

**From:** Meabhann Crowe <[mcrowe@mkofireland.ie](mailto:mcrowe@mkofireland.ie)>  
**Sent:** Thursday 6 April 2023 15:10  
**To:** Niamh Thornton <[n.thornton@pleanala.ie](mailto:n.thornton@pleanala.ie)>  
**Cc:** SIDS <[sids@pleanala.ie](mailto:sids@pleanala.ie)>  
**Subject:** 201050a-Umma More Wind Farm SID -ABP-316051

Niamh,

I refer to the proposed Umma More renewable energy development and the Strategic Infrastructure Development (SID) application lodged with An Bord Pleanála on the 10th of March 2023. It has come to our attention that there is a discrepancy in the identification of participating properties contained within the shadow flicker assessment piece of Chapter 5 of the Environmental Impact Assessment Report (EIAR) as lodged, the issue arises due to a formatting error in Table 5-9 of the EIAR. The attached letter and briefing note has been prepared by MKO to address this error. We would ask that this is shared with the Inspector. Should you require anything further please do not hesitate to get in touch.

Kind regards,  
Meabhann Crowe

**Meabhann Crowe, MRTPI**  
Project Planner

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**MKO**

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Ms Niamh Thornton  
An Bord Pleanála  
Strategic Infrastructure Development (SID) Section  
64 Marlborough Street,  
Dublin 1

Our Ref: 201050  
Your Ref: ABP-316051

05<sup>th</sup> April 2023

**Re:** Section 37E of the Planning and Development Act 2000, as amended - Planning Application ABP-316051 - Proposed Development in the townlands of Ballynafearagh, Raheen, Baskin High, Baskin Low, Lissanode, Umma Beg or Moneynamanagh, Umma More in County Westmeath

Dear Niamh,

I refer to the proposed Umma More renewable energy development and the Strategic Infrastructure Development (SID) application lodged with An Bord Pleanála on the 10<sup>th</sup> of March 2023. It has come to our attention that there is a discrepancy in the identification of participating properties contained within the shadow flicker assessment piece of Chapter 5 of the Environmental Impact Assessment Report (EIAR) as lodged, the issue arises due to a formatting error in Table 5-9 of the EIAR.

Appended to this letter is a dedicated Briefing Note prepared by MKO, who undertook the original shadow flicker assessment of the EIAR. This details the formatting error in Table 5-9 '*Maximum Potential Daily & Annual Shadow Flicker – Proposed Umma More Renewable Energy Development*', and how it has resulted in subsequent knock-on effect on Tables 5-10 '*Shadow Flicker Mitigation Strategy for Daily Shadow Flicker Exceedance – Turbine Numbers and Dates*' and Table 5-11 '*Shadow Flicker Mitigation Strategy for Annual Shadow Flicker Exceedance*'. For clarification, the shadow flicker assessment results presented within Table 5-9 and in Chapter 5 of the EIAR are accurate as are the mitigation measures that will be applied to ensure that Shadow Flicker levels do not exceed the required thresholds. The only discrepancy in Table 5-9 is the identification of participating properties in columns 11 (Mitigation Strategic Required (Daily)) and 12 (Mitigation Strategy Required (Annual)) of the table.

Corrected Tables are provided in the appended Briefing Note with corrections clearly shown, with new text provided in green and removed text struck out. The corrections do not present any changes in the residual impact assessment for shadow flicker. The findings of the shadow flicker assessment as presented in the EIAR remain the same in light of these corrections.

I trust that the enclosed information is sufficient for your requirements. If however, you have any query or wish to discuss the matter in detail, please do not hesitate to contact me.

Yours sincerely,



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Meabhann P. Crowe

Meabhann P. Crowe, MRTPI  
Project Planner MKO

ENCL – Briefing Note



## BRIEFING NOTE

Project Reference	Umma More Renewable Energy Development
Date & Time	05/04/2023
Subject	ELAR Main Report: Chapter 5 – Tables 5-9 to 5-11 amendments due to formatting error
Author(s)	Ellen Costello

It has come to our attention that there is a formatting error within Table 5-9 in Chapter 5 of the ELAR for Umma More Renewable Energy Development (Proposed Development). The formatting error in question is in Table 5-9 '*Maximum Potential Daily & Annual Shadow Flicker – Proposed Umma More Renewable Energy Development*' and is relating to the identification of participating properties in the Proposed Development. Tables 5-10 (Daily) and Table 5-11 (Annual) presents the shadow flicker mitigation strategy for the Proposed Development, identifying properties that are not participating in the Proposed Development. Due to the formatting error in identifying participating properties in Table 5-9, this carried through to Table 5-10 and Table 5-11.

For clarification, the shadow flicker assessment results and modelling presented within Table 5-9 and in Chapter 5 of the ELAR are accurate as are the mitigation measures that will be applied to ensure that Shadow Flicker levels do not exceed the required thresholds. The only discrepancy with Table 5-9 was the identification of participating properties in Columns 11 and 12.

Please find below clarification of the origin of the formatting error in Table 5-9 which has carried through to Table 5-10 and Table 5-11 in Chapter 5 of the ELAR.

### **Clarification of the origin of the formatting error in Table 5-9 to Table 5-11:**

Within Table 5-9 there are seven instances in which the House ID identified as a participating property is incorrectly identified in Columns 11 (Mitigation Strategy Required (Daily)) and 12 (Mitigation Strategy Required (Annual)) in Table 5-9. From House ID number 9 onwards, the identified participating properties jumped down one cell in Table 5-9, resulting in a typographical error in the identification of a participating property. For example, property no. 9 is participating in the Proposed Development however, it was property number 10 that was identified as participating. Table 1 below presents a summary of the relevant properties relating to the formatting error.





