10:07/40
30	05:43 06:17-06:38/21 21:36	06:37 19:45-20:02/17 20:31	07:32 16:54-18:01/67 19:15	07:28 16:00-16:34/34 17:06	08:26 15:14-15:42/28 09:00-09:27/27 16:18 14:24-14:31/7 09:34-09:46/12	08:52 15:19-15:42/23 14:04-14:21/17 16:20 14:25-14:57/32 09:27-10:07/40
31	05:44 06:16-06:38/22 21:35	06:39 19:45-20:00/15 20:29		07:30 16:02-16:32/30 17:04		08:52 15:20-15:43/23 14:05-14:21/16 16:21 14:26-14:57/31 09:27-10:08/41
Potential sun hours	512	460	382	328	259	233
Sum of minutes with flicker	171	522	753	2134	1225	3326

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar per WTG

Calculation: Worst Case Analysis **WTG:** 11 - T11

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	January	February	March	April	May	June
1	08:52 15:01-15:44/43 16:22	08:22 16:17-16:25/8 17:14	07:24 16:49-17:17/28 18:09	07:09 19:19-19:37/18 20:08 17:28-19:06/98	06:00 06:25-06:56/31 17:38-18:48/70 21:03 19:45-20:19/34	05:10 20:49-21:11/22 06:16-06:39/23 21:53 21:13-21:19/6
2	08:52 15:02-15:46/44 16:23	08:20 17:16	07:22 16:49-17:15/26 18:11	07:06 19:19-19:35/16 20:10 17:27-19:06/99	05:58 06:24-06:55/31 17:39-18:47/68 21:05 19:45-20:18/33	05:09 20:49-21:10/21 06:17-06:38/21 21:55 21:13-21:20/7
3	08:52 15:04-15:47/43 16:24	08:18 17:18	07:19 16:51-17:14/23 18:13	07:04 19:21-19:33/12 20:12 17:27-19:06/99	05:56 06:22-06:55/33 17:42-18:46/64 21:07 19:47-20:19/32	05:08 20:50-21:10/20 06:17-06:37/20 21:56 21:12-21:21/9
4	08:51 15:04-15:48/44 16:26	08:16 17:20	07:17 16:53-17:12/19 18:15	07:02 19:25-19:27/2 20:14 17:26-19:05/99	05:53 06:20-06:54/34 17:43-18:45/62 21:09 19:47-20:18/31	05:07 20:51-21:10/19 06:19-06:37/18 21:57 21:13-21:22/9
5	08:51 15:05-15:50/45 16:27	08:15 17:22	07:15 16:56-17:08/12 18:17	06:59 17:26-19:05/99 20:15	05:51 06:18-06:54/36 17:44-18:44/60 21:11 19:48-20:17/29	05:07 20:51-21:10/19 06:20-06:36/16 21:58 21:12-21:23/11
6	08:51 15:06-15:51/45 16:28	08:13 17:24	07:12 18:19	06:57 17:26-19:06/100 20:17	05:50 06:16-06:53/37 17:46-18:42/56 21:12 19:49-20:15/26	05:06 20:51-21:09/18 06:20-06:35/15 21:59 21:12-21:23/11
7	08:50 15:07-15:51/44 16:30	08:11 17:26	07:10 17:17-17:30/13 18:21	06:54 17:25-19:05/100 20:19	05:48 06:14-06:52/38 17:47-18:40/53 21:14 19:50-20:14/24	05:05 20:53-21:09/16 06:22-06:34/12 22:00 21:12-21:25/13
8	08:50 15:09-15:52/43 16:31	08:09 17:28	07:08 17:10-17:38/28 18:23	06:52 17:26-19:05/99 20:21	05:46 06:12-06:51/39 17:49-18:39/50 21:16 19:51-20:12/21	05:05 20:53-21:08/15 06:23-06:33/10 22:01 21:12-21:25/13
9	08:49 15:11-15:52/41 16:32	08:07 17:30	07:05 07:29-07:31/2 18:25 17:05-17:41/36	06:50 17:25-19:04/99 20:23	05:44 06:11-06:50/39 17:52-18:38/46 21:18 19:53-20:12/19	05:04 20:54-21:08/14 06:25-06:31/6 22:02 21:12-21:26/14
