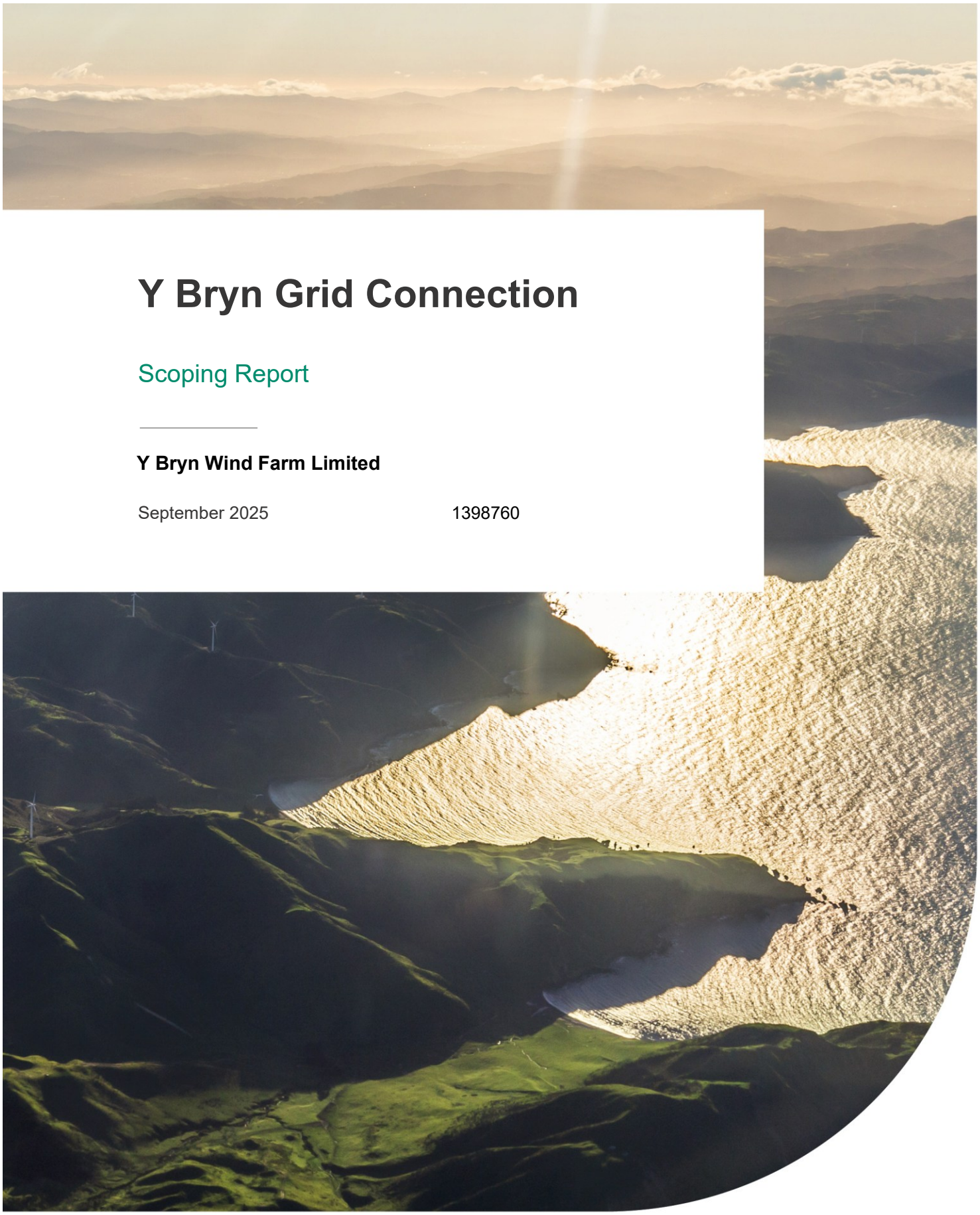


Y Bryn Grid Connection

Scoping Report

Y Bryn Wind Farm Limited

September 2025 1398760

OUR VISION

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Glossary

Term	Definition
Applicant	Y Bryn Wind Farm Limited, a project company wholly owned by development partners ESB and Coriolis Energy.
Application	The Infrastructure Consent (IC) for a significant infrastructure project (SIP) or Development of National Significance (DNS) application for the Proposed Development*. *It is currently assumed that the Proposed Development will be considered a SIP under the Infrastructure (Wales) Act 2024.
Environmental Impact Assessment (EIA)	EIA is a means of carrying out, in a systematic way, an assessment of the likely significant environmental effects from a development.
Environmental Statement	A document reporting the findings of the EIA and produced in accordance with the EIA Regulations.
EIA Regulations	The Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017.
Proposed Development	Y Bryn Grid Connection comprising an electricity line, transformer yard and associated infrastructure.
Proposed Development area	The area within which the Proposed Development will be located.
Scoping area	Land within the Scoping boundary.
Scoping boundary	The full extent of the land available for, and being investigated for, potential development.

