MYNYDD Y GAER WIND FARM

Environmental Statement: Non-Technical Summary

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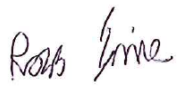
Ross Irvine 

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GLOSSARY

Term	Definition
ALC	Agricultural Land Classification
AONB	Area of Outstanding Natural Beauty
BESS	Battery Energy Storage System
BMV	Best and Most Versatile
CCBC	Caerphilly County Borough Council
CCS	Considerate Constructors Scheme
CEMP	Construction Environmental Management Plan
CoCP	Code of Construction Practice
CTMP	Construction Traffic Management Plan
DAM	Development Advice Maps
DNS	Development of National Significance
ECoW	Ecological Clerk of Works
EIA	Environmental Impact Assessment
EPC	Engineering, Procurement, and Construction
ES	Environmental Statement
FCA	Flood Consequence Assessment
FW	Future Wales
GGAT	Glamorgan Gwent Archaeological Trust
GRP	Glass Reinforced Plastic
Ha	Hectares
HGV	Heavy Goods Vehicle
kV	Kilovolt
LDP	Local Development Plan
LEMP	Landscape Ecological Management Plan
MWh	Megawatt-hour
NRW	Natural Resources Wales
NTS	Non-Technical Summary
PAC	Pre-Application Consultation
PEA	Preliminary Ecological Appraisal
PPW	Planning Policy Wales
PRoW	Public Right of Way
PV	Photovoltaic
RRFSO	The Regulatory Reform (Fire Safety) Order 2005
SINC	Site of Important Nature Conservation
SLA	Special Landscape Area
TAN	Technical Advice Note
ZTV	Zone of Theoretical Visibility

Contents

1 INTRODUCTION

1.1 This Non-Technical Summary (NTS) has been prepared by RPS on behalf of Cenin Renewables LTD ("Cenin" or "the Applicant"). The NTS is a standalone document that summarises the Environmental Statement (ES) that has been prepared and submitted as part of a planning application to PEDW for the construction and operation of Mynydd y Gaer Wind Farm (the "Proposed Development") which comprises the construction and operation of up to 11 wind turbines and associated infrastructure including substation switches, access tracks and turning heads, borrow pits, temporary construction compounds (including holding bays), crane pads, underground cabling, drainage works and biodiversity proposals including creation, enhancement and restoration.

1.2 The wind farm will have an installed generation capacity of approximately 75MW.

1.3 The Proposed Development will be located within the administrative boundary of Bridgend County Borough Council ("BCBC"). The Site comprises land at north of the M4 motorway and the village of Heol y Cyw, which lies approximately 5 miles from the town of Bridgend. The location of the Site is shown in **Figure 1.**

1.4 The power generated would be fed into the electricity distribution network. The Proposed Development is for a temporary period of 50 years after which the turbines and transformers would be removed.

1.5 The Proposed Development would include the following components:

- Wind turbines,
- Wind turbine foundations
- Crane platforms and temporary laydown areas
- Onsite substation compound
- Temporary construction compounds
- Access tracks
- Underground cabling
- Borrow pits
- Highway access
- Landscaping and ecological enhancement area(s)
- Common land replacement area
- Turbines

1.6 Further detail on these main components is provided in Chapter 2 of the NTS.

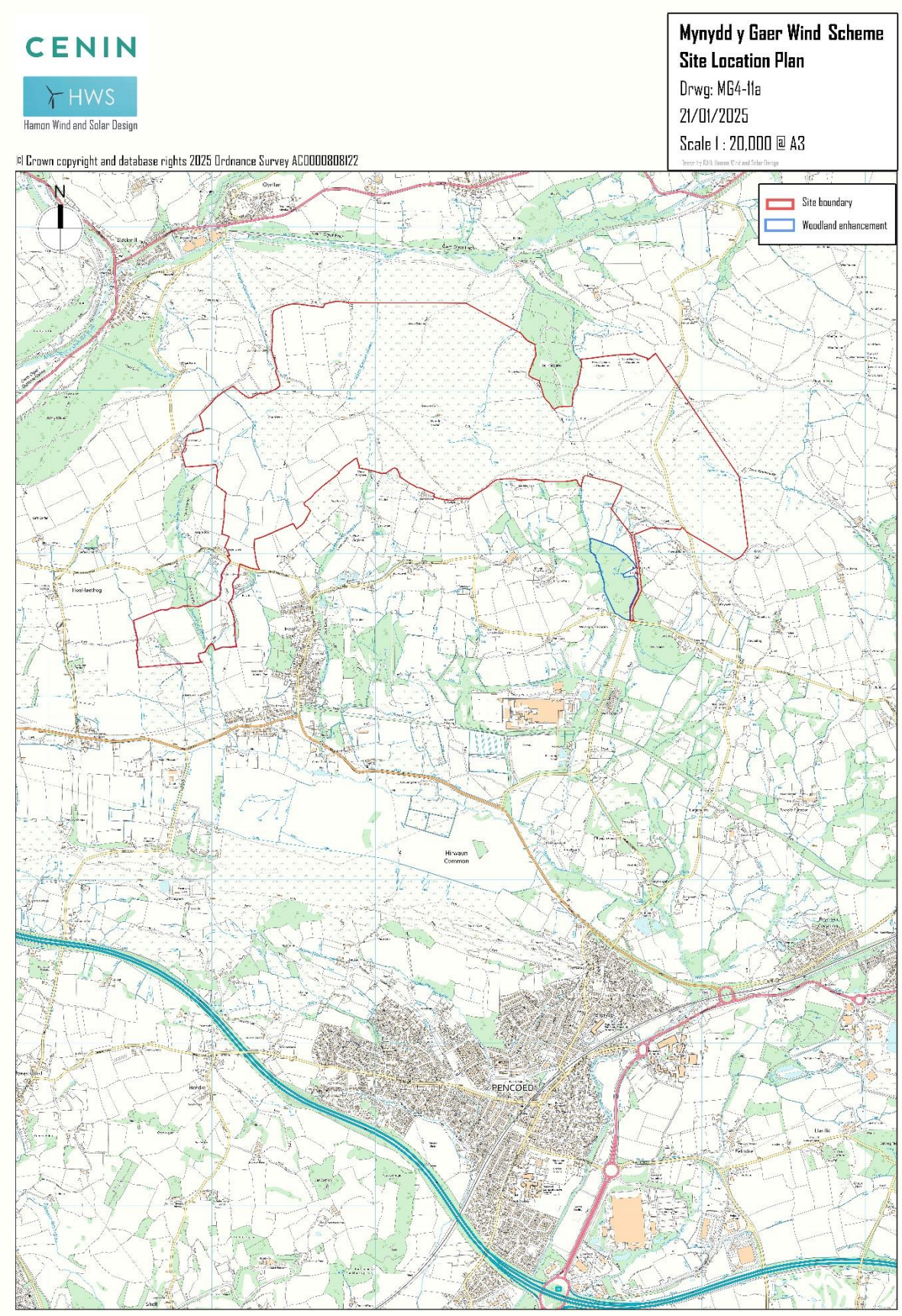

Figure 1: Site Location

The Site and Surrounding Area

1.7 The Site is located north of the M4 motorway and the village of Heol y Cyw, which lies approximately 5 miles from the town of Bridgend. The highest point of Mynydd y Gaer mountain is 295 m. The Site includes common land and a network of footpaths. From the junction on the B4280 at Pencoed, the road north to the A4093 near Glynogwr passes through the Site.

1.8 The Site comprises mainly grassland agricultural fields.

1.9 The location of the Site is shown in Figure 1.

2 PROJECT DESCRIPTION

2.1 The Proposed Development comprises the construction, operation and decommissioning of 11 wind turbines and associated infrastructure, including substation switches, access tracks and turning heads, borrow pits, temporary construction compounds (including holding bays), crane pads, underground cabling, drainage works and biodiversity proposals including creation, enhancement and restoration.

2.2 Two different types of turbines are proposed, which are the V150 and V162. The Proposed Development will include three V150 turbines and eight V162 turbines.

2.3 The Proposed Site layout is shown on **Figure 2: Proposed Site Layout Plan** below.

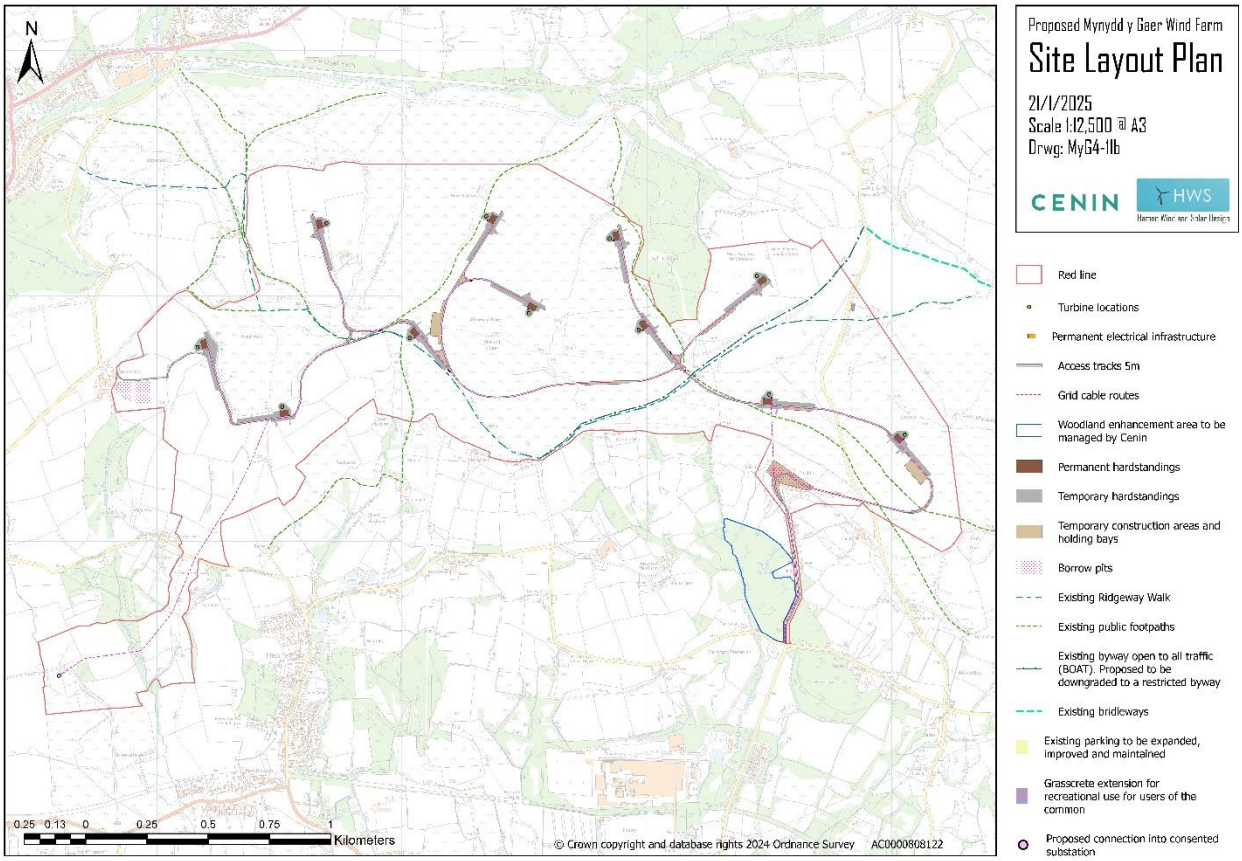

Figure 2: Proposed Site Layout Plan

Key Components

2.4 A summary of the main parts of the Proposed Development is provided below:

Grid Connection

2.5 The grid connection is proposed south of the development, west of Heol y Cyw.

2.6 The grid connection is shared with the Ty'n y Waun Solar Farm, as part of the Bridgend Energy Hub. The Proposed Preliminary Grid Connection Routes are shown on **Figure 3** below:

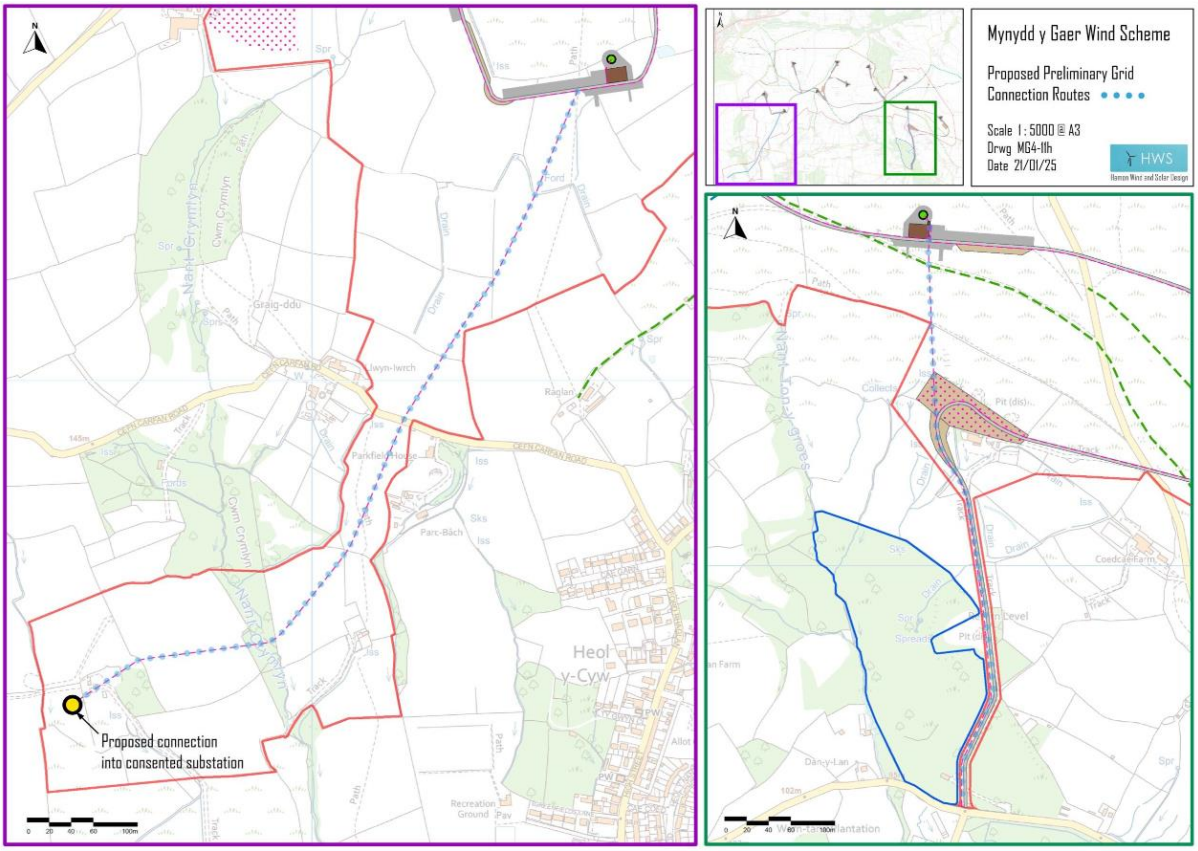

Figure 3: Proposed Preliminary Grid Connection Routes

Substation Compound

2.7 The substation exterior will be grey render or goose wing grey cladding to blend into the natural environment.

2.8 Substation and batteries will be sited on a permeable surface, such as limestone, on concrete pads to ensure foundations are not visible and will not interfere with drainage.

2.9 There will be no permanent 24-hour lighting. The lighting will be emergency triggered. CCTV will be infrared and not visible.

2.10 Deer fencing will surround the substation unit.

Access tracks and turning heads

2.11 The Proposed Development comprises the construction, operation and maintenance and decommissioning of on-site surfaced tracks providing access to the wind turbines, onsite substation compound and temporary construction compounds from the local highway network;

2.12 Most of the on-site access tracks would be required to facilitate the construction of the Proposed Development.

2.13 Additionally, a number of access tracks will be retained after construction in order to facilitate maintenance activities during the operational phase.

Borrow pits

2.14 Borrow pits will be excavated to provide fill materials required for construction of the Proposed Development, such as the on-site access tracks, wind turbine foundations and landscaping areas;

Temporary construction compounds and holding areas

2.15 The compound would be used, where necessary, for temporary storage of the various components and materials which are required for construction.

2.16 The temporary construction compounds will be reinstated at the end of the construction phase. The stored subsoil and the stored topsoil would be laid over the underlying stone surface and then reseeded using a seed mix selected or, where possible, turfs would be reinstated.

Crane pads

2.17 Permanent crane hardstandings (pads) as well as temporary lay down areas will be constructed to facilitate the cranes required for the erection of turbine components. To provide stable, firm ground for safe operation of the cranes, areas of hardstanding would be laid down on one side of each turbine foundation.

Access and Parking

Access to the site is achieved via the A473 Penybont Road, the B4280 Penprysg Road and Bryngarn Road, with a new site access proposed approximately 3km north of Pencoed, located as new fourth arm to the junction of Bryngarn Road and Chapel Road. From this location, purpose built on-site access tracks will be provided.

A Framework Construction Traffic Management Plan (fCTMP) describing the delivery routes, construction routes, construction compounds and any associated parking or management of construction traffic will be submitted with the DNS application (see Volume 3, Appendix 8.2 of the ES). The fCTMP will be refined and agreed with the LPA following consent of the scheme.

Appearance and Design

2.18 The Proposed Development proposes introducing tall modern structures into the ridgeline. The appearance will be a more modern and obvious human influence on the landscape compared to that currently formed by grassland and agriculture.

2.19 There are a number of wind farms in close proximity, as further outlined within the cumulative assessments.

Landscape and Open Space Strategy

The landscape strategy consists of the following measures.

- Within the turbine Site – habitat management
- Beyond the Turbine Site – woodland enhancements
- Creation of Exchange Common Land
- Controlled access on Mynydd y Gaer

Further information is provided in Volume 1, Chapter 5: Landscape and Visual Assessment of the ES.

Drainage and Flood Risk

2.20 Based on the Natural Resources Wales (NRW) mapping, the Site is located within Development Advice Map Zone A and is located within Flood Zone 1.

2.21 Mapping indicates that there is some flood risk from surface water flooding and small watercourses at the site. This is not within the locations of proposed turbines, but some portions of the access track fall within these extents. The flood extents are likely to be associated with the ordinary watercourses located across the site. In some areas the watercourses are proposed to be crossed,

the potential flood risk will be considered when designing the crossings. An ordinary watercourse consent will also be required for the proposed watercourse crossings.

2.22 A Flood Consequences Assessment has been produced for the Proposed Development (Volume 3, Appendix 2.1 of the ES) which includes the proposed measures which could be incorporated into the development to mitigate the identified risk.

2.23 Filter drains will be placed downgradient of the turbines, which will intercept and attenuate runoff. Additionally, filter strips will be placed adjacent to the access tracks at the site, which will intercept and attenuate runoff. Gravel infill will provide storage and treatment for surface water flows.

2.24 A further detailed design will be developed in consultation with the relevant authorities.

Lighting

Due to the height of the turbines, the proposed development would require an aviation lighting scheme in accordance with the Civil Aviation Authority (CAA) policy. It is likely this would comprise of medium-intensity steady-red lights at the nacelle of the turbines;

Consultation is recommended with the CAA and Ministry of Defence to confirm the lighting requirements and agree to a lighting scheme.

Replacement Common Land

2.25 Applications under sections 16 and 38 of the Commons Act 2006 have been submitted as part of the DNS application for the Proposed Development. Consent under section 38 of the Commons Act 2006 is required to carry out 'restricted works' on common land, namely; extending the current car park on MYG, and the laying of a section of cable to enable the Proposed Development to export electricity from the site to the south and beyond to National Grid Electricity Distribution network.

2.26 A separate section 16 application has been submitted for the Release Land required for the turbine bases, crane pads, new access tracks, drainage works, cable trenches, working areas, Sub-station and their micro-sitting areas.

2.27 The replacement land does not adjoin MYG Common (CL20), it is to the south (475m) it abuts another common that of Hirwaun Common (CL21), the proposed land is currently enclosed agricultural pasture used for grazing.

2.28 The area of Release Land to be de-registered amounts to approximately 21.12 Ha (of which is 4.01 Ha being the permanent structures of turbine, bases, tracks and substations), it is anticipated that 5.67 Ha is required for allowance on micro siting of turbine basis, compounds and laydowns in construction phase while temporary land for batter cuts and stripping of roads cables at side of roads amount to 11.44 ha. 21.54 ha of Replacement Land is offered in exchange.

2.29 As a result of the Proposed Development there will be no reduction in the Common land area available to all users and there will no be detrimental impact on the commoners, landowners or public.

Mitigation

Primary / Embedded Mitigation

2.30 Embedded mitigation consists of measures that have been incorporated into the design of development to prevent, reduce or offset any significant effects upon a receptor.

2.31 Embedded mitigation developed through the EIA process has been incorporated into the construction and operation of the proposed development in order to avoid and reduce the potential environmental impacts as far as it is practical to do so.

2.32 The Design has inherently implemented a range of embedded mitigation measures to reduce and minimise impacts to the environment, examples include but are not limited to:

Topic	Mitigation Measure
Landscape	Micro siting design of the turbine layout has respected habitats, site lines between historic features on the plateau and sought to minimise the impacts on residential visual amenity. Minimise the potential effects on local residential receptor groups with at least a 500m buffer around properties. Turbines positions were adjusted to lessen the visual impact on residential receptors at Glynogwr, Glynllan to the north and Heol y Cyw to the south. This was achieved by moving the turbines away from these settlements, further towards the centre of Mynydd y Gaer. Turbine T12 on the north east side of the proposed windfarm was removed to reduce the scheme's proximity to properties and settlement to the north east.
Ecology	A 50m buffer added to woodland to protect Goshawks. Three biodiversity mitigation areas have been identified: • East of Blackmill Woodland • Wern Tarw Woodland • Exchange Land
Common Land	Creation of an area of exchange common land to the south to mitigate loss of Mynydd y Gaer common from the proposed turbine development.
Telecomms	In consultation with Telecomms operators, lines of site were identified for microwaves and UHF beams. The layout has been adjusted accordingly to microsite T1, T2, T3, T10 and T11.
Historic Environment	The location of Turbine 9 has been moved approx. 70m to the west to avoid archaeology.
Transport	On-site borrow pits are proposed to reduce the level of traffic associated with the import of aggregate form off-site locations. This could be secured as part of any consent.