10	08:49 15:12-15:52/40 16:34	08:05 16:59-17:02/3 17:32	07:03 07:27-07:33/6 18:27 17:01-17:45/44	06:47 17:25-19:04/99 20:25	05:42 06:09-06:48/39 17:54-18:35/41 21:20 19:55-20:09/14	05:04 20:55-21:09/14 22:03 21:13-21:28/15
11	08:48 15:13-15:52/39 16:35	08:03 16:56-17:04/8 17:34	07:00 07:25-07:34/9 18:29 16:57-17:47/50	06:45 17:26-19:04/98 20:26	05:40 06:08-06:46/38 17:56-18:33/37 21:21 19:58-20:05/7	05:03 20:55-21:08/13 22:04 21:12-21:28/16
12	08:47 15:14-15:52/38 16:37	08:01 16:54-17:06/12 17:36	06:58 07:22-07:34/12 18:31 16:55-17:50/55	06:42 17:25-19:03/98 20:28	05:38 06:09-06:44/35 21:23 17:59-18:31/32	05:03 20:56-21:08/12 22:04 21:12-21:29/17
13	08:46 15:15-15:53/38 16:39	07:59 16:51-17:08/17 17:38	06:56 07:20-07:34/14 18:32 16:52-17:51/59	06:40 17:25-19:03/98 20:30	05:36 20:50-20:53/3 18:02-18:28/26 21:25 06:08-06:44/36	05:02 20:57-21:07/10 22:05 21:13-21:29/16
14	08:45 15:16-15:53/37 16:40	07:57 16:50-17:10/20 17:40	06:53 07:17-07:34/17 18:34 16:50-17:54/64	06:38 20:02-20:04/2 20:32 17:26-19:03/97	05:35 20:49-20:54/5 18:05-18:24/19 21:26 06:09-06:45/36	05:02 20:58-21:07/9 22:06 21:13-21:30/17
15	08:44 15:18-15:53/35 16:42	07:55 16:49-17:12/23 17:42	06:51 07:15-07:34/19 18:36 16:49-17:56/67	06:35 19:57-20:05/8 20:34 17:25-19:01/96	05:33 20:48-20:56/8 21:28 06:08-06:44/36	05:02 20:58-21:06/8 22:06 21:12-21:30/18
16	08:44 16:07-16:08/1 16:44 15:20-15:53/33	07:53 16:49-17:15/26 17:44	06:48 07:12-07:32/20 18:38 16:46-17:57/71	06:33 19:55-20:07/12 20:36 17:26-19:01/95	05:31 20:47-20:57/10 21:30 06:08-06:44/36	05:02 20:59-21:06/7 22:07 21:12-21:30/18
17	08:42 16:06-16:10/4 15:23-15:28/5 16:45 15:30-15:52/22	07:51 16:48-17:17/29 17:46	06:46 07:10-07:32/22 18:40 16:45-17:58/73	06:31 19:53-20:09/16 20:38 17:27-19:01/94	05:30 20:47-20:59/12 21:32 06:08-06:44/36	05:02 20:59-21:06/7 22:07 21:13-21:31/18
18	08:41 16:06-16:12/6 16:47 15:32-15:52/20	07:49 16:47-17:18/31 17:48	06:43 07:07-07:30/23 18:42 16:43-17:59/76	06:28 19:51-20:11/20 20:39 17:27-19:00/93	05:28 20:46-21:00/14 21:33 06:09-06:44/35	05:02 21:00-21:05/5 22:08 21:13-21:31/18
19	08:40 16:07-16:14/7 16:49 15:33-15:51/18	07:47 16:46-17:21/35 17:50	06:41 07:05-07:28/23 18:44 16:41-18:01/80	06:26 19:49-20:12/23 20:41 17:27-18:59/92	05:27 20:46-21:02/16 21:35 06:08-06:44/36	05:02 21:01-21:05/4 22:08 21:13-21:32/19
20	08:39 16:06-16:16/10 16:51 15:34-15:50/16	07:44 16:46-17:22/36 17:52	06:38 07:02-07:25/23 18:46 16:39-18:01/82	06:24 19:48-20:14/26 20:43 17:28-18:58/90	05:25 20:47-21:04/17 21:36 06:09-06:44/35	05:02 21:02-21:06/4 22:09 21:14-21:33/19
