



Parc Ynni Calon y Gwynt

ENVIRONMENTAL STATEMENT

Appendix 11N: Cumulative Noise Prediction Assumptions





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1 CUMULATIVE NOISE PREDICTION ASSUMPTIONS

1.1 MYNYDD CLOGAU

1.1.1. Mynydd Clogau is an existing 17 turbine development (App. No: M/1998/0669), located approximately 1.5 km to the north-east of the Proposed Development. Noise predictions for this wind farm have been based on a 43 m hub Vestas V52 850 kW machine, as this is the turbine model installed on-site. Noise predictions here are based upon specified sound power levels provided by the manufacturer¹. A 2 dB uncertainty factor has been added to the specified levels.

1.1.2. The corresponding source noise levels used in the assessments are shown in **Table 11N 1** below.

Table 11N 1 – Assumed Sound Power Level for Mynydd Clogau: V52-850kW

Standardised 10m Wind Speed (m/s)	L _{WA}	Octave Band Centre Frequency (Hz)							
		63	125	250	500	1k	2k	4k	8k
3	96.0	78.5	84.2	88.6	90.6	90.1	87.9	81.9	64.8
4	96.6	79.1	84.8	89.2	91.2	90.7	88.5	82.5	65.4
5	99.2	81.7	87.4	91.8	93.8	93.3	91.1	85.1	68.0
6	103.4	85.9	91.6	96.0	98.0	97.5	95.3	89.3	72.2
7	105.9	88.4	94.1	98.5	100.5	100.0	97.8	91.8	74.7
8	106.4	88.9	94.6	99.0	101.0	100.5	98.3	92.3	75.2
9	106.1	88.6	94.3	98.7	100.7	100.2	98.0	92.0	74.9
10	105.3	87.8	93.5	97.9	99.9	99.4	97.2	91.2	74.1
11	104.7	87.2	92.9	97.3	99.3	98.8	96.6	90.6	73.5
12	104.5	87.0	92.7	97.1	99.1	98.6	96.4	90.4	73.3

1.1.3. The turbine co-ordinates used in the predictions for Mynydd Clogau are shown in **Table 11N 2** below. These are the as-built co-ordinates.

Table 11N 2 – Mynydd Clogau Turbine Locations

Turbine	Easting	Northing
T1	303532	299658
T2	303314	299535

¹ Vestas Wind Systems A/S, 2008. "General Specification Vestas V52-850 kW". Document no.: 946506 V10, Dated 01/10/08

Turbine	Easting	Northing
T3	303091	299453
T4	303554	299421
T5	302929	299333
T6	303228	299271
T7	303637	299208
T8	302921	299178
T9	303423	299170
T10	302536	299120
T11	303228	299113
T12	302932	298998
T13	302601	298971
T14	302399	298906
T15	302705	298853
T16	302446	298756
T17	302221	298688

1.1.4. In regards noise levels at receptor locations, Planning Condition 17 states:

"The wind turbine noise level, measured in accordance with conditions 13 and 14, shall not at any time exceed 35 dB(A) expressed as LA90,10 minutes at wind speeds not exceeding 10 metres per second measured at a height of 10 metres above ground level at all houses existing at the time the wind farm is first commissioned, except Ty Uchaf where the wind turbine noise level shall not exceed 35 dB(A) up to wind speed of 6 metres per second and thereafter shall not exceed 37.5dB(A) up to 10 metres per second."

1.1.5. For the purposes of this assessment, the Mynydd Clogau component has been assumed to not be greater than the above noise limit at each respective receptor location.

1.2 ESGAIR CWMOWEN

1.2.1. Esgair Cwmowen is a proposed 11 turbine development (App. No: P/2010/0890), located to the north of the Proposed Development. Noise predictions for the Esgair Cwmowen wind farm have been based on a 69 m hub Vestas V112 3.45 MW machine. This was the turbine model proposed in the noise chapter of the application. Noise predictions here are based upon specified sound power

levels provided by the manufacturer². A 2 dB uncertainty factor has been added to the specified levels. The noise chapter stated several modes of operation. It was stated that all turbines would be fitted with serrated trailing edges, and would be operated in Sound Optimisation Mode 3 (SO3) for wind speeds of 7 m/s and above. The corresponding source noise levels used in the assessments are shown in **Table 11N 3** below.