List of Abbreviations

Term	Definition
AADT	Annual Average Daily Traffic
AEP	Annual Exceedance Probability
AIL	Abnormal Indivisible Load
AIS	Air Insulated Substation
AOD	Above Ordnance Datum
AQMA	Air Quality Management Area
ASNW	Ancient Semin Natural Woodland
AWI	Ancient Woodland Inventory
AWSU	Ancient Woodland of Unknown Category
BPA	Borrow Pit Assessment
BCBC	Bridgend County Borough Council
BGS	British Geological Survey
BPM	Best Practicable Means
CCC	Climate Change Committee
CCRA	Climate Change Resilience and Adaptation
CCS	Carbon Capture and Storage
CEMP	Construction Environment Management Plan
CIfA	Chartered Institute for Archaeologists
CIRIA	Construction Industry Research and Information Association
CMRA	Coal Mining Risk Assessment
CoPA	Control of Pollution Act
CRTN	Calculation of Road Traffic Noise
CTMP	Construction Traffic Management Plan
DAS	Design and Access Statement
dB	Decibel
DESNZ	Department for Energy Security and Net Zero
DfT	Department for Transport
DHA	Designated Historic Asset
DEMP	Decommissioning Environmental Management Plan
DMRB	Design Manual for Roads and Bridges
DNS	Development of National Significance
DWPA	Drinking Water Protected Areas

Term	Definition
EAF	Electric Arc Furnace
EPD	Environmental Performance Declarations
EIA	Environmental Impact Assessment
ELF	Extremely Low Frequency
EMF	Electric and Magnetic Field
EPA	Environmental Protection Act
ES	Environmental Statement
FCA	Flood Consequence Assessment
FEED	Front End Engineering Design
FEH	Flood Estimation Handbook
FRP	Forest Resource Plan
FSC	Forest Stewardship Council
GCR	Geological Conservation Review
GHG	Greenhouse Gas
GIS	Geographic Information System
GIS	Gas Insulated Substation
GPP	Guidance for Pollution Prevention
GSP	Grid Supply Point
GWDTE	Groundwater Dependent Terrestrial Ecosystem
GWP	Global Warming Potential
HDV	Heavy Duty Vehicle
HEDBA	Historic Environment Desk Based Assessment
HER	Historic Environment Record
HEWA	Historic Environment (Wales) Act
HGV	Heavy Goods Vehicle
HLCA	Historic Landscape Character Area
HMP	Habitat Management Plan
Hz	Hertz
IAQM	Institute of Air Quality Management
ICCI	In-Combination Climate Change Impacts
IC	Infrastructure Consent
ICE	Inventory of Carbon and Energy
ICE	Internal Combustion Engine
IEMA	Institute of Environmental Management

Term	Definition
IHBC	Institute of Historic Building Conservation
IPCC	Intergovernmental Panel on Climate Change
ISEP	Institute of Sustainability and Environmental Professionals
km	kilometre
kV	kilovolt
LAQM	Local Air Quality Management
LB	Listed Building
LCA	Landscape Character Areas
LDP	Local Development Plan
LQAS	Land Quality Advisory Service
LSE	Likely Significant Effect
LSHI	Landscape of Special Historic Interest
LVIA	Landscape and Visual Impact Assessment
m	metres
MCDHW	Manual of Contract Documents for Highway Works
MW	Megawatt
NGET	National Grid Electricity Transmission
NGR	National Grid Reference
NPAP	National Peatland Action Programme
NPS	National Policy Statement
NPTCBC	Neath Port Talbot County Borough Council
NPTLLA	Neath Port Talbot LANDMAP Landscape Assessment
NPTVS	Neath Port Talbot Visual Sensory
NRW	Natural Resources Wales
NSIP	Nationally Significant Infrastructure Project
NTS	Non-Technical Summary
OHL	Overhead Line
OEMP	Operational Environmental Management Plan
OS	Ordnance Survey
PAC	Pre-Application Consultation
PAG	Procedure and Advice Guidance
PAWS	Plantation on Ancient Woodland Site