21	08:38 16:07-16:18/11 16:52 15:37-15:49/12	07:42 16:46-17:22/36 17:54	06:36 07:03-07:23/20 18:48 16:39-18:02/83	06:21 06:46-06:50/4 17:29-18:58/89 20:45 19:48-20:16/28	05:24 20:46-21:04/18 21:38 06:10-06:44/34	05:02 21:02-21:06/4 22:09 21:14-21:33/19
22	08:37 16:07-16:19/12 16:54 15:40-15:47/7	07:40 16:45-17:21/36 17:56	06:33 07:03-07:21/18 18:49 16:37-18:02/85	06:19 06:44-06:52/8 17:30-18:57/87 20:47 19:47-20:18/31	05:22 20:46-21:06/20 21:39 06:09-06:43/34	05:02 21:02-21:06/4 22:09 21:14-21:33/19
23	08:35 16:07-16:22/15 16:56	07:38 16:46-17:21/35 17:58	06:31 18:23-18:25/2 16:36-18:03/87 18:51 07:04-07:20/16	06:17 06:42-06:53/11 17:30-18:56/86 20:49 19:47-20:20/33	05:21 20:46-21:08/22 21:41 06:10-06:43/33	05:02 21:02-21:06/4 22:09 21:14-21:33/19
24	08:34 16:07-16:24/17 16:58	07:36 16:46-17:21/35 18:00	06:29 18:21-18:26/5 16:34-18:03/89 18:53 07:05-07:17/12	06:15 06:40-06:54/14 17:31-18:56/85 20:51 19:46-20:22/36	05:19 20:47-21:09/22 21:43 06:11-06:43/32	05:03 21:02-21:07/5 22:09 21:15-21:33/18
25	08:33 16:08-16:26/18 17:00	07:33 16:46-17:20/34 18:02	06:26 18:20-18:29/9 16:34-18:04/90 18:55 07:10-07:12/2	06:12 06:38-06:55/17 17:32-18:55/83 20:52 19:46-20:22/36	05:18 20:47-21:11/24 21:44 06:11-06:42/31	05:03 21:02-21:08/6 22:09 21:15-21:33/18
26	08:31 16:09-16:28/19 17:02	07:31 16:46-17:20/34 18:04	06:24 18:18-18:30/12 18:57 16:32-18:04/92	06:10 06:36-06:55/19 17:32-18:53/81 20:54 19:45-20:21/36	05:17 20:46-21:11/25 21:45 06:12-06:42/30	05:03 21:01-21:08/7 22:09 21:15-21:33/18
27	08:30 16:10-16:31/21 17:04	07:29 16:46-17:19/33 18:05	06:21 18:18-18:32/14 18:59 16:32-18:05/93	06:08 06:34-06:56/22 17:33-18:52/79 20:56 19:45-20:21/36	05:16 20:46-21:11/25 21:47 06:13-06:42/29	05:04 21:01-21:09/8 22:09 21:15-21:33/18
28	08:28 16:11-16:30/19 17:06	07:26 16:47-17:18/31 18:07	06:19 18:17-18:33/16 19:01 16:30-18:05/95	06:06 06:31-06:55/24 17:34-18:51/77 20:58 19:45-20:20/35	05:14 20:47-21:11/24 21:48 06:13-06:41/28	05:04 21:00-21:09/9 22:09 21:15-21:33/18
29	08:27 16:11-16:29/18 17:08		07:16 19:17-19:36/19 20:02 17:30-19:05/95	06:04 06:29-06:55/26 17:36-18:50/74 21:00 19:45-20:20/35	05:13 20:47-21:10/23 06:14-06:41/27 21:50 21:14-21:15/1	05:05 21:00-21:10/10 22:09 21:16-21:33/17
30	08:25 16:12-16:28/16 17:10		07:14 19:17-19:37/20 20:04 17:29-19:05/96	06:02 06:27-06:55/28 17:37-18:49/72 21:02 19:45-20:20/35	05:12 20:47-21:10/23 06:15-06:40/25 21:51 21:15-21:17/2	05:05 21:01-21:12/11 22:09 21:16-21:33/17
31	08:23 16:14-16:26/12 17:12		07:11 19:18-19:38/20 20:06 17:28-19:06/98		05:11 20:49-21:11/22 06:15-06:39/24 21:52 21:14-21:18/4	
Potential sun hours	250	273	367	420	494	510
Sum of minutes with flicker	958	522	2284	3424	2337	931