Table 11N 3 – Assumed Sound Power Level for Esgair Cwmowen (Mode 0 / Mode SO3)

Standardised 10m Wind Speed (m/s)	L _{WA}	Octave Band Centre Frequency (Hz)							
		63	125	250	500	1k	2k	4k	8k
3	95.5	76.1	85.9	87.3	90.0	89.7	86.9	81.3	64.8
4	97.2	77.8	87.6	89.0	91.7	91.4	88.6	83.0	66.5
5	101.3	81.9	91.7	93.1	95.8	95.5	92.7	87.1	70.6
6	105.1	85.7	95.5	96.9	99.6	99.3	96.5	90.9	74.4
7	103.0	83.6	93.4	94.8	97.5	97.2	94.4	88.8	72.3
8	103.0	83.6	93.4	94.8	97.5	97.2	94.4	88.8	72.3
9	103.0	83.6	93.4	94.8	97.5	97.2	94.4	88.8	72.3
10	103.0	83.6	93.4	94.8	97.5	97.2	94.4	88.8	72.3
11	103.0	83.6	93.4	94.8	97.5	97.2	94.4	88.8	72.3
12	103.0	83.6	93.4	94.8	97.5	97.2	94.4	88.8	72.3

1.2.2. The turbine co-ordinates used in the predictions for Esgair Cwmowen are shown in **Table 11N 4** below.

Table 11N 4 – Esgair Cwmowen Turbine Locations

Turbine	Easting	Northing
T2	300059	301155
T5	299864	300826
T6	300235	300810
T8	299257	300264
T9	299616	300391
T10	299927	300327

² Vestas Wind Systems A/S, 2016. "Performance Specification, V112-3.45 MW 50/60 Hz". Document no.: 0053-3710 V06. Dated 20/10/16

Turbine	Easting	Northing
T11	300169	300556
T12	300553	300711
T13	299521	300083
T20	299756	299927
T22	299924	299791

- 1.2.3. The Esgair Cwmowen noise chapter also states additional mitigation, that is dependent on wind speed and wind direction. This is in the form of pausing T8 and T13 in the 7 – 9 m/s wind speed range for particular wind directions.
- 1.2.4. It is not explicitly stated what these directions are, but is described as being when receptors R10, R13 or R14 are downwind of the Esgair Cwmowen development. R10 is the receptor Lluestuchaf. Lluestuchaf is part of the Parc Ynni Calon y Gwynt development, and will not be a residential dwelling in the event of consent. Therefore for the purposes of these cumulative assessments, the pauses for the northerly wind directions where that location is downwind has not been assumed. For the receptors R13 (known here as H46), and R14 (known here as H44), downwind directions have been assumed as 45, 90 and 135°.
- 1.2.5. The assumed operational modes for T8 and T13 are detailed below in **Table 11N 5 – Table 11N 6**. The other turbines are assumed to be operating in the same configuration (i.e. Mode 0 for 3 – 6 m/s, and in Mode SO3 for 7 – 12 m/s), but for all directions, as detailed in **Table 11N 7**.