Mitigation Areas

Wern Tarw Woodland

2.33 To facilitate the transportation of turbines to the Turbine Site, a small portion (0.11 ha) of the Wern Tarw Woodland will be removed. Therefore the woodland has been identified as an area for mitigation. Whilst woodland removal along the haul road would be located within an area designated as ancient woodland, the extent of loss would be relatively limited.

2.34 Given the woodland's deteriorating condition and density of undesirable features, conservation management of the whole woodland under the Applicant's control is proposed.

2.35 The wider woodland would significantly benefit from the intervention of long-term, sympathetic ancient woodland restoration. It is estimated that more than 6 hectares of ancient woodland could be managed and restored to its former condition.

East of Blackmill Woodland

2.36 Blackmill Woodlands Special Area of Conservation (SAC) is an international site of conservation importance, designated for its old sessile oak woods. The SAC is outside of the Turbine Site and outside the Application Boundary but has been included as an area of offsite mitigation. To the east of Allt y Rhiw, outside of the woodland habitat, is an area of dense bracken, comprising primarily a bracken monoculture. The dense bracken is located partly within the boundary of the SAC and extends outside, to the east. To reduce the continuous pressure of bracken on the SAC and facilitate

recruitment of woodland saplings, selective bracken control would be implemented along the edge of the SAC and outside of the boundary.

Exchange Land

2.37 The Exchange Land forms part of the replacement common land for the Proposed Development and is located to the west of Heol-y-Cyw, and south of Blackmill, in Bryncethin

2.38 This area has been identified as replacement common land only but provides an opportunity to deliver biodiversity benefits through enhancement and restoration. Indicative measures have been proposed within the Exchange Land where they provide benefits to biodiversity, the landscape and the community and improvements to land use, ensuring no impediment of common land rights. It should be noted that the extent land available for biodiversity enhancement within the Exchange Land is unknown at the current stage. As a result, this section sets out the potential measures based on the nature of habitats within an area likely to be available. Proposals within the Exchange Land would be subject to change following confirmation of the final extent. Once specific areas are confirmed, mitigation measures will be revised as part of the full DNS application and illustrated on a plan.

2.39 Mitigation in the exchange land consists of a series of new and enhanced hedgerows and treelines, rush management and wetland feature creation, invasive non-native species control of Himalayan Balsam, enhancement of broadleaved woodland, and implementation of wildlife boxes.

2.40 Biodiversity enhancement measures have been proposed within this area that will support the local community, and benefit the environment, without interfering with common land functions.

2.41 The mitigation proposed in these areas is fully outlined in Volume 1, Chapter 6: Terrestrial Ecology of the ES, and Volume 3, Appendix 6.5: Outline Biodiversity Strategy of the ES.

Sustainability

2.42 This section summarises the effects of the Proposed Development on sustainability factors such energy demand, waste, use of natural resources and residues and emissions.

Energy Demand

2.43 The Proposed Development will supply electrical energy to the distribution network rather than generate demand.

2.44 The Welsh Government formally committed Wales to legally binding targets to deliver the goal of net-zero emissions. The Climate Change Committee recommended the following targets that the Proposed Development will contribute to:

- Carbon Budget 2 (2021-25): 37% average reduction with credit (“offset”) limit of 0%
- Carbon Budget 3 (2026-30): 58% average reduction
- 2030 target: 63% reduction
- 2040 target: 89% reduction
- 2050 target: 100% reduction (net zero)

Vulnerability to Accidents and Disasters

2.45 The EIA Regulations state that an EIA must identify, describe, and assess, in an appropriate manner, the direct and indirect significant effects arising from the vulnerability of the Proposed Development to risks of major accidents or disasters.

2.46 The EIA looks at both how the Proposed Development affects the environment and how outside dangers could impact the Proposed Development. The objective of such an assessment is to establish whether the Proposed Development increases risks to existing receptors or increases the

sensitivity of those receptors to the consequences of the hazard. For example, by introducing new links/pathways between a possible hazard and a receptor.

Summary of the Key Parameters of the Proposal

Table 2.1: Summary of the Key Parameters of the Proposal

Element of Development	Key Parameter for EIA
Site Area	347.97ha.
Number of turbines	11
Maximum turbine height	230m
Cable route	10.43km

Construction

Phasing of Construction Works

2.47 The timing of the Proposed Development would be dependent on securing planning permission and the discharge of planning conditions. It is expected that construction will last 2 years.

Construction Working Hours

2.48 All work would be undertaken between 08:00 and 18:00 hours Monday to Friday, with limited construction activities on Saturdays between 08:00 and 13:00 hours. No construction activities would take place on Sundays or Bank Holidays.

2.49 In the event that works are required outside of these hours in exceptional circumstances, this would be agreed with the LPA prior to commencement of the activity.

Environmental Management during Construction

2.50 Construction would be undertaken in accordance with good practice environmental management procedures that will be set out in more detailed plans and method statements contained within a Construction Environmental Management Plan (CEMP) to be developed by the contractor. The CEMP will set out the key management measures that contractors would be required to adopt and implement to protect the environment during construction.

Drainage

2.51 The construction phase would incorporate pollution prevention and flood response measures to ensure that the potential for any temporary effects on water quality or flood risk are reduced as far as practicable.

2.52 Such measures would be implemented through the CEMP, which will require the following:

- Installation of wheel washing facilities at the entrance to the construction compounds;
- Use of sediment fences along existing watercourses when working nearby to prevent sediment being washed into watercourses;
- Covers for lorries transporting materials to/from site to prevent releases of dust/sediment to watercourses/drains;
- Bulk storage areas to be secured and provided with secondary containment (in accordance with the Oil Storage Regulations and best practice);

- Storage of oils and chemicals away from existing watercourses, including drainage ditches or ponds;
- Concrete to be stored and handled appropriately to prevent release to drains;
- Preparation of a flood response plan in the event of flooding during construction works. This would include a procedure for securing or relocating materials stored in bulk;
- Treatment of any runoff water that gathers in the trenches would be pumped via settling tanks or ponds to remove any sediment;
- Obtain consent for any works (e.g. discharge of surface water) that may affect an existing watercourse. The conditions of the consent will be specified to ensure that construction does not result in significant alteration to the hydrological regime or an increase in fluvial risk;
- Use of a documented spill procedure and use of spill kits kept in the vicinity of chemical/oil storage;
- Storage of stockpiled materials on an impermeable surface to prevent leaching of contaminants and use of covers when not in use to prevent materials being dispersed and to protect from rain; and
- Stockpiles to be kept to minimum possible size with gaps to allow surface water runoff to pass through.

Disposal of Waste

2.53 Site waste generated during construction of the Proposed Development would typically comprise materials generated during excavation or earthworks. Excavated materials would be re-used onsite where these deemed suitable for re-use. Excavated peat is not classed as waste provided that is deemed suitable for a pre-determined use as part of the construction of the Proposed Development or for reinstatement activities. Where not deemed suitable for re-use, site waste would either be transported to a suitable recycling facility or landfill site (if non-recyclable).

2.54 Waste generated during the operational phase would be limited to repair and maintenance activities and would be managed in a similar way to construction waste, including adherence to the waste hierarchy and measures set out in the SWMP and CEMP. Waste generated during decommissioning of the Proposed Development would be managed similarly.

Use of Natural Resources

2.55 The contractors' CEMP will consider the main types and quantities of materials required for the Proposed Development in order to assess potential for sourcing materials in an environmentally responsible way.

2.56 The Considerate Constructors Scheme (CCS) includes measures relating to the use of resources, including categories in relation to minimising the use of water. The construction process would take into account the principles of good practice in soil handling and restoration.

2.57 The EIA Directive also refers to the use of land and biodiversity resources. Further details are provided in Chapter 6 (Biodiversity).

An Agricultural Land Classification Survey of the proposed site was completed and is documented in Volume 1, Chapter 16: Land Use and Soils of the ES.

Further to this, a Peat survey was conducted in December 2024 by RPS. The survey identified a number of small pockets of peat on the Site, however no peat was identified at a depth of over 40cm, in which the peat can be classed as deep peat, which is subject to protection.

Residues and Emissions

2.58 The CEMP will consider ways of minimising construction activity residues and emissions, including spills, noise and vehicle emissions during the construction phase.

2.59 Details of residues and emissions in relation to water are set out in the Flood Consequence Assessment (FCA) and Drainage Strategy. Any impact associated with noise has been addressed by a Noise Impact Assessment, included as part of the DNS application.

Vulnerability to Accidents and Disasters

2.60 Given the nature of the Proposed Development, it is considered that the key areas of concern for major accidents and disasters include fires, flooding, mechanical failure (e.g. collapse, blade throw or ice throw).

2.61 Consideration of risks to aviation activity is considered within Volume 1, Chapter 13: Aviation, of the ES.

2.62 Vulnerability to accidents and disasters is considered within the ES on a topic-by-topic basis within each individual chapter.

Fire Risk

2.63 The Proposed Development comprises electrical infrastructure which presents a potential fire risk. Therefore, the Proposed Development will include several passive, active and additional measures to mitigate against fire risk.

Flood Risk

2.64 The evaluation of flood risk associated with the Proposed Development is provided within the Flood Consequence Assessment (FCA) which is Volume 3, Appendix 2.1 of the ES.

Mechanical failure or blade/ice throw

2.65 The wind turbines will be designed and constructed to withstand extreme wind and weather conditions. The wind turbine scenarios under consideration at this stage in the DNS application process all have a proven record in terms of safety and reliability. As such the likelihood of collapse or blade throw is low.

2.66 However, multiple public footpaths and bridleways are in proximity to the proposed wind turbines and much of the Proposed Development site is situated on common land, whereby pedestrian movements are not limited to PRoW. Therefore, several measures have been incorporated into the design of the Proposed Development to reduce the likelihood of mechanical failure or blade/ ice throw and ensure the safety of PRoW users and members of the public.

2.67 The potential effects of the Proposed Development with respect to human health are considered across all EIA chapters.

Operation and Maintenance

2.68 The operational lifetime of the Proposed Development is 50 years. During this period the Proposed Development would largely be automated, with wind turbine operations being managed and monitored via control equipment located within the on-site substation compound. These systems

would ensure the safe operation of the Proposed Development, including the implementation of safety measures (e.g. fire suppression, ice detection, emergency cutoff).

2.69 Once operational, the wind farm will be managed remotely and will require only occasional site visits for maintenance, as needed.

Decommissioning

2.70 After the Proposed Development's lifespan of 50 years, it is proposed that the turbines and transformers would be removed. All structures, cabling and transformers would be removed from the Site and recycled or disposed of in accordance with good practice and market conditions at that time.

2.71 The works required for decommissioning of the Proposed Development would be similar in nature to those required during construction.

2.72 A decommissioning and enhancement plan, to include timescales and transportation methods, ecological and landscape enhancements and other environmental improvements, would be developed in consultation the local planning authority, local community and key stakeholders following consent of the DNS application.

3 NEED AND ALTERNATIVES CONSIDERED

3.1 The need for the Proposed Development is based on the following considerations, having regard to the relevant national and local policy context:

1. Increasing demand for electricity;
2. The need to decarbonise energy systems and combat the potentially devastating effects of climate change on current and future generations; and
3. Energy security for Wales.

3.2 Overall, there is a significant need to transition away from fossil fuels to achieve national carbon and greenhouse gas reduction targets, in particular the Welsh and UK Government's legally binding targets of net zero carbon emissions by 2050. There is also a strong requirement to consider energy security and the avoidance of the importation of energy.

