

Project:
4636 Derreenacrinnig West Windfarm

Description:
Construction of 3 No. wind turbines with an overall ground to blade tip height of 119.3m. The wind turbines will have a rotor diameter of up to 82m and a hub height of 78.3m.

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
Kathlyn Feeney / kfeeney@jodireland.com
Calculated:
30/06/2025 15:04/4.0.552

SHADOW - Main Result

Calculation: 4636- Derreenacrinnig Windfarm Worst Case
Assumptions for shadow calculations

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

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

Sunshine probability S (Average daily sunshine hours) [VALENTIA OBS.]
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1.30 2.04 2.89 4.92 5.79 4.99 4.32 4.35 3.60 2.54 1.64 1.06

Operational time
N NNE NE ENE E ESE SE SSE S SSW SW WSW
136 297 373 423 216 252 408 617 382 612 1,601 1,598

W WNW NW NNW Sum
456 331 428 630 8,760

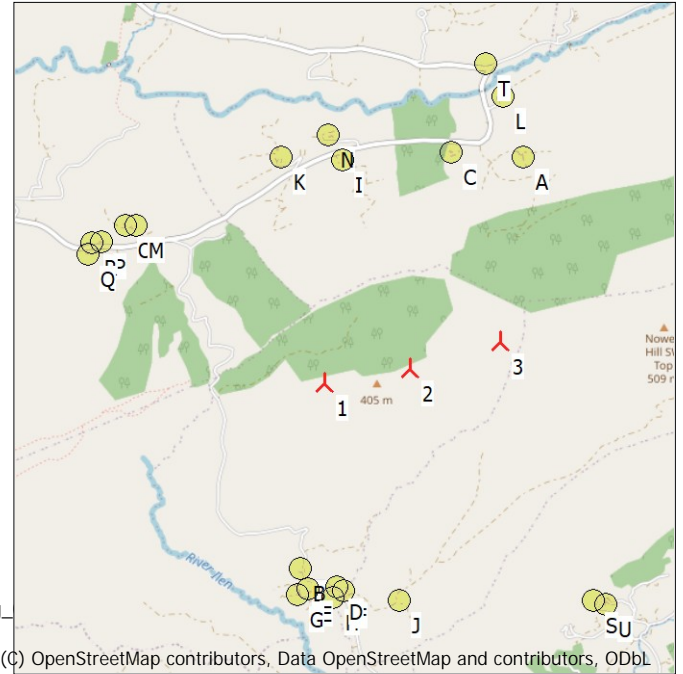
Monthly aggregation of real case reduction
A ZVI (Zones of Visual Influence) calculation is performed before flicker calculation so non visible WTG do not contribute to calculated flicker values. A WTG will be visible if it is visible from any part of the receiver window. The ZVI calculation is based on the following assumptions:
Height contours used: Height Contours: CONTOURLINE_4636 Dreenacreenig
Receptor grid resolution: 1.0 m

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

Row	data/Description	Valid	WTG type			Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Shadow data	
			Manufact.	Type-generator					Calculation distance [m]	RPM [RPM]
1	510,915 551,849 372.8 T1	Yes	ENERCON	E-82 E2-2,300	2,300	82.0	78.3	1,603	18.0	
2	511,370 551,918 398.1 T2	Yes	ENERCON	E-82 E2-2,300	2,300	82.0	78.3	1,603	18.0	
3	511,853 552,050 359.7 T3	Yes	ENERCON	E-82 E2-2,300	2,300	82.0	78.3	1,603	18.0	

Shadow receptor-Input

No.	Name	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
				[m]	[m]	[m]	[m]	[°]		[m]
A	H1	511,995	553,023	187.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5
B	H2	510,767	550,866	202.9	2.0	2.0	0.5	90.0	"Green house mode"	2.5
C	H3	511,608	553,060	192.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5
D	H4	510,962	550,767	196.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
E	H5	510,807	550,763	191.4	2.0	2.0	0.5	90.0	"Green house mode"	2.5
F	H6	511,001	550,749	192.3	2.0	2.0	0.5	90.0	"Green house mode"	2.5
G	H7	510,756	550,731	181.8	2.0	2.0	0.5	90.0	"Green house mode"	2.5
H	H8	510,943	550,719	188.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
I	H9	511,031	553,032	191.4	2.0	2.0	0.5	90.0	"Green house mode"	2.5
J	H10	511,293	550,692	220.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
K	H11	510,707	553,049	160.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5
L	H12	511,892	553,350	163.7	2.0	2.0	0.5	90.0	"Green house mode"	2.5
M	H13	509,928	552,697	158.0	2.0	2.0	0.5	90.0	"Green house mode"	2.5
N	H14	510,958	553,161	161.6	2.0	2.0	0.5	90.0	"Green house mode"	2.5
O	H15	509,876	552,698	154.6	2.0	2.0	0.5	90.0	"Green house mode"	2.5
P	H16	509,742	552,619	159.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
Q	H17	509,670	552,559	168.0	2.0	2.0	0.5	90.0	"Green house mode"	2.5
R	H18	509,695	552,618	160.4	2.0	2.0	0.5	90.0	"Green house mode"	2.5
S	H19	512,328	550,677	226.2	2.0	2.0	0.5	90.0	"Green house mode"	2.5
T	H20	511,801	553,526	168.5	2.0	2.0	0.5	90.0	"Green house mode"	2.5
U	H21	512,392	550,659	214.9	2.0	2.0	0.5	90.0	"Green house mode"	2.5



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SHADOW - Main Result

Calculation: 4636- Derreenacrinnig Windfarm Worst Case

Calculation Results

Shadow receptor

No.	Name	Shadow, worst case		Shadow, expected values	
		Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
A	H1	21:41	68	0:27	2:15
B	H2	0:00	0	0:00	0:00
C	H3	30:51	46	0:52	2:53
D	H4	0:00	0	0:00	0:00
E	H5	0:00	0	0:00	0:00
F	H6	0:00	0	0:00	0:00
G	H7	0:00	0	0:00	0:00
H	H8	0:00	0	0:00	0:00
I	H9	0:00	0	0:00	0:00
J	H10	0:00	0	0:00	0:00
K	H11	12:51	62	0:16	1:08
L	H12	2:05	18	0:09	0:11
M	H13	4:00	21	0:15	0:27
N	H14	11:43	50	0:16	1:00
O	H15	3:48	20	0:15	0:26
P	H16	3:18	18	0:14	0:22
Q	H17	3:04	18	0:13	0:22
R	H18	2:58	17	0:13	0:20
S	H19	0:00	0	0:00	0:00
T	H20	0:00	0	0:00	0:00
U	H21	0:00	0	0:00	0:00

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

No.	Name	Worst case [h/year]	Expected [h/year]
1	T1	29:58	3:07
2	T2	37:09	3:35
3	T3	24:57	2:17

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

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

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SHADOW - Calendar

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Shadow receptor: A - H1

Sunshine probability S (Average daily sunshine hours) [VALENTIA OBS.]

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1.30 2.04 2.89 4.92 5.79 4.99 4.32 4.35 3.60 2.54 1.64 1.06

Operational time

N NNE NE ENE E ESE SE SSE S SSW SW WSW W WNW NW NNW Sum
136 297 373 423 216 252 408 617 382 612 1,601 1,598 456 331 428 630 8,760

	January	February	March	April	May	June	July	August	September	October	November	December		
1	08:45	13:01 (3)	08:18	07:25	07:15	06:11	05:26	05:23	05:59	06:48	07:37	07:30	08:21	12:52 (3)
2	16:38	13:21 (3)	17:25	18:16	20:10	21:00	21:46	21:59	21:28	20:26	19:17	17:12	16:32	25 14:33 (2)
3	08:44	13:01 (3)	08:16	07:23	07:13	06:09	05:25	05:24	06:01	06:50	07:39	07:32	08:22	12:51 (3)
4	16:39	13:20 (3)	17:27	18:18	20:11	21:02	21:47	21:59	21:26	20:24	19:15	17:10	16:31	25 14:32 (2)
5	08:44	13:02 (3)	08:15	07:21	07:10	06:07	05:24	05:24	06:02	06:52	07:40	07:34	08:24	12:51 (3)
6	16:40	13:21 (3)	17:29	18:20	20:13	21:04	21:48	21:59	21:25	20:22	19:13	17:08	16:30	27 14:33 (2)
7	08:44	13:03 (3)	08:13	07:18	07:08	06:05	05:23	05:25	06:04	06:53	07:42	07:36	08:25	12:50 (3)
8	16:41	14:43 (2)	17:31	18:22	20:15	21:05	21:49	21:58	21:23	20:20	19:10	17:06	16:30	27 14:32 (2)
9	08:44	13:03 (3)	08:12	07:16	07:06	06:03	05:23	05:26	06:05	06:55	07:44	07:37	08:26	12:50 (3)
10	16:42	14:44 (2)	17:32	18:23	20:17	21:07	21:50	21:58	21:21	20:17	19:08	17:04	16:29	26 14:31 (2)
11	08:44	13:04 (3)	08:10	07:14	07:03	06:01	05:22	05:27	06:07	06:56	07:45	07:39	08:28	12:50 (3)
12	16:43	14:46 (2)	17:34	18:25	20:18	21:08	21:51	21:57	21:19	20:15	19:06	17:03	16:29	27 14:32 (2)
13	08:43	13:04 (3)	08:08	07:12	07:01	05:59	05:21	05:28	06:08	06:58	07:47	07:41	08:29	12:50 (3)
14	16:44	14:46 (2)	17:36	18:27	20:20	21:10	21:52	21:57	21:18	20:13	19:04	17:01	16:29	25 14:31 (2)
15	08:43	13:06 (3)	08:07	07:10	06:59	05:58	05:21	05:28	06:10	07:00	07:49	07:43	08:30	12:50 (3)
16	16:46	14:48 (2)	17:38	18:29	20:22	21:12	21:53	21:56	21:16	20:10	19:01	16:59	16:28	23 14:30 (2)
17	08:42	13:07 (3)	08:05	07:07	06:57	05:56	05:20	05:29	06:11	07:01	07:50	07:44	08:31	12:51 (3)
18	16:47	14:49 (2)	17:40	18:30	20:23	21:13	21:53	21:55	21:14	20:08	18:59	16:58	16:28	19 13:10 (3)
19	08:42	13:08 (3)	08:03	07:05	06:54	05:54	05:20	05:30	06:13	07:03	07:52	07:46	08:32	12:51 (3)
20	16:49	14:49 (2)	17:42	18:32	20:25	21:15	21:54	21:55	21:12	20:06	18:57	16:56	16:28	19 13:10 (3)
21	08:41	13:10 (3)	08:01	07:03	06:52	05:53	05:20	05:31	06:15	07:04	07:54	07:48	08:33	12:51 (3)
22	16:50	14:51 (2)	17:43	18:34	20:27	21:16	21:55	21:54	21:10	20:04	18:55	16:55	16:28	20 13:11 (3)
23	08:41	13:11 (3)	07:59	07:01	06:50	05:51	05:19	05:32	06:16	07:06	07:55	07:50	08:34	12:51 (3)
24	16:51	14:51 (2)	17:45	18:36	20:28	21:18	21:56	21:53	21:08	20:01	18:52	16:53	16:27	20 13:11 (3)
25	08:40	14:36 (2)	07:57	06:58	06:48	05:49	05:19	05:34	06:18	07:08	07:57	07:52	08:35	12:52 (3)
26	16:53	14:52 (2)	17:47	18:37	20:30	21:20	21:56	21:52	21:06	19:59	18:50	16:52	16:27	20 13:12 (3)
27	08:39	14:37 (2)	07:56	06:56	06:46	05:48	05:19	05:35	06:19	07:09	07:59	07:53	08:36	12:52 (3)
28	16:54	14:52 (2)	17:49	18:39	20:32	21:21	21:57	21:51	21:04	19:57	18:48	16:50	16:27	20 13:12 (3)
29	08:38	14:37 (2)	07:54	06:54	06:43	05:46	05:19	05:36	06:21	07:11	08:00	07:55	08:37	12:53 (3)
30	16:56	14:53 (2)	17:51	18:41	20:33	21:23	21:57	21:50	21:02	19:54	18:46	16:49	16:27	20 13:13 (3)
31	08:37	14:37 (2)	07:52	06:52	06:41	05:45	05:19	05:37	06:23	07:12	08:02	07:57	08:38	12:53 (3)
32	16:57	14:53 (2)	17:53	18:43	20:35	21:24	21:58	21:49	21:00	19:52	18:44	16:47	16:28	21 13:14 (3)
33	08:37	14:38 (2)	07:50	06:49	06:39	05:43	05:18	05:38	06:24	07:14	08:04	07:58	08:39	12:53 (3)
34	16:59	14:53 (2)	17:54	18:44	20:37	21:26	21:58	21:48	20:58	19:50	18:42	16:46	16:28	20 13:13 (3)
35	08:36	14:38 (2)	07:48	06:47	06:37	05:42	05:18	05:39	06:26	07:16	08:06	08:00	08:40	12:53 (3)
36	17:01	14:54 (2)	17:56	18:46	20:38	21:27	21:59	21:47	20:56	19:47	18:39	16:45	3 14:23 (2)	16:28 21 13:14 (3)
37	08:35	14:39 (2)	07:46	06:45	06:35	05:40	05:19	05:41	06:27	07:17	08:07	08:02	14:17 (2)	08:40 12:54 (3)
38	17:02	14:54 (2)	17:58	18:48	20:40	21:29	21:59	21:46	20:54	19:45	18:37	16:43	9 14:26 (2)	16:28 21 13:15 (3)
39	08:34	14:40 (2)	07:44	06:42	06:33	05:39	05:19	05:42	06:29	07:19	08:09	08:04	14:17 (2)	08:41 12:54 (3)
40	17:04	14:54 (2)	18:00	18:49	20:42	21:30	21:59	21:45	20:52	19:43	18:35	16:42	11 14:28 (2)	16:29 21 13:15 (3)
41	08:33	14:40 (2)	07:42	06:40	06:31	05:38	05:19	05:43	06:31	07:21	08:11	08:05	14:16 (2)	08:42 12:55 (3)
42	17:06	14:53 (2)	18:02	18:51	20:43	21:32	22:00	21:44	20:50	19:40	18:33	16:41	13 14:29 (2)	16:29 21 13:16 (3)
43	08:31	14:41 (2)	07:40	06:38	06:29	05:36	05:19	05:45	06:32	07:22	08:13	08:07	14:16 (2)	08:42 12:55 (3)
44	17:07	14:53 (2)	18:04	18:53	20:45	21:33	22:00	21:42	20:48	19:38	18:31	16:40	14 14:30 (2)	16:30 21 13:16 (3)
45	08:30	14:43 (2)	07:38	06:35	06:26	05:35	05:19	05:46	06:34	07:24	08:14	08:08	14:15 (2)	08:43 12:56 (3)
46	17:09	14:52 (2)	18:05	18:54	20:47	21:34	22:00	21:41	20:46	19:36	18:29	16:39	15 14:30 (2)	16:30 21 13:17 (3)
47	08:29	14:46 (2)	07:36	06:33	06:24	05:34	05:19	05:47	06:35	07:25	08:16	08:10	14:15 (2)	08:43 12:56 (3)
48	17:11	14:49 (2)	18:07	18:56	20:49	21:36	22:00	21:40	20:44	19:33	18:27	16:38	16 14:31 (2)	16:31 21 13:17 (3)
49	08:28	14:34 (2)	07:34	06:31	06:22	05:33	05:20	05:49	06:37	07:27	08:18	08:12	14:16 (2)	08:43 12:56 (3)
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51	08:27	14:31	06:29	06:20	05:32	05:20	05:30	05:50	06:39	07:29	08:20	08:13	14:16 (2)	08:44 12:58 (3)
52	17:14	18:11	19:00	20:52	21:38	22:00	21:37	20:39	19:29	18:19	17:23	16:36	16 14:32 (2)	16:32 20 13:18 (3)
53	08:25	14:29	06:26	06:18	05:30	05:21	05:52	06:40	07:30	08:21	09:15	08:15	14:16 (2)	08:44 12:58 (3)
54	17:16	18:13	19:01	20:54	21:40	22:00	21:36	20:37	19:26	18:16	17:21	16:35	16 14:32 (2)	16:33 20 13:18 (3)
55	08:24	14:24	06:24	06:16	05:29	05:21	05:53	06:42	07:32	08:23	09:16	08:16	14:17 (2)	08:44 12:58 (3)
56	17:18	18:14	19:03	20:55	21:41	22:00	21:34	20:35	19:24	18:13	17:19	16:34	15 14:32 (2)	16:34 21 13:19 (3)
57	08:22	14:22	06:22	06:14	05:28	05:22	05:55	06:43	07:34	08:25	09:18	08:18	14:17 (2)	08:44 12:59 (3)
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59	08:21	14:21	06:21	06:12	05:27	05:22	05:56	06:45	07:35	08:26	09:19	08:19	12:53 (3)	08:44 12:59 (3)
60	17:21	18:16	19:06	20:59	21:43	22:00	21:31	20:31	19:20	18:10	17:15	16:32	22 14:32 (2)	16:35 21 13:20 (3)
61	08:20	14:20	06:20	06:11	05:27	05:21	05:58	06:47	07:37	08:28	09:21	08:21	12:53 (3)	08:45 13:00 (3)
62	17:23	18:18	19:08	20:58	21:44	22:00	21:29	20:28	19:17	18:07	17:13	16:36	20 13:20 (3)	16:36 20 13:20 (3)
Potential sun hours	260	278	367	416	484	498	501	453	381	332	267	181	245	674
Total, worst case	446											181		674
Sun reduction	0.16											0.18		0.13
Oper. time red.	1.00											1.00		1.00
Wind dir. red.	0.71											0.72		0.70
Total reduction	0.11											0.13		0.09
Total, real	49											24		63

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

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

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SHADOW - Calendar

Calculation: 4636- Derreenacrinnig Windfarm Worst Case Assumptions for shadow calculations

Shadow receptor: B - H2

Sunshine probability S (Average daily sunshine hours) [VALENTIA OBS.]

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1.30 2.04 2.89 4.92 5.79 4.99 4.32 4.35 3.60 2.54 1.64 1.06

Operational time

N NNE NE ENE E ESE SE SSE S SSW SW WSW W WNW NW NNW Sum
136 297 373 423 216 252 408 617 382 612 1,601 1,598 456 331 428 630 8,760

Table with 13 columns (January to December) and 31 rows of shadow data. Each row contains 13 pairs of start and end times. Summary rows at the bottom include 'Potential sun hours', 'Total, worst case', 'Sun reduction', 'Oper. time red.', 'Wind dir. red.', 'Total reduction', and 'Total, real'.

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

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



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SHADOW - Calendar

Calculation: 4636- Derreenacrinng Windfarm Worst Case
Assumptions for shadow calculations

Shadow receptor: C - H3

Sunshine probability S (Average daily sunshine hours) [VALENTIA OBS.]

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1.30 2.04 2.89 4.92 5.79 4.99 4.32 4.35 3.60 2.54 1.64 1.06

Operational time

N NNE NE ENE E ESE SE SSE S SSW SW WSW W WNW NW NNW Sum
136 297 373 423 216 252 408 617 382 612 1,601 1,598 456 331 428 630 8,760

	January	February	March	April	May	June	July	August	September	October	November	December					
1	08:45	11:28 (3)	08:18	07:25	07:15	06:11	05:26	05:23	05:59	06:48	07:37	07:30	08:21	11:20 (3)			
1	16:38	49 14:51 (1)	17:25	18:16	20:10	21:00	21:46	21:59	21:28	20:26	19:17	17:12	16:32	17 14:35 (1)			
2	08:44	11:28 (3)	08:16	07:23	07:13	06:09	05:25	05:24	06:01	06:50	07:39	07:32	08:22	11:18 (3)			
2	16:39	48 14:51 (1)	17:27	18:18	20:11	21:02	21:47	21:59	21:26	20:24	19:15	17:10	16:31	21 14:35 (1)			
3	08:44	11:29 (3)	08:15	07:21	07:10	06:07	05:24	05:24	06:02	06:52	07:40	07:34	08:24	11:18 (3)			
3	16:40	46 14:51 (1)	17:29	18:20	20:13	21:04	21:48	21:59	21:25	20:22	19:13	17:08	16:30	26 14:37 (1)			
4	08:44	11:30 (3)	08:13	07:18	07:08	06:05	05:23	05:25	06:04	06:53	07:42	07:36	08:25	11:18 (3)			
4	16:41	45 14:52 (1)	17:31	18:22	20:15	21:05	21:49	21:58	21:23	20:20	19:10	17:06	16:30	33 14:37 (1)			
5	08:44	11:30 (3)	08:12	07:16	07:06	06:03	05:23	05:26	06:05	06:55	07:44	07:37	08:26	11:17 (3)			
5	16:42	43 14:52 (1)	17:32	18:23	20:17	21:07	21:50	21:58	21:21	20:17	19:08	17:04	16:29	38 14:37 (1)			
6	08:44	11:31 (3)	08:10	07:14	07:03	06:01	05:22	05:27	06:07	06:56	07:45	07:39	08:28	11:18 (3)			
6	16:43	41 14:53 (1)	17:34	18:25	20:18	21:08	21:51	21:57	21:19	20:15	19:06	17:03	16:29	40 14:39 (1)			
7	08:43	11:32 (3)	08:08	07:12	07:01	05:59	05:22	05:28	06:08	06:58	07:47	07:41	08:29	11:17 (3)			
7	16:45	38 14:52 (1)	17:36	18:27	20:20	21:10	21:52	21:57	21:18	20:13	19:04	17:01	16:29	43 14:39 (1)			
8	08:43	11:33 (3)	08:07	07:10	06:59	05:58	05:21	05:28	06:10	07:00	07:49	07:43	08:30	11:17 (3)			
8	16:46	34 14:53 (1)	17:38	18:29	20:22	21:12	21:53	21:56	21:16	20:10	19:01	16:59	16:28	45 14:39 (1)			
9	08:42	11:34 (3)	08:05	07:07	06:57	05:56	05:20	05:29	06:11	07:01	07:50	07:44	08:31	11:18 (3)			
9	16:47	28 14:53 (1)	17:40	18:30	20:23	21:13	21:53	21:55	21:14	20:08	18:59	16:58	16:28	47 14:41 (1)			
10	08:42	11:35 (3)	08:03	07:05	06:55	05:54	05:20	05:30	06:13	07:03	07:52	07:46	08:32	11:18 (3)			
10	16:49	21 14:52 (1)	17:42	18:32	20:25	21:15	21:54	21:55	21:12	20:06	18:57	16:56	16:28	48 14:41 (1)			
11	08:41	11:38 (3)	08:01	07:03	06:52	05:53	05:20	05:31	06:15	07:04	07:54	07:48	08:33	11:18 (3)			
11	16:50	17 14:53 (1)	17:43	18:34	20:27	21:16	21:55	21:54	21:10	20:04	18:55	16:55	16:28	49 14:41 (1)			
12	08:41	11:38 (3)	07:59	07:01	06:50	05:51	05:19	05:32	06:16	07:06	07:55	07:50	08:34	11:19 (3)			
12	16:51	8 14:52 (1)	17:45	18:36	20:28	21:18	21:56	21:53	21:08	20:01	18:52	16:53	16:27	49 14:42 (1)			
13	08:40	11:38 (3)	07:58	06:58	06:48	05:49	05:19	05:34	06:18	07:08	07:57	07:52	08:35	11:19 (3)			
13	16:53	5 14:51 (1)	17:47	18:37	20:30	21:20	21:56	21:52	21:06	19:59	18:50	16:52	16:27	50 14:42 (1)			
14	08:39	11:39 (3)	07:56	06:56	06:46	05:48	05:19	05:35	06:19	07:09	07:59	07:53	08:36	11:19 (3)			
14	16:54	17:49	18:39	20:32	21:21	21:57	21:51	21:51	21:04	19:57	18:48	16:50	16:27	49 14:42 (1)			
15	08:38	11:39 (3)	07:54	06:54	06:43	05:46	05:19	05:36	06:21	07:11	08:00	07:55	08:37	11:20 (3)			
15	16:56	17:51	18:41	20:33	21:23	21:57	21:50	21:50	21:02	19:54	18:46	16:49	16:27	51 14:43 (1)			
16	08:37	11:40 (3)	07:52	06:52	06:41	05:45	05:19	05:37	06:23	07:12	08:02	07:57	08:38	11:20 (3)			
16	16:57	17:53	18:43	20:35	21:24	21:58	21:49	21:49	21:00	19:52	18:44	16:47	16:28	51 14:44 (1)			
17	08:37	11:40 (3)	07:50	06:49	06:39	05:43	05:19	05:38	06:24	07:14	08:04	07:58	08:39	11:20 (3)			
17	16:59	17:55	18:44	20:37	21:26	21:58	21:48	21:48	20:58	19:50	18:42	16:46	16:28	49 14:43 (1)			
18	08:36	11:41 (3)	07:48	06:47	06:37	05:42	05:18	05:39	06:26	07:16	08:06	08:00	08:40	11:21 (3)			
18	17:01	17:56	18:46	20:38	21:27	21:59	21:47	21:47	20:56	19:47	18:39	16:45	16:28	51 14:44 (1)			
19	08:35	11:41 (3)	07:46	06:45	06:35	05:40	05:19	05:41	06:27	07:17	08:07	08:02	08:40	11:22 (3)			
19	17:02	17:58	18:48	20:40	21:29	21:59	21:46	21:46	20:54	19:45	18:37	16:43	16:28	51 14:45 (1)			
20	08:34	11:42 (3)	07:44	06:42	06:33	05:39	05:19	05:42	06:29	07:19	08:09	08:04	08:41	11:21 (3)			
20	17:04	18:00	18:49	20:42	21:30	21:59	21:45	21:45	20:52	19:43	18:35	16:42	16:29	52 14:45 (1)			
21	08:33	11:43 (3)	07:42	06:40	06:31	05:38	05:19	05:43	06:31	07:21	08:11	08:05	08:42	11:22 (3)			
21	17:06	18:02	18:51	20:44	21:32	22:00	21:44	21:44	20:50	19:40	18:33	16:41	16:29	52 14:46 (1)			
22	08:31	11:44 (3)	07:40	06:38	06:29	05:36	05:19	05:45	06:32	07:22	08:13	08:07	08:42	11:22 (3)			
22	17:07	18:04	18:53	20:45	21:33	22:00	21:42	21:42	20:48	19:38	18:31	16:40	16:30	51 14:45 (1)			
23	08:30	11:45 (3)	07:38	06:36	06:26	05:35	05:19	05:46	06:34	07:24	08:14	08:09	08:43	11:23 (3)			
23	17:09	18:05	18:55	20:47	21:34	22:00	21:41	21:41	20:46	19:36	18:29	16:39	16:30	52 14:47 (1)			
24	08:29	11:46 (3)	07:36	06:33	06:24	05:34	05:19	05:47	06:35	07:25	08:16	08:10	08:43	11:23 (3)			
24	17:11	18:07	18:56	20:49	21:36	22:00	21:40	21:40	20:44	19:33	18:27	16:38	16:31	52 14:47 (1)			
25	08:28	11:47 (3)	07:34	06:31	06:22	05:33	05:20	05:49	06:37	07:27	08:18	08:12	08:43	11:24 (3)			
25	17:12	18:09	18:58	20:50	21:37	22:00	21:38	21:38	20:42	19:31	18:25	16:37	16:31	51 14:47 (1)			
26	08:27	11:48 (3)	07:31	06:29	06:20	05:32	05:20	05:50	06:39	07:29	08:20	08:13	08:44	11:25 (3)			
26	17:14	18:11	19:00	20:52	21:38	22:00	21:37	21:37	20:39	19:29	18:23	16:36	16:32	50 14:48 (1)			
27	08:25	11:49 (3)	07:29	06:26	06:18	05:31	05:21	05:52	06:40	07:30	08:21	08:15	08:44	11:25 (3)			
27	17:16	18:13	19:01	20:54	21:40	22:00	21:36	21:36	20:37	19:26	18:21	16:35	16:33	49 14:48 (1)			
28	08:24	11:50 (3)	07:27	06:24	06:16	05:29	05:21	05:53	06:42	07:32	08:23	08:16	08:44	11:26 (3)			
28	17:18	18:14	19:03	20:55	21:41	22:00	21:34	21:34	20:35	19:24	18:19	16:34	16:34	51 14:49 (1)			
29	08:22	11:51 (3)	07:22	06:14	06:05	05:28	05:22	05:55	06:44	07:34	08:25	08:18	14:27 (1)	08:44	11:26 (3)		
29	17:20	18:17	19:05	20:57	21:42	22:00	21:33	21:33	20:33	19:22	18:17	16:33	5 14:32 (1)	16:34	49 14:49 (1)		
30	08:21	11:52 (3)	07:19	06:12	06:03	05:27	05:22	05:56	06:45	07:35	08:27	08:19	14:26 (1)	08:45	11:27 (3)		
30	17:21	18:18	19:06	20:59	21:43	22:00	21:31	21:31	20:31	19:20	18:15	16:32	7 14:33 (1)	16:35	50 14:50 (1)		
31	08:20	11:53 (3)	07:17	06:09	06:00	05:27	05:21	05:58	06:47	07:38	08:30	08:23	08:45	11:27 (3)			
31	17:23	18:20	19:08	20:58	21:44	22:00	21:30	21:30	20:29	19:18	18:13	16:36	16:36	49 14:50 (1)			
Potential sun hours	260																
Total, worst case		423	278	367	416	484	498	501	453	381	332	267					1416
Sun reduction		0.16											12				0.13
Oper. time red.		1.00											0.18				1.00
Wind dir. red.		0.67											1.00				0.67
Total reduction		0.10											0.72				0.67
Total, real		44											0.13				0.09
													2				128