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar per WTG

Calculation: Worst Case Analysis **WTG:** 11 - T11

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.30	1.90	2.60	4.30	5.00	4.40	3.70	3.80	3.20	2.40	1.70	0.90

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
220	198	165	317	218	306	541	740	684	712	1,330	910	725	710	432	552	8,760

	July	August	September	October	November	December
1	05:06 21:00-21:12/12	05:46 06:19-06:55/36	06:41 17:25-19:03/98	07:34 08:00-08:13/13	07:32 16:29-16:31/2	08:27 14:55-15:34/39
	22:08 21:16-21:32/16	21:33 18:08-18:43/35	20:26	19:12 17:33-18:30/57	17:02	16:17
2	05:07 20:59-21:13/14	05:48 06:19-06:57/38 18:05-18:44/39	06:42 17:24-19:03/99	07:36 08:02-08:12/10	07:34	08:29 14:55-15:35/40
	22:08 21:17-21:32/15	21:31 20:07-20:17/10	20:24	19:10 17:35-18:27/52	17:00	16:17
3	05:08 20:59-21:14/15 06:32-06:36/4	05:50 06:20-06:59/39 18:03-18:46/43	06:44 17:23-19:02/99	07:38 08:04-08:11/7	07:36	08:30 14:54-15:35/41
	22:07 21:17-21:32/15	21:29 20:04-20:20/16	20:21	19:07 17:38-18:24/46	16:58	16:16
4	05:09 20:59-21:14/15 06:30-06:38/8	05:51 06:21-07:00/39 18:00-18:48/48	06:46 17:23-19:02/99	07:39 08:06-08:10/4	07:38	08:32 14:53-15:36/43
	22:07 21:18-21:32/14	21:27 20:02-20:22/20	20:19	19:05 17:41-18:21/40	16:56	16:15
5	05:09 20:58-21:14/16 06:28-06:39/11	05:53 06:23-07:01/38 17:59-18:49/50	06:48 17:22-19:02/100	07:41 17:45-18:17/32	07:40	08:33 14:52-15:36/44
	22:06 21:17-21:30/13	21:25 20:01-20:23/22	20:17	19:03	16:54	16:15
6	05:10 20:58-21:15/17 06:27-06:40/13	05:55 06:25-07:02/37 17:57-18:51/54	06:49 17:21-19:01/100	07:43 17:49-18:10/21	07:42	08:35 14:52-15:37/45
	22:06 21:18-21:30/12	21:24 20:00-20:25/25	20:14	19:00	16:52	16:14
7	05:11 20:58-21:16/18 06:26-06:42/16	05:56 06:26-07:02/36 17:55-18:52/57	06:51 17:21-19:01/100	07:45	07:44	08:36 14:52-15:36/44
	22:05 21:18-21:30/12	21:22 19:58-20:25/27	20:12	18:58	16:50	16:14
8	05:12 20:58-21:16/18 06:26-06:43/17	05:58 06:28-07:03/35 17:53-18:53/60	06:53 17:21-19:00/99	07:47 17:34-17:41/7	07:46	08:37 14:52-15:36/44
	22:04 21:19-21:29/10	21:20 19:57-20:26/29	20:09	18:55	16:48	16:13
9	05:13 20:57-21:17/20 06:25-06:44/19	06:00 06:30-07:04/34 17:51-18:54/63	06:55 19:15-19:26/11	07:48 17:29-17:45/16	07:48	08:38 14:52-15:35/43
	22:04 21:19-21:28/9	21:18 19:56-20:26/30	20:07 17:20-18:59/99	18:53	16:47	16:13
10	05:14 20:57-21:17/20 06:24-06:45/21	06:02 06:31-07:04/33 17:50-18:55/65	06:56 19:13-19:28/15	07:50 17:26-17:47/21	07:50 15:48-15:56/8	08:40 14:51-15:35/44
	22:03 21:20-21:28/8	21:16 19:55-20:27/32	20:04 17:20-18:59/99	18:51	16:45	16:12
11	05:16 20:57-21:18/21 06:24-06:46/22	06:03 06:33-07:04/31 17:48-18:57/69	06:58 19:11-19:29/18	07:52 17:24-17:49/25	07:52 15:46-15:58/12	08:41 14:52-15:35/43
	22:02 21:21-21:27/6	21:14 19:55-20:28/33	20:02 17:20-18:58/98	18:48	16:43	16:12
12	05:17 20:56-21:18/22 06:23-06:47/24	06:05 06:34-07:03/29 17:46-18:57/71	07:00 19:10-19:30/20	07:54 17:23-17:50/27	07:54 15:44-16:00/16	08:42 14:52-15:35/43
	22:01 21:21-21:26/5	21:11 19:53-20:28/35	19:59 17:21-18:58/97	18:46	16:41	16:12
13	05:18 20:56-21:19/23 06:24-06:48/24	06:07 06:36-07:04/28 17:45-18:58/73	07:02 19:08-19:29/21	07:56 17:21-17:51/30	07:55 15:43-16:01/18	08:43 14:52-15:34/42
	22:00 21:22-21:25/3	21:09 19:53-20:28/35	19:57 17:20-18:56/96	18:43	16:40	16:12
14	05:19 20:57-21:20/23 06:23-06:49/26	06:09 06:38-07:04/26 17:44-18:59/75	07:04 19:08-19:26/18	07:58 17:20-17:52/32	07:57 15:42-16:02/20	08:44 14:53-15:34/41
	21:59 21:24-21:25/1	21:07 19:53-20:29/36	19:54 17:20-18:56/96	18:41	16:38	16:12
15	05:20 20:56-21:20/24	06:10 06:39-07:03/24 17:42-18:59/77	07:05 19:08-19:24/16	08:00 17:19-17:52/33	07:59 15:42-16:03/21	08:45 14:53-15:34/41