Term	Definition
PEDPAS	Planning and Energy Policy, Design & Access Statement
PEDW	Planning and Environment Decision Wales
PEFC	Programme for the Endorsement of Forest Certification
PLHRA	Peat Landslide Hazard Risk Assessment
PMP	Peat Management Plan
PPG	Pollution Prevention Guidelines
PPW	Planning Policy Wales
PRoW	Public Right of Way
PWS	Private Water Supplies
PWSA	Private Water Supplies Assessment
RAWS	Restored Ancient Woodland Site
RCIS	Royal Institute of Chartered Surveyors
RCP	Representative Concentration Pathway
RHL	Registered Historic Landscape
RHPG	Registered Historic Parks and Garden
RVAA	Residential Visual Amenity Assessment
SAB	Sustainable Drainage (SuDS) Approving Body
SAC	Special Area of Conservation
SCA	Seascape Character Area
SEPA	Scottish Environment Protection Agency
SIP	Significant Infrastructure Project
SLA	Special Landscape Area
SM	Scheduled Monument
SMP	Soil Management Plan
SP	Strategic Policy
SPG	Supplementary Planning Guidance
SPZ	Source Protection Zone
SR	Scoping Report
SSSI	Site of Special Scientific Interest
STGO	Special Types General Order
SuDS	Sustainable Drainage System
SWPM	Site Waste Management Plan

Term	Definition
TAN	Technical Advice Note
TIA	Traffic Impact Assessment
TWA	Transport and Works Ac
UGC	Underground Cable
UKCEH	UK Centre for Ecology & Hydrology
UKFS	UK Forestry Standard
UN	United Nations
WCA	Watercourse Crossing Assessment
WelTAG	Welsh Transport Appraisal Guidance
WFD	Water Framework Directive
WMP	Water Management Plan
WT	Woodland Trust
ZTV	Zone of Theoretical Visibility

1. Introduction

1.1 Background and Context

1.1.1 This Scoping Report (SR) has been prepared by Natural Power Consultants Limited (Natural Power) and their specialist consultants on behalf of Y Bryn Wind Farm Limited ('the Applicant') in anticipation of an Application for a proposed grid connection, being for the currently proposed Y Bryn Wind Farm Development of National Significance (DNS)[1]. The Proposed Development is anticipated to comprise 132 kilovolt (kV) cable (up to approximately 4 kilometre (km) in length)), a 132 / 275 kV transformer yard, a short section of 275 kV cable, and associated infrastructure (hereinafter the Proposed Development).

1.1.2 The 132 kV cabling will be a mix of underground cabling (UGC) initially within Natural Resources Wales (NRW) forestry until reaching open farmland. Thereafter the UGC will switch to an overhead line (OHL), likely double wooden poles, until reaching adjacent to the existing dual 132/275 kV tower north of the motorway, wherefrom at least two steel towers will be required to carry the cable over the M4 motorway and A48. Once landed below the motorway, the final route and methods to reaching a connection bay at the planned-to-be-upgraded Margam Grid Supply Point (GSP) are still to be determined as part of the EIA and design process. It is noted that the Margram GSP is currently subject to redevelopment as a Gas Insulated Substation (GIS) by National Grid Electricity Transmission (NGET), as part of delivering the Port Talbot steelworks electric arc furnace (EAF) project by 2027.

1.1.3 The Proposed Development is currently assumed as likely to be determined as a Significant Infrastructure Project (SIP) under the Infrastructure (Wales) Act 2024[2].

1.1.4 The Proposed Development is located in south-Wales and wholly within the jurisdiction of Neath Port Talbot County Borough Council (NPTCBC). The Applicant is proposing the grid connection from the proposed Y Bryn Wind Farm on-site substation to the upgraded Margam GIS, located south-west of the proposed wind farm within Neath Port Talbot Local Planning Authority area. See Figure 1.1: Location Plan for the current proposed grid connection corridor.

1.1.5 The grid connection corridor should be considered preliminary as it will evolve in response to site survey information to be gathered in relation to environmental and technical constraints, stakeholder feedback to this SR, and other consultations and responses gathered through public engagement.