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

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

Project:

4636 Derreenacrinnig West Windfarm

Description:

Construction of 3 No. wind turbines with an overall ground to blade tip height of 119.3m. The wind turbines will have a rotor diameter of up to 82m and a hub height of 78.3m.

Licensed user:

Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
Kathlyn Feeney / kfeeney@jodireland.com
Calculated:
30/06/2025 15:04/4.0.552

SHADOW - Calendar

Calculation: 4636- Derreenacrinnig Windfarm Worst Case
Assumptions for shadow calculations

Shadow receptor: D - H4

Sunshine probability S (Average daily sunshine hours) [VALENTIA OBS.]

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1.30 2.04 2.89 4.92 5.79 4.99 4.32 4.35 3.60 2.54 1.64 1.06

Operational time

N NNE NE ENE E ESE SE SSE S SSW SW WSW W WNW NW NNW Sum
136 297 373 423 216 252 408 617 382 612 1,601 1,598 456 331 428 630 8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:45	08:18	07:25	07:15	06:11	05:26	05:23	05:59	06:48	07:37	07:30	08:21
	16:38	17:25	18:16	20:10	21:00	21:46	21:59	21:28	20:26	19:17	17:12	16:32
2	08:44	08:16	07:23	07:13	06:09	05:25	05:24	06:01	06:50	07:39	07:32	08:22
	16:39	17:27	18:18	20:11	21:02	21:47	21:59	21:26	20:24	19:15	17:10	16:31
3	08:44	08:15	07:21	07:10	06:07	05:24	05:24	06:02	06:52	07:40	07:34	08:24
	16:40	17:29	18:20	20:13	21:04	21:48	21:59	21:25	20:22	19:13	17:08	16:31
4	08:44	08:13	07:19	07:08	06:05	05:24	05:25	06:04	06:53	07:42	07:36	08:25
	16:41	17:31	18:22	20:15	21:05	21:49	21:58	21:23	20:20	19:10	17:06	16:30
5	08:44	08:12	07:16	07:06	06:03	05:23	05:26	06:05	06:55	07:44	07:37	08:26
	16:42	17:32	18:23	20:17	21:07	21:50	21:58	21:21	20:17	19:08	17:05	16:30
6	08:44	08:10	07:14	07:04	06:01	05:22	05:27	06:07	06:56	07:45	07:39	08:28
	16:43	17:34	18:25	20:18	21:08	21:51	21:57	21:19	20:15	19:06	17:03	16:29
7	08:43	08:08	07:12	07:01	06:00	05:22	05:28	06:08	06:58	07:47	07:41	08:29
	16:45	17:36	18:27	20:20	21:10	21:52	21:57	21:18	20:13	19:04	17:01	16:29
8	08:43	08:07	07:10	06:59	05:58	05:21	05:29	06:10	07:00	07:49	07:43	08:30
	16:46	17:38	18:29	20:22	21:12	21:52	21:56	21:16	20:10	19:01	16:59	16:28
9	08:42	08:05	07:07	06:57	05:56	05:21	05:30	06:12	07:01	07:50	07:44	08:31
	16:47	17:40	18:30	20:23	21:13	21:53	21:55	21:14	20:08	18:59	16:58	16:28
10	08:42	08:03	07:05	06:55	05:54	05:20	05:31	06:13	07:03	07:52	07:46	08:32
	16:49	17:42	18:32	20:25	21:15	21:54	21:55	21:12	20:06	18:57	16:56	16:28
11	08:41	08:01	07:03	06:52	05:53	05:20	05:32	06:15	07:05	07:54	07:48	08:33
	16:50	17:44	18:34	20:27	21:16	21:55	21:54	21:10	20:04	18:55	16:55	16:28
12	08:40	07:59	07:01	06:50	05:51	05:20	05:33	06:16	07:06	07:55	07:50	08:34
	16:52	17:45	18:36	20:28	21:18	21:56	21:53	21:08	20:01	18:53	16:53	16:28
13	08:40	07:57	06:58	06:48	05:49	05:19	05:34	06:18	07:08	07:57	07:51	08:35
	16:53	17:47	18:37	20:30	21:20	21:56	21:52	21:06	19:59	18:50	16:52	16:28
14	08:39	07:56	06:56	06:46	05:48	05:19	05:35	06:19	07:09	07:59	07:53	08:36
	16:54	17:49	18:39	20:32	21:21	21:57	21:51	21:04	19:57	18:48	16:50	16:28
15	08:38	07:54	06:54	06:44	05:46	05:19	05:36	06:21	07:11	08:00	07:55	08:37
	16:56	17:51	18:41	20:33	21:23	21:57	21:50	21:02	19:54	18:46	16:49	16:28
16	08:37	07:52	06:52	06:41	05:45	05:19	05:37	06:23	07:13	08:02	07:57	08:38
	16:58	17:53	18:43	20:35	21:24	21:58	21:49	21:00	19:52	18:44	16:47	16:28
17	08:37	07:50	06:49	06:39	05:43	05:19	05:38	06:24	07:14	08:04	07:58	08:39
	16:59	17:55	18:44	20:37	21:26	21:58	21:48	20:58	19:50	18:42	16:46	16:28
18	08:36	07:48	06:47	06:37	05:42	05:19	05:40	06:26	07:16	08:06	08:00	08:40
	17:01	17:56	18:46	20:38	21:27	21:59	21:47	20:56	19:47	18:40	16:45	16:28
19	08:35	07:46	06:45	06:35	05:41	05:19	05:41	06:27	07:17	08:07	08:02	08:40
	17:02	17:58	18:48	20:40	21:29	21:59	21:46	20:54	19:45	18:37	16:43	16:28
20	08:34	07:44	06:42	06:33	05:39	05:19	05:42	06:29	07:19	08:09	08:04	08:41
	17:04	18:00	18:49	20:42	21:30	21:59	21:45	20:52	19:43	18:35	16:42	16:29
21	08:33	07:42	06:40	06:31	05:38	05:19	05:43	06:31	07:21	08:11	08:05	08:42
	17:06	18:02	18:51	20:44	21:31	22:00	21:44	20:50	19:40	18:33	16:41	16:29
22	08:31	07:40	06:38	06:29	05:37	05:19	05:45	06:32	07:22	08:13	08:07	08:42
	17:07	18:04	18:53	20:45	21:33	22:00	21:42	20:48	19:38	18:31	16:40	16:30
23	08:30	07:38	06:36	06:27	05:35	05:19	05:46	06:34	07:24	08:14	08:08	08:43
	17:09	18:06	18:55	20:47	21:34	22:00	21:41	20:46	19:36	18:29	16:39	16:30
24	08:29	07:36	06:33	06:25	05:34	05:20	05:48	06:36	07:25	08:16	08:10	08:43
	17:11	18:07	18:56	20:49	21:36	22:00	21:40	20:44	19:33	18:27	16:38	16:31
25	08:28	07:34	06:31	06:22	05:33	05:20	05:49	06:37	07:27	08:18	08:12	08:43
	17:13	18:09	18:58	20:50	21:37	22:00	21:38	20:42	19:31	17:25	16:37	16:31
26	08:27	07:31	06:29	06:20	05:32	05:20	05:50	06:39	07:29	08:20	08:13	08:44
	17:14	18:11	19:00	20:52	21:38	22:00	21:37	20:39	19:29	17:23	16:36	16:32
27	08:25	07:29	06:26	06:18	05:31	05:21	05:52	06:40	07:30	08:21	08:15	08:44
	17:16	18:13	19:01	20:54	21:40	22:00	21:36	20:37	19:26	17:21	16:35	16:33
28	08:24	07:27	06:24	06:16	05:30	05:21	05:53	06:42	07:32	08:23	08:16	08:44
	17:18	18:15	19:03	20:55	21:41	22:00	21:34	20:35	19:24	17:19	16:34	16:34
29	08:22	07:22	06:14	06:05	05:29	05:22	05:55	06:44	07:34	08:25	08:18	08:44
	17:20	18:17	19:05	20:57	21:42	22:00	21:33	20:33	19:22	17:17	16:33	16:35
30	08:21	07:19	06:13	06:03	05:28	05:22	05:56	06:45	07:35	08:26	08:19	08:44
	17:22	18:19	19:07	20:59	21:43	22:00	21:31	20:31	19:20	17:15	16:33	16:35
31	08:19	07:17	06:07	05:57	05:27	05:21	05:58	06:47	07:37	08:28	08:21	08:44
	17:23	18:20	19:08	21:00	21:44	22:00	21:29	20:29	19:18	17:14	16:30	16:36
Potential sun hours	260	278	367	416	484	498	501	453	381	332	267	245
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

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

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

Project:

4636 Derreenacrinnig West Windfarm

Description:

Construction of 3 No. wind turbines with an overall ground to blade tip height of 119.3m. The wind turbines will have a rotor diameter of up to 82m and a hub height of 78.3m.

Licensed user:

Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
Kathlyn Feeney / kfeeney@jodireland.com
Calculated:
30/06/2025 15:04/4.0.552

SHADOW - Calendar

Calculation: 4636- Derreenacrinnig Windfarm Worst Case Assumptions for shadow calculations

Shadow receptor: E - H5

Sunshine probability S (Average daily sunshine hours) [VALENTIA OBS.]

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1.30 2.04 2.89 4.92 5.79 4.99 4.32 4.35 3.60 2.54 1.64 1.06

Operational time

N NNE NE ENE E ESE SE SSE S SSW SW WSW W WNW NW NNW Sum
136 297 373 423 216 252 408 617 382 612 1,601 1,598 456 331 428 630 8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:45	08:18	07:25	07:15	06:11	05:26	05:23	05:59	06:48	07:37	07:30	08:21
	16:38	17:25	18:16	20:10	21:00	21:46	21:59	21:28	20:26	19:17	17:12	16:32
2	08:44	08:16	07:23	07:13	06:09	05:25	05:24	06:01	06:50	07:39	07:32	08:22
	16:39	17:27	18:18	20:11	21:02	21:47	21:59	21:26	20:24	19:15	17:10	16:31
3	08:44	08:15	07:21	07:10	06:07	05:24	05:24	06:02	06:52	07:40	07:34	08:24
	16:40	17:29	18:20	20:13	21:04	21:48	21:59	21:25	20:22	19:13	17:08	16:31
4	08:44	08:13	07:19	07:08	06:05	05:24	05:25	06:04	06:53	07:42	07:36	08:25
	16:41	17:31	18:22	20:15	21:05	21:49	21:58	21:23	20:20	19:10	17:06	16:30
5	08:44	08:12	07:16	07:06	06:03	05:23	05:26	06:05	06:55	07:44	07:37	08:26
	16:42	17:32	18:23	20:17	21:07	21:50	21:58	21:21	20:17	19:08	17:05	16:30
6	08:44	08:10	07:14	07:04	06:01	05:22	05:27	06:07	06:56	07:45	07:39	08:28
	16:43	17:34	18:25	20:18	21:08	21:51	21:57	21:19	20:15	19:06	17:03	16:29
7	08:43	08:08	07:12	07:01	06:00	05:22	05:28	06:08	06:58	07:47	07:41	08:29
	16:45	17:36	18:27	20:20	21:10	21:52	21:57	21:18	20:13	19:04	17:01	16:29
8	08:43	08:07	07:10	06:59	05:58	05:21	05:29	06:10	07:00	07:49	07:43	08:30
	16:46	17:38	18:29	20:22	21:12	21:52	21:56	21:16	20:10	19:01	16:59	16:28
9	08:42	08:05	07:07	06:57	05:56	05:21	05:30	06:12	07:01	07:50	07:44	08:31
	16:47	17:40	18:30	20:23	21:13	21:53	21:55	21:14	20:08	18:59	16:58	16:28
10	08:42	08:03	07:05	06:55	05:54	05:20	05:31	06:13	07:03	07:52	07:46	08:32
	16:49	17:42	18:32	20:25	21:15	21:54	21:55	21:12	20:06	18:57	16:56	16:28
11	08:41	08:01	07:03	06:52	05:53	05:20	05:32	06:15	07:05	07:54	07:48	08:33
	16:50	17:44	18:34	20:27	21:16	21:55	21:54	21:10	20:04	18:55	16:55	16:28
12	08:41	07:59	07:01	06:50	05:51	05:20	05:33	06:16	07:06	07:55	07:50	08:34
	16:52	17:45	18:36	20:28	21:18	21:56	21:53	21:08	20:01	18:53	16:53	16:28
13	08:40	07:58	06:58	06:48	05:49	05:19	05:34	06:18	07:08	07:57	07:52	08:35
	16:53	17:47	18:37	20:30	21:20	21:56	21:52	21:06	19:59	18:50	16:52	16:28
14	08:39	07:56	06:56	06:46	05:48	05:19	05:35	06:19	07:09	07:59	07:53	08:36
	16:55	17:49	18:39	20:32	21:21	21:57	21:51	21:04	19:57	18:48	16:50	16:28
15	08:38	07:54	06:54	06:44	05:46	05:19	05:36	06:21	07:11	08:00	07:55	08:37
	16:56	17:51	18:41	20:33	21:23	21:57	21:50	21:02	19:54	18:46	16:49	16:28
16	08:37	07:52	06:52	06:41	05:45	05:19	05:37	06:23	07:13	08:02	07:57	08:38
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	16:59	17:55	18:44	20:37	21:26	21:58	21:48	20:58	19:50	18:42	16:46	16:28
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	17:01	17:56	18:46	20:38	21:27	21:59	21:47	20:56	19:47	18:40	16:45	16:28
19	08:35	07:46	06:45	06:35	05:41	05:19	05:41	06:28	07:17	08:07	08:02	08:40
	17:02	17:58	18:48	20:40	21:29	21:59	21:46	20:54	19:45	18:37	16:43	16:28
20	08:34	07:44	06:42	06:33	05:39	05:19	05:42	06:29	07:19	08:09	08:04	08:41
	17:04	18:00	18:49	20:42	21:30	21:59	21:45	20:52	19:43	18:35	16:42	16:29
21	08:33	07:42	06:40	06:31	05:38	05:19	05:44	06:31	07:21	08:11	08:05	08:42
	17:06	18:02	18:51	20:44	21:31	22:00	21:44	20:50	19:40	18:33	16:41	16:29
22	08:31	07:40	06:38	06:29	05:37	05:19	05:45	06:32	07:22	08:13	08:07	08:42
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26	08:27	07:31	06:29	06:20	05:32	05:20	05:50	06:39	07:29	08:20	08:13	08:44
	17:14	18:11	19:00	20:52	21:38	22:00	21:37	20:39	19:29	17:23	16:36	16:32
27	08:25	07:29	06:26	06:18	05:31	05:21	05:52	06:40	07:30	08:21	08:15	08:44
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	17:23	18:20	19:08	20:59	21:44	22:00	21:29	20:29	19:18	17:14	16:32	16:36
Potential sun hours	260	278	367	416	484	498	501	453	381	332	267	245
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

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

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

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30/06/2025 15:04/4.0.552

SHADOW - Calendar

Calculation: 4636- Derreenacrinnig Windfarm Worst Case Assumptions for shadow calculations

Shadow receptor: F - H6

Sunshine probability S (Average daily sunshine hours) [VALENTIA OBS.]

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
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Operational time

N NNE NE ENE E ESE SE SSE S SSW SW WSW W WNW NW NNW Sum
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	16:41	17:31	18:22	20:15	21:05	21:49	21:58	21:23	20:20	19:10	17:06	16:30
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	16:43	17:34	18:25	20:18	21:08	21:51	21:57	21:19	20:15	19:06	17:03	16:29
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17	08:37	07:50	06:49	06:39	05:43	05:19	05:38	06:24	07:14	08:04	07:58	08:39
	16:59	17:55	18:44	20:37	21:26	21:58	21:48	20:58	19:50	18:42	16:46	16:28
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	17:01	17:56	18:46	20:38	21:27	21:59	21:47	20:56	19:47	18:40	16:45	16:28
19	08:35	07:46	06:45	06:35	05:41	05:19	05:41	06:27	07:17	08:07	08:02	08:40
	17:02	17:58	18:48	20:40	21:29	21:59	21:46	20:54	19:45	18:37	16:43	16:28
20	08:34	07:44	06:42	06:33	05:39	05:19	05:42	06:29	07:19	08:09	08:04	08:41
	17:04	18:00	18:49	20:42	21:30	21:59	21:45	20:52	19:43	18:35	16:42	16:29
21	08:33	07:42	06:40	06:31	05:38	05:19	05:43	06:31	07:21	08:11	08:05	08:42
	17:06	18:02	18:51	20:44	21:31	22:00	21:44	20:50	19:40	18:33	16:41	16:29
22	08:31	07:40	06:38	06:29	05:37	05:19	05:45	06:32	07:22	08:13	08:07	08:42
	17:07	18:04	18:53	20:45	21:33	22:00	21:42	20:48	19:38	18:31	16:40	16:30
23	08:30	07:38	06:36	06:27	05:35	05:19	05:46	06:34	07:24	08:14	08:08	08:43
	17:09	18:06	18:55	20:47	21:34	22:00	21:41	20:46	19:36	18:29	16:39	16:30
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	17:11	18:07	18:56	20:49	21:36	22:00	21:40	20:44	19:33	18:27	16:38	16:31
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	17:13	18:09	18:58	20:50	21:37	22:00	21:38	20:42	19:31	17:25	16:37	16:31
26	08:27	07:31	06:29	06:20	05:32	05:20	05:50	06:39	07:29	08:20	08:13	08:44
	17:14	18:11	19:00	20:52	21:38	22:00	21:37	20:39	19:29	17:23	16:36	16:32
27	08:25	07:29	06:26	06:18	05:31	05:21	05:52	06:40	07:30	08:21	08:15	08:44
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28	08:24	07:27	06:24	06:16	05:30	05:21	05:53	06:42	07:32	08:23	08:16	08:44
	17:18	18:15	19:03	20:55	21:41	22:00	21:34	20:35	19:24	17:19	16:34	16:34
29	08:22	07:22	06:14	06:05	05:29	05:22	05:55	06:44	07:34	08:25	08:18	08:44
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Potential sun hours	260	278	367	416	484	498	501	453	381	332	267	245
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

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

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



Project:

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Calculated:
30/06/2025 15:04/4.0.552

SHADOW - Calendar

Calculation: 4636- Derreenacrinnig Windfarm Worst Case
Assumptions for shadow calculations

Shadow receptor: G - H7

Sunshine probability S (Average daily sunshine hours) [VALENTIA OBS.]

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1.30 2.04 2.89 4.92 5.79 4.99 4.32 4.35 3.60 2.54 1.64 1.06

Operational time

N NNE NE ENE E ESE SE SSE S SSW SW WSW W WNW NW NNW Sum
136 297 373 423 216 252 408 617 382 612 1,601 1,598 456 331 428 630 8,760

Table with columns for months (January to December) and rows for days (1-31) and summary rows (Potential sun hours, Total, worst case, Sun reduction, Oper. time red., Wind dir. red., Total reduction, Total, real).

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

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



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Kathlyn Feeney / kfeeney@jodireland.com
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30/06/2025 15:04/4.0.552

SHADOW - Calendar

Calculation: 4636- Derreenacrinnig Windfarm Worst Case Assumptions for shadow calculations

Shadow receptor: H - H8

Sunshine probability S (Average daily sunshine hours) [VALENTIA OBS.]

