Foel Fach Wind Farm Limited.

Foel Fach Wind Farm - Environmental Statement Volume II

Main Written Statement – Chapter 9

Project Reference: 664094

This chapter is summarised within the Non-Technical Summary of this Environmental Statement

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9 LANDSCAPE AND VISUAL

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9.1.2 This chapter is supported by the following appendices presented in Environmental Statement (**ES**) **Volume III**:

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9.2 Consultation and Scope

Scoping Direction

9.2.1 The scope of this assessment has been established through an ongoing scoping process. This has involved the production of an EIA Scoping Report (provided in **ES Volume III, Appendix 1.1: EIA Scoping Report**), which was submitted to PEDW in July 2024. Further information on the scoping process can be found in **ES Volume II, Chapter 4: Approach to the EIA**.

9.2.2 The Scoping Direction, a copy of which is included in **ES Volume III, Appendix 1.2: EIA Scoping Direction and Addendum**, was received on 5 December and 18 December 2024. **Table 9.1** summarises the key Scoping Direction comments related to this assessment and sets out how these have been addressed by the Applicant.

Table 9.1 Summary of Scoping Direction Comments Relevant to this Landscape and Visual Assessment

ID no.	Issue Consultee and date of response	Summary of comments raised	Applicant response
N/A	*National Resources Wales (NRW) 29/08/2024*	LVIA Study area and Scope - Concern that the proposed study area does not precisely follow NRW guidance (GN46) on setting an approximate study area distance from the Site based on wind farm height. Due to the fact the ZTV shows theoretical visibility extends into areas of Conwy County Borough Council (CCBC) request for additional viewpoints with visualisations from the B4501 (both north and south of Cerrigydrudion) with precise locations based on a larger scale ZTV representation. Lack of any night-time visual assessment from a location within the ENP a designated Dark Skies Park. No cumulative ZTV analysis provided. No details of ground level components i.e. the BESS and substation. ZTV analysis would be beneficial in terms of confirming the extent which these components would be visible and whether any specific viewpoints are required in order to illustrate this visibility. VP 15 (CRDVNL) from PRoW but set between 2 forest blocks likely impacting on visibility. Advise alternative locally promoted route (Liberty Hall) 3 in upland to north of VP15 as a more suitable location.	The 35 km threshold was established as an area of search based upon the findings of a series of test ZTVs that were produced to demonstrate the visual extents for a range of wind turbine heights with up to 230 m as a worst-case scenario. The ZTVs demonstrated that visibility reduces significantly at the full extent of the wider area of search (35 km) and substantially reduces beyond 20 km. Additional viewpoints 19-21 have been added within CRDVNL to account for visibility extending into sensitive and publicly accessible elevated areas of this NL between c.12-32 km from the Site. The 26-28 km study area advised by GN46 falls well within the 35 km area of search which has ensured the wider site context has been fully recorded and considered within the LVIA. Prior experience of similar large-scale wind development such as this demonstrated that significant effects upon landscape character at distances beyond 20 km are unlikely. However, further site and assessment work against landscape character, using LANDMAP areas, has allowed the LVIA to adapt the detailed study area where there was potential for significant effects beyond 20 km to arise, particularly as a result of the assessment of additional

ID no.	Issue Consultee and date of response	Summary of comments raised	Applicant response
			viewpoints within the CRDVNL and Conwy district as requested by NRW and CCBC. Assessment has been undertaken for 3 no. viewpoints that provide nighttime views that were deemed suitable, accessible and safe given the duty of care to employees. ENP did not raise concerns that the selected viewpoints would not enable an assessment to be made of the effects of the Proposed Development upon the ENP. The viewpoints proposed considered existing operational wind development and have been reviewed against the emerging cumulative position. Ground level components have been considered as the project proposals were refined and are included within the assessment. Viewpoint 15 location was reviewed during additional site visits to the suggested area and has been repositioned accordingly.
N/A	*Conwy County Borough Council (CCBC)*	Larger scale representation of the ZTV plans required. Request for additional viewpoints to the north and south of Cerrigydrudion	Further site visits were undertaken to assess the most suitable locations for additional viewpoints. Additional viewpoints have been included as follows: Viewpoint 17: B4501 North of Cerrigydrudion (296136, 350484); Viewpoint 18: B4501 South of Cerrigydrudion (295299, 346326).
ID. 62	*Study area*	The applicant's attention is drawn to NRW's comments highlighting the approach outlined in the SR does not accord with NRW Guidance Note (GN) 46, as LANDMAP aspect areas have not been identified and filtering has	The 35 km threshold was established as an area of search based upon test ZTVs that demonstrated visibility reduces significantly beyond 20 km. The 26-28 km study area advised by GN46 falls well within the

ID no.	Issue Consultee and date of response	Summary of comments raised	Applicant response
		not been undertaken to demonstrate the proposed 20 km study area is appropriate. NRW also highlights the purpose of the 35 km study area is not clear. NRW advises that the filtering exercise is expected to result in aspect areas outside of the 20 km area being identified and that using a different approach to GN 46 may therefore result in potentially significant effects on aspect areas being missed. They add that the same principles outlined in GN 46 apply if local landscape character areas, rather than LANDMAP aspect areas, were to be used. NRW therefore does not agree the effects on landscape character or visual receptors beyond 20 km can be scoped out. They add this is also on the basis that the Zone of Theoretical Visibility shows visibility of up to all 11 turbines beyond 20 km and the SR suggests viewpoints within designated landscapes beyond 20 km. PEDW recommends the applicant liaises directly with NRW and the LPA to agree the size of the detailed study area, which will form the basis of the landscape character and visual amenity receptors to be scoped into the ES. Any departure from the advice provided by NRW should be supported by a robust rationale in the ES.	35 km area of search which ensures the wider site context has been fully recorded and considered within the LVIA. A detailed filtering exercise of LANDMAP aspect **areas has been undertaken and is presented in ES Volume III, Appendix 9.4: LANDMAP Detailed Assessment, Appendix 9.5: Special Landscape Areas Assessment, Appendix 9.6: National Landscapes Assessment, Appendix 9.7: National Park Assessment, and Appendix 9.8: Preliminary Assessment of Receptor Groups**. This filtering identified those receptors with potential for significant effects requiring detailed assessment, with the level of attention proportionate to the likelihood of significant effects arising.

ID no.	Issue Consultee and date of response	Summary of comments raised	Applicant response
ID.63	*Landscape designations*	The applicant's attention is drawn to comments from NRW advising the Proposed Development is likely to cause substantial harm to the character and qualities of the Eryri National Park (ENP) and the Clwydian Range and Dee Valley National Landscape (CRDVNL), and the visual amenity of the people visiting these areas. NRW adds that it is therefore likely to be considered contrary to the statutory purpose of these designations and national planning policy. NRW notes that the effects on Designated Landscapes are proposed to be scoped into the Landscape and Visual Impact Assessment (LVIA) and advises this should include an assessment of the effects on the special qualities of the ENP and CRDVNL. They advise the stated special qualities in the applicable Management Plans are headlines and any assessment of the impacts on these qualities should be informed by detailed supporting evidence and assessment, including that found within local landscape character assessments. The applicant's attention is also drawn to NRW's comments regarding the status of the evaluation of the new National Park designation for the CRDVNL. PEDW recommends the applicant also consults Eryri National Park Authority (ENPA).	A comprehensive assessment of the effects on special qualities of both Eryri National Park and the Clwydian Range and Dee Valley National Landscape has been undertaken and is presented in **Appendix 9.7** and **Appendix 9.6**. The assessment draws upon the detailed supporting evidence within the applicable Management Plans and local landscape character assessments. The special qualities assessment considers the nine special qualities of Eryri National Park as defined in the Cynllun Eryri Landscape Management Plan 2020, and the five special qualities and features of the CRDVNL as defined in the Management Plan 2020-2025.
ID.64	*Aviation Warning Lighting*	The applicant's attention is drawn to comments from NRW regarding the impact of aviation warning lighting, advising the LVIA should refer to NRW's evidence on	A comprehensive night-time lighting assessment has been undertaken in accordance with NRW guidance and is presented in this Chapter in line with **ES**

ID no.	Issue Consultee and date of response	Summary of comments raised	Applicant response
		dark skies and should include at least one night-time viewpoint, with photomontage, from a location in the ENP where dark skies are likely to be best experienced. PEDW recommends the applicant liaises directly with NRW and ENPA to agree such a viewpoint(s).	**Volume III, Appendix 9.3: Night Time Lighting Assessment Methodology**. The assessment includes night-time visualisations from three representative viewpoints within Eryri National Park (Viewpoints 5, 9, and 10) which demonstrate the aviation lighting effects from locations where dark skies are experienced. The lighting intensity ZTV is presented in **ES Volume IV, Figure 9.35: Lighting Intensity ZTV for Lit Turbines T01, T04, T05 and T10 to 20 km with Viewpoints**. The assessment concludes that aviation lighting effects would be not significant, including from locations within the National Park.
ID.65	*Zone of Theoretical Visibility (ZTV)*	The applicant's attention is drawn to comments from CCBC and NRW advising the scale of figure 1 makes it difficult to interrogate the results of the ZTV against potential viewpoints.	Multiple ZTV figures have been produced at different scales to enable detailed interrogation of visibility patterns. These include **ES Volume IV, Figure 9.3: Blade Tip ZTV to 35 km with Viewpoints**, **Figure 9.4: Blade Tip ZTV to 20 km with Viewpoints**, **Figure 9.5: Hub Height ZTV to 35 km with Viewpoints**, **Figure 9.6: Hub Height ZTV to 20 km with Viewpoints**, and quadrant-specific enlargements (**Figures 9.7-9.10**). The lighting intensity ZTV has also been produced at **ES Volume IV**, **Figure 9.35**. These provide appropriate scale representations for detailed analysis of potential viewpoint locations and visibility patterns.

ID no.	Issue Consultee and date of response	Summary of comments raised	Applicant response
ID.66	*Viewpoints*	The applicant's attention is drawn to comments from CCBC, advising the provision of visualisations from viewpoints along the B4501. ENPA confirms they are content with the proposed viewpoint locations and proposed methodologies for assessing them. The applicant's attention is also drawn to comments from NRW advising a blade tip ZTV alone is insufficient for NRW to confirm whether proposed viewpoints are adequate. They add that other information which will demonstrate adequacy will include cumulative ZTV analysis, hub height ZTV analysis, ZTV analysis of ground level components and draft viewpoint photography / wirelines. NRW also highlights concerns regarding the majority of LVIA viewpoints within the ENP and CRDVNL being located on roads, which are likely to be less sensitive than those sections away from the road enjoyed by sensitive receptors such as people using PRoW, open access land and visiting hill summits. The applicant's attention is drawn to NRW's comments advising additional or alternative viewpoints are included. NRW also recommends the applicant consults the relevant LPAs for further advise on viewpoints. PEDW recommends the applicant liaises directly with CG, CCBC, NRW and ENPA to agree viewpoint locations and visualisations, ensuring the agreed approach is clearly outlined in the ES.	Additional viewpoints along the B4501 corridor have been included as requested: Viewpoint 17: B4501 North of Cerrigydrudion (296136, 350484) and Viewpoint 18: B4501 South of Cerrigydrudion (295299, 346326). Additional viewpoints have also been added within CRDVNL (Viewpoints 19-21) to account for visibility extending into sensitive elevated areas of this National Landscape. To demonstrate the adequacy of the proposed viewpoints as requested by NRW, comprehensive ZTV analysis has been undertaken including: • Blade tip ZTV analysis (**ES Volume IV, Figures 9.3-9.4**) • Hub height ZTV analysis (**ES Volume IV, Figures 9.5-9.6**) • Cumulative ZTV analysis showing combinations with operational, consented, and scoping wind farms (**ES Volume IV, Figures 9.36-9.43**), and • Lighting intensity ZTV analysis (**ES Volume IV, Figure 9.35**). The cumulative ZTV analysis has been particularly important in demonstrating viewpoint adequacy, as it shows the theoretical visibility patterns when the Proposed Development is considered alongside other

ID no.	Issue Consultee and date of response	Summary of comments raised	Applicant response
			existing and Proposed Developments in the area. This analysis confirms that the selected viewpoints appropriately represent the range of cumulative visual effects likely to arise and provide adequate coverage of sensitive receptors including those within designated landscapes. All 21 assessment viewpoints have been agreed through consultation and cover a range of receptor types, distances, and elevations as presented in **ES Volume III, Appendix 9.9: Viewpoint Assessment**. The viewpoint selection has been informed by the comprehensive ZTV analysis to ensure representative coverage of areas where significant visual effects, including cumulative effects, are most likely to occur.
ID.67	*Visualisations*	NRW advises that except for viewpoints 17 and 18 which will be wirelines only, the visualisations for all other viewpoints with the ENP and CRDVNL should comprise photomontages, wirelines, and cumulative wirelines.	Comprehensive visualisations have been prepared for all 21 assessment viewpoints and are presented in **ES Volume III, Appendix 9.11: Visualisations Viewpoints 1 to 21**. These include photomontages for key viewpoints, wirelines for all viewpoints (including cumulative wirelines showing other wind farms), and night-time visualisations for three representative viewpoints (5, 9, and 10) within Eryri National Park. The visualisations have been prepared in accordance with SNH guidance and Landscape Institute Technical Guidance Note 06/19.

ID no.	Issue Consultee and date of response	Summary of comments raised	Applicant response
ID.68	*Cumulative effects*	NRW notes it is not clear which schemes will be included in the cumulative assessment and highlights that a 20 km study area is unlikely to be sufficient to capture all potentially significant cumulative effects on the ENP and CRDVNL. NRW states this should be reviewed alongside the long list of cumulative schemes, once compiled. ENPA highlights Gaerwen Wind Farm is in close proximity to the Proposed Development. PEDW recommends the applicant liaises directly with CG, CCBC, ENPA and NRW to agree schemes to be included in the cumulative LVIA.	A comprehensive cumulative assessment has been undertaken extending beyond the 20 km study area where necessary. Multiple cumulative ZTV figures have been produced and are presented in **ES Volume IV, Figures 9.36-9.43**, showing combinations with operational, consented, and scoping wind farms. The cumulative assessment considers schemes across both study areas and includes detailed analysis of cumulative landscape character effects and cumulative visual effects. A long-list and short-list of cumulative schemes has been developed and agreed through consultation.
ID.69	*Residential Visual Amenity Study (RVAS)*	The SR states that a separate standalone RVAS will be prepared as part of the LVIA. PEDW recommends this is included as a technical appendix to the ES.	A standalone Residential Visual Amenity Assessment has been prepared and is included as **ES Volume III, Appendix 9.10: Residential Visual Amenity Assessment**. The RVAS assesses all residential properties within 2 km of the proposed turbines in accordance with Landscape Institute Technical Guidance Note 2/19. The assessment considers residential visual amenity effects during construction and operation.

Scope of the Assessment

9.2.3 The technical scope of this assessment has been established through an ongoing scoping process. As a result of this process, the technical scope of the assessment reported in this chapter comprises:

- Effects on the landscape as a resource in its own right (the landscape effects); and
- Effects on specific views and visual amenity more generally (the visual effects).

9.2.4 Therefore, this LVIA considers the potential effects of the Proposed Development upon:

- Individual landscape features and elements;
- Landscape character;
- Specific views; and
- People who view the landscape.

9.2.5 The following sensitive landscape receptors have been assessed:

- Landscape designations (International and National level landscape designations, including Eryri NP Dark Sky Park (Eryri NP);
- Registered historic landscapes (HLW) ;
- Local landscape designations (including Special Landscape Areas (SLA));
- National landscape character areas (NCA);
- Local landscape character (LLCA); and
- Local landscape character areas (LANDMAP).

9.2.6 The following sensitive visual receptors have been assessed:

- Residential receptors within 2 km;
- Settlements;
- National trails;
- Long distance walking routes;
- Public rights of way (PRoW);
- Cycle routes; and
- Roads and railways.

9.2.7 An initial filtering exercise of receptors has been undertaken to determine which receptors have the potential for significant effects to arise upon them as a result of the construction and/or operation of the Proposed Development and would therefore require detailed consideration in this assessment. The intention has been to ensure that the level of attention given is proportionate to the likelihood of significant effects arising. The findings of this initial filtering exercise are presented in **ES Volume III** in:

- Appendix 9.5: Special Landscape Areas Assessment
- Appendix 9.6: National Landscapes Assessment
- Appendix 9.7: National Park Assessment, and
- Appendix 9.8: Preliminary Assessment of Receptor Groups.

9.2.8 Based on the desk study, field work, the professional judgement of the LVIA team and experience of delivering other onshore renewable energy projects, the following receptors/elements have been scoped out of detailed assessment:

- Effects on receptors located outside of the Zone of Theoretical Visibility (ZTV); and
- Effects on LANDMAP aspect areas outside of the study areas as defined in LANDMAP Guidance Note 46 (NRW, 2023), where it is judged that potential significant effects are unlikely to occur.

9.2.9 The scope of the assessment has not changed since the receipt of the Scoping Direction, which is presented in **Appendix 1.2.**

9.3 Methodology

9.3.1 This assessment has been undertaken in accordance with the following legislation, and with regard to the following planning policy and guidance. It should be noted that this chapter does not assess the compliance of the Proposed Development against relevant planning policy. Such an assessment is presented in the **Planning Statement**.

Legislation

International

- Council of Europe (2000) European Landscape Convention, Florence, 20.X.2000, ETS No. 176. Strasbourg: Council of Europe.

National

- National Parks and Access to the Countryside Act 1949; and
- Countryside and Rights of Way Act 2000.

National Planning Policy

- Natural Resources Wales (2018) LANDMAP Guidance Note 3: LANDMAP and the Renewable Energy Agenda. Cardiff: Natural Resources Wales;
- Planning Policy Wales (PPW) Edition 12, (February 2024) - Chapter 5;
- Future Wales: The National Plan 2040 (February 2021). Policy 17 and 18 are concerned with renewable and low carbon energy: Local Planning Policy

9.3.2 The Proposed Development is within the administrative boundary of Gwynedd Council. The Isle of Anglesey County Council and Gwynedd Council have decided to prepare a single Plan (the Plan) for Anglesey and Gwynedd Planning Authority

areas. The Anglesey and Gwynedd Joint Local Development Plan was formally adopted on 31 July 2017 and the majority of decisions on planning applications in the two Planning Authority areas will be based on the contents of the Plan.

9.3.3 The study area for the LVIA extends across a number of Local Planning Authorities (LPA) including the neighbouring authorities of:

- Conwy County Borough Council (CCBC) is located to the north/north-west of the study area;
- Denbighshire County Council (DCC) is located to the east/north-east of the study area;
- Powys County Council (PCC) is located to the south-east of the study area;
- Wrexham County Borough Council (WCBC) is located to the east of the study area; and
- Eryri (Snowdonia) National Park (ENP) covers the west side of the study area.

9.3.4 The LPAs identify Special Landscape Areas (SLA) that are protected by development plan policies. Table 9.2 below sets out the policies considered relevant to this LVIA.

Table 9.2 Local Planning Policies of Relevance to Landscape and Visual Matters

Local Authority	Planning Policy
Gwynedd Council	The Anglesey and Gwynedd Joint Local Development Plan • Strategic Policy PS 19: Conserving And Where Appropriate Enhancing The Natural Environment • Polisi AMG 2: Special Landscape Areas • Policy ADN 1: On-Shore Wind Energy
Conwy County Borough Council (CCBC)	Conwy Local Development Plan 2007 - 2022 • Policy NTE/4 The Landscape and Protecting Special Landscape Areas; • Policy NTE/7 – Onshore wind turbine development
Denbighshire County Council (DCC)	Denbighshire Local Development Plan 2006-2021 • Policy VOE 2 - Area of Outstanding Natural Beauty and Area of Outstanding Beauty • Policy VOE 9: On-shore wind energy.
Powys County Council (PCC)	Powys Local Development Plan 2011 – 2026 • Policy DM4 – Landscape • Policy RE1 – Renewable Energy
Wrexham County Borough Council (WCBC)	Wrexham Local Development Plan 2013-2028 • Policy SP14: Natural Environment

Local Authority	Planning Policy
	• EM1: Landscape and Development • Policy NE4: Area of Outstanding Natural Beauty (now National Landscape) • Policy NE5: Special Landscape Areas • Policy RE2: Renewable Energy Schemes
Eryri (Snowdonia National) Park	Eryri Local Development Plan (ELDP) 2016-2031 • Strategic Policy B: Major Development (B) • Development Policy 2: Development and the Landscape (2)

Guidance

9.3.5 The primary source of best practice for LVIA in the UK is 'The Guidelines for Landscape and Visual Impact Assessment, 3rd Edition' (GLVIA3) (Landscape Institute and the Institute for Environmental Management and Assessment, 2013).

9.3.6 The LVIA presented in this chapter has been undertaken in accordance with the principles established in GLVIA3. It must however be acknowledged that GLVIA3 establishes guidelines not a specific methodology. The preface to GLVIA3 recognises that:

"This edition concentrates on principles and processes. It does not provide a detailed or formulaic 'recipe' that can be followed in every situation – it remains the responsibility of the professional to ensure that the approach and methodology adopted are appropriate to the task in hand."

9.3.7 The methodology for this assessment has therefore been developed specifically for this LVIA to ensure that it is proportionate and fit for purpose.

9.3.8 In addition to GLVIA3, the following guidance documents have been used during the preparation of this assessment. Some of the guidance has been prepared by NatureScot or Natural England, whose remit covers Scotland and England, is considered to provide useful guidance to aid consideration of development in Wales in lieu of equivalent guidance from NRW.

- Assessing the Cumulative Impact of Onshore Wind Energy Developments, NatureScot, (March 2021);
- Siting and Designing Wind Farms in the Landscape, Version 3a, Scottish National Heritage (SNH) (August 2017);
- Natural Resources Wales (NRW) Guidance Note 046, 'Using LANDMAP in Landscape and Visual Impact Assessments, (LVIA),' January 2021;
- Visual Representation of Wind Farms, Version 2.2, SNH (February 2017);

- Visual Representation of Development Proposals - Technical Guidance Note 06/19, Landscape Institute (September 2019), including supporting Technical Information Notes 07/19, 08/19 and 09/19;
- NRW Evidence Report No. 80, NRW (November 2015), Strategic Assessment and Guidance, Stage 1- Ready Reckoner of Visual Effects Related to Turbine Size, Report no. 315, NRW (March 2019);
- An Approach to Landscape Sensitivity Assessment – To Inform Spatial Planning and Land Management, Natural England (June 2019);
- Assessing Landscape Value Outside National Designations -Technical Guidance Note 02/21, Landscape Institute (2021);
- Residential Visual Amenity Assessment (RVAA). Technical Guidance Note 2/19. Landscape Institute (2019);
- Guidance on Aviation Lighting Impact Assessment, NatureScot (November 2024);
- Designing Wind Farms in Wales. Design Commission for Wales (Updated 2014);
- Designing for Renewable Energy in Wales. Design Commission for Wales (November 2023); and
- Landscape Sensitivity Assessment guidance for Wales. Guidance Note GN017. Natural Resources Wales (updated 2023).

Baseline Characterisation

Extent of the Study Area

9.3.9 The Landscape and Visual Chapter of the Scoping Direction Request proposed that the LVIA will consider an initial 35 km radius study area.

9.3.10 In order to assist with defining the study area, a digital Zone of Theoretical Visibility (ZTV) model was created as a starting point to illustrate the geographical area within which views of development on the Site are theoretically possible.

9.3.11 This was based on a 'bare earth' scenario, whereby the screening effect of areas of existing vegetation or built features in the landscape are not considered. The ZTV's were modelled to blade tip height using the currently proposed maximum turbine blade tip heights of between up to 200 m and up to 220 m and is presented at **ES Volume IV, Figure 9.3**.

Desk Study

9.3.12 In order to establish the baseline conditions within the study area, data has been obtained from the following sources:

- Future Wales. The National Plan 2040 (February 2021): Policy 17 and 18;
- Relevant National and Local Policy documents as set out in **Table 9.2** above;
- Ynys Môn and Gwynedd/ Gwynedd Join Local Development Plan 2011 - 2026 (host Local

- Authority area) landscape policy; Natural Resources Wales (NRW) National Landscape
- Character Areas (NLCA);
- Gwynedd/ Gwynedd Landscape Character SPD (November 2009);
- Gwynedd/ Gwynedd Landscape Strategy Update (2012);
- Review of Special Landscape Areas in Gwynedd and Anglesey, LUC (December 2012);
- Conwy and Sir Ddinbych/ Conwy and Denbighshire Landscape Sensitivity and Capacity Assessment for Wind Energy Development (May 2013);
- Eryri NP Authority. Local Development Plan 2016 - 2031 Supplementary Planning Guidance: Landscape and Seascapes of Eryri (July 2014).
- Eryri NP Authority. Local Development Plan 2016 - 2031 Supplementary Planning Guidance: Landscape Sensitivity and Capacity Assessment (October 2016).
- Eryri NP Authority. Local Development Plan 2016 - 2031 Supplementary Planning Guidance: Obtrusive Lighting (Light Pollution) (October 2016).
- Natural Resources Wales (NRW) LANDMAP Information System.
- Bryniau Clwyd a Dyffryn Dyfrdwy / Clwydian Range and Dee Valley National Landscape Management Plan Strategy 2014 – 2019;
- Bryniau Clwyd a Dyffryn Dyfrdwy/ Clwydian Range and Dee Valley National Landscape Supplementary Planning Guidance: Planning for the Dark Night Sky (June 2022).
- Cadw for information regarding designated historic assets.
- Digital Terrain Model (DTM) at 5 m spatial resolution.
- Ordnance survey mapping at 1:25,000 scale.
- Aerial and street view imagery available on Google Earth.

Field Study(s)

9.3.13 Field visits have been conducted in a variety of weather conditions and at different times of the year during the pre-application stage and assessment stages to help understand the landscape and how it changes throughout the year, including any seasonal changes to vegetation. This includes visits to the land within the Site itself and visits to the wider, publicly accessible, landscape. The Site and surrounding study area were visited on the following dates:

- 4 July 2024
- 8 August 2024
- 5 February 2025
- 23-24 June 2025, and
- 31 October 2025.

9.3.14 In addition, visits to a number of the private residential properties within 2 km of proposed wind turbines were carried out as part of the RVAA (refer to **Appendix 9.9**).

Assessment Methodology

9.3.15 In this chapter, landscape and visual effects are assessed separately although the procedure for assessing each of these is closely linked and follows GLVIA3 (Landscape Institute and the Institute for Environmental Management and Assessment, 2013).

9.3.16 The main objectives of the LVIA can be summarised as follows:

- To identify, evaluate and describe the baseline character of the Site and its surroundings and also any notable individual landscape features or important views within the Site and its surroundings;
- To determine the nature of the receptor (i.e. the sensitivity) through a consideration of its susceptibility to the type of development proposed and any values associated with it;
- To identify and describe any impacts of the Proposed Development in so far as they affect the receptors;
- To evaluate the nature of the effects (i.e. the magnitude, duration and reversibility of the effect);
- To identify and describe mitigation measures that have been adopted to avoid, reduce and compensate for effects;
- To evaluate the relative significance of residual effects; and
- To determine which residual effects, if any, are significant.

9.3.17 The LVIA assesses both the long-term effects relating to the operational lifetime and the short-term temporary effects associated with the construction of the Proposed Development.

9.3.18 Consideration has been given to seasonal variations when assessing the visibility of the Proposed Development.

9.3.19 A 50 m micrositing allowance is sought for the wind turbines and all other elements of the Proposed Development. Micrositing is a well-established principle in wind farm DNS applications, as it allows for changes in design associated with technological advancements or turbine component manufacturing constraints to be incorporated into the development proposals. It also provides flexibility to avoid any unknown environmental constraints which might be revealed during later phases of investigation or construction, including archaeological features, ground conditions, or ecological sensitivities. The LVIA assessment has been undertaken on the basis of the proposed turbine locations as presented in Table 2.1 of **ES Volume II, Chapter 2: Description of the Proposed Development**, with the understanding that final turbine positions may be adjusted within the 50 m micrositing tolerance. Given the scale of the proposed turbines (200-220 m to blade tip) and the distances to sensitive receptors, the potential for micrositing adjustments of up to 50 m to materially alter the landscape and visual effects assessed in this chapter is considered negligible. The identified micrositing areas have been selected to avoid known environmentally constrained areas identified during baseline surveys, as detailed in **ES Volume II, Chapter 3: Environmental context and reasonable alternatives considered.**

9.3.20 The LVIA also considers any cumulative effects arising in conjunction with other applicable schemes in the study area, as defined below. Best practice guidelines (Assessing the Cumulative Impact of Onshore Wind Energy Developments, NatureScot, March 2021) identify two principal types of cumulative visual impact:

- Combined visibility – where the observer is able to see two or more developments from one viewpoint; and
- Sequential visibility – where two or more sites are not visible at one location but would be seen as the observer moves along a linear route, for example, a road or PRoW.