	21:58 06:22-06:49/27	21:05 19:52-20:28/36	19:52 17:20-18:55/95	18:39	16:37	16:12
16	05:22 20:56-21:20/24	06:12 06:41-07:02/21 17:41-19:00/79	07:07 19:07-19:21/14	08:02 17:18-17:52/34	08:01 15:42-16:01/19	08:46 14:53-15:34/41
	21:57 06:22-06:50/28	21:03 19:52-20:28/36	19:49 17:20-18:54/94	18:36	16:35	16:12
17	05:23 20:56-21:20/24	06:14 06:43-07:02/19 17:40-19:01/81	07:09 19:07-19:19/12	08:03 17:18-17:53/35	08:03 15:41-15:59/18	08:47 14:53-15:34/41
	21:56 06:21-06:50/29	21:01 19:52-20:28/36	19:47 17:20-18:53/93	18:34	16:33	16:12
18	05:24 20:56-21:20/24	06:16 06:44-07:00/16 17:38-19:01/83	07:11 19:07-19:16/9	08:05 17:17-17:53/36	08:05 15:41-15:58/17	08:47 14:54-15:34/40
	21:54 06:21-06:52/31	20:59 19:52-20:27/35	19:44 17:21-18:52/91	18:32	16:32	16:12
19	05:26 20:56-21:20/24	06:17 06:46-07:00/14 17:37-19:01/84	07:12 19:08-19:14/6 17:22-18:51/89	08:07 17:17-17:53/36	08:07 15:41-15:56/15	08:48 14:54-15:35/41
	21:53 06:21-06:52/31	20:56 19:52-20:27/35	19:42 07:54-08:04/10	18:30	16:31	16:13
20	05:27 20:56-21:18/22	06:19 06:48-06:59/11 17:36-19:02/86	07:14 19:08-19:11/3 17:21-18:49/88	08:09 17:17-17:53/36	08:09 15:42-15:55/13	08:49 14:55-15:35/40
	21:52 06:20-06:52/32	20:54 19:52-20:25/33	19:40 07:51-08:06/15	18:27	16:29 15:14-15:21/7	16:13
21	05:29 20:56-21:16/20	06:21 06:49-06:56/7 17:34-19:02/88	07:16 07:49-08:06/17	08:11 17:17-17:52/35	08:10 15:42-15:53/11	08:49 14:55-15:35/40
	21:50 06:20-06:53/33	20:52 19:52-20:22/30	19:37 17:22-18:48/86	18:25	16:28 15:12-15:24/12	16:13
22	05:30 20:56-21:16/20	06:23 06:51-06:54/3 17:33-19:02/89	07:18 07:48-08:07/19	08:13 17:17-17:52/35	08:12 15:42-15:52/10	08:50 14:56-15:36/40
	21:49 06:20-06:53/33	20:50 19:53-20:21/28	19:35 17:23-18:47/84	18:23	16:27 15:10-15:26/16	16:14
23	05:32 20:56-21:14/18	06:25 19:53-20:19/26	07:20 07:47-08:08/21	08:15 17:17-17:51/34	08:14 15:43-15:50/7	08:50 14:56-15:36/40
	21:48 06:19-06:53/34	20:47 17:32-19:03/91	19:32 17:24-18:46/82	18:21	16:25 15:10-15:27/17	16:14
24	05:33 20:57-21:13/16	06:26 19:53-20:16/23	07:21 07:48-08:11/23	08:17 17:17-17:48/31	08:16 15:43-15:49/6	08:51 14:56-15:36/40
	21:46 06:19-06:54/35	20:45 17:31-19:03/92	19:30 17:25-18:45/80	18:18	16:24 15:09-15:29/20	16:15
25	05:35 20:57-21:12/15	06:28 19:54-20:14/20	07:23 07:49-08:12/23	07:19 16:18-16:46/28	08:17 15:44-15:48/4 15:01-15:06/5	08:51 14:57-15:38/41
	21:45 06:19-06:54/35	20:43 17:30-19:03/93	19:27 17:25-18:42/77	17:16	16:23 15:09-15:30/21	16:16
26	05:36 20:58-21:11/13	06:30 19:56-20:12/16	07:25 07:51-08:13/22	07:21 16:18-16:44/26	08:19 15:45-15:47/2	08:52 14:58-15:38/40
	21:43 06:19-06:55/36	20:40 17:29-19:03/94	19:25 17:26-18:41/75	17:14	16:22 14:58-15:31/33	16:16
27	05:38 20:58-21:09/11	06:32 19:57-20:09/12	07:27 07:53-08:14/21	07:23 16:19-16:41/22	08:21 14:57-15:32/35	08:52 14:58-15:39/41
	21:41 06:19-06:54/35	20:38 17:28-19:03/95	19:22 17:27-18:39/72	17:12	16:21	16:17
28	05:40 20:59-21:08/9	06:33 19:59-20:07/8	07:28 07:55-08:14/19	07:24 16:20-16:39/19	08:22 14:56-15:33/37	08:52 14:59-15:40/41
	21:40 06:19-06:55/36	20:36 17:27-19:03/96	19:20 17:29-18:37/68	17:10	16:20	16:18
29	05:41 20:59-21:06/7 18:20-18:31/11	06:35 20:03-20:05/2	07:30 07:57-08:14/17	07:26 16:21-16:37/16	08:24 14:56-15:34/38	08:52 14:59-15:41/42
	21:38 06:18-06:55/37	20:33 17:27-19:03/96	19:17 17:30-18:35/65	17:08	16:19	16:19
30	05:43 21:00-21:05/5 18:15-18:37/22	06:37 17:25-19:03/98	07:32 07:58-08:13/15	07:28 16:23-16:34/11	08:26 14:55-15:34/39	08:52 15:00-15:42/42
	21:36 06:19-06:55/36	20:31	19:15 17:31-18:32/61	17:06	16:18	16:20
31	05:44 21:01-21:03/2 18:11-18:40/29	06:39 17:25-19:03/98		07:30 16:25-16:32/7		08:52 15:01-15:43/42
	21:35 06:19-06:54/35	20:29		17:04		16:21
Potential sun hours	512	460	382	328	259	233
Sum of minutes with flicker	1501	3642	3064	914	499	1289