1.1.6 Construction access for the section of the grid connection route from the wind farm substation to the new steel tower on the edge of the open farmland north of the motorway will be via the southern block of Y Bryn Wind Farm DNS site (see Y Bryn Wind Farm Environmental Statement Volume 1 Chapter 11: Traffic and Transport and associated Figure 11.1: Construction Traffic Highway Links within Volume 2). Access for the section of

[1] Available at: https://planningcasework.service.gov.wales/case/CAS-01294-W3D7Y5 [Accessed 05/09/2025]

[2] Available at: https://www.legislation.gov.uk/asc/2024/3/contents [Accessed 05/09/2025]

the grid connection south of the M4 motorway will depend on the final locations of electricity cabling and the transformer yard, but is expected to come from Junction 38 off the M4 and via the A48, potentially utilising one or more of Cefn Gwrgan Road (leading to the private road into Margam Substation), the A4241 (Harbour Way), and/or the road leading into 'Margam Energy Park' (two existing operational biomass plants, and proposed green hydrogen and data centre). The final application boundary will be refined as the development evolves. This SR outlines the approach for assessing construction traffic access in the Environmental Statement (ES), including defining appropriate study area, survey requirements, and assessment methodology.

1.1.7 The EIA Regulations set out the types of development which must be subject to an EIA (Schedule 1 developments), and those which may be subject to an EIA, depending on certain thresholds and criteria (Schedule 2 developments). The type and scale of the Proposed Development mean that, under the EIA Regulations, it is likely to be a development that exceeds the applicable thresholds for the following descriptions of "Energy Industry" within Schedule 2:

"*Energy Industry:*

k) Transmission of electrical energy by overhead cables. Development to provide an electric line installed above ground with a nominal voltage of 132 kilovolts.'

1.1.8 Regulation 5(2) of the EIA Regulations requires that if either of the following events are to occur, a development is determined to be a development requiring EIA:

'a) the submission by the applicant or appellant in relation to that development of a statement referred by the applicant or appellant as an environmental statement for purposes of these Regulations; or

b) the adoption by the relevant planning authority of a screening opinion to the effect that the development is EIA development."

1.1.9 The Applicant has notified PEDW of the intention to prepare and submit an ES in support of the Application without prior request for EIA screening direction, under Regulation 31(1) of the EIA Regulations.

1.1.10 On the basis of the above, and in accordance with the EIA Regulations, the Proposed Development is defined as EIA development. As such an EIA is required and an ES will be prepared in accordance with the EIA Regulations.

1.1.11 In line with the EIA Regulations, the request for an EIA Scoping Direction is made for the purposes of section 62D of the Town and Country Planning Act 1990[3]. In accordance with Regulation 33 of the EIA Regulations, those considering making an EIA application may ask PEDW for a scoping direction to state in writing their opinion as to the scope and level of detail of the information to be provided in the ES. This SR has been prepared in accordance with Regulation 33(2) of the EIA Regulations, and PEDW's DNS Procedural

[3] Available at: https://www.legislation.gov.uk/ukpga/1990/8/section/62D [Accessed 05/09/2025]

Guidance (Appendix 2: EIA) (27 February 2025) in absence of equivalent SIP specific guidance.

1.1.12 The current concept of the Proposed Development is a result of recognising a number of site-specific and broader constraints, from data gathered through desk top studies and site visits, as they are understood at the date of writing this SR. The concept of the Proposed Development presented in this SR is expected to be refined to a firmer design during the EIA process, following site surveys and assessment, and through further consultation with consultees and stakeholders.

1.1.13 The SR has been prepared to identify the potential environmental effects of the Proposed Development which require detailed assessment in the EIA that needs to be reported in the ES which will accompany the Application.

1.2 The Applicant

1.2.1 The Proposed Development - Y Bryn Grid Connection - is being developed by Y Bryn Wind Farm Limited, a project company wholly owned by development partners ESB and Coriolis Energy.

1.2.2 ESB is Ireland's premier energy company and is a leading independent power generator in the UK market. ESB has a track record of over 30 years as a successful investor in the UK since commissioning one of the first independent power generating plants at Corby in Northamptonshire in 1994.

1.2.3 ESB owns and operates wind farms across the UK and Ireland with a total installed capacity of 1.2 gigawatts (GW), including the operational Mynydd y Betws Wind Farm (34.5 Megawatt (MW)) in Carmarthenshire.

1.2.4 Coriolis Energy identifies and works on the development of wind farm proposals, and ESB constructs and operates those wind farms.