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1.30 2.04 2.89 4.92 5.79 4.99 4.32 4.35 3.60 2.54 1.64 1.06

Operational time

N NNE NE ENE E ESE SE SSE S SSW SW WSW W WNW NW NNW Sum
136 297 373 423 216 252 408 617 382 612 1,601 1,598 456 331 428 630 8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:45	08:18	07:25	07:15	06:11	05:26	05:23	05:59	06:48	07:37	07:30	08:21
	16:38	17:25	18:16	20:10	21:00	21:46	21:59	21:28	20:26	19:17	17:12	16:32
2	08:44	08:16	07:23	07:13	06:09	05:25	05:24	06:01	06:50	07:39	07:32	08:22
	16:39	17:27	18:18	20:11	21:02	21:47	21:59	21:26	20:24	19:15	17:10	16:31
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	16:45	17:36	18:27	20:20	21:10	21:52	21:57	21:18	20:13	19:04	17:01	16:29
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11	08:41	08:01	07:03	06:52	05:53	05:20	05:32	06:15	07:05	07:54	07:48	08:33
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12	08:40	07:59	07:01	06:50	05:51	05:20	05:33	06:16	07:06	07:55	07:50	08:34
	16:52	17:45	18:36	20:28	21:18	21:56	21:53	21:08	20:01	18:53	16:53	16:28
13	08:40	07:57	06:58	06:48	05:49	05:19	05:34	06:18	07:08	07:57	07:51	08:35
	16:53	17:47	18:37	20:30	21:20	21:56	21:52	21:06	19:59	18:50	16:52	16:28
14	08:39	07:56	06:56	06:46	05:48	05:19	05:35	06:19	07:09	07:59	07:53	08:36
	16:54	17:49	18:39	20:32	21:21	21:57	21:51	21:04	19:57	18:48	16:50	16:28
15	08:38	07:54	06:54	06:44	05:46	05:19	05:36	06:21	07:11	08:00	07:55	08:37
	16:56	17:51	18:41	20:33	21:23	21:57	21:50	21:02	19:54	18:46	16:49	16:28
16	08:37	07:52	06:52	06:41	05:45	05:19	05:37	06:23	07:13	08:02	07:57	08:38
	16:58	17:53	18:43	20:35	21:24	21:58	21:49	21:00	19:52	18:44	16:47	16:28
17	08:37	07:50	06:49	06:39	05:43	05:19	05:38	06:24	07:14	08:04	07:58	08:39
	16:59	17:55	18:44	20:37	21:26	21:58	21:48	20:58	19:50	18:42	16:46	16:28
18	08:36	07:48	06:47	06:37	05:42	05:19	05:40	06:26	07:16	08:06	08:00	08:40
	17:01	17:56	18:46	20:38	21:27	21:59	21:47	20:56	19:47	18:40	16:45	16:28
19	08:35	07:46	06:45	06:35	05:41	05:19	05:41	06:27	07:17	08:07	08:02	08:40
	17:02	17:58	18:48	20:40	21:29	21:59	21:46	20:54	19:45	18:37	16:43	16:28
20	08:34	07:44	06:42	06:33	05:39	05:19	05:42	06:29	07:19	08:09	08:04	08:41
	17:04	18:00	18:49	20:42	21:30	21:59	21:45	20:52	19:43	18:35	16:42	16:29
21	08:33	07:42	06:40	06:31	05:38	05:19	05:43	06:31	07:21	08:11	08:05	08:42
	17:06	18:02	18:51	20:44	21:31	22:00	21:44	20:50	19:40	18:33	16:41	16:29
22	08:31	07:40	06:38	06:29	05:37	05:19	05:45	06:32	07:22	08:13	08:07	08:42
	17:07	18:04	18:53	20:45	21:33	22:00	21:42	20:48	19:38	18:31	16:40	16:30
23	08:30	07:38	06:36	06:27	05:35	05:19	05:46	06:34	07:24	08:14	08:08	08:43
	17:09	18:06	18:55	20:47	21:34	22:00	21:41	20:46	19:36	18:29	16:39	16:30
24	08:29	07:36	06:33	06:25	05:34	05:20	05:48	06:36	07:25	08:16	08:10	08:43
	17:11	18:07	18:56	20:49	21:36	22:00	21:40	20:44	19:33	18:27	16:38	16:31
25	08:28	07:34	06:31	06:22	05:33	05:20	05:49	06:37	07:27	08:18	08:12	08:43
	17:13	18:09	18:58	20:50	21:37	22:00	21:38	20:42	19:31	17:25	16:37	16:31
26	08:27	07:31	06:29	06:20	05:32	05:20	05:50	06:39	07:29	08:20	08:13	08:44
	17:14	18:11	19:00	20:52	21:38	22:00	21:37	20:39	19:29	17:23	16:36	16:32
27	08:25	07:29	06:26	06:18	05:31	05:21	05:52	06:40	07:30	08:21	08:15	08:44
	17:16	18:13	19:01	20:54	21:40	22:00	21:36	20:37	19:26	17:21	16:35	16:33
28	08:24	07:27	06:24	06:16	05:30	05:21	05:53	06:42	07:32	08:23	08:16	08:44
	17:18	18:15	19:03	20:55	21:41	22:00	21:34	20:35	19:24	17:19	16:34	16:34
29	08:22	07:22	06:14	06:05	05:29	05:22	05:55	06:44	07:34	08:25	08:18	08:44
	17:20	18:17	19:05	20:57	21:42	22:00	21:33	20:33	19:22	17:17	16:33	16:35
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	17:22	18:19	19:07	20:59	21:43	22:00	21:31	20:31	19:20	17:15	16:33	16:35
31	08:19	07:17	06:11	06:01	05:27	05:21	05:58	06:47	07:37	08:28	08:21	08:44
	17:23	18:20	19:08	21:00	21:44	22:00	21:29	20:29	19:18	17:14	16:31	16:36
Potential sun hours	260	278	367	416	484	498	501	453	381	332	267	245
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

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

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



Project:

4636 Derreenacrinnig West Windfarm

Description:

Construction of 3 No. wind turbines with an overall ground to blade tip height of 119.3m. The wind turbines will have a rotor diameter of up to 82m and a hub height of 78.3m.

Licensed user:

Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
Kathlyn Feeney / kfeeney@jodireland.com
Calculated:
30/06/2025 15:04/4.0.552

SHADOW - Calendar

Calculation: 4636- Derreenacrinnig Windfarm Worst Case Assumptions for shadow calculations

Shadow receptor: I - H9

Sunshine probability S (Average daily sunshine hours) [VALENTIA OBS.]

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1.30 2.04 2.89 4.92 5.79 4.99 4.32 4.35 3.60 2.54 1.64 1.06

Operational time

N NNE NE ENE E ESE SE SSE S SSW SW WSW W WNW NW NNW Sum
136 297 373 423 216 252 408 617 382 612 1,601 1,598 456 331 428 630 8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:45	08:18	07:25	07:15	06:11	05:26	05:23	05:59	06:48	07:37	07:30	08:21
	16:38	17:25	18:16	20:10	21:00	21:46	21:59	21:28	20:26	19:17	17:12	16:32
2	08:45	08:17	07:23	07:13	06:09	05:25	05:24	06:01	06:50	07:39	07:32	08:22
	16:39	17:27	18:18	20:11	21:02	21:47	21:59	21:26	20:24	19:15	17:10	16:31
3	08:44	08:15	07:21	07:10	06:07	05:24	05:24	06:02	06:52	07:40	07:34	08:24
	16:40	17:29	18:20	20:13	21:04	21:48	21:59	21:25	20:22	19:13	17:08	16:30
4	08:44	08:13	07:19	07:08	06:05	05:23	05:25	06:04	06:53	07:42	07:36	08:25
	16:41	17:31	18:22	20:15	21:05	21:49	21:58	21:23	20:20	19:10	17:06	16:30
5	08:44	08:12	07:16	07:06	06:03	05:23	05:26	06:05	06:55	07:44	07:37	08:26
	16:42	17:32	18:23	20:17	21:07	21:50	21:58	21:21	20:17	19:08	17:04	16:29
6	08:44	08:10	07:14	07:04	06:01	05:22	05:27	06:07	06:56	07:45	07:39	08:28
	16:43	17:34	18:25	20:18	21:09	21:51	21:57	21:19	20:15	19:06	17:03	16:29
7	08:43	08:08	07:12	07:01	06:00	05:22	05:28	06:08	06:58	07:47	07:41	08:29
	16:45	17:36	18:27	20:20	21:10	21:52	21:57	21:18	20:13	19:04	17:01	16:29
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	16:46	17:38	18:29	20:22	21:12	21:53	21:56	21:16	20:10	19:01	16:59	16:28
9	08:42	08:05	07:07	06:57	05:56	05:21	05:29	06:11	07:01	07:50	07:45	08:31
	16:47	17:40	18:30	20:23	21:13	21:53	21:56	21:14	20:08	18:59	16:58	16:28
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	16:49	17:42	18:32	20:25	21:15	21:54	21:55	21:12	20:06	18:57	16:56	16:28
11	08:41	08:01	07:03	06:52	05:53	05:20	05:31	06:15	07:04	07:54	07:48	08:33
	16:50	17:43	18:34	20:27	21:17	21:55	21:54	21:10	20:04	18:55	16:55	16:28
12	08:41	07:59	07:01	06:50	05:51	05:19	05:33	06:16	07:06	07:55	07:50	08:34
	16:51	17:45	18:36	20:28	21:18	21:56	21:53	21:08	20:01	18:52	16:53	16:27
13	08:40	07:58	06:58	06:48	05:49	05:19	05:34	06:18	07:08	07:57	07:52	08:35
	16:53	17:47	18:37	20:30	21:20	21:56	21:52	21:06	19:59	18:50	16:52	16:27
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	16:54	17:49	18:39	20:32	21:21	21:57	21:51	21:04	19:57	18:48	16:50	16:27
15	08:38	07:54	06:54	06:44	05:46	05:19	05:36	06:21	07:11	08:00	07:55	08:37
	16:56	17:51	18:41	20:33	21:23	21:57	21:50	21:02	19:54	18:46	16:49	16:28
16	08:38	07:52	06:52	06:41	05:45	05:19	05:37	06:23	07:13	08:02	07:57	08:38
	16:57	17:53	18:43	20:35	21:24	21:58	21:49	21:00	19:52	18:44	16:47	16:28
17	08:37	07:50	06:49	06:39	05:43	05:19	05:38	06:24	07:14	08:04	07:58	08:39
	16:59	17:55	18:44	20:37	21:26	21:58	21:48	20:58	19:50	18:42	16:46	16:28
18	08:36	07:48	06:47	06:37	05:42	05:19	05:40	06:26	07:16	08:06	08:00	08:40
	17:01	17:56	18:46	20:39	21:27	21:59	21:47	20:56	19:47	18:40	16:45	16:28
19	08:35	07:46	06:45	06:35	05:40	05:19	05:41	06:27	07:17	08:07	08:02	08:40
	17:02	17:58	18:48	20:40	21:29	21:59	21:46	20:54	19:45	18:37	16:43	16:28
20	08:34	07:44	06:42	06:33	05:39	05:19	05:42	06:29	07:19	08:09	08:04	08:41
	17:04	18:00	18:49	20:42	21:30	21:59	21:45	20:52	19:43	18:35	16:42	16:29
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	17:06	18:02	18:51	20:44	21:32	22:00	21:44	20:50	19:40	18:33	16:41	16:29
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	17:09	18:05	18:55	20:47	21:34	22:00	21:41	20:46	19:36	18:29	16:39	16:30
24	08:29	07:36	06:33	06:24	05:34	05:20	05:47	06:35	07:25	08:16	08:10	08:43
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	17:13	18:09	18:58	20:50	21:37	22:00	21:39	20:42	19:31	17:25	16:37	16:31
26	08:27	07:31	06:29	06:20	05:32	05:20	05:50	06:39	07:29	08:20	08:13	08:44
	17:14	18:11	19:00	20:52	21:38	22:00	21:37	20:40	19:29	17:23	16:36	16:32
27	08:25	07:29	06:26	06:18	05:31	05:21	05:52	06:40	07:30	08:21	08:15	08:44
	17:16	18:13	19:01	20:54	21:40	22:00	21:36	20:37	19:26	17:21	16:35	16:33
28	08:24	07:27	06:24	06:16	05:29	05:21	05:53	06:42	07:32	08:23	08:16	08:44
	17:18	18:14	19:03	20:55	21:41	22:00	21:34	20:35	19:24	17:19	16:34	16:34
29	08:22		07:22	06:14	05:28	05:22	05:55	06:44	07:34	08:25	08:18	08:44
	17:20		20:05	20:57	21:42	22:00	21:33	20:33	19:22	17:17	16:33	16:34
30	08:21		07:19	06:12	05:28	05:22	05:56	06:45	07:35	08:27	08:19	08:45
	17:21		20:06	20:59	21:43	22:00	21:31	20:31	19:20	17:15	16:32	16:35
31	08:20		07:17		05:27		05:58	06:47		07:28		08:45
	17:23		20:08		21:45		21:30	20:29		17:13		16:36
Potential sun hours	260	278	367	416	484	498	501	453	381	332	267	245
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

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

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



Project:

4636 Derreenacrinnig West Windfarm

Description:

Construction of 3 No. wind turbines with an overall ground to blade tip height of 119.3m. The wind turbines will have a rotor diameter of up to 82m and a hub height of 78.3m.

Licensed user:

Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
Kathlyn Feeney / kfeeney@jodireland.com
Calculated:
30/06/2025 15:04/4.0.552

SHADOW - Calendar

Calculation: 4636- Derreenacrinnig Windfarm Worst Case Assumptions for shadow calculations

Shadow receptor: J - H10

Sunshine probability S (Average daily sunshine hours) [VALENTIA OBS.]

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1.30 2.04 2.89 4.92 5.79 4.99 4.32 4.35 3.60 2.54 1.64 1.06

Operational time

N NNE NE ENE E ESE SE SSE S SSW SW WSW W WNW NW NNW Sum
136 297 373 423 216 252 408 617 382 612 1,601 1,598 456 331 428 630 8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:44	08:18	07:25	07:15	06:11	05:26	05:23	05:59	06:48	07:37	07:30	08:21
	16:38	17:25	18:16	20:10	21:00	21:46	21:59	21:28	20:26	19:17	17:12	16:32
2	08:44	08:16	07:23	07:13	06:09	05:25	05:24	06:01	06:50	07:39	07:32	08:22
	16:39	17:27	18:18	20:11	21:02	21:47	21:59	21:26	20:24	19:15	17:10	16:31
3	08:44	08:15	07:21	07:10	06:07	05:24	05:24	06:02	06:52	07:40	07:34	08:24
	16:40	17:29	18:20	20:13	21:03	21:48	21:59	21:25	20:22	19:13	17:08	16:31
4	08:44	08:13	07:18	07:08	06:05	05:24	05:25	06:04	06:53	07:42	07:36	08:25
	16:41	17:31	18:22	20:15	21:05	21:49	21:58	21:23	20:20	19:10	17:06	16:30
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	16:42	17:32	18:23	20:17	21:07	21:50	21:58	21:21	20:17	19:08	17:05	16:29
6	08:43	08:10	07:14	07:04	06:01	05:22	05:27	06:07	06:56	07:45	07:39	08:27
	16:43	17:34	18:25	20:18	21:08	21:51	21:57	21:19	20:15	19:06	17:03	16:29
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	16:46	17:38	18:29	20:22	21:12	21:52	21:56	21:16	20:10	19:01	16:59	16:28
9	08:42	08:05	07:07	06:57	05:56	05:21	05:30	06:12	07:01	07:50	07:44	08:31
	16:47	17:40	18:30	20:23	21:13	21:53	21:55	21:14	20:08	18:59	16:58	16:28
10	08:42	08:03	07:05	06:55	05:54	05:20	05:31	06:13	07:03	07:52	07:46	08:32
	16:49	17:42	18:32	20:25	21:15	21:54	21:55	21:12	20:06	18:57	16:56	16:28
11	08:41	08:01	07:03	06:52	05:53	05:20	05:32	06:15	07:04	07:54	07:48	08:33
	16:50	17:44	18:34	20:27	21:16	21:55	21:54	21:10	20:04	18:55	16:55	16:28
12	08:40	07:59	07:01	06:50	05:51	05:20	05:33	06:16	07:06	07:55	07:50	08:34
	16:52	17:45	18:36	20:28	21:18	21:55	21:53	21:08	20:01	18:53	16:53	16:28
13	08:40	07:57	06:58	06:48	05:49	05:19	05:34	06:18	07:08	07:57	07:51	08:35
	16:53	17:47	18:37	20:30	21:20	21:56	21:52	21:06	19:59	18:50	16:52	16:28
14	08:39	07:56	06:56	06:46	05:48	05:19	05:35	06:19	07:09	07:59	07:53	08:36
	16:54	17:49	18:39	20:32	21:21	21:57	21:51	21:04	19:57	18:48	16:50	16:28
15	08:38	07:54	06:54	06:44	05:46	05:19	05:36	06:21	07:11	08:00	07:55	08:37
	16:56	17:51	18:41	20:33	21:23	21:57	21:50	21:02	19:54	18:46	16:49	16:28
16	08:37	07:52	06:52	06:41	05:45	05:19	05:37	06:23	07:13	08:02	07:57	08:38
	16:58	17:53	18:43	20:35	21:24	21:58	21:49	21:00	19:52	18:44	16:47	16:28
17	08:37	07:50	06:49	06:39	05:43	05:19	05:38	06:24	07:14	08:04	07:58	08:39
	16:59	17:55	18:44	20:37	21:26	21:58	21:48	20:58	19:50	18:42	16:46	16:28
18	08:36	07:48	06:47	06:37	05:42	05:19	05:40	06:26	07:16	08:06	08:00	08:40
	17:01	17:56	18:46	20:38	21:27	21:59	21:47	20:56	19:47	18:40	16:45	16:28
19	08:35	07:46	06:45	06:35	05:41	05:19	05:41	06:27	07:17	08:07	08:02	08:40
	17:02	17:58	18:48	20:40	21:29	21:59	21:46	20:54	19:45	18:37	16:43	16:28
20	08:34	07:44	06:42	06:33	05:39	05:19	05:42	06:29	07:19	08:09	08:03	08:41
	17:04	18:00	18:49	20:42	21:30	21:59	21:45	20:52	19:43	18:35	16:42	16:29
21	08:33	07:42	06:40	06:31	05:38	05:19	05:43	06:31	07:21	08:11	08:05	08:42
	17:06	18:02	18:51	20:43	21:31	22:00	21:44	20:50	19:40	18:33	16:41	16:29
22	08:31	07:40	06:38	06:29	05:37	05:19	05:45	06:32	07:22	08:13	08:07	08:42
	17:07	18:04	18:53	20:45	21:33	22:00	21:42	20:48	19:38	18:31	16:40	16:30
23	08:30	07:38	06:36	06:27	05:35	05:19	05:46	06:34	07:24	08:14	08:08	08:43
	17:09	18:06	18:55	20:47	21:34	22:00	21:41	20:46	19:36	18:29	16:39	16:30
24	08:29	07:36	06:33	06:24	05:34	05:20	05:48	06:36	07:25	08:16	08:10	08:43
	17:11	18:07	18:56	20:49	21:36	22:00	21:40	20:44	19:33	18:27	16:38	16:31
25	08:28	07:34	06:31	06:22	05:33	05:20	05:49	06:37	07:27	08:18	08:12	08:43
	17:13	18:09	18:58	20:50	21:37	22:00	21:38	20:42	19:31	17:25	16:37	16:31
26	08:26	07:31	06:29	06:20	05:32	05:20	05:50	06:39	07:29	08:20	08:13	08:44
	17:14	18:11	19:00	20:52	21:38	22:00	21:37	20:39	19:29	17:23	16:36	16:32
27	08:25	07:29	06:26	06:18	05:31	05:21	05:52	06:40	07:30	08:21	08:15	08:44
	17:16	18:13	19:01	20:54	21:40	22:00	21:36	20:37	19:26	17:21	16:35	16:33
28	08:24	07:27	06:24	06:16	05:30	05:21	05:53	06:42	07:32	08:23	08:16	08:44
	17:18	18:15	19:03	20:55	21:41	22:00	21:34	20:35	19:24	17:19	16:34	16:34
29	08:22	07:22	06:14	06:05	05:29	05:22	05:55	06:44	07:34	08:25	08:18	08:44
	17:20	18:17	19:05	20:57	21:42	22:00	21:33	20:33	19:22	17:17	16:33	16:35
30	08:21	07:19	06:13	06:03	05:28	05:22	05:56	06:45	07:35	08:26	08:19	08:44
	17:21	18:18	19:06	20:59	21:43	22:00	21:31	20:31	19:20	17:15	16:32	16:35
31	08:19	07:17	06:11	06:01	05:27	05:21	05:58	06:47	07:37	08:28	08:21	08:44
	17:23	18:20	19:08	21:00	21:44	22:00	21:29	20:28	19:17	17:14	16:31	16:36
Potential sun hours	260	278	367	416	484	498	501	453	381	332	267	245
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

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

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



Project:

4636 Derreenacrinnig West Windfarm

Description:

Construction of 3 No. wind turbines with an overall ground to blade tip height of 119.3m. The wind turbines will have a rotor diameter of up to 82m and a hub height of 78.3m.