9.3.21 The NatureScot cumulative assessment guidelines (2021) state that 'combined visibility' may either be 'in combination' (where two or more sites are visible from a fixed viewpoint in the same arc of view) or 'in succession' (where two or more sites are visible from a fixed viewpoint, but the observer is required to turn to see the different sites). Both types are discussed in this chapter. The published GLVIA3 also indicates a difference in emphasis between sequential effects that are frequent and those which are occasional. This chapter also includes a further consideration of the overall totality of the effect when the Proposed Development is considered alongside the other operational or proposed schemes across the study area.

9.3.22 In relation to both the effects of the Proposed Development alone, and the cumulative effects with other schemes in the study area, both beneficial (positive) and adverse (negative) effects are considered. Renewable energy development can give rise to a wide spectrum of opinions, ranging from strongly negative to strongly positive, with a wide range of opinions lying somewhere between these two positions. For instance, some people view wind turbines as incongruous or industrial structures whilst others view them as aesthetically pleasing, elegant structures and a positive response to climate change. This spectrum of opinion has come to be referred to in relation to wind farms as the concept of valency. For the avoidance of doubt, in considering the effects of the Proposed Development, a precautionary approach to the assessment has been adopted and it is assumed that, unless specifically stated otherwise, the effects of the proposal would be adverse in nature even though it is acknowledged that, for some people, the impacts could be considered to be beneficial.

9.3.23 In accordance with the EIA Regulations requirement to assess a worst-case scenario, the LVIA has been undertaken on the basis of the maximum parameters sought turbines with a maximum blade tip height of 220 m and maximum rotor diameter of 175 m. The ZTVs have been generated using the maximum hub height, and the visualisations illustrate the maximum rotor diameter, in accordance with standard practice. All turbine candidates being considered fall within these maximum parameters.

Landscape Assessment Methodology

9.3.24 The assessment has identified the existing landscape features on the Site, and in the immediate vicinity, and how these elements combine to give the area a sense of landscape character. Plans and construction details of the Proposed Development

have been used to determine the impacts of the Proposed Development on landscape features and character.

9.3.25 The LVIA firstly assesses how the Proposed Development would impact directly on any existing landscape features or elements (e.g. removal of trees etc.).

9.3.26 The LVIA then considers impacts on landscape character with reference to landscape character areas/types identified in published landscape character documents. Further details of the assessment criteria that underpins this LVIA are set out in **ES Volume III, Appendix 9.1: Landscape and Visual Impact Assessment Criteria**.

9.3.27 The assessment of effects on landscape character is based primarily on the LANDMAP Visual Sensory Areas. In addition, effects on broader landscape character, including areas such as Eryri NP to the west of the Site and the Bryniau Clwyd a Dyffryn Dyfrdwy / Clwydian Range And Dee Valley National Landscape (former AONB) to the east of the study area, are evaluated using key descriptions and guidance from published character assessments for these designated landscapes, both of which partly fall within the 20 km detailed study area. Descriptions of key characteristics from larger LCAs, including the Gwynedd Landscape Character SPD (2009), Gwynedd Landscape Strategy Update (2012), and Conwy Landscape Sensitivity and Capacity Assessment for Onshore Wind Turbine Development, have also informed the assessment. The analysis draws on updated LANDMAP data (NRW, 2024) and references local LCA studies where specific sensitivities or relevant guidance for managing landscape change are identified.

9.3.28 The guidance within LLCAs includes forces for change, key sensitivities and guidelines for development led-change, protection and conservation and the management and enhancement of existing landscape character and features. This guidance also feeds into the mitigation section of this chapter where pertinent to the potential for mitigation of the proposals.

9.3.29 LANDMAP Visual and Sensory Aspect Areas within 20 km of the Proposed Development are shown in **ES Volume IV, Figure 9.23: LANDMAP Visual and Sensory Classification within 20 km** and overlaid with the blade tip ZTV in **ES Volume IV, Figure 9.24: LANDMAP Visual and Sensory Overall Evaluation with Blade Tip ZTV with Viewpoints**.

9.3.30 The area of the Site in which the Proposed Development is located is within Visual and Sensory Aspect Area: SNPVS091- Foel Goch uplands. The access track from the B4501 also passes through the adjoining SNPVS089: Afon Mynach Valley.

9.3.31 Beyond the Site's host aspect area, the assessment considers effects on landscape character collectively in broad geographical areas around the Site based on their distance from the Proposed Development. The intention has been to ensure that the level of attention given is proportionate to the likelihood of significant effects arising.

9.3.32 The first stage in assessing the effects of the Proposed Development on landscape character is to evaluate the sensitivity of the landscape to the type of change

proposed. As indicated within GLVIA3, sensitivity of landscape character should be determined through a consideration of both susceptibility to change arising from the type of development proposed and any values associated with the landscape.

9.3.33 The second stage is to determine the magnitude of change on landscape character as a result of the Proposed Development. This has been determined using professional judgement based on the following factors:

- The percentage of the visual and sensory aspect area from where the Site would theoretically and actually be visible;
- The distance between the aspect area and the Site;
- The likely prominence of the turbines, substation, BESS, or associated infrastructure elements from the aspect area taking account of existing locally dominant characteristics in the character type; and
- The degree to which the physical and perceptual characteristics would change as a result of the Proposed Development.

Visual Assessment Methodology

Zones of Theoretical Visibility (ZTV)

9.3.34 Potential visual receptors of the Proposed Development have been identified by interpretation of digitally generated ZTVs.

9.3.35 A ZTV illustrates the extents from which a feature would theoretically be visible within a defined study area.

9.3.36 ZTVs are generated assuming a 'bare ground' terrain model. The bare ground ZTVs presented within this LVIA have been generated from topographical data only and they do not take any account of vegetation or the built environment which may screen views of the development. They are, as such, a 'worst case' zone of visual influence and considerably over-emphasise the actual visibility of the Proposed Development. In reality, trees, hedges and buildings may restrict views of the Proposed Development from many of the areas rendered as within the bare ground ZTV.

9.3.37 A further assumption of the ZTVs is that climatic visibility is 100 % (i.e., visibility is not impeded by moisture or pollution in the air). In reality, such atmospheric conditions are relatively rare in this part of the country. Mist, fog, rain and snow are all common weather occurrences, which would regularly restrict visibility of the development from some of the areas within the ZTV; this being an incrementally more significant factor with distance from the Site. Atmospheric pollution is not as significant as it is in other parts of the country but is still present and would also restrict actual visibility on some occasions, again more so with distance from the Site.

9.3.38 The ZTVs were generated using GIS. The programme uses topographical height data (OS Terrain 5) to build a terrain model. The programme then renders the model

using a square grid to illustrate whether the turbines would be visible in each 50 m x 50 m square on the grid for a specified distance in every direction from the Site.

9.3.39 Digital ZTVs have been prepared to illustrate the theoretical visibility of the turbine for a radius of 35 km around the Site. Three sets of ZTVs have been produced for the Proposed Development's wind turbines, the first shows visibility of the proposed wind turbines to blade tip when the blade is at its highest possible position (**ES Volume IV, Figure 9.3**), the second, the visibility of the turbines at the highest anticipated hub heights(**ES Volume IV, Figure 9.5**) and the final set shows the visibility of the turbines proposed to be lit with visible aviation lights (**ES Volume VI, Figure 9.35**). Enlargements of the ZTVs have also been produced.

9.3.40 Cumulative ZTVs have been produced to show locations where the ZTVs of two or more operational, consented or proposed developments (in certain cases a number of wind farms which are at the same stage in development have been grouped together). In the cumulative ZTVs one colour has been used to illustrate the theoretical visibility of the Proposed Development and a second colour to illustrate the visibility of the second site. Where the ZTVs of the two sites overlap a third colour has been used to illustrate this potential cumulative visual influence.

9.3.41 It should be noted that there are several limitations to the use of ZTVs. For a discussion of these limitations please refer to Visual Representation of Wind farms – Version 2.2 (NatureScot). In particular, it should be noted that the ZTV plans simply illustrate theoretical visibility and do not imply or assign any level of significance to those areas identified as being within the ZTV. The ZTVs are a tool to assist the Landscape Architect to identify where the Site would potentially be visible from.

9.3.42 The assessment of landscape and visual effects in this chapter does not rely solely on the accuracy of the ZTVs. The ZTVs have been ground proofed and professional judgement has been used to evaluate the significance of effects.

Assessment Viewpoints

9.3.43 A selection of viewpoints have been considered as part of this assessment to represent a range of views and viewer types, as discussed in Visual Representation of Wind farms – Version 2.2 (NatureScot) and in paragraphs 6.16-6.20 of GLVIA3. These viewpoints have been derived through desk-based and on-site analysis, interpretation of ZTVs, and through consideration of the viewpoints used in the assessment of nearby wind farms. The assessment viewpoints have also been consulted on as part of the EIA scoping process and amended based on the feedback received from consultees (refer to **Table 9.3** below).

9.3.44 The viewpoints are representative of the range of views towards the Site. They are not intended to cover every single view but are representative of a range of distances from the Site and receptor types (e.g. residents, walkers, road users) and have been used to inform the assessment of effects on landscape character, the visual assessment, and the cumulative assessment. The viewpoints cover a variety of different character areas, are in different directions from the Site and are at varying elevations. Some of the viewpoints are intended to be representative of the visual experience in a general location whereas other viewpoints illustrate the view

from a specific or important vantage point. The viewpoints are located at a range of distances from the Site to illustrate the varying magnitude of visual impacts and the differing effects of the Proposed Development.

9.3.45 Visualisations have been produced for each of the 21 assessment viewpoints; these are presented in **Appendix 9.11**. This includes night-time visualisations for three of the assessment viewpoints (5, 9 and 10). Viewpoints 5, 9, and 10 were selected for night-time visualisations as they are representative, publicly accessible viewpoints within the Eryri National Park, allowing for an assessment of effects on the dark sky qualities of the designated landscape, as requested during scoping. An explanation of how they have been produced and information to be read in conjunction with the visualisations is provided in **ES Volume III, Appendix 9.2: Visualisation Information**.

9.3.46 **Table 9.3** identifies the 21 assessment viewpoints. The locations of these viewpoints are illustrated in **ES Volume IV, Figure 9.3** and **ES Volume IV, Figure 9.4.**

Table 9.3 Assessment Viewpoints

No.	Visual Receptor	Distance to Nearest Proposed Turbine (m)	Grid Reference	Justification / Key Receptors
1	Cefnddwysarn	3,038	296590, 338560	A Road. Minor roads. Residents. Special Landscape Area
2	A4212	4,330	292363, 336555	A road. Residents. Historic Landscape Area. National Park
3	Caer-garreg	3,551	290817, 343691	Road users. Residents. Rights of Way. Special Landscape Area. National Park
4	Mwnwgl-y-llyn Bridge	5,429	292962, 335125	Tourists. Promoted recreational walk. Railway. B road. Historic Landscape Area. National Park
5	Llangower	8,003	291099, 333096	Tourists. Promoted recreational walk. Railway. B road. Historic Landscape Area. National Park
6	Footpath Bryn-yr-Hydd	6,180	288119, 337234	Footpath / other route users. Historic Landscape Area. National Park
7	Carnedd y Filiast	6,964	287135, 344578	Hill walkers. Peak within National Park
8	Cerrigydrudion	6,676	295344, 348743	Road users. Residents. Promoted recreational route

No.	Visual Receptor	Distance to Nearest Proposed Turbine (m)	Grid Reference	Justification / Key Receptors
9	B4391 South of Rhanneg	10,153	300164, 333517	Tourists. B road. National Park
10	Picnic Area west of Llyn Celyn Reservoir	8,485	284685, 340669	A road. Tourists. National Park
11	Footpath North of Bryn-y-gwrgi	10,084	299487, 350938	Footpath / other route users
12	Arenig Fawr	11,098	282694, 336942	Hill walkers. Historic Landscape Area. Peak within National Park
13	Footpath South of Hafodty Hafod Dre	11,737	289236, 352985	Promoted recreational route. Road users. Residents. Historic Landscape Area. Special Landscape Area
14	Green Lane, Corwen	13,321	308116, 343840	Promoted recreational route. National Landscape
15	East of Cynwyd	14,063	308534, 340304	Promoted recreational route. National Landscape
16	Castell Dinas Brân	27,217	322202, 343030	Tourists. Footpath users. National Landscape
17	B4501 North of Cerrigydrudion	8,475	296136, 350484	Minor road, Users of Forest Park
18	B4501 South of Cerrigydrudion	4,240	295299, 346326	Minor road, Special Landscape Area
19	Moel y Garnedd (ENP)	6,423	289635, 335517	National Park
20	Moel Morfydd (CRDVNL)	21,402	315958, 345766	National Landscape Area
21	Moel y Plas (CRDVNL)	25,889	316762, 355523	National Landscape Area

9.3.47 Each of the representative viewpoints has been visited to gain an understanding of the sensitivity of the viewpoint receptors and to make professional judgements on the likely visual effects arising from the Proposed Development.

9.3.48 The viewpoints were used as the starting point for considering the effects on visual receptors within the entire study area. However, the visual assessment does not rely solely on the viewpoint assessments to determine the significance of effects on different visual receptor groups throughout the study area. It should be recognised that the viewpoints illustrated in the LVIA simply represent a series of snapshots from a small selection of the locations within the study area from where the Proposed Development would be visible. Following the viewpoint assessment, the LVIA considers the effect on visual amenity throughout the study area with reference to different visual receptor groups at varying distances from the Site.

9.3.49 In addition to the 21 viewpoints, it was also set out in the EIA Scoping Report that wireline visualisations would be prepared for two further locations, Yr Wyddfa and Cadair Idris. These locations are both located at a distance of approximately 35 km from the Proposed Development. The wirelines are included at **ES Volume III, Appendix 9.13: Additional Wireline Visualisations.**

Assessment Criteria

Significance of Effect

9.3.50 The purpose of an LVIA, when produced in the context of an EIA, is to identify any significant landscape and visual effects within the study area to assist the determining authority in deciding the acceptability of the scheme under consideration.

9.3.51 The detailed assessment criteria used to determine landscape and visual sensitivity, magnitude of change and significance of effect are set out in **Appendix 9.1.**

9.3.52 In summary, the sensitivity of receptors is described as very high, high, medium, low or very low, and is combined with the magnitude of change, which is also described on this same scale from very high to very low, to derive a judgement of the level of effect. This judgement is described as being on a scale from major to negligible, as per **Table 9.4**. Where appropriate, no effect has also been used within this assessment. Professional judgement is then employed to determine whether the effect is significant or not. Those effects described as major, moderate-major, and in some cases moderate, may be regarded as significant.

9.3.53 The indicative matrix shown below in **Table 9.4** is used as a guide on which judgements are based. Each receptor is considered on an individual basis through professional judgement, so although the matrix may be used as an initial guide, there will inevitably be some variation between outcomes. This is especially so where a judgement falls within the light grey area, which may or may not be significant.

Table 9.4 Matrix of Significance

		Magnitude of change				
		Very High	High	Medium	Low	Very Low
Sensitivity	Very High	Major	Major	Moderate-Major	Moderate	Moderate Minor
	High	Major	Major	Moderate	Moderate Minor	Minor
	Medium	Moderate-Major	Moderate	Moderate	Moderate Minor	Minor
	Low	Moderate	Moderate Minor	Moderate Minor	Minor	Minor / Negligible
	Very Low	Moderate Minor	Minor	Minor	Minor/ Negligible	Negligible

9.4 Baseline Conditions

9.4.1 An initial filtering exercise of receptors has been undertaken to determine which receptors have the potential for significant effects to arise upon them as a result of the construction and/or operation of the Proposed Development and would therefore require detailed consideration in this assessment. The intention has been to ensure that the level of attention given is proportionate to the likelihood of significant effects arising. The findings of this initial filtering exercise are presented in **Appendix 9.8.**

9.4.2 The following section concentrates on those receptors that have been identified as requiring detailed consideration in this assessment.

9.4.3 At this point, for clarity, it is necessary to distinguish between two terms that are frequently used in published guidance and this chapter. They originate from the 'Guidelines for Landscape Character Assessment' (Countryside Agency and NatureScot, 2002):

- Landscape Character Types (LCTs) are defined as tracts of landscape, which have a generic unity of character due to the particular combinations of landform, land cover, pattern and elements. The same landscape character type can occur at several different locations throughout a study area; and
- Landscape Character Areas (LCAs) are defined as discrete geographical areas of a particular landscape character type and can only occur at a single location.

Existing Baseline – Landscape Receptors

9.4.4 The Site is located on upland moorland to the north of the town of Bala, Gwynedd in North Wales, comprising grazing moorland, acid grassland, dry acid heath and acid neutral flush areas. The proposed wind turbines are located on areas of upland grazing moorland. The Site boundary is situated to the east of Eryri (Snowdonia) National Park, with the National Park boundary located approximately 1.9 km to the west of the nearest proposed turbine (T01).

9.4.5 The Site lies within the administrative boundary of Gwynedd Council. The Site is centred approximately at British National Grid (BNG) 294075, 341299. The nearest town is Bala, located approximately 4 km to the south of the Site. The nearest settlement is the village of Frongoch, located approximately 2.7 km to the south-west of the Site. Within Frongoch there are residential properties, holiday homes and a primary school (Ysgol Bro Trywery).

9.4.6 The nearest main highways are the A494 and A5 which meet at the village of Druid 2 miles to the west of the town of Corwen and c.14 km from the Site to the north-west.

9.4.7 The A494 continues across the east side of the study area following the Cefn Coch valley. It heads past Sarnau the closest point to the nearest turbine approximately 2.7 km to the immediate east. The route around the town of Bala and then follows the west side of Lake Bala, after which it continues across the NP boundary and over the southern area of Eryri NP towards Dolgellau.

9.4.8 The A5 continues across the north of the study area heading north-west towards the town of Betws-Y-Coed.

9.4.9 The landform of the Site varies from approximately 225 m Above Ordnance Datum (AOD) to approximately 450 m AOD. The majority of the Site is located on an area of upland grazing moorland with a number of parcels of registered Common Land. The registered common land parcels are located in the north-east of the Site, the south-east corner of the Site.

9.4.10 The location of the Proposed Development is illustrated in **ES Volume IV, Figure 9.1**: **Site Location and Initial study area 35 km**.

Landscape Designations

9.4.11 Landscape designations are illustrated in **ES Volume IV, Figure 9.15: Landscape Designations within 35 km, ES Volume IV, Figure 9.16: Landscape Designations within 20 km** and overlaid with the blade tip ZTV in **ES Volume IV, Figure 9.17: Landscape Designations within 20 km with Blade Tip ZTV**.

International Landscape Designations

9.4.12 There are no international or national landscape designations covering the Site.

National Landscape Designations

Eryri NP (Snowdonia)

9.4.13 The Eryri NP (ENP), formerly known as Snowdonia National Park, is located approximately 1.9 km to the west of the proposed windfarm at its closest point to the nearest turbine. The Landscape Management Plan, The Eryri NP Partnership Plan 2020, Cynllun Eryri Landscape Management Plan identifies several special qualities

that make Eryri a unique and important place. The key special qualities are as follows:

1. **Diverse Landscapes**: Diverse, high-quality landscapes and seascapes within a small geographic area, ranging from coast to rolling uplands to rugged mountains for which Eryri is famed.
2. **Community Cohesion**: A robust sense of community identity, cohesion, continuity and inclusivity combine to give a strong 'sense of place and belonging' within Eryri.
3. **Vibrancy of the Welsh Language:**

   The vibrancy of Welsh is most obvious in Eryri as it continues to be the choice of language in many social and professional environments. It is evident in local place names, the wildlife and history therein and is therefore intrinsic to the uniqueness of our cultural and natural heritage.
4. **Inspiration for the Arts**

   Eryri is a place which has inspired some of the nation's most notable culture, folklore, art, literature and music; an influence which continues across all creative pursuits to the present day.
5. **Tranquillity and Solitude - Peaceful Areas**

   The opportunity for people to understand and enjoy Eryri NP actively, whilst maintaining areas of silence, tranquillity and solitude, thus promoting vital aspects of health, well-being and personal reflection.
6. **Recreation, Leisure and Learning**

   Extensive opportunities for recreation, leisure and learning for people of all ages and abilities
7. **Historic Landscapes**

   The changing relationship between people and nature over time has produced landscapes of great beauty and variety in Eryri; a national asset that is essential both to our identity and to our individual 'sense of place' and wellbeing.
8. **Renowned Geology**

   Complex varied and renowned geology, which has been vital in influencing the disciplines of geology and geography internationally.
9. **Internationally Important Habitats and Species**

   There are 17 National Nature Reserves in Eryri; more than in any other National Park in England and Wales; and 56 Sites of Special Scientific Interest. The tremendous biodiversity reflects the varied landscape, geology, climate and land management. The richness of plants and animals is fundamental to the history, culture, language, economy and ongoing well-being of all people who live in and visit the area.

9.4.14 Given the proximity of the Proposed Development to the National Park, the effects on it and its Special Qualities (SQ) are considered further at **Appendix 9.7**.

Clwydian Range and Dee Valley National Landscape

9.4.15 The Clwydian Range and Dee Valley National Landscape / Tirwedd Cenedlaethol Bryniau Clwyd a Dyffryn Dyfrdwy (NL) overlaps the eastern edge of the 35 km study

area as a well as the 20 km detailed study area and is situated c.11 km from the Proposed Development at its closest point. At the time of writing, the current management plan for the NL is The Clwydian Range and Dee Valley Area of Outstanding Natural Beauty (AONB) Management Plan Review 2020 – 2025, September 2022 Clwydian Range and Dee Valley AONB Management Plan

9.4.16 National Landscapes represent some of the finest landscapes in the country and their status receives Statutory protection equivalent to National Parks. The Clwydian Range and Dee Valley Management Plan (CRDVMP) defines the individual features and qualities and features that make up the special character of the area. It is also recognised that this special character is made up of the unique combination of all its Special Qualities and Features. This is a combination of the physical attributes (rolling hills, rushing rivers, heather topped moorlands) and non-physical attributes (tranquillity, community spirit, access to nature). These attributes are referred to within the (CRDVMP) as "Features" and "Qualities" respectively. The attributes are organised into 5 separate themes which are as follows:

1. Landscape Character and Quality: Tranquillity, Remoteness and Wildness, Space and Freedom
2. Habitats and Wildlife: Heather Moorland and Rolling Ridges, Broadleaved Woodlands and Veteran Trees, river Valleys and the River Dee, Limestone Grasslands, Cliffs and Screes
3. Historic Environment: Historic Settlement and Archaeology, Industrial Features and World Heritage Site, Historic Defence Features, Small Historic Features, Traditional Boundaries
4. Access Recreation and Tourism: Iconic Visitor and Cultural Attractions, The Offa's Dyke National Trail and Promoted Routes, and
5. Culture and People: The Built Environment, People and Communities.

9.4.17 With reference to **ES Volume IV, Figure 9.3** (200 m and up to 220 m), theoretical visibility exists from the west-facing northern and central parts and the southern hills of the Clywdian Range of the NL**,** ranging from 12 to 30 km from the Site. Actual visibility is expected to be reduced due to existing field hedgerows and tree cover. At locations with unobstructed views over distances greater than 21 km, potential effects are anticipated to be minimal. While significant effects from distant locations are considered unlikely, further consideration was given to areas within the ZTV in the CRDVNL due to their sensitivity and requests at Scoping by NRW and CCBC (**Table 9.1**). Additional representative viewpoints (19-21) and an evaluation of effects on the special qualities of the NL have been included in the assessment (refer to **Appendix 9.9** and **Appendix 9.6**).

Proposed Glyndŵr National Park

9.4.18 Natural Resources Wales (NRW) is currently consulting on the designation of a new National Park in northeast Wales - the proposed Glyndŵr National Park. If designated in 2025 as proposed, this would become Wales's fourth National Park. The proposed designation covers approximately 528 km² of upland and lowland landscape encompassing the Berwyn Mountains, Dee Valley, Ceiriog Valley, Tanat Valley, and Lake Vyrnwy, extending across parts of Denbighshire, Wrexham, Powys, and Gwynedd local authority areas.

9.4.19 The nearest point of the proposed Glyndŵr National Park boundary to the Proposed Development is approximately 4.25 km to the south-east. The proposed boundary extends across a range of distances from 4.25 km to approximately 30 km from the Site, with the closest western portions at 4-10 km and the more distant eastern portions (including the Vale of Llangollen) at 20-30 km. The proposed designation partially overlaps with the existing Clwydian Range and Dee Valley National Landscape in its northern portions.

9.4.20 NRW's commissioned assessment (Craggattack Consulting, 2024) has identified six Special Qualities that justify the proposed National Park designation: (1) Inspiration, Enjoyment, Understanding and Wellbeing; (2) Diverse Geology; (3) Richness of Habitats and Wildlife; (4) Deep Cultural Connections; (5) A Landscape of Outstanding Diversity and Contrast; and (6) The Working Landscape - Farming and Forestry. These Special Qualities reflect the landscape quality, ecological richness, cultural significance, and recreational value of the area.

9.4.21 LANDMAP Visual & Sensory assessment indicates that 58% of the proposed National Park (23 of 40 aspect areas) is assessed as High or Outstanding value, with four areas of Outstanding value representing the most exceptional landscapes. These four Outstanding value areas are all located 22-28 km from the Site and comprise: Llantysilio Mountain (upland moorland), Vale of Llangollen (historic valley), Craig Rhiwarth (upland escarpment), and Upper Tanat Valley (remote valley).

9.4.22 Given the proximity of the proposed National Park designation to the Proposed Development, and the high landscape value associated with areas that would receive National Park status, the potential effects on the proposed Glyndŵr National Park are considered in detail in **ES Volume III, Appendix 9.12: Glyndŵr Candidate National Park Assessment**. That assessment evaluates effects on landscape character (using all 40 LANDMAP Visual & Sensory areas within the proposed boundary), visual amenity (through representative viewpoints and receptor group analysis), and the six identified Special Qualities.

Historic Landscapes

9.4.23 With reference to **ES Volume IV, Figure 9.16** four Historic Landscapes lie within the 20 km detailed study area comprising:

- Y Bala a Glannau Tegid (Bala and Bala Lakesides): situated approximately 2.8 km to the south;
- Y Berwyn (Berwyn): situated approximately 2.8 km to the south-east;
- Bro Trawsfynydd a Chwm Prysor (Transfynydd Basin and Cwm Prysor): situated approximately 14.4 km to the south-west; and
- Mynydd Hiraethog (Denbigh Moors): situated approximately 9.4 km to the north.

9.4.24 Given the main considerations within these historic landscape areas are their heritage assets any landscape and visual related characteristics are assessed within the Historic LANDMAP assessment at **Section 9.6** and within **ES Volume III,**

Appendix 8.1: Cultural Heritage Desk Based Assessment, which also addresses the nearby Registered Parks and Gardens of Special Historic interest.

Local Landscape Designations

9.4.25 Special Landscape Areas (SLA) have been identified by 3 out of the 5 LPA's whose administrative boundaries overlap the 35 km area of search, with a total of 5 SLAs within the 35 km area of search.

9.4.26 Special Landscape Areas (SLA) in LPAs whose administrative boundaries overlap the 20 km detailed study area have been identified, with a total of 42 SLAs located within the detailed study area.

9.4.27 An initial review has been undertaken to determine which SLAs would have the potential for significant effects to arise upon them as a result of the Proposed Development and would therefore require detailed consideration in this assessment (**Appendix 9.5**). The intention has been to ensure that the level of attention given to each SLA is proportionate to the likelihood of significant effects arising upon them.

9.4.28 With reference to **ES Volume IV, Figure 9.17**, the review identified the potential for significant effects to occur on three SLAs, which all lie within or overlap a 10 km offset from the Site boundary. One of the SLAs hosts the Site itself. These SLA's are as follows:

- Gwynedd & Ynys Mor (Bala Hinterlands – formerly referred to as (Penllyn) – hosts the Site
- Afon Ceirw valley mosaic – approximately 250 m to north of closest turbine, and
- Mynydd Hiraethog upland mosaic - approximately 8.5 km to north of the Site.

National Landscape Character Areas (NLCA)

9.4.29 At the national level, the Site and all of the proposed turbines and infrastructure are located within NLCA10 Mynydd Hiraethog / Denbigh Moors. Its key characteristics are identified as:

- Rolling unenclosed uplands with gentle topography. Generally, between 350 m and 600 m AOD;
- Dissected by a number of minor rivers with their sources - in the hills of Hiraethog and Clocaenog;
- Scarplets – Occasional grit bands within the shale and mudstone bedrock geology, create more pronounced landform variation, giving rise to gentle but distinct landform profiles and exposures including scarplets;
- Moorland – often managed grouse moors, with large tracts of peaty and thin soils, seasonally wet, overlaying the impermeable Silurian sandstones of the western part of the area, with finer, well drained loamy and silty soils evident in areas overlaying shale/mudstone;
- Borrowed distant horizons in views - appearance of moorland horizon upon horizon giving a sense of being in a much larger continuous open moorland.