Where:

- 0: Mode 0
- 3: Mode SO3
- 9: Paused

Table 11N 5 – Operational Modes, Esgair Cwmowen, T8

Wind Direction Sector (degrees)	Standardised 10m Wind Speed (m/s)									
	3	4	5	6	7	8	9	10	11	12
0	0	0	0	0	3	3	3	3	3	3
45	0	0	0	0	9	9	9	3	3	3
90	0	0	0	0	9	9	9	3	3	3
135	0	0	0	0	9	9	9	3	3	3
180	0	0	0	0	3	3	3	3	3	3
225	0	0	0	0	3	3	3	3	3	3

Wind Direction Sector (degrees)	Standardised 10m Wind Speed (m/s)									
	3	4	5	6	7	8	9	10	11	12
270	0	0	0	0	3	3	3	3	3	3
315	0	0	0	0	3	3	3	3	3	3

Table 11N 6 – Operational Modes, Esgair Cwmowen, T13

Wind Direction Sector (degrees)	Standardised 10m Wind Speed (m/s)									
	3	4	5	6	7	8	9	10	11	12
0	0	0	0	0	3	3	3	3	3	3
45	0	0	0	0	9	9	3	3	3	3
90	0	0	0	0	9	9	3	3	3	3
135	0	0	0	0	9	9	3	3	3	3
180	0	0	0	0	3	3	3	3	3	3
225	0	0	0	0	3	3	3	3	3	3
270	0	0	0	0	3	3	3	3	3	3
315	0	0	0	0	3	3	3	3	3	3

Table 11N 7 – Operational Modes, Esgair Cwmowen, Other Turbines

Wind Direction Sector (degrees)	Standardised 10m Wind Speed (m/s)									
	3	4	5	6	7	8	9	10	11	12
0	0	0	0	0	3	3	3	3	3	3
45	0	0	0	0	3	3	3	3	3	3
90	0	0	0	0	3	3	3	3	3	3
135	0	0	0	0	3	3	3	3	3	3
180	0	0	0	0	3	3	3	3	3	3
225	0	0	0	0	3	3	3	3	3	3
270	0	0	0	0	3	3	3	3	3	3
315	0	0	0	0	3	3	3	3	3	3

1.3 TIRGWYNT

- 1.3.1. Tirgwynt is an existing 12 turbine wind farm (App. No.: P/2013/0026) located approximately 1.5 km to the north-west of the Proposed Development. Noise predictions for this wind farm have been based on a 68.5 m hub MM92 2 MW machine, as this is the turbine model installed on-site. Noise predictions here are based upon specified sound power levels provided by the manufacturer³. A 2 dB uncertainty factor has been added to the specified levels. The corresponding source noise levels used in the assessments are shown in **Table 11N 8** below.

Table 11N 8 – Assumed Sound Power Level for Tirgwynt: MM92

Standardised 10m Wind Speed (m/s)	L _{WA}	Octave Band Centre Frequency (Hz)							
		63	125	250	500	1k	2k	4k	8k
3	91.4	74.9	78.1	83.8	86.1	86.7	81.6	75.5	67.4
4	97.3	80.8	84.0	89.7	92.0	92.6	87.5	81.4	73.3
5	103.2	86.7	89.9	95.6	97.9	98.5	93.4	87.3	79.2
6	105.1	88.6	91.8	97.5	99.8	100.4	95.3	89.2	81.1
7	106.2	89.7	92.9	98.6	100.9	101.5	96.4	90.3	82.2
8	106.2	89.7	92.9	98.6	100.9	101.5	96.4	90.3	82.2
9	106.2	89.7	92.9	98.6	100.9	101.5	96.4	90.3	82.2
10	106.2	89.7	92.9	98.6	100.9	101.5	96.4	90.3	82.2
11	106.2	89.7	92.9	98.6	100.9	101.5	96.4	90.3	82.2
12	106.2	89.7	92.9	98.6	100.9	101.5	96.4	90.3	82.2

- 1.3.2. The turbine co-ordinates used in the predictions for Tirgwynt are shown in **Table 11N 9** below. These are thought to be the as-built co-ordinates.

Table 11N 9 – Tirgwynt Turbine Locations

Turbine	Easting	Northing
T1	299689	300964
T2	299470	301042
T3	299308	301357
T4	299246	300626

³ REpower Systems SE, 2011. "Power Curve & Sound Power Level REpower MM92". Document no.: SD-2.9-WT.PC.03-B-D-EN, Dated 13/07/11.

