

A3.3.41 NP RESPONSE TO NRW REQUEST FOR ILLUSTRATIVE EXAMPLES OF AVIATION LIGHTING EFFECTS

Rafe Osborne

Subject: RE: Y Bryn Wind Farm - Aviation Lighting scheme, VPs and ZTVs NRW:01273097

From: Lucy Freeman <[REDACTED]>
Sent: 29 June 2022 14:55
To: SW Planning <[REDACTED]>
Cc: Trevor Hunter <[REDACTED]>; Ffion Edwards <[REDACTED]>; Rafe Osborne <[REDACTED]>; Graeme Glencorse <[REDACTED]>; Malcolm Spaven <[REDACTED]>
Subject: RE: Y Bryn Wind Farm - Aviation Lighting scheme, VPs and ZTVs NRW:01273097

FAO Lisa Jones

Hi Lisa,

Apologies for the delay in responding.
I am working with Rafe on Y Bryn Wind Farm.
As requested please find example; Crystal Rig IV Wind Farm PLI documents saved to sharefile, linked below:
<https://naturalpower.sharefile.com/f/fo47d7a4-eff8-464e-bed4-a3d3fdc58552>
I have given access to swplanning@cyfoethnaturiolcymru.gov.uk if you need me to add your personal email address please send this on and I can add you to the folder.
Included in the folder are the applicants closing submissions and core documents; 6. Aviation Lighting 6.1-6.10; 10. Supporting Documents 10.1 -10.4 and 12. Inquiry Reports 12.1 – 12.3.
Other examples can be found on the DPEA website for [Clauchrie](#) and [Clashgour](#).

Many thanks,
Lucy

A3.3.42 NPTCBC AVIATION LIGHTING RESPONSE – MAY 2022

From: Steven Jenkins <[REDACTED]>
Sent: 23 May 2022 16:11
To: Trevor Hunter <[REDACTED]>
Cc: 'Rhodri Davies' <[REDACTED]>
Subject: FW: Y Bryn Windfarm - Aviation lighting response

Hi Trevor

Simon White has read the letter from Natural Power's Graeme Glencorse dated 11 February and looked at the pdf showing Y Bryn aviation lighting intensity ZTV.

He has advised that based on the assurance that aviation lighting has negligible visibility/effect below 4 degrees from the horizontal and therefore is unlikely to affect Maesteg and Bryn and associated settlements, the approach to choosing the representative viewpoints from those selected for the LVIA generally seems reasonable with one caveat. The one additional viewpoint he had suggested in his LVIA scoping response which Soltys Brewster did not take forward, his viewpoint G at Croeserw, appears to be an elevated location likely to be affected by lighting at a closer range than the Bettws and Cwmafan viewpoints. He believes that the assessment should address the effects on this area at least in text, differentiating it from the effects on Caerau and Maesteg to the south.

I hope this is of assistance

Kind regards

Steven Jenkins

Senior Planning Officer – Development Management / Uwch Swyddog Cynllunio - Rheoli Datblygu
Neath Port Talbot County Borough Council/ Cyngor Bwrdeistref Sirol Castell-nedd Port Talbot Tel/ Ffôn: [REDACTED]

We welcome correspondence in Welsh and will deal with Welsh and English correspondence to the same standards and timescales.
Croesewir gohebiaeth yn y Gymraeg a byddwn yn ymdrin â gohebiaeth Gymraeg a Saesneg i'r un safonau ac amserlenni

If you would like to use Welsh when dealing with the Council please click [here](#)
Os hoffech ddefnyddio'r Gymraeg wrth ddelio â'r Cyngor os gwelwch yn dda cliciwch [yma](#)

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A3.3.43 NOISE LIMITS NOTE TO LOCAL PLANNING AUTHORITIES (LPAS) - APRIL 2022

Y Bryn Wind Farm

Appropriate Noise Limits

for Natural Power Consultants / Coriolis Energy

Malcolm Hayes, Hayes McKenzie Partnership Ltd

3470_Note02_EXT1, 06 April 2022

1. INTRODUCTION

- 1.1 Y Bryn Wind Farm (DNS/3264571; NPTCBC App. Ref: P/21/34/DNS; BCBC App. Ref: P2021/0057) is a proposed onshore wind energy development. This note presents a discussion with respect to appropriate noise limits for adoption when assessing the potential noise impacts associated with the development.

2. ETSU-R-97 NOISE LIMITS

ETSU-R-97 Noise Limit

- 2.1 ETSU-R-97⁽¹⁾ sets out noise limits which are considered to provide a balance between the control of noise from a wind farm and that which is received by a neighbour to a wind farm. This takes the form of a daytime (Amenity Hours) Noise Limit and a Night-time Noise Limit.
- 2.2 The range presented within ETSU-R-97 is as follows:
- Daytime (Amenity Hours): 35 – 40 dB L_{A90} or Background + 5 dB, whichever is the greater;
 - Night-time: 43 dB L_{A90} or Background + 5 dB, whichever is the greater.
 - Associated Properties to the proposed development may be subject to a higher limit of 45 dB L_{A90} or Background + 5 dB, whichever is the greater.
- 2.3 In the event that there are neighbouring wind farms then the levels should be considered cumulative to ensure that creeping sound levels from different wind farms do not result

⁽¹⁾ ETSU-R-97. "The Assessment and Rating of Noise from Wind Farms", ETSU for the Department of Trade and Industry (1996).

in levels which are significantly in excess of the proposed design values within ETSU-R-97.

3. COMPLIANCE WITH ETSU-R-97 NOISE LIMITS: Y BRYN IN ISOLATION

- 3.1 Predictions of operational noise have been undertaken based upon the layout proposed by the Developer. These predictions have been undertaken in accordance with the Institute of Acoustics (IoA) Good Practice Guide⁽²⁾ (GPG) and include the following:

- a 2 dB Uncertainty factor to the SWL (sound power level) for the candidate turbine;
- The adoption of the SWL for a Nordex N163 STE (serrated trailing edge) 5.7 MW which is predicted to result in the highest sound levels at neighbouring noise sensitive receptors within the range of turbines currently under consideration;
- Inclusion of the varied hub heights proposed for the site;
- Inclusion of Concave Valley Corrections (which will increase predicted levels by 3 dB where determined to occur);
- Inclusion of barrier effects with a maximum attenuation as set out within the IoA GPG;
- Assumed mixed ground condition: $G = 0.5$
- Assumed Temperature and Humidity of 10°C and 70% RH (relative humidity);
- Directivity Model as set out in IoA GPG for complex ground.

- 3.2 On the basis of these assumptions we have calculated that two clusters of properties will exceed a level of 40 dB L_{A90} when Y Bryn is considered on its own. These are Hafod Farm (280160 189850) and Highland Heights (283345 190160).

⁽²⁾ "A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise", Institute of Acoustics, 2013.

- 3.3 Hafod Farm represents 3 receptor locations which are clustered around the long barn which is located to the east of the group of properties. The location is to the west of the southern cluster of wind turbines and is upwind of the wind farm for the dominant or prevailing wind direction.
- 3.4 Highland Heights (Penymynydd) represents 1 or 2 receptor locations. Highland Heights itself is an occupied dwelling house but the property to the east (Blaen-cwmcerwyn) is, from external examination, unlivable whilst probably suitable to live in without the need for planning permission. Both these locations are located to the east of the southern cluster and therefore downwind of the site for the prevailing wind direction.

Predictions for Hafod Farm

- 3.5 Table 1 below presents the predicted sound levels for Hafod Farm for the operation of Y Bryn Wind Farm in isolation. The table highlights the wind speed and wind direction conditions where it is predicted that the operational sound levels of the wind turbines may exceed the absolute sound level of 40 dB LA90.

Table 1: Predicted Sound Levels at Hafod Farm: Y Bryn in Isolation: dB LA90								
	Standardised Wind Speed at 10m agl: m/s							
Sector	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0
0	29.8	34.3	38.1	38.3	38.4	38.4	38.4	38.4
15	31.0	35.5	39.4	39.6	39.7	39.7	39.7	39.7
30	31.9	36.4	40.3	40.5	40.6	40.6	40.6	40.6
45	31.9	36.5	40.3	40.5	40.7	40.7	40.7	40.7
60	32.4	36.9	40.8	41.0	41.2	41.2	41.2	41.2
75	32.4	36.9	40.8	41.0	41.2	41.2	41.2	41.2
90	32.4	36.9	40.8	41.0	41.2	41.2	41.2	41.2
105	32.4	36.9	40.8	41.0	41.2	41.2	41.2	41.2
120	32.4	36.9	40.8	41.0	41.2	41.2	41.2	41.2
135	32.4	36.9	40.8	41.0	41.2	41.2	41.2	41.2
150	32.3	36.9	40.8	41.0	41.1	41.1	41.1	41.1
165	32.3	36.8	40.7	40.9	41.0	41.0	41.0	41.0
180	31.5	36.1	39.9	40.1	40.3	40.3	40.3	40.3
195	31.3	35.8	39.7	39.9	40.1	40.1	40.1	40.1
210	30.8	35.2	39.2	39.4	39.5	39.5	39.5	39.5
225	29.7	34.1	38.1	38.3	38.5	38.5	38.5	38.5
240	29.0	33.4	37.4	37.6	37.7	37.7	37.7	37.7
255	28.2	32.5	36.5	36.7	36.9	36.9	36.9	36.9
270	27.8	32.1	36.0	36.2	36.4	36.4	36.4	36.4

Table 1: Predicted Sound Levels at Hafod Farm: Y Bryn in Isolation: dB LA90								
	Standardised Wind Speed at 10m agl: m/s							
Sector	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0
285	27.6	31.9	35.9	36.1	36.2	36.2	36.2	36.2
300	27.8	32.1	36.0	36.3	36.4	36.4	36.4	36.4
315	28.2	32.6	36.5	36.7	36.9	36.9	36.9	36.9
330	29.0	33.4	37.3	37.5	37.6	37.6	37.6	37.6
345	29.8	34.2	38.1	38.3	38.4	38.4	38.4	38.4

- 3.6 At no time is it predicted that operational sound from Y Bryn Wind Farm in isolation will exceed the ETSU-R-97 Night-time Noise Limit of 43 dB LA90.

Predictions for Highland Heights

- 3.7 Table 2 below presents the predicted sound levels for Highland Heights for the operation of Y Bryn Wind Farm in isolation. Again, the table highlights the wind speed and wind direction conditions where it is predicted that the operational sound levels of the wind turbines may exceed the absolute sound level of 40 dB LA90.