This is especially notable on Mynydd Hiraethog with borrowed views to Snowdonia (to the west) and Clwydian Range (to the east);

- Extensive afforested areas – mostly in the Clocaenog area, whose enclosure and shelter contrasts entirely with adjacent moorland;
- A number of moorland reservoirs - some large, some long and twisting, some in association with afforested areas;
- Bedrock geology is composed of Silurian sandstones of the Wenlock Series and argillaceous rocks (shales and mudstones) of the Llandovery, Ashgill and Ludlow Series, and in part masked by glacial till and drumlins;
- Very isolated, little settlement - other than small linear villages connected by the few roads that cross the area;
- Field patterns – distinctive open, stone wall field patterns evident in parts e.g. between Cerrigydruidion and Pentrefoelas. Hedges and more trees in more sheltered pastoral valley landscapes e.g. around Betws-Gwerfil Goch;
- Archaeology - a distinctive series of prehistoric ritual and funerary sites; and
- The quiet upland space between the more iconic but busier upland landscapes of the Clwydian Range and Snowdonia.

9.4.30 The 35 km study area also includes the following NL's: NLCA06 Snowdonia, NCLA11 Vale of Clwyd, NCA 15 Vale of Llangollen and Dee Valley, NCA 16 Berwyn, NCLA 12 Clwydian Range and NCLA 09 Bryniau Rhos Hills. The relative location of the NCLA's is shown at **ES Volume IV, Figure 9.28: National and Local Landscape Character Areas within 20 km.**

Local Landscape Character

LANDMAP

9.4.31 LANDMAP is the formally adopted five-tiered landscape evaluation baseline tool developed by NRW. It comprises five nationally consistent spatial datasets, referred to as Aspect Layers:

- Geological Landscape
- Landscape Habitats
- Visual and Sensory
- Historic Landscape, and
- Cultural Landscape Services.

9.4.32 These five aspect layers are divided into Aspect Areas that have been assessed by a NRW assessor. The Overall Evaluation of the Aspect Area is key to understanding its value in terms of sensitivity, rarity or importance.

9.4.33 The Overall Evaluation is:

- Low – little or no importance
- Moderate – of some local importance
- High – of regional or county importance, and

- Outstanding – of national or international importance.

9.4.34 The Aspect Areas have been mapped and are presented in **ES Volume IV, Figure 9.18: LANDMAP Geological Landscape Classification within 20 km** to **ES Volume IV, Figure 9.27: LANDMAP Cultural Landscape Classification within 10 km** and have been overlaid with the ZTV. Each of the Aspect Areas relating to the five aspect layers which cover the Proposed Development are summarised below.

9.4.35 It is important to acknowledge that while the LANDMAP database provides the most comprehensive landscape character information available for Wales, some aspect area surveys were undertaken several years ago and may not fully reflect:

9.4.36 Recent changes in land management practices

9.4.37 New development that has occurred since surveys (in particular some recently constructed wind energy development), and

9.4.38 Changes in landscape condition or character over time

Geological Landscape

SNPGL132 – Unnamed

9.4.39 The entirety of the Proposed Development is located within Geological Landscape Aspect Area SNPGL13 – Unnamed, which is a large geological aspect area covering the upland and mountain valley landscape area inclusive of the moorland areas to the immediate west of the Site up to the Eryri NP boundary and bounding Conwy district to the immediate north. It is described as an 'Upland area of the Upper Dee valley below Bala, outside SNP, in SE-dipping Ordovician - Lower Silurian mudstones and turbidites. NE-SW ridges with crags (e.g. Cefn Caer Euni, Craig Wenallt), partially wooded and flanked by fault-controlled valleys. Thick boulder clay in valleys, including drumlins. U-shaped broad Dee valley floored by alluvium.' The area has an overall evaluation of moderate.

Landscape Habitats

SNPLH193 - Unnamed

9.4.40 The entirety of the Proposed Development is located within Landscape Habitat Aspect Area SNPLH193- Unnamed which is an area of grassland and marsh inclusive of unimproved and semi-improved acid grassland, dry acid heath and acid neutral flush. The area has an overall evaluation of moderate.

9.4.41 The proposed access track uses the existing farm access track from the B4501 which crosses Aspect Area SNPLH194 which is classified as improved grassland and is assessed as having low value. The proposed access track then continues east through Aspect Area SNPLH193 which is an area of acid marsh grassland encompassing the entire Site area inclusive of 10 turbines and their associated access tracks and hard standing which are also located within it. This Aspect Area is assessed as having moderate value. The LANDMAP assessment states the area contains *'unimproved acid grassland and wet modified bog, the condition of which has not been assessed. There is no knowledge of any priority habitats or species within this aspect area.'*

Visual and Sensory

9.4.42 Visual and Sensory Aspect Areas within 20 km of the Site are illustrated in **ES Volume IV, Figure 9.23** and overlaid with the blade tip ZTV in **ES Volume IV, Figure 9.24.**

9.4.43 The Proposed Development is contained within Visual Sensory Aspect Area: SNPVS091 Foel Goch Uplands. The access track heads east from the B4501 with the first section following the existing farm track to Llaithgwm farm through Aspect Area: SNPVS089 Afon Mynach Valley.

SNPVS091 Foel Goch Uplands

9.4.44 The Aspect area is as an area of large scale open upland moorland with exposed plateau, hillsides and scarp slopes. It is described as '*Upland rough grazing / moorland. Scattered small conifer plantations, some felled to the west, and overhead pylons are moderate visual detractors. Borrowed views to Arenig mountains and Migneint in fair weather provides visual linkage with these upland areas*.' This Aspect Area is assessed as having overall high value largely based on its scenic value but is in fair condition and of moderate rarity.

SNPVS089 Afon Mynach Valley

9.4.45 This Aspect Area is an open upland valley of medium scale. It is described as '*Pleasant green valley with open rural character. Field boundary predominantly post & wire. Borrowed views of Arenig mountains in good weather. Wind turbines (outside study area) slight visual detractor*.'

Historic Landscape

9.4.46 Historic Landscape Aspect Areas within 20 km of the Site are illustrated in **ES Volume IV, Figure 9.25: LANDMAP Historic Landscape Classification within 20 km** and overlaid with the blade tip ZTV in **ES Volume IV, Figure 9.26: LANDMAP Historic Landscape Overall Evaluation with Blade Tip ZTV**.

9.4.47 The Proposed Development is contained within Historic Landscape Aspect Area: GWNDDHL743 Uplands around Moel Darren. The access track follows the existing track to Llaithgwm through Aspect Area: GWNDDHL172 Cwmtirmynach.

GWNDDHL743 Uplands around Moel Darren

9.4.48 This Aspect Area is marginal land described as a '*Large expanse of relatively largely unenclosed upland, within which there are no occupied dwellings. The area has been covered by upland archaeological survey but little more than post-medieval and a small number of medieval sites associated with pastoral farming have been recorded here.*' This Aspect Area is assessed as having overall high value for its upland qualities but is of a moderate condition and rarity.

Cultural Landscape Services

9.4.49 The LANDMAP Cultural Landscape Services is a new dataset layer which will provide information relating to cultural services and the connections between landscape, the natural environment and place, including natural settings, aesthetic appreciation, tranquillity, cultural heritage, inspiration and spiritual and identity and sense of place. The aspect uses existing Visual and Sensory boundaries. Currently there is no survey information covering the area of search for this aspect but cultural characteristics will be picked up by the assessment of local landscape character within **Section 9.6**.

Other Published Landscape Character Assessments

9.4.50 In addition to LANDMAP, there are also several other published Landscape Character Assessments which cover the landscape in and around the Proposed Development and which assist with a consideration of Local Landscape Character. The studies include:

- Gwynedd Council Landscape Character Supplementary Planning Guidance (2009)
- Conwy and Denbighshire Landscape Sensitivity and Capacity Assessment for Wind Energy Development (2013)
- Powys Landscape Character Assessment (2022)
- Wrexham LANDMAP Supplementary Planning Guidance (2007), and
- Snowdonia [Eryri] National Park Landscape Sensitivity and Capacity Assessment (2016).

9.4.51 The local character types set out in the published Landscape Character Assessments are illustrated in **ES Volume IV, Figure 9.28** and overlaid with the ZTV on **ES Vol IV, Figure 9.29: National and Local Landscape Character Areas with Blade Tip ZTV to 20 km**.

Local Landscape Description and Character Appraisal

9.4.52 The following discussion provides an overview of the physical and perceptual characteristics of the Site and the surrounding landscape without particular reference to published landscape character types.

Topography

9.4.53 The majority of the Site is set within a topographical bowl contained by a number of peaks of the Foel Goch Uplands which would host the 10 turbines. These comprise the top and north facing slopes of Foel Fach at approximately 457 m above ordnance datum (AOD), south and west facing slopes of Moel Darren 509 m AOD, north facing slopes of Moel Emoel 549 m AOD, east facing slopes and plateau of Eglwys-Anne Warren Frridd 463 m AOD, ridge and north facing slopes of Pen y Bwich Gwyn 502 m AOD.

9.4.54 Beyond the Site, the topography of the detailed 20 km study area is varied with a range of upland hills and narrow incised valleys with areas of raised plateau, scarp slopes and steep hill sides as well as gentle undulations, predominantly comprised of moorland and upland agricultural areas. Land drains to the south and east from the Site area via several tributaries including Cefn-coch Brook which head south and south-east draining from peaks around Foel Fach towards the Afon Meloch which then heads south-west to meet the River Dee (to the north-east of Bala).

9.4.55 To the west the Arenig Fach 689 m AOD, is a taller mountain peak with watercourses that drain into the upland lake Llyn Celyn and Afon Tryweryn via the Afon Gelyn. Arenig Fawr, 854 m AOD to the south-west is the high point of a large upland basin draining towards Llyn Tegid (Lake Bala) to the south of the Site via several upland rivers including the Afon Llafar and Afon Dylo.

9.4.56 To the south of the study area is the narrower wooded valley of the Hirnant leading north from Foel Goch 613 m AOD east of Llyn Tegid.

9.4.57 Further to the south-west into Denbighshire is the Berwyn range of hills an extensive tract of open moorland plateau.

Watercourses and Drainage

9.4.58 Within the detailed 20 km study area there is an extensive network of rivers and watercourses flowing from the higher ground broadly west to east and north north-west to south south-east through the narrow valleys towards the River Dee via several upland rivers and lakes acting as tributaries within the large and dramatic linked drainage basins.

Vegetation Pattern

Local Context

9.4.59 The Site comprises elevated open moorland and acid grassland with an absence of tree cover. The nearest substantial woodland are plantations which occur on the steep valley slopes to the south of the Site.

Wider Context (20 km)

9.4.60 Within the surrounding landscape most of the study area is comprised of open and exposed moorland and incised valleys with very limited tree cover, which continues north into Conwy District. Within the southern parts of the study area fields there is more extensive tree cover by way of woodland plantations within moorland side slopes which contrast strongly with the open exposed plateau of the numerous hills. A more intricate hedge-lined field structure provides more enclosed landscape areas around Pantglas further to the south. To the south-east around Sarnau and Bethel there are smaller scattered woodlands and scattered villages covering rolling hills and valleys, providing a mixed medium scale enclosed farming landscape set between high adjacent upland areas.

9.4.61 Further to the north-east between Wenallt and Maerdy in the Ceirw and Alwen valleys, where the scale becomes more intimate with a smaller irregular field pattern and a strong pattern of trees, hedges and smaller linear woodland blocks defining it.

Built Infrastructure

9.4.62 Traffic noise & movement from the A494 to the east and south detracts from tranquillity within local confines including the shores of Lake Bala and settlement valley areas to the east around Sarnau and Bethel. The slopes above form the route corridor for both the National Grid high voltage overhead line from Trawsfynydd and the SP Manweb distribution voltage lines also on steel lattice towers. The A5 heads north-west past Maerdy towards Ty-nant across the north of the study area.

Sensory and Perceptual Characteristics

9.4.63 The Site is perceived as an open exposed area of moorland with defined hills, ridges and raised plateau, steep scarp and hillside slopes; comprised of grassland, heath and wet bogland. It is largely open access land and provides opportunities for recreation and appreciation of the landscape with several PRoW crossing the Site. Its elevation affords long-range views across the surrounding landscape including towards ENP and surrounding valleys.

Forces for Future Change in the Landscape

9.4.64 There are three existing wind energy developments within 10 km of the Site with 3 turbines at Hafoty Ucha 3.5 km to the north, a single turbine at Bodtegir 7.5 km to the north-east, and 3 turbines at Braich Ddu approximately 7 km to the south-east. **ES Volume IV, Figure 9.33: Cumulative Sites within 35 km** illustrates the development status of wind farms within 35 km for schemes that that are operational, consented, submitted or in scoping. This illustrates the potential for several further wind energy developments to be constructed in the landscape around the Site, further consolidating the existing presence of wind energy in the landscape.

9.4.65 Due to the proximity of the pre assessed area, which is >2 km away from the nearest proposed turbine at the Site, it can be assumed there will also be further wind energy development that will come forward in the landscape near to the Site, serving to reinforce the already existing presence of wind energy in the nearby landscape.

9.4.66 Further change is also likely to occur due to the continued need to meet demand for new tourism development particular in and around Bala. As such nearby urban areas may also see further development.

9.4.67 It is widely recognised that climate change will have an impact on the future character of the Welsh landscape through changes to weather conditions that will in turn result in changes to vegetation that will affect the intrinsic character of the landscape which may lead to changes in land management practices.

Existing Baseline - Visual Receptors

9.4.68 The location of visual receptors is illustrated on **ES Volume IV, Figure 9.31: Principal Visual Receptors to 20 km Blade Tip ZTV and Viewpoints**.

Residential Receptors within 2 km

9.4.69 There are a number of residential properties which lie within 2 km of a proposed turbine location of the Proposed Development. The location of these individual properties is illustrated in **ES Volume IV, Figure 9.32: Residential Receptors within 2 km** with further detail provided in **Appendix 9.9**.

Settlement

9.4.70 Numerous settlements lie within the ZTV. As detailed in **Appendix 9.8**, the following settlements within 2-5 km have the potential to be significantly affected by the Proposed Development:

- Bala – nearest town located approximately 3.1 km to the south-west
- Llanderfel - located approximately 4.2 km to the south-east
- Tynant - located approximately 5 km to the north-east
- Wenalt - located approximately 3.6 km to the east
- Sarnau - located approximately 2.7 km to the south-east
- Bethel - located approximately 3.9 km to the south-east
- Llanfor - located approximately 3.1 km to the south-east
- Cefnddwysarn - located approximately 3 km to the south-east
- Frongoch - located approximately 2.7 km to the south-west, and
- Rhyd-uchaf - located approximately 4.2 km to the south-west.

9.4.71 The following main settlements are located between 5 km and 10 km from the Proposed Development:

- Cerrigydrudion - located approximately 6.3 km to the north
- Llanfihangel Glyn Myfyr - located approximately 8.2 km to the north-west
- Maerdy - located approximately 7.5 km to the north-east
- Glan- yr-afon - located approximately 7.3 km to the east
- Glasfryn - located approximately 8.5 km to the north
- Cefn-brith - located approximately 8.2 km to the north
- Betws Gwerfil Goch - located approximately 9.5 km to the north-east, and
- Llandrillo - located approximately 9.1 km to the south-east.

National Trails

9.4.72 Offas Dyke National Trail passes c.25 km to the east. Following the scoping response from NRW two further viewpoints were added within the CRDV NL to assess the effects of the Proposed Development on this National Trail.

Long Distance Walking Routes

9.4.73 There are a number of long-distance footpaths that pass through the 35 km study area comprising:

- Wales Coastal Path
- Hiraethog Trail
- Cross Britain Way
- Cambrian Way
- Snowdonia Slate Trail
- Offa's Dyke Path
- Dee Valley Way, and
- North Berwyn Way.

9.4.74 These are illustrated in **ES Volume IV, Figure 9.15**.

Public Rights of Way

9.4.75 There is an extensive network of public rights of way within the surrounding landscape, comprising footpaths, bridleways, byways and permissive paths that provide access across the upland areas and connect settlements throughout the study area. The assessment considers both long-distance walking routes and the local public rights of way network within 5 km of the Site.

9.4.76 The local PRoW network provides recreational access across the upland moorland areas, with many routes crossing open access land and connecting to the wider promoted route network. Within the 5 km study area, the network includes numerous footpaths that traverse the elevated terrain around the Site, providing opportunities for local recreation and access to the surrounding countryside.

9.4.77 Many of these local rights of way connect to or form part of longer recreational routes, creating an interconnected network that serves both local users and longer-distance walkers exploring the area between the Eryri NP to the west and the Clwydian Range and Dee Valley National Landscape to the east.

Cycle Routes

9.4.78 The following series of cycle routes is available within the broader 35 km study area. It is anticipated that most of these routes, particularly those outside the detailed 20 km study zone and the Zone of Theoretical Visibility (ZTV), or those that are well-enclosed such as mountain biking trails within forestry areas, are unlikely to experience significant effects as a result of the Proposed Development. However, certain long distance routes and local routes within 5 km have been identified for further assessment due to the sensitivity of the landscapes through which they traverse.

National Cycle Network Routes

- NCN Route 82 (Bangor to Fishguard) - Sustrans national cycle route passing through parts of Eryri NP at >15 km from the Site, and
- NCN Route 8 (Lôn Las Cymru) - Major north-south Wales cycle route traversing through the wider study area at >15 km from the Site.

Regional Cycle Routes

- Regional Route 80 - Regional cycling route mentioned in landscape character assessments, and
- Lôn Dysynni cycle route - Regional route within the wider study area.

Local and Recreational Cycling Areas

- Coed y Brenin Mountain Biking Centre - mountain bike trails and visitor facilities within Eryri NP (>10 km from site)
- Antur Stiniog - Downhill and free-ride trails near Blaenau Ffestiniog (>15 km from site)
- Penmachno - Natural riding areas in ancient woodland near Betws-y-Coed (>15 km from site), and
- Coed Llandegla - Mountain biking centre within the Clwydian Range and Dee Valley area (>20 km from site).

Local Road-Based Cycling Routes

The following local cycling routes are considered in the roads assessment:

- Northern Area Routes - Rural lanes around Cerrigydrudion and connecting roads (1-5 km from site)
- Eastern Area Routes - Rural routes around Sarnau and connections to A494 corridor (1-5 km from site)
- Southern Area Routes - Cycling routes around Bala, Llanfor, and Llanderfel (2-5 km from site), and
- Western Area Routes - Routes around Frongoch and connections toward Eryri NP (1-5 km from site).

Promoted Multi-User Paths

- Lôn Gwyrfai - Multi-user path connecting Rhyd Ddu and Beddgelert within Eryri NP (>15 km from site), and
- Mawddach Estuary Path - Walking and cycling route from Barmouth to Dolgellau (>20 km from site).

Historic Railway Paths

- Corris Railway trackbed - Safeguarded for potential reinstatement as recreational route (>15 km from site), and
- Trawsfynydd to Blaenau Ffestiniog railway - Disused railway safeguarded for future transport/recreational use (>15 km from site).

Roads and Railways

9.4.79 The 20 km detailed study area is predominantly a rural and largely elevated upland area that is crossed by two main roads A494 and A5 which cut through the landscape and serve the surrounding larger settlements. There are also a number of minor roads serving the scattered smaller settlements which largely follow lowland valley routes between opposing upland areas.

A-Roads:

- The A494 comes from the north-east and heads south-west past the town of Bala and Lake Bala;
- The A5 cuts across the north of the study area passing by Tynant c.5 km from the Site boundary.

Notable B Roads:

- B4501 - This minor road runs between Frongoch and Cerrigydrudion, serving as an important local connection through the upland landscape adjacent to Clocaenog Forest. The road provides scenic views across the rolling moorland terrain and serves both local traffic and visitors accessing the forest areas and rural communities.
- B4401 - This B road extends from Corwen eastward, following the Cefn Coch valley via Llandrillo before continuing past the eastern shores of Llyn Tegid (Lake Bala). The route traverses a varied landscape of pastoral farmland with small irregular fields divided by stone walls and hedgerows, connecting the historic settlements within this U-shaped valley setting.
- B4391 - This scenic B road serves as a tourist route at the edge of Eryri NP, providing access for visitors traveling through the upland landscape south of Rhanneg. The road offers views across the varied topography of the area and serves both local traffic and tourists exploring the National Park's eastern approaches.

Minor Roads within 5 km

9.4.80 There is an extensive network of minor roads surrounding the Site which provide access to smaller settlements and isolated properties scattered across the surrounding upland areas as well as links to the wider road network as detailed above. In order to keep the assessment, proportionate to the scope of the LVIA these minor routes have been grouped by orientation i.e. north, east, south and west up to 5 km from the Site boundary.

Railways

9.4.81 The local area lacks main line railways, but it is traversed by two tourist railway lines that provide wider opportunities for the appreciation of the broader landscape. One such line is a 9-mile narrow gauge railway that traces the eastern shore of Lake Bala which is considered by the adjacent Viewpoint 5 at Llangower at a distance of 8 km from the Site, which overlooks the lake and provides equivalent views to that experienced along the lakeside route. Another is the Llangollen Railway, the sole

standard gauge heritage railway in North Wales, running between Llangollen and Carrog, a former station on the Ruabon to Barmouth line.

Future Baseline in the Absence of the Proposed Development

9.4.82 It is anticipated that the future baseline landscape characteristics at Foel Fach would remain relatively similar to the current baseline over the operational lifetime of the Proposed Development. The Site comprises elevated open moorland with acid grassland, dry acid heath, and acid neutral flush areas characteristic of the wider Foel Goch Uplands, which form part of an extensive tract of upland grazing moorland that has remained largely unchanged for many decades. The existing land management practices of rough grazing, predominantly by sheep, are likely to continue, maintaining the open character of the moorland landscape and preventing significant encroachment by scrubland or secondary woodland.

9.4.83 However, climate change may result in some gradual alterations to the vegetation characteristics within the Site and surrounding uplands over time. Potential changes could include the drying out of wet heath and bog areas due to increased frequency of summer drought conditions, longer growing seasons leading to enhanced growth rates of vegetation such as bracken and gorse, and possible changes in the prevalence of pests and diseases affecting species such as heather. While such changes are difficult to predict with reliable certainty and would occur gradually across the wider landscape character area, they may lead to subtle shifts in land management practices. Notwithstanding these potential climate-induced changes, the fundamental open upland moorland character of the Site and immediate surroundings would be expected to persist, with the elevated topography, exposure, and existing grazing regimes maintaining the essential landscape characteristics that define this aspect of the Foel Goch Uplands

9.5 Mitigation Embedded into the Design

9.5.1 This assessment has been based on the principle that measures have been 'embedded' into the design of the Proposed Development to remove potential significant effects as far as practicable, for example by the considered placement of infrastructure. **ES Volume II, Chapter 2: Description of the Proposed Development** identifies the design mitigation that has been embedded into the design of the Proposed Development.

9.5.2 The primary embedded mitigation adopted in relation to the Proposed Development relates to the consideration that was given to avoiding and minimising landscape and visual effects during the evolution of the layout. A detailed discussion of the design evolution and the iterative process underpinning it is provided in **ES Volume II, Chapter 3: Environmental Context and Reasonable Alternatives Considered**

9.5.3 Based on general good practice design principles (as set out in SNH/NatureScot guidelines) and an analysis of site-specific opportunities and constraints, the turbine locations have evolved to take into consideration a number of landscape and visual constraints whilst maintaining an optimal development. The embedded mitigation relevant to this assessment is detailed in **Table 9.5.**

Table 9.5 Embedded Mitigation

Embedded mitigation measure relevant to landscape and visual amenity	Function
Turbine Layout and Siting	
Reduction in turbine numbers from 11 (at scoping) to 10 turbines in final design	To reduce the overall visual presence and cumulative landscape effects of the development
Positioning of turbines on elevated plateau areas and slopes between peaks of the Foel Goch Uplands, avoiding the highest summits including Moel Emoel (549 m AOD), Moel Darren (509 m AOD), Pen y Bwich Gwyn (502 m AOD), Foel Fach (457 m AOD) and Eglwys-Anne Warren Frridd (463 m AOD). Turbines are generally viewed from surrounding areas as being contained within a topographical bowl formed by the surrounding higher ground.	To maintain consistency with the existing upland landscape character by positioning turbines on intermediate slopes and plateau areas rather than prominent summits, thereby maximizing natural topographical containment and screening from key sensitive receptors including settlements, the National Park, and major routes
Maintaining minimum 1.9 km separation from Eryri NP boundary (approximately 2 km to nearest turbine T01)	To minimise visual impacts on the National Park's special qualities and designated landscape
T01, T02, T08 (now T04) and T11 (now T10) reduced from 220 m to 200 m tip height	To minimise visual impact from Eryri NP and reduce prominence in views from sensitive receptors
Relocation of T08 (now T04) further west	To reduce landscape and visual impact near Moel Emoel and from Eryri NP, and to reduce visual effects on Bala
Removal of original T04 from design	To avoid loss of peat soils and reduce risk of water pollution near watercourses
Turbine Design	
Turbines to be painted off-white colour with low reflectivity semi-matt finish	To be least intrusive in the landscape when seen against the sky in various weather conditions typically experienced in Wales
Provision of aviation lighting - It is proposed that turbines T01, T04, T05 and T10 are provided with dimmable 2000 candela (cd) lights at hub height. Additional infra-red (IR) lighting is also proposed on all turbines except T07 to satisfy MoD requirements.	A reduced lighting scheme is proposed for the Proposed Development in order to minimise the night time visual impact of the development on sensitive receptors.
Infrastructure Siting	
Siting of infrastructure to avoid areas of deep peat where possible	To minimise landscape character change and maintain existing moorland characteristics
Maintaining 50 m buffer from major watercourses for infrastructure placement	To preserve riparian landscape features and reduce visual intrusion near water features
Underground cabling following access track routes	To minimise additional landscape disturbance and visual clutter
Access Design	

Embedded mitigation measure relevant to landscape and visual amenity	Function
Utilisation of existing farm track from B4501 to Llaithgwm farm where practicable	To minimise new landscape scarring and maintain existing landscape patterns
Site entrance positioned to avoid areas of peat	To reduce landscape impacts at the main access point
Access track design to minimise watercourse crossings	To maintain existing hydrological patterns and landscape continuity
Restoration and Integration	
Design allows for reinstatement of track verges with locally occurring species	To blend infrastructure into the existing landscape character
Edges of hardstandings to be blended to adjacent contours	To reduce the engineered appearance and integrate with natural topography
Natural vegetation allowed to re-establish at turbine locations and hardstanding edges	To soften the visual impact of infrastructure over time

9.6 Assessment of Likely Effects (without Additional Mitigation)

9.6.1 As set out at **Section 9.7** below, no additional mitigation measures are proposed for the scheme regarding landscape and visual impacts. The LVIA assesses the effects of the Proposed Development after the implementation of embedded mitigation, which has been integrated throughout an iterative design process as described in **ES Volume II, Chapter 3: Environmental context and reasonable alternatives considered**. As no additional mitigation measures are proposed for landscape and visual matters, the assessment presented in **Section 9.8** constitutes the assessment of residual effects. This approach is in line with good practice for LVIA, as set out in GLVIA3, where the primary mitigation is intrinsic to the scheme's design.

9.7 Additional Mitigation Measures

9.7.1 No additional measures are proposed to mitigate landscape and visual impacts. The LVIA assesses the effects of the Proposed Development after the implementation of embedded mitigation, which has been integrated throughout an iterative design process as described in **ES Volume II, Chapter 3: Environmental context and reasonable alternatives considered**. As no additional mitigation measures are proposed for landscape and visual matters, the assessment presented in **Section 9.6** constitutes the assessment of residual effects. This approach is in line with good practice for LVIA, as set out in GLVIA3, where the primary mitigation is intrinsic to the scheme's design.

9.8 Assessment of Residual Effects

Overview

9.8.1 Considering the design evolution of the Proposed Development, a filtering exercise has been undertaken of visual receptors to determine which have the potential for significant effects to arise and would therefore require detailed consideration in this

assessment. The intention has been to ensure that the level of attention given is proportionate to the likelihood of significant effects arising. The findings of the initial filtering exercise are presented in **Appendix 9.8**.

General Visibility of Wind Turbines

9.8.2 With reference to the blade tip ZTV in **ES Volume IV, Figure 9.3** and **ES Volume IV, Figure 9.5**, due to the height of the proposed turbines (10 no. turbines with heights of up to 200 m and up to 220 m to blade tip) theoretical visibility is shown extending across limited parts of the wider 35 km study area, with visibility becoming increasingly fragmented and intermittent with distance as surrounding topography creates natural screening..

9.8.3 At the wider 20 to 35 km scale, the ZTV demonstrates only limited and highly fragmented theoretical visibility extending out in certain directions from the Site, confined to limited high points in areas to the north-west, parts of the Clwydian Range and Dee Valley National Landscape to the east, and limited high points to the far south-west. This wide-scale visibility is highly fragmented due to the complex topography of the Welsh uplands, with extensive areas showing no theoretical visibility, particularly in the more sheltered valley locations and areas where intervening high ground blocks views.

9.8.4 Within the detailed 20 km study area, as shown in **ES Volume IV, Figure 9.4** and **ES Volume IV, Figure 9.6**, theoretical visibility is more extensive, and it is within this area that the most significant visual effects would be expected to occur. The pattern of visibility is most concentrated in the first 10 km out from the Site, where the proposed turbines would appear most prominent in the landscape.