Licensed user:

Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
Kathlyn Feeney / kfeeney@jodireland.com
Calculated:
30/06/2025 15:04/4.0.552

SHADOW - Calendar

Calculation: 4636- Derreenacrinnig Windfarm Worst Case Assumptions for shadow calculations

Shadow receptor: K - H11
Sunshine probability S (Average daily sunshine hours) [VALENTIA OBS.]
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1.30 2.04 2.89 4.92 5.79 4.99 4.32 4.35 3.60 2.54 1.64 1.06

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
136	297	373	423	216	252	408	617	382	612	1,601	1,598	456	331	428	630	8,760

	January	February	March	April	May	June	July	August	September	October	November	December	
1	08:45	11:47 (1)	08:18	07:25	07:15	06:11	05:26	05:23	05:59	06:48	07:37	07:30	08:21
2	16:38	12:00 (1)	17:25	18:16	20:10	21:00	21:46	21:59	21:28	20:26	19:17	17:12	16:32
3	08:45	11:47 (1)	08:17	07:23	07:13	06:09	05:25	05:24	06:01	06:50	07:39	07:32	08:22
4	16:39	12:11 (1)	17:27	18:18	20:12	21:02	21:47	21:59	21:26	20:24	19:15	17:10	16:31
5	08:44	11:48 (1)	08:15	07:21	07:10	06:07	05:24	05:24	06:02	06:52	07:40	07:34	08:24
6	16:40	11:59 (1)	17:29	18:20	20:13	21:04	21:48	21:59	21:25	20:22	19:13	17:08	16:30
7	08:44	11:50 (1)	08:13	07:19	07:08	06:05	05:23	05:25	06:04	06:53	07:42	07:36	08:25
8	16:41	12:00 (1)	17:31	18:22	20:15	21:05	21:49	21:58	21:23	20:20	19:10	17:06	16:30
9	08:44	11:50 (1)	08:12	07:16	07:06	06:03	05:23	05:26	06:05	06:55	07:44	07:37	08:26
10	16:42	11:59 (1)	17:32	18:23	20:17	21:07	21:50	21:58	21:21	20:17	19:08	17:04	16:29
11	08:44	11:52 (1)	08:10	07:14	07:04	06:01	05:22	05:27	06:07	06:56	07:45	07:39	08:28
12	16:43	11:58 (1)	17:34	18:25	20:18	21:09	21:51	21:57	21:19	20:15	19:06	17:03	16:29
13	08:43		08:08	07:12	07:01	06:00	05:22	05:28	06:08	06:58	07:47	07:41	08:29
14	16:45		17:36	18:27	20:20	21:10	21:52	21:57	21:18	20:13	19:04	17:01	16:29
15	08:43		08:07	07:10	06:59	05:58	05:21	05:29	06:10	07:00	07:49	07:43	08:30
16	16:46		17:38	18:29	20:22	21:12	21:53	21:56	21:16	20:10	19:01	16:59	16:28
17	08:42		08:05	07:07	06:57	05:56	05:21	05:29	06:12	07:01	07:50	07:45	08:31
18	16:47		17:40	18:30	20:23	21:13	21:53	21:56	21:14	20:08	18:59	16:58	16:28
19	08:42		08:03	07:05	06:55	05:54	05:20	05:30	06:13	07:03	07:52	07:46	08:32
20	16:49		17:42	18:32	20:25	21:15	21:54	21:55	21:12	20:06	18:57	16:56	16:28
21	08:41		08:01	07:03	06:52	05:53	05:20	05:31	06:15	07:05	07:54	07:48	08:33
22	16:50		17:44	18:34	20:27	21:17	21:55	21:54	21:10	20:04	18:55	16:55	16:28
23	08:41		07:59	07:01	06:50	05:51	05:19	05:33	06:16	07:06	07:55	07:50	10:08 (2)
24	16:51		17:45	18:36	20:28	21:18	21:56	21:53	21:08	20:01	18:53	16:53	5
25	08:40		07:58	06:58	06:48	05:49	05:19	05:34	06:18	07:08	07:57	07:52	10:13 (2)
26	16:53		17:47	18:37	20:30	21:20	21:56	21:52	21:06	19:59	18:50	16:52	9
27	08:39		07:56	06:56	06:46	05:48	05:19	05:35	06:19	07:09	07:59	07:53	10:16 (2)
28	16:54		17:49	18:39	20:32	21:21	21:57	21:51	21:04	19:57	18:48	16:50	11
29	08:38		07:54	06:54	06:44	05:46	05:19	05:36	06:21	07:11	08:00	07:55	10:17 (2)
30	16:56		17:51	18:41	20:33	21:23	21:57	21:50	21:02	19:54	18:46	16:49	13
31	08:38		07:52	06:52	06:41	05:45	05:19	05:37	06:23	07:13	08:02	07:57	10:05 (2)
32	16:58		17:53	18:43	20:35	21:24	21:58	21:49	21:00	19:52	18:44	16:47	14
33	08:37		07:50	06:49	06:39	05:43	05:19	05:38	06:24	07:14	08:04	07:59	10:05 (2)
34	16:59		17:55	18:44	20:37	21:26	21:58	21:48	20:58	19:50	18:42	16:46	15
35	08:36		07:48	06:47	06:37	05:42	05:19	05:40	06:26	07:16	08:06	08:00	10:04 (2)
36	17:01		17:56	18:46	20:39	21:27	21:59	21:47	20:56	19:47	18:40	16:45	15
37	08:35		07:46	06:45	06:35	05:40	05:19	05:41	06:27	07:17	08:07	08:02	10:05 (2)
38	17:02		17:58	18:48	20:40	21:29	21:59	21:46	20:54	19:45	18:37	16:43	15
39	08:34		07:44	06:42	06:33	05:39	05:19	05:42	06:29	07:19	08:09	08:04	10:05 (2)
40	17:04		18:00	18:49	20:42	21:30	22:00	21:45	20:52	19:43	18:35	16:42	15
41	08:33		07:42	06:40	06:31	05:38	05:19	05:43	06:31	07:21	08:11	08:05	10:06 (2)
42	17:06		18:02	18:51	20:44	21:32	22:00	21:44	20:50	19:40	18:33	16:41	14
43	08:32		07:40	06:38	06:29	05:36	05:19	05:45	06:32	07:22	08:13	08:07	10:07 (2)
44	17:07		18:04	18:53	20:45	21:33	22:00	21:43	20:48	19:38	18:31	16:40	13
45	08:30		07:38	06:36	06:27	05:35	05:19	05:46	06:34	07:24	08:14	08:09	10:07 (2)
46	17:09		18:05	18:55	20:47	21:34	22:00	21:41	20:46	19:36	18:29	16:39	12
47	08:29		07:36	06:33	06:24	05:34	05:20	05:47	06:36	07:25	08:16	08:10	10:19 (2)
48	17:11		18:07	18:56	20:49	21:36	22:00	21:40	20:44	19:33	18:27	16:38	11
49	08:28		07:34	06:31	06:22	05:33	05:20	05:49	06:37	07:27	08:18	08:12	10:09 (2)
50	17:13		18:09	18:58	20:50	21:37	22:00	21:39	20:42	19:31	18:25	16:37	10
51	08:27		07:31	06:29	06:20	05:32	05:20	05:50	06:39	07:29	08:20	08:13	10:12 (2)
52	17:14		18:11	19:00	20:52	21:38	22:00	21:37	20:40	19:29	18:23	16:36	6
53	08:25		07:29	06:26	06:18	05:31	05:21	05:52	06:40	07:30	08:21	08:15	10:18 (2)
54	17:16		18:13	19:01	20:54	21:40	22:00	21:36	20:37	19:27	18:21	16:35	6
55	08:24		07:27	06:24	06:16	05:30	05:21	05:53	06:42	07:32	08:23	08:16	10:18 (2)
56	17:18		18:15	19:03	20:55	21:41	22:00	21:34	20:35	19:24	18:19	16:34	6
57	08:23			07:22	06:14	05:29	05:22	05:55	06:44	07:34	08:25	08:18	10:19 (2)
58	17:20			20:05	20:57	21:42	22:00	21:33	20:33	19:22	18:17	16:33	6
59	08:21			07:19	06:13	05:28	05:22	05:56	06:45	07:35	08:27	08:19	10:20 (2)
60	17:21			20:06	20:59	21:43	22:00	21:31	20:31	19:20	18:15	16:32	6
61	08:20			07:17	06:11	05:27		05:58	06:47		07:29		10:21 (2)
62	17:23			20:08		21:45		21:30	20:29		17:13		16:36
63	Potential sun hours	260	278	367	416	484	498	501	453	381	332	267	245
64	Total, worst case	238										178	355
65	Sun reduction	0.16										0.18	0.13
66	Oper. time red.	1.00										1.00	1.00
67	Wind dir. red.	0.56										0.54	0.63
68	Total reduction	0.09										0.10	0.08
69	Total, real	21										18	30

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

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

Project:

4636 Derreenacrinnig West Windfarm

Description:

Construction of 3 No. wind turbines with an overall ground to blade tip height of 119.3m. The wind turbines will have a rotor diameter of up to 82m and a hub height of 78.3m.

Licensed user:

Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
Kathlyn Feeney / kfeeney@jodireland.com
Calculated:
30/06/2025 15:04/4.0.552

SHADOW - Calendar

Calculation: 4636- Derreenacrinnig Windfarm Worst Case Assumptions for shadow calculations

Shadow receptor: L - H12

Sunshine probability S (Average daily sunshine hours) [VALENTIA OBS.]

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1.30 2.04 2.89 4.92 5.79 4.99 4.32 4.35 3.60 2.54 1.64 1.06

Operational time

N NNE NE ENE E ESE SE SSE S SSW SW WSW W WNW NW NNW Sum
136 297 373 423 216 252 408 617 382 612 1,601 1,598 456 331 428 630 8,760

Table with 13 columns (January to December) and 31 rows of daily data. Each row contains 13 pairs of start and end times. Summary rows at the bottom include: Potential sun hours, Total, worst case, Sun reduction, Oper. time red., Wind dir. red., Total reduction, Total, real.

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

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



Project:

4636 Derreenacrinnig West Windfarm

Description:

Construction of 3 No. wind turbines with an overall ground to blade tip height of 119.3m. The wind turbines will have a rotor diameter of up to 82m and a hub height of 78.3m.

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Finisklin Business Park
F91 RHH9 Sligo
+353719161416
Kathlyn Feeney / kfeeney@jodireland.com
Calculated:
30/06/2025 15:04/4.0.552

SHADOW - Calendar

Calculation: 4636- Derreenacrinnig Windfarm Worst Case
Assumptions for shadow calculations

Shadow receptor: M - H13

Sunshine probability S (Average daily sunshine hours) [VALENTIA OBS.]

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1.30 2.04 2.89 4.92 5.79 4.99 4.32 4.35 3.60 2.54 1.64 1.06

Operational time

N NNE NE ENE E ESE SE SSE S SSW SW WSW W WNW NW NNW Sum
136 297 373 423 216 252 408 617 382 612 1,601 1,598 456 331 428 630 8,760

	January	February	March	April	May	June	July	August	September	October	November	December	
1	08:45 16:38	08:18 17:25	07:25 18:16	07:15 20:10	06:11 21:00	05:26 21:46	05:23 22:00	05:59 21:28	06:48 20:26	07:37 19:17	07:30 17:12	08:21 16:32	
2	08:45 16:39	08:17 17:27	07:23 18:18	07:13 20:12	06:09 21:02	05:25 21:47	05:24 21:59	06:01 21:26	06:50 20:24	07:39 19:15	07:32 17:10	08:22 16:31	
3	08:44 16:40	08:15 17:29	07:21 18:20	07:10 20:13	06:07 21:04	05:24 21:48	05:24 21:59	06:02 21:25	06:52 20:22	07:40 19:13	07:34 17:08	08:24 16:31	
4	08:44 16:41	08:13 17:31	07:19 18:22	07:08 20:15	06:05 21:05	05:24 21:49	05:25 21:58	06:04 21:23	06:53 20:20	07:42 19:10	07:36 17:06	08:25 16:30	
5	08:44 16:42	08:12 17:32	07:16 18:23	07:06 20:17	06:03 21:07	05:23 21:50	05:26 21:58	06:05 21:21	06:55 20:17	07:44 19:08	07:37 17:05	08:26 16:29	
6	08:44 16:43	08:10 17:34	07:14 18:25	07:04 20:18	06:01 21:09	05:22 21:51	05:27 21:57	06:07 21:19	06:57 20:15	07:45 19:06	07:39 17:03	08:28 16:29	
7	08:43 16:45	08:08 17:36	07:12 18:27	07:01 20:20	06:00 21:10	05:22 21:52	05:28 21:57	06:08 21:18	06:58 20:13	07:47 19:04	07:41 17:01	08:29 16:29	
8	08:43 16:46	08:07 17:38	07:10 18:29	06:59 20:22	05:58 21:12	05:21 21:53	05:29 21:56	06:10 21:16	07:00 20:11	07:49 19:01	07:43 16:59	08:30 16:28	
9	08:42 16:47	08:05 17:40	07:08 18:30	06:57 20:23	05:56 21:13	05:21 21:53	05:30 21:56	06:12 21:14	07:01 20:08	07:50 18:59	07:45 16:58	08:31 16:28	
10	08:42 16:49	08:03 17:42	07:05 18:32	06:55 20:25	05:54 21:15	05:20 21:54	05:31 21:55	06:13 21:12	07:03 20:06	07:52 18:57	07:46 16:56	08:32 16:28	
11	08:41 16:50	08:01 17:44	09:27 (1) 09:32 (1)	07:03 18:34	06:52 20:27	05:53 21:17	05:32 21:55	06:15 21:10	07:05 20:04	07:54 18:55	07:48 16:55	08:33 16:28	
12	08:41 16:52	07:59 17:45	09:25 (1) 09:35 (1)	07:01 18:36	06:50 20:28	05:51 21:18	05:19 21:56	06:16 21:08	07:06 20:01	07:55 18:53	07:50 16:53	08:35 16:28	
13	08:40 16:53	07:58 17:47	09:23 (1) 09:36 (1)	06:58 18:37	06:48 20:30	05:49 21:20	05:19 21:56	06:18 21:06	07:08 19:59	07:57 18:50	07:52 16:52	08:36 16:28	
14	08:39 16:54	07:56 17:49	09:23 (1) 09:36 (1)	06:56 18:39	06:46 20:32	05:48 21:21	05:19 21:57	06:20 21:04	07:09 19:57	07:59 18:48	07:53 16:50	08:36 16:28	
15	08:38 16:56	07:54 17:51	09:22 (1) 09:37 (1)	06:54 18:41	06:44 20:34	05:46 21:23	05:19 21:57	06:21 21:02	07:11 19:54	08:01 18:46	07:55 16:49	08:37 16:28	
16	08:38 16:58	07:52 17:53	09:22 (1) 09:37 (1)	06:52 18:43	06:41 20:35	05:45 21:24	05:19 21:58	06:23 21:00	07:13 19:52	08:02 18:44	07:57 16:47	08:38 16:28	
17	08:37 16:59	07:50 17:55	09:22 (1) 09:37 (1)	06:49 18:44	06:39 20:37	05:43 21:26	05:19 21:58	06:24 20:58	07:14 19:50	08:04 18:42	07:59 16:46	08:39 16:28	
18	08:36 17:01	07:48 17:56	09:23 (1) 09:36 (1)	06:47 18:46	06:37 20:39	05:42 21:27	05:19 21:59	06:26 20:56	07:16 19:47	08:06 18:40	08:00 16:45	08:40 16:28	
19	08:35 17:02	07:46 17:58	09:24 (1) 09:35 (1)	06:45 18:48	06:35 20:40	05:41 21:29	05:19 21:59	06:28 20:54	07:17 19:45	08:07 18:37	08:02 16:43	08:40 16:28	
20	08:34 17:04	07:44 18:00	09:25 (1) 09:34 (1)	06:43 18:49	06:33 20:42	05:39 21:30	05:19 22:00	06:29 21:45	07:19 19:43	08:09 18:35	08:04 16:42	08:41 16:29	
21	08:33 17:06	07:42 18:02	09:34 (1)	06:40 18:51	06:31 20:44	05:38 21:32	05:19 22:00	06:31 20:50	07:21 19:40	08:11 18:33	09:57 (1) 10:02 (1)	08:05 16:41	08:42 16:29
22	08:32 17:07	07:40 18:04		06:38 18:53	06:29 20:45	05:37 21:33	05:19 22:00	06:32 21:43	07:22 19:38	08:13 18:31	10 10:05 (1)	08:07 16:40	08:42 16:30
23	08:30 17:09	07:38 18:06		06:36 18:55	06:27 20:47	05:35 21:34	05:19 22:00	06:34 21:41	07:24 19:36	08:14 18:29	09:54 (1) 10:06 (1)	08:09 16:39	08:43 16:30
24	08:29 17:11	07:36 18:07		06:33 18:56	06:25 20:49	05:34 21:36	05:20 22:00	06:36 20:44	07:26 19:33	08:16 18:27	09:53 (1) 10:07 (1)	08:10 16:38	08:43 16:31
25	08:28 17:13	07:34 18:09		06:31 18:58	06:22 20:50	05:33 21:37	05:20 22:00	06:37 20:42	07:27 19:31	07:18 17:25	08:53 (1) 09:07 (1)	08:12 16:37	08:44 16:31
26	08:27 17:14	07:32 18:11		06:29 19:00	06:20 20:52	05:32 21:38	05:20 22:00	06:39 21:37	07:29 19:29	07:20 17:23	08:52 (1) 09:06 (1)	08:13 16:36	08:44 16:32
27	08:25 17:16	07:29 18:13		06:26 19:01	06:18 20:54	05:31 21:40	05:21 22:00	06:40 20:37	07:30 19:27	07:21 17:21	08:52 (1) 09:06 (1)	08:15 16:35	08:44 16:33
28	08:24 17:18	07:27 18:15		06:24 19:03	06:16 20:55	05:30 21:41	05:21 22:00	06:42 20:35	07:32 19:24	07:23 17:19	08:52 (1) 09:06 (1)	08:16 16:34	08:44 16:34
29	08:23 17:20	07:23 18:12		07:22 20:05	06:15 20:57	05:29 21:42	05:22 22:00	06:44 21:33	07:34 19:22	07:25 17:17	08:53 (1) 09:05 (1)	08:18 16:33	08:45 16:35
30	08:21 17:22	07:20 18:11		07:20 20:06	06:13 20:59	05:28 21:43	05:22 22:00	06:45 21:31	07:35 19:20	07:27 17:15	08:55 (1) 09:04 (1)	08:19 16:32	08:45 16:35
31	08:20 17:23	07:17 18:15		07:17 20:08	05:27 21:45	05:27 21:45	05:27 21:45	06:47 20:29	07:29 17:14	08:58 (1) 09:01 (1)		08:45 16:36	
Potential sun hours	260	278	367	416	484	498	501	453	381	332	267	245	
Total, worst case		119								121			
Sun reduction		0.21								0.24			
Oper. time red.		1.00								1.00			
Wind dir. red.		0.52								0.52			
Total reduction		0.11								0.12			
Total, real		13								15			

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

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

Project:

4636 Derreenacrinng West Windfarm

Description:

Construction of 3 No. wind turbines with an overall ground to blade tip height of 119.3m. The wind turbines will have a rotor diameter of up to 82m and a hub height of 78.3m.

Licensed user:

Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
Kathlyn Feeney / kfeeney@jodireland.com
Calculated:
30/06/2025 15:04/4.0.552

SHADOW - Calendar

Calculation: 4636- Derreenacrinng Windfarm Worst Case Assumptions for shadow calculations

Shadow receptor: N - H14

Sunshine probability S (Average daily sunshine hours) [VALENTIA OBS.]

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1.30 2.04 2.89 4.92 5.79 4.99 4.32 4.35 3.60 2.54 1.64 1.06

Operational time

N NNE NE ENE E ESE SE SSE S SSW SW WSW W WNW NW NNW Sum
136 297 373 423 216 252 408 617 382 612 1,601 1,598 456 331 428 630 8,760

	January	February	March	April	May	June	July	August	September	October	November	December					
1	08:45	11:10 (2)	08:18	07:25	07:15	06:11	05:26	05:23	05:59	06:48	07:37	07:30	08:21	10:58 (2)			
2	16:38	11:26 (2)	17:25	18:16	20:10	21:00	21:46	21:59	21:28	20:26	19:17	17:12	16:32	13	11:11 (2)		
3	08:45	11:10 (2)	08:17	07:23	07:13	06:09	05:25	05:24	06:01	06:50	07:39	07:32	08:22	10:57 (2)			
4	16:39	11:25 (2)	17:27	18:18	20:11	21:02	21:47	21:59	21:26	20:24	19:15	17:10	16:31	14	11:11 (2)		
5	08:44	11:11 (2)	08:15	07:21	07:10	06:07	05:24	05:24	06:02	06:52	07:40	07:34	08:24	10:58 (2)			
6	16:40	11:26 (2)	17:29	18:20	20:13	21:04	21:48	21:59	21:25	20:22	19:13	17:08	16:30	14	11:12 (2)		
7	08:44	11:12 (2)	08:13	07:19	07:08	06:05	05:23	05:25	06:04	06:53	07:42	07:36	08:25	10:58 (2)			
8	16:41	11:27 (2)	17:31	18:22	20:15	21:05	21:49	21:58	21:23	20:20	19:10	17:06	16:30	15	11:13 (2)		
9	08:44	11:11 (2)	08:12	07:16	07:06	06:03	05:23	05:26	06:05	06:55	07:44	07:37	08:26	10:58 (2)			
10	16:42	11:27 (2)	17:32	18:23	20:17	21:07	21:50	21:58	21:21	20:17	19:08	17:04	16:29	16	11:14 (2)		
11	08:44	11:12 (2)	08:10	07:14	07:04	06:01	05:22	05:27	06:07	06:56	07:45	07:39	08:28	10:58 (2)			
12	16:43	11:28 (2)	17:34	18:25	20:18	21:09	21:51	21:57	21:19	20:15	19:06	17:03	16:29	16	11:14 (2)		
13	08:43	11:12 (2)	08:08	07:12	07:01	06:00	05:22	05:28	06:08	06:58	07:47	07:41	08:29	10:58 (2)			
14	16:45	11:28 (2)	17:36	18:27	20:20	21:10	21:52	21:57	21:18	20:13	19:04	17:01	16:29	16	11:14 (2)		
15	08:43	11:13 (2)	08:07	07:10	06:59	05:58	05:21	05:28	06:10	07:00	07:49	07:43	08:30	10:59 (2)			
16	16:46	11:29 (2)	17:38	18:29	20:22	21:12	21:53	21:56	21:16	20:10	19:01	16:59	16:28	15	11:14 (2)		
17	08:42	11:14 (2)	08:05	07:07	06:57	05:56	05:21	05:29	06:11	07:01	07:50	07:45	08:31	11:00 (2)			
18	16:47	11:28 (2)	17:40	18:30	20:23	21:13	21:53	21:56	21:14	20:08	18:59	16:58	16:28	15	11:15 (2)		
19	08:42	11:14 (2)	08:03	07:05	06:55	05:54	05:20	05:30	06:13	07:03	07:52	07:46	08:32	11:00 (2)			
20	16:49	11:28 (2)	17:42	18:32	20:25	21:15	21:54	21:55	21:12	20:06	18:57	16:56	16:28	16	11:16 (2)		
21	08:41	11:16 (2)	08:01	07:03	06:52	05:53	05:20	05:31	06:15	07:04	07:54	07:48	08:33	11:00 (2)			
22	16:50	11:29 (2)	17:43	18:34	20:27	21:17	21:55	21:54	21:10	20:04	18:55	16:55	16:28	16	11:16 (2)		
23	08:41	11:16 (2)	07:59	07:01	06:50	05:51	05:19	05:33	06:16	07:06	07:55	07:50	08:34	11:01 (2)			
24	16:51	11:29 (2)	17:45	18:36	20:28	21:18	21:56	21:53	21:08	20:01	18:53	16:53	16:27	15	11:16 (2)		
25	08:40	11:17 (2)	07:58	06:58	06:48	05:49	05:19	05:34	06:18	07:08	07:57	07:52	08:35	11:01 (2)			
26	16:53	11:28 (2)	17:47	18:37	20:30	21:20	21:56	21:52	21:06	19:59	18:50	16:52	16:27	15	11:16 (2)		
27	08:39	11:18 (2)	07:56	06:56	06:46	05:48	05:19	05:35	06:19	07:09	07:59	07:53	08:36	11:02 (2)			
28	16:54	11:28 (2)	17:49	18:39	20:32	21:21	21:57	21:51	21:04	19:57	18:48	16:50	16:27	15	11:17 (2)		
29	08:38	11:20 (2)	07:54	06:54	06:44	05:46	05:19	05:36	06:21	07:11	08:00	07:55	08:37	11:03 (2)			
30	16:56	11:27 (2)	17:51	18:41	20:33	21:23	21:57	21:50	21:02	19:54	18:46	16:49	16:28	14	11:17 (2)		
31	08:38	11:12 (2)	07:52	06:52	06:41	05:45	05:19	05:37	06:23	07:13	08:02	07:57	08:38	11:03 (2)			
32	16:57	11:28 (2)	17:53	18:43	20:35	21:24	21:58	21:49	21:00	19:52	18:44	16:47	16:28	15	11:18 (2)		
33	08:37	11:07 (2)	07:50	06:49	06:39	05:43	05:19	05:38	06:24	07:14	08:04	07:59	08:39	11:03 (2)			
34	16:59	11:28 (2)	17:55	18:44	20:37	21:26	21:58	21:48	20:58	19:50	18:42	16:46	16:28	15	11:18 (2)		
35	08:36	11:04 (2)	07:48	06:47	06:37	05:42	05:19	05:40	06:26	07:16	08:06	08:00	08:40	11:04 (2)			
36	17:01	11:16 (2)	17:56	18:46	20:39	21:27	21:59	21:47	20:56	19:47	18:40	16:45	16:28	14	11:18 (2)		
37	08:35	11:02 (2)	07:46	06:45	06:35	05:40	05:19	05:41	06:27	07:17	08:07	08:02	08:40	11:05 (2)			
38	17:02	11:12 (2)	17:58	18:48	20:40	21:29	21:59	21:46	20:54	19:45	18:37	16:43	16:28	14	11:19 (2)		
39	08:34	11:04 (2)	07:44	06:42	06:33	05:39	05:19	05:42	06:29	07:19	08:09	08:04	08:41	11:05 (2)			
40	17:04	11:18 (2)	18:00	18:49	20:42	21:30	21:59	21:45	20:52	19:43	18:35	16:42	16:29	14	11:19 (2)		
41	08:33	11:02 (2)	07:42	06:40	06:31	05:38	05:19	05:43	06:31	07:21	08:11	08:05	08:42	11:06 (2)			
42	17:06	11:18 (2)	18:02	18:51	20:44	21:32	22:00	21:44	20:50	19:40	18:33	16:41	16:29	14	11:20 (2)		
43	08:31	11:07 (2)	07:40	06:38	06:29	05:36	05:19	05:45	06:32	07:22	08:13	08:07	08:42	11:06 (2)			
44	17:07	11:18 (2)	18:04	18:53	20:45	21:33	22:00	21:43	20:48	19:38	18:31	16:40	16:30	14	11:20 (2)		
45	08:30	11:03 (2)	07:38	06:36	06:27	05:35	05:19	05:46	06:34	07:24	08:14	08:09	08:43	11:07 (2)			
46	17:09	11:19 (2)	18:05	18:55	20:47	21:34	22:00	21:41	20:46	19:36	18:29	16:39	16:30	14	11:21 (2)		
47	08:29	11:05 (2)	07:36	06:33	06:24	05:34	05:20	05:47	06:35	07:25	08:16	08:10	08:43	11:07 (2)			
48	17:11	11:10 (2)	18:07	18:56	20:49	21:36	22:00	21:40	20:44	19:33	18:27	16:38	16:31	14	11:21 (2)		
49	08:28	11:01 (2)	07:34	06:31	06:22	05:33	05:20	05:49	06:37	07:27	08:18	08:12	08:44	11:08 (2)			
50	17:13	11:09 (2)	18:09	18:58	20:50	21:37	22:00	21:39	20:42	19:31	18:25	16:37	16:31	14	11:22 (2)		
51	08:27	11:00 (2)	07:31	06:29	06:20	05:32	05:20	05:50	06:39	07:29	08:20	08:13	08:44	11:08 (2)			
52	17:14	11:05 (2)	18:11	19:00	20:52	21:38	22:00	21:37	20:40	19:29	18:23	16:36	16:32	14	11:22 (2)		
53	08:25	11:00 (2)	07:29	06:26	06:18	05:31	05:21	05:52	06:40	07:30	08:21	08:15	08:44	11:08 (2)			
54	17:16	11:05 (2)	18:13	19:01	20:54	21:40	22:00	21:36	20:37	19:26	18:21	16:35	7	11:06 (2)	16:33	15	11:23 (2)
55	08:24	11:00 (2)	07:27	06:24	06:16	05:29	05:21	05:53	06:42	07:32	08:23	08:16	10:58 (2)	10:58 (2)	08:44	11:09 (2)	
56	17:18	11:05 (2)	18:14	19:03	20:55	21:41	22:00	21:34	20:35	19:24	18:19	16:34	10	11:08 (2)	16:34	14	11:23 (2)
57	08:22	11:00 (2)	07:22	06:14	05:28	05:22	05:22	05:55	06:44	07:34	08:25	08:18	10:58 (2)	10:58 (2)	08:44	11:09 (2)	
58	17:20	11:05 (2)	18:05	18:54	20:46	21:32	22:00	21:33	20:33	19:22	18:17	16:33	11	11:09 (2)	16:34	15	11:24 (2)
59	08:21	11:00 (2)	07:19	06:12	05:28	05:22	05:22	05:56	06:45	07:35	08:27	08:19	10:57 (2)	10:57 (2)	08:45	11:09 (2)	
60	17:21	11:05 (2)	18:06	18:55	20:59	21:43	22:00	21:31	20:31	19:20	18:15	16:32	13	11:10 (2)	16:35	15	11:24 (2)
61	08:20	11:00 (2)	07:17	06:10	05:27	05:21	05:21	05:58	06:47	07:38	08:30	08:23	08:45	11:10 (2)			
62	17:23	11:05 (2)	18:08	18:57	20:50	21:45	22:00	21:30	20:29	19:18	18:13	16:35	16:36	15	11:25 (2)		
Potential sun hours	260	278	367	416	484	498	501	453	381	332	267	245	455				
Total, worst case	207										41		455				
Sun reduction	0.16										0.18		0.13				
Oper. time red.	1.00										1.00		1.00				
Wind dir. red.	0.60										0.60		0.60				
Total reduction	0.09										0.11		0.08				
Total, real	19										5		37				

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

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

Project:

4636 Derreenacrinnig West Windfarm

Description:

Construction of 3 No. wind turbines with an overall ground to blade tip height of 119.3m. The wind turbines will have a rotor diameter of up to 82m and a hub height of 78.3m.