*Table 1 Clarification of Participating Property Formatting Error*

House ID	Participating Properties within the Proposed Development	Formatting error regarding identification as Participating Properties within Table 5-9
9	Yes	Not identified as a Participating Property
10	No	Identified as a Participating Property
12	Yes	Not identified as a Participating Property
13	No	Identified as a Participating Property
26	Yes	Not identified as a Participating Property
27	No	Identified as a Participating Property
29	Yes	Not identified as a Participating Property
30	No	Identified as a Participating Property
33	Yes	Not identified as a Participating Property
34	No	Identified as a Participating Property
80	Yes	Not identified as a Participating Property
81	No	Identified as a Participating Property
84	Yes	Not identified as a Participating Property
85	No	Identified as a Participating Property

With the above in mind, please find below corrected Table 5-9 in which, Columns 11 and 12 have been updated to correct this formatting error, therefore correctly identifying the participating properties.



Table 5.9 Maximum Potential Daily &amp; Annual Shadow Flicker – Proposed Umma More Renewable Energy Development

House ID	ITM Coordinates (Easting)	ITM Coordinates (Northing)	Description	Distance to Nearest Turbine (metres)	Nearest Proposed Turbine No.	Max. Daily Shadow Flicker: Pre-Mitigation (hrs:min:sec)	Max. Annual Shadow Flicker: Pre-Mitigation (hrs:min:sec)	Max. Annual Shadow Flicker Adjusted for Average Regional Sunshine (hrs:min:sec)	Proposed Turbine(s) Giving Rise to Daily Shadow Flicker Exceedance	Mitigation Strategy Required (Daily)	Mitigation Strategy Required (Annual)
1	618187	745934	Derelict	571	T4	01:09:00	140:42:00	42:18:28	3, 4	No*	No*
2	618399	747936	Dwelling	757	T1	00:51:36	73:30:00	22:06:04	1, 2,	No**	No
3	619841	746630	Dwelling	759	T5	01:30:00	198:48:00	59:46:41	2, 3, 4, 5, 6, 7	Yes	Yes
4	621453	745239	Dwelling	759	T7	00:40:12	71:30:00	21:29:59	7, 9,	No**	No
5	618915	745338	Dwelling	763	T4	00:37:48	69:30:00	20:53:54	5, 8,	Yes	No
6	620556	746589	Dwelling	767	T6	01:09:00	87:06:00	26:11:26	5, 6,	No**	No
7	618087	745667	Dwelling	770	T4	00:54:00	71:48:00	21:35:24	4,	Yes	No
8	621320	746366	Dwelling	777	T7	00:49:48	82:18:00	24:44:50	6, 7,	Yes	No
9	618475	748140	Dwelling	779	T1	00:51:36	42:48:00	12:52:11	1,	No**	No
10	621172	744654	Dwelling	808	T9	00:51:36	55:48:00	16:46:43	8, 9,	Yes	No
11	618036	745676	Dwelling	809	T4	00:52:12	79:00:00	23:45:18	4,	Yes	No
12	618376	748045	Dwelling	818	T1	00:48:36	52:24:00	15:45:23	1,	No**	No
13	619889	747394	Dwelling	829	T1	00:49:12	128:18:00	38:34:45	1, 2, 3,	Yes	Yes
14	618287	747683	Dwelling	833	T1	00:46:48	73:30:00	22:06:04	1, 2,	Yes	No
15	618174	747340	Dwelling	847	T2	00:46:12	109:54:00	33:02:47	1, 2, 3,	Yes	Yes
16	618208	747455	Dwelling	847	T2	00:46:12	104:00:00	31:16:20	1, 2, 3,	Yes	Yes
17	618264	747610	Dwelling	860	T1	00:46:12	86:12:00	25:55:12	1, 2,	Yes	No
18	619952	747921	Dwelling	861	T1	00:45:00	61:24:00	18:27:45	1, 2,	Yes	No
19	620818	746596	Dwelling	868	T7	00:42:00	67:36:00	20:19:37	6,	Yes	No
20	618250	747779	Dwelling	873	T1	00:45:00	67:00:00	20:08:48	1, 2,	Yes	No
21	618929	745223	Dwelling	878	T4	00:34:48	57:12:00	17:11:59	8	Yes	No
22	618121	747256	Dwelling	885	T2	00:44:24	96:48:00	29:06:26	1, 2, 3,	Yes	No
23	621200	744540	Dwelling	898	T9	00:39:00	33:12:00	9:58:59	8, 9,	Yes	No