9.8.5 To the south and south-west of the Site, the detailed 20 km ZTV indicates visibility across the area around Bala and Lake Bala (Llyn Tegid), including viewpoints VP1 (Cefnddwysarn), VP2 (A4212), and VP5 (Llangower). Theoretical visibility extends across the lower-lying terrain around the town of Bala and the lakeside areas, with these closer viewpoints within 4-8 km showing potential visibility of multiple turbines, where they could potentially appear relatively more prominent in views.

9.8.6 To the west, visibility extends partway into the edge Eryri NP, with the ZTV showing theoretical visibility mainly from elevated areas including VP7 (Carnedd y Filiast), VP10 (Picnic Area west of Llyn Celyn Reservoir), and VP12 (Arenig Fawr). The complex mountainous topography of the National Park creates a fragmented pattern of visibility, with significant areas of no theoretical visibility in the more sheltered valley locations and areas screened by intervening peaks and ridges.

9.8.7 North and north-east of the Site, the ZTV shows theoretical visibility from Cerrigydrudion (VP8) and across parts of the Mynydd Hiraethog uplands (wherefrom however significant influence from operational, consented and planned wind turbine developments). VP17 and VP18 along the B4501 corridor north and south of Cerrigydrudion illustrate worst case visibility in this northern area, as the pattern becomes more fragmented with distance as the rolling upland topography creates localised screening and influence of existing and consented turbines exerts stronger influence.

9.8.8 To the east and south-east within the detailed 20 km study area, visibility is shown from parts of the rolling upland terrain, with theoretical visibility reaching towards the closer western edges of the Clwydian Range and Dee Valley National Landscape. Beyond the 20 km detailed study area, theoretical visibility continues to some more distant elevated locations within this designated landscape, including VP16 (Castell Dinas Brân) at approximately 27 km, though at such distances the turbines would appear much reduced in scale and prominence.

9.8.9 There are notable areas with limited or no visibility shown on the ZTV, particularly in the more enclosed valley areas around settlements such as parts of the Dee Valley, and locations where intervening topography blocks views. The complex upland topography creates a varied pattern of visibility, with theoretical visibility generally following the higher ground and ridgelines while being largely absent from the more sheltered valley locations. Notwithstanding the scale of turbines, theoretical visibility is relatively contained in extent, particularly from more publicly accessible areas (as opposed to inaccessible mountainous uplands), including from within 5 km to 10 km range where use has been made of the immediate topographical high points enclosing the turbine locations. Notable parts of the A5, B4501 and A494 corridors are subject to no or only limited theoretical visibility.

9.8.10 The ZTV analysis demonstrates that while theoretical visibility extends across a wider area due to the elevated moorland setting and height of the proposed turbines (200 and 220 m tall), the most significant visual effects would likely be concentrated within the detailed 20 km study area. Actual visibility would be considerably reduced throughout both study areas by existing screening features including scattered woodland plantations, farm buildings, hedgerows and the undulating topography characteristic of this upland Welsh landscape.

Landscape Features and Landscape Character

Construction

9.8.11 Construction works would result in the removal or disturbance of existing landscape features within the Site. Without additional mitigation, the removal of existing landscape features and the presence of construction activities and a partially constructed development would result in significant landscape character effects on Visual and Sensory Aspect Area: SNPVS091 – Foel Goch Uplands in which the Proposed Development is located and the adjoining CNWVS050 – Foel Goch which covers equivalent upland to the immediate north. Significant effects on landscape character could also potentially occur up to 10 km from the Site boundary and some isolated upland vantage points between 10-15 km.

Operation

9.8.12 Once operational, the proposed turbines would introduce a large vertical scale of change that would be prominent across Visual and Sensory Aspect Area: SNPVS091 – Foel Goch Uplands and neighbouring character areas including CNWVS050 – Foel Goch. Significant effects would be experienced up to 10 km from the Site boundary.

Visual Amenity

Construction

9.8.13 Visual amenity effects from construction activities associated with the Proposed Development would be screened from parts of the study area due to the rolling upland and lowland topography as well as from within some enclosed wooded valley and farmland areas. However, activities would be visible from the more elevated open and exposed locations that allow views across the uplands where the proposed turbines would be located. Significant effects on visual amenity could potentially be experienced by residential receptors, users of PRoW and road users up to 10 km from the Site boundary.

Operation

9.8.14 There is the potential for significant effects to arise on visual amenity during operation. Effects associated with the operational phase and the proposed turbines are considered to be long-term, reversible effects.

9.8.15 Due to the characteristics of the wind turbines and the upland topography of both the Site and the surrounding area, it is not feasible to eliminate all views of the Proposed Development. As a result, significant visual amenity effects are expected for residential receptors within approx. 1 km, users of Public Rights of Way (PRoW), and local road users generally within approx. 5 km. Additionally, some isolated vantage points, such as mountain summits and elevated local routes up to approx. 12 km from the Site boundary with uninterrupted sightline are also likely to experience notable visual effects.

9.8.16 Beyond 10 km, theoretical visibility from national trails and long-distance walking routes is limited with the majority experiencing no visibility or very limited theoretical visibility from short sections of the routes. The viewpoints 8 (Cerrigydrudion) and 11 (Footpath north of Bryn-y-gwrgi) and 13 (Footpath South of Hafodty Hafod Dre) represent locations further afield on or near to Hiraethog Trail, whilst the more distant viewpoints 16 (Castell Dinas Bran) and 21(Moel y Plas) are representative of views from Offa's Dyke long distance walking route.

9.8.17 Beyond 20 km, theoretical visibility from the key road and rail routes is very limited, with the majority experiencing limited theoretical visibility from short sections of the route or no visibility at all due to the key routes generally following the lower-lying valleys where low to negligible theoretical visibility is predicted. Given the increased distance from the Proposed Development and the limited theoretical visibility and intervening built development and vegetation that would further restrict actual visibility, any effects would be limited and would not be considered significant.

Detailed Assessment

9.8.18 This section considers the effects of the Proposed Development on the physical features of the Site, landscape character, and visual amenity. It considers the effects during operation as well as the construction phase.

Landscape Features

Construction

9.8.19 As identified in the baseline section, the existing landscape features within the Site comprise:

- Upland grazing moorland with elevated peaks;
- Unimproved and semi-improved acid grassland;
- Dry acid heath;
- Acid neutral flush areas; and
- Small watercourses and tributaries including Cefn-coch Brook.

9.8.20 The construction phase would result in the partial removal of acid grassland, dry heath, and acid flush vegetation through the construction of onsite access tracks, hardstanding areas, the BESS and substation compound, onsite underground cabling, the construction compound and turbine foundations. Underground electricity cables would generally follow existing and proposed access tracks.

9.8.21 The existing vegetation would be removed to allow construction of foundations for the various elements. Soils stripped as part of the establishment works would be stored in accordance with details provided in **ES Volume II, Chapter 7: Land, Soils and Water** with established soil handling best-practice for use during reinstatement works on completion of construction activities.

9.8.22 The acid grassland, dry heath, and acid flush areas are characteristic features of the wider surrounding upland area that extends across the Foel Goch Uplands. The Site forms part of the fabric of the Gwynedd & Ynys Mor (Bala Hinterlands) SLA and is within LANDMAP Visual and Sensory Aspect Area SNPVS091 Foel Goch Uplands.

9.8.23 The upland grazing moorland, acid grassland, dry heath, and acid flush areas noted in the descriptions of the Bala Hinterlands SLA and the host LANDMAP Landscape Habitat Aspect Area (SNPLH193) that cover the Site are assessed as having an overall moderate evaluation and are judged to have a high susceptibility to change. Combining the value and susceptibility results in the sensitivity of these landscape features being medium.

9.8.24 The acid grassland, heath and flush areas would experience a low magnitude of change and minor effect resulting from the construction of internal access tracks, hardstandings and turbine foundations. This is because the impacts would only affect a small part of the overall upland area with large areas remaining unaffected. The overall level of effect on these onsite habitats resulting from the construction of the Proposed Development is considered to be **minor-moderate** and not significant.

9.8.25 The small watercourses and tributaries within the Site, including Cefn-coch Brook, are of medium value and medium susceptibility to change, giving them a medium sensitivity. With appropriate construction methods and water crossing designs in

place, these features would experience no greater than a **low** magnitude of change as a worst-case, resulting in **minor** effects during the construction phase.

9.8.26 The upland landform of the Site is covered by LANDMAP Geological Landscape aspect area SNPGL132, as noted in the baseline section. There would however be no notable impact to the topography or underlying landform of the Site as a result of the construction of the Proposed Development, with only relatively minor earthworks required to facilitate the construction, and no greater than a **negligible** effect on the overall topography or underlying landform of the Site, which is **not significant**.

Operation

9.8.27 During the operation phase there would be no further adverse impacts to landscape features.

Landscape Character

9.8.28 Beyond the immediate environs of the Site, the ground level components of the Proposed Development, including access tracks, areas of hardstanding, temporary construction compound, substation and BESS containers, would often either not be discernible or only a low percentage of these elements would theoretically be visible due to the elevation of the rolling upland upon which they are located. In reality woodland areas set close to the Site and roadside vegetation will provide additional ground level screening such that visibility is likely to be further reduced. Therefore, effects on landscape character, as experienced in the wider landscape, for most locations arise largely in relation to the introduction of the 10 proposed turbines into the landscape and the resultant changes to the perceptual experience of landscape character.

9.8.29 It is acknowledged that there may be more elevated areas where ground-level elements, particularly the substation building and electrical infrastructure (for example suspended busbars) may be visible, and these are considered within the assessment where relevant.

9.8.30 It is noted that, in general, the magnitude of change in landscape character would incrementally decrease with distance from the turbines and other elements of the Proposed Development as they become gradually less prominent. A summary of the effects on landscape character is presented in **Table 9.6** and **Table 9.7**. Note that for all character types stated within this table, the duration of the Proposed Development is considered to be long-term and reversible.

9.8.31 The consideration of baseline conditions set out above identifies landscape character at the National scale, with regard to the published National Character Areas. It also identifies the various published local landscape character assessments. The LANDMAP categorisation is also discussed, including each of the five different aspect layers. The most relevant of the aspect layers to a consideration of effects on landscape character is the visual and sensory aspect layer. The assessment of effects on landscape character set out below therefore focuses on the identified visual and sensory aspect areas in and around the Site,

but with regard to the content of the other published studies relevant to the area being considered.

9.8.32 Visual and Sensory Aspect Areas have been overlaid with the blade tip ZTV in **ES Volume IV, Figure 9.24**. This overlay plan helps to provide an indication of potential 'worst-case' maximum intervisibility between the Proposed Development and each of the character areas. This potential visibility of the turbines has also been calculated for each of the character areas in terms of the percentage of the character area that would have theoretical visibility of the Proposed Development, and these percentages are referred to throughout the discussion of the potential effects set out below. It is important to reiterate that potential visibility of the turbines is only one component of a consideration of the magnitude of impact to landscape character and the potential visibility set out is not the sole basis on which judgements of impacts are made. In addition, other factors are also relevant, including the distance between the character area and the Proposed Development, the proportion of the turbines that would be visible (i.e. is it only blade tips, rather than the full turbine height) and the underlying characteristics of the landscape and the extent to which there is an interrelationship between key elements or features of the landscape and the Proposed Development.

Visual and Sensory Aspect Areas Covering the Site

SNPVS091 - Foel Goch Uplands (Host Aspect Area)

9.8.33 This aspect area is an upland area of large scale comprising exposed upland/plateau and upland moorland characterised by upland rough grazing and moorland. The area features scattered commercial conifer plantations, some felled to the west, and overhead pylons which are moderate visual detractors. The elevated open areas of the Site afford borrowed views to Arenig mountains and Migneint in fair weather. The landscape exhibits a large visual scale with exposed character, simple pattern and a mixture of visual unity elements. Existing vertical elements including overhead pylons and telecommunications infrastructure are already present within the landscape character.

Value

9.8.34 The value of the aspect area is assessed as high. The LANDMAP assessment indicates an overall evaluation of 'High', with high character value, though moderate scenic quality and rarity. It is also located within the locally designated Special Landscape Area.

Susceptibility

9.8.35 The susceptibility of the area is assessed as moderate to high. The landscape has a large visual scale and exposed character, which both lend the landscape to accommodating wind energy development, but also enables wind energy development to potentially influence the character across the area . . However, the area already accommodates some existing vertical detractors including overhead steel lattice pylons, telecommunications infrastructure and commercial conifer plantations, indicating some capacity to accommodate additional vertical elements.

The simple pattern and mixture of visual unity characteristics suggest the landscape has some ability to absorb change and the large scale of the landscape provides some capacity for appropriately scaled development.

Sensitivity

9.8.36 Combining the high value and moderate to high susceptibility results in this aspect area having a **high** sensitivity to the change proposed.

Magnitude of change during construction

9.8.37 During construction, the open upland areas of the Site would be affected by disturbance arising from the formation of 10 turbine foundations, hard standings and access tracks leading to each turbine location. Large cranes would be used to erect the turbines and would move between turbine locations during the construction period. Temporary fencing, construction signage, site compound, and welfare facilities would be present. There would be additional movement of construction vehicles and personnel within the Site via access tracks. The same activities would be associated with the decommissioning period, but in reverse as some of the built elements were removed.

9.8.38 The scale of change would be medium to large, affecting a large area within the aspect area where the Proposed Development is located, extending across the peaks and slopes of Foel Fach (457 m AOD), Moel Darren (509 m AOD), Moel Emoel (549 m AOD), Eglwys-Anne Warren Frridd (463 m AOD), and Pen y Bwich Gwyn (502 m AOD). The effect would be short-term, temporary and reversible, resulting in a **medium** magnitude of change.

Effects during construction

9.8.39 Overall, the effect is judged to be **moderate to major** and **significant** with the change affecting the development areas across the Site that lie within the upland moorland character of the aspect area. The construction activities would introduce temporary but substantial change to the visual character of this exposed upland landscape, with large-scale machinery and infrastructure construction visible across considerable distances given the open, exposed nature of the terrain.

Magnitude of change during operation

9.8.40 With reference to theoretical visibility analysis, parts of the 10 proposed wind turbines would be visible across the majority of the aspect area due to its exposed, large-scale character. The upland moorland topography with scattered conifer plantations means there are limited areas where there would be no visibility of parts of any turbines, though some screening may occur in areas of denser plantation woodland and otherwise not all parts of all of the turbines would always be visible, as a result of their visual containment within the main topographical features.

9.8.41 The turbines would introduce additional vertical structures into the landscape that would have a strong influence on the visual character of the area. While the area already accommodates existing vertical detractors (overhead pylons,

telecommunications infrastructure, commercial conifer plantations), the scale and grouping of 10 wind turbines would represent a concentration of energy infrastructure within this upland character area. The turbines would be prominently visible from across the exposed plateau areas and would introduce movement into an otherwise relatively static upland landscape.

9.8.42 The Proposed Development would create new focal points within the landscape, reflecting the existing pattern of energy infrastructure. However, the large scale of the landscape and existing presence of vertical detractors means the development would not be entirely uncharacteristic of the broader landscape context.

9.8.43 The development would represent a large vertical scale of change that would be prominent across much of the exposed upland character area. The effects would be experienced across a large geographical extent of the aspect area, resulting in a **high** magnitude of change.

Effects during operation

9.8.44 Overall, the effects on SNPVS091 - Foel Goch Uplands during the operation phase are judged to be **major** and **significant.** The effects would be direct within the areas of the aspect area hosting the wind turbines, and indirect across the broader aspect area where the development would be visible and influence the visual character of the upland moorland landscape.

Visual and Sensory Aspect Areas Outside of the Site and Host Aspect Area

9.8.45 A detailed assessment of LANDMAP areas outside of the host Visual Sensory Landscape Aspect Area (which provides the immediate landscape context to the Site) is provided at **Appendix 9.4**. The following section provides a summary of the findings, beginning with those Aspect Areas within 5 km, divided into those to the north, east, south and west. Thereafter follows a consideration of the Aspect Areas between 5 km and 10 km, again divided into those to the north, east, south and west. **Table 9.6** and **Table 9.7** , at the end of this section, provides a summary of the magnitude of change, level of effect and significance of effects on the landscape character of the wider landscape, based on the visual and sensory Aspect Areas.

Summary of Effects on Northern Aspect Areas within 5 km

9.8.46 Within 5 km to the north of the site, landscape character effects vary based on the specific character of each aspect area, its value, and the degree of intervisibility with the Proposed Development. There are four Aspect Areas in this part of the landscape which are discussed below. **CNWVS050 - Foel Goch** would experience **moderate** and **significant** effects during both construction and operation phases. This mountainous ridge of moorland and upland pasture lies immediately to the north of the Site boundary and extends to between 1 km and 4 km from the nearest proposed turbine. It has a High overall evaluation and would have 75% theoretical visibility of the proposed turbines, with the majority (57%) seeing parts of 1-4 turbines. The elevated position and open moorland character provide minimal screening, resulting in clear views of construction activities, in particular the cranes

erecting the turbines, from some parts and the operational turbines across substantial portions of this upland landscape.

9.8.47 **CNWVS048 - Maes-newyddion uplands** and **CNWVS049 - Moel Gwern-nannau** would experience **minor** and **not significant** effects during construction and operation. Both areas benefit from substantial topographic screening (59% and 70% no visibility respectively) and have only Moderate overall evaluations. The limited extent of visibility and distance of 4.2-4.5 km significantly reduce the perceived scale of development impacts.

9.8.48 **CNWVS006 – Ceirw and Medrad narrow valleys** would experience **moderate** and **significant** effects during the operation phase and **minor** and **not significant** effects during construction. The narrow upland valley is located around 2.5 km from the nearest proposed turbine at its closest point. It has a High overall evaluation and would have 71% theoretical visibility of the proposed turbines, with 41% with parts of 1-4 turbines visible. The combination of High evaluation, Special Landscape Area designation, and valley characteristics results in high sensitivity. Some screening is provided by valley containment but there are also elevated valley side locations providing opportunities to experience construction activities, specifically the cranes erecting the turbines, but no ground level activity, with turbines appearing at a medium scale of change during the operational period.

Summary of Effects on Eastern Aspect Areas within 5 km

9.8.49 Some areas to the east within 5 km would have some potential to experience landscape character effects due to proximity and elevated viewing positions. However, large parts of the landscape to the east and north-east would also lie outside of the ZTV and have no visibility of the Proposed Development.

9.8.50 **SNPVS135 - Cefn Caer-Euni** would experience **major** and **significant** effects during the operation phase and **moderate** and **not significant** effects during construction. This elevated moorland scarp is located around 3 km from the nearest proposed turbine at its closest point and covers a small part of the landscape around the high ground at Cefn Caer-Euni. It has a High overall evaluation and would have 82% theoretical visibility with 65% seeing parts of 8-10 turbines. The proximity (3.4 km to the centre of the Aspect Area) and exposed character of this hillside and scarp slopes moorland would allow extensive and prominent views of the operational turbines and the cranes erecting the turbines during construction.

9.8.51 **SNPVS137 - Parc y Derwgoed** would experience **moderate** but **not significant** effects during construction and operation. The Aspect area lies around 3 km from the nearest proposed turbine at its closest point and has a Moderate overall evaluation. Despite 66% theoretical visibility of the turbines across the area, the wooded hillside character means that visibility of the turbines would in reality be much less than this and where turbines were visible, they would often be filtered through woodland gaps rather than forming prominent features in the landscape.

Summary of Effects on Southern Aspect Areas within 5 km

9.8.52 Areas to the south within 5 km have a mixture of visibility, with several parts lying outside of the ZTV and having no visibility along with other, generally more elevated areas, from which visibility would be available. Effects on landscape character are therefore variable across the area, as discussed below.

9.8.53 **SNPVS094 - Bala Plain** and **SNPVS099 - Bala Lake (Llyn Tegid)** would both experience **major** and **significant** effects during construction and operation phases. The Bala Plain area is located around 4 km from the nearest proposed turbine, with Bala Lake slightly further away, with its closest edge just within 5 km, but with the majority of the lake extending further from the Site. Despite the Bala Plain having only Moderate evaluation, its location partly within the National Park elevates its sensitivity. There would be 93% and 98% theoretical visibility from these areas respectively, however that does not factor in the built form in and around Bala which would screen many views and is a key element of the character of the Bala Plain landscape. These areas could experience views of the operational phase and also of the cranes erecting the turbines during construction and the turbines would have an impact on landscape character as a result, albeit the key characteristic of the area would remain the built form of Bala itself.

9.8.54 **SNPVS092 - Bethel** and **SNPVS136 - Sarnau** would experience **moderate** but **not significant** effects, during the construction and operation phases. These settled agricultural landscapes are located to the south and south-east of the Site, with the Bethel landscape covering a large area extending from the Site Boundary to beyond 5 km from the turbines and the Sarnau area located at around 4.5 km from the nearest turbine. Both areas have Moderate evaluations. The two areas have only 64% and 75% theoretical visibility respectively, illustrating the topographical screening of the turbines from sections of the landscape in these areas. Their working landscape contexts have less potential to experience significant landscape character effects and notwithstanding the proximity to the development the intermittent nature of the views is important in reducing the impact to the character of these landscapes.

Summary of Effects on Western Aspect Areas within 5 km

9.8.55 Areas to the west have varied visibility of the Proposed Development, in part due to the topographic screening which limits visibility in the valleys. Some landscape character effects would however occur, particularly to more open elevated parts of the landscape which have a greater intervisibility with the Proposed Development.

9.8.56 **SNPVS087 - Migneint** is a large Aspect Area which covers a broad swathe of the landscape to the west of the Site, with its closest point around 3 km from the nearest proposed turbine but extending to over 20 km away. The Aspect Area would experience **moderate** and **significant** effects, during the construction and operation phase on that part of the landscape within 5 km of a proposed turbine, but these significant effects would not extend beyond around 7 km, after which there would be very limited visibility of the Proposed Development. This extensive upland moorland within Eryri NP has Outstanding overall evaluation, creating very high sensitivity.

However, theoretical visibility is limited to only 21% of the area, with effects of any note concentrated on its eastern edges only, closest to the Site.

9.8.57 **SNPVS089 - Afon Mynach valley** lies around 1 km from the nearest proposed turbine and covers the westernmost section of the Site. Parts of the landscape at the heart of the Aspect Area immediately alongside the B4501 lie outside of the ZTV and would have no visibility of the Proposed Development. Overall, the Aspect Area would experience no greater than **moderate** but **not significant** effects at all phases. This open upland valley, containing the access track to the Site, would experience some impact to its character from visible turbines, though the presence of existing visual detractors and roads in the baseline context reduces significance.

9.8.58 **SNPVS090 - Afon Tryweryn** and **SNPVS095 - Rhyd-uchaf** show contrasting effects. The Afon Tryweryn valley which lies around 3 km from the nearest proposed turbine would experience **moderate** but **not significant** effects at all phases due to varied visibility patterns and Moderate evaluation. However, Rhyd-uchaf undulating farmland, which is located around 3.5 km from the nearest proposed turbine would experience **moderate-major** and **significant** effects within 5 km, during construction and operation, however the significant effects would not extend across the whole Aspect Area, which extends to around 13 km and instead would become non-significant within less than 10 km. Across the Aspect Areas as a whole there would be 77% theoretical visibility of the proposed turbines, with 66% of the area having potential visibility of the complete 10-turbine array. However, with distance the potential for the turbines to impact the character of the area diminishes, with the wider landscape of the National Park the primarily influence on the character of the landscape.

Summary of Effects on Northern Aspect Areas 5-10 km

9.8.59 At distances of 5-10 km to the north, landscape character effects are generally more limited as the potential for impacts is reduced by distance, though some significant effects remain for some of the higher value landscape areas.

9.8.60 **CNWVS044 - Cerrigydrudion** village is a very small Aspect Area covering the built form of Cerrigydrudion village only. It is located around 6.5 km from the nearest proposed turbine and has a Low overall evaluation. The built up nature of the area is such that intervening buildings would often prevent views towards the Site and the primary influence on the character of the Area is its immediate village context. Some views of the turbines may be available from parts of the village, which overall would experience **moderate** and **not significant** effects to its landscape character at all phases.

9.8.61 **CNWVS077 – Garn Prys** and **CNWVS004 - Mwdwl Eithin** would experience **minor** and **not significant** effects and **moderate** and **not significant** effects respectively, at all phases. The Garn Prys area is located around 6.5 km from the nearest turbine, to the north-west of the Site, outside of the National Park. The area would experience very limited visibility (only 17% would have any theoretical visibility of the turbines) and this limited views, combined with the distance from the turbines serves to reduce the potential for there to be effects on landscape character. The Mwdwl Eithin area is located around 6 km from the nearest proposed turbine at its

closest point, to the north-east of the Site, extending to around 7 km away. The area has a High evaluation. There would be theoretical visibility from much of the area, but not the north facing slopes, with only 53% of the area having theoretical visibility of 8-10 turbines. The Aspect Area is comprised of exposed moorland which has some visual connectivity with the wider landscape, including the landscape in which the Proposed Development is located. However, wider views from the area already include various existing wind energy developments, including at Clocaenog, such that views of turbines are already an existing characteristic of the area. Overall, whilst the Proposed Development would form a noticeable element in the view in one direction from the Aspect Area this would not be such as to impact the character of the area to a significant degree, noting the distance and existing views of wind energy which form part of the character of the area.

Summary of Effects on Eastern Aspect Areas 5-10 km

9.8.62 The potential visibility of the turbines is relatively limited between 5 km and 10 km to the east, with large tracts of the landscape outside of the ZTV. The Aspect Areas to the east between 5-10 km would therefore experience varied effects on their landscape character, with many areas not experiencing significant effects based on this topographic screening.

9.8.63 **DNBGHVS070 - Maerdy Hills** and **DNBGHVS073 - Gwyddelwern Hills** would both experience **moderate** and **not significant** effects at all phases. Both are located over 7.5 km from the nearest proposed turbine at their closest points and have High overall evaluations. There is some theoretical visibility from the areas (47% and 62% respectively) however there are blocks of woodland in each area which are not reflected in the theoretical visibility mapping. The Gwyddelwern Hills, would have theoretical visibility of 8-10 turbines across 46% of its area, however at this distance from the Proposed Development these views would not be such as to significantly change the character of the area, which would remain primarily influenced by its immediate agricultural surroundings.

9.8.64 **DNBGHVS068 - Clocaenog Forest** and **DNBGHVS095 - Dee Valley-Corwen** would experience **minor** and **not significant** effects at all phases, due to woodland screening and valley containment respectively.

Summary of Effects on Southern Aspect Areas 5-10 km

9.8.65 Southern areas between 5-10 km generally experience reduced effects on landscape character due to distance and topographic screening.

9.8.66 Most areas including **SNPVS093 - Llandderfel and Dee Valley bottom**, **SNPVS097 - Cwm Pennant**, **SNPVS103 - Y Berwyn**, **SNPVS104 - Cwm Hirnant valley**, and **SNPVS105 - Bwlch y Groes** uplands would experience **minor-moderate** but **not significant** effects at all phases. Despite High overall evaluations for most areas, substantial topographic screening and distance combine to limit actual effects to landscape character.

9.8.67 **DNBGHVS100 - Berwyn Mountain** is located primarily beyond 10 km, however a small part extends to within 7.5 km, to the south-east of the Site. This separate part

covers the landscape around Cefn Llystyn where some visibility of the Proposed Development would be possible, but with lower lying areas having no visibility due to topographic screening. This area would experience **moderate** and **not significant** effects, at all phases, with the nearby surrounding landscape remaining the primary influence on the character of the area. The part of the Aspect Area beyond 10 km is located around 10.5 km from the nearest turbine at its closest point and extends to around 13 km away. Due to its elevated nature clear long-distance views are available from the area, which would include for the Proposed Development. However, the distance from the Proposed Development serves to limit the potential for impacts to the overall character of the landscape and no significant effects would arise.

Summary of Effects on Western Aspect Areas 5-10 km

9.8.68 Some parts of the western area between 5-10 km would have no visibility of the Proposed Development and limited effects on landscape character due to topographic screening and distance. Other parts, generally more towards the south-west would have greater potential for visibility and effects on landscape character.

9.8.69 **SNPVS125 - Arenig Fawr** is located just over 5 km from the nearest proposed turbine at its closest point and extends out to just less than 15 km away. The entirety of the Aspect Area is located within the National Park, with a resulting High sensitivity. The part of the Aspect Area between 5 km and 10 km has only partial visibility of the Proposed Development, with no visibility at all in the area between Llyn Arenig Fawr and the summit of Mynydd Nodol. Elsewhere the Proposed Development would be seen located beyond the boundary of the National Park, the majority of which is predominately located in the opposite direction, as is the summit of Arenig Fawr itself, which lies around 11.5 km from the nearest proposed turbine. Nonetheless, the closest part of the Aspect Area to the Proposed Development around the eastern slopes of Mynydd Nodol would experience **moderate** and **significant** landscape character effects during all phases, due to the proximity to the proposed turbines and the intervisibility arising from the orientation of the landform, which allows for open views across the valley towards the Site. However, this significant effect would only occur across a limited section of the Aspect Area, not extending beyond around 6.5 km, with the remaining area more heavily influenced by the surrounding National Park landscape and experiencing the turbines at greater distances where visible. Indeed, only 38% of the Aspect Area as a whole would have theoretical visibility of the turbines. The area beyond 6.5 km from the nearest proposed turbine would therefore experience no greater than **moderate** and **not significant** landscape character effects during all phases.