Table 2: Predicted Sound Levels at Highland Heights: Y Bryn in Isolation: dB LA90								
	Standardised Wind Speed at 10m agl: m/s							
Sector	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0
0	32.4	37.0	40.7	40.7	40.9	40.9	40.9	40.9
15	32.2	36.8	40.4	40.5	40.6	40.6	40.6	40.6
30	31.5	36.0	39.6	39.7	39.8	39.8	39.8	39.8
45	31.5	36.1	39.7	39.8	39.9	39.9	39.9	39.9
60	31.2	35.7	39.4	39.4	39.6	39.6	39.6	39.6
75	31.1	35.6	39.2	39.3	39.4	39.4	39.4	39.4
90	31.2	35.7	39.4	39.5	39.6	39.6	39.6	39.6
105	31.4	35.9	39.5	39.6	39.8	39.8	39.8	39.8
120	31.6	36.1	39.8	39.9	40.0	40.0	40.0	40.0
135	32.4	37.0	40.6	40.7	40.8	40.8	40.8	40.8
150	32.5	37.1	40.8	40.9	41.0	41.0	41.0	41.0
165	33.0	37.6	41.2	41.3	41.5	41.5	41.5	41.5
180	33.2	37.8	41.5	41.5	41.7	41.7	41.7	41.7
195	33.6	38.2	41.9	41.9	42.1	42.1	42.1	42.1
210	33.6	38.3	41.9	42.0	42.1	42.1	42.1	42.1
225	34.0	38.6	42.3	42.3	42.5	42.5	42.5	42.5
240	34.0	38.6	42.3	42.4	42.5	42.5	42.5	42.5
255	34.0	38.7	42.3	42.4	42.5	42.5	42.5	42.5
270	34.1	38.7	42.4	42.4	42.6	42.6	42.6	42.6

Table 2: Predicted Sound Levels at Highland Heights: Y Bryn in Isolation: dB LA90								
	Standardised Wind Speed at 10m agl: m/s							
Sector	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0
285	34.0	38.6	42.3	42.3	42.5	42.5	42.5	42.5
300	33.6	38.2	41.9	42.0	42.1	42.1	42.1	42.1
315	33.6	38.2	41.9	41.9	42.1	42.1	42.1	42.1
330	33.1	37.7	41.3	41.4	41.5	41.5	41.5	41.5
345	32.8	37.3	41.0	41.0	41.2	41.2	41.2	41.2

- 3.8 At no time is it predicted that operational sound from Y Bryn Wind Farm in isolation will exceed the ETSU-R-97 Night-time Noise Limit of 43 dB LA90.

Background Noise Levels: Hafod Farm

- 3.9 Table 3 details the measured background sound levels collected at Hafod Farm and which form the assessment of the existing sound environment at this measurement location.
- 3.10 At wind speeds of 10 m/s and above the measured levels have been capped at 43.5 and 40.1 dB LA90 for Amenity and Night Hours respectively. This capping is due to the regression analysis providing an unrealistic increase in background sound levels with increasing wind speed, i.e. the derived increase is significantly greater than would be expected. Therefore, capping the background sound level is considered to be a conservative determination of the prevailing background at each measurement location. Such capping of the sound levels follows the guidance within the IoA GPG: SGN 2: Section 2.9³. This is because insufficient data at these higher wind speeds was acquired during the survey to allow determination for wind speeds above 10 m/s.

Table 3: Hafod Farm Background Noise Levels and Derived ETSU-R-97 Noise Criteria: dB LA90											
Measured Levels	Standardised Wind Speed at 10m agl: m/s										
	4	5	6	7	8	9	10	11	12	13	14
Hafod Farm: Amenity	27.7	28.7	30.3	32.6	35.4	38.5	41.4	43.3	43.5	43.5	43.5
Hafod Farm: Night	27.2	27.3	27.9	29.2	31.5	35.1	40.1	40.1	40.1	40.1	40.1
ETSU-R-97 Noise Criteria: dB LA90											
	Standardised Wind Speed at 10m agl: m/s										
	4	5	6	7	8	9	10	11	12	13	14
Amenity Hours	40.0	40.0	40.0	40.0	40.4	43.5	46.4	48.3	48.5	48.5	48.5
Night Hours	43.0	43.0	43.0	43.0	43.0	43.0	45.1	45.1	45.1	45.1	45.1

³ https://www.ioa.org.uk/sites/default/files/IOA%20GPG%20SGN%20No%202%20Final%20Sept%202014_0.pdf

Table 3: Hafod Farm Background Noise Levels and Derived ETSU-R-97 Noise Criteria: dB LA90											
Measured Levels	Standardised Wind Speed at 10m agl: m/s										
	4	5	6	7	8	9	10	11	12	13	14
Night Hours: Lower	40.0	40.0	40.0	40.0	40.0	40.1	45.1	45.1	45.1	45.1	45.1

Background Noise Levels: Highland Heights

- 3.11 Table 4 details the measured background sound levels collected at Highland Heights and which form the assessment of the existing sound environment at this measurement location.

Table 4: Highland Heights Background Noise Levels and Derived ETSU-R-97 Noise Criteria: dB LA90											
	Standardised Wind Speed at 10m agl: m/s										
Measured Levels	4	5	6	7	8	9	10	11	12	13	14
Highland Heights: Amenity	28.4	29.8	31.3	32.9	34.5	36.1	37.6	39.0	40.3	41.4	42.3
Highland Heights Farm: Night	27.2	28.3	29.4	30.7	32.1	33.4	34.7	36.0	37.3	38.4	39.3
ETSU-R-97 Noise Criteria: dB LA90											
	Standardised Wind Speed at 10m agl: m/s										
	4	5	6	7	8	9	10	11	12	13	14
Amenity Hours	40.0	40.0	40.0	40.0	40.0	41.1	42.6	44.0	45.3	46.4	47.3
Night Hours	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.4	44.3
Night Hours: Lower	40.0	40.0	40.0	40.0	40.0	40.0	40.0	41.0	42.3	43.4	44.3

Potential Exceedance at Hafod Farm: Y Bryn in Isolation

- 3.12 Table 5 details the predicted potential exceedance with the application of a noise limit where the fixed day and night-time limit level will be 40 dB LA90.

Table 5: Predicted Level of Exceedance for Absolute Level of 40 dB LA90 or Background + 5 dB								
	Standardised Wind Speed at 10m agl: m/s							
Sector	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0
Criterion	40.0	40.0	40.0	40.0	40.0	40.1	45.1	45.1
0	-10.2	-5.7	-1.9	-1.7	-1.6	-1.7	-6.7	-6.7
15	-9.0	-4.5	-0.6	-0.4	-0.3	-0.4	-5.4	-5.4
30	-8.1	-3.6	0.3	0.5	0.6	0.5	-4.5	-4.5
45	-8.1	-3.5	0.3	0.5	0.7	0.6	-4.4	-4.4
60	-7.6	-3.1	0.8	1.0	1.2	1.1	-3.9	-3.9
75	-7.6	-3.1	0.8	1.0	1.2	1.1	-3.9	-3.9
90	-7.6	-3.1	0.8	1.0	1.2	1.1	-3.9	-3.9

Table 5: Predicted Level of Exceedance for Absolute Level of 40 dB LA90 or Background + 5 dB								
	Standardised Wind Speed at 10m agl: m/s							
Sector	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0
105	-7.6	-3.1	0.8	1.0	1.2	1.1	-3.9	-3.9
120	-7.6	-3.1	0.8	1.0	1.2	1.1	-3.9	-3.9
135	-7.6	-3.1	0.8	1.0	1.2	1.1	-3.9	-3.9
150	-7.7	-3.1	0.8	1.0	1.1	1.0	-4.0	-4.0
165	-7.7	-3.2	0.7	0.9	1.0	0.9	-4.1	-4.1
180	-8.5	-3.9	-0.1	0.1	0.3	0.2	-4.8	-4.8
195	-8.7	-4.2	-0.3	-0.1	0.1	0.0	-5.0	-5.0
210	-9.2	-4.8	-0.8	-0.6	-0.5	-0.6	-5.6	-5.6
225	-10.3	-5.9	-1.9	-1.7	-1.5	-1.6	-6.6	-6.6
240	-11.0	-6.6	-2.6	-2.4	-2.3	-2.4	-7.4	-7.4
255	-11.8	-7.5	-3.5	-3.3	-3.1	-3.2	-8.2	-8.2
270	-12.2	-7.9	-4.0	-3.8	-3.6	-3.7	-8.7	-8.7
285	-12.4	-8.1	-4.1	-3.9	-3.8	-3.9	-8.9	-8.9
300	-12.2	-7.9	-4.0	-3.7	-3.6	-3.7	-8.7	-8.7
315	-11.8	-7.4	-3.5	-3.3	-3.1	-3.2	-8.2	-8.2
330	-11.0	-6.6	-2.7	-2.5	-2.4	-2.5	-7.5	-7.5
345	-10.2	-5.8	-1.9	-1.7	-1.6	-1.7	-6.7	-6.7

Potential Exceedance at Highland Heights: Y Bryn in Isolation

3.13 Table 6 details the predicted potential exceedance with the application of a noise limit where the fixed day and night-time limit level will be 40 dB LA90.

Table 6: Predicted Level of Exceedance for Absolute Level of 40 dB LA90 or Background + 5 dB								
	Standardised Wind Speed at 10m agl: m/s							
Sector	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0
Criterion	40.0	40.0	40.0	40.0	40.0	40.0	40.0	41.0
0	-7.6	-3.0	0.7	0.7	0.9	0.9	0.9	-0.1
15	-7.8	-3.2	0.4	0.5	0.6	0.6	0.6	-0.4
30	-8.5	-4.0	-0.4	-0.3	-0.2	-0.2	-0.2	-1.2
45	-8.5	-3.9	-0.3	-0.2	-0.1	-0.1	-0.1	-1.1
60	-8.8	-4.3	-0.6	-0.6	-0.4	-0.4	-0.4	-1.4
75	-8.9	-4.4	-0.8	-0.7	-0.6	-0.6	-0.6	-1.6
90	-8.8	-4.3	-0.6	-0.5	-0.4	-0.4	-0.4	-1.4
105	-8.6	-4.1	-0.5	-0.4	-0.2	-0.2	-0.2	-1.2
120	-8.4	-3.9	-0.2	-0.1	0.0	0.0	0.0	-1.0
135	-7.6	-3.0	0.6	0.7	0.8	0.8	0.8	-0.2
150	-7.5	-2.9	0.8	0.9	1.0	1.0	1.0	0.0
165	-7.0	-2.4	1.2	1.3	1.5	1.5	1.5	0.5

Table 6: Predicted Level of Exceedance for Absolute Level of 40 dB LA90 or Background + 5 dB								
	Standardised Wind Speed at 10m agl: m/s							
Sector	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0
180	-6.8	-2.2	1.5	1.5	1.7	1.7	1.7	0.7
195	-6.4	-1.8	1.9	1.9	2.1	2.1	2.1	1.1
210	-6.4	-1.7	1.9	2.0	2.1	2.1	2.1	1.1
225	-6.0	-1.4	2.3	2.3	2.5	2.5	2.5	1.5
240	-6.0	-1.4	2.3	2.4	2.5	2.5	2.5	1.5
255	-6.0	-1.3	2.3	2.4	2.5	2.5	2.5	1.5
270	-5.9	-1.3	2.4	2.4	2.6	2.6	2.6	1.6
285	-6.0	-1.4	2.3	2.3	2.5	2.5	2.5	1.5
300	-6.4	-1.8	1.9	2.0	2.1	2.1	2.1	1.1
315	-6.4	-1.8	1.9	1.9	2.1	2.1	2.1	1.1
330	-6.9	-2.3	1.3	1.4	1.5	1.5	1.5	0.5
345	-7.2	-2.7	1.0	1.0	1.2	1.2	1.2	0.2

Consequences of Compliance with 40 dB LA90 Absolute Limit

- 3.14 To meet the operational requirement of 40 dB LA90 when background noise levels are low would require that turbines are operated in noise mitigation modes to reduce incident sound levels at neighbouring properties.
- 3.15 A scheme has been developed for the Nordex N163 STE 5.7 MW which would meet the requirements of such a level being imposed.
- 3.16 The consequences of such a sound mitigation scheme for Y Bryn operating in isolation indicates a reduction in generation for the site as follows:
- 2.3% energy loss⁴;
 - Equivalent to 3,046 less homes provided renewable energy per year⁵;

⁴ Natural Power energy analysis based on on-site wind monitoring and long-term correlation, with the proposed layout and Hayes McKenzie produced and manufacturer validated noise curtailment strategy

⁵ BEIS 'Digest of United Kingdom Energy Statistics', as of December 2020 – 3578kWh/annum average UK household electricity demand

- 4,796 tonnes of CO₂ not removed from the energy generation mix per year⁶.