se	ITM Coordinates (Easting)	ITM Coordinates (Northing)	Description	Distance to Nearest Turbine (metres)	Nearest Proposed Turbine No.	Max. Daily Shadow Flicker: Pre- Mitigation (hrs:min:sec)	Max. Annual Shadow Flicker: Pre- Mitigation (hrs:min:sec)	Max. Annual Shadow Flicker Adjusted for Average Regional Sunshine (hrs:min:sec)	Proposed Turbine(s) Giving Rise to Daly Shadow Flicker Exceedance	Mitigation Strategy Required (Daily)	
24	621312	746517	Dwelling	900	T7	00:37:48	38:30:00	11:34:36	6, 7,	Yes	1
25	618422	748301	Dwelling	919	T1	00:42:00	40:54:00	12:17:54	1,	Yes	1
26	618380	748267	Dwelling	930	T1	00:43:48	33:18:00	10:00:47	1,	No**	1
27	621461	746453	Dwelling	931	T7	00:41:24	63:36:00	19:07:27	6, 7	Yes	1
28	618077	746968	Dwelling	941	T3	00:42:36	120:54:00	36:21:14	1, 2, 3, 4	Yes	1
29	621434	744955	Dwelling	946	T9	00:55:48	52:30:00	15:47:11	9,	No**	1
30	621149	744413	Dwelling	947	T9	00:11:24	3:24:00	1:01:21	N/A	No	1
31	620140	746850	Dwelling	956	T6	00:45:00	70:06:00	21:04:43	2, 3	Yes	1
32	621238	744491	Dwelling	959	T9	00:36:00	28:36:00	8:35:59	8	Yes	1
33	618042	747109	Dwelling	960	T2	00:40:48	108:18:00	32:33:55	1, 2, 3	No**	1
34	620699	744161	Dwelling	963	T9	00:00:00	0:00:00	0:00:00	N/A	No	1
35	620376	744130	Dwelling	981	T9	00:00:00	0:00:00	0:00:00	N/A	No	1
36	621274	744492	Dwelling	986	T9	00:37:48	32:12:00	9:40:57	9	Yes	1
37	621203	744407	Dwelling	989	T9	00:22:12	10:18:00	3:05:50	N/A	No	1
38	621233	746652	Dwelling	989	T7	00:33:00	22:12:00	6:40:31	6	Yes	1
39	621280	746636	Dwelling	993	T7	00:32:24	17:54:00	5:22:57	6	Yes	1
40	621314	744527	Dwelling	997	T9	00:42:36	41:24:00	12:26:55	9	Yes	1
41	617957	746743	Dwelling	998	T3	00:40:12	98:06:00	29:29:53	2, 3, 4	Yes	1
42	621833	746010	Dwelling	999	T7	00:39:36	45:42:00	13:44:30	7	Yes	1
43	618447	748447	Dwelling	1003	T1	00:39:00	42:54:00	12:53:59	1	Yes	1
44	621462	744804	Dwelling	1007	T9	00:48:00	33:06:00	9:57:11	9	Yes	1
45	618372	748380	Dwelling	1008	T1	00:38:24	40:48:00	12:16:06	1	Yes	1
46	621478	744839	Dwelling	1013	T9	00:49:12	32:18:00	9:42:45	9	Yes	1
47	617996	746982	Dwelling	1020	T2	00:39:00	116:12:00	34:56:27	1, 2, 3, 4	Yes	1



House ID	ITM Coordinates (Easting)	ITM Coordinates (Northing)	Description	Distance to Nearest Turbine (metres)	Nearest Proposed Turbine No.	Max. Daily Shadow Flicker: Pre-Mitigation (hrs:min:sec)	Max. Annual Shadow Flicker: Pre-Mitigation (hrs:min:sec)	Max. Annual Shadow Flicker Adjusted for Average Regional Sunshine (hrs:min:sec)	Proposed Turbine(s) Giving Rise to Daily Shadow Flicker Exceedance	Mitigation Strategy Required (Daily)	Mitigation Strategy Required (Annual)
48	621453	744698	Dwelling	1035	T9	00:41:24	36:00:00	10:49:30	9	Yes	No
49	620423	744066	Dwelling	1040	T9	00:00:00	0:00:00	0:00:00	N/A	No	No
50	620144	747524	Dwelling	1040	T1	00:38:24	59:06:00	17:46:16	1, 2	Yes	No
51	617960	747157	Dwelling	1041	T2	00:37:48	84:48:00	25:29:56	1, 2, 3	Yes	No
52	620494	744059	Dwelling	1044	T9	00:00:00	0:00:00	0:00:00	N/A	No	No
53	621347	744492	Dwelling	1044	T9	00:40:48	37:54:00	11:23:47	9	Yes	No
54	618372	748440	Dwelling	1050	T1	00:36:36	42:36:00	12:48:35	1	Yes	No
55	618835	745029	Dwelling	1056	T4	00:32:24	20:00:00	6:00:50	8	Yes	No
56	620477	746929	Dwelling	1062	T6	00:28:12	62:36:00	18:49:25	N/A	No	No
57	620936	744114	Dwelling	1081	T9	00:00:00	0:00:00	0:00:00	N/A	No	No
58	617910	747172	Dwelling	1091	T2	00:36:36	77:36:00	23:20:02	1, 2, 3	Yes	No
59	621651	744955	Dwelling	1097	T7	00:34:12	17:36:00	5:17:32	9	Yes	No
60	621886	745261	Dwelling	1115	T7	00:36:36	35:36:00	10:42:17	7	Yes	No
61	620218	747506	Dwelling	1116	T1	00:36:00	50:36:00	15:12:55	1, 2	Yes	No
62	618449	748599	Dwelling	1119	T1	00:30:36	21:18:00	6:24:17	1	Yes	No
63	618359	748530	Dwelling	1123	T1	00:34:12	37:00:00	11:07:33	1	Yes	No
64	621608	744868	Dwelling	1132	T7	00:46:12	26:06:00	7:50:53	9	Yes	No
65	621814	746367	Dwelling	1135	T7	00:36:00	24:42:00	7:25:38	7	Yes	No
66	621953	746099	Dwelling	1140	T7	00:34:48	18:42:00	5:37:23	7	Yes	No
67	619592	748749	Dwelling	1148	T1	00:00:00	0:00:00	0:00:00	N/A	No	No
68	617851	747114	Dwelling	1151	T2	00:34:48	80:30:00	24:12:21	1, 2, 3	Yes	No
69	617846	747216	Dwelling	1156	T2	00:34:12	69:00:00	20:44:53	1, 2, 3	Yes	No
70	617831	747309	Dwelling	1180	T2	00:33:36	58:00:00	17:26:25	1, 2, 3	Yes	No
71	621896	746322	Dwelling	1181	T7	00:34:48	20:48:00	6:15:16	7	Yes	No