Table layout: For each day in each month the following matrix apply

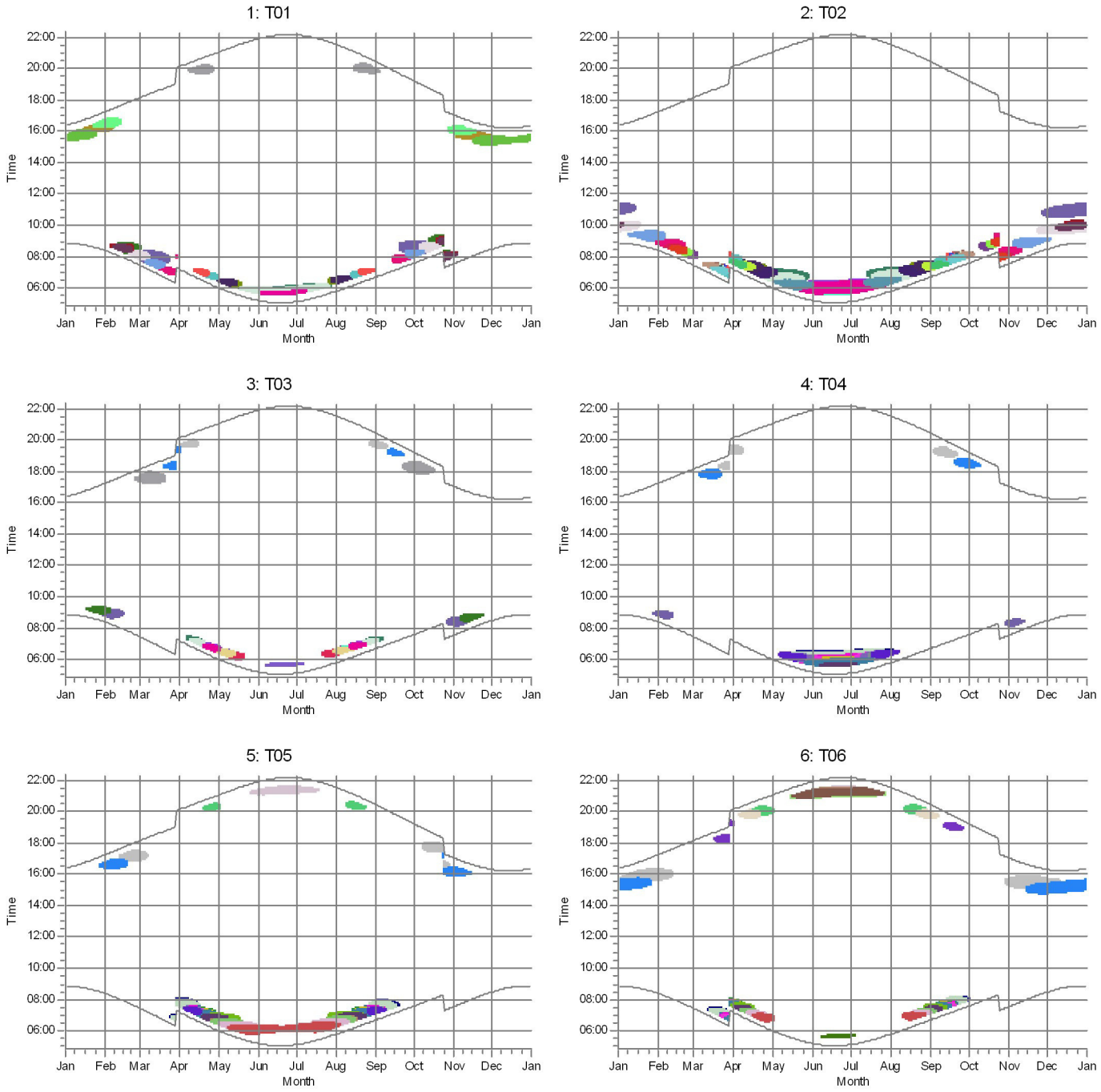
Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Calendar per WTG, graphical

Calculation: Worst Case Analysis



Shadow receptors

G: H007	AA: H029	AL: H040	AZ: H055	BL: H068	BV: H079	CI: H096	CT: H107	DU: H139	EK: H158
L: H012	AB: H030	AM: H041	BA: H056	BM: H070	BX: H083	CJ: H097	CU: H108	DV: H140	EM: H161
N: H014	AC: H031	AP: H044	BC: H059	BN: H071	BZ: H085	CK: H098	CY: H113	DZ: H144	EN: H165
P: H016	AD: H032	AR: H046	BD: H060	BO: H072	CB: H087	CL: H099	DA: H115	EC: H147	EO: H235
V: H023	AE: H033	AS: H047	BF: H062	BP: H073	CD: H090	CP: H103	DB: H116	EH: H153
X: H025	AH: H036	AT: H048	BI: H065	BS: H076	CF: H093	CQ: H104	DF: H120	EI: H156
Y: H027	AK: H039	AW: H052	BK: H067	BT: H077	CH: H095	CS: H106	DT: H138	EJ: H157