3.17 It should be noted that the above numbers are calculated on the basis of a single 5.7MW model, when machines of up to 7.2MW are currently being considered for the proposed development. Whilst higher capacity but quieter machines may result in lower percentage levels of constraining, it is possible that such constraining would result in similar or higher levels of energy losses. Therefore, what is presented here is considered to be a reasonable conservative estimate.

4. CUMULATIVE NOISE IMPACTS FOR 40/40 AND 40/43 NOISE CRITERION

- 4.1 Cumulative noise impacts are associated with neighbouring wind farm sites, both operational and consented.
- 4.2 For Hafod Farm this relates to Brombil Wind Farm which is an operational 4 turbine site located 1.3 – 1.8 km to the south-west of Hafod Farm. Predicted sound levels during rated power operation, i.e. when Brombil Wind Farm will be generating its highest levels, are predicted to not exceed 33.6 dB L_{A90} when Hafod Farm is downwind of Brombil.
- 4.3 The predicted impacts associated with cumulative noise levels at Hafod Farm will change by less than 0.1 dB increase when Hafod Farm is downwind of Y Bryn Wind Farm. During periods of prevailing wind, i.e. south-west, then predicted cumulative sound will increase by around 1 – 1.8 dB over the levels predicted for Y Bryn on its own. Therefore, cumulatively, the expected exceedances as set out in Table 5 will change by 0 dB when downwind of Y Bryn and may increase by a maximum of 1 dB when upwind of Y Bryn.
- 4.4 Highland Heights is not subject to cumulative noise levels in that all wind farms that may have an influence upon the levels experienced at this location are at least 10 dB below levels associated with Y Bryn Wind Farm. Therefore, cumulative sound impacts are not required to be considered for this location.

⁶ BEIS 'Digest of United Kingdom Energy Statistics', July 2021. Table 5.14 "Estimated carbon dioxide emissions from electricity supplied". BEIS's "all non-renewable fuels" emissions equate to 440 tonnes of carbon dioxide per GWh.

Foel Trawsnant

- 4.5 Foel Trawsnant Wind Farm (FT) has recently been given consent (December 2021) with an associated set of planning conditions dealing with noise.
- 4.6 A review of the Noise Assessment which was attached to the application for FT indicates that for some noise sensitive locations neighbouring the FT site, predicted operational noise levels for the proposed wind turbine for installation (Nordex N90⁷) will exceed the consented noise limits without mitigation to the installed wind turbines. This presents a problem in that if noise limits as set out within the FT consent were adopted for these named dwellings then Y Bryn Wind Farm would be required to operate at levels at least 10 dB below the consented levels.
- 4.7 As it is, since FT will operate at the consented levels for long periods, adoption of the consented levels within the FT consent is not practical with respect to the proposed Y Bryn wind turbines for the northern cluster.
- 4.8 Adoption of a cumulative noise limit of 40/40 or 40/43 provides some additional headroom for the Y Bryn wind turbines to operate.
- 4.9 Predictions indicate that with the proposed FT Nordex N90 wind turbines installed and operating at their consented noise limits, the energy yield loss for a 40/43 dB cumulative noise limit will be around 6.2% (around 8,021 homes worth of generating capacity: 12,628 tonnes of CO₂ per year) with the operation of FT included.
- 4.10 In the event that a criterion level of 40/40 was adopted then this would increase the energy losses to around 9.0% (around 11,627 homes worth of generating capacity is lost: 18,304 tonnes of CO₂ per year).
- 4.11 The difference in number of homes that may be supplied from Y Bryn Wind Farm will be around 3,605 homes or 5,676 tonnes CO₂ per year on the basis of setting a cumulative absolute noise limit for night-time operation of 40 or 43 dB L_{A90}.

⁷ It is recognised that Foel Trawsnant is subject to a S73 application with respect to a change in turbines through increased rotor diameter. Therefore, the levels currently predicted for the consented site candidate turbine may change. At this time it is not known whether this will result in a reduction or increase in operational levels. However, the level of predicted exceedance of the consented noise limits would indicate that some mitigation will still be required for Foel Trawsnant.

Duration of Exposure

- 4.12 Another variable to consider when adopting a specific noise limit for a wind farm is the duration of exposure. As indicated above, Hafod Farm is only expected to exceed a level of 40 dB L_{A90} when downwind of the proposed site. This is a NE/E wind direction. The historical wind rose for the site indicates that this occurs, i.e. between 6 – 9 m/s and between 30 – 195° per Table 5, for around 20% of the average year⁸. If we assume a proportional split between day and night-time then the application of control through a limit of 43 dB L_{A90} will occur for around 7% of the year.
- 4.13 Highland Heights is located to the east of the southern cluster. The historical wind rose indicates wind speeds between 6 – 11 m/s and wind directions from 135 through to 15° (per Table 6) where predicted levels are in excess of 40 dB L_{A90} occur for around 30% of the year. If we assume a proportional split between day and night-time then the application of control through a limit of 43 dB L_{A90} will occur for around 10% of the year.
- 4.14 As daytime fixed lower limit levels are limited to 40 dB L_{A90} , it would only be for 8 hours per day (11pm – 7am) when any exposure above 40 dB L_{A90} would be relevant.

5. APPROPRIATE NIGHT TIME NOISE LIMIT

- 5.1 On the basis of the analysis above, it is appropriate for the Consenting Authority to consider the application of the ETSU compliant cumulative night-time absolute noise criterion for the proposed Y Bryn Wind Farm.
- 5.2 The need for 43 dB L_{A90} as a night-time noise limit is not necessary for all receptors neighbouring the proposed site. However, to minimise the energy losses associated with a lower night-time noise level of 40 dB, specific locations where the remaining cumulative headroom has been compromised by consent for the Foel Trawsnant Wind Farm should be considered for an increased night-time noise limit of 43 dB L_{A90} or Background + 5 dB.
- 5.3 Consideration should also be given to the impacts to generating capacity upon Y Bryn in isolation due to the presence of dwellings at Hafod Farm and Highland Heights where

⁸ Natural Power energy analysis

achieving a Night-time Absolute Noise level of 40 dB will result in a loss of energy equivalent to supplying 3,046 homes.

A3.3.44 NOISE CORRESPONDENCE WITH LPA – APRIL 2022

Ffion Edwards

From: Malcolm Hayes <[redacted]>
Sent: 08 April 2022 10:03
To: [redacted]
Cc: Ffion Edwards; Trevor Hunter
Subject: 3470 - Y Bryn Wind Farm - Noise - Contour Plots
Attachments: 3470_PRED20_2022_04_08_Y Bryn Isolation and Cumulative Noise Predictions-
Nordex N163 STE_INT1-0_MDH.pdf

Dear Dick,

Following our meeting earlier this week it was requested that we provide some contour plots for the site both cumulatively and in isolation.

Please find attached a pdf which provides these contours.

They do not include CCVC but this is because I need someone in Salisbury Office to be back at their desk to run the model for contours and they are away until next week. Once these have been undertaken I can send through a better quality figure.

The source level we have assumed is $L_{WA} = 109.2$ dB, i.e. Published = $107.2 + 2$ dB

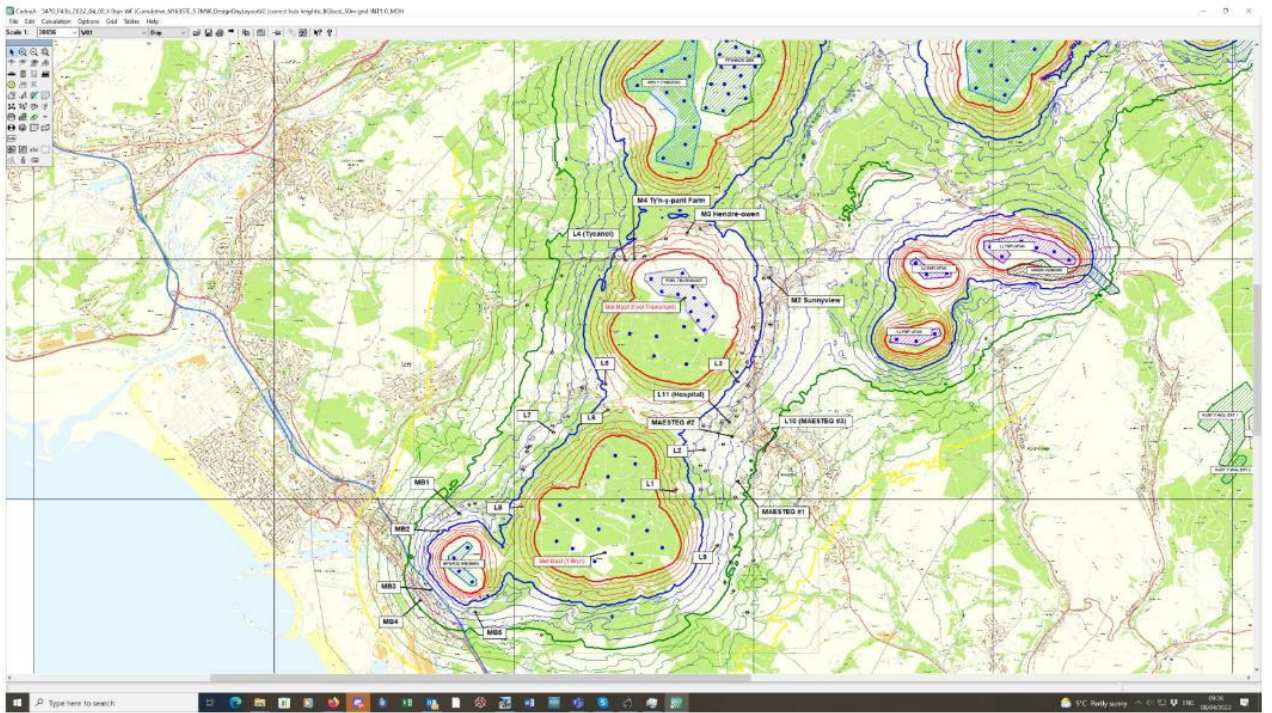
Let me know if you need anything further.