se	ITM Coordinates (Easting)	ITM Coordinates (Northing)	Description	Distance to Nearest Turbine (metres)	Nearest Proposed Turbine No.	Max. Daily Shadow Flicker: Pre- Mitigation (hrs:min:sec)	Max. Annual Shadow Flicker: Pre- Mitigation (hrs:min:sec)	Max. Annual Shadow Flicker Adjusted for Average Regional Sunshine (hrs:min:sec)	Proposed Turbine(s) Giving Rise to Daly Shadow Flicker Exceedance	Mitigation Strategy Required (Daily)	
2	621926	746313	Dwelling	1202	T7	00:34:12	19:36:00	5:53:37	7	Yes	
3	621990	745273	Dwelling	1206	T7	00:34:12	28:12:00	8:28:47	7	Yes	
4	617548	746289	Dwelling	1207	T4	00:33:00	29:36:00	8:54:02	4	Yes	
5	620952	746948	Dwelling	1220	T7	00:23:24	10:12:00	3:04:02	N/A	No	
6	620298	743884	Dwelling	1238	T9	00:00:00	0:00:00	0:00:00	N/A	No	
7	621296	744152	Derelect	1240	T9	00:00:00	0:00:00	0:00:00	N/A	No	
8	619544	748873	Dwelling	1245	T1	00:00:00	0:00:00	0:00:00	N/A	No	
9	620373	743851	Dwelling	1258	T9	00:00:00	0:00:00	0:00:00	N/A	No	
0	622071	745331	Dwelling	1261	T7	00:32:24	24:30:00	7:22:01	7	No**	
1	621174	746964	Dwelling	1270	T7	00:28:48	25:00:00	7:31:03	N/A	No	
2	621000	747004	Dwelling	1280	T7	00:22:48	10:00:00	3:00:25	N/A	No	
3	620245	743844	Dwelling	1285	T9	00:00:00	0:00:00	0:00:00	N/A	No	
4	618416	748813	Dwelling	1314	T1	00:00:00	0:00:00	0:00:00	N/A	No	
5	622082	746291	Dwelling	1332	T7	00:30:36	15:00:00	4:30:38	7	Yes	
6	619669	744029	Dwelling	1355	T8	00:00:00	0:00:00	0:00:00	N/A	No	
7	617397	745840	Dwelling	1361	T4	00:29:24	13:00:00	3:54:32	N/A	No	
8	622205	746027	Dwelling	1363	T7	00:29:24	12:12:00	3:40:07	N/A	No	
9	617498	745482	Dwelling	1376	T4	00:30:36	20:30:00	6:09:51	4	Yes	
0	620170	743767	Dwelling	1376	T9	00:00:00	0:00:00	0:00:00	N/A	No	
1	617444	745580	Dwelling	1386	T4	00:30:00	16:24:00	4:55:53	4	Yes	
2	617494	745416	Dwelling	1409	T4	00:30:00	23:06:00	6:56:46	4	Yes	
3	617586	746998	Dwelling	1415	T3	00:28:48	42:18:00	12:43:10	N/A	No	
4	621151	747129	Dwelling	1426	T7	00:22:12	10:12:00	3:04:02	N/A	No	
5	622285	745942	Dwelling	1426	T7	00:28:12	10:48:00	3:14:51	N/A	No	