Turbine	Easting	Northing
T5	299131	300860
T6	299044	300045
T7	299011	301432
T8	298894	301632
T9	298844	300367
T10	298785	302067
T11	298541	302559
T12	298456	302261

1.4 LLYN LORT

- 1.4.1. Llyn Lort is proposed 23 turbine wind farm (DNS Ref. No: CAS-02362-P3S4H4), located approximately 3 km to the north of the Proposed Development. Noise predictions for this wind farm have been based on a 138.5 m hub Nordex N163 6.X MW machine. A configuration with Serrated Trailing Edges (STE) has been assumed. This was the turbine model proposed in the noise chapter of the application. Noise predictions here are based upon specified sound power levels provided by the manufacturer⁴. A 2 dB uncertainty factor has been added to the specified levels.
- 1.4.2. There is a proposed operational strategy for some of the turbines, that is dependent on wind speed and wind direction. For the turbines running in the unrestricted Mode 1a, the corresponding source noise levels used in the assessments, are shown in **Table 11N 10** below.

Table 11N 10 – Assumed Sound Power Level for Llyn Lort: N163 6.X MW STE, Mode 1a (138 m hub)

Standardised 10m Wind Speed (m/s)	L _{WA}	Octave Band Centre Frequency (Hz)							
		63	125	250	500	1k	2k	4k	8k
3	97.8	79.0	86.6	88.7	89.9	91.7	92.4	86.8	72.4
4	99.8	81.0	88.6	90.7	91.9	93.7	94.4	88.8	74.4
5	104.6	85.8	93.4	95.5	96.7	98.5	99.2	93.6	79.2
6	109.0	90.2	97.8	99.9	101.1	102.9	103.6	98.0	83.6
7	109.2	90.4	98.0	100.1	101.3	103.1	103.8	98.2	83.8
8	109.2	90.4	98.0	100.1	101.3	103.1	103.8	98.2	83.8

⁴ Nordex Energy SE & Co. KG (2024). Sales document. Octave sound power levels. Nordex N163/6.X VPC. Document: F008_277a_A14_EN, Revision 05, Dated 03 May 2024.

Standardised 10m Wind Speed (m/s)	L _{WA}	Octave Band Centre Frequency (Hz)							
		63	125	250	500	1k	2k	4k	8k
9	109.2	90.4	98.0	100.1	101.3	103.1	103.8	98.2	83.8
10	109.2	90.4	98.0	100.1	101.3	103.1	103.8	98.2	83.8
11	109.2	90.4	98.0	100.1	101.3	103.1	103.8	98.2	83.8
12	109.2	90.4	98.0	100.1	101.3	103.1	103.8	98.2	83.8

- 1.4.3. The turbine co-ordinates used in the predictions for Llyn Lort are shown in **Table 11N 11** below. These are the as-built co-ordinates.

Table 11N 11 – Llyn Lort Turbine Locations

Turbine	Easting	Northing
T1	298434	302996
T2	298426	303603
T3	299216	304025
T4	298852	303361
T5	298935	302813
T6	299231	302106
T7	299451	302605
T8	299392	303260
T9	299794	303616
T10	299853	303029
T11	300339	302875
T12	300768	302505
T13	300558	303393
T14	300541	303796
T15	300991	304207
T16	300765	304570
T17	301664	304775

Turbine	Easting	Northing
T18	302405	305317
T19	303048	305692
T20	303482	305368
T21	303633	305959
T22	302852	306058
T23	302769	306503

- 1.4.4. The assumed operational modes for the restricted Llyn Lort turbines (T1, T5, T6, T7, T10, T11, T12, T16) are detailed below in **Table 11N 12 – Table 11N 20** below. The other turbines are assumed to be operating unrestricted in Mode 1a.