1.2.5 Coriolis Energy is a specialist independent wind farm development company operating throughout the UK. Its principals have been responsible for successfully developing 15 onshore wind farms in the UK with a capacity of more than 700 MW over three decades.

1.3 Purpose of this Scoping Report

1.3.1 The purpose of this SR is to provide information to PEDW and relevant consultees, and to seek approval that the intended the scope of the EIA will be acceptable It is proposed to begin stakeholder consultation at the scoping stage with baseline conditions for some assessments being presented in the SR along with the possible impacts of the Proposed Development being identified. Where the Applicant is proposing to "scope out" particular elements from the EIA, sufficient information and justification is provided within this SR to allow this judgment to be made.

1.3.2 The intention is to focus the EIA on any receptors that have potential to experience significant effects as a result of the Proposed Development. This SR uses the currently

available information relating to the Proposed Development and the area that it sits within to identify and agree with consultees key areas of assessment, potential significant effects, and the approach to assessing these within the ES. Potential minor and likely non-significant effects are proposed to be scoped out.

1.3.3 The Applicant will ensure that regular and continued liaison with key stakeholders is carried out and documented through the process of agreeing the scope of the EIA. Consultees will note that this SR contains several questions, where feedback is sought. Not all questions will be relevant to all consultees, Therefore, it is requested that consultees provide feedback only on those questions appropriate to them. The questions should not be considered an exhaustive list, and consequently feedback is welcome on any additional issue considered relevant to the EIA for the Proposed Development. If consultees elect not to respond to any relevant questions then the Applicant will assume that consultees are satisfied with the approach adopted.

1.3.4 The scope of the ES will be based on the scoping direction received. Where further evidence justifies a change to this scoping direction, this will be included in the ES.

1.4 Technical Expertise

1.4.1 Details of the technical consultancies who will input into the ES or other standalone reports are as follows:

1. Construction and Design – LSTC;
2. Ecology – Natural Power;
3. Ornithology – Natural Power;
4. Geology, Hydrology and Hydrogeology and Soils – Natural Power;
5. Landscape and Visual– SLR;
6. Cultural Heritage – Pegasus Group;
7. Traffic and Movement– Natural Power;
8. Noise– Hayes McKenzie Partnership Ltd
9. Forestry – Arc Woodlands;
10. Mining Risk Assessment – Natural Power;
11. Electro-Magnetic Frequency Assessment – Pager Power;
12. Climate and Air Quality – Air Quality Consultants Ltd.

2. Approach to EIA

2.1 Introduction

2.1.1 EIA is a statutory procedure which systematically assesses the likely significant environmental effects arising from a Proposed Development. The EIA will be conducted in

accordance with the EIA Regulations[4] and will describe features of the Proposed Development, or measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment. In addition to any mitigation, the ES will also report any proposed enhancement measures. The key principles which will be applied during the EIA include integration, proportionality and efficiency.

2.1.2 The EIA will determine what the effects of the Proposed Development are likely to be by comparing the baseline conditions with the conditions that would prevail should the Proposed Development be constructed, operated, and subsequently decommissioned. The effects of the Proposed Development will be predicted in relation to environmental receptors (e.g. biological, physical, and population and human health).

2.1.3 A distinction will be made in the assessments between impacts and effects, where:

- "*Impacts are defined as the predicted change to the baseline environment attributable to the Proposed Development; and*
- *Effects are the consequence of impacts on environmental resources or receptors, in context of the sensitivity of those environmental resources or receptors.*"

2.1.4 This SR provides consultees with information that will allow them to agree on those receptors and topics that are likely to experience a significant effect, and those that will not and may be "scoped out" of the EIA. In doing so the impact assessment will be focussed on those effects that will influence the determination of the Application.

2.1.5 The EIA process allows for the opportunity to "design out" or avoid significant adverse environmental effects through the design evolution of the Proposed Development. An iterative design approach is already being undertaken for the Proposed Development and will continue to be adopted throughout the EIA process. The iterative design approach allows for a design that works well for both the local environment and wider environmental resources within the area, incorporates consideration of mitigation and enhancement measures, as well as being an economically viable development in order to deliver on Welsh, UK and international renewable energy targets.