House ID	ITM Coordinates (Easting)	ITM Coordinates (Northing)	Description	Distance to Nearest Turbine (metres)	Nearest Proposed Turbine No.	Max. Daily Shadow Flicker: Pre-Mitigation (hrs:min:sec)	Max. Annual Shadow Flicker: Pre-Mitigation (hrs:min:sec)	Max. Annual Shadow Flicker Adjusted for Average Regional Sunshine (hrs:min:sec)	Proposed Turbine(s) Giving Rise to Daily Shadow Flicker Exceedance	Mitigation Strategy Required (Daily)	Mitigation Strategy Required (Annual)
96	622295	745509	Dwelling	1438	T7	00:27:36	10:30:00	3:09:26	N/A	No	No
97	618860	749119	Dwelling	1439	T1	00:00:00	0:00:00	0:00:00	N/A	No	No
98	617289	746117	Dwelling	1448	T4	00:27:36	10:06:00	3:02:13	N/A	No	No
99	617278	746093	Dwelling	1459	T4	00:27:36	10:24:00	3:07:38	N/A	No	No
100	620195	743672	Dwelling	1463	T9	00:00:00	0:00:00	0:00:00	N/A	No	No
101	622364	745714	Dwelling	1490	T7	00:26:24	9:48:00	2:56:49	N/A	No	No
102	620071	743671	Dwelling	1495	T9	00:00:00	0:00:00	0:00:00	N/A	No	No
103	618406	749020	Dwelling	1498	T1	00:00:00	0:00:00	0:00:00	N/A	No	No
104	619132	749208	Dwelling	1505	T1	00:00:00	0:00:00	0:00:00	N/A	No	No
105	621024	743677	Dwelling	1519	T9	00:00:00	0:00:00	0:00:00	N/A	No	No
106	620058	743635	Dwelling	1533	T9	00:00:00	0:00:00	0:00:00	N/A	No	No
107	619204	749238	Dwelling	1537	T1	00:00:00	0:00:00	0:00:00	N/A	No	No
108	621159	747263	Dwelling	1559	T7	00:00:00	0:00:00	0:00:00	N/A	No	No
109	622263	745001	Dwelling	1568	T7	00:27:00	14:00:00	4:12:35	N/A	No	No
110	617260	745546	Dwelling	1571	T4	00:26:24	11:54:00	3:34:42	N/A	No	No
111	618430	749128	Dwelling	1583	T1	00:00:00	0:00:00	0:00:00	N/A	No	No
112	622455	745549	Dwelling	1591	T7	00:25:12	7:48:00	2:20:44	N/A	No	No
113	619965	743600	Dwelling	1595	T9	00:00:00	0:00:00	0:00:00	N/A	No	No
114	617184	746449	Dwelling	1596	T4	00:25:12	9:00:00	2:42:23	N/A	No	No
115	619373	749288	Dwelling	1605	T1	00:00:00	0:00:00	0:00:00	N/A	No	No

\* Derelict Property

\*\*Participating Property



Clarification in the formatting error in identification of participating properties in Table 5-9 thus requires an update to Table 5-10 and Table 5-11. Properties that are not participating in the Proposed Development are identified in the shadow flicker mitigation strategy in the EIAR. The areas included below:

Table 5-10 Shadow Flicker Mitigation Strategy for Daily Shadow Flicker Exceedance – Turbine Numbers and Dates

Property	No. of Days 30min/day Threshold is Exceeded	Turbine(s) Producing Shadow Flicker Exceedance	Days of Year When Mitigation May be Required (Days)	Days of Year When Mitigation May be Required (Dates)*
1	237	2, 3, 4, 5, 6, 7	1-18, 20-27, 44-53, 80-99, 140-203, 245-264, 292-300, 319-365	1 <sup>st</sup> January – 18 <sup>th</sup> January, 20 <sup>th</sup> January – 27 <sup>th</sup> January, 13 <sup>th</sup> February – 22 <sup>nd</sup> February, 21 <sup>st</sup> March – 31 <sup>st</sup> March, 20 <sup>th</sup> May – 22 <sup>nd</sup> July, 1 <sup>st</sup> – 21 <sup>st</sup> September, 19 <sup>th</sup> – 27 <sup>th</sup> October, 15 <sup>th</sup> November – 31 <sup>st</sup> December
2	40	5, 8,	85-95, 164-181 250-260,	26 <sup>th</sup> March – 5 <sup>th</sup> April, 13 <sup>th</sup> June – 30 <sup>th</sup> June, 7 <sup>th</sup> -17 <sup>th</sup> September
3	69	4	138-206	18 <sup>th</sup> May – 25 <sup>th</sup> July
4	88	6, 7,	1-29, 50-58, 316-365,	1 <sup>st</sup> January – 29 <sup>th</sup> January, 19 <sup>th</sup> February – 27 <sup>th</sup> February, 12 <sup>th</sup> November – 31 <sup>st</sup> December
5	47	1	29-51, 294 – 317	30 <sup>th</sup> January – 20 <sup>th</sup> February, 21 <sup>st</sup> October – 13 <sup>th</sup> November
6	87	8, 9	129-215	9 <sup>th</sup> May – 3 <sup>rd</sup> August
7	80	4	133-212	13 <sup>th</sup> May – 31 <sup>st</sup> July
8	39	1	45-63, 282-301,	14 <sup>th</sup> February – 4 <sup>th</sup> March, 9 <sup>th</sup> October – 28 <sup>th</sup> October
9	249	1, 2, 3	12-50, 78-107, 238-267, 295-334, 353-358	12 <sup>th</sup> January – 19 <sup>th</sup> February, 19 <sup>th</sup> March – 17 <sup>th</sup> April, 26 <sup>th</sup> August – 24 <sup>th</sup> September, 22 <sup>nd</sup> October – 30 <sup>th</sup> November, 19 <sup>th</sup> December – 24 <sup>th</sup> December
10	83	1, 2	26-46, 85-103, 241-261, 299-320	26 <sup>th</sup> January – 15 <sup>th</sup> February, 26 <sup>th</sup> March – 13 <sup>th</sup> April, 29 <sup>th</sup> August – 18 <sup>th</sup> September, 26 <sup>th</sup> October – 16 <sup>th</sup> November
11	125	1, 2, 3,	10-31, 64-83, 118-137, 207-227, 262-281, 315-336	10 <sup>th</sup> January – 31 <sup>st</sup> January, 5 <sup>th</sup> March – 24 <sup>th</sup> March, 28 <sup>th</sup> April – 17 <sup>th</sup> May, 26 <sup>th</sup> July – 15 <sup>th</sup> August, 19 <sup>th</sup> September – 8 <sup>th</sup> October, 11 <sup>th</sup> November – 2 <sup>nd</sup> December
12	136	1, 2, 3,	1-15, 17-18, 52-71, 107-126, 219-238, 274-294, 327-329, 331-365	1 <sup>st</sup> January – 15 <sup>th</sup> January, 17 <sup>th</sup> -18 <sup>th</sup> January, 21 February – 12 <sup>th</sup> March, 17 April – 6 <sup>th</sup> May, 7 August – 2 <sup>nd</sup> August, 1 October – 21 October, 23 <sup>rd</sup> – 25 <sup>th</sup> November, 27 <sup>th</sup> November – 31 <sup>st</sup> December