Table 11N 12 – Assumed Sound Power Levels of Operational Modes, Llyn Lort

Operational Mode	Standardised 10m Wind Speed (m/s)									
	3	4	5	6	7	8	9	10	11	12
Mode 1a	97.8	99.8	104.6	109.0	109.2	109.2	109.2	109.2	109.2	109.2
Mode 2a	97.8	99.8	104.6	108.8	108.8	108.8	108.8	108.8	108.8	108.8
Mode 3a/3b	97.8	99.8	104.6	108.3	108.3	108.3	108.3	108.3	108.3	108.3
Mode 9a	97.8	99.8	103.8	103.8	103.8	103.8	103.8	103.8	103.8	103.8
Mode 10a	97.8	99.8	103.3	103.3	103.3	103.3	103.3	103.3	103.3	103.3

Where:

- 1: Mode 1a
- 2: Mode 2a
- 3: Mode 3a/3b
- 9: Mode 9a
- 10: Mode 10a

Table 11N 13 – Operational Modes, Llyn Lort, T1

Wind Direction Sector (degrees)	Standardised 10m Wind Speed (m/s)									
	3	4	5	6	7	8	9	10	11	12
0	1	1	1	1	1	1	1	1	1	1
45	1	1	1	9	1	1	1	1	1	1

Wind Direction Sector (degrees)	Standardised 10m Wind Speed (m/s)									
	3	4	5	6	7	8	9	10	11	12
90	1	1	1	9	1	1	1	1	1	1
135	1	1	1	9	1	1	1	1	1	1
180	1	1	1	1	1	1	1	1	1	1
225	1	1	1	1	1	1	1	1	1	1
270	1	1	1	1	1	1	1	1	1	1
315	1	1	1	1	1	1	1	1	1	1

Table 11N 14 – Operational Modes, Llyn Lort, T5

Wind Direction Sector (degrees)	Standardised 10m Wind Speed (m/s)									
	3	4	5	6	7	8	9	10	11	12
0	1	1	1	1	1	1	1	1	1	1
45	1	1	1	9	1	1	1	1	1	1
90	1	1	1	9	1	1	1	1	1	1
135	1	1	1	9	1	1	1	1	1	1
180	1	1	1	1	1	1	1	1	1	1
225	1	1	1	1	1	1	1	1	1	1
270	1	1	1	1	1	1	1	1	1	1
315	1	1	1	1	1	1	1	1	1	1

Table 11N 15 – Operational Modes, Llyn Lort, T6

Wind Direction Sector (degrees)	Standardised 10m Wind Speed (m/s)									
	3	4	5	6	7	8	9	10	11	12
0	1	1	1	1	1	1	1	1	1	1
45	1	1	1	9	1	1	1	1	1	1
90	1	1	1	9	1	1	1	1	1	1
135	1	1	1	9	1	1	1	1	1	1
180	1	1	1	9	1	1	1	1	1	1
225	1	1	1	9	3	1	1	1	1	1
270	1	1	1	9	9	1	1	1	1	1

Wind Direction Sector (degrees)	Standardised 10m Wind Speed (m/s)									
	3	4	5	6	7	8	9	10	11	12
315	1	1	1	9	1	1	1	1	1	1

Table 11N 16 – Operational Modes, Llyn Lort, T7

Wind Direction Sector (degrees)	Standardised 10m Wind Speed (m/s)									
	3	4	5	6	7	8	9	10	11	12
0	1	1	1	1	1	1	1	1	1	1
45	1	1	1	1	1	1	1	1	1	1
90	1	1	1	1	1	1	1	1	1	1
135	1	1	1	1	1	1	1	1	1	1
180	1	1	1	1	1	1	1	1	1	1
225	1	1	1	1	1	1	1	1	1	1
270	1	1	1	9	1	1	1	1	1	1
315	1	1	1	9	1	1	1	1	1	1

Table 11N 17 – Operational Modes, Llyn Lort, T10

Wind Direction Sector (degrees)	Standardised 10m Wind Speed (m/s)									
	3	4	5	6	7	8	9	10	11	12
0	1	1	1	1	1	1	1	1	1	1
45	1	1	1	1	1	1	1	1	1	1
90	1	1	1	1	1	1	1	1	1	1
135	1	1	1	1	1	1	1	1	1	1
180	1	1	1	1	1	1	1	1	1	1
225	1	1	1	1	1	1	1	1	1	1
270	1	1	1	9	9	1	1	1	1	1
315	1	1	1	9	1	1	1	1	1	1