Licensed user:

Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
Kathlyn Feeney / kfeeney@jodireland.com
Calculated:
30/06/2025 15:04/4.0.552

SHADOW - Calendar

Calculation: 4636- Derreenacrinnig Windfarm Worst Case
Assumptions for shadow calculations

Shadow receptor: O - H15
Sunshine probability S (Average daily sunshine hours) [VALENTIA OBS.]
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1.30 2.04 2.89 4.92 5.79 4.99 4.32 4.35 3.60 2.54 1.64 1.06

Operational time

N NNE NE ENE E ESE SE SSE S SSW SW WSW W WNW NW NNW Sum
136 297 373 423 216 252 408 617 382 612 1,601 1,598 456 331 428 630 8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:45 16:38	08:18 17:25	07:25 18:16	07:15 20:10	06:11 21:00	05:26 21:46	05:23 22:00	05:59 21:28	06:48 20:26	07:37 19:17	07:30 17:12	08:21 16:32
2	08:45 16:39	08:17 17:27	07:23 18:18	07:13 20:12	06:09 21:02	05:25 21:47	05:24 21:59	06:01 21:26	06:50 20:24	07:39 19:15	07:32 17:10	08:22 16:31
3	08:44 16:40	08:15 17:29	07:21 18:20	07:10 20:13	06:07 21:04	05:24 21:48	05:24 21:59	06:02 21:25	06:52 20:22	07:40 19:13	07:34 17:08	08:24 16:31
4	08:44 16:41	08:13 17:31	07:19 18:22	07:08 20:15	06:05 21:05	05:24 21:49	05:25 21:58	06:04 21:23	06:53 20:20	07:42 19:10	07:36 17:06	08:25 16:30
5	08:44 16:42	08:12 17:32	07:16 18:23	07:06 20:17	06:03 21:07	05:23 21:50	05:26 21:58	06:05 21:21	06:55 20:17	07:44 19:08	07:37 17:05	08:26 16:29
6	08:44 16:43	08:10 17:34	07:14 18:25	07:04 20:18	06:01 21:09	05:22 21:51	05:27 21:57	06:07 21:19	06:57 20:15	07:45 19:06	07:39 17:03	08:28 16:29
7	08:43 16:45	08:08 17:36	07:12 18:27	07:01 20:20	06:00 21:10	05:22 21:52	05:28 21:57	06:08 21:18	06:58 20:13	07:47 19:04	07:41 17:01	08:29 16:29
8	08:43 16:46	08:07 17:38	07:10 18:29	06:59 20:22	05:58 21:12	05:21 21:53	05:29 21:56	06:10 21:16	07:00 20:11	07:49 19:01	07:43 16:59	08:30 16:28
9	08:42 16:47	08:05 17:40	07:08 18:30	06:57 20:23	05:56 21:13	05:21 21:53	05:30 21:56	06:12 21:14	07:01 20:08	07:50 18:59	07:45 16:58	08:31 16:28
10	08:42 16:49	08:03 17:42	07:05 18:32	06:55 20:25	05:54 21:15	05:20 21:54	05:31 21:55	06:13 21:12	07:03 20:06	07:52 18:57	07:46 16:56	08:32 16:28
11	08:41 16:50	08:01 17:44	07:03 18:34	06:52 20:27	05:53 21:17	05:20 21:55	05:32 21:54	06:15 21:10	07:05 20:04	07:54 18:55	07:48 16:55	08:33 16:28
12	08:41 16:52	07:59 17:45	07:01 18:36	06:50 20:28	05:51 21:18	05:19 21:56	05:33 21:53	06:16 21:08	07:06 20:01	07:55 18:53	07:50 16:53	08:35 16:28
13	08:40 16:53	07:58 17:47	09:21 (1) 09:28 (1)	06:58 18:37	06:48 20:30	05:49 21:20	05:19 21:56	06:18 21:52	07:08 19:59	07:57 18:50	07:52 16:52	08:36 16:28
14	08:39 16:54	07:56 17:49	09:19 (1) 09:30 (1)	06:56 18:39	06:46 20:32	05:48 21:21	05:19 21:57	06:20 21:51	07:09 19:57	07:59 18:48	07:53 16:50	08:36 16:28
15	08:38 16:56	07:54 17:51	09:18 (1) 09:31 (1)	06:54 18:41	06:44 20:34	05:46 21:23	05:19 21:57	06:21 21:02	07:11 19:54	08:01 18:46	07:55 16:49	08:37 16:28
16	08:38 16:58	07:52 17:53	09:17 (1) 09:31 (1)	06:52 18:43	06:41 20:35	05:45 21:24	05:19 21:58	06:23 21:01	07:13 19:52	08:02 18:44	07:57 16:47	08:38 16:28
17	08:37 16:59	07:50 17:55	09:17 (1) 09:31 (1)	06:49 18:44	06:39 20:37	05:43 21:26	05:19 21:58	06:24 20:58	07:14 19:50	08:04 18:42	07:59 16:46	08:39 16:28
18	08:36 17:01	07:48 17:56	09:17 (1) 09:31 (1)	06:47 18:46	06:37 20:39	05:42 21:27	05:19 21:59	06:26 21:47	07:16 19:47	08:06 18:40	08:00 16:45	08:40 16:28
19	08:35 17:02	07:46 17:58	09:17 (1) 09:31 (1)	06:45 18:48	06:35 20:40	05:41 21:29	05:19 21:59	06:28 20:54	07:17 19:45	08:07 18:37	08:02 16:43	08:40 16:28
20	08:34 17:04	07:44 18:00	09:18 (1) 09:30 (1)	06:43 18:49	06:33 20:42	05:39 21:30	05:19 22:00	06:29 21:45	08:09 19:43	08:09 18:35	09:51 (1) 09:58 (1)	08:04 16:42
21	08:33 17:06	07:42 18:02	09:19 (1) 09:29 (1)	06:40 18:51	06:31 20:44	05:38 21:32	05:19 22:00	06:31 21:44	07:21 19:40	08:11 18:33	09:49 (1) 10:00 (1)	08:05 16:41
22	08:32 17:07	07:40 18:04	09:22 (1) 09:26 (1)	06:38 18:53	06:29 20:45	05:37 21:33	05:19 22:00	06:32 21:43	07:22 19:38	08:13 18:31	09:48 (1) 10:01 (1)	08:07 16:40
23	08:30 17:09	07:38 18:06	09:17 (1) 09:31 (1)	06:36 18:55	06:27 20:47	05:35 21:34	05:19 22:00	06:34 21:41	07:24 19:36	08:14 18:29	09:48 (1) 10:01 (1)	08:09 16:39
24	08:29 17:11	07:36 18:07	09:17 (1) 09:31 (1)	06:33 18:56	06:25 20:49	05:34 21:36	05:20 22:00	06:36 21:40	07:26 19:34	08:16 18:27	09:47 (1) 10:02 (1)	08:10 16:38
25	08:28 17:13	07:34 18:09	09:17 (1) 09:31 (1)	06:31 18:58	06:22 20:50	05:33 21:37	05:20 22:00	06:37 21:39	07:27 19:31	07:18 17:25	08:48 (1) 09:02 (1)	08:12 16:37
26	08:27 17:14	07:32 18:11	09:17 (1) 09:31 (1)	06:29 19:00	06:20 20:52	05:32 21:38	05:20 22:00	06:39 21:37	07:29 20:40	07:20 17:23	08:47 (1) 09:01 (1)	08:13 16:36
27	08:25 17:16	07:29 18:13	09:17 (1) 09:31 (1)	06:26 19:01	06:18 20:54	05:31 21:40	05:21 22:00	06:40 21:36	07:30 19:27	07:21 17:21	08:48 (1) 09:00 (1)	08:15 16:35
28	08:24 17:18	07:27 18:15	09:17 (1) 09:31 (1)	06:24 19:03	06:16 20:55	05:30 21:41	05:21 22:00	06:42 21:34	07:32 19:24	07:23 17:19	08:49 (1) 08:59 (1)	08:16 16:34
29	08:23 17:20	07:23 18:05	09:17 (1) 09:31 (1)	06:22 19:05	06:15 20:57	05:29 21:42	05:22 22:00	06:44 21:33	07:34 19:22	07:25 17:17	08:51 (1) 08:57 (1)	08:18 16:33
30	08:21 17:22	07:20 18:06	09:17 (1) 09:31 (1)	06:20 19:06	06:13 20:59	05:28 21:43	05:22 22:00	06:45 21:31	07:35 19:20	07:27 17:15	08:19 16:33	08:45 16:35
31	08:20 17:23	07:19 18:08	09:17 (1) 09:31 (1)	06:17 19:08	05:27 20:58	05:27 21:45	05:58 21:30	06:47 20:29	07:29 17:14	07:29 17:14	08:19 16:33	08:45 16:36
Potential sun hours	260	278	367	416	484	498	501	453	381	332	267	245
Total, worst case										115		
Sun reduction		0.21								0.24		
Oper. time red.		1.00								1.00		
Wind dir. red.		0.52								0.52		
Total reduction		0.11								0.12		
Total, real		12								14		

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

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

Project:

4636 Derreenacrinnig West Windfarm

Description:

Construction of 3 No. wind turbines with an overall ground to blade tip height of 119.3m. The wind turbines will have a rotor diameter of up to 82m and a hub height of 78.3m.

Licensed user:

Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
Kathlyn Feeney / kfeeney@jodireland.com
Calculated:
30/06/2025 15:04/4.0.552

SHADOW - Calendar

Calculation: 4636- Derreenacrinnig Windfarm Worst Case Assumptions for shadow calculations

Shadow receptor: P - H16
Sunshine probability S (Average daily sunshine hours) [VALENTIA OBS.]
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1.30 2.04 2.89 4.92 5.79 4.99 4.32 4.35 3.60 2.54 1.64 1.06

Operational time

N NNE NE ENE E ESE SE SSE S SSW SW WSW W WNW NW NNW Sum
136 297 373 423 216 252 408 617 382 612 1,601 1,598 456 331 428 630 8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:45 16:38	08:18 17:25	07:25 18:16	07:15 20:10	06:11 21:00	05:26 21:46	05:23 22:00	05:59 21:28	06:48 20:26	07:37 19:17	07:30 17:12	08:21 16:32
2	08:45 16:39	08:17 17:27	07:23 18:18	07:13 20:12	06:09 21:02	05:25 21:47	05:24 21:59	06:01 21:26	06:50 20:24	07:39 19:15	07:32 17:10	08:22 16:31
3	08:44 16:40	08:15 17:29	07:21 18:20	07:10 20:13	06:07 21:04	05:24 21:48	05:24 21:59	06:02 21:25	06:52 20:22	07:40 19:13	07:34 17:08	08:24 16:31
4	08:44 16:41	08:13 17:31	07:19 18:22	07:08 20:15	06:05 21:05	05:24 21:49	05:25 21:58	06:04 21:23	06:53 20:20	07:42 19:11	07:36 17:06	08:25 16:30
5	08:44 16:42	08:12 17:32	07:16 18:23	07:06 20:17	06:03 21:07	05:23 21:50	05:26 21:58	06:05 21:21	06:55 20:17	07:44 19:08	07:37 17:05	08:26 16:30
6	08:44 16:43	08:10 17:34	07:14 18:25	07:04 20:18	06:01 21:09	05:22 21:51	05:27 21:57	06:07 21:19	06:57 20:15	07:45 19:06	07:39 17:03	08:28 16:29
7	08:43 16:45	08:08 17:36	07:12 18:27	07:01 20:20	06:00 21:10	05:22 21:52	05:28 21:57	06:08 21:18	06:58 20:13	07:47 19:04	07:41 17:01	08:29 16:29
8	08:43 16:46	08:07 17:38	07:10 18:29	06:59 20:22	05:58 21:12	05:21 21:53	05:29 21:56	06:10 21:16	07:00 20:11	07:49 19:01	07:43 16:59	08:30 16:28
9	08:42 16:47	08:05 17:40	07:08 18:31	06:57 20:23	05:56 21:13	05:21 21:53	05:30 21:56	06:12 21:14	07:01 20:08	07:50 18:59	07:45 16:58	08:31 16:28
10	08:42 16:49	08:03 17:42	07:05 18:32	06:55 20:25	05:54 21:15	05:20 21:54	05:31 21:55	06:13 21:12	07:03 20:06	07:52 18:57	07:46 16:56	08:32 16:28
11	08:41 16:50	08:01 17:44	07:03 18:34	06:52 20:27	05:53 21:17	05:20 21:55	05:32 21:54	06:15 21:10	07:05 20:04	07:54 18:55	07:48 16:55	08:33 16:28
12	08:41 16:52	07:59 17:45	07:01 18:36	06:50 20:28	05:51 21:18	05:19 21:56	05:33 21:53	06:16 21:08	07:06 20:01	07:55 18:53	07:50 16:53	08:35 16:28
13	08:40 16:53	07:58 17:47	06:58 18:37	06:48 20:30	05:49 21:20	05:19 21:56	05:34 21:52	06:18 21:06	07:08 19:59	07:57 18:50	07:52 16:52	08:36 16:28
14	08:39 16:54	07:56 17:49	06:56 18:39	06:46 20:32	05:48 21:21	05:19 21:57	05:35 21:51	06:20 21:04	07:09 19:57	07:59 18:48	8 09:30 (1) 07:53	08:36 16:28
15	08:38 16:56	07:54 17:51	06:54 18:41	06:44 20:34	05:46 21:23	05:19 21:57	05:36 21:51	06:21 21:03	07:11 19:54	08:01 18:46	11 09:39 (1) 07:55	08:37 16:28
16	08:38 16:58	07:52 17:53	06:52 18:43	06:41 20:35	05:45 21:24	05:19 21:58	05:37 21:50	06:23 21:01	07:13 19:52	08:02 18:44	13 09:40 (1) 07:57	08:38 16:28
17	08:37 16:59	07:50 17:55	06:49 18:44	06:39 20:37	05:43 21:26	05:19 21:58	05:38 21:48	06:24 20:58	07:14 19:50	08:04 18:42	14 09:41 (1) 07:59	08:39 16:28
18	08:36 17:01	07:48 17:56	06:47 18:46	06:37 20:39	05:42 21:27	05:19 21:59	05:40 21:47	06:26 20:56	07:16 19:47	08:06 18:40	14 09:41 (1) 08:00	08:40 16:28
19	08:35 17:02	07:46 17:58	06:45 18:48	06:35 20:40	05:41 21:29	05:19 21:59	05:41 21:46	06:28 20:54	07:17 19:45	08:07 18:37	13 09:39 (1) 08:02	08:40 16:28
20	08:34 17:04	07:44 18:00	7 08:59 (1) 09:06 (1)	06:43 18:50	06:33 20:42	05:39 21:30	05:42 22:00	06:29 21:45	07:19 19:43	08:09 18:35	12 09:43 (1) 08:04	08:41 16:29
21	08:33 17:06	07:42 18:02	11 08:57 (1) 09:08 (1)	06:40 18:51	06:31 20:44	05:38 21:32	05:43 22:00	06:31 21:44	07:21 19:40	08:11 18:33	10 09:38 (1) 08:05	08:42 16:29
22	08:32 17:07	07:40 18:04	13 08:56 (1) 09:09 (1)	06:38 18:53	06:29 20:45	05:37 21:33	05:45 22:00	06:32 21:43	07:22 19:38	08:13 18:31	5 09:35 (1) 08:07	08:42 16:30
23	08:30 17:09	07:38 18:06	13 08:56 (1) 09:09 (1)	06:36 18:55	06:27 20:47	05:35 21:34	05:46 22:00	06:34 21:41	07:24 19:36	08:14 18:29	08:09 16:39	08:43 16:30
24	08:29 17:11	07:36 18:07	13 08:55 (1) 09:08 (1)	06:33 18:56	06:25 20:49	05:34 21:36	05:48 22:00	06:36 20:44	07:26 19:34	08:16 18:27	08:10 16:38	08:43 16:31
25	08:28 17:13	07:34 18:09	13 08:55 (1) 09:08 (1)	06:31 18:58	06:22 20:50	05:33 21:37	05:20 22:00	06:37 21:39	07:27 19:31	07:18 17:25	08:12 16:37	08:44 16:31
26	08:27 17:14	07:32 18:11	13 08:55 (1) 09:08 (1)	06:29 19:00	06:20 20:52	05:32 21:38	05:50 22:00	06:39 21:37	07:29 19:29	07:20 17:23	08:13 16:36	08:44 16:32
27	08:25 17:16	07:29 18:13	10 08:57 (1) 09:07 (1)	06:26 19:01	06:18 20:54	05:31 21:40	05:52 22:00	06:40 21:36	07:30 19:27	07:21 17:21	08:15 16:35	08:44 16:33
28	08:24 17:18	07:27 18:15	5 08:59 (1) 09:04 (1)	06:24 19:03	06:16 20:55	05:30 21:41	05:53 22:00	06:42 21:34	07:32 19:24	07:23 17:19	08:16 16:34	08:44 16:34
29	08:23 17:20	07:23 18:05	07:22 20:05	06:15 20:57	05:29 21:42	05:22 22:00	05:55 21:33	06:44 20:33	07:34 19:22	07:25 17:17	08:18 16:33	08:45 16:35
30	08:21 17:22	07:21 18:06	07:20 20:06	06:13 20:59	05:28 21:43	05:22 22:00	05:56 21:31	06:45 20:31	07:35 19:20	07:27 17:15	08:19 16:33	08:45 16:35
31	08:20 17:23	07:20 18:08	07:17 20:08	05:27 21:45	05:27 21:45	05:27 21:45	05:58 21:30	06:47 20:29	07:29 17:14	07:29 17:14	08:45 16:36	08:45 16:36
Potential sun hours	260	278	367	416	484	498	501	453	381	332	267	245
Total, worst case		98								100		
Sun reduction		0.21								0.24		
Oper. time red.		1.00								1.00		
Wind dir. red.		0.52								0.52		
Total reduction		0.11								0.12		
Total, real		10								12		

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

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

Project:

4636 Derreenacrinnig West Windfarm

Description:

Construction of 3 No. wind turbines with an overall ground to blade tip height of 119.3m. The wind turbines will have a rotor diameter of up to 82m and a hub height of 78.3m.