9.8.70 **SNPVS098 - Afon Llafar**, **SNPVS088 - Llyn Celyn**, and **SNPVS124 - Water** would all experience **minor-moderate** but **not significant** effects or **negligible** and **not significant** effects, at all phases due to valley containment, distance of over 5 km from the nearest proposed turbine, and limited theoretical visibility, despite their High landscape values and National Park locations.

Overall Summary of Effects on Landscape Character

9.8.71 The assessment reveals a pattern of effects around the Site, with the most significant landscape character effects concentrated within 5 km, particularly to the east, south, and selected northern and western areas. The typically elevated moorland setting of the proposed turbines leads to theoretical visibility from some more distant areas, though actual effects vary based on landscape value, designation status, topographic screening, and distance.

9.8.72 There would be a **major** and **significant** effect on the Aspect Area in which the Proposed Development is located, SNPVS091 - Foel Goch Uplands. Such an effect is typical of what would be expected to occur within the immediate landscape surrounding a commercial scale wind energy development.

9.8.73 Within 5 km, some aspect areas experience **major** and **significant** effects, particularly Bala Plain, Bala Lake, and Cefn Caer-Euni. However, much of the landscape within 5 km would have no theoretical visibility of the proposed turbines and the significant effects would be localised to smaller sections of the landscape within 5 km, generally on higher ground, rather than occurring across the whole landscape.

9.8.74 Between 5-10 km, significant effects become more restricted, concentrated primarily on more elevated areas with high landscape values and good visibility, such as, those parts of the Migneint**,** Rhyd-uchaf and Arenig Fawr Aspect Areas closest to the Site.

9.8.75 Beyond 10 km, there would be no significant effects on landscape character. Whilst the Proposed Development may still be visible from parts of the landscape beyond 10 km, at this distance it would not form a sufficiently prominent element to significantly impact the primary characteristics of the landscape, forming only one element in the distance of any views out from the landscape.

LANDMAP Visual and Sensory Aspect Areas Operational Phase Significant Effects Summary

Major Significant Effects:

- SNPVS091 - Foel Goch Uplands
- SNPVS135 - Cefn Caer-Euni
- SNPVS094 - Bala Plain
- SNPVS099 - Bala Lake

Moderate Major Significant Effects:

- SNPVS095 - Rhyd-uchaf

Moderate Significant Effects:

- CNWVS050 - Foel Goch
- CNWVS006 - Ceirw and Medrad valleys

- SNPVS087 - Migneint
- SNPVS125 - Arenig Fawr

Table 9.6 Summary of Residual Landscape Character Effects on Visual Sensory Aspect Areas within 5 km During Construction and Operation

Receptor	During Construction				During Operation			
	Sensitivity	Magnitude of Change	Level of Effect	Significant residual effect?	Sensitivity	Magnitude of Change	Level of Effect	Significant residual effect?
Visual and Sensory Aspect Areas covering the Site								
SNPVS091 - Foel Goch Uplands	High	Medium	**Moderate-Major**	**Yes**	High	High	**Major**	**Yes**
Visual and Sensory Aspect Areas within 5 km to the north								
CNWVS050 - Foel Goch	High	Medium	**Moderate**	**Yes**	High	Medium	**Moderate**	**Yes**
CNWVS048 - Maes-newyddion uplands	Medium	Low	Minor	No	Moderate	Low	Minor	No
CNWVS049 - Moel Gwern-nannau	Medium	Low	Minor	No	Moderate	Low	Minor	No
Visual and Sensory Aspect Areas within 5 km to the east								
SNPVS135 - Cefn Caer-Euni	High	Medium-Low	Moderate	No	High	High	**Major**	**Yes**
SNPVS137 - Parc y Derwgoed	Medium	Medium	Moderate	No	Moderate	Medium	Moderate	No
Visual and Sensory Aspect Areas within 5 km to the northeast								

Receptor	During Construction				During Operation			
	Sensitivity	Magnitude of Change	Level of Effect	Significant residual effect?	Sensitivity	Magnitude of Change	Level of Effect	Significant residual effect?
CNWVS006 - Ceirw and Medrad valleys	High	Low	Minor	No	High	Medium	**Moderate**	**Yes**
Visual and Sensory Aspect Areas within 5 km to the south								
SNPVS094 - Bala Plain	High	High	**Major**	**Yes**	High	High	**Major**	**Yes**
SNPVS099 - Bala Lake (Llyn Tegid)	High	High	**Major**	**Yes**	High	High	**Major**	**Yes**
SNPVS092 - Bethel	Medium	Medium	Moderate	No	Moderate	Medium	Moderate	No
SNPVS136 - Sarnau	Medium	Medium	Moderate	No	Moderate	Medium	Moderate	No
Visual and Sensory Aspect Areas within 5 km to the west								
SNPVS087 - Migneint	Very High	Low	**Moderate**	**Yes**	Very High	Low	**Moderate**	**Yes**
SNPVS089 - Afon Mynach valley	Medium	Medium	Moderate	No	Moderate	Medium	Moderate	No
SNPVS090 - Afon Tryweryn	Medium	Medium	Moderate	No	Moderate	Medium	Moderate	No
SNPVS095 - Rhyd-uchaf	Medium	High	**Moderate-Major**	**Yes**	Moderate	High	**Moderate-Major**	**Yes**

Table 9.7 Summary of Residual Landscape Character Effects on Visual Sensory Aspect Areas between 5-10 km During Construction and Operation

Receptor	Sensitivity	Magnitude of Change	Level of Effect	Significant residual effect?
North				
CNWVS044 – Cerrigydrudion	Medium	Medium	Moderate	No
CNWVS077 - Garn Prys	Medium	Low	Minor	No
CNWVS004 - Mwdwl Eithin	High	Medium	Moderate	No
East				
DNBGHVS070 - Maerdy Hills	High	Medium	Moderate	No
DNBGHVS073 - Gwyddelwern Hills	High	Medium	Moderate	No
DNBGHVS068 - Clocaenog Forest	Medium	Low	Minor	No
DNBGHVS095 - Dee Valley-Corwen	Medium	Low	Minor	No
South				
SNPVS093 - Llandderfel and Dee Valley bottom	High	Low	Minor-Moderate	No
SNPVS097 - Cwm Pennant	High	Low	Minor-Moderate	No
SNPVS103 - Y Berwyn	High	Low	Minor-Moderate	No
SNPVS104 - Cwm Hirnant valley	High	Low	Minor-Moderate	No
SNPVS105 - Bwlch y Groes uplands	High	Low	Minor-Moderate	No

Receptor	Sensitivity	Magnitude of Change	Level of Effect	Significant residual effect?
DNBGHVS100 - Berwyn Mountain	High	Medium	Moderate	No
West				
SNPVS125 - Arenig Fawr	Very High	Low	**Moderate**	**Yes**
SNPVS098 - Afon Llafar	High	Low	Minor-Moderate	No
SNPVS088 – Llyn Celyn	High	Very Low	Minor-Moderate	No
SNPVS124 - Water	High	Very Low	Minor-Moderate	No

Notes:

- Effects during construction are assessed as similar in nature and magnitude
- Operation phase effects represent the long-term impacts of the Proposed Development
- Significant effects are those assessed as moderate or above
- Table key: P/T = Permanent or Temporary, D/I = Direct or Indirect, ST/MT/LT = Short Term, Medium Term or Long Term

Effects on Visual Amenity

Construction

9.8.76 The vast majority of construction activities associated with the Proposed Development would be screened from most parts of the study area due to the immediate containment of the development within a topographical bowl provided by ridgelines to most directions, together with rolling upland and lowland topography as well as from within some enclosed wooded valley and farmland areas; while activities (particularly final erection of turbines by cranes) would be most visible from the more elevated open and exposed locations that allow views across the uplands where the proposed infrastructure would be located.

9.8.77 Visualisations for each of the 21 assessment viewpoints are included in **Appendix 9.11**.

9.8.78 Construction activities associated with the Proposed Development would be screened from parts of the study area due to the complex upland topography of the Welsh hills and from within enclosed valley areas and lower-lying farmland; while activities would be most visible from the more elevated open and exposed moorland locations that characterise the landscape setting of the Site.

9.8.79 From locations within Eryri NP to the west, such as Viewpoints 4 (Mwnwgl-y-llyn Bridge), 5 (Llangower), 6 (Footpath Bryn-yr-Hydd), 7 (Carnedd y Filiast), 10 (Picnic Area west of Llyn Celyn Reservoir) and 12 (Arenig Fawr), the intervening mountainous topography and extensive areas of coniferous woodland would provide substantial screening of ground-level construction activities. However, the cranes used during turbine erection would be visible above the intervening terrain and forest cover for relatively short periods. At distances ranging from approximately 5.5 km to 11 km, these cranes would appear as temporary vertical elements on the horizon. It is assessed that any views of these works would result in a low magnitude of additional change and no greater than a **minor**, temporary effect, which would be **not significant**.

9.8.80 From more distant elevated locations within the National Landscape designations, such as Viewpoint 16 (Castell Dinas Brân) at approximately 27 km and Viewpoints 20 and 21 (Moel Morfydd and Moel y Plas) at over 21 km distance within the Clwydian Range and Dee Valley National Landscape, the considerable intervening distance would make construction activities largely invisible or indiscernible, with only the tallest cranes potentially visible as very small scale features in exceptional weather conditions. Effects would be no greater than **negligible**.

9.8.81 From elevated locations in relatively close proximity to the Proposed Development, such as Viewpoints 1 (Cefnddwysarn) at 3 km, 2 (A4212) at 4.3 km, and 3 (Caer-garreg) at 3.6 km, there would be clear views towards the Site. Owing to intervening topography however these locations would not experience views of any ground level construction activities including access track construction, turbine foundation works, and component delivery, but would see views of the cranes used to install the turbines. In these locations, there would be up to a **medium to high** magnitude of

additional change from cranes used to install turbines which would result in **moderate-major** and **significant** temporary effects during the construction phase.

9.8.82 From Viewpoint 8 (Cerrigydrudion) at approximately 6.7 km to the north, the elevated position of this settlement edge location would allow views across the intervening upland terrain towards the Site. Owing to intervening topography however no ground level construction activities would be visible, with only short-term views of cranes used to install turbines. Such views though would be somewhat reduced in prominence due to the greater distance compared to the closest viewpoints. This would result in up to **moderate significant** temporary effects during the construction phase.

9.8.83 From more distant elevated viewpoints such as Viewpoint 9 (B4391 South of Rhanneg) at over 10 km distance within Eryri NP, ground-level construction activities would be largely screened by the topographic bowl within which the Proposed Development sits together with intervening rolling upland topography, with the additional visual effects primarily relating to views of the cranes erecting the turbines. At this distance, the cranes would not appear particularly prominent during the construction period, due to their apparent scale diminishing with distance, resulting in up to **minor**, temporary effects that would be **not significant.**

9.8.84 From the remaining viewpoints (VPs 11, 13-15 and 17-19), ground-level activities would be screened through a combination of the topographic bowl within which the Proposed Development sits together with the wider complex upland topography, scattered woodland plantations, and in some cases the built form of settlements. In these locations, the additional visual effects, over and above those addressed under the heading of Operational Effects, would arise primarily in relation to views of the cranes erecting the turbines and where these are visible would result in up to **low** magnitude changes and up to **minor,** temporary effects that would be **not significant**.

Operation

9.8.85 A detailed viewpoint assessment of the operational effects is presented in **Appendix 9.9**, and this considers the long-term visual effects during the operation phase of the proposed turbines, BESS and substation for each of the 21 viewpoints, which are considered to have potential for significant effects resulting from the Proposed Development.

9.8.86 For each of the detailed assessment viewpoints, a short description is given of the baseline view, and a judgement is provided regarding the sensitivity of the key receptors likely to experience the view.

9.8.87 This is followed by a description of the features of the Proposed Development that would be visible from that viewpoint. This includes a description of how many turbine hubs and blades would be visible how they would relate to one another and the landscape/ context of the wider view and also, where relevant, whether any ground-level components such as internal access tracks or substation would be visible. For each viewpoint, where relevant there is also commentary on how vegetation, topography and built form would affect the actual visibility of the turbines.

9.8.88 A judgement is then provided of the magnitude of change that would be experienced at each viewpoint, the level of the effect on the view and a statement provided to clarify whether the additional effect resulting from the Proposed Development would be significant or not.

9.8.89 A summary of the sensitivity of the view, magnitude of change in the view, the level of effect and its significance is given in **Table 9.8.** Where a viewpoint is representative of more than one type of visual receptor, the assessment carried forward into the table represents the most sensitive receptor group represented by the viewpoint. Note: **Bold** text indicates a significant effect.

9.8.90 With reference to the **Appendix 9.9**, when considered against the existing baseline it has been assessed that there would be **significant** visual effects at 13 of the 21 representative viewpoints. These are as follows:

- VP1: Cefnddwysarn
- VP2: A4212
- VP3: Caer-garreg
- VP4: Mwnwgl-y-llyn Bridge
- VP5: Llangower
- VP6: Footpath Bryn-yr-Hydd
- VP7: Carnedd y Filiast
- VP9: B4391 South of Rhanneg
- VP10: Picnic Area west of Llyn Celyn Reservoir
- VP12: Arenig Fawr
- VP17: B4501 North of Cerrigydrudion
- VP18: B4501 South of Cerrigydrudion, and
- VP19: Moel y Garnedd (ENP).

9.8.91 Given the nature of the Proposed Development and its location, this number of significant effects is no higher than would reasonably be expected based on similar schemes which have been consented around the UK.

Table 9.8 Summary of Residual Visual Effects from Assessment Viewpoints During Operation

Viewpoint: Location	Sensitivity	Magnitude of Change	Level of Effect	Significant residual effect?
VP1: Cefnddwysarn	High	Medium-High	**Moderate-Major adverse**	**Yes**
VP2: A4212	High	Medium-High	**Moderate-Major adverse**	**Yes**

Viewpoint: Location	Sensitivity	Magnitude of Change	Level of Effect	Significant residual effect?
VP3: Caer-garreg	High	Medium	**Moderate-Major adverse**	**Yes**
VP4: Mwnwgl-y-llyn Bridge	Very High	Medium	**Moderate-Major adverse**	**Yes**
VP5: Llangower	Very High	Medium	**Moderate-Major adverse**	**Yes**
VP6: Footpath Bryn-yr-Hydd	Very High	Medium	**Moderate-Major adverse**	**Yes**
VP7: Carnedd y Filiast	Very High	Medium	**Moderate-Major adverse**	**Yes**
VP8: Cerrigydrudion	High	Low-Medium	Moderate adverse	No
VP9: B4391 South of Rhanneg	Very High	Medium	**Moderate-Major adverse**	**Yes**
VP10: Picnic Area west of Llyn Celyn Reservoir	Very High	Medium	**Moderate-Major adverse**	**Yes**
VP11: Footpath North of Bryn-y-gwrgi	High	Low	Moderate-minor adverse	No
VP12: Arenig Fawr	Very High	Medium	**Moderate-Major adverse**	**Yes**
VP13: Footpath South of Hafodty Hafod Dre	High	Low	Minor adverse	No
VP14: Green Lane, Corwen	High	Very Low	Minor adverse	No
VP15: East of Cynwyd	High	Low	Minor adverse	No
VP16: Castell Dinas Brân	High	Very Low	Minor adverse	No
VP17: B4501 North of Cerrigydrudion	Medium-High	Medium	**Moderate-Major adverse**	**Yes**
VP18: B4501 South of Cerrigydrudion	Medium-High	Medium	**Moderate adverse**	**Yes**

Viewpoint: Location	Sensitivity	Magnitude of Change	Level of Effect	Significant residual effect?
VP19: Moel y Garnedd (ENP)	Very High	Medium	**Moderate-Major adverse**	**Yes**
VP20: Moel Morfydd (CRDVNL)	High	Very Low-Low	Minor adverse	No
VP21: Moel y Plas (CRDVNL)	High	Very Low	Minor adverse	No

Residential receptors within 2 km

9.8.92 There are a number of residential properties which lie within 2 km of a proposed turbine location within the Proposed Development. The location of these individual properties is illustrated in **ES Volume IV, Figure 9.32** with further detail provided in **Appendix 9.10**.

9.8.93 The layout of the wind farm has followed an iterative process as set out in the **Design and Access Statement**, which accompanies the application. An important part of the design process included minimising the visual effects that would be experienced by residents of the closest dwellings i.e., to avoid overbearing visual effects. As a consequence of this design approach, whilst a high magnitude was predicted at several properties, the RVAA predicted that there would be no potential for a Very High magnitude of change to be experienced from any dwelling. This approach has ensured that no visual effect would be close to meeting the Residential Visual Amenity Threshold (RVAT). In accordance with best practice guidance TGN 02/19, the RVAA Step 3 results indicate that there is no requirement for a more detailed Step 4 study where a judgement is made on whether the Proposed Development would result in the RVAT being met or not at specific properties.

9.8.94 Having undertaken an appraisal of the relationship between the Proposed Development and the residential property groups within the 2 km RVAA study area, it is assessed that some residents (ten locations) would experience a **significant** visual effect during the construction and operation phase, with the effects ranging from **moderate to major**. In all cases, the properties would all continue to have other views available that are not affected by the Proposed Development. It is not the case that any of the effects would be of such a scale so as to become dominant or overbearing in landscape and visual terms.

Settlements

9.8.95 It is recognised that there would be some additional temporary visual effects during the construction of the Proposed Development over and above those assessed under the operation phase.

9.8.96 The vast majority of effects, of note, when considering the construction phase would be experienced within the local environs of the Site, with views from many areas

contained by topography, as illustrated by the blade tip ZTV of the proposed turbines in **ES Volume IV, Figure 9.3.**

9.8.97 The construction works would be visible from a number of properties within the local landscape. These views would only be experienced for a relatively short duration and are considered short term, temporary effects.

9.8.98 The construction effects are described where relevant to the available views from each settlement in the following paragraphs. Overall, it is assessed that there would generally be a lower magnitude of effect during construction compared with the operational phase effects assessed below with generally worst case effects arising as a result of visibility of cranes erecting turbines (i.e. shortly prior to the start of the operational phase).

9.8.99 All settlements assessed in detail from the filtered list within **Appendix 9.8** are located within 10 km of the Proposed Development, with settlements further afield already sieved out of further analysis given the likelihood they would not experience any significant effects as a result of the Proposed Development.

9.8.100 The assessment of visual effects on settlements has been undertaken through detailed analysis of the Zone of Theoretical Visibility (ZTV) as illustrated in **ES Volume IV, Figure 9.4** and **ES Volume IV, Figure 9.3**.

9.8.101 The sensitivity of all settlements is considered to be high, reflecting the elevated importance placed on residential visual amenity. For each settlement assessed, the analysis provides a description of its location within specific LANDMAP aspect areas, key views towards the development, and professional judgement on the magnitude of change, level of visual effect, and significance. The assessment differentiates between effects during the construction and operational phases of the development.

Settlements within 5 km

Frongoch (2.7 km south-west)

9.8.102 Frongoch is located within LANDMAP Visual and Sensory Aspect Area SNPVS090 (Afon Tryweryn, Moderate evaluation) which covers the valley area south-west of the Site. The settlement sits within the Gwynedd & Ynys Môn (Bala Hinterlands) Special Landscape Area and occupies a valley location with residential properties and a primary school (Ysgol Bro Tryweryn). The settlement is positioned at approximately 220-240 m AOD within an area showing theoretical visibility on the ZTV. It should be noted however that there is notable vegetation in and around the settlement which serves to reduce potential visibility from many of the properties.

9.8.103 During construction, with reference to **ES Volume IV, Figure 9.4** those residents which do not have their views towards the Site screened by vegetation or other intervening buildings would experience noticeable visual effects from wind turbine construction activities. The cranes used during turbine erection would be clearly visible from parts of the settlement, introducing new vertical elements into views across the valley to the north-east. Some residents may also see construction

vehicles and personnel moving along access tracks and around turbine pads in an area extending approximately 2.7 km to the north-east of the settlement. The rolling valley topography would provide some screening of ground-based construction activity, limiting visibility for some properties, though elevated construction elements would remain visible. The same activities would be associated with the decommissioning period, but in reverse as the built elements of the Proposed Development were removed from the Site. During the construction phase, the effects would be **moderate** and **significant**.

9.8.104 During operation, with reference to **ES Volume IV, Figure 9.4**, most residents in Frongoch would be located in sections of the ZTV which indicate they would theoretically be able to see 9-10 turbine blade tips, with 7-8 turbine hubs potentially visible from elevated parts of the settlement. The turbines would extend across approximately 2 km of the north-eastward view, creating prominent vertical elements against the skyline for those properties where views were available. The movement of the turbine blades would naturally draw the eye, making the development more noticeable in views from the settlement. As demonstrated by the Hub Height ZTV analysis, there would be no visibility of the ground-level components (solar, BESS, and substation elements) from Frongoch due to distance and intervening topography.

9.8.105 The visual change for Frongoch would result in a **high** magnitude of change, primarily due to the proximity of the settlement to the wind farm

9.8.106 The resulting visual effect would be **major** and is considered **significant** for residents of Frongoch with clear north-eastward views. Some properties however would experience no greater than **moderate** and **not significant** effects due to partial screening by local topography and vegetation.

Sarnau (2.7 km south-east)

9.8.107 Sarnau is located within LANDMAP Visual and Sensory Aspect Area SNPVS092 (Bethel, Moderate evaluation) which covers the upland hillside and scarp slopes area, with rolling small hills and valleys and scattered woodland. The settlement is positioned along the A494 corridor at approximately 280-320 m AOD on elevated ground within the Gwynedd & Ynys Môn (Bala Hinterlands) Special Landscape Area.

9.8.108 During construction, with reference to **ES Volume IV, Figure 9.4**, some residents would have clear visibility of some turbine construction activities from their elevated position, however others would have views screened by intervening vegetation and built form within the small settlement of around 20 properties. Construction cranes would be visible on the north-western horizon during turbine erection, extending across approximately 2-3 km of the north-westward view. The relatively open upland character of the intervening landscape provides limited screening, meaning construction activities would be clearly visible. The same activities would be associated with the decommissioning period. During the construction phase, the effects would be **moderate-major** and **significant**.

9.8.109 During operation, with reference to **ES Volume IV, Figure 9.4,** those residents which do have open views towards the Site would see 9-10 turbine blade tips with 8-9 hubs potentially visible from elevated parts of the settlement. However, in many cases views would be screened by intervening vegetation and built form. The turbines, where visible, would appear as prominent vertical elements on the western horizon, forming notable new features across approximately 2-3 km of the view. Limited screening is available due to the open upland character of the area, though some field boundaries and scattered farm buildings would provide partial screening for properties in more sheltered locations within the settlement.

9.8.110 The magnitude of impact on residents in Sarnau which do have open views towards the Site would be **high**, considering the settlement's elevated position, the relatively open character of the intervening landscape, and the proximity to the wind farm. The turbines would appear prominently on the skyline.

9.8.111 The resulting visual effect would be **major** and is considered **significant** for some of residents in Sarnau. For many of the properties however views would be either partially or fully screened by built form and vegetation resulting in no greater than a **moderate**, **not significant** effect.

Cefnddwysarn (3.0 km south-east)

9.8.112 Cefnddwysarn is located within LANDMAP Visual and Sensory Aspect Area SNPVS092 (Bethel, Moderate evaluation) and is represented by Viewpoint 1 in the assessment (which is located slightly to south in order to obtain visibility above trees on the north side of the A494). The very small settlement of less than 10 properties occupies elevated ground at approximately 250 m AOD and provides some open views towards the Site across the intervening upland landscape, but with views from several of the properties heavily filtered by vegetation.

9.8.113 During construction, with reference to **ES Volume IV, Figure 9.4** and Viewpoint 1 (Cefnddwysarn), residents would experience some views of the construction cranes. Intervening topography and vegetation within the landscape provides screening for most ground level construction activities. During the construction phase, the effects would be no greater than **moderate** and **not significant**.

9.8.114 During operation, with reference to **ES Volume IV, Figure 9.4** and the viewpoint assessment, all 10 turbines would be theoretically visible from Cefnddwysarn, however, in reality, vegetation in the landscape would notably reduce potential visibility. The location of Viewpoint 1 gives a worst-case representation of views from the vicinity of the settlement, but due to its elevation location along the minor road which leads out from the settlement, shows far greater visibility than would be available from the majority of the properties. Indeed, the vegetation which would limit potential views can be clearly seen in the photography for the viewpoint. Where visible the turbines would appear as prominent new vertical elements in the landscape.

9.8.115 There would be a **high** magnitude of change from a very small part of the settlement where views were not obscured by vegetation, but with the majority of the area having no more than a medium magnitude.

9.8.116 The resulting visual effect would be **major** and significant for residents of a very small part of Cefnddwysarn, but with the remainder of the settlement experiencing no greater than **moderate**, **not significant** effects or less.

Llanfor (3.1 km south-east)

9.8.117 Llanfor is situated within LANDMAP Visual and Sensory Aspect Area SNPVS094 (Bala Plain, Moderate evaluation) in a valley location at approximately 200-220 m AOD. The settlement lies within the Gwynedd & Ynys Môn (Bala Hinterlands) Special Landscape Area and benefits from some natural screening provided by the valley setting which notably limits the potential visibility of the Proposed Development.

9.8.118 During construction, with reference to **ES Volume IV, Figure 9.4,** residents would have very little visibility of construction activities from within the settlement. Glimpses of construction cranes may be visible on the skyline during turbine erection, though the valley location would provide screening of ground-based activities. The elevated turbine construction elements would remain visible above the local topographic screening. During the construction phase, the effects would be **minor** and **not significant**.

9.8.119 During operation, with reference to **ES Volume IV, Figure 9.4** 7-9 turbines would be theoretically visible from Llanfor, predominantly blade tips with some hub visibility from elevated locations within the settlement. The valley location provides some natural screening which in combination of the screening effects of vegetation and intervening built form serves to notably reduce the potential for views, reducing the prominence of the turbines.

9.8.120 The magnitude of impact would be medium-low, considering the screening provided by the valley location, vegetation and intervening built form. The turbines would be noticeable in some north-westward views but would not be seen from the majority of the settlement.

9.8.121 The resulting visual effect would be **moderate-minor** and is considered **not significant.**

Bala (4.0 km south)

9.8.122 Bala his one of the principal towns within Eryri NP and is the largest settlement within the study area. The town is positioned around Llyn Tegid (Bala Lake) - the largest natural lake in Wales - within a deep glacial basin sitting on the Bala geological fault line. The settlement comprises a planned medieval borough with its historic core designated as a Conservation Area, arranged in a distinctive grid iron pattern that reflects its planned medieval origins.

9.8.123 Bala is located within multiple high-value LANDMAP designations, including **SNPVS094 (Bala Plain, Moderate evaluation)** for visual and sensory qualities, and **SNPHL865 (Bala, Outstanding evaluation)** for historic landscape value.

9.8.124 The town serves as a tourist destination within the National Park, with the Bala Lake Railway following the southern shoreline and other tourist-related developments including camping and caravan sites.

9.8.125 Bala occupies a classic U-shaped glacial valley at approximately 160-180 m AOD, with land rising either side to create the distinctive valley form. To the east, the valley side rises toward Craig Y Allor (478 m AOD), while to the west and northwest, the land rises toward the prominent peaks of Arenig Fach (689 m AOD) and Arenig Fawr (854 m AOD) respectively. This valley setting creates a natural amphitheatre effect where the town sits within a contained landscape basin, with the Proposed Development located on the elevated moorland beyond the valley rim to the north.

9.8.126 The ZTV analysis demonstrates that despite the valley location providing some natural containment, 5-8 turbines would be theoretically visible from parts of the town, appearing predominantly as blade tips on the northern horizon. However, the analysis must account for the extensive built development that significantly limits actual visibility to periodic locations in and around the town.

9.8.127 During construction, residents would experience noticeable visual effects from the turbine erection phase, when construction cranes would be clearly visible from elevated parts of the settlement. These cranes, reaching heights potentially exceeding the final turbine heights during construction, would introduce new vertical elements into views across the valley to the northeast.

9.8.128 Construction activities would affect not only permanent residents but also the tourist population visiting the town, the lake, and using the heritage railway. The **high** sensitivity of these receptors, combined with the **medium** magnitude of construction impacts, results in **moderate** adverse effects during construction, which are considered **significant** for those parts of Bala that would have clear open views towards the Proposed Development, primarily at the northern edge of the town, with no effects within the centre of Bala where views would be screened by intervening built form.

9.8.129 During operation, where they would be visible the turbines would appear as prominent new vertical focal points on the northern horizon. Viewpoint 2 on the A4212 within the National Park demonstrates major significant effects for road users approaching Bala and provides an indication of the visibility that would be available from some parts of the town, where views are not screened by buildings or vegetation.