Table 11N 18 – Operational Modes, Llyn Lort, T11

Wind Direction Sector (degrees)	Standardised 10m Wind Speed (m/s)									
	3	4	5	6	7	8	9	10	11	12
0	1	1	1	1	1	1	1	1	1	1
45	1	1	1	1	1	1	1	1	1	1

Wind Direction Sector (degrees)	Standardised 10m Wind Speed (m/s)									
	3	4	5	6	7	8	9	10	11	12
90	1	1	1	1	1	1	1	1	1	1
135	1	1	1	1	1	1	1	1	1	1
180	1	1	1	9	1	1	1	1	1	1
225	1	1	1	9	3	1	1	1	1	1
270	1	1	1	9	9	1	1	1	1	1
315	1	1	1	9	9	1	1	1	1	1

Table 11N 19 – Operational Modes, Llyn Lort, T12

Wind Direction Sector (degrees)	Standardised 10m Wind Speed (m/s)									
	3	4	5	6	7	8	9	10	11	12
0	1	1	1	3	1	1	1	1	1	1
45	1	1	1	1	1	1	1	1	1	1
90	1	1	1	1	1	1	1	1	1	1
135	1	1	1	1	1	1	1	1	1	1
180	1	1	1	9	3	1	1	1	1	1
225	1	1	1	9	9	1	1	1	1	1
270	1	1	1	10	9	1	1	1	1	1
315	1	1	1	9	9	1	1	1	1	1

Table 11N 20 – Operational Modes, Llyn Lort, T16

Wind Direction Sector (degrees)	Standardised 10m Wind Speed (m/s)									
	3	4	5	6	7	8	9	10	11	12
0	1	1	1	1	1	1	1	1	1	1
45	1	1	1	1	1	1	1	1	1	1
90	1	1	1	1	1	1	1	1	1	1
135	1	1	1	1	1	1	1	1	1	1
180	1	1	1	3	1	1	1	1	1	1
225	1	1	1	3	1	1	1	1	1	1

Wind Direction Sector (degrees)	Standardised 10m Wind Speed (m/s)									
	3	4	5	6	7	8	9	10	11	12
270	1	1	1	1	1	1	1	1	1	1
315	1	1	1	1	1	1	1	1	1	1

1.5 SINGLE TURBINE A

- 1.5.1. Single Turbine A (App. Ref: 22/2175/FUL) is a single turbine, located approximately 3.5 km to the north. This has been granted planning permission, and is a replacement for the previous turbine unit at the same approximate location. Noise predictions for Single Turbine A have been based upon the turbine model proposed, a 53m hub V47 660/200 kW wind turbine. Noise predictions here are based upon the sound power levels stated in the noise report⁵ supporting the planning application. The stated uncertainty within the noise report, of 2 dB, has been included. The corresponding source noise levels used in the assessments are shown in **Table 11N 21** below.

Table 11N 21 – Assumed Sound Power Level for Single Turbine A: V47

Standardised 10m Wind Speed (m/s)	L _{WA}	Octave Band Centre Frequency (Hz)							
		63	125	250	500	1k	2k	4k	8k
3	102.6	79.9	87.8	91.5	96.9	98.7	94.6	89.6	70.9
4	103.1	80.4	88.3	92.0	97.4	99.2	95.1	90.1	71.4
5	103.6	80.9	88.8	92.5	97.9	99.7	95.6	90.6	71.9
6	104.0	81.3	89.2	92.9	98.3	100.1	96.0	91.0	72.3
7	104.5	81.8	89.7	93.4	98.8	100.6	96.5	91.5	72.8
8	105.0	82.3	90.2	93.9	99.3	101.1	97.0	92.0	73.3
9	105.4	82.7	90.6	94.3	99.7	101.5	97.4	92.4	73.7
10	105.8	83.1	91.0	94.7	100.1	101.9	97.8	92.8	74.1
11	106.2	83.5	91.4	95.1	100.5	102.3	98.2	93.2	74.5
12	106.6	83.9	91.8	95.5	100.9	102.7	98.6	93.6	74.9

- 1.5.2. The turbine co-ordinates used in the predictions for Single Turbine A are shown in **Table 11N 22** below.