Licensed user:

Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
Kathlyn Feeney / kfeeney@jodireland.com
Calculated:
30/06/2025 15:04/4.0.552

SHADOW - Calendar

Calculation: 4636- Derreenacrinnig Windfarm Worst Case
Assumptions for shadow calculations

Shadow receptor: Q - H17
Sunshine probability S (Average daily sunshine hours) [VALENTIA OBS.]
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1.30 2.04 2.89 4.92 5.79 4.99 4.32 4.35 3.60 2.54 1.64 1.06

Operational time

N NNE NE ENE E ESE SE SSE S SSW SW WSW W WNW NW NNW Sum
136 297 373 423 216 252 408 617 382 612 1,601 1,598 456 331 428 630 8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:45	08:18	07:25	08:42 (1)	07:15	06:11	05:26	05:23	05:59	06:48	07:37	08:21
	16:38	17:25	18:16	08:55 (1)	20:10	21:00	21:46	22:00	21:28	20:26	19:17	17:12
2	08:45	08:17	07:23	08:42 (1)	07:13	06:09	05:25	05:24	06:01	06:50	07:39	08:22
	16:39	17:27	18:18	08:53 (1)	20:12	21:02	21:47	21:59	21:26	20:24	19:15	17:10
3	08:44	08:15	07:21	08:43 (1)	07:10	06:07	05:24	05:24	06:02	06:52	07:40	08:24
	16:40	17:29	18:20	08:52 (1)	20:13	21:04	21:48	21:59	21:25	20:22	19:13	17:08
4	08:44	08:13	07:19	08:46 (1)	07:08	06:05	05:24	05:25	06:04	06:53	07:42	08:25
	16:41	17:31	18:22	08:48 (1)	20:15	21:05	21:49	21:58	21:23	20:20	19:11	17:06
5	08:44	08:12	07:16		07:06	06:03	05:23	05:26	06:05	06:55	07:44	08:26
	16:42	17:32	18:23		20:17	21:07	21:50	21:58	21:21	20:17	19:08	17:05
6	08:44	08:10	07:14		07:04	06:01	05:22	05:27	06:07	06:57	07:45	08:28
	16:43	17:34	18:25		20:18	21:09	21:51	21:57	21:19	20:15	19:06	17:03
7	08:43	08:08	07:12		07:01	06:00	05:22	05:28	06:08	06:58	07:47	08:29
	16:45	17:36	18:27		20:20	21:10	21:52	21:57	21:18	20:13	19:04	17:01
8	08:43	08:07	07:10		06:59	05:58	05:21	05:29	06:10	07:00	07:49	08:30
	16:46	17:38	18:29		20:22	21:12	21:53	21:56	21:16	20:11	19:01	16:59
9	08:42	08:05	07:08		06:57	05:56	05:21	05:30	06:12	07:01	07:50	08:31
	16:47	17:40	18:31		20:23	21:13	21:53	21:56	21:14	20:08	18:59	16:58
10	08:42	08:03	07:05		06:55	05:54	05:20	05:31	06:13	07:03	07:52	08:32
	16:49	17:42	18:32		20:25	21:15	21:54	21:55	21:12	20:06	18:57	16:56
11	08:41	08:01	07:03		06:52	05:53	05:20	05:32	06:15	07:05	07:54	08:33
	16:50	17:44	18:34		20:27	21:17	21:55	21:54	21:10	20:04	18:55	16:55
12	08:41	07:59	07:01		06:50	05:51	05:20	05:33	06:16	07:06	07:55	08:35
	16:52	17:45	18:36		20:28	21:18	21:56	21:53	21:08	20:01	18:53	16:53
13	08:40	07:58	06:59		06:48	05:50	05:19	05:34	06:18	07:08	07:57	08:36
	16:53	17:47	18:37		20:30	21:20	21:56	21:52	21:06	19:59	18:50	16:52
14	08:39	07:56	06:56		06:46	05:48	05:19	05:35	06:20	07:09	07:59	08:36
	16:55	17:49	18:39		20:32	21:21	21:57	21:51	21:04	19:57	18:48	16:50
15	08:38	07:54	06:54		06:44	05:46	05:19	05:36	06:21	07:11	08:01	08:37
	16:56	17:51	18:41		20:34	21:23	21:57	21:51	21:03	19:54	18:46	16:49
16	08:38	07:52	06:52		06:41	05:45	05:19	05:37	06:23	07:13	08:02	08:38
	16:58	17:53	18:43		20:35	21:24	21:58	21:50	21:01	19:52	18:44	16:47
17	08:37	07:50	06:49		06:39	05:43	05:19	05:38	06:24	07:14	08:04	08:39
	16:59	17:55	18:44		20:37	21:26	21:58	21:48	20:58	19:50	18:42	16:46
18	08:36	07:48	06:47		06:37	05:42	05:19	05:40	06:26	07:16	08:06	08:40
	17:01	17:56	18:46		20:39	21:27	21:59	21:47	20:56	19:47	18:40	16:45
19	08:35	07:46	06:45		06:35	05:41	05:19	05:41	06:28	07:17	08:07	08:40
	17:02	17:58	18:48		20:40	21:29	21:59	21:46	20:54	19:45	18:37	16:43
20	08:34	07:44	06:43		06:33	05:39	05:19	05:42	06:29	07:19	08:09	08:41
	17:04	18:00	18:50		20:42	21:30	22:00	21:45	20:52	19:43	18:35	16:42
21	08:33	07:42	06:40		06:31	05:38	05:19	05:43	06:31	07:21	08:11	08:42
	17:06	18:02	18:51		20:44	21:32	22:00	21:44	20:50	19:40	18:33	16:41
22	08:32	07:40	06:38		06:29	05:37	05:19	05:45	06:32	07:22	08:13	08:42
	17:07	18:04	18:53		20:45	21:33	22:00	21:43	20:48	19:38	18:31	16:40
23	08:30	07:38	06:36		06:27	05:35	05:19	05:46	06:34	07:24	08:14	08:43
	17:09	18:06	18:55		20:47	21:34	22:00	21:41	20:46	19:36	18:29	16:39
24	08:29	07:36	06:33	08:46 (1)	06:25	05:34	05:20	05:48	06:36	07:26	08:16	08:43
	17:11	18:07	18:56	08:53 (1)	20:49	21:36	22:00	21:40	20:44	19:34	18:27	16:38
25	08:28	07:34	06:31	08:43 (1)	06:23	05:33	05:20	05:49	06:37	07:27	08:18	08:44
	17:13	18:09	18:58	08:54 (1)	20:50	21:37	22:00	21:39	20:42	19:31	18:25	16:37
26	08:27	07:32	06:29	08:42 (1)	06:20	05:32	05:20	05:50	06:39	07:29	08:20	08:44
	17:14	18:11	19:00	08:54 (1)	20:52	21:38	22:00	21:37	20:40	19:29	18:23	16:36
27	08:25	07:29	06:26	08:42 (1)	06:18	05:31	05:21	05:52	06:40	07:30	08:21	08:44
	17:16	18:13	19:01	08:55 (1)	20:54	21:40	22:00	21:36	20:37	19:27	18:21	16:35
28	08:24	07:27	06:24	08:42 (1)	06:16	05:30	05:21	05:53	06:42	07:32	08:23	08:44
	17:18	18:15	19:03	08:55 (1)	20:55	21:41	22:00	21:34	20:35	19:24	18:19	16:34
29	08:23		07:22		06:15	05:29	05:22	05:55	06:44	07:34	08:25	08:45
	17:20		20:05		20:57	21:42	22:00	21:33	20:33	19:22	18:17	16:33
30	08:21		07:20		06:13	05:28	05:22	05:56	06:45	07:35	08:27	08:45
	17:22		20:06		20:59	21:43	22:00	21:31	20:31	19:20	18:15	16:33
31	08:20		07:17		06:11	05:27	05:21	05:58	06:47	07:39	08:31	08:45
	17:23		20:08		21:45	21:30	22:00	21:30	20:29	19:14	18:09	16:32
Potential sun hours	260	278	367		416	484	498	501	453	381	332	267
Total, worst case												245
Sun reduction		56		35							93	
Oper. time red.		0.21		0.24							0.24	
Wind dir. red.		1.00		1.00							1.00	
Total reduction		0.54		0.54							0.54	
Total, real		0.11		0.13							0.13	
		6		5							12	

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

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

Project:

4636 Derreenacrinnig West Windfarm

Description:

Construction of 3 No. wind turbines with an overall ground to blade tip height of 119.3m. The wind turbines will have a rotor diameter of up to 82m and a hub height of 78.3m.

Licensed user:

Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
Kathlyn Feeney / kfeeney@jodireland.com
Calculated:
30/06/2025 15:04/4.0.552

SHADOW - Calendar

Calculation: 4636- Derreenacrinnig Windfarm Worst Case Assumptions for shadow calculations

Shadow receptor: R - H18

Sunshine probability S (Average daily sunshine hours) [VALENTIA OBS.]

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1.30 2.04 2.89 4.92 5.79 4.99 4.32 4.35 3.60 2.54 1.64 1.06

Operational time

N NNE NE ENE E ESE SE SSE S SSW SW WSW W WNW NW NNW Sum
136 297 373 423 216 252 408 617 382 612 1,601 1,598 456 331 428 630 8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:45 16:38	08:18 17:25	07:25 18:16	07:15 20:10	06:11 21:00	05:26 21:46	05:23 22:00	05:59 21:28	06:48 20:26	07:37 19:17	07:30 17:12	08:21 16:32
2	08:45 16:39	08:17 17:27	07:23 18:18	07:13 20:12	06:09 21:02	05:25 21:47	05:24 21:59	06:01 21:26	06:50 20:24	07:39 19:15	07:32 17:10	08:22 16:31
3	08:44 16:40	08:15 17:29	07:21 18:20	07:10 20:13	06:07 21:04	05:24 21:48	05:24 21:59	06:02 21:25	06:52 20:22	07:40 19:13	07:34 17:08	08:24 16:31
4	08:44 16:41	08:13 17:31	07:19 18:22	07:08 20:15	06:05 21:05	05:24 21:49	05:25 21:58	06:04 21:23	06:53 20:20	07:42 19:11	07:36 17:06	08:25 16:30
5	08:44 16:42	08:12 17:32	07:16 18:23	07:06 20:17	06:03 21:07	05:23 21:50	05:26 21:58	06:05 21:21	06:55 20:17	07:44 19:08	07:37 17:05	08:26 16:30
6	08:44 16:43	08:10 17:34	07:14 18:25	07:04 20:18	06:01 21:09	05:22 21:51	05:27 21:57	06:07 21:19	06:57 20:15	07:45 19:06	07:39 17:03	08:28 16:29
7	08:43 16:45	08:08 17:36	07:12 18:27	07:01 20:20	06:00 21:10	05:22 21:52	05:28 21:57	06:08 21:18	06:58 20:13	07:47 19:04	07:41 17:01	08:29 16:29
8	08:43 16:46	08:07 17:38	07:10 18:29	06:59 20:22	05:58 21:12	05:21 21:53	05:29 21:56	06:10 21:16	07:00 20:11	07:49 19:01	07:43 16:59	08:30 16:28
9	08:42 16:47	08:05 17:40	07:08 18:31	06:57 20:23	05:56 21:13	05:21 21:53	05:30 21:56	06:12 21:14	07:01 20:08	07:50 18:59	07:45 16:58	08:31 16:28
10	08:42 16:49	08:03 17:42	07:05 18:32	06:55 20:25	05:54 21:15	05:20 21:54	05:31 21:55	06:13 21:12	07:03 20:06	07:52 18:57	07:46 16:56	08:32 16:28
11	08:41 16:50	08:01 17:44	07:03 18:34	06:52 20:27	05:53 21:17	05:20 21:55	05:32 21:54	06:15 21:10	07:05 20:04	07:54 18:55	07:48 16:55	08:33 16:28
12	08:41 16:52	07:59 17:45	07:01 18:36	06:50 20:28	05:51 21:18	05:20 21:56	05:33 21:53	06:16 21:08	07:06 20:01	07:55 18:53	07:50 16:53	08:35 16:28
13	08:40 16:53	07:58 17:47	06:59 18:37	06:48 20:30	05:49 21:20	05:19 21:56	05:34 21:52	06:18 21:06	07:08 19:59	07:57 18:50	09:28 (1) 16:52	07:52 16:28
14	08:39 16:54	07:56 17:49	06:56 18:39	06:46 20:32	05:48 21:21	05:19 21:57	05:35 21:51	06:20 21:04	07:09 19:57	07:59 18:48	09:25 (1) 16:50	07:53 16:28
15	08:38 16:56	07:54 17:51	06:54 18:41	06:44 20:34	05:46 21:23	05:19 21:57	05:36 21:51	06:21 21:03	07:11 19:54	08:01 18:46	09:24 (1) 16:49	07:55 16:28
16	08:38 16:58	07:52 17:53	06:52 18:43	06:41 20:35	05:45 21:24	05:19 21:58	05:37 21:50	06:23 21:01	07:13 19:52	08:02 18:44	09:33 (1) 16:47	07:57 16:28
17	08:37 16:59	07:50 17:55	06:49 18:44	06:39 20:37	05:43 21:26	05:19 21:58	05:38 21:48	06:24 20:58	07:14 19:50	08:04 18:42	09:36 (1) 16:46	07:59 16:28
18	08:36 17:01	07:48 17:56	06:47 18:46	06:37 20:39	05:42 21:27	05:19 21:59	05:40 21:47	06:26 20:56	07:16 19:47	08:06 18:40	09:36 (1) 16:45	08:00 16:28
19	08:35 17:02	07:46 17:58	06:45 18:48	06:35 20:40	05:41 21:29	05:19 21:59	05:41 21:46	06:28 20:54	07:17 19:45	08:07 18:37	09:36 (1) 16:43	08:02 16:28
20	08:34 17:04	07:44 18:00	06:43 18:50	06:33 20:42	05:39 21:30	05:19 22:00	05:42 21:45	06:29 20:52	07:19 19:43	08:09 18:35	09:34 (1) 16:42	08:04 16:29
21	08:33 17:06	07:42 18:02	08:54 (1) 09:02 (1)	06:40 18:51	05:38 20:44	05:19 21:32	05:43 21:44	06:31 20:50	07:21 19:40	08:11 18:33	09:26 (1) 16:41	08:05 16:29
22	08:32 17:07	07:40 18:04	08:53 (1) 09:03 (1)	06:38 18:53	06:29 20:45	05:37 21:33	05:45 22:00	06:32 21:43	07:22 19:38	08:13 18:31	09:33 (1) 16:40	08:07 16:30
23	08:30 17:09	07:38 18:06	08:52 (1) 09:04 (1)	06:36 18:55	06:27 20:47	05:35 21:34	05:19 22:00	06:34 21:41	07:24 19:36	08:14 18:29	09:34 (1) 16:39	08:09 16:30
24	08:29 17:11	07:36 18:07	08:52 (1) 09:05 (1)	06:33 18:56	06:25 20:49	05:34 21:36	05:20 22:00	05:48 21:40	06:36 19:34	07:26 18:27	08:16 17:18	08:10 16:31
25	08:28 17:13	07:34 18:09	08:51 (1) 09:04 (1)	06:31 18:58	06:22 20:50	05:33 21:37	05:20 22:00	05:49 21:39	06:37 20:42	07:27 19:31	07:18 17:25	08:12 16:31
26	08:27 17:14	07:32 18:11	08:51 (1) 09:04 (1)	06:29 19:00	06:20 20:52	05:32 21:38	05:20 22:00	06:39 21:37	07:29 20:40	07:29 19:29	07:20 17:23	08:13 16:32
27	08:25 17:16	07:29 18:13	08:52 (1) 09:03 (1)	06:26 19:01	06:18 20:54	05:31 21:40	05:21 22:00	05:52 21:36	06:40 20:37	07:30 19:27	07:21 17:21	08:15 16:33
28	08:24 17:18	07:27 18:15	08:53 (1) 09:01 (1)	06:24 19:03	06:16 20:55	05:30 21:41	05:21 22:00	05:53 21:34	06:42 20:35	07:32 19:24	07:23 17:19	08:16 16:34
29	08:23 17:20	07:23 18:05	09:01 (1) 09:09 (1)	07:22 20:05	06:15 20:57	05:29 21:42	05:22 22:00	05:55 21:33	06:44 20:33	07:34 19:22	07:25 17:17	08:18 16:33
30	08:21 17:22	07:21 18:06	09:02 (1) 09:10 (1)	07:20 20:06	06:13 20:59	05:28 21:43	05:22 22:00	05:56 21:31	06:45 20:31	07:35 19:20	07:27 17:15	08:19 16:35
31	08:20 17:23	07:20 18:08	09:03 (1) 09:11 (1)	07:17 20:08	05:27 21:45	05:27 21:45	05:27 21:45	05:58 21:30	06:47 20:29	07:29 17:14	07:29 17:14	08:45 16:36
Potential sun hours	260	278	367	416	484	498	501	453	381	332	267	245
Total, worst case		88								90		
Sun reduction		0.21								0.24		
Oper. time red.		1.00								1.00		
Wind dir. red.		0.53								0.53		
Total reduction		0.11								0.12		
Total, real		9								11		

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

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

Project:

4636 Derreenacrinnig West Windfarm

Description:

Construction of 3 No. wind turbines with an overall ground to blade tip height of 119.3m. The wind turbines will have a rotor diameter of up to 82m and a hub height of 78.3m.

Licensed user:

Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
Kathlyn Feeney / kfeeney@jodireland.com
Calculated:
30/06/2025 15:04/4.0.552

SHADOW - Calendar

Calculation: 4636- Derreenacrinnig Windfarm Worst Case Assumptions for shadow calculations

Shadow receptor: S - H19

Sunshine probability S (Average daily sunshine hours) [VALENTIA OBS.]

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1.30 2.04 2.89 4.92 5.79 4.99 4.32 4.35 3.60 2.54 1.64 1.06

Operational time

N NNE NE ENE E ESE SE SSE S SSW SW WSW W WNW NW NNW Sum
136 297 373 423 216 252 408 617 382 612 1,601 1,598 456 331 428 630 8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:44	08:18	07:25	07:15	06:11	05:26	05:23	05:59	06:48	07:37	07:30	08:21
	16:38	17:25	18:16	20:10	21:00	21:45	21:59	21:28	20:26	19:17	17:12	16:32
2	08:44	08:16	07:23	07:13	06:09	05:25	05:24	06:01	06:50	07:39	07:32	08:22
	16:39	17:27	18:18	20:11	21:02	21:47	21:59	21:26	20:24	19:15	17:10	16:31
3	08:44	08:15	07:21	07:10	06:07	05:24	05:24	06:02	06:52	07:40	07:34	08:23
	16:40	17:29	18:20	20:13	21:03	21:48	21:59	21:24	20:22	19:13	17:08	16:30
4	08:44	08:13	07:18	07:08	06:05	05:23	05:25	06:04	06:53	07:42	07:35	08:25
	16:41	17:31	18:22	20:15	21:05	21:49	21:58	21:23	20:19	19:10	17:06	16:30
5	08:44	08:12	07:16	07:06	06:03	05:23	05:26	06:05	06:55	07:43	07:37	08:26
	16:42	17:32	18:23	20:16	21:07	21:50	21:58	21:21	20:17	19:08	17:04	16:29
6	08:43	08:10	07:14	07:03	06:01	05:22	05:27	06:07	06:56	07:45	07:39	08:27
	16:43	17:34	18:25	20:18	21:08	21:51	21:57	21:19	20:15	19:06	17:03	16:29
7	08:43	08:08	07:12	07:01	06:00	05:22	05:28	06:08	06:58	07:47	07:41	08:29
	16:45	17:36	18:27	20:20	21:10	21:52	21:57	21:17	20:13	19:04	17:01	16:29
8	08:43	08:06	07:10	06:59	05:58	05:21	05:29	06:10	07:00	07:48	07:43	08:30
	16:46	17:38	18:29	20:22	21:12	21:52	21:56	21:16	20:10	19:01	16:59	16:28
9	08:42	08:05	07:07	06:57	05:56	05:21	05:29	06:11	07:01	07:50	07:44	08:31
	16:47	17:40	18:30	20:23	21:13	21:53	21:55	21:14	20:08	18:59	16:58	16:28
10	08:42	08:03	07:05	06:55	05:54	05:20	05:30	06:13	07:03	07:52	07:46	08:32
	16:49	17:42	18:32	20:25	21:15	21:54	21:55	21:12	20:06	18:57	16:56	16:28
11	08:41	08:01	07:03	06:52	05:53	05:20	05:31	06:15	07:04	07:54	07:48	08:33
	16:50	17:43	18:34	20:27	21:16	21:55	21:54	21:10	20:03	18:55	16:55	16:28
12	08:40	07:59	07:01	06:50	05:51	05:19	05:33	06:16	07:06	07:55	07:50	08:34
	16:51	17:45	18:36	20:28	21:18	21:55	21:53	21:08	20:01	18:52	16:53	16:28
13	08:40	07:57	06:58	06:48	05:49	05:19	05:34	06:18	07:08	07:57	07:51	08:35
	16:53	17:47	18:37	20:30	21:19	21:56	21:52	21:06	19:59	18:50	16:52	16:27
14	08:39	07:56	06:56	06:46	05:48	05:19	05:35	06:19	07:09	07:59	07:53	08:36
	16:54	17:49	18:39	20:32	21:21	21:57	21:51	21:04	19:57	18:48	16:50	16:27
15	08:38	07:54	06:54	06:43	05:46	05:19	05:36	06:21	07:11	08:00	07:55	08:37
	16:56	17:51	18:41	20:33	21:23	21:57	21:50	21:02	19:54	18:46	16:49	16:28
16	08:37	07:52	06:52	06:41	05:45	05:19	05:37	06:23	07:12	08:02	07:57	08:38
	16:58	17:53	18:43	20:35	21:24	21:58	21:49	21:00	19:52	18:44	16:47	16:28
17	08:36	07:50	06:49	06:39	05:43	05:19	05:38	06:24	07:14	08:04	07:58	08:39
	16:59	17:55	18:44	20:37	21:26	21:58	21:48	20:58	19:50	18:42	16:46	16:28
18	08:36	07:48	06:47	06:37	05:42	05:19	05:40	06:26	07:16	08:06	08:00	08:40
	17:01	17:56	18:46	20:38	21:27	21:59	21:47	20:56	19:47	18:39	16:45	16:28
19	08:35	07:46	06:45	06:35	05:40	05:19	05:41	06:27	07:17	08:07	08:02	08:40
	17:02	17:58	18:48	20:40	21:29	21:59	21:46	20:54	19:45	18:37	16:43	16:28
20	08:34	07:44	06:42	06:33	05:39	05:19	05:42	06:29	07:19	08:09	08:03	08:41
	17:04	18:00	18:49	20:42	21:30	21:59	21:45	20:52	19:43	18:35	16:42	16:29
21	08:32	07:42	06:40	06:31	05:38	05:19	05:43	06:31	07:21	08:11	08:05	08:41
	17:06	18:02	18:51	20:43	21:31	22:00	21:44	20:50	19:40	18:33	16:41	16:29
22	08:31	07:40	06:38	06:29	05:36	05:19	05:45	06:32	07:22	08:12	08:07	08:42
	17:07	18:04	18:53	20:45	21:33	22:00	21:42	20:48	19:38	18:31	16:40	16:30
23	08:30	07:38	06:35	06:26	05:35	05:19	05:46	06:34	07:24	08:14	08:08	08:42
	17:09	18:05	18:54	20:47	21:34	22:00	21:41	20:46	19:36	18:29	16:39	16:30
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	17:11	18:07	18:56	20:48	21:36	22:00	21:40	20:44	19:33	18:27	16:38	16:31
25	08:28	07:33	06:31	06:22	05:33	05:20	05:49	06:37	07:27	08:18	08:12	08:43
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26	08:26	07:31	06:29	06:20	05:32	05:20	05:50	06:39	07:29	08:19	08:13	08:44
	17:14	18:11	19:00	20:52	21:38	22:00	21:37	20:39	19:29	17:23	16:36	16:32
27	08:25	07:29	06:26	06:18	05:31	05:21	05:52	06:40	07:30	08:21	08:15	08:44
	17:16	18:13	19:01	20:53	21:39	22:00	21:35	20:37	19:26	17:21	16:35	16:33
28	08:24	07:27	06:24	06:16	05:30	05:21	05:53	06:42	07:32	08:23	08:16	08:44
	17:18	18:14	19:03	20:55	21:41	22:00	21:34	20:35	19:24	17:19	16:34	16:34
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	17:20		20:05	20:57	21:42	22:00	21:33	20:33	19:22	17:17	16:33	16:34
30	08:21		07:19	06:12	05:28	05:22	05:56	06:45	07:35	08:27	08:19	08:44
	17:21		20:06	20:58	21:43	22:00	21:31	20:31	19:20	17:15	16:32	16:35
31	08:19		07:17		05:27		05:58	06:47		07:28		08:44
	17:23		20:08		21:44		21:29	20:28		17:13		16:36
Potential sun hours	260	278	367	416	484	498	501	453	381	332	267	245
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

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

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

Project:

4636 Derreenacrinnig West Windfarm

Description:

Construction of 3 No. wind turbines with an overall ground to blade tip height of 119.3m. The wind turbines will have a rotor diameter of up to 82m and a hub height of 78.3m.

Licensed user:

Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
Kathlyn Feeney / kfeeney@jodireland.com
Calculated:
30/06/2025 15:04/4.0.552

SHADOW - Calendar

Calculation: 4636- Derreenacrinnig Windfarm Worst Case Assumptions for shadow calculations

Shadow receptor: T - H20

Sunshine probability S (Average daily sunshine hours) [VALENTIA OBS.]

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1.30 2.04 2.89 4.92 5.79 4.99 4.32 4.35 3.60 2.54 1.64 1.06

Operational time

N NNE NE ENE E ESE SE SSE S SSW SW WSW W WNW NW NNW Sum
136 297 373 423 216 252 408 617 382 612 1,601 1,598 456 331 428 630 8,760

Table with columns for months (January to December) and rows for days (1-31). Each cell contains a time range (Sunrise to Sunset) and a numerical value. Summary rows at the bottom include 'Potential sun hours', 'Total, worst case', 'Sun reduction', 'Oper. time red.', 'Wind dir. red.', 'Total reduction', and 'Total, real'.

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

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



Project:

4636 Derreenacrinnig West Windfarm

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30/06/2025 15:04/4.0.552

SHADOW - Calendar

Calculation: 4636- Derreenacrinnig Windfarm Worst Case Assumptions for shadow calculations

Shadow receptor: U - H21

Sunshine probability S (Average daily sunshine hours) [VALENTIA OBS.]

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1.30 2.04 2.89 4.92 5.79 4.99 4.32 4.35 3.60 2.54 1.64 1.06

Operational time

N NNE NE ENE E ESE SE SSE S SSW SW WSW W WNW NW NNW Sum
136 297 373 423 216 252 408 617 382 612 1,601 1,598 456 331 428 630 8,760

Table with columns for months (January to December) and rows for days (1-31). Each cell contains a time range (e.g., 08:44 - 16:38) and a shadow reduction value. Summary rows at the bottom show 'Potential sun hours' and 'Total, worst case' for each month.