Regards

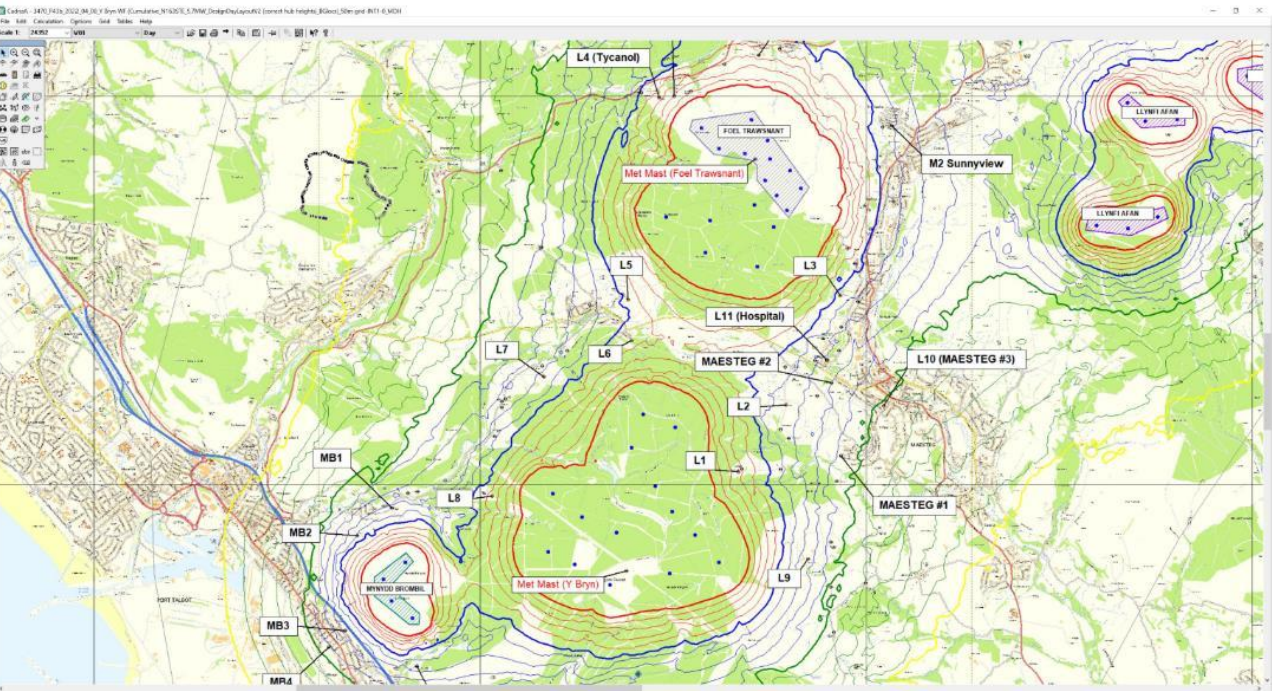
Malcolm Hayes BSc MIOA
Director & Principal Acoustic Consultant
Hayes McKenzie Partnership Ltd
Lodge Park, Tre'r-ddol, Machynlleth, Powys, UK, SY20 8PL

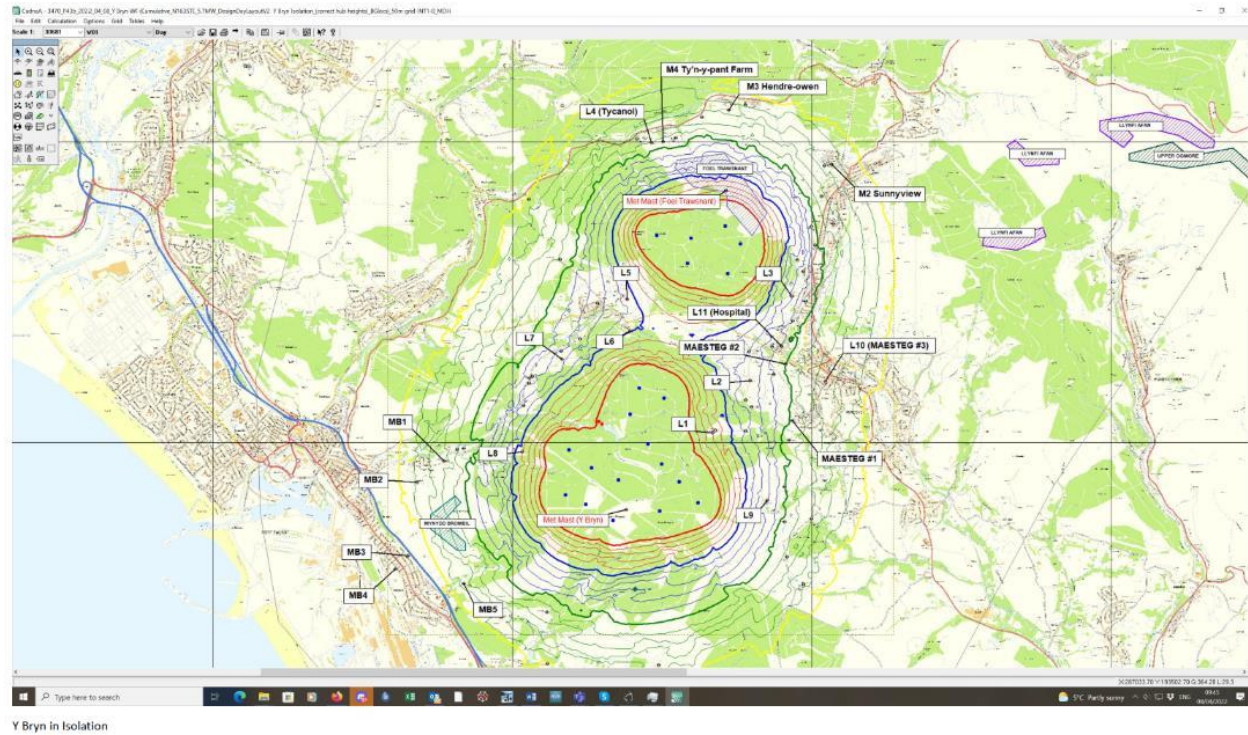
T: +[redacted]
M: +[redacted]
E: [redacted]
W: hayesmckenzie.co.uk

Hayes McKenzie
Consultants in Acoustics



Nordex N163 STE $L_{eq} = 109.2$
No CCVC
Blue = 40 dB L_{eq} Green = 35 dB L_{eq} Yellow = 30 dB L_{eq}





A3.3.45 MEMO FROM DICK BOWDLER, ACOUSTIC CONSULTANT – APRIL 2022

Dick Bowdler
Acoustic Consultant

077 8535 2534
dick@dickbowdler.co.uk

To:	Malcolm Hayes
Copies:	
Date:	11 th April 2020
Job:	Y Bryn Wind Farm
Our Ref:	W560
Pages:	2

Malcolm,

SUMMARY OF MY CURRENT POSITION.

I thought it would be useful to set out my present position with regard to the noise limits to be adopted for the application. I'm happy to discuss further if you wish. Where my recommendations have been agreed/adopted by the Councils I have explicitly stated that.

Apart from section 4 below, where I discuss limits I mean the cumulative limit for all wind farms that are required by the guidance to be included at a property.

If there are any financially involved residents then they would of course be entitled to higher limits.

1. LOWER FIXED ETSU LIMITS

Broadly speaking my view is that the three tests to establish the lower day time limit show the following:

- Test 1. There is a very large number of properties within the 35dB contour which points to a very strong pressure towards 35dB.
- Test 2. You have produced an argument that shows significant loss of power if the limits are reduced. If I accept this it suggests a strong pressure towards 40dB.
- Test 3. The background noise levels are low and the margin of predicted turbine noise is up to or exceeding 10dB at some properties. However, it is not as low as some more remote areas. I suggest a neutral or slight downward pressure on the limit.

Taking an overall view of these tests they suggest a limit somewhere in the middle of the range. I suggest 38dB which I consider is generous for the applicant. Of course we could argue about the individual tests for ever but I think that is a fair compromise.

The night time limit in ETSU-R-97 is 43dB.

These limits have been adopted and agreed by both Neath Port Talbot and Bridgend County Borough Councils. This is not surprising since they both were of the view,

The Haven, Low Causeway, Culross, Fife. KY12 8HN.

Dick Bowdler
Page 2

in their scoping responses, that just because a wind farm is large does not mean that it is entitled to a lower limit of 40dB.

2. ALTERNATIVE FIXED LIMITS

There is significant concern that the impact on some residents at night will be very high. The margin of turbine noise over background noise could be as high as almost 20dB at some wind speeds. I have recommended, and it has been accepted by both Councils that they would accept an increase in the lower fixed limit during day time to 40dB in return for a reduction in the night time limit also to 40dB.

So in summary, the Councils' view is that the fixed limits should be 38dB during the day and 43dB at night or 40dB both day and night. Whichever option the applicant adopts should be applied to all properties.

3. VARIABLE LIMITS AND OVERALL LIMIT

Variable limits should be background noise level plus 5dB where this is higher than the fixed limit. If the "40/40" fixed limits are adopted I would have no objection to the overall day time limit (fixed and variable) being calculated for each property and that same limit used for all times (that is to say, night time background noise is not taken into account)

4. LIMITS FOR Y BRYN

The limits adopted in the noise conditions must apply to Y Bryn only. They should be calculated from the cumulative limits using the consented limits for other wind farms. Whilst I have no objections to using directional turbine noise levels in principle, I would like to agree a suitable methodology since the directional levels will need to be related to the consented limits (not calculated levels) and will have to take into account any possible variable modes adopted by other wind farms.

Kind regards,

Dick Bowdler

A3.3.46 PUBLIC RIGHT OF WAY (PROW) LETTER FROM NP TO NPTCBC AND BCBC –
APRIL 2022

29th April 2022

Doc No: 1272652



Jon Griffiths and Mathew
Palmer
by email

Local Office

Registered Office

Harbour House
Y Lanfa
Aberystwyth
SY23 1AS
WALES
UK

Tel: +44 (0) 1970 636 869
www.naturalpower.com
sayhello@naturalpower.com

The Natural Power Consultants Limited
The Green House
Forrest Estate, Dalry,
Castle Douglas, Kirkcudbrightshire,
DG7 3XS

Reg No: SC177881

Y Bryn Wind Farm –Public Rights of Way (PROW)

Dear Jon Griffiths and Mathew Palmer,

On behalf of Y Bryn Wind Farm Ltd, Natural Power has been in consultation with the Public Rights of Way (PROW) officers from Neath Port Talbot County Borough Council (NPTCBC) and Bridgend County Borough Council (BCBC). Over the course of five months between September 2021 and February 2022 Natural Power has engaged with the officers on multiple Microsoft teams calls and via email exchanges to discuss the design of the Y Bryn Wind Farm in relation to PROW.