3.3 A mix of non-fossil fuel energy sources are required, and onshore wind generation has an important role to play as part of the mix of energy sources required to meet increasing electricity demand in the future.

3.4 A broad overview of the key national and local policy and guidance relevant to the Proposed Development is provided below.

- **Welsh Government Climate Emergency Declaration (2019)**
- **Welsh Government Declaration of Commitment to Net Zero by 2050)**
- **National Grid Future Energy Scenarios (July 2024)**
- **Well-being and Future Generations (Wales) Act 2015** sets out 7 well-being goals. These goals define the priorities of future growth in Wales, which holds all public bodies accountable in achieving sustainable development.
- **Future Wales - the National Plan 2040 (FW),** Future Wales is the national development framework, setting the direction for development in Wales to 2040. It addresses key national priorities, including sustaining and developing a vibrant economy, achieving decarbonisation and climate-resilience, developing strong ecosystems and improving the health and well-being of communities.
- **Planning Policy Wales (PPW) Edition 12,** is the national policy outlining guidance for making planning decisions in Wales. One of five key principles of PPW concerns '*Maximising environmental protection and limiting environmental impact*' and is outlined further in Section 5.7: Energy, that gives context to, and the requirements of, energy projects.
- **Bridgend County Borough Council Replacement Local Development Plan (RLDP) 2018-2033**, adopted in March 2024 defines local policies to inform development and planning decisions within the County Borough.

3.5 In summary, the benefits of this Wind Development include:

- The carbon dioxide offset would make an important contribution towards the government target to reduce carbon dioxide emissions by 100% by 2050.
- The Proposed Development could make a significant contribution towards the renewable energy objectives of BCBC, the Welsh Government, and UK Government.
- The Proposed Development provides diversity and security of energy supply, reducing reliance on importing of energy.
- Onshore wind farms, particularly those close to areas of electricity demand, provide an important contribution towards making Wales and the UK more energy self-sufficient. If

constructed, the Proposed Development would help improve this self-sufficiency and narrow the energy supply gap.

Alternatives Considered

Site Location and Selection

3.6 The first step in site selection comprises a nationwide search for suitable sites that meet suitable criteria. Once a potential site location was identified, an evaluation of site constraints and opportunities was undertaken to inform an initial concept design. In assessing the suitability of a site, the following criteria are considered:

1. Technical suitability of the Site for construction and operation
    a. Topography and ground conditions
    b. Size
    c. Orientation
    d. Accessibility
2. Grid connection feasibility
    a. Proximity of nearest point of connection
    b. Availability of grid capacity at the substation
    c. Accessibility substation to connect to via cables
3. Design constraints
    a. Designations, both national and local level
    b. Existing land use
    c. Landscape designations
    d. Ecological designation
    e. Heritage designations
    f. Flood risk
    g. Neighbouring land uses
    h. Potential visual receptors
    i. Presence of Best and Most Versatile (BMV) Agricultural Land.
4. Site Availability

3.7 Taking into account the above criteria, it is often that agricultural land is the most suitable option for proposed onshore wind development, as is the case for the Proposed Development. The location of the Site was selected due to its location entirely within Pre-Assessed Area (PAA) 9 as per Policy 17 of Future Wales (2021), where there is a presumption in favour of large-scale wind energy development (subject to the criteria in Policy 18).

3.8 The Site selection process and design development is described in summary below.

Design Evolution

3.9 Following the Site selection process, further design evolution and refinement of the land parcels selected for inclusion of the Proposed Development took place:

First Design Iteration (2019)

3.10 Initial site investigations and site constraints analyses were undertaken with a focus on providing turbines for landowners interested in collaborating with the scheme. Individually, owned land is shown shaded below with landowner details redacted. Access was not confirmed at this time.

3.11 13 Turbines (V136 4MW machines) were proposed at this stage.

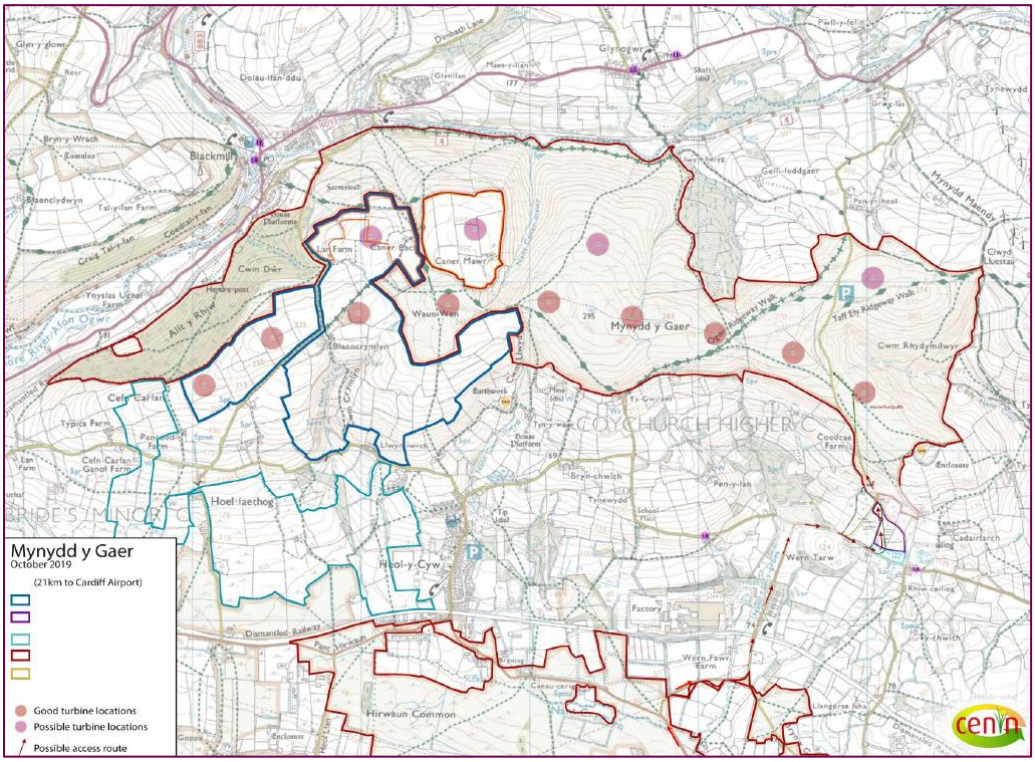

Plate 3.1: Initial Site Layout

Second Design Iteration (2020)

3.12 Turbines were relocated to provide a minimum buffer of 400m from houses, and away from Blackmill Woodlands SSSI to the west and from archaeology to the east.

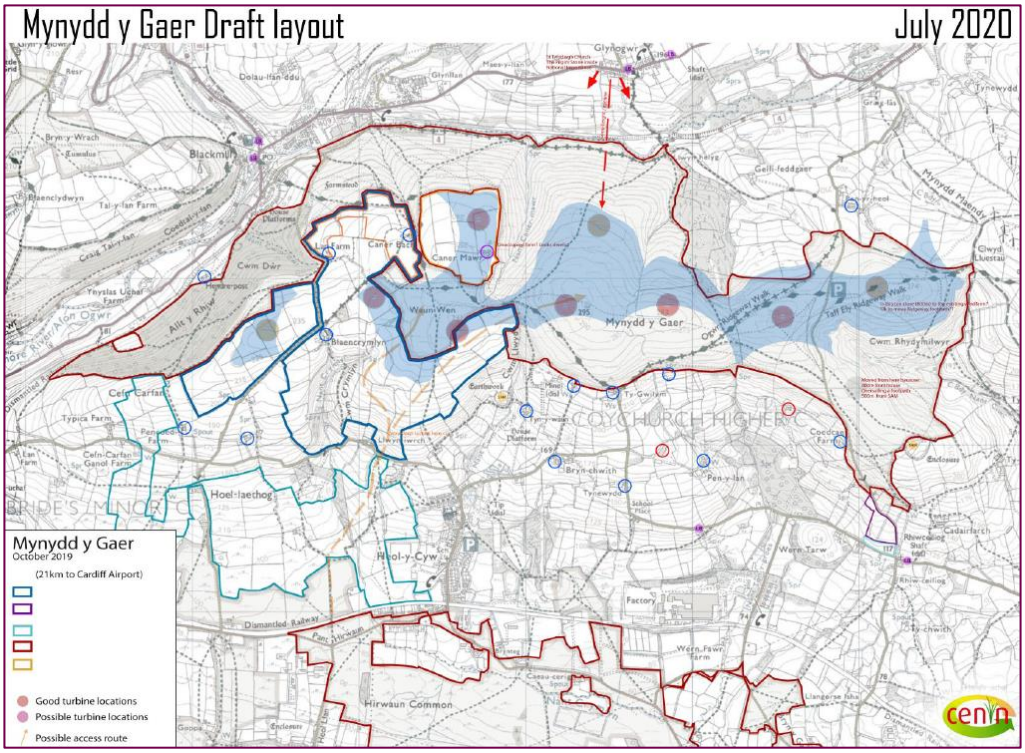

Plate 3.2: Second Site Layout Iteration

Third Design Iteration (2021)

3.13 In 2021, further constraints analysis was completed on:

- Coal high risk areas;
- Distance to airport;
- Peat;
- Linesearch;
- Archaeology;
- Telecoms;

3.14 Following the adoption of Future Wales: The National Plan 2040 as the NDF, it is confirmed that the Site lies within the Policy 17 Pre-Assessed Area for Wind.

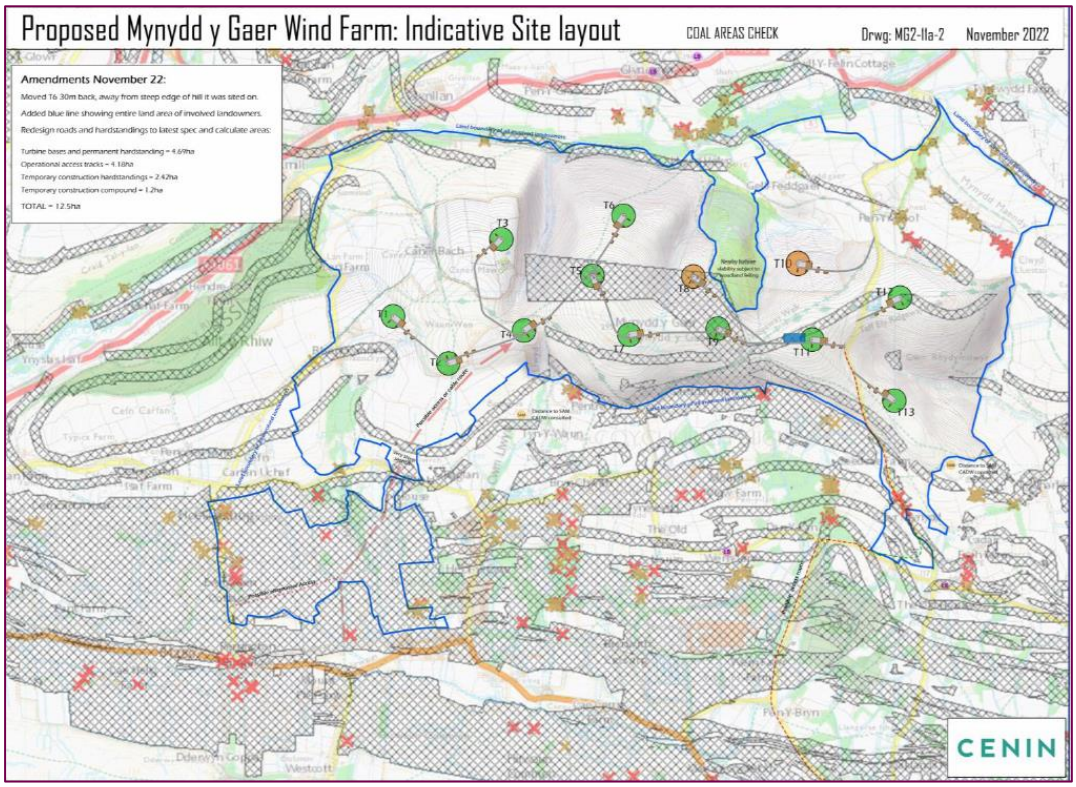

Plate 3.3: Third Site Layout Iteration

Fourth Design Iteration (2022)

3.15 At this stage, the Site layout was driven to maximum possible turbine capacity using new V150 machines.

3.16 In terms of access, an ownership masterplan with several route options was proposed. The access route was finalised from the east past Rockwool.