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

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



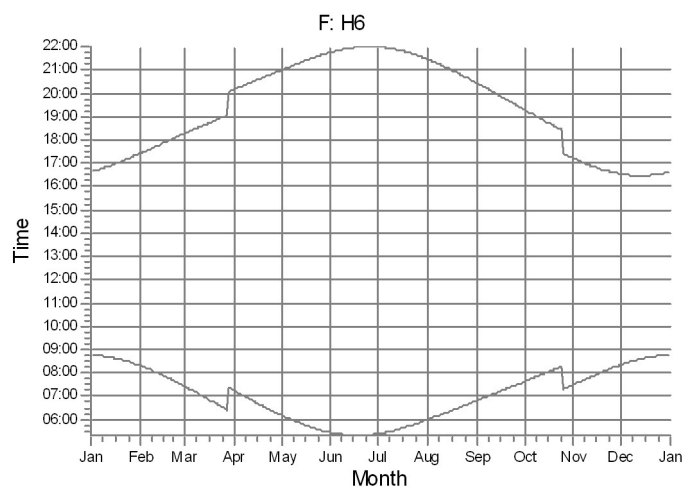
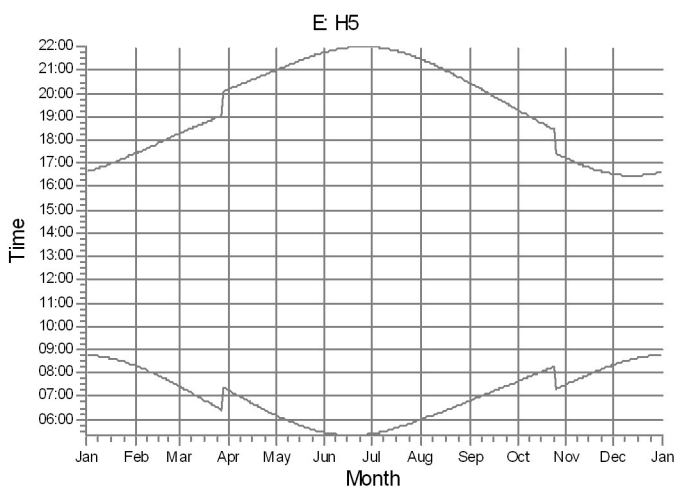
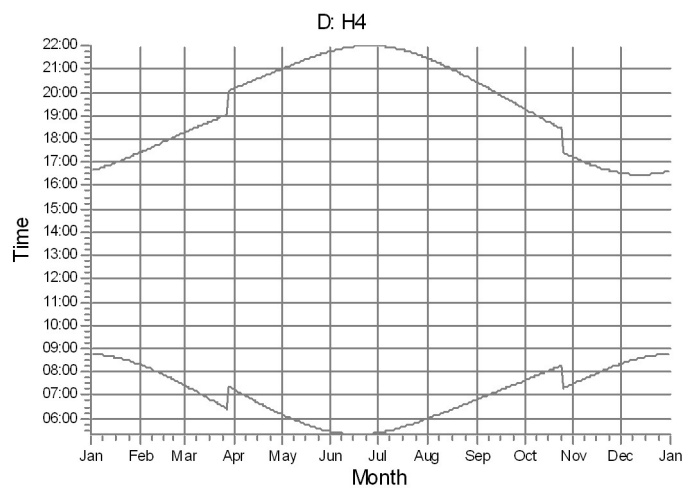
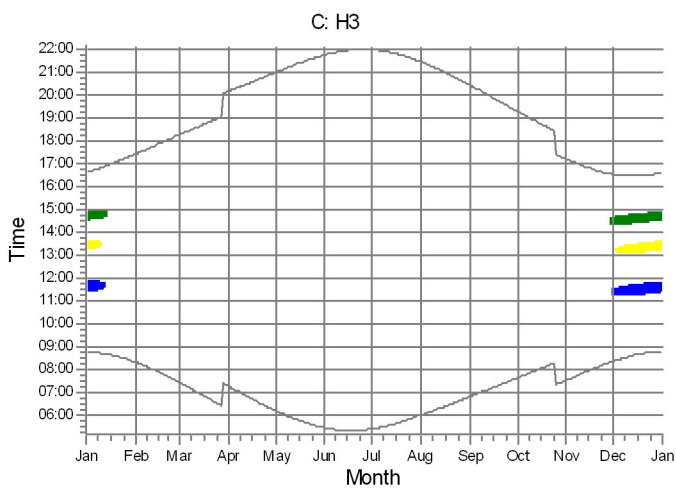
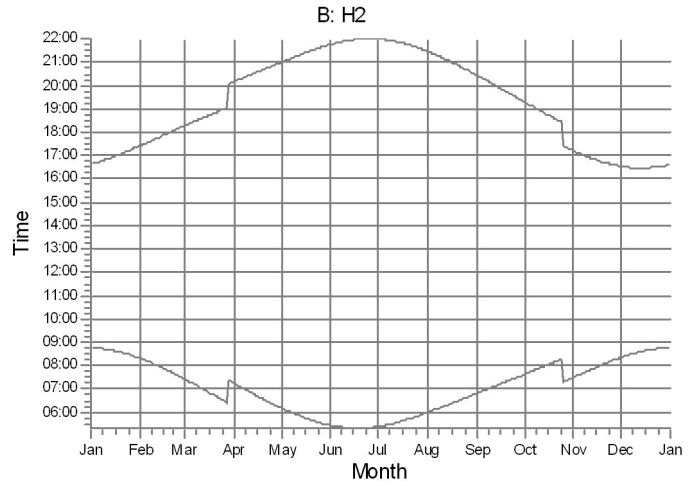
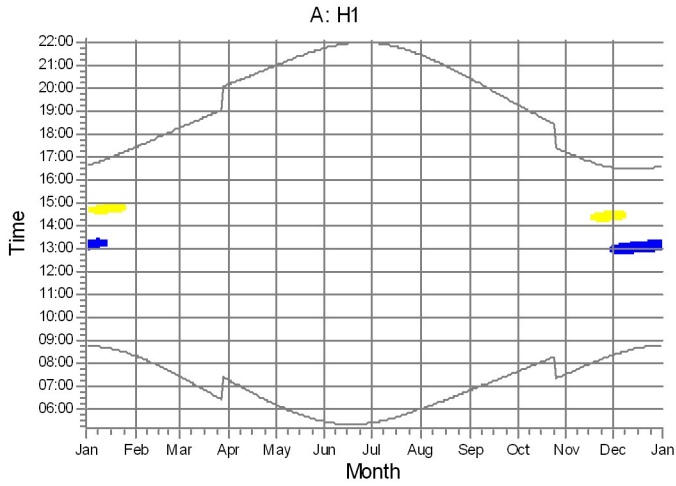
Project:
4636 Derreenacrinnig West Windfarm

Description:
Construction of 3 No. wind turbines with an overall ground to blade tip height of 119.3m. The wind turbines will have a rotor diameter of up to 82m and a hub height of 78.3m.

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F91 RHH9 Sligo
+353719161416
Kathlyn Feeney / kfeeney@jodireland.com
Calculated:
30/06/2025 15:04/4.0.552

SHADOW - Calendar, graphical

Calculation: 4636- Derreenacrinnig Windfarm Worst Case



WTGs

1: T1
 2: T2
 3: T3

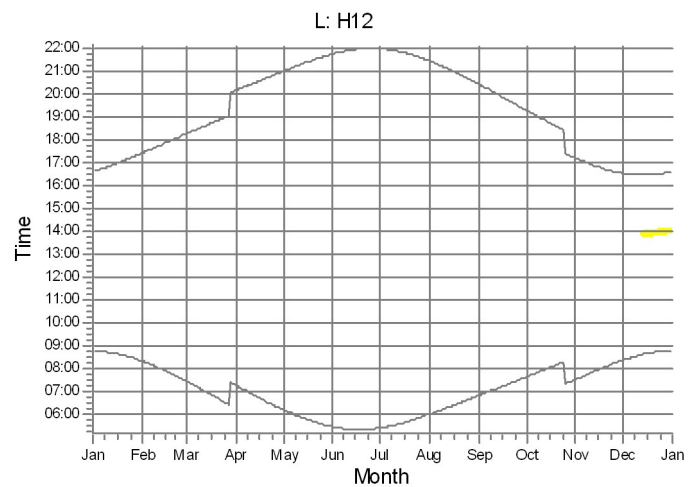
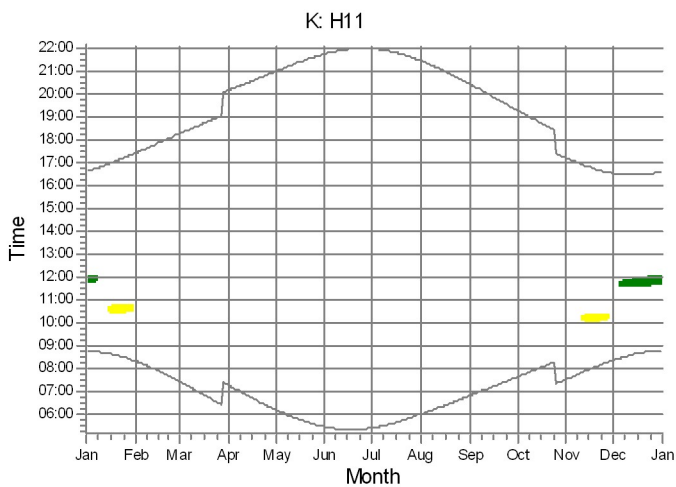
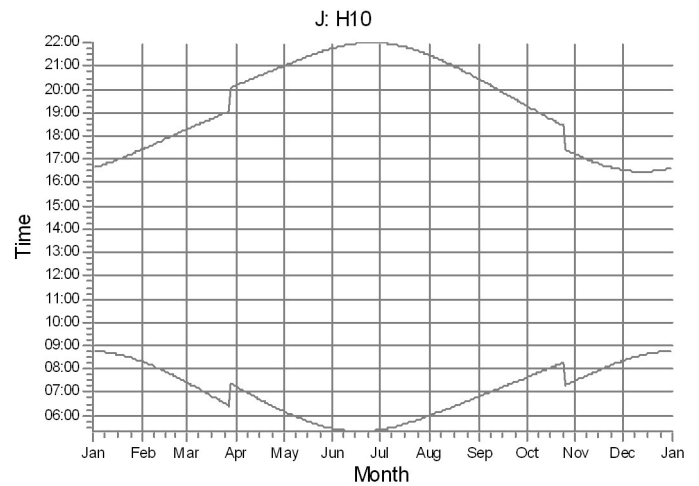
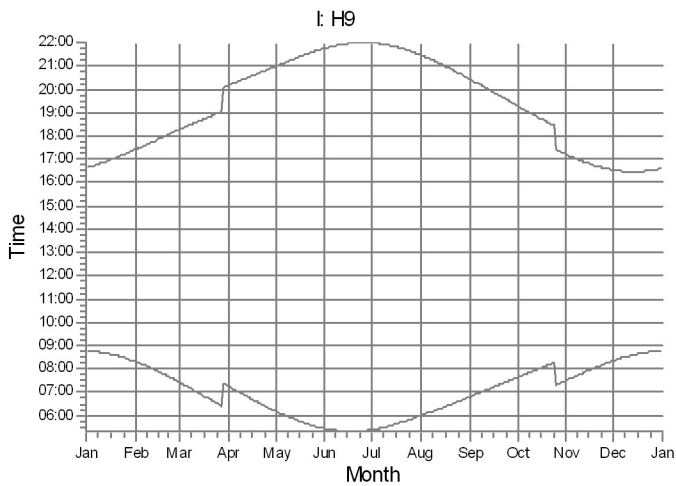
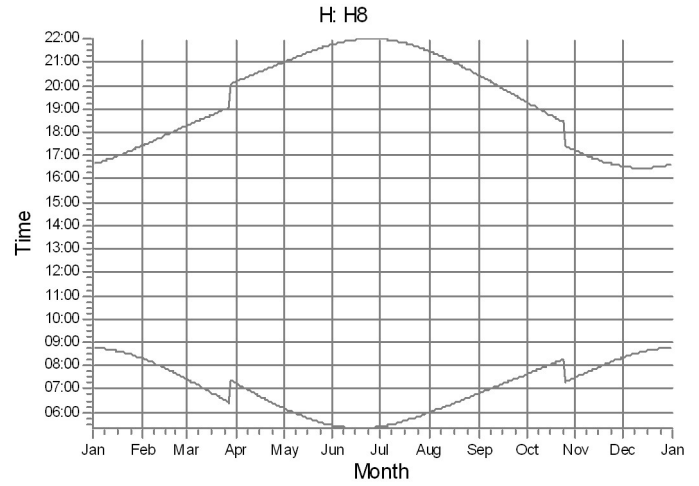
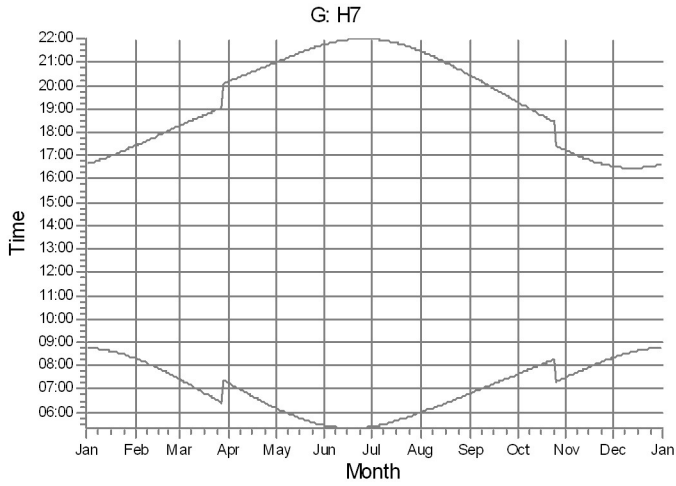
Project:
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30/06/2025 15:04/4.0.552

SHADOW - Calendar, graphical

Calculation: 4636- Derreenacrinnig Windfarm Worst Case



WTGs

1: T1 2: T2

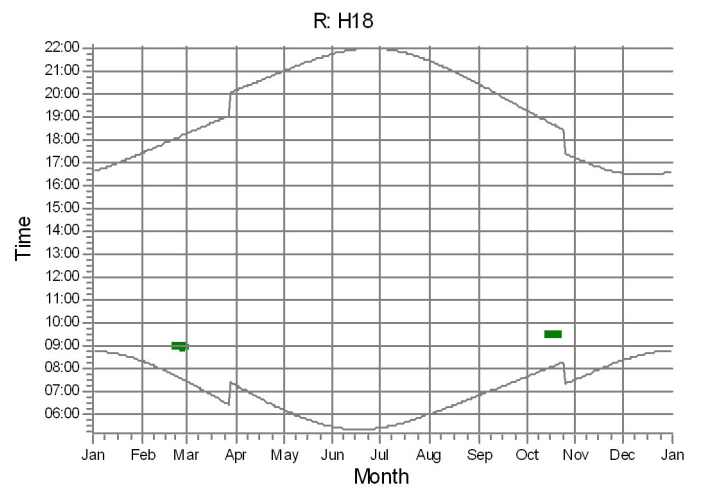
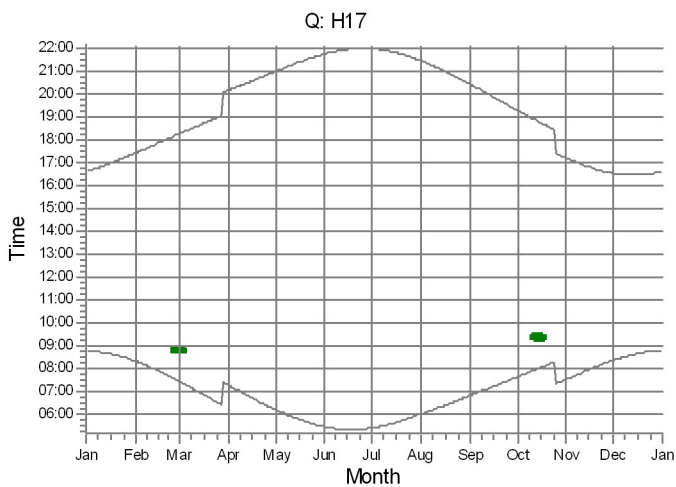
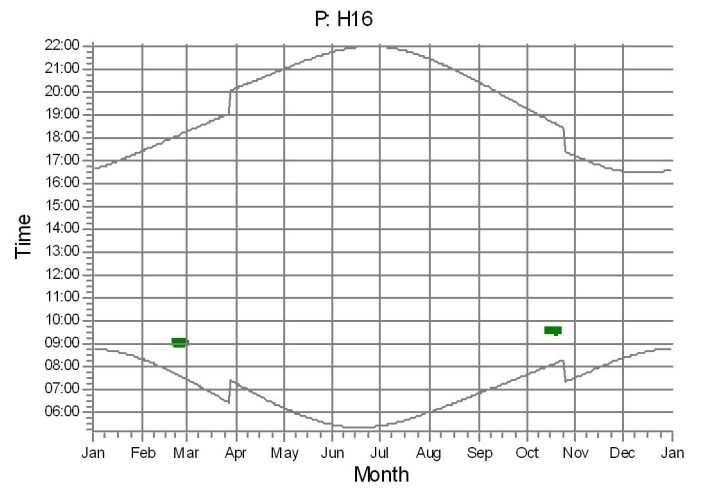
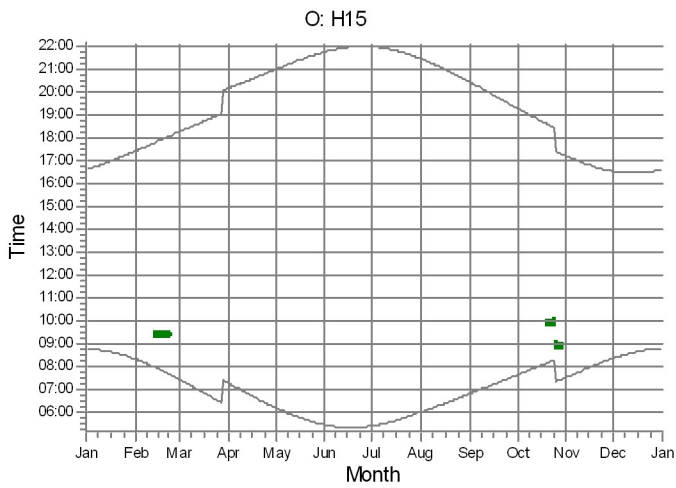
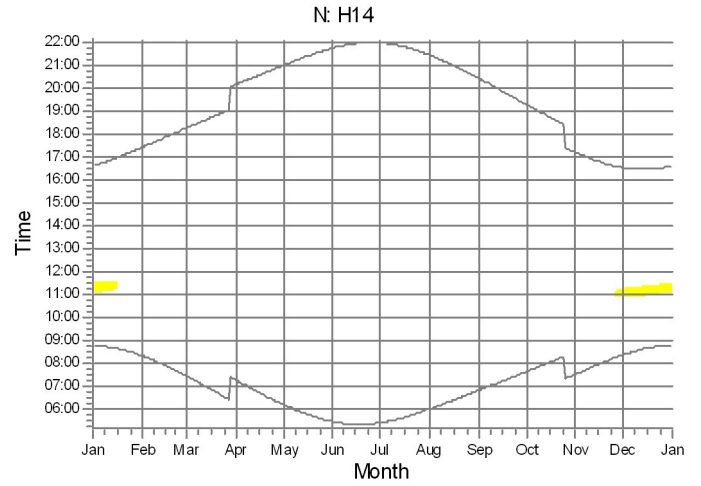
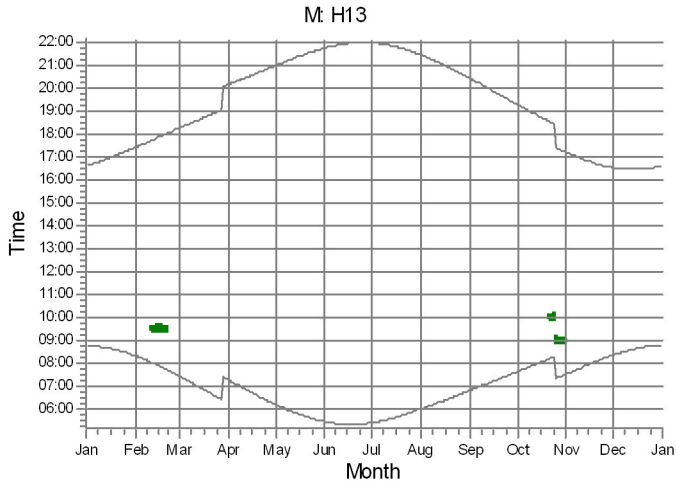
Project:
4636 Derreenacrinning West Windfarm

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30/06/2025 15:04/4.0.552

SHADOW - Calendar, graphical

Calculation: 4636- Derreenacrinning Windfarm Worst Case



WTGs

1: T1 2: T2

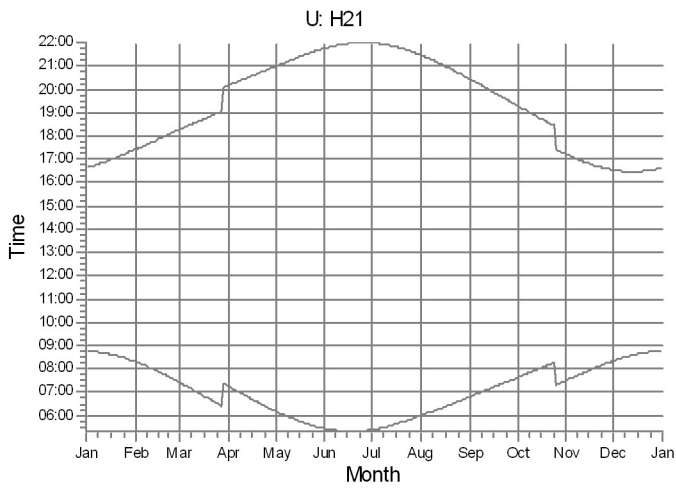
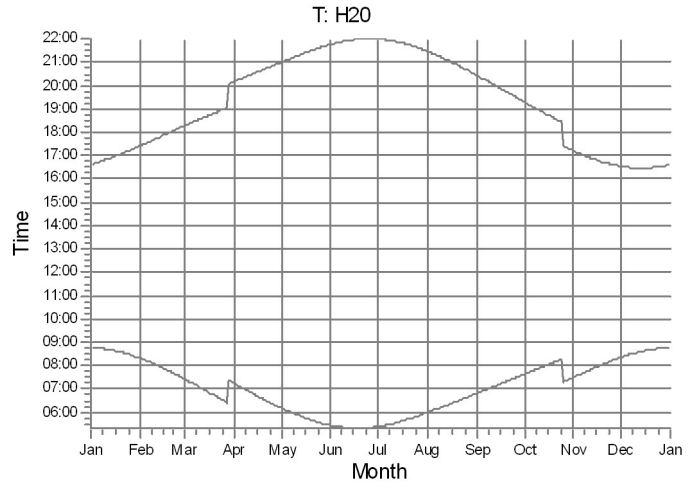
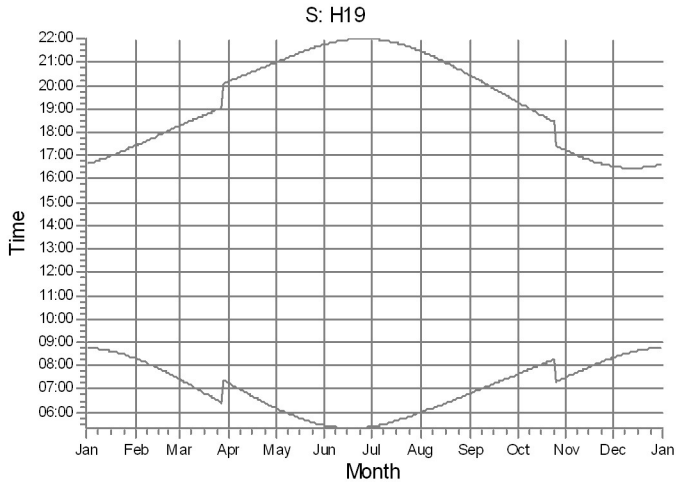
Project:
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30/06/2025 15:04/4.0.552

SHADOW - Calendar, graphical

Calculation: 4636- Derreenacrinnig Windfarm Worst Case



WTGs

Project:

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Calculated:
30/06/2025 15:04/4.0.552

SHADOW - Calendar per WTG

Calculation: 4636- Derreenacrinnig Windfarm Worst Case Assumptions for shadow calculations

WTG: 1 - T1

Sunshine probability S (Average daily sunshine hours) [VALENTIA OBS.]