The aim of this letter is to seek agreement in writing with the officers that the layout of the wind farm and mitigation proposed is deemed acceptable from a PROW perspective.

The approximate distance from each turbine to the nearest PROW has been measured using Geographic Information Systems (GIS) based on shapefiles provided by NPTCBC for PROW within Neath Port Talbot County and Natural Resources Wales (NRW) for PROW within Bridgend County (BCBC were unable to provide shapefiles).

Table Error! No text of specified style in document..1 Approximate distance from each turbine to the nearest PROW

Turbine	Approximate distance to nearest PROW (m)*
1	534 (footpath)
2	194 (footpath)
3	232 (footpath)
4	130 (footpath)
5	102 (footpath)
6	93 (footpath)
7	118 (footpath)
8	104 (footpath)
9	206 (footpath)
10	460 (footpath)
11	300 (footpath)

29th April 2022

Doc No: 1272652



Turbine	Approximate distance to nearest PRow (m)*
12	86 (footpath)
13	106 (footpath)
14	527 (footpath)
15	738 (footpath)
16	397 (footpath)
17	102 (footpath)
18	216 (footpath)
19	475 (footpath)
20	271 (footpath)
21	89 (footpath)

Source: Coriolis and Natural Power. * all distances are approximate and have been measured on GIS using the most up to date data available from NPTCBC for land within NPTCBC and NRW for land within BCBC

- Based on the final turbine layout Natural Power can confirm that the design is able to maintain the following buffers:
- 86 m blade length (or greater distance) for all registered public footpaths on the definitive PRow map;
 - 200 m (or greater distance) for all registered public bridleways on the definitive PRow map.

It was discussed and agreed on the calls that these distances are considered acceptable for the permitted footpaths and bridleways, subject to mitigation, as discussed further below.

Such mitigation includes:

- provision for an appropriate worded condition regarding the protection from ice throw.
- options for re-routing two sections of a local authority recorded permissive route – ‘North to South Dragon Ride’, where a 200 m buffer is not achieved east of T5 and T6 and between T12 and T13.

Ice throw is a rare occurrence that will only happen when the blades of the turbine are stationary and under near freezing temperatures and relatively high humidity, with either freezing rain or sleet. When ice becomes detached from the blades (through temperature increase or activation of blade heating systems), ice can be thrown from the blades if they are rotating, or fall vertically to the ground if the blades are at standstill.

Modern turbines are fitted with climatic detection systems and passive/active de-icing solutions – like the models being considered for the proposed development – will help to mitigate against the occurrence of ice throw. Turbine procurement, together with good practice site management procedures, including the use of visual warnings signs and curtailment during periods of ice build-up on blades, will mitigate and manage this potential hazard.

Proposed condition wording for ice throw is as follows:

‘Prior to the start of commercial operation, confirmation of the application of ice monitoring and/or de-icing systems and/or protocols for all turbines located within 1 x tip-heights distance of any registered public footpaths on the definitive map shall be provided to the relevant local planning authorities..’

Reason: *to further mitigate any risks to the public from falling ice.’*

Proposed condition wording to cover offering alternative routes for two sections of the permissive ‘North to South Dragon Ride’

29th April 2022

Doc No: 1272652



‘Prior to the start of commercial operation, a scheme of mitigation for the ‘North to South Dragon Ride’ recorded permissive route shall be agreed with the relevant local planning authorities.

Reason: *to maintain recreational amenity within the site.’*

We would be grateful for your comments on the content of this letter and agreement on distances maintained to PRow and happy to engage further regarding appropriate condition wording.

Yours sincerely

[Redacted signature]

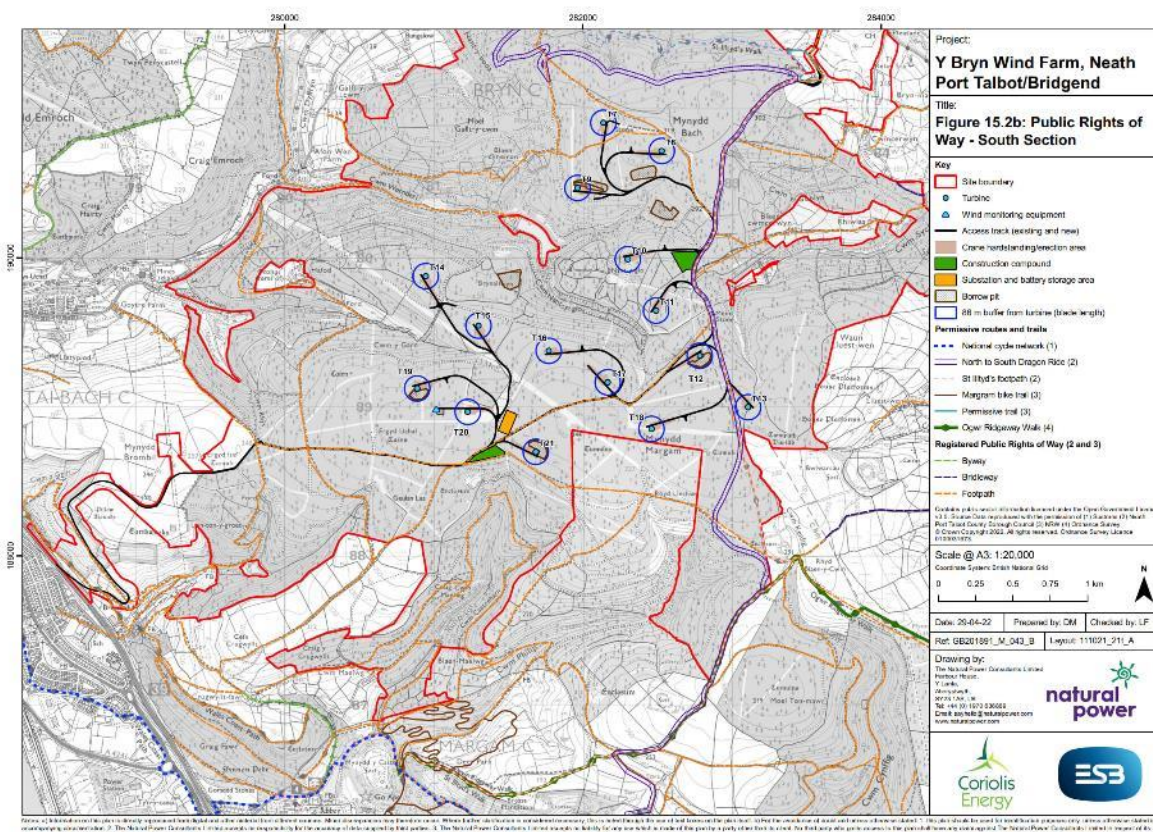
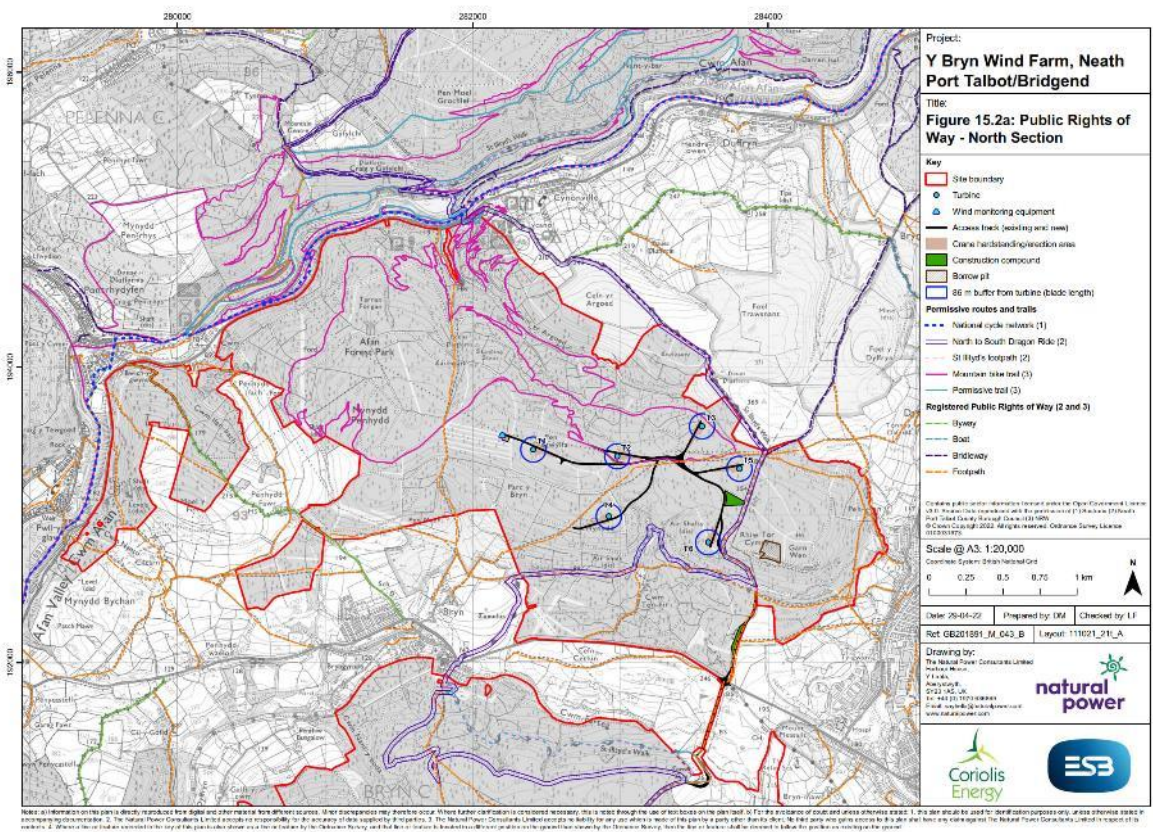
Lucy Freeman

Project Manager

+ [Redacted contact information]

Encl. Y Bryn Wind Farm – Figure 15.2: Public Rights of Way

A3.3.47 NPTCBC RESPONSE TO PROW LETTER – MAY 2022



Ffion Edwards

From: Jon Griffiths <[redacted]>
Sent: 10 May 2022 16:40
To: Trevor Hunter; mathew.palmer@coriolis-energy.com
Cc: [redacted]
Subject: RE: Y Bryn wind farm - Public rights of ways

Hi Trevor

Many thanks for the email together with the letter setting out an approach going forward. The contents of which are acceptable. I've been speaking with my legal officers regarding the proposed permissive alternative and they've suggested that perhaps a better way forward would be an access agreement for the lifetime of the wind farm (including any extensions on its use). This they suggest would be a more appropriate mechanism rather than using a permissive path agreement that by its very nature could be permitted at any time. Would this more formal agreement be something that you would accept?