⁵ Matrix Acoustic Design Consultants, 2023. "Land near Nant Wylt. Repowering of existing wind turbine (replacement). Noise Assessment". Report M2242/R01, dated 06/01/23.

Table 11N 22 – Single Turbine A

Turbine	Easting	Northing
T1	302203	302611

1.6 MYNYDD LLUEST Y GRAIG

- 1.6.1. Mynydd Lluest y Graig is a proposed 16 turbine development, that is in its scoping stage, located approximately 5 km to the north of the Proposed Development. Given its distance away, this site is likely to be relatively insignificant to the cumulative noise impact at receptor locations near the Parc Ynni Calon y Gwynt development.
- 1.6.2. Noise predictions for this wind farm have been based on a 115 m hub Siemens-Gamesa SG 6.0-170 machine. This is based upon an assumption of a generic turbine model that would fall into the proposed dimensions suggested in the scoping report. That is, a hub height in the region of 114 m, a rotor diameter of up to 175 m, and a power rating of up to 7.5 MW. Noise predictions here are based upon specified sound power levels provided by the manufacturer⁶. A 2 dB uncertainty factor has been added to the specified levels. The corresponding source noise levels used in the assessments are shown in **Table 11N 23** below.

Table 11N 23 – Assumed Sound Power Level for Mynydd Lluest y Graig – SG 6.0-170

Standardised 10m Wind Speed (m/s)	L _{WA}	Octave Band Centre Frequency (Hz)							
		63	125	250	500	1k	2k	4k	8k
3	95.0	76.5	83.3	85.5	86.5	89.7	89.4	84.9	73.1
4	99.8	81.3	88.1	90.3	91.3	94.5	94.2	89.7	77.9
5	104.7	86.2	93.0	95.2	96.2	99.4	99.1	94.6	82.8
6	107.7	89.2	96.0	98.2	99.2	102.4	102.1	97.6	85.8
7	108.0	89.5	96.3	98.5	99.5	102.7	102.4	97.9	86.1
8	108.0	89.5	96.3	98.5	99.5	102.7	102.4	97.9	86.1
9	108.0	89.5	96.3	98.5	99.5	102.7	102.4	97.9	86.1
10	108.0	89.5	96.3	98.5	99.5	102.7	102.4	97.9	86.1
11	108.0	89.5	96.3	98.5	99.5	102.7	102.4	97.9	86.1
12	108.0	89.5	96.3	98.5	99.5	102.7	102.4	97.9	86.1

- 1.6.3. The turbine co-ordinates used in the predictions for Mynydd Lluest y Graig are shown in **Table 11N 24** below. There are no turbine coordinates yet proposed for this development. The assumptions

⁶ Siemens Gamesa Renewable Energy, 2020. "Standard Acoustic Emission, Rev. 0, AM 0 – AM-6, N1-N7, SG 6.0-170. Document No.: D2359593-002, dated 27 February 2020.

here are based on an approximate turbine layout that fits within the stated development boundary of the planning application.

Table 11N 24 – Mynydd Lluest y Graig Turbine Locations

Turbine	Easting	Northing
T1	296182	302361
T2	296005	302839
T3	295820	303362
T4	296858	304131
T5	297490	303632
T6	297696	303143
T7	297849	305154
T8	298291	304675
T9	298240	304094
T10	299194	304522
T11	299588	304128
T12	300381	304446
T13	300357	305241
T14	301216	305101
T15	301239	305666
T16	301697	306279
T17	301882	306887
T18	301876	307413



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