3.17 In 2023, exchange land and mitigation land was identified in the neighbouring the associated Ty'n y Waun Solar Site and formalised.

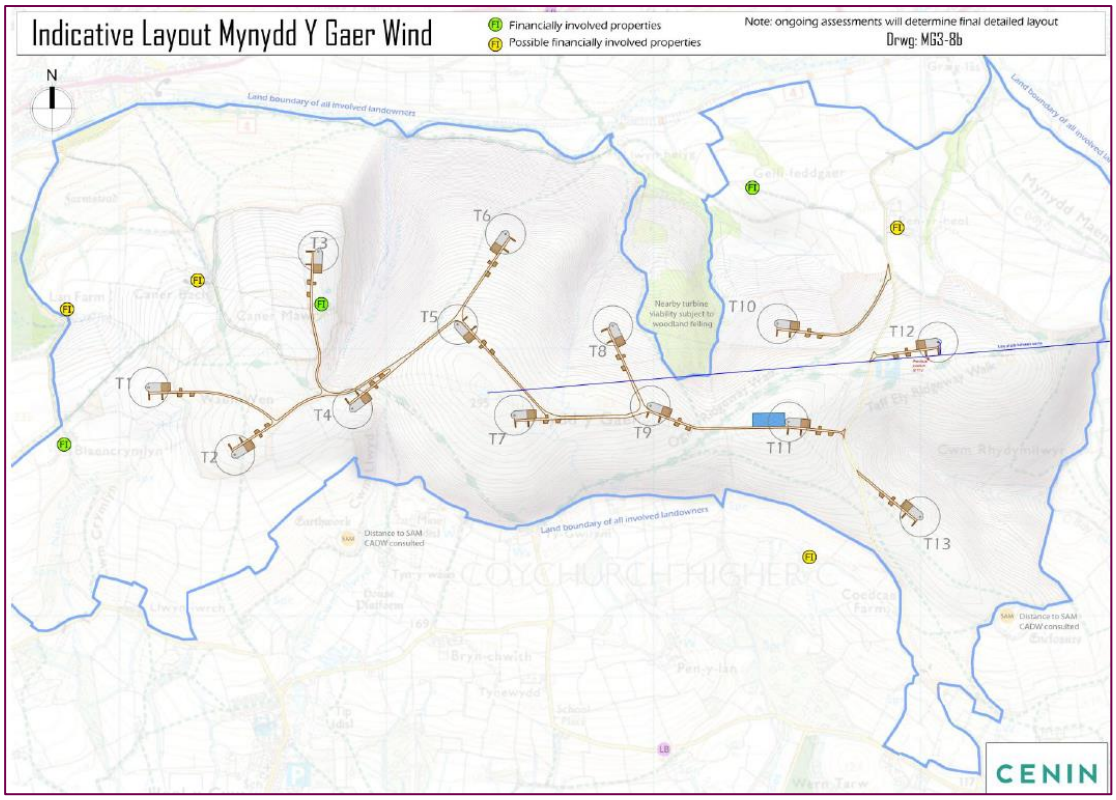

Plate 3.4: Fourth Site Layout Iteration

Fifth Design Iteration (2024)

3.18 T2 was moved as a result of findings from ecological studies A 50m buffer added to woodland to protect Goshawks.

3.19 The layout overall layout was reduced from 13 to 11 x V162 turbines.

3.20 The layout was adjusted to microsite T1, T2, T3, T10 and T11 due to telecoms constraints, identification of high-pressure gas line required the micrositing of T2 closer to the common.

3.21 Several turbines were reduced from 200m to 180m tip to lessen visual impact from Glynogwr.

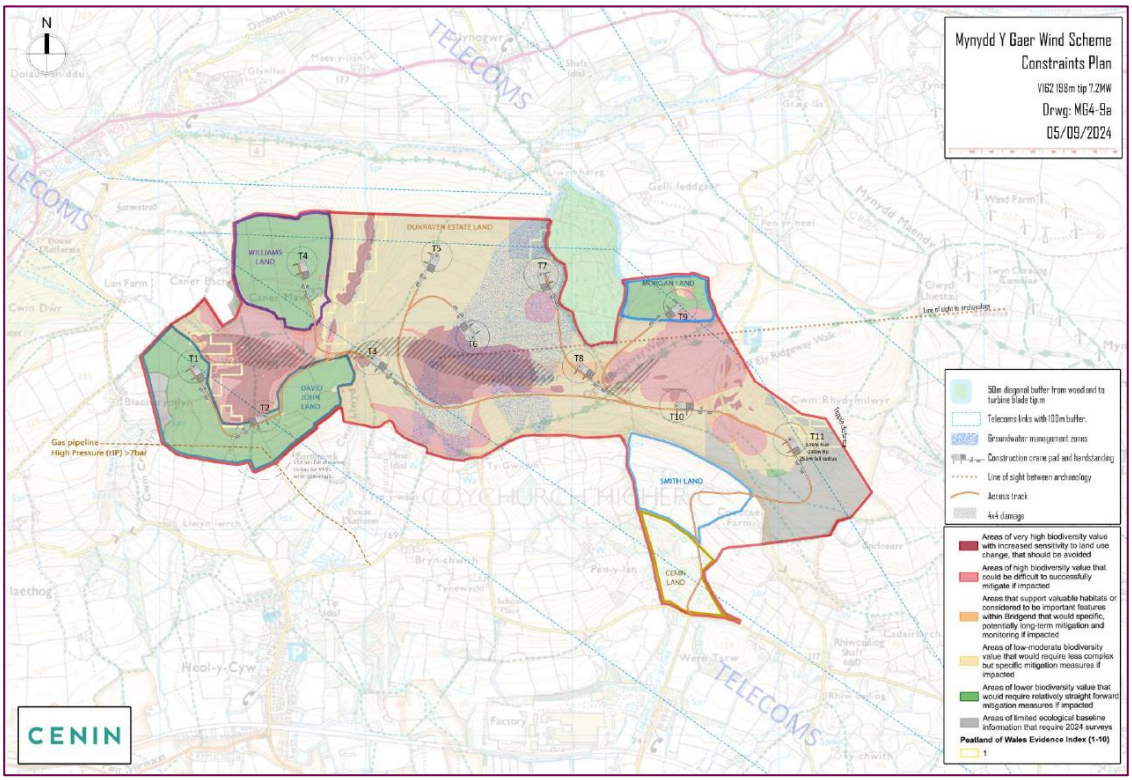

Plate 3.5: Fifth Site Layout Iteration

Sixth Design Iteration (2024)

3.22 T9's location was changed to avoid archaeology moving approximately 70m to the west. This also reduced the ecological impact of T9 on possible hedgerow habitat.

3.23 Grid cable routes confirmed, and Grid connection corridor added

3.24 Re-design adjusted or flipped cranes pads for T1, T4 and T6, being mindful not to encroach on pre-assessed ecologically sensitive areas.

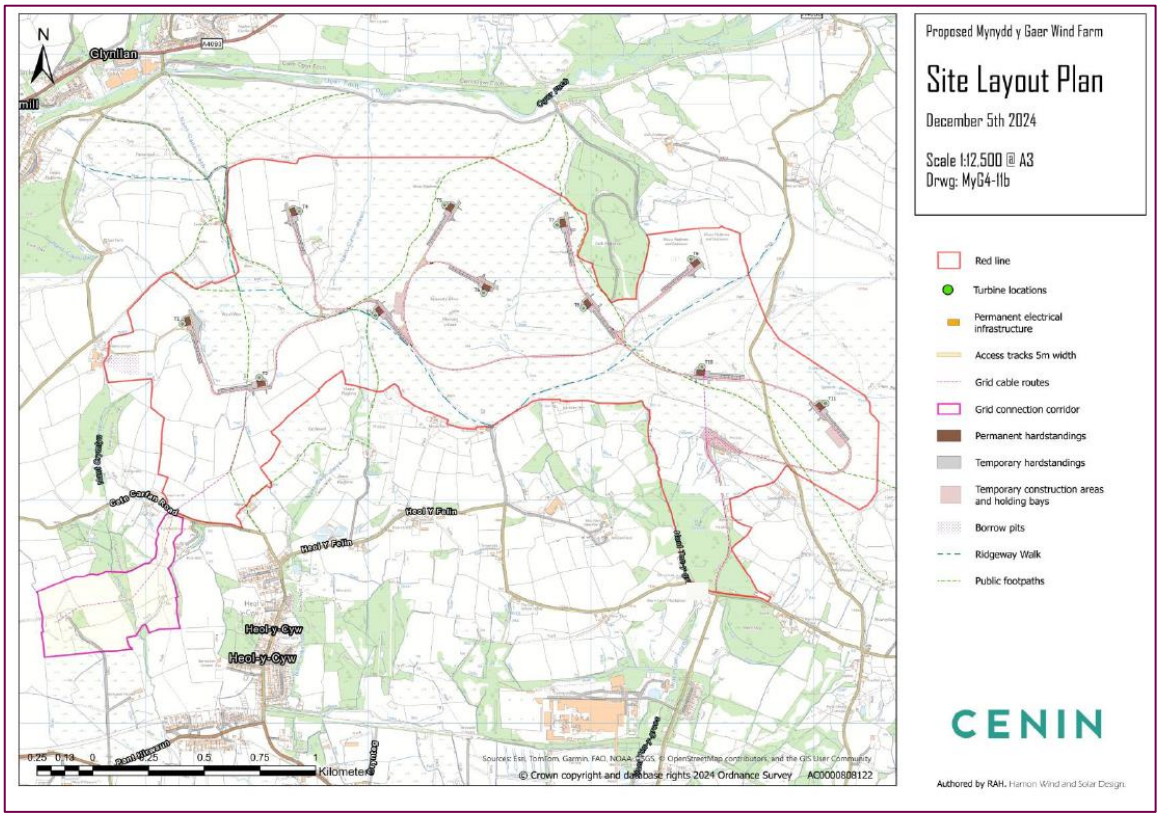

Plate 3.1: Sixth Site Layout Iteration

4 ENVIRONMENTAL ASSESSMENT METHODOLOGY

EIA Scoping

4.1 Scoping is the process of identifying the issues to be addressed during the EIA process.

4.2 A Scoping Request was submitted to the Planning Inspectorate (now PEDW) on 30 March 2023; PEDW issued their Scoping Direction on 25 August 2023.