Jon

From: Trevor Hunter <[redacted]>
Sent: 29 April 2022 15:58
To: Jon Griffiths <[redacted]>; mathew.palmer@coriolis-energy.com
Cc: Steven Jenkins <[redacted]>; lee.evans@coriolis-energy.com; Ffion Edwards <[redacted]>; Lucy Freeman <[redacted]>
Subject: Y Bryn wind farm - Public rights of ways

Hi Jon, Mathew,

Many thanks again for your engagement with us in respect of mitigating impacts for public rights of way.

By way of confirmation, please find attached a letter setting out the approach that we had agreed, including a couple of draft proposed planning conditions (on which your comments are welcomed).

We're submitting this under the terms of the Planning Performance Agreement. Any questions or comments at all happy to clarify by email or with another call, whatever suits.

Best regards,

Trevor Hunter
Project Manager
Coriolis Energy

Mobile: [redacted]
Office: [redacted]
Email: [redacted]
Website: www.coriolis-energy.com
Address: 22-24 King Street, Maidenhead, Berkshire SL6 1EF

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A3.3.48 BRIDGEND RESPONSE TO PROW LETTER- MAY 2022

Ffion Edwards

From:

Mathew Palmer <[REDACTED]>

Sent:

11 May 2022 12:21

To:

Trevor Hunter; Jon Griffiths

Cc:

Steven Jenkins; Lee Evans; Ffion Edwards; Lucy Freeman

Subject:

RE: Y Bryn wind farm - Public rights of ways

Hi Trevor,

Thank you for your email dated 29th April along with the letter setting out the approach going forward as well as the draft proposed planning conditions.

Firstly, I apologise for the delay in replying but trust that the following information is of assistance.

I have now had an opportunity to discuss the letter with the Rights of Way Manager at Bridgend CBC and would make the following comments:

- The RoW Manager has asked for written confirmation of the maximum blade length of T13 and confirmation that no registered public footpath will be within the over-sail of a turbine.
- It is our belief that in p.2 of the letter the word “permitted” in the 4th line should be altered to either registered or Definitive to clarify that that is what is being referred to and not ‘permissive’ routes.
- Also on p.2 where the recorded permissive North to South Dragon Route is being referred to (line 8) we believe that “bridleway” should be inserted after “permissive” so that it is obvious that any proposed diversion then relates to this permissive bridleway and not the footpath over which it runs otherwise the public might query why other footpaths are not being diverted because they’re within the same distance from the turbines.
- The same would need to be changed on p.3

I can also confirm that we are happy with the proposed conditions within the document.

Should you have any queries please do not hesitate to contact me.

Kind Regards,

Mathew

Mathew Palmer

Swyddog Hawliau Tramwy a Thir Mynediad | Rights of Way & Access Land Officer

Cymunedau | Communities

Cyngor Bwrdeistref Sirol Pen-y-bont ar Ogwr | Bridgend County Borough Council

Ffon | Phones:

[REDACTED]

E-bost | Email:

[REDACTED]

Gwefan | Website:

www.bridgend.gov.uk

Rydym yn croesawu gohebiaeth yn y Gymraeg. Rhwch wybod i ni os yw eich dewis iaith yw'r Gymraeg.

We welcome correspondence in Welsh. Please let us know if your language choice is Welsh.

From:

Trevor Hunter <[REDACTED]>

Sent:

29 April 2022 15:58

To:

Jon Griffiths <[REDACTED]>; Mathew Palmer <[REDACTED]>

Cc:

Steven Jenkins <[REDACTED]>; Lee Evans <[REDACTED]>; Ffion Edwards <[REDACTED]>; Lucy Freeman <[REDACTED]>

Subject:

Y Bryn wind farm - Public rights of ways

Hi Jon, Mathew,

Many thanks again for your engagement with us in respect of mitigating impacts for public rights of way.

By way of confirmation, please find attached a letter setting out the approach that we had agreed, including a couple of draft proposed planning conditions (on which your comments are welcomed).

We’re submitting this under the terms of the Planning Performance Agreement. Any questions or comments at all happy to clarify by email or with another call, whatever suits.

Best regards,

Trevor Hunter
Project Manager
Coriolis Energy

Mobile: [REDACTED]
Office: [REDACTED]
Email: [REDACTED]
Website: www.coriolis-energy.com
Address: 22-24 King Street, Maidenhead, Berkshire SL6 1EF

A3.3.49 SOLTYS BREWSTER LETTER EXPLAINING APPROACH TO INCLUDING FORESTRY IN SLVIA CHAPTER AND VISUALS TO NRW – JUNE 2022

Rafe Osborne

From: Greg Vaughan <[REDACTED]>
Sent: 24 June 2022 13:52
To: [REDACTED]
Cc: Rafe Osborne; Richard Cole; Steve Mann; Guy Cope; [REDACTED]; Trevor Hunter; Ffion Edwards
Subject: Y Bryn Wind Farm - Forestry in SLVIA Chapter.
Attachments: Copy of NRW Forestry Management Plan letter_Y Bryn (CORRESPOND - 1281854 - 1 - A3) - 2nd DRAFT SBC.DOCX 24.06.22.pdf; Figure – Lines of Sight over NRW Long Term Felling Plan.pdf; Example Photowire (VP2 – Maesteg Golf Course).pdf

Good afternoon Lisa

We are writing to inform you of our proposed approach for including forestry in the Y Bryn Wind Farm SLVIA chapter and associated figures.

- Attached are:
- NRW forestry visuals letter 23.06.22: A letter giving context on the requirement for including forestry in the SLVIA, and detailing how we propose to do this.
 - Figure – Lines of Sight over NRW Long Term Felling Plan: An example figure showing the lines of sight from VP2 to visible turbines, overlaying the NRW Long Term Felling Plan.
 - Example Photowire (VP2 – Maesteg Golf Course): An example visual figure with photowire of turbines showing ‘bare earth’ worst case scenario over the photomontage for this viewpoint.

Please do not hesitate to advise of any questions or clarifications on any element of the attached documents, and we now look forward to any comments that you may have regarding the above and attached.

best regards

Greg Vaughan

Greg Vaughan
Senior Associate
Mobile: [REDACTED]



UK Tel: [REDACTED] Ireland Tel: [REDACTED]

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24 June 2022



FAO Lisa Jones
National Resources Wales



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Dear Lisa,

RE: Y Bryn Wind Farm

We are currently reviewing the approach to be taken to assess the effects on visual amenity of the proposed Y Bryn Wind Farm in combination with Natural Resources Wales (NRW) forestry management plan (refer to *Figure – Lines of Sight over NRW Long Term Felling Plan* attached, which shows the proposed management plan from 2022-2051).

In relation to the suggested approach to assess felling in the ‘Seascape Landscape and Visual Assessment’ (SLVIA) chapter for Y Bryn Wind Farm, consultation letters were issued to NRW, amongst other consultees, with the following commitment:

‘Removal of forestry associated with the wind farm (if visible) only will be illustrated on the photomontages. Forestry removal as shown on NRW’s Forestry Design Plan not directly associated with Y Bryn Wind Farm or that lie outside of the site boundary will be illustrated on visualisations from viewpoints where it is deemed necessary to illustrate any potential changes in the view due as a result of felling. Any potential effects on landscape character and visual amenity as a result of felling will also be described within the assessment text’.

Felling directly associated with y Bryn Wind Farm will be minimal as it follows a key hole approach, and not whole coupe felling. However, if deemed applicable, these will be shown on the photomontages.

With regards to forestry removal that is not related to the wind farm i.e. ongoing forestry management by NRW, we are proposing the following approach within the SLVIA. From the 37 agreed viewpoints that are included in Chapter 8 of the Environmental Statement, we have identified the following 12 viewpoints from where currently planned NRW forestry management may potentially result in a notable change in visual amenity:

- VP1 – Evans Terrace, Caerau
- VP2 – Maesteg Golf Course
- VP3 – Bryn (Play Area, off Neath Road)
- VP4 – Brynna Road, Cwmafan
- VP8 – Margam Park (Deer Park)
- VP13 – Junction of Heol Gelli Lenor and Brynlllywarch, Maesteg
- VP17 – Margam Park

- VP23 – Margam Park Access Road
- VP24 – Wales Coast Path, Kenfig Burrows
- VP25 – Bryn East, picnic area opposite Royal Oak Public House
- VP26 – Ogwr Ridgeway Walk, near Bwlwarcau Hill Fort
- VP28 - Llangynwyd

The methodology that we propose to adopt is outlined below:

- Identify lines of sight from each viewpoint, extending to the nearest turbines within each view in order to assist in referencing/locating individual forestry coupes that are shown within the attached *Figure – Lines of Sight over NRW Long Term Felling Plan*. This figure shows an example of this approach for VP2 – Maesteg Golf Course.
- Prepare a photowire to illustrate the bare earth view superimposed with the photomontage. These figures indicate the ‘worst case’ scenario i.e. that all forestry coupes would be harvested at the same time, which in reality is not the case. Please note that photomontages cannot be accurately produced to illustrate changes in the view due to the inherent dynamic nature of forestry growth and management with ongoing harvesting and replanting operations. An example Photowire for VP2 – Maesteg Golf Course is enclosed.
- Descriptive text, where applicable, from each of the proposed viewpoints to describe the variation in likely views and effects on visual amenity over the 50 year life time of the proposed development as a result of the NRW long term forestry strategy. An example of the descriptive text for VP2 – Maesteg Golf Course is included below.

Example descriptive text for VP2 – Maesteg Golf Course:

There are two areas of forestry currently planned for felling in direct line-of-sight to the nearest turbines, T7 and T8, within the southern section. Both forestry coupes are approximately 400 m from the VP to the south-west. The coupe shaded dark orange colour on Figure – Lines of Sight over NRW Long Term Felling Plan is due to be clear felled between 2027 to 2031 and the coupe shaded dark green between 2042 to 2046. Immediately beyond these forestry coupes, further to the south-west on the Mynydd Bach plateau, is an extensive block of unassigned forestry which was planted between 1980 to 1999. Following felling of the above forestry blocks to the front of the young forestry, which is scheduled to be completed by 2046, the assigned management (shaded light blue) will have an additional 24 years of growth and to have reached a mature height being 47 to 66 years old. This area of forestry, will effectively duplicate the degree of screening currently provided by the coupes due to be harvested from 2027 onwards. The two coupes harvested will, in addition, it is assumed be replanted and will offer further screening from year 2031 onwards. Following the harvesting of forestry in 2042, the blade tips of T9, T10 and T11 should remain screened from view to a degree by the unassigned forestry.