Property No.	No. of Days 30min/day Threshold is Exceeded	Turbine(s) Producing Shadow Flicker Exceedance	Days of Year When Mitigation May be Required (Days)	Days of Year When Mitigation May be Required (Dates)*
17	85	1, 2,	33-53, 92-111, 233-253, 291-312,	4 <sup>th</sup> February - 22 <sup>nd</sup> February, 2 <sup>nd</sup> April - 21 <sup>st</sup> April, 21 August - 10 September, 18 <sup>th</sup> October - 8 <sup>th</sup> November
18	72	1, 2,	21-35, 60-80, 264-284, 310-324	21 <sup>st</sup> January - 4 <sup>th</sup> February, 1 <sup>st</sup> March - 21 <sup>st</sup> March, 21 September - 11 <sup>th</sup> October, 6 <sup>th</sup> November - 20 <sup>th</sup> November
19	73	6	1-26, 319-365	1 <sup>st</sup> January - 26 <sup>th</sup> January, 12 <sup>th</sup> November - 31 <sup>st</sup> December
20	75	1, 2,	20-38, 75-92, 253-270, 307-326,	20 <sup>th</sup> January - 7 <sup>th</sup> April, 16 <sup>th</sup> March - 2 <sup>nd</sup> April, 10 <sup>th</sup> September - 27 <sup>th</sup> September, 3 <sup>rd</sup> November - 22 November
21	24	8	94-105, 240-251,	4 <sup>th</sup> April - 15 <sup>th</sup> April, 28 August - 8 <sup>th</sup> September
22	108	1, 2, 3,	23-39, 74-91, 124-142, 203-220, 254-272, 306-322,	23 January - 8 <sup>th</sup> February, 15 <sup>th</sup> March - 1 <sup>st</sup> April, 4 <sup>th</sup> May - 22 <sup>nd</sup> May, 22 July - 8 <sup>th</sup> August, 11 <sup>th</sup> September - 29 <sup>th</sup> September, 2 November - 18 <sup>th</sup> November
23	58	8, 9,	153-190, 162-181,	3 <sup>rd</sup> June - 9 <sup>th</sup> July,
24	45	6, 7,	1-11, 46-47, 298-299, 335-336, 338-365	1 <sup>st</sup> January - 11 <sup>th</sup> January, 15 <sup>th</sup> February - 16 <sup>th</sup> February, 25 <sup>th</sup> -26 <sup>th</sup> October, 1 <sup>st</sup> -2 <sup>nd</sup> December, 4 <sup>th</sup> December - 31 <sup>st</sup> December
25	41	1,	17-36, 309-329,	17 <sup>th</sup> January - 5 <sup>th</sup> February, 5 <sup>th</sup> November - 25 <sup>th</sup> November
26	35	1,	24-41, 305-321,	24 <sup>th</sup> January - 10 <sup>th</sup> February, 1 <sup>st</sup> November - 17 <sup>th</sup> November
27	121	6, 7	40-59, 285-305	9 <sup>th</sup> February - 28 <sup>th</sup> February, 12 <sup>th</sup> October - 1 <sup>st</sup> November
28	148	1, 2, 3, 4	1-7, 11, 49-65, 101-119, 153-191, 225-243, 280-297, 335, 339-365	1 <sup>st</sup> January - 7 <sup>th</sup> January, 11 <sup>th</sup> January, 18 <sup>th</sup> February - 6 <sup>th</sup> March, 11 <sup>th</sup> April - 29 <sup>th</sup> April, 3 <sup>rd</sup> June - 10 <sup>th</sup> July, 13 <sup>th</sup> August - 31 <sup>st</sup> August, 7 <sup>th</sup> October - 24 <sup>th</sup> October, 1 <sup>st</sup> December, 5 <sup>th</sup> December - 31 <sup>st</sup> December
29	32	9	97-112, 232-247,	7 <sup>th</sup> April - 21 <sup>st</sup> April, 20 August - 4 <sup>th</sup> September
31	33	2, 3	68-73, 109-118, 226-235, 271-277,	9 <sup>th</sup> March - 14 <sup>th</sup> March, 19 <sup>th</sup> - 28 <sup>th</sup> April, 14 August - 23 <sup>rd</sup> August, 28 <sup>th</sup> September - 4 <sup>th</sup> October
32	30	8	157-186,	6 <sup>th</sup> June - 5 <sup>th</sup> July
33	97	1, 2, 3	39-53, 88-103, 135-151, 193-209, 242-257, 292-307,	8 <sup>th</sup> February - 22 <sup>nd</sup> February, 20 <sup>th</sup> March - 13 <sup>th</sup> April, 15 <sup>th</sup> May - 31 <sup>st</sup> May, 12 <sup>th</sup> July - 28 <sup>th</sup> July, 30 <sup>th</sup> August - 14 <sup>th</sup> September, 19 <sup>th</sup> October - 3 <sup>rd</sup> November
35	20	9	162-181,	11 <sup>th</sup> June - 30 <sup>th</sup> June
38	20	6	26-35, 310-319	26 <sup>th</sup> January - 4 <sup>th</sup> February, 6 <sup>th</sup> November - 15 <sup>th</sup> November