4.3 The ES topic chapters provide a summary of the key points raised during Scoping and as a result of any further consultation with both statutory and non-statutory consultees.

4.4 The ES has been prepared in line with the requirements of the Scoping Direction and includes the following topics as requested:

- Land and Soil (including Peat)
- Aviation and Telecommunications
- Air Quality
- Electromagnetic Interference
- Risks of Major Accidents (including Coal Mining)

Plate 0.1: Sixth Site Layout Iteration

- Waste
- Landscape and Visual
- Transport
- Hydrology and Flood Risk
- Geology and Hydrogeology
- Biodiversity
- Ornithology
- Acoustics
- Shadow Flicker
- Socioeconomics

General Approach to EIA

4.5 The assessment of each environmental topic forms a separate chapter of the ES. For each environmental topic, the following have been addressed:

- Methodology and assessment criteria;
- Description of the environmental baseline conditions;
- Measures adopted as part of the Proposed Development, including mitigation and design measures that form part of the Proposed Development;
- Identification of likely effects; and evaluation and assessment of the significance of identified effects, taking into account any measures designed to reduce or avoid environmental effects which form part of the Proposed Development;

- Identification of any further mitigation or monitoring measures envisaged to avoid, reduce and, if possible, remedy adverse effects (in addition to those measures that form part of the Proposed Development); and
- Assessment of any cumulative effects with other developments planned in the area.
- Interrelated effects provides an assessment of the interrelated effects, including receptor-led and project lifetime effects of the Proposed Development; and Methodology and Assessment Criteria

4.6 Each topic chapter provides details of the methodology for baseline data collection and the approach to the assessment of effects. Each environmental topic has been considered by a specialist in that area.

4.7 Each topic chapter defines the scope of the assessment within the methodology section, together with details of the study area, desk study and survey work undertaken, and the approach to the assessment of effects.

4.8 The identification and evaluation of effects have been based on the information set out in Chapter 2 (Project Description) of this ES, EIA good practice guidance documents, and relevant topic-specific guidance where available.

Assessment of Effects

4.9 The assessment is based on consideration of the likely magnitude (scale of changes) of the predicted impact and the sensitivity of the affected receptor (e.g. houses, Public Rights of Way etc).

Sensitivity or Importance of Receptors

4.10 Receptors are the physical or biological resource or user group that would be affected by the Proposed Development. Some receptors will be more sensitive to certain environmental effects than others. Sensitivity takes into account factors including:

- Vulnerability of the receptor
- Recoverability of the receptor
- Value/importance of the receptor.

Magnitude of Impact

4.11 Impacts are the physical changes to the environment attributable to the Proposed Development. The categorisation of the magnitude of impact is topic-specific but generally takes into account factors such as:

- Extent
- Duration
- Frequency
- Reversibility

Significance of Effects

4.12 Effect is the term used to express the consequence of an impact (expressed as the 'significance of effect'). This is identified by considering the magnitude of the impact and the sensitivity or value of the receptor.

4.13 The magnitude of an impact does not directly translate into significance of effect. For example, a significant effect may arise as a result of a relatively modest impact on a resource of national value, or a large impact on a resource of local value. In broad terms, therefore, the significance of the effect

can depend on both the impact magnitude and the sensitivity or importance of the receptor having regard to the matrix below.

Table 4.1: Typical Assessment Matrix

Sensitivity	Magnitude of Impact				
	No Change	Negligible	Low	Medium	High
Negligible	No change	Negligible	Negligible or Minor	Negligible or Minor	Minor
Low	No change	Negligible or Minor	Negligible or Minor	Minor	Minor or Moderate
Medium	No change	Negligible or Minor	Minor	Moderate	Moderate or Major
High	No change	Minor	Minor Moderate	Moderate or Major	Major or Substantial
Very high	No change	Minor	Moderate Major	Major or Substantial	Substantial

4.14 Unless set out otherwise in each topic chapter, effects assessed as moderate or above are considered as significant in terms of the EIA Regulations within this assessment.

Assessment of Cumulative Effects

4.15 The EIA Regulations require consideration of cumulative effects, which are effects on a receptor that may arise when the Proposed Development is considered together with other Proposed Developments in the area.

4.16 The cumulative effects of the Proposed Development in conjunction with other proposed schemes have been considered within each topic chapter of the ES.

5 LANDSCAPE AND VISUAL IMPACT ASSESSMENT

Introduction

5.1 This chapter considers the potential impacts on this LVIA during the construction, operation and maintenance and decommissioning phase of the Proposed Development. The assessment considers the potential effects of the proposed Mynydd y Gaer Wind Farm development upon the physical landscape elements and features, landscape character, views and visual amenity within the study area.

Methodology

5.2 The Landscape and Visual Impact Assessment (LVIA), undertaken as part of Chapter 5 - Landscape and Visual Resources, identifies and assesses the likely significant effects that would arise as a result of the proposed development on the landscape (its fabric, character and elements) and upon views as experienced by receptors (people). The full methodology for the LVIA can be viewed within Appendix 5A of this Chapter. As a matter of best practice, this assessment has been undertaken based on the relevant guidance on landscape and visual impact assessment (LVIA) including Guidelines for Landscape and Visual Impact Assessment: Third Edition (GLVIA3) (Landscape Institute and Institute of Environmental Management & Assessment, 2013).

Baseline

5.3 A comprehensive desk-based review was undertaken to inform the baseline assessment for this LVIA. The existing studies and datasets referred to as part of the desk-based review for this LVIA are summarised in Table 5.9. For a full set of source documents please see the References section at the end of this chapter. Site specific surveys were undertaken to inform the baseline assessment for this LVIA. A summary of the site specific surveys undertaken to inform this chapter of the ES are provided in Table 5.10. The landscape and visual receptor baseline descriptions and findings can be found at Appendices 5B and 5C respectively.

Mitigation

5.4 The following measures have been adopted as part of the Proposed Development to mitigate potential impacts on this LVIA:

- Turbine Site – habitat management
- Beyond the Turbine Site – woodland enhancements
- Creation of Exchange Common Land
- Controlled access on Mynydd y Gaer

Likely significant effects

5.5 Taking into account the mitigation measures described above, the following significant effects are likely to occur with respect to this LVIA :

5.6 Out of the 34 of landscapes which have been assessed using the process described in Appendix 5B which reflects the NRW landscape filtering process in GN46, 12 are predicted to experience significant adverse effects where the ZTV shadow falls. These are mostly within 7km of the Proposed Development in elevated and open landscapes to the west though to the east and where they would appear as the closest turbines to these landscapes. An important local characteristic is that the existing wind farms, especially in close proximity to Mynydd y Gaer provide an existing context which the proposed development would contribute to, by intensifying wind turbine development intervisibility and on the skylines of surrounding landscapes but would not be substantially uncharacteristic with the attributes of these receiving landscapes. The scale of change and potential adverse effects on scenic quality is less than if there were no wind farms as part of the baseline.

5.7 Most of the landscape areas that are within the 15 to 32km buffer are to the north and north east of Mynydd y Gaer. These areas correspond with elevated open plateaux and ridges with upland moorland and pasture above mixed farming, forestry and settled valleys. None of these are predicted to experience significant adverse effects.

5.8 The viewpoint assessment identifies there will be significant visual effects on 15 viewpoint receptors due to the proposed development in combination with operational cumulative schemes and up to 6.3km from Mynydd y Gaer.

5.9 In terms of visual effects on settlements – the following will experience significant adverse effects:

- In the Ogwr Fach Valley – Glynllan and Glynogwr
- Lowland settlements south of Mynydd y Gaer – Hoel y Cyw

5.10 Recreational users will experience significant effects on:

- Mynydd y Gaer Open Access Land (430ha)
- PRoW within 1.5km of the Mynydd y Gaer
- Cefn Hirgoed Common (519 ha)
- Mynydd Llangeinwyr Open Access Land (1730 ha total – only the southern half south of Pen y Foel which equates to approximately half this area)
- Bryn y Wrach Open Access Land
- Mynydd y Glyn Open Access Land (south west facing slopes)
- Most of the Ogwr Ridgeway Walk, Taff Ely Ridgeway Walk and Sky to Sea Walk within the 5km buffer of the proposed turbines (all locally promoted trails)
- National Cycle Network (NCN) Route 4 east of Gynogwr along a 1.5km section of dismantled railway.

5.11 There is a presumption in favour of windfarm development within PAAs as set out in Policies 17 and 18 of the Future Wales Plan. Crucially, the proposed scheme falls within PAA 9. This assessment has shown that although there are predicted to be some significant landscape and visual effects, these will be relatively local and confined to some receptor locations within 7km of the proposed development. There would be no significant effects on national landscape designations which fall within the 45km buffer from the proposed development. These include the Gower National Landscape, Exmoor National Park and Brecon Beacons National Park. Indeed, landscape and visual effects would be no greater than negligible adverse within the Gower National Landscape, Exmoor National Park and minor adverse at worse from some southern and most elevated parts of the Brecon Beacons National Park. Additionally, the proposed scheme would not be as visible as other existing operational or cumulative proposed windfarm schemes from these landscapes. The special qualities of the Brecon Beacons LCAs assessed would not be altered or reduced significantly. The National Park special qualities of the level of tranquillity, quality of extensive views from prominent hilltops and the level of remoteness would not be reduced by the proposed windfarm at Mynydd y Gaer.

5.12 Although the proposed development falls within SLA 5 Mynydd y Gaer, it would be located within the context of the existing Taff Ely and Mynydd Portref windfarms, in the adjoining SLA, Mynydd Hugh and Lantrisant Forest. The landscape effects are described in Appendix 5B as part of the assessment on the host LCA 9 Hirwaun Common and Surrounding Ridges. It is acknowledged that there will be a major adverse effect on this SLA and LCA.

5.13 Future Wales Plan Policy 18 states that proposals for renewable energy projects will be permitted subject to there being ‘no unacceptable adverse visual impacts on nearby communities and individual dwellings’. This assessment concludes that although there are some significant adverse visual effects on local residential areas these are within 2km of the proposed development. None of the effects are so unacceptable so as to reach RVAT – where it would potentially affect ‘living conditions’

5.14 Future Wales Plan Policy 18 also states that, ‘the cumulative impacts of existing and consented renewable energy schemes should also be considered.’ Scenario 2 of the cumulative landscape and visual assessment (CLVIA) in this chapter has assessed this series of windfarm developments i.e.

proposed scheme + operational + consented schemes. In addition, the CLVIA includes assessment of schemes in planning or at scoping stage referred to as Scenario 3. The majority of the cumulative baseline is made up of wind farms that are already in operation, which forms part of the assessment in Scenario 1, in the landscape and visual assessment. As more windfarms become present in the landscape in some cases these will have the greater contributing influence to the level of effect. In Scenario 1, 12 LCAs / VSAAs are predicted to experience significant effects. In Scenario 2, with the addition of the consented schemes, 7 of these 12 areas are predicted to have additional cumulative effects which result in the combined cumulative schemes having an equal (type 1 cumulative effect) or greater contributing effect (type 3 cumulative effect) to the overall level of significance rather than the proposed scheme.

5.15 Regarding visual matters, In Scenario 1, 90-degree views where the proposed scheme is central to the view, 15 viewpoints are predicted to experience significant effects. In 360 degree in succession views, 11 viewpoints are judged to experience significant effects attributable mainly to the proposed scheme and the 4 viewpoints from where the cumulative operational schemes have an equal or greater effect on visual amenity than the proposed scheme.