9.8.130 The magnitude of visual change varies significantly across the settlement however, as summarised below:

- **Medium-high magnitude** for elevated northern areas and approaches where clear views are available, plus the path that runs along the lake shore to the south of the town;
- **Low-medium magnitude** for the majority of the settlement where the built environment and valley topography provide screening; and
- **Negligible magnitude** for lower-lying central areas and southern parts of the town where again many views are screened by built form.

9.8.131 For elevated northern areas of Bala with clear views toward the development, plus the path that runs along the lake shore to the south of the town, the high sensitivity combined with **medium-high** magnitude change results in **moderate-major adverse effects,** which are considered **significant**.

9.8.132 For the majority of the settlement, where extensive built development and the valley setting provide screening, the effects would be no greater than **minor-moderate adverse and not significant**.

Llandderfel (4.2 km south-east)

9.8.133 Llandderfel is situated within LANDMAP Visual and Sensory Aspect Area SNPVS093 (Llandderfel, Moderate evaluation) and Historic Landscape Aspect Area GWNDDHL395 (Llandderfel, High evaluation). The settlement is located in a valley setting at approximately 200-240 m AOD with mixed elevated and sheltered areas. The majority of the settlement lies outside of the ZTV and would have no theoretical visibility of the Proposed Development. For those small areas at the east of the settlement which do lie within the ZTV any potential visibility would be severely restricted by intervening vegetation and built development. Effects from the settlement would be no greater than **minor** and **not significant** at all phases.

Rhyd-uchaf (4.2 km south-west)

9.8.134 Rhyd-uchaf is located within LANDMAP Visual and Sensory Aspect Area SNPVS095 (Rhyd-uchaf, Moderate evaluation) in an elevated location at approximately 250-280 m AOD.

9.8.135 During construction, with reference to **ES Volume IV, Figure 9.4** there would be some potential for glimpses of the construction cranes on the north-eastern horizon, though screening would be provided by local topography and vegetation, severing to notably limit potential effects. During the construction phase, the effects would be no greater than **minor-moderate** and **not significant**.

9.8.136 During operation, with reference to **ES Volume IV, Figure 9.4** 6-8 turbines would be theoretically visible from Rhyd-uchaf, predominantly blade tips with some hub visibility. The elevated location increases sensitivity to visual change, though some notable screening is provided by intervening topography and vegetation in and around the settlement.

9.8.137 The magnitude of impact would be **medium** for that very small number of properties which have a clear open view towards the Site, considering the elevated position balanced against the screening effects and distance. Most properties would however have either no views or no more than a **low** magnitude of impact.

9.8.138 The resulting visual effect would be **moderate** and is considered **significant** for a very small number of the residents of Rhyd-uchaf, with the majority of the residents experiencing no more than a **minor**, **not significant** effect.

Settlements within 5-10 km

Cerrigydrudion (6.3 km north)

9.8.139 Cerrigydrudion is represented by Viewpoint 8 and is located within LANDMAP Visual and Sensory Aspect Area CNWVS044 (Cerrigydrudion, Low evaluation). The settlement sits at approximately 350-400 m AOD within a valley setting.

9.8.140 During construction, with reference to **ES Volume IV, Figure 9.4** and Viewpoint 8 (Cerrigydrudion), residents would have limited visibility of construction activities due to distance and intervening topography. Some construction cranes might be visible on the southern horizon during turbine erection from elevated parts of the settlement. During the construction phase, the effects would be **minor** and **not significant**.

9.8.141 During operation, with reference to **ES Volume IV, Figure 9.4**, 5-7 turbines would be theoretically visible from Cerrigydrudion, predominantly blade tips appearing on the southern horizon. Distance and intervening topography would reduce prominence, though elevated elements would remain visible from parts of the settlement.

9.8.142 The magnitude of impact would be **medium** for elevated areas with clear southward views, but the distance significantly reduces the prominence of the development. Large parts of the village would however have no views of the proposed turbines due to screening by intervening buildings.

9.8.143 The resulting visual effect would be **moderate** for elevated parts of the settlement and is considered **significant** for those areas, while most of the settlement, where views are screened by other buildings would experience **minor** effects.

Maerdy (7.5 km north-east)

9.8.144 Maerdy is located within LANDMAP Visual and Sensory Aspect Area CNWVS013 (Ceirw and Alwen valleys east, High evaluation) in the valley setting at approximately 250-300 m AOD. The high landscape evaluation reflects the scenic quality of this valley landscape.

9.8.145 During construction, with reference to **ES Volume IV, Figure 9.4** residents would have very limited visibility of construction activities due to the distance (7.5 km) and screening provided by the valley location and intervening topography. Any visibility would be limited to glimpses of construction cranes from elevated locations. During the construction phase, the effects would be **negligible** and **not significant**.

9.8.146 During operation with reference to **ES Volume IV, Figure 9.4**, 3-5 turbines would be theoretically visible from elevated parts of Maerdy but would appear distant and of reduced prominence. The valley location and distance provide significant screening, reducing the visual impact substantially.

9.8.147 The magnitude of impact would be **low-medium** for the limited areas with potential visibility, but **low** when considering the settlement as a whole.

9.8.148 The resulting visual effect would be **minor-moderate** and is considered **not significant** due to the distance and limited visibility.

Llandrillo (9.1 km south-east)

9.8.149 Llandrillo is located within LANDMAP Visual and Sensory Aspect Area DNBGHVS105 (Llandrillo, Low evaluation) at approximately 200-250 m AOD. This is classified as a Village development area described as a "*small compact typically north Wales village settlement based around a fine Victorian Church (St.Trillo*)". The settlement benefits from significant screening provided by the valley location and distance.

9.8.150 During construction and operation, with reference to **ES Volume IV, Figure 9.4** residents would have very limited theoretical visibility due to distance and intervening topography. From elevated locations, 1-3 turbines may be theoretically visible, but would appear very distant and of minimal prominence.

9.8.151 The magnitude of impact would be low for any areas with potential visibility, and **very low** for the settlement as a whole.

9.8.152 The resulting visual effect would be **minor** and is considered **not significant** due to the substantial distance and limited visibility.

Settlements within 10-20 km

9.8.153 Settlements at distances of 10-20 km, including those within the Clwydian Range and Dee Valley National Landscape area, would experience very limited theoretical visibility due to distance and intervening topography. The complex upland topography creates extensive screening, with only occasional glimpses of distant turbine tips possible from elevated locations. At these distances, the proposed turbines would appear as very distant elements on the horizon with minimal visual prominence.

9.8.154 During both construction and operation phases, these settlements would experience a **very low** magnitude of change resulting in **negligible to minor** visual effects that are **not significant.**

Table 9.9 Summary of Visual Assessment of Settlements

Settlement (distance to site)	LANDMAP: Visual Sensory (Value)	Sensitivity	Magnitude of Change (operation phase)	Level of Effect		Significant residual effect?
				Construction	Operation	
Frongoch (2.7 km SW)	SNPVS090 Afon Tryweryn (Moderate)	High	High	**Moderate**	**Major (Significant) (worst-case)**	**Yes**
Sarnau (2.7 km SE)	SNPVS092 Bethel (Moderate)	High	High	**Moderate-Major**	**Major (Significant)**	**Yes**
Cefnddwysarn (3.0 km SE)	SNPVS092 Bethel (Moderate)	High	High	Moderate (not significant)	**Major (Significant)**	**Yes**
Llanfor (3.1 km SE)	SNPVS094 Bala Plain (Moderate)	High	Medium-High	Minor	Moderate-Minor (Not Significant)	No
Bala (4.0 km S) Northern elevated areas of settlement	SNPVS094 Bala Plain (Moderate)	High	Medium	**Moderate**	**Moderate-Major (Significant)**	**Yes**
Bala town centre and southern areas	SNPVS094 Bala Plain (Moderate)	High	Low-Medium	Minor-Moderate	Minor-Moderate (Not Significant)	No
Llandderfel (4.2 km SE)	SNPVS093 Llanderfel (Moderate)	High	Medium	Minor	Minor (Not Significant)	No

Settlement (distance to site)	LANDMAP: Visual Sensory (Value)	Sensitivity	Magnitude of Change (operation phase)	Level of Effect		Significant residual effect?
				Construction	Operation	
Rhyd-uchaf (4.2 km SW)	SNPVS095 Rhyd-uchaf (Moderate)	High	Medium	Minor-Moderate	**Moderate (Significant) (worst-case)**	**Yes**
Cerrigydrudion (6.3 km N)	CNWVS044 Cerrigydrudion (Low)	High	Medium	Minor (not significant)	**Moderate (Significant) (worst-case)**	**Yes**
Maerdy (7.5 km NE)	CNWVS013 Ceirw and Alwen valleys east (High)	High	Low-Medium	Negligible	Minor-Moderate (Not Significant)	No
Llandrillo (9.1 km SE)	DNBGHVS105 Llandrillo (Low)	High	Low	Minor	Minor (Not Significant)	No
Settlements at distances of 10-20 km	Various	High	Very Low	Negligible to Minor	Negligible to Minor	No

National Trails and Long Distance Walking Routes

9.8.155 The following assessment focuses on the national trails and long-distance walking routes within 20 km of the Proposed Development identified in the filtering exercise in **Appendix 9.8** as having the potential to experience significant effects.

9.8.156 In accordance with the methodology set out in **Appendix 9.1** the sensitivity of users of long-distance routes is considered to be high.

Hiraethog Trail

9.8.157 The Hiraethog Trail is a long-distance walking which runs between Pentrefoelas and Bodfari route that traverses the Mynydd Hiraethog uplands, passing approximately 4 km to the north of the Site at its closest point. The trail crosses open moorland terrain in parts with some panoramic views across the upland landscape, connecting with the broader network of moorland paths and bridleways in the area It also runs though Clocaenog Forest and the Clocaenog wind farm. The route extends approximately 15 km through the study area, with the closest sections crossing exposed plateau areas approximately 4-5 km north of the Site within LANDMAP Visual and Sensory Aspect Area CNWVS006 - Ceirw and Medrad narrow valleys, characterised as “narrow upland valleys with flat valley floor” with “scattered farmsteads with the A5 along the Ceirw valley floor and B4501”.

9.8.158 With reference to **ES Volume IV, Figure 9.4,** the sections of the Hiraethog Trail closest to the Site (approximately 4-5 km north following the B4501 and rising into CNWVS049 – Moel Gwern-nannau via Haffoty Ucha wind farm)) show some theoretical visibility of between 3 turbines in the Medrad valley and up to 7-10 turbines from elevated and exposed sections crossing the moorland plateau. The trail's alignment at this point across open upland terrain provides direct southward views toward the turbine array with minimal intervening screening, however at this point the route runs adjacent to the existing turbines at Hafoty Ucha Wind Farm. Much of the route to the south of Cerrigydrudion would also lie outside of the ZTV and would have no visibility of the Proposed Development, and this would also apply to the section to the south of Llanfihangel Glyn Myfyr. A large section of the route also runs within Clocaenog Forest which would prevent any visibility towards the Site

9.8.159 With reference to **Appendix 9.11** there are three viewpoints from the Trail: Viewpoint 8 (Cerrigydrudion), approximately 6.3 km to the north; Viewpoint 13 (Footpath South of Hafodty) at around 12 km to the north-west; and Viewpoint 11 (Footpath North of Bryn-y-gwrgi) at around 10 km to the north-east.

9.8.160 During construction, walkers on the closest sections of the trail (4-5 km) would experience short term views of the cranes erecting the turbines. The elevated character of some sections of the trail would provide unobstructed views of construction activities, resulting in a **medium** magnitude of change and **moderate** effects which would be **not significant**. More distant sections of the trail (6-10 km) would experience reduced construction visibility with **low** magnitude of change and **minor** effects.

9.8.161 During operation, where three to ten turbines would be theoretically visible from the closest sections of the trail (4-5 km), they would appear as prominent vertical elements on the southern horizon contained behind the ridgeline, becoming a noticeable feature in the panoramic moorland views that characterise this generally upland walking experience. The turbines would occupy a moderate portion of the available southward views, creating a noticeable change to the visual experience from this short section of the route. From more distant sections (6-10 km), where up to three to six turbines would be theoretically visible, they would appear as clearly discernible vertical elements in the broader upland landscape context, albeit reduced in prominence with the increased distance from the Site.

9.8.162 Overall, the magnitude would be **medium-high** for the closest sections (4-5 km) and **medium** for sections 6-10 km away. This would result in **moderate-major** effects which are **significant** for the closest sections and **moderate** effects which whilst slightly diminished remain **significant** for sections up to around 8 km given the scale of development, extensive visibility, and high recreational sensitivity of the route. This would principally apply to the section which runs along the minor road between Cefn-brith and just to the north of Cerrigydrudion. Beyond 8 km the effects would reduce to moderate not significant, as the scale of the turbines further reduced. Beyond 10 km whilst the turbines would remain noticeable, the magnitude of change would reduce to **low** to **very low,** due to the turbines appearing as smaller scale features and therefore much less prominent in the wider panoramic upland views available. The level of effect reducing to **minor to negligible** which would be **not significant** in more distant views along the trail.

Cross Britain Way

9.8.163 The Cross Britain Way is a 280-mile long-distance hiking trail that runs from Boston, Lincolnshire, on the east coast of England, to Barmouth, on the west coast of Wales. The route passes through Bala and runs through the southern extent of the study area. Much of the route between Llyn Efyrnwy and Bala lies outside of the ZTV or would have views screened by woodland vegetation. However, visibility of the turbines would be possible for those walking in the direction towards Bala for around the final 3 km, at which point the route would lie around 5 to 7 km from the nearest proposed turbine. From this section, where clear open views towards the Proposed Development were available there would be a **medium** magnitude of change and a **moderate**, **significant** effect, during operation.

9.8.164 There would also be some visibility from the route when approaching Bala from the west, as it runs along the hills to the south of Llyn Tegid. Where there were clear open views towards the Proposed Development for the section closest to Bala (around 5 km to 7 km from the nearest proposed turbine) there would also be a **medium** magnitude of change and a **moderate**, **significant** effect during operation. At greater distances the operational phase effect would reduce as the turbines formed a smaller element in the view, with any effects being no greater than **moderate**, **not significant.** During construction effects would be no greater than **moderate** and **not significant.**

Dee Valley Way

9.8.165 The Dee Valley Way follows to the north of the route of the River Dee between Corwen and Llangollen. At its closest point it lies around 13 km to the east of the nearest proposed turbine. Viewpoint 14 Green Lane Corwen, is illustrative of the views from the designation of the route at its closest point to the Proposed Development. Whilst there may be potential for views of the turbines from sections of the route, at distances of 13 km of greater, the turbines would form only minor elements in the view and effects would be no greater than **minor** and **not significant** at all phases.

North Berwyn Way

9.8.166 The North Berwyn Way is a 24 km linear trail that runs through the North Berwyn Mountains to the south of the River Dee, between Corwen and Llangollen. At its closest point it lies around 11 km to the east of the nearest proposed turbine. Viewpoint 14 Green Lane Corwen, is illustrative of the views from the designation of the route and Viewpoint 15 East of Cynwyd is also taken from the route. Whilst there may be potential for views of the turbines from sections of the route, when it is not passing through woodland, at distances of 11 km of greater, the turbines would form only minor elements in the view and effects would be no greater than **moderate/minor** and **not significant** during operation and **minor** and **not significant** during construction.

Local Public Rights of Way

9.8.167 There are extensive networks of public rights of way which pass through and around the Site and the surrounding landscape as illustrated on **ES Volume IV, Figure 9.31**. The assessment below is structured by distance and direction from the Site and directional sectors to ensure proportionate consideration of effects which have been considered with reference to detailed aerial imagery, analysis with ZTV correlation and LANDMAP context integration, in addition to on-site observations of the experience from the routes.

Public Rights of Way within 5 km

9.8.168 There are several PRoW within 5 km of the Site serving the nearby settlements and providing recreational access to upland areas. This zone contains the routes with the highest potential for significant effects due to proximity and scale of the proposed turbines, however many of the PRoW within 5 km are located outside of the ZTV and would have no visibility of the Proposed Development, or little more than glimpses of blade tips due to topographical screening. The assessment is subdivided by directional sectors to provide detailed analysis of the varied topographical and visibility conditions.

Northern Sector (0-5 km North)

9.8.169 The northern sector contains an extensive network of PRoW, crossing open moorland terrain. Those PRoW with greatest visibility (7-10 turbines visible) include

footpaths running alongside the B4501 corridor where they run upward into the elevated, exposed character across the plateau landscape. Other routes with less visibility (3-6 turbines visible or less) comprise routes within the valleys, cross-valley bridleways with intermittent visibility depending on local topography, and farm access tracks with permissive access to moorland areas. The routes with the least visibility (0-2 turbines visible) include enclosed valley routes following watercourses and woodland edge paths adjacent to plantation forests benefiting from screening.

9.8.170 During construction, users of the more elevated routes within 2-3 km would experience close-range views of construction activities including crane operations and turbine erection, with high magnitude of change and major effects which would be significant. Routes between 3-5 km would have moderate construction visibility with **medium** magnitude of change and **moderate** effects which would be **not significant**.

9.8.171 During operation, those PRoW on elevated ground within 2-3 km which do lie within the ZTV would have extensive visibility of 7-10 turbines appearing as prominent features in the view, with **high** magnitude of change and **major** effects which would be **significant**. Routes between 3-5 km would experience **medium to high** magnitude of change and **moderate-major** effects which would be **significant** for elevated routes with clear views towards the Proposed Development, given the large scale of the turbines.

Eastern Sector (0-5 km East)

9.8.172 The eastern sector includes a network of local PRoW serving settlements along the A494 corridor within LANDMAP Visual and Sensory Aspect Areas SNPVS090 - Cefn Coch Valley (*"Narrow upland valley with scattered settlement"* -with notable vegetation and topographic screening in valley locations) and DNBGHVS067 eastern upland areas with *"Open character and long views"* where higher visibility is possible from elevated eastern routes. The PRoW with greatest visibility (5-10 turbines visible) include elevated footpaths south of Sarnau climbing eastward from the valley with direct westward views showing maximum potential visibility and bridleways connecting to upland common land providing access to elevated areas with panoramic views. Settlement-specific networks around Sarnau, Bethel, and Wenallt show variable visibility depending on elevation, with many routes screened by vegetation or topography.

9.8.173 During construction, a small number of elevated routes within 2-3 km would experience **high** magnitude of change and **major** effects which would be **significant**. Valley routes and settlement perimeter paths, which comprise the greater number of the routes in this area, would experience **medium** magnitude of change or less and **moderate** effects at most, which would be **not significant**.

9.8.174 During operation, a small number of upland bridleways and elevated footpaths within 3 km would experience **high** magnitude of change and **major** effects which would be **significant**. A small number of routes between 3-5 km showing 3-6 turbines visibility across the Cefn Coch valley would experience **medium-high** magnitude of change and **moderate-major** effects which would be **significant** where there were direct westward views to the full turbine array, however most

routes would have some vegetation or topographic screening that would limit the extent of these significant effects.

Southern Sector (0-5 km South)

9.8.175 This sector contains recreational routes within LANDMAP Visual and Sensory Aspect Areas SNPVS091 - Foel Goch Uplands and SNPVS088 - Bala Basin. PRoW with the greatest potential visibility (7-10 turbines visible) include routes following elevated ground north of Bala which have maximum theoretical visibility, Lake Bala northern perimeter paths providing popular recreational routes with direct views to the turbine array, and upland approach routes with bridleway connections. High recreation value routes include promoted circular walks from Bala with several waymarked routes providing access to elevated viewing positions and routes around Llanfor connecting settlements to upland areas. Lake Bala recreational routes include footpath networks parallel to the narrow-gauge Bala Lake Railway experiencing moderate visibility, and extensive waterside recreational networks around the lake with variable visibility depending on specific location and elevation.

9.8.176 During construction, the ProW within 5 km to the south would experience some views of the construction activity, primarily just the cranes erecting the turbines, with the more elevated routes within 3 km experiencing **medium** magnitude of change and **moderate** effects which would be **not significant**.

9.8.177 During operation, those routes with clear open views towards the Proposed Development would experience **high** magnitude of change and **major** effects which would be **significant**. This would include the shore section of PRoW which runs to the south of Bala along the north shore of Llyn Tegid. However, the intermittent ZTV coverage to the south of the Site combined with the additional screening effects of vegetation in the landscape would serve to restrict the number of routes where such effects would occur.

Western Sector (0-5 km West)

9.8.178 The western sector includes PRoW within the Eryri NP. PRoW with the greatest potential visibility in this area (9-10 turbines visible) include elevated ENP footpaths 2-4 km west on high ground with direct unobstructed views towards the Proposed Development. PRoW with less visibility include valley floor approaches following Afon Mynach and other watercourses showing reduced visibility, and partially screened routes with some woodland or landform screening.

9.8.179 During construction, those routes within 5 km with clear open views towards the Proposed Development would experience **medium** magnitude of change and **major-moderate** effects which would be **significant**.

9.8.180 During operation, elevated footpaths within 5 km with clear open views towards the Proposed Development would experience **high** magnitude of change and **major** effects which would be **significant**. PRoW running along the lower parts of the valleys following Afon Mynach and other watercourses, where reduced visibility of the turbines was available would experience **medium** magnitude of change and

moderate effects which would be **significant**. Some routes which run outside of the ZTV would experience no effect.

Local Public Rights of Way 5-10 km from Site

9.8.181 PRoW between 5-10 km from the Site show reduced impacts as the Proposed Development becomes a smaller element in views, though elevated routes maintain some visibility. The assessment considers directional variations in topography and settlement patterns, with potential for impacts generally beginning to decrease substantially except for some more elevated routes with clear sightlines.

Northern Sector (5-10 km North)

9.8.182 The northern area between 5 km and 10 km includes PRoW around Cerrigydrudion (around 6-8 km from the Proposed Development) , routes either side of the B4501 and bridleways connecting to wider Mynydd Hiraethog area. There are also several paths which link to the Hiraethog Trail. There are also RRoW around Glasfryn (around 7-10 km from the Proposed Development) some of which have limited visibility due to intervening topography.

9.8.183 During construction, there would be very limited visibility of construction activities with only occasional views of tall cranes from elevated and open sections, resulting in **very low** magnitude of change and **negligible to minor** effects which would be **not significant**.

9.8.184 During operation, the majority of the routes would experience no greater than a **low to medium magnitude** of change and **minor to moderate** effects which would generally be **not significant**.

Eastern Sector (5-10 km East)

9.8.185 The eastern sector has varied potential visibility of the Proposed Development with may parts outside the ZTV and having no potential visibility, and any visibility generally only being available from more elevated locations. PRoW include those in the Alwen Valley (around 6-8 km from the Proposed Development) including valley floor routes following the river corridor with limited visibility due to enclosed character, valley side climbs with footpaths and bridleways ascending valley sides showing increasing visibility, and ridge routes with potential for long-distance views.

9.8.186 During construction, effects would be **very low** magnitude resulting in **negligible** effects which would be **not significant**.

9.8.187 During operation, valley side routes would experience **low** magnitude of change and **minor** effects which would be **not significant.** Ridge approaches and the more elevated routes may experience **low to medium** or **medium** magnitude of change and **minor to moderate** or **moderate** effects which would generally be **not significant** given the increased distance and reduced prominence of the turbines.

Southern Sector (5-10 km South)

9.8.188 The southern sector includes PRoW around Llandrillo to the southeast (around 8-10 km from the Proposed Development) with routes generally showing limited visibility due to distance and topographic screening. There are also PRoW in the Hirnant Valley (around 7-9 km from the Proposed Development), which comprise valley floor paths following watercourses south with minimal visibility, valley side routes with climbing paths showing occasional views back towards the Site, and ridge connections linking to the broader upland network. Many of the PRoW in the area between 5 km and 10 km to the south would run through or close to woodland and other vegetation that notable serve to reduce the potential for views towards the Proposed Development.

9.8.189 During construction and operation, the majority of routes would experience **very low** magnitude of change resulting in **negligible to minor effects** which would be **not significant** due to substantial intervening distance and topographical and vegetation screening.

Western Sector (5-10 km West)

9.8.190 The PRoW within the western sector includes routes through the agricultural land to the west of Bala and south of Mynydd Nodol (around 5-8 km from the Proposed Development). There are also PRoW around Llyn Celyn (between 5-7 km from the Proposed Development) which includes reservoir perimeter routes around water body with variable visibility, feeder valley routes following tributary valleys, and elevated approaches climbing from reservoir to surrounding peaks.

9.8.191 During construction, the routes would experience **low** magnitude of change and **minor** effects which would be **not significant** due to the distance from the Site along with the screening effects of vegetation from sections of the routes.

9.8.192 During operation, the routes would experience a varying magnitude of change ranging from **low to medium** depending on the extent of screening by topography and the vegetative cover available. The more open and exposed parts of these routes represent a worst case and would be subject to **moderate** effects which would be **significant** given their National Park location, though the increased distance and some enclosed sections reduces the overall impacts experienced in this area when considering the network of paths as a whole.

Public Rights of Way 10-20 km from Site

9.8.193 PRoW beyond 10 km would have visibility which is highly variable and generally limited to elevated viewpoints on clear days, with the vast majority of the routes beyond 10 km experiencing no visibility due to intervening topography and distance. Effects would be no greater than **minor** (**not significant**).

9.8.194 **Table 9.10** summarises the visual effects of the Proposed Development on national trails, long-distance walking routes, and the local public rights of way network

Table 9.10 Summary of Residual Effects on National Trails, Long-Distance Walking Routes and Public Rights of Way

Receptor (distance to site, route length)	Sensitivity	Construction			Operation		
		Magnitude of Change	Level of Effect	Significant residual effect?	Magnitude of Change	Level of Effect	Significant residual effect?
Hiraethog Trail – Closest sections (4-5 km north)	High	Medium	Moderate	No	Medium-High	**Moderate-Major (worst-case)**	**Yes**
Hiraethog Trail – Distant sections (6-10 km north)	High	Low	Minor	No	Medium	**Moderate (worst-case)**	**Yes**
Cross Britain Way	High	Low	Moderate	No	Medium	**Moderate (worst-case)**	**Yes**
Dee Valley Way	High	Very Low	Minor	No	Very Low	Minor	No
North Berwyn Way	High	Very Low	Minor	No	Low	Moderate-minor	No
Public Rights of Way within 5 km	High	High	**Major (worst-case)**	**Yes**	High	**Major (worst-case)**	**Yes**
Public Rights of Way between 5 km and 10 km	High	Low	Minor	No	Medium	**Moderate (worst-case)**	**Yes**

Receptor (distance to site, route length)	Sensitivity	Construction			Operation		
		Magnitude of Change	Level of Effect	Significant residual effect?	Magnitude of Change	Level of Effect	Significant residual effect?
Public Rights of Way between 10 km and 20 km	High	Very Low	Minor	No	Medium-High	Minor	No

Visual Effects on Roads

Methodology and Approach

9.8.195 The assessment of visual effects on road users has been undertaken through detailed analysis of the Zone of Theoretical Visibility (ZTV) as illustrated in **ES Volume IV, Figure 9.4** and **ES Volume IV, Figure 9.6,** combined with onsite analysis from driving through the study area**.** The assessment recognises that most road users (vehicles) generally have a reduced sensitivity compared to residents due to their transient nature and speed of travel. It is though noted that recreational cyclists using these routes have a high sensitivity to changes in the view. The analysis is structured by road type and distance, focusing on areas where the most significant effects are likely to occur based on the ZTV analysis and proximity to the development.

A Roads

A494

9.8.196 The A494 runs from Ruthin to the north-east and heads south-west to Dolgellau past the town of Bala and along the shores of Lake Bala (Llyn Tegid). The road passes approximately 2.7 km east of the nearest proposed turbine at its closest point around Sarnau. With reference to the ZTV, extensive theoretical visibility is indicated along elevated sections of this route, particularly as it approaches and passes through the Bala area. From elevated sections, where views are not screened by intervening vegetation road users would experience views of 7-10 turbines, both blade tips and hubs, appearing as prominent vertical elements on the western horizon. In reality considerable roadside vegetation screens much of the route through the study area in particular as it approaches Bala to the west of Cefnddwysarn (the section to the immediate south of the Site). The turbines would be most noticeable on elevated, open sections of the route, the most notable of which is between Cefnddwysarn and Bethel, a 3 km section which ranges from 249 m AOD to 274 m AOD moving eastwards beyond 3 km from the Site where views extend across the upland landscape towards the Site.

9.8.197 During construction, this would result in a **low** magnitude of change and **minor** visual effect, which is considered **not significant**.

9.8.198 During operation, the worst-case magnitude on very short sections of the route would be **medium**, resulting in a **moderate** visual effect that is **not significant**. The majority of the route would however have either no visibility or no greater than a **minor** effect.

A5

9.8.199 The A5 runs across the north of the study area as it runs between Betws-Y-Coed and Llangollen, passing by Tynant approximately 5 km from the Site boundary at its closest point. This route serves as a key transport corridor. the majority of the A5 runs outside of the ZTV and would have no visibility of the Proposed Development.