Property	No. of Days 30min/day Threshold is Exceeded	Turbine(s) Producing Shadow Flicker Exceedance	Days of Year When Mitigation May be Required (Days)	Days of Year When Mitigation May be Required (Dates)*
0	9	6	34-37, 308-312	3 <sup>rd</sup> February - 6 <sup>th</sup> February, 4 November - 8 <sup>th</sup> November
0	46	9	149-194	29 <sup>th</sup> May - 13 <sup>th</sup> July
1	98	2,3,4	18-37, 72-85, 120-134, 211-225, 260-273, 309- 328,	18 <sup>th</sup> January - 6 <sup>th</sup> February, 13 <sup>th</sup> March- 26 <sup>th</sup> March, 30 <sup>th</sup> April - 14 <sup>th</sup> May, 30 <sup>th</sup> July - 13 <sup>th</sup> August, 17 <sup>th</sup> September - 30 <sup>th</sup> September, 5 <sup>th</sup> November - 24 <sup>th</sup> November
2	27	7	59-71, 273-286,	28 <sup>th</sup> February - 12 <sup>th</sup> March, 30 <sup>th</sup> September - 13 <sup>th</sup> October
3	64	1	1-22, 324-365	1 <sup>st</sup> January - 22 January, 20 November - 31 <sup>st</sup> December
4	34	9	111-127, 217-233	21 April - 7 <sup>th</sup> May, 5 <sup>th</sup> August - 21 <sup>st</sup> August
5	37	1	14-31, 314-332,	14 <sup>th</sup> January - 31 <sup>st</sup> January, 10 <sup>th</sup> November - 28 <sup>th</sup> November
6	31	9	107-122, 222-236	17 <sup>th</sup> April - 2nd May, 10 <sup>th</sup> August - 24 <sup>th</sup> August
7	131	1, 2, 3, 4	1-8, 51-64, 100-113, 146-163, 182-199, , 232-245, 281-294, 332- 333, 337-365	1 <sup>st</sup> January - 8 <sup>th</sup> January, 20 <sup>th</sup> February - 5 <sup>th</sup> March, 10 <sup>th</sup> April - 23 <sup>rd</sup> April, 26 <sup>th</sup> May - 12 <sup>th</sup> June, 1 <sup>st</sup> July - 18 <sup>th</sup> July, 20 <sup>th</sup> August - 2nd September, 8 <sup>th</sup> October - 21 <sup>st</sup> October, 18 <sup>th</sup> November - 29 <sup>th</sup> November, 3 <sup>rd</sup> December - 31 <sup>st</sup> December
8	40	9	121-140, 203-222	1 <sup>st</sup> May - 20 <sup>th</sup> May, 22nd July - 10 <sup>th</sup> August
9	44	1, 2	58-65, 99-112, 231- 245, 280-286,	27 <sup>th</sup> February - 6 <sup>th</sup> March, 9 <sup>th</sup> April - 22nd April, 19 <sup>th</sup> August - 2 <sup>nd</sup> September, 7 <sup>th</sup> October - 13 <sup>th</sup> October
11	69	1,2,3	40-50, 84-96, 128-137, 208-217, 249-261, 295- 306,	9 <sup>th</sup> February - 19 <sup>th</sup> February, 25 <sup>th</sup> March - 6 <sup>th</sup> April, 8 <sup>th</sup> May -17 <sup>th</sup> May, 27 <sup>th</sup> July - 5 <sup>th</sup> August, 6 <sup>th</sup> September - 18 <sup>th</sup> September, 22 <sup>nd</sup> October - 2 <sup>nd</sup> November
13	42	9	151-192	31 May - 11 <sup>th</sup> July
14	48	1	2-3, 6-26, 319-340, 342-344	2nd January - 3 <sup>rd</sup> January, 6 <sup>th</sup> January - 26 <sup>th</sup> January, 15 <sup>th</sup> November - 6 <sup>th</sup> December, 8 December - 10 <sup>th</sup> December
15	18	8	108-116, 229-237	18 <sup>th</sup> April - 26 <sup>th</sup> April, 17 <sup>th</sup> August - 25 <sup>th</sup> August
16	54	1,2,3	41-50, 84-93, 125-131, 213-219, 252-261, 296- 305,	10 <sup>th</sup> February - 19 <sup>th</sup> February, 25 <sup>th</sup> March - 3 <sup>rd</sup> April, 5 <sup>th</sup> May - 11 <sup>th</sup> May, 1 <sup>st</sup> August - 7 <sup>th</sup> August, 9 <sup>th</sup> September - 18 <sup>th</sup> September, 23 <sup>rd</sup> October - 1 <sup>st</sup> November
19	15	9	96-103, 241-247	6 <sup>th</sup> April - 13 <sup>th</sup> April, 29 <sup>th</sup> August - 4 <sup>th</sup> September