Within the northern section, the forestry coupe located on Caer Mynydd/Parc y Bryn (shaded orange) is due be harvested between 2027 and 2031. Following this, there will potentially be increased visibility towards the lower part of the tower to T4 as well as to T1. However, the unassigned management areas surrounding the forestry coupe (planted 2004 and 2014) will continue to establish and will reimpose a degree of screening that currently exists to T4. However, the forestry coupe titled ‘minimum intervention crops’ and also the coupe of ‘Low impact silvicultural system’ will also contribute to the degree of screening provided to the towers of turbines T4 and also T6. For all other turbines there will be no perceptible change following forestry management during the lifetime of the proposed development from currently planned management.

Evaluations for magnitude of impacts, both individually and cumulatively, will remain as assessed as there will no discernible change to views following implementation of the forestry management.

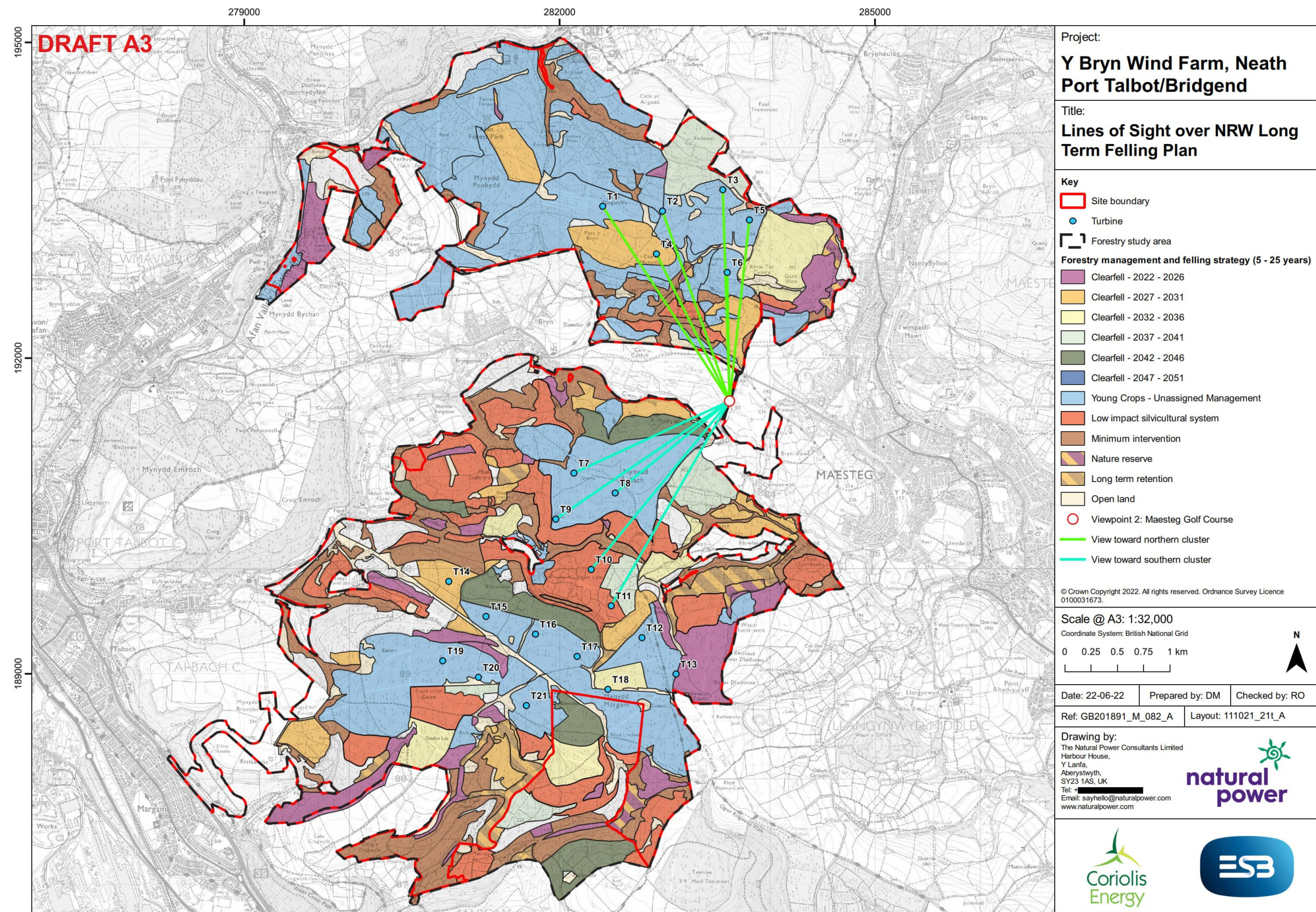
I would be grateful if you could confirm if the above approach is acceptable to you.

Yours sincerely

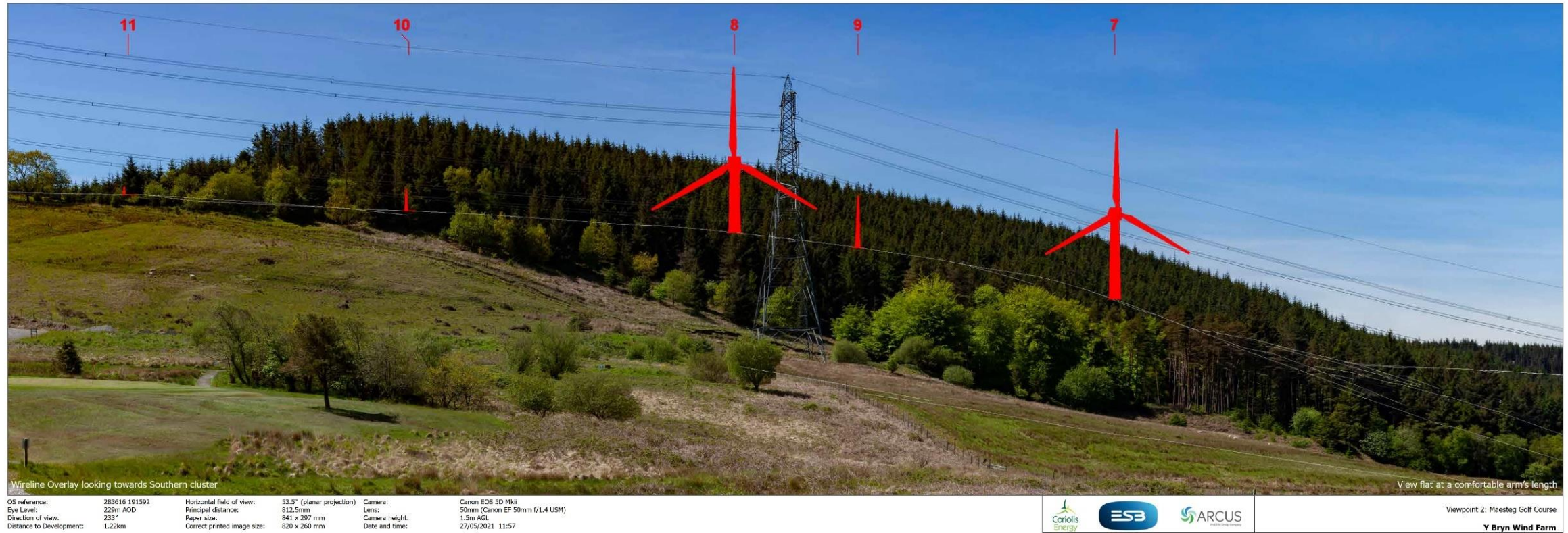
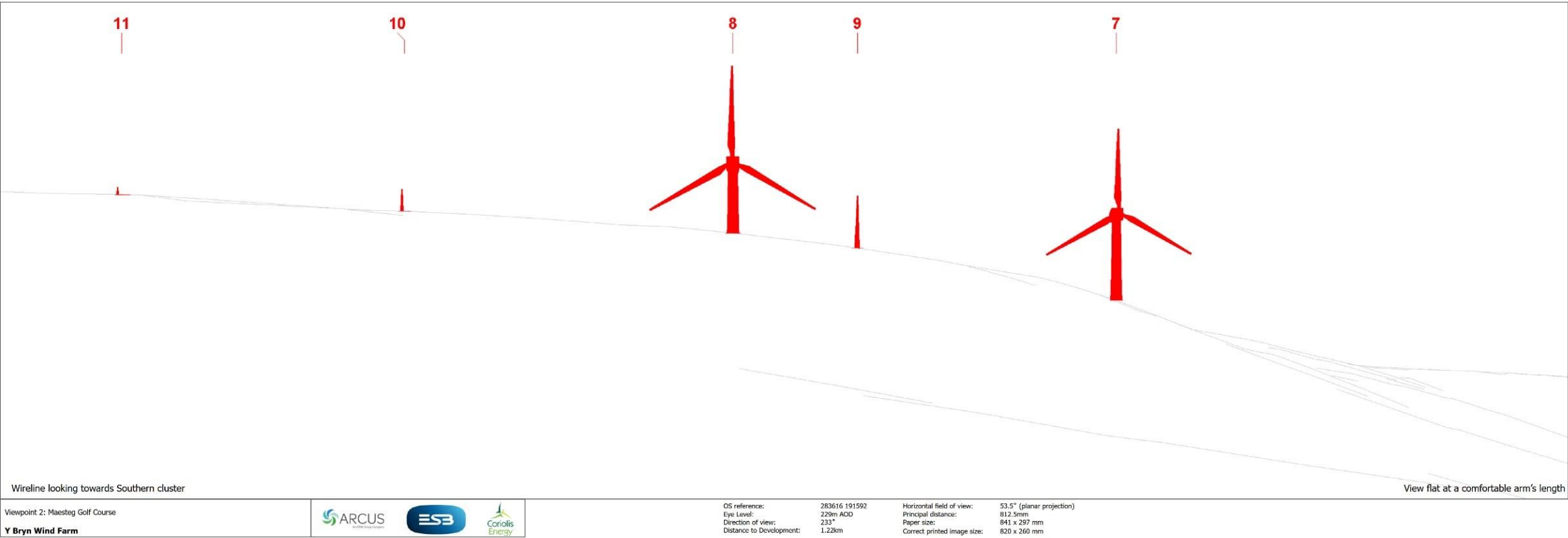
Richard Cole