Where visibility occurs, road users would see 3-5 turbines predominantly as blade tips on the southern horizon. The turbines would appear as distant elements with reduced prominence due to the separation distance. During both construction and operation phases, this would result in no greater than a **low** magnitude of change and **minor** visual effect, which is **not considered significant.**

B Roads

B4501

9.8.200 The B4501 runs north-south to the immediate west of the Site between Frongoch and Cerrigydrudion, representing the closest major road to the Proposed Development. This route is represented by Viewpoints 17 and 18 (B4501 North and South of Cerrigydrudion respectively). The road passes within approximately 2 km of the nearest proposed turbine. Large sections of the road lie outside of the ZTV and would have no visibility of the Proposed Development. From those sections of this route which lie within the ZTV, road users would experience clear and prominent views of the development, with 9-10 turbines visible both as blade tips and hubs. For the section which runs closest to the Site, around 3 km in length, the turbines would be clearly visible above the roadside vegetation and field boundaries.

9.8.201 During construction, this would result in a **high** magnitude of change and **major** visual effect, which is considered **significant**. During operation, the magnitude would remain **high**, resulting in a **major** visual effect that is **significant**. For the section located further to the north, in the vicinity of Viewpoint 18, the prominence of the turbines would be less, resulting in a **medium** magnitude of change and **moderate** visual effect, which is considered **not significant**. More expansive views are available from the route further north in the vicinity of Viewpoint 17, but again there would be a **medium** magnitude of change and **moderate** visual effect, which is considered **not significant.**

B4401

9.8.202 The B4401 heads from Corwen to the east and follows the Cefn Coch valley via Llandrillo, continuing to join with the A494 to the east side of Bala at distances of approximately 4-12 km from the Site. With reference to the ZTV, theoretical visibility from this route is very intermittent due to the valley location and intervening topography. Where visibility occurs from the more elevated sections, primarily to the north of Cefn Coch, road users would see turbines predominantly as blade tips appearing on the western horizon.

9.8.203 During both construction and operation phases, this would result in a **low-medium** magnitude of change and **minor-moderate** visual effect, which is considered to be **not significant**.

B4391

9.8.204 The B4391 is represented by Viewpoint 9 (B4391 South of Rhanneg) at approximately 9 km south of the Site. From this route, road users would experience some visibility of the Proposed Development appearing on the northern horizon.

9.8.205 During the construction phase there would be a **low** magnitude of change and **minor** visual effect, which is considered to be **not significant**. During operation there would be a medium magnitude of change and **moderate** visual effect, which is considered to be **significant**.

Minor Unnamed Road Network within 5 km

Northern Area

9.8.206 The minor road network to the north of the Site includes rural lanes connecting scattered farms and small settlements to the B4501 and the A5. These roads generally follow valley routes with some limited elevated sections providing views towards the Site, such as at Viewpoint 3 Caer-garreg and the minor road which runs past the Hafoty Ucha wind farm. The ZTV indicates theoretical visibility from elevated sections, where road users would often see no more than 4-7 turbines predominantly as blade tips. The open upland character of the small sections of the routes which have the greatest visibility provides limited screening, though the rural nature of these roads means traffic levels are generally low.

9.8.207 For vehicles, during construction, this would result in a medium magnitude of change and **moderate** visual effect, which is considered **not significant**. During operation, the magnitude would be **medium**, resulting in a **moderate** visual effect that is **significant,** but limited to very short sections of the minor road network, with the majority of the routes either screened from view entirely, or with very limited potential visibility and no greater than **minor** effects that would be **not significant**.

Eastern Area

9.8.208 The minor road network to the east includes rural lanes around Sarnau, Bethel, and connecting routes to the A494. These roads occupy rolling upland terrain with varying levels of visibility indicated on the ZTV, but with many experiencing no views, or no more than minor glimpses, particularly once intervening vegetation is considered. From some limited elevated sections, road users would experience views of up to 5-8 turbines, with the development appearing on the western horizon. Most valley sections would experience reduced visibility due to intervening topography and vegetation.

9.8.209 For vehicles, during the construction phase, this would result in a **low** magnitude of change and **minor** visual effect, which is considered to be **not significant**. During the operation phase, this would result in a **medium** magnitude of change and **moderate** visual effect on small sections of the routes, which is considered to be **not significant**.

Southern Area

9.8.210 The minor road network to the south includes rural lanes around Bala, Llanfor, and Llandderfel. These roads generally follow valley routes with theoretical visibility notably restricted due to screening by both topography and intervening vegetation in the landscape. Road users would from limited sections see up to 4-6 turbines predominantly as blade tips appearing on the northern horizon. The routes generally

run in valley locations which provide some natural screening, reducing the visual impact compared to more elevated routes.

9.8.211 For vehicles, during both construction and operation phases, this would result in no more than a **low-medium** magnitude of change and **minor-moderate** visual effect, which is considered to be **not significant**, with several routes having no visibility and no effect**.**

Western Area

9.8.212 The minor road network to the west includes rural lanes around Frongoch and routes in and around Rhyd Uchaf. These roads show extensive theoretical visibility on the ZTV due to their proximity to the Site and elevated positions, albeit in reality many views would be screened by roadside vegetation, with not all routes having clear open views across the landscape towards the Proposed Development. Road users would experience prominent views of 7-10 turbines, both blade tips and hubs, from a small number of sections of the roads where more open views would be available.

9.8.213 For vehicles, during construction, this would result in a medium magnitude of change and **moderate** visual effect, which is considered **significant**. During operation, the magnitude would be **high**, resulting in a **major** visual effect that is **significant**.

Minor Roads 5-10 km

9.8.214 Minor roads at distances of 5-10 km from the Proposed Development would experience varied potential visibility, with many routes have either no views or limited theoretical visibility according to the ZTV analysis. Where visibility occurs, it would typically be from more elevated sections of routes which aren't screened by roadside vegetation where turbines might be visible, predominantly as blade tips appearing as distant elements on the horizon. The combination of distance, intervening topography, and roadside vegetation would significantly reduce the visual impact. Minor roads within this distance band would generally experience no more than **very low** to **low** magnitudes of change and **negligible to minor** visual effects, which are considered to be **not significant** during both construction and operation.

Table 9.11 Summary of Residual Effects on Roads

Road Type and Route	Distance to Site	Sensitivity	Construction			Operation		
			Magnitude	Level	Significant	Magnitude	Level	Significant
A Roads								
A494	2.7 km (closest)	Medium	Low	Minor	No	Medium	Moderate (worst-case)	No
A5	5 km	Medium	Low	Minor	No	Low	Minor	No
Notable B Roads								
B4501	1.5 km (closest)	Medium	High	**Major**	**Yes**	High	**Major**	**Yes**
B4401	8-12 km	Medium	Low-Medium	Minor-Moderate	No	Low-Medium	Minor-Moderate	No
B4391	9 km	Medium	Low	Minor	No	Medium	**Moderate**	**Yes**
Minor Roads within 5 km								
Northern Area	1-5 km	Medium	Medium	Moderate	No	Medium	**Moderate**	**Yes**
Eastern Area	1-5 km	Medium	Low	Minor	No	Medium	Moderate	No
Southern Area	2-5 km	Medium	Low-Medium	Minor-Moderate	No	Low-Medium	Minor-Moderate	No
Western Area	1-5 km	Medium	Medium	**Moderate**	**Yes**	High	**Major**	**Yes**
Minor Roads 5-10 km								

Road Type and Route	Distance to Site	Sensitivity	Construction			Operation		
			Magnitude	Level	Significant	Magnitude	Level	Significant
Various	5-10 km	Medium	Very Low-Low	Negligible-Minor	No	Very Low-Low	Negligible-Minor	No

Visual Effects on Cycle Routes

Methodology and Approach

9.8.215 The assessment of visual effects on cycle route users has been undertaken through detailed analysis of the Zone of Theoretical Visibility (ZTV) as illustrated in **ES Volume IV, Figure 9.4, ES Volume IV, Figure 9.6**. Cycle routes are illustrated on **ES Volume IV, Figure 9.31.**

9.8.216 Cycle route users are considered to have high sensitivity due to their recreational nature, slower speed of travel compared to motorists, and heightened appreciation of landscape character. The assessment considers both national and regional cycle routes, as well as local mountain biking and cycling areas within the study area.

National Cycle Network Routes

NCN Route 82 (Bangor to Fishguard)

9.8.217 NCN Route 82 is a Sustrans national cycle route that runs from Bangor to Fishguard, forming part of the wider national cycling network. The route passes through parts of Eryri NP and the wider study area, though it is located at considerable distance from the Proposed Development site (20 km+). The route generally follows valley corridors and established transport routes, which provide natural screening from intervening topography and vegetation. With reference to the ZTV analysis, there would be no theoretical visibility from this route and **no effect** at all phases.

NCN Route 8 (Lôn Las Cymru)

9.8.218 NCN Route 8, known as Lôn Las Cymru, is a national cycle route that traverses Wales from north to south. This route also passes through parts of the wider study area, particularly within Eryri NP, but at considerable distance from the Proposed Development. The route typically follows valley routes and established corridors that provide natural screening from upland developments. Based on the ZTV analysis, theoretical visibility would be extremely limited due to distance and intervening topography. Any potential views would be of very distant turbine tips from occasional elevated sections, appearing as barely perceptible elements on the horizon. During both construction and operation phases, this would result in a **very low** magnitude of change and **negligible** visual effect, which is **not significant.**

Regional and Local Cycle Routes

Mountain Biking Areas

9.8.219 The Proposed Development is located within a region known for mountain biking, with areas such as Coed y Brenin and other forest-based mountain biking centres in the wider study area. However, these established mountain biking centres are located at considerable distances from the Proposed Development primarily within Eryri NP to the west and south-west. The forested nature of these areas provides extensive screening from intervening vegetation and topography. Based on the ZTV analysis, theoretical visibility from these areas would be very limited, with any

potential views being heavily screened by the forest canopy and intervening ridgelines. During both construction and operation phases, effects would result in a **very low** magnitude of change and **negligible** visual effect, which is **not significant**.

Local Cycling Routes

9.8.220 Within the immediate vicinity of the Site, there are various local roads and tracks that may be used by recreational cyclists, particularly those connecting rural communities and providing access to the upland areas. These routes were assessed in conjunction with the minor roads set out in **Table 9.11**. These routes would follow similar patterns of effect to the users of the minor road network assessed previously, with visibility of the Proposed Development generally screened by intervening topography or vegetation from most routes, but with some short sections having greater visibility. The effects on the routes during construction and operation would be in line with the effects on the minor roads that the routes would follow, as previously discussed and which are summarised in **Table 9.11**.

Table 9.12 Summary of Visual Effects on Cycle Routes

Cycle Route Type	Distance to Site	Sensitivity	Construction			Operation		
			Magnitude	Level	Significant	Magnitude	Level	Significant
National Cycle Network Routes								
NCN Route 82 (Bangor to Fishguard)	>15 km	High	None	No Effect	No	None	No Effect	No
NCN Route 8 (Lôn Las Cymru)	>15 km	High	Very Low	Negligible	No	Very Low	Negligible	No
Regional								
Mountain Biking Areas	>10 km	High	Very Low	Negligible	No	Very Low	Negligible	No

Effects on Landscape Designations

Eryri National Park (Snowdonia NP)

9.8.221 The Eryri National Park is located around 2 km to the west of the nearest proposed turbine at its closest point. Effects on the Eryri National Park and its Special Qualities (SQ) are considered further within **Appendix 9.7**.

9.8.222 In summary, significant landscape character effects are predicted for some small sections of the National Park, at its easternmost extent. The majority of the National Park would have no visibility of the Proposed Development. To aid a consideration of effects on the National Park a review has also been undertaken of effects on the character areas set out in the Eryri Landscape Character Assessment (2016), to supplement the assessment of effects on the LANDMAP visual and sensory Aspect Areas within the National Park set out in the main assessment of landscape character effects. This assessment has identified localised effects during construction and operation on two of the LCAs within Eryri NP:

- LCA 15: Yr Arenig – **Moderate-Major** (Significant)
- LCA 16: Dyffryn Dyfil- **Moderate** (Significant)

9.8.223 Effects would be localised to eastern areas of these LCAs and would primarily affect the perception of tranquillity and remoteness from elevated viewpoints, rather than occurring across the LCAs as a whole. The majority of the character of these sections of the National Park is drawn from its views across the wider National Park landscape, in the opposite direction to the Proposed Development, rather than from views looking beyond its boundaries. The most scenic elements of the National Park would remain available to experience from these LCAs, with or without the Proposed Development. Indeed, distant views of wind energy development are already available from much of the landscape within the National Park where the Proposed Development could be seen, and such visibility of wind energy beyond the boundaries of the National Park is therefore already an existing characteristic of the landscape.

9.8.224 There would also be some localised significant visual effects within the National Park, but again these would be limited to areas towards the eastern boundary of the National Park, and the majority of the National Park would have no visibility of the Proposed Development. Where the Proposed Development would be seen, it would be in views looking beyond the National Park, with the most scenic core of the National Park in the opposite direction and not impacted.

9.8.225 With regard to the total 37 “Key Viewpoints” defined by NRW, The Proposed Development would only be visible from 15 out of the total 37 “Key Viewpoints”, but importantly with only three of those falling within 20 km, being SNP11: Arenig Fawr (11 km), SNP12: Aran Fawddwy (20 km) and SNP18: Mynydd Garthmyn (20 km), the latter two of which have not been identified as required assessment viewpoints for the Proposed Development. SNP18 has theoretical visibility of only 4 turbine tips, and 0 hubs. SNP12 has full 360 degree panorama, with the operational Clocaenog and other nearby schemes already visible in the same part of the view. With both

locations at a distance of 20 km there would be no notable effects from the Proposed Development on either.

9.8.226 The only relevant Key Viewpoint therefore is SNP11: Arenig Fawr, where views towards the Proposed Development illustrate the turbines located within the natural topographical containment bowl that the embedded design mitigation has successfully utilised, with limited sky lining of turbines, no stacking of turbines, and contrasting markedly in extents to the expansive horizontal scope of the operational Clocaenog and the now consent Alwen Forest projects. Furthermore, the clear separation and distinction between the mountainous ranges within ENP and the lower lying uplands of Foel Goch beyond the National Park boundary are reinforced by the intervening B4501 transport corridor, and two sets of high-voltage steel lattice tower pylons across the foreground of views.

9.8.227 Whilst some localised significant effects on landscape character and visual amenity have been identified within the National Park, the Proposed Development would not compromise the overall integrity of the National Park or prevent the appreciation of its special qualities across the designated area as a whole.

9.8.228 In the eastern area of the National Park, the Proposed Development would have the potential to introduce or intensify some adverse effects on some of the special qualities, with localised significant effects identified in relation to SQ1 and SQ5. However, a significant effect on a special landscape quality or qualities does not inevitably compromise the designation's objectives and/or integrity. Not least when the identified effect would relate to impacts that would only occur across a limited geographic proportion of the National Park or would be experienced from only a number of key viewpoints, as is the case with the Proposed Development. The Proposed Development would only have any visibility of note from one of the key viewpoints in the National Park identified by NRW, with any others either having no visibility at all or lying a minimum of over 20 km away from the Proposed Development. From that viewpoint (Arenig Fawr) existing wind energy is already visible in the same direction as the Proposed Development and the most sensitive and important views look away from the Proposed Development, towards the summits of Yr Wyddfa and Cadair Idris.

The Clwydian Range and Dee Valley National Landscape (CRDNL)

9.8.229 The Proposed Development is located approximately 11 km to the west of the Clwydian Range and Dee Valley National Landscape boundary at its closest point.

9.8.230 Effects on the National Landscape and its Special Qualities (SQ) are considered further within **Appendix 9.6.**

9.8.231 In summary, no greater than **minor-moderate** effects, which are **not significant** were identified in relation to either visual amenity on receptors within the National Landscape, or on the landscape character of the National Landscape, during either construction or operation. As a result, there were **no significant effects** identified to any of the Special Qualities of the National Landscape.

Local Landscape Designations

Special Landscape Areas

9.8.232 Special Landscape Areas (SLA) in LPAs whose administrative boundaries are within or overlap the 35 km study area have been identified, with a total of 19 SLAs located within the study area. Effects on the Special Landscape Areas are considered further within **Appendix 9.5.**

9.8.233 A filtering exercise identified that three SLAs have the potential to experience significant effects from the Proposed Development and therefore required detailed assessment.

9.8.234 The Proposed Development is located within the Bala Hinterland SLA (formerly Penllyn). The SLA extends to around 8 km to the west and south-west of the nearest proposed turbine, around 5 km to the south and around 6 km to the north. It lies immediately adjacent to the Afon Ceirw Valley Mosaic SLA (discussed separately below), which covers the landscape to the north-east of the Site, with the two SLAs in effect comprising a single combined area. As previously set out in relation to the effects on landscape character and visual amenity in the area covered by the SLA, there is variable visibility of the Proposed Development across this part of the landscape, with some sections of the SLA having no visibility, many areas having only glimpses views and then some more open areas where the turbines would be more prominent. These areas being primarily in the immediate environs of the Site. Where the Proposed Development is seen clearly and at close proximity within the SLA there would be **major adverse** effects which are considered **significant** during construction and operation. However, for much of the SLA, landscape effects would be less, with either **no effect** or no greater than a **moderate, not significant** effect arising during all phases.

9.8.235 The Afon Ceirw valley mosaic SLA is located around 250 m to the north of the nearest proposed turbine and extends to around 8 km to the north-east The area is contiguous with the Bala Hinterland SLA to its south and west, with the two SLAs in effect comprising a single combined area. As previously set out in relation to the effects on landscape character and visual amenity in the area covered by the SLA, there are large parts of the SLA landscape that would have no views of the Proposed Development, or limited views of a small number of the turbines, primarily blade tips. This reflects the valley nature of the majority of the SLA, whereby the topography of the valley sides would screen potential views of the turbines. Where the Proposed Development is seen clearly and at close proximity within the SLA during construction and operation there would be **moderate-major adverse** effects considered **significant,** however from the majority of the SLA there would be no significant effects due to the limited visibility of the turbines, with effects being no greater than **moderate/minor**.

9.8.236 The Mynydd Hiraethog upland mosaic SLA is located around 8.5 km to the north of the Proposed Development and extends to over 20 km away. Much of the SLA would have no visibility of the Proposed Development, but some visibility would be possible towards the southern extent of the SLA, generally on south facing slopes. At a distance of at least 8.5 km, the Proposed Development would be seen as a small

element in a wide panorama. Overall, the SLA would experience no greater than minor adverse effects during construction and **minor-moderate adverse** effects during operation, which are considered **not significant**, as the turbines would appear as distant features that would not compromise the moorland character or key qualities of this designation.

9.8.237 The remaining 16 SLAs within the study area were screened out of detailed assessment due to their distance from the Site, limited theoretical visibility, or enclosed valley locations that provide natural screening.

Assessment of Effects on Registered Parks and Gardens

Rhiwlas Registered Historic Park and Garden (Grade II)

9.8.238 Rhiwlas (Grid Reference SH 924 371) is a Grade II Registered Historic Park and Garden located just to the north of Bala, approximately 7-8 km south-southeast of the Proposed Development. The park was initially laid out in the late eighteenth century by the notable landscape designer William Emes, with further developments in the nineteenth century. The designation comprises:

- A well-preserved landscape park with fine mature trees
- Ornamental gardens in varied styles
- A woodland walk with specimen trees including giant sequoias planted in the 1860s
- Two walled kitchen gardens with brick and stone walls, and
- A long main drive (almost 1 km) flanked by superb deciduous trees, notably beech and oak.

9.8.239 The park lies mainly to the south, west and north-west of the house (rebuilt by Clough Williams-Ellis in 1954). The parkland includes:

- Sloping pastureland dotted with mature deciduous trees (oak, beech, sycamore and lime)
- The steep wooded area of Coed Mawr to the north-west with rocky outcrops
- The Afon Tryweryn defining the west and south boundaries, and
- Views south from the house across the sloping parkland towards the river.

9.8.240 With reference to **ES Volume IV, Figure 9.4** and **ES Volume IV, Figure 9.16**, the ZTV analysis indicates:

- Theoretical visibility of 5-10 turbines from parts of the Registered Historic Park and Garden
- The most extensive visibility, if not screened by intervening vegetation, would be from elevated areas within the parkland
- Lower-lying areas near the river and within the more enclosed garden areas would have limited or no visibility

9.8.241 However, the mature tree cover throughout the park, including the extensive woodland blocks and specimen trees, would provide substantial additional screening not captured in the bare-earth ZTV.

9.8.242 **Sensitivity**: As a Grade II Registered Historic Park and Garden, Rhiwlas is of **high** value.

9.8.243 **Magnitude of Change**:

- At approximately 7-8 km distance, the proposed turbines would appear as distant features on the horizon to the north/north-west, but would be almost entirely screened by intervening vegetation
- The turbines would not interrupt the key designed views from the house, which are oriented southward towards the river
- The park's principal features - the ornamental gardens, woodland walk, walled gardens, and main drive - would remain unaffected
- Where visible, the turbines would be seen beyond and above the existing mature tree canopy, but such views would be highly limited, with almost the whole Registered Historic Park and Garden having no actual visibility of the Proposed Development
- The park's essential character as a well-preserved example of late eighteenth-century landscape design would remain intact

9.8.244 The magnitude of change is assessed as **low**.

9.8.245 **Significance of Effect**: The combination of High sensitivity and **low** magnitude of change would result in a **minor** effect during construction and operation, which is considered **not significant**.

9.8.246 While there would be some theoretical visibility of the Proposed Development from parts of Rhiwlas, the distance involved (7-8 km), the screening provided by the park's extensive mature tree cover, and the orientation of the principal designed views away from the Proposed Development would ensure that the special qualities and significance of this Grade II Registered Historic Park and Garden would not be significantly affected. The park would retain its character as a well-preserved example of late eighteenth-century landscape design by William Emes, with its varied ornamental gardens, fine mature trees, and carefully composed parkland views remaining intact.

Table 9.13 Summary of Residual Effects on National and Local Landscape Designations

Receptor	During Construction				During Operation			
	Sensitivity	Magnitude of Change	Level of Effect	Significant residual effect?	Sensitivity	Magnitude of Change	Level of Effect	Significant residual effect?
National Park								
Eryri NP - LCA 15: Yr Arenig	Very High	Medium	**Moderate -Major**	**Yes**	Very High	Medium	**Moderate-Major**	**Yes**
Eryri NP - LCA 16: Dyffryn Dyfil	High	Medium	**Moderate**	**Yes**	Very High	Medium	**Moderate**	**Yes**
National Landscapes								
Clwydian Range and Dee Valley National Landscape	High	Low	Minor-Moderate	No	High	Low	Minor-Moderate	No
Local Landscape Designations								
Bala Hinterland SLA (host)	High	High	**Major**	**Yes**	High	High	**Major**	**Yes**
Afon Ceirw valley mosaic SLA	High	Medium-High	**Moderate -Major**	**Yes**	High	Medium-High	**Moderate-Major**	**Yes**
Mynydd Hiraethog upland mosaic SLA	Medium-High	Low	Minor	No	Medium-High	Low	Minor-Moderate	No
Registered Parks and Gardens								
Rhiwlas Registered Historic Park and Garden (Grade II)	High	Low	Minor	No	High	Low	Minor	No

Effects of Aviation Lighting

9.8.247 In line with the NatureScot Guidance on Aviation Lighting Impact Assessment, 2024, which is considered to be the most up to date best practice for aiding assessments of wind turbine lighting, the process of carrying out assessment of visible aviation lighting can be understood in terms of three distinct steps, each of which are undertaken below. Further detail regarding the approach to the to the assessment of visible aviation lighting is set out in **Appendix 9.3**.

Step 1: Defining the Lighting Proposal

9.8.248 In accordance with Civil Aviation Authority (CAA) CAP 764, turbines taller than 150 m require visible aviation lighting. For the Proposed Development, which comprises 10 turbines with heights of 200-220 m to blade tip, visible aviation lighting will be required on selected turbines to meet CAA requirements.

9.8.249 As noted in **ES Volume II, Chapter 12: Aviation**, the MoD scoping consultation response advises that "*conditions are added to any consent issued requiring that the development is fitted with aviation safety lighting and that sufficient data is submitted to ensure that structures can be accurately charted to allow deconfliction*."

9.8.250 Four turbines (T01, T04, T05 and T10) are proposed to be fitted with visible red aviation warning lights on the nacelles. Modern aviation lighting systems incorporate mitigation measures to reduce visual impact, including reduced intensity settings in good visibility conditions and directional lighting to minimise downward light spill.

9.8.251 There would be no other visible lighting of note associated with the other built elements of the Proposed Development that would be relevant to the consideration of aviation lighting effects.

Step 2: Understanding the Baseline

9.8.252 The baseline lighting environment in the landscape around the Site varies considerably. The Site is located within LANDMAP Visual and Sensory Aspect Area SNPVS091 Foel Goch Uplands, which is described as "Upland rough grazing / moorland" with "scattered small conifer plantations" and "overhead pylons are moderate visual detractors." This indicates an area that already contains some man-made infrastructure but retains largely rural characteristics.

9.8.253 The nearest significant sources of artificial lighting include:

- The town of Bala, located approximately 4 km to the south of the Site
- The village of Frongoch, approximately 2.7 km to the south-west
- Lighting along the A494 and A5 road corridors
- Scattered residential properties and farm buildings throughout the area, and
- Existing overhead power lines crossing the area.

9.8.254 The Site's location approximately 1.9 km east of the Eryri NP boundary is a significant consideration for night-time lighting assessment. Eryri NP has special qualities including *"Tranquillity and Solitude - Peaceful Areas"* and *"The opportunity for people to understand and enjoy Eryri NP actively, whilst maintaining areas of silence, tranquillity and solitude."* The National Park also includes areas with relatively dark skies compared to more urbanised areas.

9.8.255 However, the upland moorland area where the Site is located does not represent the most sensitive dark sky areas, being influenced to some extent by lighting from nearby settlements and roads. The context differs significantly from more remote mountain areas within the National Park itself.

9.8.256 It should be noted that the frequency with which upland viewpoints are visited during hours of darkness is typically very limited, with most recreational use occurring during daylight hours. This is particularly relevant for hill summits and remote moorland areas where night-time access would be challenging and rarely undertaken except by specialist users such as landscape photographers.

Step 3: Assessing the Effects of the Aviation Lighting

9.8.257 Zone of Theoretical Visibility (ZTV) plans have been prepared showing where lit turbines would be visible and the theoretical intensity of lighting effects. **ES Volume IV, Figure 9.35** the extent and intensity of potential aviation lighting visibility across the study area. Night-time visualisations illustrating the aviation lighting effects have been produced from three representative viewpoints and are included at **Appendix 9.11.** In addition, a report has been prepared by Dr Stuart Lumsden, which provides further guidance on the likely visibility of the aviation lighting from the landscape surrounding the Proposed Development and is included at ES Volume III, **Appendix 9.14**: **Report on the Visibility of Aviation Lights at Foel Fach.**

9.8.258 Taking account of the limited number of lit turbines (four in total: T01, T04, T05 and T10) and the implementation of appropriate lighting mitigation measures, the potential for any significant effects to arise from the visible aviation lights for receptors identified within the study area is limited, as discussed further below.

Effects on Landscape Character

9.8.259 The potential for significant effects on landscape character from aviation lighting is limited. The host landscape character area SNPVS091 Foel Goch Uplands is influenced to some extent by lighting from nearby settlements and roads. The addition of aviation lighting on four selected turbines would not fundamentally alter the visual and sensory characteristics that define this landscape area, particularly given the existing context of artificial lighting from Bala and surrounding settlements and also in particular noting the embedded mitigation to reduce the intensity of the lighting at lower elevations, which would apply across the landscape immediately in and around the lit turbines, as illustrated on **ES Volume IV, Figure 9.35** and discussed by Dr Lumsden in **Appendix 9.14**.

9.8.260 While the nearest proposed turbine is located within 2 km of Eryri NP, **ES Volume IV, Figure 9.35** also demonstrates that aviation lighting visibility within the National Park would be limited and of reduced intensity due to distance and topographical screening. This reduced visibility is also discussed further by Dr Lumsden in **Appendix 9.14.** The aviation lighting would be viewed from the National Park in the context of the existing settlement lighting pattern, including from Bala, and would not materially compromise the special qualities of tranquillity and dark skies that characterise the more remote core areas of the designation, or the locations in the National Park which lies closer to the Proposed Development.

Effects on Visual Receptors

9.8.261 Residential Receptors: Properties within the **ES Volume IV, Figure 9.32** study area would experience varying degrees of potential aviation lighting visibility. However, given the elevated moorland location of the turbines and the limited number of lit turbines (four), combined with modern lighting mitigation measures which would mean a much reduced intensity of lighting would be visible, as illustrated on **ES Volume IV, Figure 9.35**, effects on residential visual amenity would be relatively limited and not significant.

Viewpoint Assessment

9.8.262 With reference to **Appendix 9.11**. The night-time visualisations from three representative viewpoints (Viewpoints 5, 9 and 10) provide evidence of the aviation lighting effects and are discussed further below. Viewpoints 5, 9, and 10 were selected for night-time visualisations as they are representative, publicly accessible viewpoints within the Eryri National Park, allowing for an assessment of effects on the dark sky qualities of the designated landscape, as requested during scoping. They are located away from the immediate environs of Bala, where the baseline lighting would be greater, but are not located on more remote summits, such as Viewpoint 7, due to the very limited number of people who would be likely to visit these locations during night-time, partly due to the health and safety challenges associated with accessing such locations safely after dark:.