Property No.	No. of Days 30min/day Threshold is Exceeded	Turbine(s) Producing Shadow Flicker Exceedance	Days of Year When Mitigation May be Required (Days)	Days of Year When Mitigation May be Required (Dates)*
60	25	7	126-138, 206-217	6 <sup>th</sup> May - 18 <sup>th</sup> May, 25 <sup>th</sup> July-5 <sup>th</sup> August
61	31	1,2	62-65, 100-110, 234-244, 279-283,	3 <sup>rd</sup> March-6 <sup>th</sup> March, 10 <sup>th</sup> April -20 <sup>th</sup> April, 22nd August-1 <sup>st</sup> September, 6 <sup>th</sup> October- 10 <sup>th</sup> October
62	10	1	351-360	17 <sup>th</sup> December - 26 <sup>th</sup> December
63	55	1	1-16, 327-365	1 <sup>st</sup> January -16 <sup>th</sup> January, 23 <sup>rd</sup> November - 31 <sup>st</sup> December
64	19	9	103-112, 232-240	13 <sup>th</sup> April - 22nd April, 20 <sup>th</sup> August - 28 <sup>th</sup> August
65	26	7	30-42, 303-315	30 <sup>th</sup> January - 11 <sup>th</sup> February, 30 <sup>th</sup> October - 11 <sup>th</sup> November
66	17	7	56-64, 281-288	25 <sup>th</sup> February - 5 <sup>th</sup> March, 8 <sup>th</sup> October - 15 <sup>th</sup> October
68	37	1,2,3	47-54,89-96, 128-130, 215-216, 249-259, 291-298	16 <sup>th</sup> February - 23 <sup>rd</sup> February, 30 <sup>th</sup> March - 6 <sup>th</sup> April, 8 <sup>th</sup> May - 10 <sup>th</sup> May, 3 <sup>rd</sup> August - 4 <sup>th</sup> August, 6 <sup>th</sup> September - 16 <sup>th</sup> September, 18 <sup>th</sup> October - 25 <sup>th</sup> October
69	36	1,2,3	41-47,81-88, 121-123, 222-224, , 257-264, 299-305	10 <sup>th</sup> February - 16 <sup>th</sup> February, 22nd March - 29 <sup>th</sup> March, 1 <sup>st</sup> May - 3 <sup>rd</sup> May, 10 <sup>th</sup> August - 12 <sup>th</sup> August, 14 <sup>th</sup> September - 21 <sup>st</sup> September, 26 <sup>th</sup> October - 1 <sup>st</sup> November
70	31	1,2,3	36-40, 74-81, 114-116, 229-231, 265-271, 306-310	5 <sup>th</sup> February - 9 <sup>th</sup> February, 15 <sup>th</sup> March - 22nd March, 24 <sup>th</sup> April - 26 <sup>th</sup> April, 17 <sup>th</sup> August - 19 <sup>th</sup> August, 22nd September - 28 <sup>th</sup> September, 2nd November - 6 <sup>th</sup> November
71	20	7	38-47, 298-307	7 <sup>th</sup> February - 16 <sup>th</sup> February, 25 <sup>th</sup> October - 3 <sup>rd</sup> November
72	18	7	40-48, 297-305	9 <sup>th</sup> February - 17 <sup>th</sup> February, 24 <sup>th</sup> October - 1 <sup>st</sup> November
73	16	7	122-129, 215-222	2nd May - 9 <sup>th</sup> May, 3 <sup>rd</sup> August - 10 <sup>th</sup> August
74	13	4	71-76, 269-275	12 <sup>th</sup> March - 17 <sup>th</sup> March, 26 <sup>th</sup> September - 2nd October
80	9	7	<del>116-119, 224-228</del>	<del>26<sup>th</sup> April - 29<sup>th</sup> April, 12<sup>th</sup> August - 16<sup>th</sup> August</del>
88	42	7	38-58, 286-306	7 <sup>th</sup> February - 27 <sup>th</sup> February, 13 <sup>th</sup> October - 2 <sup>nd</sup> November
89	9	4	130-133, 211-215	10 <sup>th</sup> May - 13 <sup>th</sup> May, 30 <sup>th</sup> July - 3 <sup>rd</sup> August
91	2	4	121,223	1 <sup>st</sup> May, 11 <sup>th</sup> August
92	6	4	135-137, 207-209	15 <sup>th</sup> May - 17 <sup>th</sup> May, 26 <sup>th</sup> July - 28 <sup>th</sup> July

\*Note: days of year are based on the year 2022



Property No.	Max. Annual Shadow Flicker Adjusted for Average Regional Sunshine (hrs:min:sec)	Turbine(s) Producing Shadow Flicker Exceedance	Post-mitigation Maximum Annual Shadow Flicker (hrs:mins:sec)
3	59:46:41	2,3,4,5,6,7	≤30:00:00
13	38:34:35	1, 2, 3	≤30:00:00
15	33:02:47	1,2,3	≤30:00:00
16	31:16:20	1,2,3	≤30:00:00
28	36:21:14	1,2,3,4	≤30:00:00
33	32:33:55	1,2,3	≤30:00:00
47	34:56:27	1,2,3,4,	≤30:00:00

clarification, the shadow flicker assessment results, including the modelling presented within Chapter 5 of the EIAR are accurate and the above do not present any changes in the residual impact assessment. The formatting error which gave rise to the incorrect identification of participating parties in Table 5-9 and subsequent updates to Table 5-10 and Table 5-11 has been rectified and updated tables are presented in this briefing note. The *Assessment of Effects and Associated Mitigation Measures* (EIAR Chapter 5, Section 5.9.3.10) remains the same, as does the findings of the shadow flicker assessment.