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1.30 2.04 2.89 4.92 5.79 4.99 4.32 4.35 3.60 2.54 1.64 1.06

Operational time

N NNE NE ENE E ESE SE SSE S SSW SW WSW W WNW NW NNW Sum
136 297 373 423 216 252 408 617 382 612 1,601 1,598 456 331 428 630 8,760

	January	February	March	April	May	June
1	08:45 11:47-12:00/13 16:38 14:36-14:51/15	08:18 17:25	07:25 08:42-08:55/13 18:16	07:15 20:10	06:11 21:00	05:26 21:46
2	08:44 11:47-11:59/12 16:39 14:36-14:51/15	08:16 17:27	07:23 08:42-08:53/11 18:18	07:13 20:11	06:09 21:02	05:25 21:47
3	08:44 11:48-11:59/11 16:40 14:37-14:51/14	08:15 17:29	07:21 08:43-08:52/9 18:20	07:10 20:13	06:07 21:04	05:24 21:48
4	08:44 11:50-12:00/10 16:41 14:38-14:52/14	08:13 17:31	07:19 08:46-08:48/2 18:22	07:08 20:15	06:05 21:05	05:23 21:49
5	08:44 11:50-11:59/9 16:42 14:38-14:52/14	08:12 17:32	07:16 18:23	07:06 20:17	06:03 21:07	05:23 21:50
6	08:44 11:52-11:58/6 16:43 14:39-14:53/14	08:10 17:34	07:14 18:25	07:04 20:18	06:01 21:08	05:22 21:51
7	08:43 14:39-14:52/13 16:45	08:08 17:36	07:12 18:27	07:01 20:20	06:00 21:10	05:22 21:52
8	08:43 14:40-14:53/13 16:46	08:07 17:38	07:10 18:29	06:59 20:22	05:58 21:12	05:21 21:53
9	08:42 14:41-14:53/12 16:47	08:05 17:40	07:07 18:30	06:57 20:23	05:56 21:13	05:21 21:53
10	08:42 14:41-14:52/11 16:49	08:03 17:42	07:05 18:32	06:55 20:25	05:54 21:15	05:20 21:54
11	08:41 14:43-14:53/10 16:50	08:01 09:27-09:32/5 17:44	07:03 18:34	06:52 20:27	05:53 21:16	05:20 21:55
12	08:41 14:44-14:52/8 16:51	07:59 09:25-09:35/10 17:45	07:01 18:36	06:50 20:28	05:51 21:18	05:19 21:56
13	08:40 14:46-14:51/5 16:53	07:58 09:21-09:36/15 17:47	06:58 18:37	06:48 20:30	05:49 21:20	05:19 21:56
14	08:39 16:54	07:56 09:19-09:36/17 17:49	06:56 18:39	06:46 20:32	05:48 21:21	05:19 21:57
15	08:38 16:56	07:54 09:18-09:37/19 17:51	06:54 18:41	06:44 20:33	05:46 21:23	05:19 21:57
16	08:37 16:58	07:52 09:17-09:37/20 17:53	06:52 18:43	06:41 20:35	05:45 21:24	05:19 21:58
17	08:37 16:59	07:50 09:17-09:37/20 17:55	06:49 18:44	06:39 20:37	05:43 21:26	05:19 21:58
18	08:36 17:01	07:48 09:17-09:36/19 17:56	06:47 18:46	06:37 20:38	05:42 21:27	05:19 21:59
19	08:35 17:02	07:46 09:17-09:35/18 17:58	06:45 18:48	06:35 20:40	05:40 21:29	05:19 21:59
20	08:34 17:04	07:44 08:59-09:06/7 18:00 09:18-09:34/16	06:42 18:49	06:33 20:42	05:39 21:30	05:19 21:59
21	08:33 17:06	07:42 08:54-09:08/14 18:02 09:19-09:29/10	06:40 18:51	06:31 20:44	05:38 21:32	05:19 22:00
22	08:31 17:07	07:40 08:53-09:09/16 18:04 09:22-09:26/4	06:38 18:53	06:29 20:45	05:36 21:33	05:19 22:00
23	08:30 17:09	07:38 08:52-09:09/17 18:06	06:36 18:55	06:27 20:47	05:35 21:34	05:19 22:00
24	08:29 17:11	07:36 08:46-09:08/22 18:07	06:33 18:56	06:24 20:49	05:34 21:36	05:20 22:00
25	08:28 17:13	07:34 08:43-09:08/25 18:09	06:31 18:58	06:22 20:50	05:33 21:37	05:20 22:00
26	08:27 17:14	07:31 08:42-09:08/26 18:11	06:29 19:00	06:20 20:52	05:32 21:38	05:20 22:00
27	08:25 17:16	07:29 08:42-09:07/25 18:13	06:26 19:01	06:18 20:54	05:31 21:40	05:21 22:00
28	08:24 17:18	07:27 08:42-09:04/22 18:15	06:24 19:03	06:16 20:55	05:30 21:41	05:21 22:00
29	08:22 17:20		07:22 20:05	06:14 20:57	05:29 21:42	05:22 22:00
30	08:21 17:21		07:19 20:06	06:13 20:59	05:28 21:43	05:22 22:00
31	08:20 17:23		07:17 20:08		05:27 21:44	
Potential sun hours	260	278	367	416	484	498
Sum of minutes with flicker	219	347	35	0	0	0

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

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

Project:

4636 Derreenacrinnig West Windfarm

Description:

Construction of 3 No. wind turbines with an overall ground to blade tip height of 119.3m. The wind turbines will have a rotor diameter of up to 82m and a hub height of 78.3m.

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Calculated:
30/06/2025 15:04/4.0.552

SHADOW - Calendar per WTG

Calculation: 4636- Derreenacrinnig Windfarm Worst Case
Assumptions for shadow calculations

WTG: 1 - T1

Sunshine probability S (Average daily sunshine hours) [VALENTIA OBS.]

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1.30 2.04 2.89 4.92 5.79 4.99 4.32 4.35 3.60 2.54 1.64 1.06

Operational time

N NNE NE ENE E ESE SE SSE S SSW SW WSW W WNW NW NNW Sum
136 297 373 423 216 252 408 617 382 612 1,601 1,598 456 331 428 630 8,760

	July	August	September	October	November	December
1	05:23 21:59	05:59 21:28	06:48 20:26	07:37 19:17	07:30 17:12	08:21 16:32
2	05:24 21:59	06:01 21:26	06:50 20:24	07:39 19:15	07:32 17:10	08:22 16:31
3	05:24 21:59	06:02 21:25	06:52 20:22	07:40 19:13	07:34 17:08	08:24 16:31
4	05:25 21:58	06:04 21:23	06:53 20:20	07:42 19:10	07:36 17:06	08:25 16:30
5	05:26 21:58	06:05 21:21	06:55 20:17	07:44 19:08	07:37 17:05	08:26 16:29
6	05:27 21:57	06:07 21:19	06:56 20:15	07:45 19:06	07:39 17:03	08:28 16:29
7	05:28 21:57	06:08 21:18	06:58 20:13	07:47 19:04	07:41 17:01	08:29 16:29
8	05:29 21:56	06:10 21:16	07:00 20:10	07:49 19:01	07:43 16:59	08:30 16:28
9	05:30 21:55	06:12 21:14	07:01 20:08	07:50 18:59	07:44 16:58	08:31 16:28
10	05:30 21:55	06:13 21:12	07:03 20:06	07:52 18:57	09:18-09:25/7 16:56	08:32 16:28
11	05:32 21:54	06:15 21:10	07:05 20:04	07:54 18:55	09:17-09:27/10 16:55	08:33 16:28
12	05:33 21:53	06:16 21:08	07:06 20:01	07:55 18:53	09:16-09:28/12 16:53	08:34 16:28
13	05:34 21:52	06:18 21:06	07:08 19:59	07:57 18:50	09:15-09:33/18 16:52	08:35 16:28
14	05:35 21:51	06:19 21:04	07:09 19:57	07:59 18:48	09:14-09:38/24 16:50	08:36 16:28
15	05:36 21:50	06:21 21:02	07:11 19:54	08:00 18:46	09:14-09:39/25 16:49	08:37 16:28
16	05:37 21:49	06:23 21:00	07:13 19:52	08:02 18:44	09:15-09:40/25 16:47	08:38 16:28
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18	05:40 21:47	06:26 20:56	07:16 19:47	08:06 18:40	09:18-09:41/23 16:45	08:40 16:28
19	05:41 21:46	06:27 20:54	07:17 19:45	08:07 18:37	09:23-09:39/16 16:43	08:40 16:28
20	05:42 21:45	06:29 20:52	07:19 19:43	08:09 18:35	09:24-09:39/15 16:42	08:41 16:29
21	05:43 21:44	06:31 20:50	07:21 19:40	08:11 18:33	09:26-09:38/12 16:41	08:42 16:29
22	05:45 21:42	06:32 20:48	07:22 19:38	08:13 18:31	09:30-09:35/5 16:40	08:42 16:30
23	05:46 21:41	06:34 20:46	07:24 19:36	08:14 18:29	09:48-10:06/18 16:39	08:43 16:30
24	05:48 21:40	06:36 20:44	07:25 19:33	08:16 18:27	09:47-10:07/20 16:38	08:43 16:31
25	05:49 21:38	06:37 20:42	07:27 19:31	08:18 17:25	08:48-09:07/19 16:37	08:43 16:31
26	05:50 21:37	06:39 20:40	07:29 19:29	08:20 17:23	08:47-09:06/19 16:36	08:44 16:32
27	05:52 21:36	06:40 20:37	07:30 19:26	08:21 17:21	08:48-09:06/18 16:35	08:44 16:33
28	05:53 21:34	06:42 20:35	07:32 19:24	08:23 17:19	08:49-09:06/17 16:34	08:44 16:34
29	05:55 21:33	06:44 20:33	07:34 19:22	08:25 17:17	08:51-09:05/14 16:33	08:44 16:34
30	05:56 21:31	06:45 20:31	07:35 19:20	08:27 17:15	08:55-09:04/9 16:32	08:45 16:35
31	05:58 21:30	06:47 20:29	 17:14	08:28 17:14	08:58-09:01/3 	08:45 16:36
Potential sun hours	501	453	381	332	267	245
Sum of minutes with flicker	0	0	0	391	12	794

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

Day in month Sun rise (hh:mm) Sun set (hh:mm) First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Project:
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F91 RHH9 Sligo
+353719161416
Kathlyn Feeney / kfeeney@jodireland.com
Calculated:
30/06/2025 15:04/4.0.552

SHADOW - Calendar per WTG

Calculation: 4636- Derreenacrinng Windfarm Worst Case
Assumptions for shadow calculations

WTG: 2 - T2
Sunshine probability S (Average daily sunshine hours) [VALENTIA OBS.]
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1.30 2.04 2.89 4.92 5.79 4.99 4.32 4.35 3.60 2.54 1.64 1.06

Operational time

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:45 11:10-11:26/16	08:18 07:25 07:15 06:11	07:25 07:15 06:11	07:15 06:11	06:11 05:26	05:26 05:23	05:23 05:59	05:59 06:48	06:48 07:37	07:37 07:30	07:30 07:12	08:21 10:58-11:11/13
2	08:44 11:10-11:25/15	08:16 07:23 07:13 06:09	07:23 07:13 06:09	07:13 06:09	06:09 05:25	05:25 05:24	05:24 06:01	06:01 06:50	06:50 07:39	07:39 07:32	07:32 07:17	08:22 10:57-11:11/13
3	08:44 11:11-11:26/15	08:15 07:21 07:10 06:07	07:21 07:10 06:07	07:10 06:07	06:07 05:24	05:24 05:24	05:24 06:02	06:02 06:52	06:52 07:40	07:40 07:34	07:34 07:17	08:24 10:58-11:12/14 14:20-14:33/13
4	08:44 11:12-11:27/15	08:13 07:18 07:08 06:05	07:18 07:08 06:05	07:08 06:05	06:05 05:23	05:23 05:25	05:25 06:04	06:04 06:53	06:53 07:42	07:42 07:36	07:36 07:17	08:25 10:58-11:13/15 14:21-14:32/11
5	08:44 11:11-11:27/16	08:12 07:16 07:06 06:03	07:16 07:06 06:03	07:06 06:03	06:03 05:23	05:23 05:26	05:26 06:05	06:05 06:55	06:55 07:44	07:44 07:37	07:37 07:17	08:26 10:58-11:14/16 14:21-14:31/10
6	08:44 11:12-11:28/16	08:10 07:14 07:04 06:01	07:14 07:04 06:01	07:04 06:01	06:01 05:22	05:22 05:27	05:27 06:07	06:07 06:56	06:56 07:45	07:45 07:39	07:39 07:17	08:28 10:58-11:14/16 14:23-14:32/9
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8	08:43 11:13-11:29/16	08:07 07:10 06:59 05:58	07:10 06:59 05:58	06:59 05:58	05:58 05:21	05:21 05:29	05:29 06:10	06:10 07:00	07:00 07:49	07:49 07:43	07:43 07:01	08:30 10:59-11:14/15 14:25-14:30/5
9	08:42 11:14-11:28/14	08:05 07:07 06:57 05:56	07:07 06:57 05:56	06:57 05:56	05:56 05:21	05:21 05:26	05:26 06:12	06:12 07:01	07:01 07:50	07:50 07:44	07:44 07:01	08:31 11:00-11:15/15
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27	08:25 10:32-10:45/13	07:29 06:26 06:18 05:31	06:26 06:18 05:31	06:18 05:31	05:31 05:21	05:21 05:52	05:52 06:40	06:40 07:30	07:30 08:21	07:50 10:11-10:18/5	10:11-10:18/5	08:44 11:08-11:23/15 13:15-13:31/16
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29	08:22 10:35-10:44/9	07:22 06:14 05:29	06:14 05:29	05:29 05:22	05:22 05:55	05:55 06:44	06:44 07:34	07:34 08:25	08:25 09:16	07:50 10:13-10:19/3	10:13-10:19/3	08:44 11:09-11:24/15 13:16-13:32/16
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31	08:20 17:23	07:17 06:08 05:27	06:08 05:27	05:27 05:22	05:22 05:58	05:58 06:47	06:47 07:37	07:37 08:28	08:28 09:19	07:50 10:15-10:19/1	10:15-10:19/1	08:45 11:10-11:25/15
Potential sun hours	260	278	367	416	484	498	501	453	381	332	267	245
Sum of minutes with flicker	743	0	0	0	0	0	0	0	0	0	393	1093

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

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

Project:

4636 Derreenacrinnig West Windfarm

Description:

Construction of 3 No. wind turbines with an overall ground to blade tip height of 119.3m. The wind turbines will have a rotor diameter of up to 82m and a hub height of 78.3m.

Licensed user:

Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
Kathlyn Feeney / kfeeney@jodireland.com
Calculated:
30/06/2025 15:04/4.0.552

SHADOW - Calendar per WTG

Calculation: 4636- Derreenacrinnig Windfarm Worst Case
Assumptions for shadow calculations

WTG: 3 - T3

Sunshine probability S (Average daily sunshine hours) [VALENTIA OBS.]

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1.30 2.04 2.89 4.92 5.79 4.99 4.32 4.35 3.60 2.54 1.64 1.06

Operational time

N NNE NE ENE E ESE SE SSE S SSW SW WSW W WNW NW NNW Sum
136 297 373 423 216 252 408 617 382 612 1,601 1,598 456 331 428 630 8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:45 11:28-11:47/19	08:18 07:25	07:15 07:15	06:11 06:11	05:26 05:23	05:23 05:23	05:59 06:48	07:37 07:37	07:30 07:30	07:30 07:30	07:30 07:30	08:21 11:20-11:27/7
2	16:38 13:01-13:21/20	17:25 18:16	20:10 20:10	21:00 21:00	21:46 21:46	21:46 21:59	21:28 20:26	19:17 19:17	17:12 17:12	16:32 16:32	16:32 16:32	16:32 12:52-13:03/11
3	08:44 11:28-11:46/18	08:16 07:23	07:13 07:13	06:09 06:09	05:25 05:24	05:24 06:01	06:50 06:50	07:39 07:39	07:32 07:32	08:22 08:22	08:22 08:22	08:22 11:18-11:28/10
4	16:39 13:01-13:20/19	17:27 18:18	20:11 20:11	21:02 21:02	21:47 21:47	21:59 21:59	21:26 20:24	19:15 19:15	17:10 17:10	16:31 16:31	16:31 16:31	16:31 12:51-13:03/12
5	08:44 11:29-11:47/18	08:15 07:21	07:10 07:10	06:07 06:07	05:24 05:24	05:24 06:02	06:52 06:52	07:40 07:40	07:34 07:34	08:24 08:24	08:24 08:24	08:24 11:18-11:30/12
6	16:40 13:02-13:21/19	17:29 18:20	20:13 20:13	21:04 21:04	21:48 21:48	21:59 21:25	20:22 20:22	19:13 19:13	17:08 17:08	16:30 16:30	16:30 16:30	16:30 12:51-13:05/14
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38	17:02 13:11-13:19/8	17:58 18:48	20:40 20:40	21:29 21:29	21:59 21:46	20:54 19:45	18:37 18:37	16:43 16:43	16:28 16:28	16:28 16:28	16:28 16:28	16:28 12:54-13:15/21
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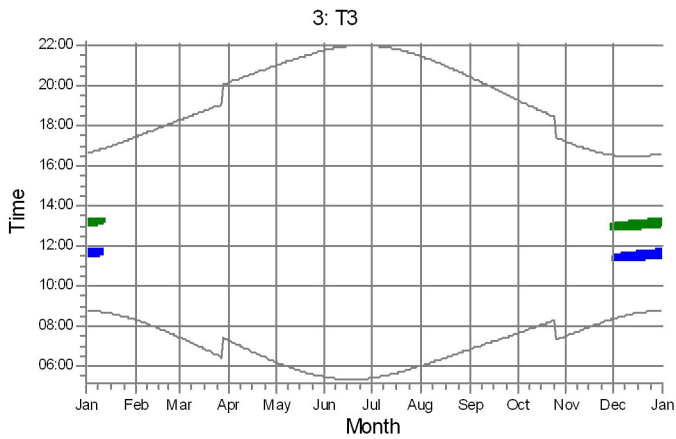
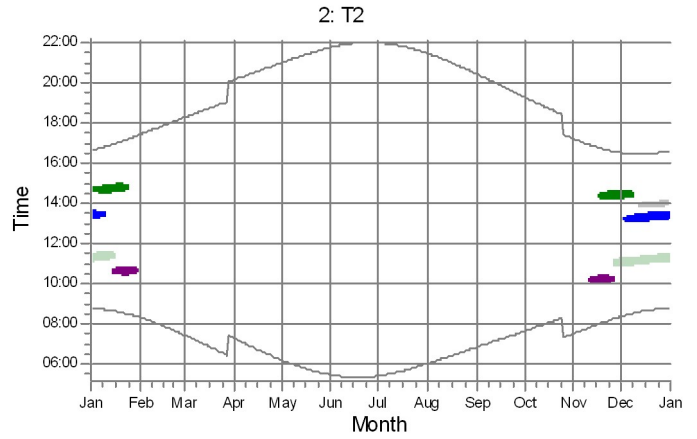
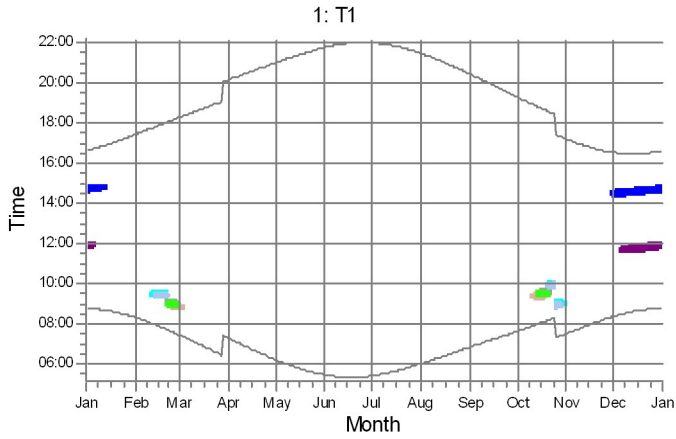
Project:
4636 Derreenacrinnig West Windfarm

Description:
Construction of 3 No. wind turbines with an overall ground to blade tip height of 119.3m. The wind turbines will have a rotor diameter of up to 82m and a hub height of 78.3m.

Licensed user:
Jennings O'Donovan
Finisklin Business Park
F91 RHH9 Sligo
+353719161416
Kathlyn Feeney / kfeeney@jodireland.com
Calculated:
30/06/2025 15:04/4.0.552

SHADOW - Calendar per WTG, graphical

Calculation: 4636- Derreenacrinnig Windfarm Worst Case



Shadow receptors

	A: H1		K: H11		M: H13		O: H15		Q: H17
	C: H3		L: H12		N: H14		P: H16		R: H18

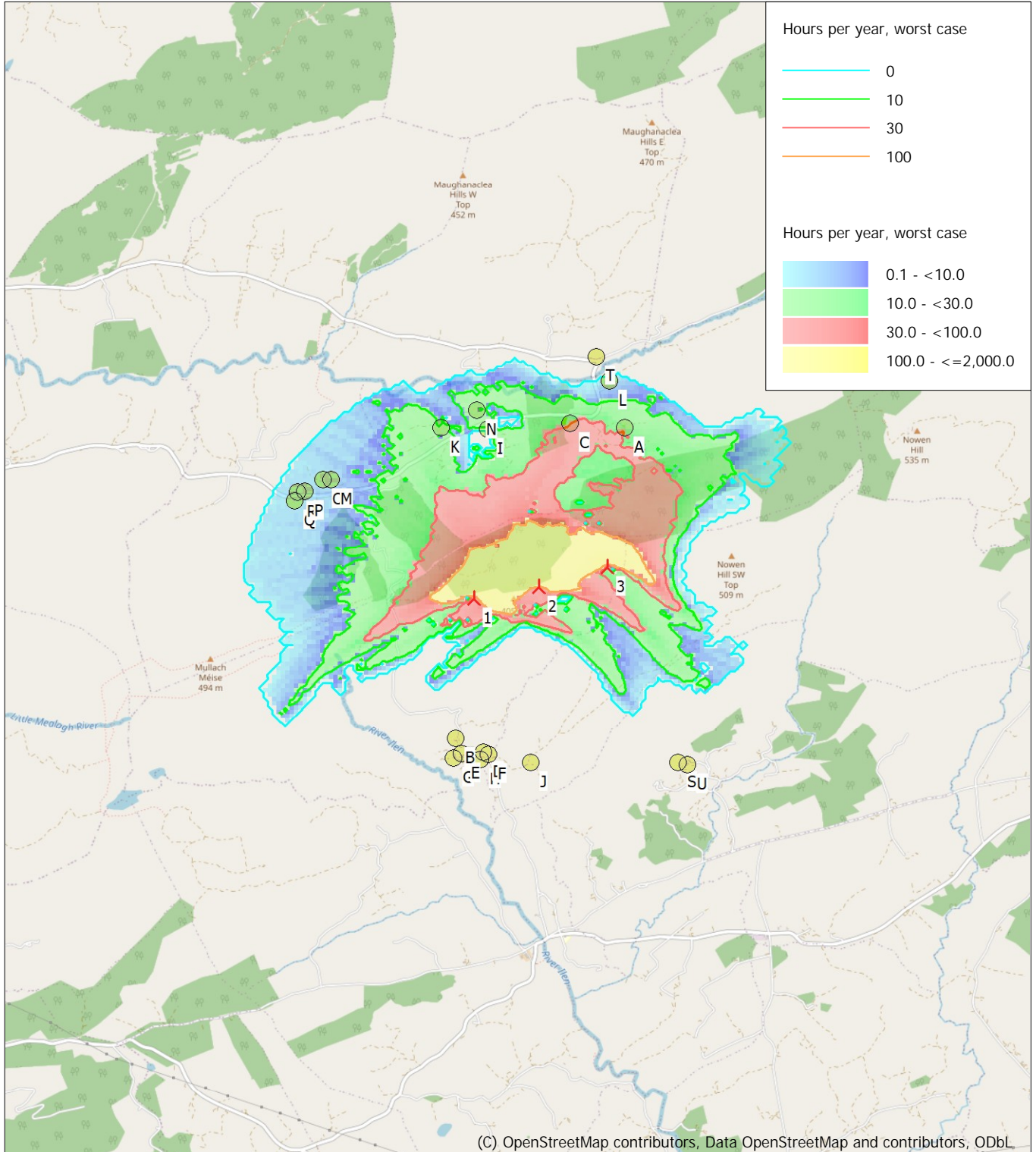
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F91 RHH9 Sligo
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Kathlyn Feeney / kfeeney@jodireland.com
Calculated:
30/06/2025 15:04/4.0.552

SHADOW - Map

Calculation: 4636- Derreenacrinnig Windfarm Worst Case



0 500 1000 1500 2000 m

Map: EMD OpenStreetMap , Print scale 1:40,000, Map center Irish ITM-IRENET95 (IE), geocentric, GRS80 East: 511,230 North: 552,000
 New WTG Shadow receptor
 Flicker map level: Height Contours: CONTOURLINE_4636 Dreenacreenig_0.wpo (1)
 Time step: 4 minutes, Day step: 14 days, Map resolution: 30 m, Visibility resolution: 15 m, Eye height: 1.5 m