5.16 In Scenario 2 when the consented cumulative schemes are included in the assessment, considering the 15 viewpoints above, 8 viewpoints will experience significant effects attributable mainly to the proposed scheme in succession with the cumulative operational and consented schemes. However, 7 viewpoints will experience significant effects where the cumulative operational and consented schemes will have an equal or greater effect on visual amenity than the proposed.

6 TERRESTRIAL ECOLOGY

Introduction

6.1 This chapter considers the potential impacts on Terrestrial Ecology during the construction, operation and maintenance and decommissioning phase of the Proposed Development. The assessment considered the potential impacts on Blackmill Woodlands SAC, Blaencrymlyn SINC, M15 - *Erica tetralix* wet heath, acid grassland communities, bristle bent, bats, otter, dormouse, reptiles and grassland fungi.

Methodology

6.2 The Terrestrial Ecology baseline was identified through a combination of desk-based assessments, site-specific surveys including field recording and eDNA sampling. Desk based assessments of existing studies and datasets were used to identify designated sites, ancient woodland, notable habitats and protected and notable species within a search area within and beyond the Proposed Development. In addition, habitat surveys, targeted species surveys and soil and water sampling were also undertaken between 2021 and 2024 to ascertain the diversity and extent of biodiversity within and in proximity to the Proposed Development.

Baseline

6.3 Several statutory designated sites were located within a 2 km search of the Proposed Development. The closest international site was Blackmill Woodlands SAC, located more than 400m to the west. The closest nationally designated site was Brynna a Wern Tarw SSSI which was located 70m from the Proposed Development's haul road.

6.4 Field survey identified an array of habitats within the Proposed Development footprint. The most abundant habitats included acid grassland, bracken, improved/agricultural grassland and to a lesser extent wetland habitats. Watercourses were identified across the Application Boundary, though none intersected with the Proposed Development footprint. Woodland, scrub and to a lesser extent hedgerows were recorded within the Application Boundary. A scarce plant was identified within acid grassland habitats within the Proposed Development.

6.5 A minimum total of five bat species were recorded, and two species groups (Myotis and Nyctaloid). The most abundant species identified was common pipistrelle, a widespread species of bat in the UK. No roosting sites were identified in structures within the Application Boundary

6.6 No otters or badgers were recorded as part of survey work and water vole was considered to be absent given the unsuitable features within the Application Boundary. A dormouse nest and two dormice were recorded within Wern Tarw Woodland, in the south east of the Application Boundary. It is assumed that dormice are present throughout the woodland.

6.7 Great crested newt was considered absent due to negative results as part of eDNA sampling of four waterbodies within and in proximity to the Proposed Development footprint. No reptiles were incidentally recorded during non-targeted surveys but habitat suitability and previous records indicate reptiles could be present.

6.8 A diverse assemblage of notable grassland fungi species was recorded across the Application Boundary, with many species recorded in acid grassland habitats in the north east of the Application Boundary. Soil sampling for fungi eDNA and fruitbody records suggest that fungi are present in select areas.

Mitigation

6.9 The following measures have been adopted as part of the Proposed Development to mitigate potential impacts on Terrestrial Ecology:

- A CEMP would be developed. The CEMP would set out the appropriate best practice measures to be implemented during construction, primarily environmental best practice, housekeeping and precautionary working methods to prevent impacts to species.

- An OEMP would be developed. The OEMP would include measures to prevent pollution, encroachment and disturbance to habitats and soils, and disturbance to mobile protected and notable species.
- A Soil Management Plan will be developed. The Soil Management Plan would include measures to maintain the quality and integrity of acid grassland soils, implement sensitive soil handling and storage and targeted turf translocation, reinstating the land (as near as possible) to its former condition post construction.
- A Biodiversity Strategy to include the necessary habitat creation, restoration and enhancement measures and protected and notable species protection measures. A bespoke turbine curtailment scheme to reduce collision risk impacts to bats has also been proposed. Green infrastructure enhancements to areas outside of the Application Boundary are also proposed.

Likely significant effects

6.10 Taking into account the mitigation and the proposed biodiversity measures during construction and operation, no significant adverse effects are likely to occur with respect to Terrestrial Ecology and an overall net benefit for biodiversity would be delivered. Several ecological receptors would experience beneficial effects in the long term, these include Wern Tarw Woodland, wet heath habitat, dormice and grassland fungi

6.11 No significant cumulative effects with other developments are likely to occur with respect to Terrestrial Ecology.

7 ORNITHOLGOY

Introduction

7.1 This chapter considers the potential impacts on ornithology during the construction, operation and maintenance and decommissioning phase of the Proposed Development.

Methodology

7.2 Both desktop and field survey data from the project site has been considered and assessed in line with industry standard methods.

Baseline

7.3 Two years on site surveys have been supplemented with an in depth desktop study and research of surrounding wind farm project environmental statements.

Mitigation

7.4 Mitigation has been incorporated into project design by adjustment of turbine locations and reduction of project overall size. Works on site will be supervised by a Ecological Clerk or Works to ensure compliance with environmental guidance and that best practice is followed.

Likely significant effects

7.5 Taking into account the mitigation measures described above, the following significant effects are likely to occur with respect to two species;

- Herring gull (breeding and non-breeding): On the basis that the sensitivity of the receptor is medium, and the magnitude of the impact is medium, it is assessed that there will be a moderate adverse effect, which is deemed significant.
- Red kite (breeding and non-breeding): On the basis that the sensitivity of the receptor is very high, and the magnitude of the impact is low, it is assessed that there will be a moderate or major adverse effect, which is deemed significant.

7.6 The following significant cumulative effects are likely to occur with respect to red kite:

- it is assessed that there will be a moderate or major adverse effect, which is significant in EIA terms.
- No data was available for other wind sites in the area relating to Herring gull, meaning that impacts for that species alone also act as the cumulative totals.

Discussion

7.7 Further modelling work and consideration of on-site impacts, and survey design, in relation to other topics, notably hydrology and ecology, are taking place and the Applicant will enter into discussions with SNCBS to seek solutions to this issue. The west end of the site in particular has heavy bird usage, likely a combination of updraft and wet fields. Additional mitigation options are being investigated to lower predicted impacts to an acceptable level.

8 TRAFFIC AND TRANSPORT

Introduction

8.1 This chapter considers the potential impacts on Transport during the construction, operation and maintenance and decommissioning phase of the Proposed Development. The assessment considered the potential impacts of construction traffic on receptors along within the Transport study area, comprising the A473 Penybont Road, B4280 Penprysg Road, Bryngarn Road and Public Rights of Way within the site.

Methodology

8.2 Receptor sensitivity was identified through a combination of desk-based analysis and site-specific traffic surveys. Desk based analysis of existing studies and datasets were used to identify the sensitivity of receptors and magnitude of impact expected against the six metrics identified in Environmental Impact Assessment guidance, comprising severance, driver delay, pedestrian delay (including non-motorised users), non-motorised user amenity, fear and intimidation, and road safety. Construction traffic flows were estimated to inform the assessment.

Baseline

8.3 Traffic surveys recorded baseline traffic volumes along roads within the study area, identifying that baseline flows on Bryngarn Road are low, particularly north of the Rockwool Factory. They also identified an existing issue with speeding along Bryngarn Road north of the Rockwool Factory. A highway safety audit was completed, which identified no issues with the local highway network within the study area that would need addressing or would be worsened by the proposed development.

8.4 The desktop study identified several PRoWs within the vicinity of the site and confirmed that there are no formal Active Travel Routes or National Cycle Routes within the study area.

8.5 It also identified key receptors outside of highway users, comprising residents of residents of Pencoed in vicinity of A473 Penybont Road, students at Bridgend College – Pencoed Campus, residents of Rhiwceiliog Pencoed and Public Right of Way Users

Mitigation

8.6 The following measures have been adopted as part of the Proposed Development to mitigate potential impacts on Transport:

- A full Construction Traffic Management Plan will be developed in general accordance with the Framework Construction Traffic Management Plan, which has been submitted with the DNS application. The Construction Traffic Management Plan will include measures to minimise the impact of construction traffic (where possible).
- A full Abnormal Loads Transport Management Plan will be developed in general accordance with the Outline Abnormal Loads Transport Management Plan, which has been submitted with the DNS application. The Abnormal Loads Transport Management Plan will include measures to minimise the impact of abnormal load deliveries (where possible).
- A Staff Travel Plan will be developed prior to commencement and will include measures to encourage site staff to use more sustainable means to single occupancy car travel when travelling to and from the site.
- An Onsite Traffic Management Plan will be developed prior to commencement and will include measures to minimise the impact of construction traffic within the site upon the existing Public Right of Ways and Public Right of Way users.

Likely significant effects

8.7 Taking into account the mitigation measures described above, no significant effects are likely to occur with respect to transport.

8.8 No significant cumulative effects are likely to occur with respect to transport.

8.9 With respect to Transport no transboundary effects are likely to occur during construction, operation and maintenance and decommissioning of the Proposed Development on the interests of European Economic Area states.

9 HISTORIC ENVIRONMENT

Introduction

9.1 This chapter considers the potential impacts on the Historic Environment during the construction, operation and maintenance and decommissioning phase of the Proposed Development.

Methodology

9.2 The historic environment was identified and assessed through a combination of desk-based analysis and a site survey. Desk-based analysis of existing datasets and readily available sources of potential information, further informed by a walk-over survey, were used to identify historic assets/receptors within the Proposed Development site. Existing datasets and a Zone of Theoretical Visibility was used to identify designated assets that could be affected both within and outside the Proposed Development site.

Baseline

9.3 The assessment identified 22 assets/receptors within the Proposed Development site, from a broad range of time periods and functions. These assets/receptors range in both sensitivity and in the potential magnitude of the impacts, however a potentially significant effect has been identified on three clusters of identified receptors that appear to relate to post-medieval deserted rural settlement sites, and the general archaeological potential of the area, largely through potentially destructive construction works.

9.4 In additional 15 designated assets/receptors have been identified in the wider study area that may potentially be impacted through changes to their setting. Only a preliminary assessment of the setting has been undertaken at this stage, but this suggests a range of impacts from negligible to minor, of which a potentially significant effect has been identified on the setting of scheduled monument GM084 Mynydd y gaer hillfort, during disruptive construction works and through visual changes during the operational phase.

Mitigation

9.5 The following measures have been adopted as part of the Proposed Development to mitigate potential impacts on the Historic Environment:

- Consultation during development of initial design freezes to avoid known areas of significant archaeological remains
- Targeted geophysical survey to identify potential archaeological remains and inform any need for further detailed mitigation.
- A metal detector survey to identify potential archaeological remains and inform any need for further detailed mitigation.
- A trenched archaeological evaluation to identify the character and extent of potential archaeological remains and inform any need for further detailed mitigation.
- Ongoing consultation with archaeological consultants and the stewardship office at Heneb-The Trust for Welsh Archaeology (Glamorgan-Gwent region) to agree any ongoing mitigation measures for design and construction.

Likely significant effects

9.6 Taking into account the mitigation measures described above, it is anticipated that the residual effect can be reduced to a minor to moderate adverse impact on the Historic Environment within the Proposed Development site, not considered significant.

9.7 There is at present insufficient information to complete a full assessment of the impact on the setting of designated assets and cumulative effects on the Historic Environment, but this will be carried out in due course.