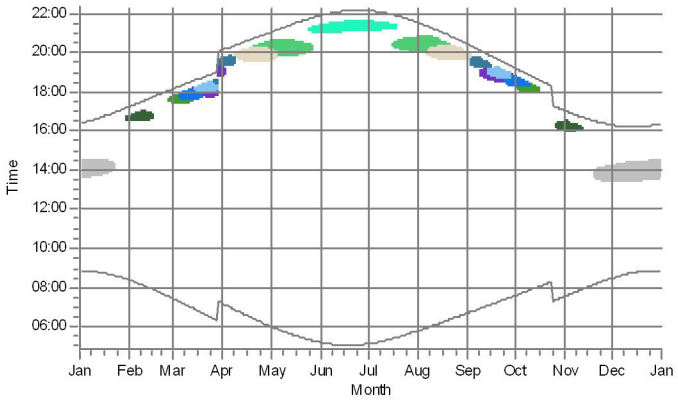
Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

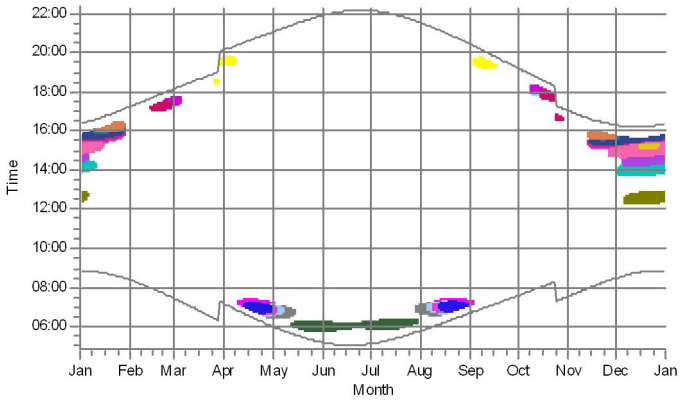
SHADOW - Calendar per WTG, graphical

Calculation: Worst Case Analysis

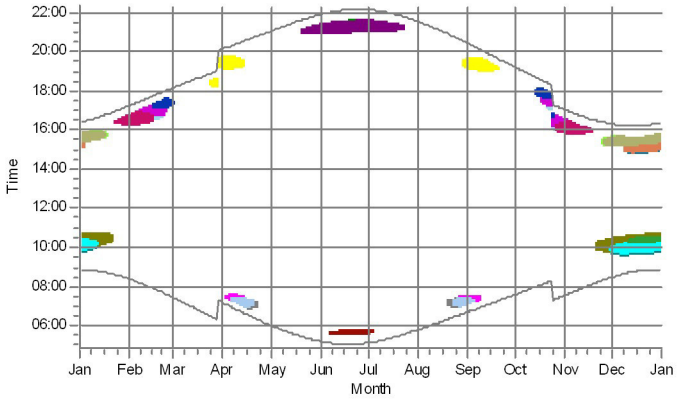
7: T07



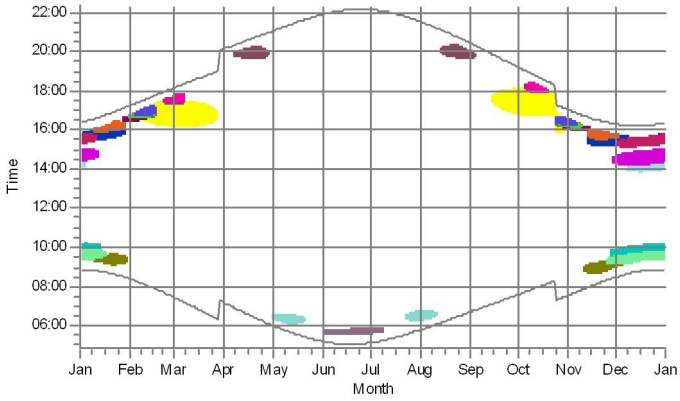
8: T08



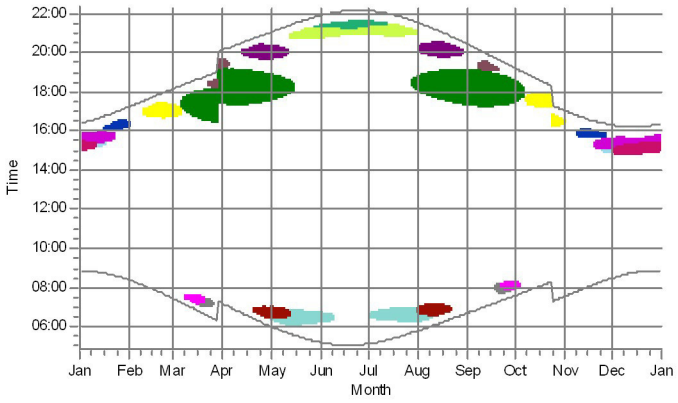
9: T09



10: T10



11: T11



Shadow receptors

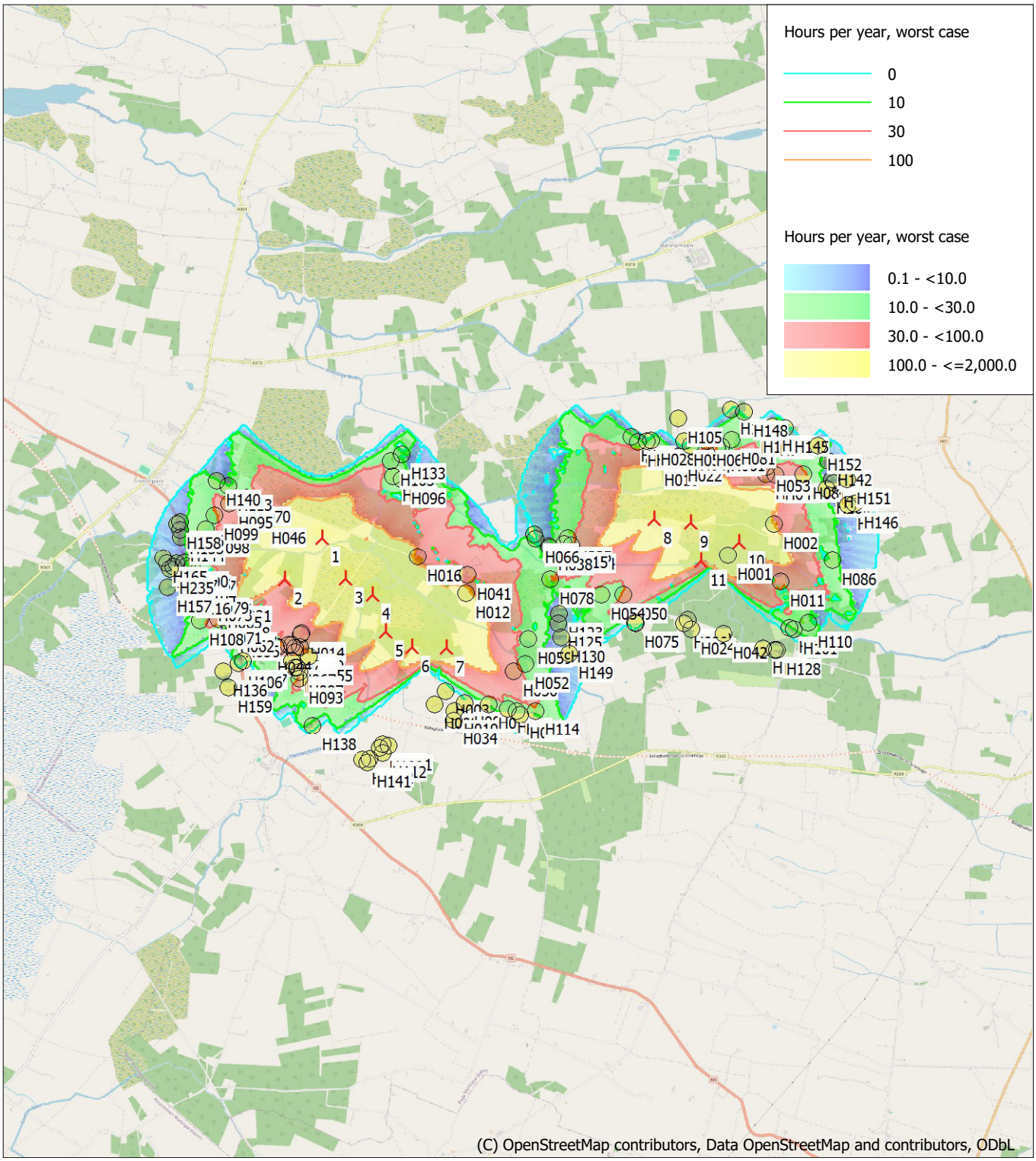
A: H001	J: H010	T: H021	AI: H037	AV: H050	BE: H061	BW: H081	CN: H101	DE: H119	DM: H130	EB: H146
B: H002	K: H011	U: H022	AJ: H038	AW: H052	BH: H064	BY: H084	CV: H110	DG: H123	DN: H131	EE: H149
D: H004	L: H012	Z: H028	AO: H043	AX: H053	BQ: H074	CA: H086	CZ: H114	DH: H124	DQ: H135	EF: H151
E: H005	M: H013	AB: H030	AQ: H045	AY: H054	BR: H075	CG: H094	DC: H117	DI: H125	DX: H142	EG: H152
F: H006	O: H015	AG: H035	AU: H049	BC: H059	BU: H078	CM: H100	DD: H118	DL: H129	DY: H143

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
kfeeney / kfeeney@jodireland.com

Calculated:
16/01/2026 16:03/4.2.285

SHADOW - Map

Calculation: Worst Case Analysis



Map: EMD OpenStreetMap , Print scale 1:75,000, Map center Irish ITM-IRENET95 (IE), geocentric, GRS80 East: 577,950 North: 789,810

New WTG Shadow receptor

Flicker map level: Height Contours: CONTOURLINE_Carrigeen Renewable Energy Development _.wpo (1)

Time step: 4 minutes, Day step: 14 days, Map resolution: 30 m, Visibility resolution: 15 m, Eye height: 1.5 m