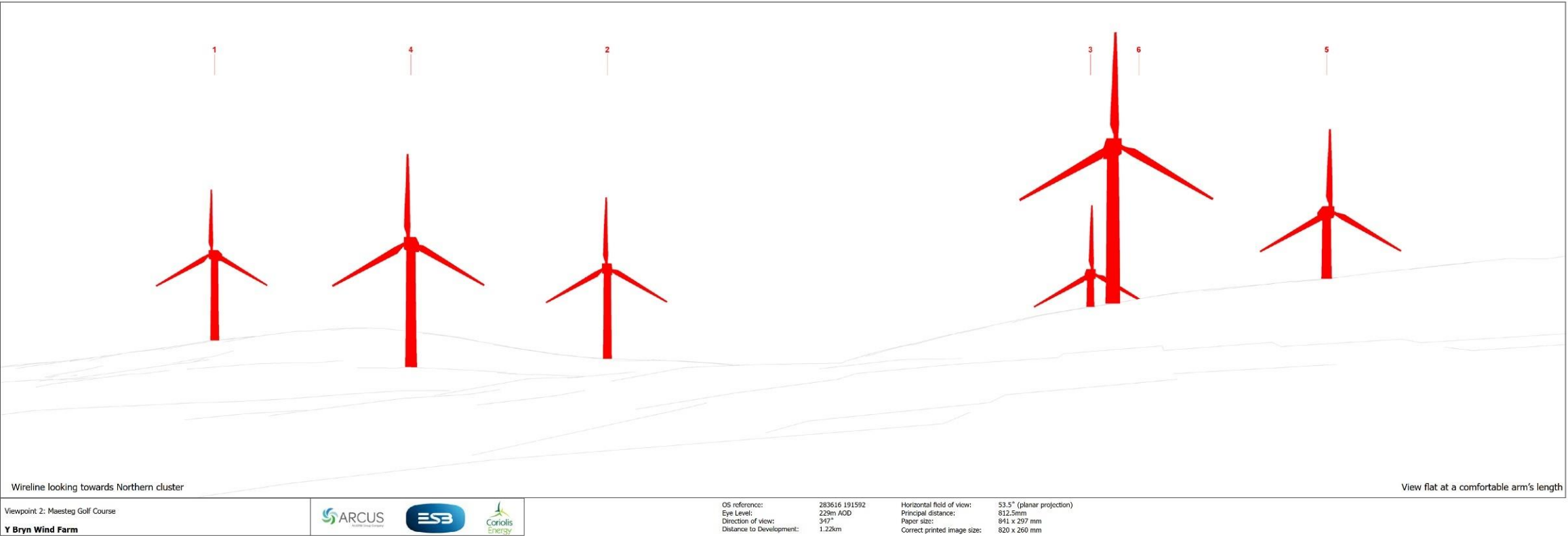
Encs:

Figure – Lines of Sight over NRW Long Term Felling Plan
Example Photowire (VP2 – Maesteg Golf Course)



Notes: a) Information on this plan is directly reproduced from digital and other material from different sources. Minor discrepancies may therefore occur. Where further clarification is considered necessary, this is noted through the use of text boxes on the plan itself. b) For the avoidance of doubt and unless otherwise stated: 1. this plan should be used for identification purposes only, unless otherwise stated in accompanying documentation. 2. The Natural Power Consultants Limited accepts no responsibility for the accuracy of data supplied by third parties. 3. The Natural Power Consultants Limited accepts no liability for any use which is made of this plan by a party other than its client. No third party who gains access to this plan shall have any claim against The Natural Power Consultants Limited in respect of its contents. 4. Where a line or feature recorded in the key of this plan is also shown as a line or feature by the Ordnance Survey, and that line or feature is located in a different position on the ground than shown by the Ordnance Survey, then the line or feature shall be deemed to follow the position as existing on the ground.





A3.3.50 NRW RESPONSE TO SOLTYS BREWSTER FORESTRY IN VISUALS AND CHAPTER LETTER AND NP ILLUSTRATIVE EXAMPLES OF AVIATION LIGHTING- JUNE 2022

Rafe Osborne

From: SW Planning <[REDACTED]>
Sent: 30 June 2022 16:06
To: Greg Vaughan; Lucy Freeman
Cc: Rafe Osborne
Subject: Y Bryn Wind Farm - Forestry in SLVIA Chapter. NRW:01312655

Good afternoon all,

Thank you for your e-mail's regarding the proposed approach for including forestry in the Y Bryn Wind Farm SLVIA chapter and associated figures, provided by Greg on 24.06.22 and the documents provided by Lucy on 29.6.22.

As previously advised we can provide you with advice prior to the formal PAC consultation, but this would fall under our charged discretionary advice service (DAS).

All information on this advice services can be found on our website at:
<https://naturalresources.wales/guidance-and-advice/business-sectors/planning-and-development/advice-for-developers/our-service-to-developers/?lang=en>

If you wish to pursue this service you should complete the relevant form found at the bottom of the above webpage and provide the necessary documents to support the request, and send back all correspondence to this email address.

However, our Discretionary Planning Advice Service is discretionary and while we aim to meet the demand for this service, there may be times where our capacity to do so is limited.

I hope the above information is helpful. Please don't hesitate to contact me if you have any further queries.

Kind regards,

Lisa

Lisa Jones
Ymgynghorydd Cynllunio Datblygu/ Development Planning Advisor
Cyfoeth Naturiol Cymru / Natural Resources Wales

In light of recent events, I am currently working from home and as such not contactable on the phone. If you need to get in touch, please email me and I will respond as quickly as possible.

Yn falch o arwain y ffordd at ddyfodol gwell i Gymru trwy reoli'r amgylchedd ac adnoddau naturiol yn gynaliadwy.
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[Twitter](#) | [Facebook](#) | [LinkedIn](#) | [Instagram](#)
Croesewir gohebiaeth yn Gymraeg a byddwn yn ymateb yn Gymraeg, heb i hynny arwain at oedi.
Correspondence in Welsh is welcomed, and we will respond in Welsh without it leading to a delay.

A3.3.51 HEADLAND EMAIL TO CADW REQUESTING PRE-CONSULTATION VIEW ON CULTURAL HERITAGE ASIDOHL – JULY 2022

Rafe Osborne

From: Jennifer Richards <[REDACTED]>
Sent: 27 July 2022 13:23
To: [REDACTED]
Cc: Ffion Edwards; Rafe Osborne
Subject: Bryn Wind Farm ASIDOHL

Dear Neil

There will be formal "Pre-Application Consultation" (PAC) on the whole Bryn application as part of the DNS process in the coming months but ahead of this I wanted to share our draft ASIDOHL assessment with you for informal comments – its too large to email so I will send you a WeTransfer link shortly. Apologies, I had thought we'd already sent this to you, but it got caught up in an internal / client review cycle before I managed to get a draft out to you. It is therefore more complete than you had indicated you wished to comment on, I hope that's ok.

I hope that you feel able to agree with the findings of Stages 1-4, but I would be happy to discuss any comments you have on these. Any feedback on Stage 5 would also be appreciated, though as we've discussed previously this stage is less factual than the previous and more a matter of professional judgement.

Best regards
Jen



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BA (Hons) PGDip MCIfA

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A3.3.52 CADW RESPONSE TO HEADLAND REQUEST FOR ASIDOHL COMMENTS–
AUGUST 2022

Rafe Osborne

To: [REDACTED]
Subject: RE: Bryn Wind Farm ASIDOHL

From: [REDACTED] >
Sent: 04 August 2022 11:38
To: [REDACTED]
Cc: Ffion Edwards <[REDACTED]>; Rafe Osborne <[REDACTED]>
Subject: RE: Bryn Wind Farm ASIDOHL

Hi Jen

I have some issues in regard to ASIDOHL in particular the indirect impact on HCLA001. The main component of this area is the grade 1 registered historic park and garden which is correctly identified as a grade A asset however a number of associated features of the park have been identified in the assessment as they are included in the HER such as Internal Park Boundary, Nursery, Margam Park (GGAT Ref. 08392w) and therefore are graded as category B. As they are part of the registered historic park and garden they should be grade A otherwise by including a large number of elements of the park in the assessment you artificially lower the scores considerably. It may be easier to discount all of the separate elements of the registered park and garden included in the HER from the ASIDOHL as they are covered by the assessment of that Asset) if this is done an explanatory note should be included in the report). Therefore the assessment of the indirect impact on HCLA001 needs to be redone.

There is a need for all of the calculations included in the ASIDOHL to be checked. For instance the calculation done for the indirect impact on HCLA001 A9.3.41 – A9.3.42 is wrong. This currently reads

Indirect visual impacts = (4+4) +(4+4) + (4+3) +(4+3) +(4+3) +(4+3) +(4+2) +(4+3) +(4+3) +(4+1) +(3+3) +(3+1) +(3+2) +(3+2) +(3+3) +(3+1) +(3+2) +(3+2) +(3+1) +(3+1) +(3+2) +(3+3) +(3+2) +(3+3) +(3+3) +(3+2) +(3+2) +(3+2) +(3+2) +(3+4) +(3+3) +(3+3) +(3+4) +(3+3) +(3+4) +(3+2) +(3+4) +(3+4) +(3+2) +(3+4) +(3+3) +(3+3) +(3+2) +(3+3) +(3+3) +(3+3) +(3+3) +(3+3) +(3+3) +(3+3) +(3+3) +(3+1) +(3+1) +(3+2) +(3+3) +(3+2) +(3+1) +(3+3) +(3+2) +(3+3) +(3+3) +(3+3) +(3+3) +(3+2) +(3+2) +(3+2) +(3+2) +(3+3) +(3+3) +(3+3) +(3+3) +(3+3) +(3+3) +(3+3) +(3+3) +(2.6+4) + (2.6+4) / 77+2 = 455.2 / 79 = 5.6

Overall indirect impacts: (0) + (5.6) = 5.

Converted to the 28 point scale this is:

5.6 x 28 / 20 = 7.8

However by my calculations this should be

Indirect visual impacts = (4+4) +(4+4) + (4+3) +(4+3) +(4+3) +(4+3) +(4+2) +(4+3) +(4+3) +(4+1) +(3+3) +(3+1) +(3+2) +(3+2) +(3+3) +(3+1) +(3+2) +(3+2) +(3+1) +(3+1) +(3+2) +(3+3) +(3+2) +(3+3) +(3+2) +(3+2) +(3+2) +(3+2) +(3+4) +(3+3) +(3+3) +(3+4) +(3+3) +(3+4) +(3+2) +(3+4) +(3+4) +(3+2) +(3+4) +(3+3) +(3+3) +(3+2) +(3+3) +(3+3) +(3+3) +(3+3) +(3+3) +(3+3) +(3+3) +(3+3) +(3+3) +(3+1) +(3+1) +(3+2) +(3+3) +(3+2) +(3+1) +(3+3) +(3+2) +(3+3) +(3+3) +(3+3) +(3+3) +(3+2) +(3+2) +(3+2) +(3+2) +(3+3) +(3+3) +(3+3) +(3+3) +(3+3) +(3+3) +(3+3) +(3+3) +(3+3) +(3+3) +(3+3) +(2.6+4) + (2.6+4) / 77+2 = 455.2 / 79 = 5.76

Overall indirect impacts: (0) + (5.6) = 5.76 which rounded up is 5.8

Converted to the 28 point scale this is:

5.8 x 28 / 20 = 8.12

This is a small error but allows questions to be raised in regard to the credibility of the ASIDOHL

In regard to my initial thoughts on stage 5, I feel that the score for HCLA001 is low but this may increase when you do the recalculation I have suggested above. Otherwise, I feel the result is about right.

Finally when the impact of development on a historic landscape has been considered at a hearing the Inspectors have normally noted the overall impact on the whole RHL but have been particularly concerned about the impact on the individual HCLAs.

If you want to send me a revised draft ASIDOHL once you have made the changes to HCLA001 and checked you calculations I would be happy to check it.

Best wishes

Neil