10 NOISE

Introduction

10.1 This chapter considers the potential impacts on noise during the construction, operation and maintenance and decommissioning phase of the Proposed Development. The assessment considered the potential impacts on amenity at the nearby noise-sensitive receptors.

Methodology

10.2 Construction noise was assessed in accordance with the guidance contained within British Standard 5228-1:2009+A1:2014 with operational noise assessed in accordance with ETSU-R-97 and the Institute of Acoustics Good Practice Guide.

Baseline

10.3 Baseline noise monitoring was undertaken at eleven nearby noise-sensitive receptors over a period of 6-weeks to establish the prevailing noise climate in the area. The monitoring was undertaken in accordance with the Good Practice Guide with the results analysed in order to derive day and night-time noise limits in accordance with ETSU-R-97.

Mitigation

10.4 The following measures have been adopted as part of the Proposed Development to mitigate potential impacts on noise:

- The adoption of Best Practicable Means for construction activities to minimise noise as far as practicable.

Likely significant effects

10.5 Taking into account the mitigation measures described above, the following significant effects are likely to occur with respect to noise:

- The predicted noise levels from all assumed construction plant and activities are shown to be comfortably below the adopted criterion of 70dB LAeq and therefore effects would be temporary and not significant; and
- The predicted operational noise levels from the Proposed Development are shown to be … the adopted criterion and therefore effects would be permanent and ….

10.6 The following significant cumulative effects are likely to occur with respect to noise:

- The predicted cumulative noise levels from the Proposed Development and the consented nearby windfarm developments are shown to be … the adopted criterion and therefore effects would be permanent and ….

11 AIR QUALITY

Introduction

11.1 This chapter considers the potential impacts on air quality during the construction, operation and maintenance and decommissioning phase of the Proposed Development. The assessment considered the potential impacts on human health, dust soiling and ecological receptors arising during construction and decommission.

Methodology

11.2 The impact of dust generated by construction and demolition activities was identified through desk-based analysis.

Baseline

11.3 The baseline conditions for this report have been characterised by drawing on information from Defra Maps (Defra, 2021)

Mitigation

11.4 The following measures have been adopted as part of the Proposed Development to mitigate potential impacts on air quality:

- A Dust Management Plan (DMP) would be developed and would include measures to reduce temporary disturbance to residential properties, recreational users and existing land users. This will include dust control measures based on the guidance provided by the Institute of Air Quality Management.

Likely significant effects

11.5 The main effect of any dust emissions during the construction phase, if not mitigated, could be annoyance due to soiling of surfaces, particularly windows, cars and laundry and the effects on human health from suspended particulate matter. However, it is normally possible, by implementation of proper control, to ensure that dust deposition does not give rise to significant adverse effects, although short-term events may occur (for example, due to technical failure or exceptional weather conditions). With the implementation of recommended mitigation measures, the residual effect is considered not significant.

11.6 The likely effects once the development is operational are considered not significant.

11.7 Taking into account the mitigation measures described above, no significant effects are likely to occur with respect to air quality:

11.8 No significant cumulative effects are likely to occur with respect to air quality:

11.9 With respect to air quality, no transboundary effects are likely to occur during construction, operation and maintenance and decommissioning of the Proposed Development on the interests of European Economic Area states.

12 SHADOW FLICKER

Introduction

12.1 This chapter considers the potential impacts on shadow flicker during the construction, operation and maintenance, and decommissioning phase of the Proposed Development.

Methodology

12.2 Relevant guidance pertaining to shadow flicker had informed the assessment methodology. A desk-based study had been conducted to determine the impact upon residential dwellings.

Baseline

12.3 Residential dwellings exist within 10 rotor diameters of the Proposed Development. The adjacent existing Mynydd Portef wind farm is considered not to have any existing impacts upon residential dwellings.

Mitigation

12.4 The following measures have been adopted as part of the Proposed Development to mitigate potential impacts on shadow flicker:

- A shutdown scheme will be implemented for dwelling receptors experiencing shadow flicker effects for more than 30 minutes on any given day and/or 30 hours per year.

Likely significant effects

12.5 Taking into account the mitigation measures described above, the following significant effects are likely to occur with respect to shadow flicker:

12.6 No significant effects are likely to occur with the implementation of the mitigation measure.

12.7 No significant cumulative effects are likely to occur with respect to shadow flicker.

12.8 With respect to shadow flicker, no transboundary effects are likely to occur during construction, operation and maintenance, and decommissioning of the Proposed Development in the interests of European Economic Area states

13 AVIATION AND TELECOMMUNICATIONS

Introduction

13.1 This chapter considers the potential impacts on Aviation and Telecommunications during the construction, operation and maintenance, and decommissioning phase of the Proposed Development.

Methodology

13.2 Relevant guidance pertaining to Aviation and Telecommunications had informed the assessment methodology. The Ofcom Spectrum Information Portal and consultation with telecommunication link operators had informed the baseline conditions to consider during the assessment. A desk-based study had been conducted to determine the impact upon aviation activity.

Baseline

13.3 The Proposed Development is within line-of-sight to the Bristol Airport and Cardiff Airport Primary Surveillance Radar.

13.4 The Proposed Development is within the vicinity of telecommunication link infrastructure pertaining to Arqiva.

Mitigation

13.5 The following measures have been adopted as part of the Proposed Development to mitigate potential impacts on Aviation and Telecommunications:

- Consultation with Bristol Airport and Cardiff Airport will be undertaken to confirm their position on the Proposed Development. Although a technical impact is considered possible due to being visible to the radar, the impact may be accommodated for, as it may not cause an operational impact.
- The details of the telecommunication infrastructure provided by Arqiva have been used to model exclusion zones to avoid causing impact.

Likely significant effects

13.6 Taking into account the mitigation measures described above, no significant effects are likely to occur with respect to Aviation and Telecommunications.

13.7 With respect to Aviation and Telecommunications, no transboundary effects are likely to occur during construction, operation and maintenance and decommissioning of the Proposed Development on the interests of European Economic Area states.

14 SOCIOECONOMICS, TOURISM AND RECREATION

Introduction

14.1 This chapter considers the potential impacts on socioeconomics, tourism and recreation during the construction, operation and maintenance and decommissioning phase of the Proposed Development. The assessment considered the potential impacts on unemployment, economic output, the visitor economy, temporary worker accommodation, commuting patterns and access to recreation.

Methodology

14.2 There is no specific guidance available which establishes a methodology for undertaking an Environmental Impact Assessment (EIA) of the socio-economic effects of a project. Accordingly, the approach adopted for this assessment is based on professional experience and best practice, and in consideration of the policy requirements/tests set out within the National Planning Policy Framework (NPPF) National Planning Statement's (NPS), Draft NPS and local planning policy. The approach is in line with methodologies used by others, that have withstood public inquiry/DCO examination.

14.3 The assessment of effects has been informed by desktop-based analysis of social and economic data for the study area. This has been used to assess the sensitivity, magnitude and significance of effects on multiple socioeconomic, tourism and recreation receptors in relation to specific project design parameters.

Baseline

14.4 Employment in the construction sector within the study area accounts for 5.4% of employees, slightly higher than observed in Wales (5.1%). The share of employees employed within the Manufacturing sector (10.7%) is in line with the Welsh average.

14.5 The study area has a lower proportion of individuals with a RQF3 qualification or higher (62.3%) than observed in Wales (64.6%). There is also a high level of education deprivation within Bridgend identified within the Welsh Index of Multiple Deprivation.

14.6 In terms of unemployment, rates have fluctuated considerably in the study area over the last ten years. Typically, the study area had a higher rate of unemployment than observed both regionally and nationally between 2015-2024.

Likely significant effects

14.7 Taking into account the mitigation measures described above, significant effects with respect to socioeconomics, tourism and recreation are only likely to occur in relation to economic output, during all phases.

14.8 No significant cumulative effects are likely to occur with respect to socioeconomics, tourism and recreation.

14.9 With respect to socioeconomics, tourism and recreation, no transboundary effects are likely to occur during construction, operation and maintenance and decommissioning of the Proposed Development on the interests of European Economic Area states.

15 GEOLOGY/HYDROGEOLOGY

15.1 The SGS EIA assessment is developed for an 11No Turbine scheme, on high ground at Mynydd y Gaer. The EIA looks at the potential impacts to geology, hydrology and hydrogeology as a result of the proposals. The EIA concentrates on the impact of turbine foundations, access roads and borrow pits.

15.2 The area has a history of Coal Mining activity, which has been assess in a previous Coal Mining Risk assessment, with data obtained from the Mining Remediation Authority (formerly the Coal Authority), and geological map data. The shallowest coal seam is considered to be at 55m depth, with no mine entries in the scheme area.

15.3 A walkover survey and Phase 1 survey, have noted a peat mantled topography, over glacial till. There were no visual signs of land instability. The EIA finds that ground investigation will be required prior to the construction phase, to understand specific ground models for the scheme features.

16 LAND AND SOILS

Introduction

16.1 This chapter considers the potential impacts on land use and soils during the construction, operation and maintenance and decommissioning phase of the Proposed Development. The assessment considered the potential impacts on agricultural land quality, land holdings and soils, including areas of peat. The potential impacts of the Proposed Development with respect to public access, including Public Rights of Way (PRoW) and other recreational resources are considered in section 14 of this NTS.

Methodology

16.2 Agricultural land use was identified through a combination of desk-based analysis and site-specific surveys. Desk based analysis of existing studies and datasets were used to identify the quality of agricultural land, the types and patterns of soils and farm holdings within the Proposed Development site. In addition, peat probing surveys were also undertaken in 2024 to identify areas of peat within the Proposed Development site.

Baseline

16.3 The desk based analysis determined that the Proposed Development site predominantly comprised Agricultural Land Classification (ALC) Grade 4 (poor quality) and Grade 3b (moderate quality) land. None of the land within the Proposed Development site was identified as best most and versatile land (i.e. land that is the most flexible, productive, and efficient, making them ideal for future crops, including food, biomass, fibres, and pharmaceuticals). The peat probing surveys identified limited areas of deep peat within the Proposed Development site.

16.4 The Proposed Development site comprises common land, of which 21.2 hectares (ha) will be impacted by seven of the 11 wind turbines and associated infrastructure. Much of the common land is grazed by livestock. The remaining three wind turbines are situated on land belonging to three local farms, with two additional landowners affected the proposed access tracks. All the farms affected are used for grassland-based livestock farming.

Mitigation

16.5 The following measures have been adopted as part of the Proposed Development to mitigate potential impacts on land use and soils:

- A Construction Environmental Management Plan (CEMP) will be developed in general accordance with the Outline CEMP, which will be submitted with the DNS application. The CEMP will include measures to maintain access and limit disruption to the affected area of common land and farm holdings during construction of the Proposed Development.
- A Soil Management Plan will be developed in general accordance with the Outline Soil Management Plan, which will be submitted with the DNS application. The Soil Management Plan will include measures to maintain the quality of affected agricultural soils and peat and reinstate land (as near as possible) to its former condition post construction.
- In accordance with the requirements of The Commons Act 2006, the Applicant has committed to provision of replacement common land to compensate for the permanent loss of common land associated with construction of the Proposed Development.

Likely significant effects

Considering the mitigation measures described above, no significant effects are likely to occur with respect to land use and soils during construction, operation and maintenance and decommissioning of the Proposed Development. In addition, no significant cumulative effects are likely to occur with respect to land use and soils.