Viewpoint 5 - Llangower (8.0 km from nearest turbine T04)

9.8.263 Viewpoint 5 is located within Eryri NP and represents tourists, promoted recreational routes, railway users and B road users. The night-time visualisation demonstrates that from this distance of approximately 8 km, the aviation lights appear as very small red points within the landscape. The lighting is visible but not prominent, appearing in the context of a rural landscape that already includes some distant settlement lighting. The effect is assessed as **minor** and **not significant**.

Viewpoint 9 - B4391 South of Rhanneg (10.2 km from nearest turbine T10)

9.8.264 Viewpoint 9 is located within Eryri NP representing tourists and B road users. At this distance of approximately 10 km, the night-time visualisation shows the aviation lights as very small points of light that are barely discernible against the night sky.

The substantial distance and the existing baseline lighting context mean that effects would be negligible and not significant.

Viewpoint 10 - Picnic Area west of Llyn Celyn Reservoir (8.5 km from nearest turbine T01

9.8.265 Viewpoint 10 is located within Eryri NP and represents A road users and tourists. The night-time visualisation demonstrates that from this distance, the aviation lights appear as small red points visible across the landscape. While visible, they do not appear prominent in the view and are viewed in the context of a landscape that includes some distant artificial lighting. The effect is assessed as **minor** and **not significant**.

Analysis of Lighting Intensity

9.8.266 With reference to **ES Volume IV**, **Figure 9.35**, the plan demonstrates that the lowest intensity lighting effects are concentrated in the immediate vicinity of the lit turbines. As discussed further by Dr Lumsden in **Appendix 9.14** Lighting intensity also reduces significantly with distance from the turbines. Areas within Eryri NP generally experience reduced intensity lighting effects due to distance and topographical screening. The lighting intensity ZTV shows that the most sensitive areas of the National Park experience either no visibility or very low intensity lighting effects.

Other Assessment Viewpoints

9.8.267 For viewpoints not illustrated with night-time visualisations, effects can be extrapolated based on distance and the lighting intensity ZTV:

- **Viewpoints within 5 km** (including VP1 Cefnddwysarn, VP2 A4212, VP3 Caer-garreg): These locations may have some visibility of aviation lighting, but effects would be moderated to some degree by the limited number of lit turbines and the existing context of settlement lighting in the area, along with the mitigation that would arise from the directional lighting.
- **More distant viewpoints** (beyond 15 km including VP16 Castell Dinas Brân at 27 km): Aviation lighting effects would be negligible at such distances.

Public Rights of Way and Recreation Routes

9.8.268 The users of public rights of way crossing the upland areas around the Site would have limited exposure to aviation lighting effects, primarily because such routes are rarely used during hours of darkness when lighting would be visible.

Roads

9.8.269 The users of the B4501 and other local roads may have intermittent views of aviation lighting, but this would be in the context of vehicle headlights and existing roadside lighting, reducing the perceived magnitude of effect.

Summary of Effects on Aviation Lighting

9.8.270 With reference to **ES Volume IV**, **Figure 9.35,** the findings of Dr Lumsden at **Appendix 9.14** and the night-time visualisations from representative viewpoints within Eryri NP, the potential for significant adverse effects from aviation lighting is limited. The four lit turbines would introduce visible lighting into the landscape, but the effects would be of low intensity, particularly from locations within the National Park, and as such would not significantly compromise the special qualities of tranquillity and dark skies. Any effects would be localised and therefore no greater than **moderate** and **not significant** in the context of the embedded mitigation and the existing landscape and visual baseline conditions around the Foel Fach site.

9.9 Opportunities for Environmental Enhancement

9.9.1 The Foel Fach Wind Farm presents several opportunities for landscape enhancement that would complement the primary renewable energy generation functions of the development. These measures align with the proposals set out in **ES Volume III**, **Appendix 5.6: Outline Habitat Management Plan**.

9.9.2 These enhancement opportunities would be designed to align with the existing upland landscape character. The enhancement measures focus on reinforcing the distinctive moorland character while providing ecological improvements.

9.10 Difficulties and Uncertainties

9.10.1 The following difficulties and uncertainties have been encountered during the undertaking of this landscape and visual assessment:

Technical Limitations

Zone of Theoretical Visibility (ZTV) Accuracy

9.10.2 The ZTV models used in this assessment show theoretical visibility based on 'bare earth' topography which follows best practice guidance (SNH/NatureScot) and do not account for screening by vegetation, buildings, or minor landform variations. While efforts were made to use the most accurate digital terrain model available (OS Terrain 5), the ZTV remains a theoretical tool and on-ground visibility may differ from predicted patterns. This limitation is particularly relevant in the Welsh uplands where:

- Scattered woodland plantations provide localised screening not captured in the bare earth model;
- Undulating moorland topography creates micro-variations in visibility;
- Hedgerows and scattered small copses and field trees may provide additional screening in some locations; and
- Weather conditions frequently limit actual visibility beyond the theoretical maximum.

9.10.3 Site surveys have been undertaken to ground truth the ZTVs and inform the assessment, helping to address this limitation.

Viewpoint Photography Limitations

9.10.4 Weather conditions during photography varied across site visits, which affected visibility and visual clarity in some viewpoint photographs. The Welsh uplands are subject to frequent changes in weather conditions including:

- Low cloud and mist that can obscure distant views
- Seasonal variations in atmospheric clarity
- Variable lighting conditions affecting the appearance of the landscape, and
- Rain and poor visibility during some site visits.

9.10.5 While site visits were timed to provide optimal visibility conditions where possible, complete consistency across all viewpoints was not achievable.

Visualisation Techniques

9.10.6 Photomontages provide a reasonable representation of the Proposed Development but cannot exactly replicate how the human eye perceives scale and distance in the upland landscape. The visualisations were prepared in accordance with current best practice guidance (Landscape Institute TGN 06/19), but inherent limitations exist in representing three-dimensional developments on two-dimensional media, particularly:

- The perception of turbine scale against the expansive moorland backdrop
- Atmospheric perspective effects over long distances
- The dynamic nature of wind turbine movement, and
- Variations in lighting and weather conditions.

Assessment Process Uncertainties

Subjective Nature of Assessment

9.10.7 While the LVIA follows a structured methodology based on GLVIA3, professional judgments about sensitivity, magnitude, and significance inevitably contain a degree of subjectivity. This is particularly relevant when assessing:

- The value and susceptibility of upland landscape character
- The significance of effects on the setting of Eryri NP
- Visual amenity impacts on different receptor groups, and
- The effectiveness of proposed mitigation measures.

9.10.8 Multiple assessors and peer review have been used to provide balance and consistency, but this remains an inherent limitation of landscape and visual assessment.

Seasonal Variations

9.10.9 While winter views were used where possible to represent a "worst-case" scenario with minimal leaf cover on deciduous vegetation, the assessment cannot capture the full range of seasonal variations that occur throughout the year in the Welsh uplands, including:

- Changes in moorland vegetation colour and texture
- Variations in atmospheric conditions and visibility
- Seasonal changes in land use and agricultural activities, and
- Weather-related variations in the perceived character of the landscape.

Future Baseline Changes

9.10.10 The assessment considers changes to the baseline landscape through cumulative assessment of other wind energy developments. However, uncertainty exists regarding:

- Which of the in-planning wind farms will be consented and constructed
- The exact timing of implementation for various cumulative schemes
- Changes in forestry management that may affect screening; and
- Climate change impacts on vegetation and landscape character over the development's lifetime.

Data Limitations

Residential Visual Amenity Assessment

9.10.11 While detailed assessment was carried out for properties within 2 km of the proposed turbines, access to some private properties was not available. In these cases, assessments of views from residential properties were made from the nearest publicly accessible location, which introduces uncertainty about:

- The exact nature of views from private properties
- The effectiveness of existing garden vegetation and buildings in screening views
- Variations in ground levels around individual properties, and
- The specific orientation and fenestration of residential buildings.

LANDMAP Data Currency

9.10.12 While the LANDMAP database provides the most comprehensive landscape character information available for Wales, some aspect area surveys were undertaken several years ago and may not fully reflect:

- Recent changes in land management practices
- New development that has occurred since surveys, and

- Changes in landscape condition or character over time.

Uncertainties Specific to Upland Environments

Atmospheric Conditions

9.10.13 The Welsh uplands are subject to particularly variable atmospheric conditions that affect visibility, including frequent low cloud, mist, and precipitation. This creates uncertainty in predicting actual visibility patterns, as:

- Theoretical visibility may be significantly reduced by weather conditions
- Seasonal variations in weather patterns affect year-round visibility, and
- Climate change may alter typical weather patterns over the development's lifetime.

9.10.14 These limitations and uncertainties are typical for an assessment of this type in an upland environment and are not expected to affect the validity of the overall conclusions of the assessment. The structured methodology, multiple site visits, and professional peer review provide confidence in the robustness of the assessment findings.

9.11 Inter-project Cumulative Effects

9.11.1 All wind energy developments that are operational, under construction, consented or subject to a valid full planning application within 35 km of the Site boundary have been identified and reviewed as part of the cumulative baseline as recommended by NatureScot best practice guidance. It is acknowledged that this list is constantly evolving and therefore, October 2025 was used as an effective cut-off date, after which no further research was undertaken on the evolving status of any existing development and/or approved developments in the study area, and the Cumulative LVIA reflects the status of each wind farm at the time of this date.

9.11.2 Following a review, it was considered that wind developments within the study area have the greatest potential to result in significant cumulative landscape or visual effects in addition to the Proposed Development. As such, these developments are the focus of the assessment.

9.11.3 In order that the assessment remains focused on those other existing development and/or approved developments which have the greatest potential to give rise to significant cumulative effects, it was deemed appropriate to focus the assessment on a detailed 20 km area from the Site, with projects beyond this distance having been reviewed and assessed to have no potential to give rise to significant cumulative effects with the Proposed Development. It was also deemed appropriate to scope out any turbines under 50 m, or any turbines between 50 m and 80 m which lie over 10 km from the nearest proposed turbine, as identified in the cumulative sites table.

9.11.4 The existing development and/or approved developments within 35 km are illustrated in **ES Volume IV, Figure 9.33**. Wind farms within the 35 km cumulative study area at the time of preparing this LVIA which were either operational, under construction or in scoping are set out in Table 9.14 below.

Table 9.14 Relevant Cumulative Developments Within 35 km of the Proposed Development

Site	Blade Tip Height	Number of Turbines	Location
Operational Wind Farms			
Hafoty Ucha Repowering	86.5 m	4	2.9 km north
Bryn Ffynon	86.5 m	1	3.02 km north
Disgarth Ucha/ Ty'n Gwyn, Llangwm	86.6 m	1	5.35 km north-east
Braich Ddu	90 m	3	5.91 km east
Bodtegir	100 m	1	7.19 km north-east
Clocaenog Forest	145 m	27	10.94 km north-east
Wern Ddu	90 m	4	11.41 km north-east
Cilgoed	78 m	1	13.3 km north-east
Tir Mostyn & Foel Goch	75 m	25	14.32 km north-east
Brenig	100 m	16	14.71 km north
Hafodty Ddu	81 m	1	18.01 km north-east
Moel Maelogen (Phase 1)	76 m	3	18.75 km north-west
Moel Maelogen (Phase 2)	76 m	9	18.75 km north-west
***Pen Y Bryn**	43 m	2	29.21 km north
***Cemmaes 2**	66 m	18	32 km south
Consented Wind Farms or Under Construction			
Pant Y Maen Wind Farm	102 m	7	15 km north
Alwen Forest	200 m	9	10 km north-east
Submitted			

Site	Blade Tip Height	Number of Turbines	Location
Gaerwen Wind Farm	180 m	9	6 km east
Scoping			
Moel Chwa Energy Park	200 m	12	5 km north-east
Mynydd Mawr Energy Park	230 m	22	20 km south-east
Carnedd Wen Wind Farm	200 m	28	25 km south
Llanbrynmair Wind Farm	230 m	15	28 km south
Esgair Ddu Energy Park	230 m	13	30 km south
Mynydd Lluest y Graig	200 m	18	33 km south
Llyn Lort Energy Park	220 m	25	34 km south

Note: Directions calculated using the centroid of the proposed turbine locations. All distances are measured from the Proposed Development site to the nearest turbine of the respective cumulative site.

9.11.5 For the avoidance of doubt and to reiterate the methodology adopted in **Appendix 9.1**, the baseline against which the solus effects of the Proposed Development has been assessed includes all operational wind farms. An assessment of the Proposed Development with consideration of other operational wind farms has already therefore been presented in the main section of this LVIA.

9.11.6 The primary purpose of the cumulative impact assessment is therefore to consider the additional effects that might arise as a result of the Proposed Development if the other consented or under construction and in scoping schemes were also operational. In addition, this cumulative assessment also includes a further consideration of the overall totality of the effect, when the Proposed Development is considered alongside the other operational, consented and in scoping schemes across the study area.

9.11.7 The baseline in the cumulative impact assessment is therefore extended to consider other schemes that are not yet present in the landscape but are at various stages in the planning process. Two scenarios are considered which reflect the different degrees of certainty that these schemes will be constructed.

- Scenario 1 assumes that other consented but as yet unbuilt wind farms are operational.
- Scenario 2 extends this further to assume that all submitted schemes and those in the scoping stage are also operational. In reality, it is possible that all other schemes that are in scoping may not be approved and constructed but this scenario assumes all scoping schemes are operational as this presents the worst case.

Cumulative ZTVs and Wirelines

9.11.8 Cumulative ZTVs have been produced to illustrate the theoretical visibility of various other wind farms and combinations of wind farms with the Proposed Development.

9.11.9 It should be reiterated that ZTVs imply a much greater geographical extent of influence on the landscape and views of it than would actually be the case. It therefore follows that the cumulative ZTVs also exaggerate the actual impacts of the turbines on landscape character and visual amenity as they do not take account of vegetation or buildings in the landscape, which may restrict the nature and extent of views.

9.11.10 Cumulative ZTVs have been produced and are included in **ES Volume IV** for the following combinations of existing, consented and other wind farm sites in scoping:

Operational

- Figure 9.36: Cumulative ZTV with Operational Pen Y Bryn, Moel Maelogen Phase 1 and Moel Maelogen Phase 2;
- Figure 9.37: Cumulative ZTV with Operational Tir Mostyn & Foel Goch, Hafodty Ddu, Brenig and Clocaenog Forest;
- Figure 9.38: Cumulative ZTV with Operational Hafoty Ucha Repowering, Bryn Ffynon, Disgarth Ucha and Figure; and
- Figure 9.39 Cumulative ZTV with Operational Cemmaes.

Consented or Under Construction Schemes

- Figure 9.40: Cumulative ZTV with Consented Pant Y Maen and Alwen Forest.

Submitted

- Figure 9.41: Cumulative ZTV with Submitted Gaerwen

Scoping

- Figure 9.42: Cumulative ZTV with Scoping Moel Chwa; and
- Figure 9.43: Cumulative ZTV with Scoping Mynydd Mawr Energy Park, Esgair Ddu Energy Park, Carnedd Wen.

9.11.11 The wirelines included with the viewpoint visualisations illustrate the cumulative developments as identified through coloured text on the viewpoint figures.

Cumulative Effects on Landscape Character

9.11.12 It is acknowledged that wherever more than one wind farm is visible at any given location in the landscape, there will be a greater overall or cumulative effect on landscape character than if just one wind farm was visible in the landscape.

9.11.13 However, it is also noted that in any given landscape where turbines are already present, the additional effect on landscape character of introducing further turbines may not be as significant as the initial introduction of turbines. Furthermore, in general, the greater the number of turbines in the baseline landscape the less significant the addition of further turbines may be in landscape character terms as the landscape will be more heavily characterised by turbines in the baseline situation.

9.11.14 The viewpoint assessment has identified that significant effects on landscape character would arise from the proposed Foel Fach Wind Farm at 13 of the 21 assessed viewpoints comprising Viewpoints 1, 2, 3, 4, 5, 6, 7, 9, 10, 12, 17, 18, and 19. The purpose of this section of the cumulative assessment is therefore to identify whether there would be any change to the assessments of significance previously set out in relation to the Proposed Development, once the other wind turbines which are not already operational are considered to form part of the baseline landscape.

9.11.15 The assessment is considered in two parts, firstly in relation to the scenario where the additional consented developments are also considered to be operational, secondly the scenario where the consented and in-planning schemes are also considered to be operational.

Scenario 1: Operational & Consented Schemes

9.11.16 In this scenario, the baseline landscape includes all operational and consented wind farms. Based on the cumulative ZTVs presented in **ES Volume IV, Figure 9.40**, the two consented schemes that may have cumulative effects with the proposed Foel Fach Wind Farm are Pant Y Maen comprising 7 turbines with a blade tip height of 102 m located approximately 16 km to the north and Alwen Forest comprising 9 turbines at 200 m at 12 km north-east.

Effects on Host Landscape Character Area (LANDMAP Visual Sensory Aspect Area SNPVS091 Foel Goch Uplands)

9.11.17 The viewpoint assessment demonstrates that views from within and towards the host landscape character area LANDMAP Visual Sensory Aspect Area SNPVS091 Foel Goch Uplands already experience significant effects. Viewpoints 1 at Cefnddwysarn, 3 at Caer-garreg, and 17 and 18 along the B4501 north and south of Cerrigydrudion all demonstrate the prominence of the Proposed Development within this landscape character area, with Moderate-Major to Major significant effects identified.

9.11.18 As noted in the assessment for Viewpoint 13 at the Footpath South of Hafodty Hafod Dre, existing wind farms at Hafoty Ucha comprising 4 turbines and Bryn Ffynon

comprising 1 turbine are already visible occupying upland slopes below the Site to the immediate north. This establishes that wind energy development is already a characteristic of the baseline landscape.

9.11.19 With the addition of Pant Y Maen and Alwen Forest as consented schemes, the host landscape character area would experience a limited increase in the number of visible turbines to the north. The proposed Foel Fach Wind Farm would remain the most prominent wind farm development due to its direct location within this character area and its scale comprising 10 turbines at 200 m to 220 m blade tip height. Within this scenario, the overall effect on the host landscape character area would remain **major** and **significant** as previously assessed. The inclusion of the consented schemes does not materially change the assessment conclusion for the host landscape character area.

Effects on Adjacent Landscape Character Areas

9.11.20 To the north, including areas around Cerrigydrudion represented by landscape character area CNWVS044, the addition of Pant Y Maen and Alwen Forest would increase the density of wind energy development visible from this area, but the landscape already contains operational wind farms as part of its character. The **moderate** level of effect would remain unchanged.

9.11.21 To the west, areas toward Eryri NP would experience some significant effects ranging from **Moderate-Major** to **Major**. The addition of Pant Y Maen and Alwen Forest to the north would have limited additional impact on these western areas due to distance and the intervening topography. The significant effects already identified would remain but would not be materially increased by the consented schemes.

9.11.22 To the east and south-east within the detailed study area, some visibility is shown extending across the rolling upland terrain, with theoretical visibility reaching towards the closer western edges of the Clwydian Range and Dee Valley National Landscape. Viewpoints 14 at Green Lane Corwen, 15 East of Cynwyd, 20 at Moel Morfydd, and 21 at Moel y Plas represent views from the National Landscape. All show Minor not significant effects due to distance ranging from 13 km to 26 km and limited visibility. The addition of Pant Y Maen and Alwen Forest would have minimal effect on these areas due to distance and topographical screening. The minor effects would remain unchanged.

Scenario 2: Operational, Consented, Submitted & In Scoping Schemes

9.11.23 This scenario further extends the baseline to include schemes that are submitted and in scoping, representing a worst-case scenario as it assumes all submitted and scoping schemes are constructed.

Effects on Host Landscape Character Area

9.11.24 The addition of the submitted Gaerwen scheme and multiple scoping schemes would introduce substantial new wind farm development into the wider landscape

context. The most influential would be Gaerwen comprising 9 turbines at 180 m at 5 km east, Moel Chwa comprising 12 turbines at 200 m at 5 km north-east, and Alwen Forest comprising 9 turbines at 200 m at 10 km north-east.

9.11.25 With reference to **Appendix 9.9**, the viewpoint assessment from viewpoint 17 along the B4501, north of Cerrigydrudion indicates that views from the north already show existing wind farms with the assessment noting existing windfarms Hafoty Ucha comprising 4 turbines and Bryn Ffynon comprising 1 turbine are visible on upland slopes to the north. The addition of the closer submitted and scoping schemes would substantially increase the density of wind energy development visible from northern approaches to the host landscape character area.

9.11.26 While the effect on the Foel Goch Uplands would remain as previously assessed for the Proposed Development, being major and significant, the cumulative context would substantially change, with the landscape character becoming more consistently characterised by renewable energy development.

Effects on Adjacent Landscape Character Areas

9.11.27 To the north and north-east, the addition of Moel Chwa would create a more continuous presence of wind energy development across these northern uplands. Combined with existing developments at Clocaenog Forest, this would represent a further change to landscape character. The effect would increase from moderate to moderate-major in locations with clear views toward multiple developments.

9.11.28 To the west, within Eryri NP, the additional submitted and scoping schemes to the east would not change the assessment of effects on landscape character beyond that already set out for the Proposed Development due to their location, but would serve to reinforce the presence of wind energy in views looking beyond the National Park boundary, which is already a characteristic of the landscape.

9.11.29 To the south the landscape is largely well separated from the submitted and scoping schemes, with no change to the effects identified for the Proposed Development. The scoping schemes further south including Carnedd Wen at 25 km would be too distant to materially increase the effects on landscape character identified for the Proposed Development.

Cumulative Effects on Visual Amenity

9.11.30 With reference to **Appendix 9.9**, the viewpoint assessment provides detailed evidence of visual effects at 21 locations, with significant effects identified at 13 viewpoints. This section considers how these effects would change under the two cumulative scenarios.

Scenario 1: Operational & Consented Schemes

9.11.31 Both Pant Y Maen and Alwen Forest are located to the north of the Proposed Development, at distances of around 12 km and 16 km. From the majority of the

study area the two schemes would either not be visible, or seen at long distance, such that they would not change the assessment of effects already set out for the Proposed Development. For visual receptors in the north of the study area, which are located closer to the two schemes, wind energy is already an established presence in many views, due to the nearby Clocaenog Forest, Hafodty Ddu and Brenig schemes. Any views where Pant Y Maen and Alwen Forest were visible along with the Proposed Development would generally be restricted to elevated locations in closer proximity to the existing wind farms, which would have the greater influence on the view, such that there would be no change to the assessment of effects identified for the Proposed Development.

Scenario 2: Operational, Consented, Submitted & In Scoping Schemes

9.11.32 The addition of the submitted Gaerwen scheme and multiple scoping schemes would alter the visual context for some, generally more elevated locations. The schemes at Gaerwen at 6 km east and Moel Chwa at 5 km north-east would be the closest to the Proposed Development and have the greater potential to be seen more prominently in views alongside the Proposed Development, however, for the majority of the landscape, intervening landform and vegetation would prevent such combined visibility, with locations limited to upland areas. In some cases, this would create views with turbines visible in multiple directions, impacting the visual amenity of these areas to some degree, but it is these more elevated locations from which the existing wind energy in the landscape is already visible, such that it is an existing characteristic of the view.

9.11.33 To the west, within Eryri NP, the submitted Gaerwen scheme and other scoping schemes to the east would not change the assessment of effects on landscape character beyond that already set out for the Proposed Development due to their more distant location, but would further serve to reinforce the presence of wind energy in views looking beyond the National Park boundary, which is already a characteristic of the landscape.

Cumulative Sequential Effects

9.11.34 The road network across the study area generally runs within the valleys, such that from many of the roads the Proposed Development would be screened by either landform or vegetation and this would also apply to potential views of the cumulative sites. The existing operational wind farms are visible from some of the road network but this primarily relates to the routes which run through the northern part of the study area.

9.11.35 With regard to Scenario 1, both the consented Pant Y Maen and Alwen Forest schemes are also located to the north of the Proposed Development, close to the existing wind farms at Hafodty Ddu and Brenig, so would serve to consolidate views of wind energy in that area. In particular, from that section of the B4501 which would pass between the operational schemes to its east and the consented schemes to its west. The Proposed Development would also have some localised effects on a short section of the B4501 further to the south, but as Pant Y Maen and Alwen Forest are located near where the existing schemes are visible, the addition of those two

schemes would not change the effects already outlined for the Proposed Development.

9.11.36 With Scenario 2, there are several routes which pass close to the other submitted and scoping stage schemes including the A494 which runs close to Gaerwen and Moel Chwa which runs close to the A5. However, the Proposed Development would only have very limited visibility from these routes once screening by landform and topography was considered and therefore has limited potential to add a sequential effect. Moel Chwa would also be seen from parts of the B4501, in a location between the consented and operational schemes to the north and the Proposed Development to the south. This would add to the sequential effects along the route, but with the Proposed Development only giving rise to significant effects on a limited section of the route.

9.11.37 With regard to sequential effects on recreational routes, there would be no further significant effects beyond those identified for the Proposed Development of itself. Other cumulative sites may be visible from different sections of routes to that from which the Proposed Development may be visible. However, generally either the Proposed Development would be a very limited element of the views from those routes where the other developments were more visible, or the other schemes would be a very limited element of the views from those routes where the Proposed Development were more visible.

Totality of the Combined Effects

9.11.38 Existing wind farms are already an established feature in many views across the study area, including from parts of the Eryri National Park, in particular towards the north around Clocaenog Forest, Hafodty Ddu and Brenig. The two consented schemes at Pant Y Maen and Alwen Forest are also located in this area and would serve to consolidate the existing developments, albeit extending their footprint to the opposite side of the B4501. The submitted and scoping schemes would extend the presence of wind energy to wider areas of the landscape, as would the Proposed Development. The overall combined effect if all the schemes were to be consented would be greater than that of the Proposed Development on its own, but many of the scoping schemes to the south of the study area in particular are located well away from the Proposed Development with limited intervisibility between them.

Cumulative Aviation Lighting Effects

9.11.39 There are no existing wind farms within the study area with visible aviation lighting. The consented scheme at Pant Y Maen is less than 150 m to tip and therefore requires no visible aviation lighting. The consented Alwen Forest scheme does include visible aviation lighting, but has developed a reduced lighting scheme of 5 lit turbines, along with other best practice mitigation measures of a similar nature to those included with the Proposed Development. At a distance of 12 km from the Proposed Development it is not considered that there would be any potential for significant cumulative effects to arise as a result of the two schemes in combination. Much of the landscape would not have views of either one or both of the two schemes and where a receptor was located at close proximity to one scheme they

would generally lie at least 10 km from the other scheme. The submitted Gaerwen scheme also includes visible aviation lighting. Again, a reduced lighting scheme has been proposed, this time of 4 lit turbines, along with other best practice mitigation measures of a similar nature to those included with the Proposed Development. Gaerwen lies around 6 km from the Proposed Development, but with many locations in and around the two schemes not able to see one or other of them due to intervening landform and vegetation. Some, generally more elevated locations, may have the potential to see the lighting from both Gaerwen and the Proposed Development, but due to the separation between the two sites and the embedded mitigation included as part of the reduced aviation lighting schemes, it is not considered that there would be any significant cumulative effects.

9.11.40 Other scoping schemes are proposed across the study area, which would also potentially require visible aviation lighting, unless the proposed turbine heights reduce to beneath 150 m when the planning applications are submitted. In many cases the schemes are located beyond 20 km or 30 km from the Proposed Development, with such distances preventing any significant cumulative effects from arising. Some schemes, in particular Moel Chwa, lie closer to the Proposed Development. Much like with Gaerwen, there would only be a limited number of generally upland locations where the Proposed Development and Moel Chwa would both be visible. Any cumulative lighting effects are therefore likely to be similar. It would be expected that a reduced lighting scheme would be included as part of the Moel Chwa application submission and a furthermore detailed consideration of potential cumulative lighting effects between the two projects would be able to be completed at that time.

Summary of Cumulative Effects

9.11.41 The cumulative assessment demonstrates that in Scenario 1 incorporating operational and consented schemes, there would be limited additional cumulative effects beyond those already identified. Pant Y Maen and Alwen Forest are located close to other existing wind farms, consolidating the presence of wind energy in that part of the landscape, and at distances of 12 km and 16 km from the Proposed Development are too distant to increase the effects identified for the Proposed Development, with many locations in the landscape having no visibility of both the Proposed Development and the two schemes. .

9.11.42 In Scenario 2 incorporating operational, consented, submitted and in scoping schemes, there would be potential for greater effects, albeit primarily from more elevated locations. The schemes at Gaerwen at 6 km east and Moel Chwa at 5 km north-east would be the closest to the Proposed Development and have the greater potential to be seen more prominently in views alongside the Proposed Development, however, for the majority of the landscape, intervening landform and vegetation would prevent such combined visibility, with locations limited to upland areas. This would create views with turbines visible in multiple directions, impacting the visual amenity of these areas to some degree, but it is these more elevated locations from which the existing wind energy in the landscape is already visible, such that it is an existing characteristic of the view.

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