2.2 What the EIA will Assess

2.2.1 The EIA Regulations (Regulation 4) specifies that:

"*(2) The EIA must identify, describe and assess in an appropriate manner, in light of each individual case, the direct and indirect significant effects of proposed development on the following -*

(a) population and human health;

(b) biodiversity, with particular attention to species and habitats protected under

[4] Available at: https://www.legislation.gov.uk/uksi/2017/572/regulation/14 [Accessed 05/09/2025]

Council Directive 92/43/EEC and Directive 2009/147/EC[5];

(c) land, soil, water, air and climate; and

(d) material assets, cultural heritage and the landscape; and

(e) the interaction between the factors listed in sub-paragraphs (a) to (d).

(3) The effects referred to in paragraph (2) on the factors set out in that paragraph must include —

(a) the operational effects of the proposed development, where the proposed development will have operational effects; and

(b) the expected effects deriving from the vulnerability of the proposed development to risks of major accidents and disasters that are relevant to that development.

(4) The relevant planning authority or the Welsh Ministers, as the case may be, must ensure that they have, or have access as necessary to, sufficient expertise to examine the environmental statement (ES)."

2.2.2 The EIA will address the construction phase of the Proposed Development, the operational phase (expected to be 50 years), and the decommissioning phase.

2.2.3 This SR will summarise how all the items listed above will be considered in the ES.

2.3 Gathering Baseline Information

2.3.1 Collection of baseline data is ongoing, and the assessment team will ensure that adequate data is obtained to enable a robust assessment, appropriate to the nature and scale of the Proposed Development.

2.3.2 The extent of the baseline assessment will be determined using both professional judgement and industry best practice. The EIA will identify areas where the baseline may change prior to the construction phase and during the expected 50 year operational phase of the Proposed Development from current conditions (for example, commercial planting and felling of trees, or through climate change, or other trends such as road traffic).

2.3.3 The baseline data consists of desk study assessments, consultation, field survey and monitoring which will be clearly reported in the ES (should there be an expected significant effect from the Proposed Development). The ES will also report any assumptions made and limitations encountered in compiling environmental baseline conditions, such as not being granted permission to access areas where surveys were required, or adverse weather conditions.

2.4 Assessment of Impacts and Evaluation of Effects

2.4.1 The assessment of impacts examines the change to the baseline environment that could result from the construction, operation and decommissioning of the Proposed Development.

Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, which ensures domestic implementation of the Habitats Directive continues. Available at The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 [Accessed 12/09/2025]

To guide the evaluation of effects, the effects will be classified into one or more of the following effects listed in Table 2.1.

Table 2.1: Classificiation of Effects

Type of Effect	Description
Positive Effects	Effects that have a beneficial influence.
Negative Effects	Effects that have an adverse influence.
Temporary Effects	Effects that persist for a limited period, often due to activities like construction.
Permanent Effects	Effects that result from an irreversible change to the baseline environment.
Direct/Primary Effects	Effects that arise directly from activities that are part of the Proposed Development.
Indirect Effects	Effects that arise from activities not explicitly part of the Proposed Development.
Secondary Effects	Effects that result from an initial effect of the Proposed Development.
Cumulative Effects	Effects that arise from the combination of different impacts at a specific location or the recurrence of similar impacts at different locations.
Synergistic Effects	Effects when multiple individual impact factors combine to have a greater effect than the sum of the individual effects.

2.4.2 The assessment will consider the necessary infrastructure replacement and maintenance requirements for the Proposed Development within the relevant chapters.

2.4.3 In determining the significance of effects, most environmental topics correlate the "magnitude of impact" arising from the Proposed Development against the "sensitivity" of the particular environmental attribute under consideration, following the general methodology described in the following paragraphs. Of the topics described in this SR, noise is the exception to this method. Each topic section contains a full description of the methodology undertaken for that particular assessment.

2.4.4 Where applicable in carrying out individual assessments, a scale of increasing sensitivity of the resource or receptor will be defined. This may be defined in terms of quality, value, rarity, or importance.

2.4.5 A magnitude of impact scale will also be defined in each technical assessment. There is not a single uniform scale across all disciplines, and the methodology would be defined in each technical assessment.

2.4.6 The correlation of sensitivity against magnitude will determine a qualitative expression for the significance of the effect. For many environmental aspects, significance can be determined by using a matrix and will be defined in each technical discipline.

2.4.7 There is no statutory definition of what constitutes a significant effect. A significant effect may be broadly defined as an effect which, either in isolation or combination with others, may be considered material in the decision-making process.

2.4.8 Effects deemed to be significant for the purpose of assessment are generally those which are described as 'Major' and 'Moderate/Major'. However, other factors may have to be considered including the duration and the reversibility of the effect. In these cases, 'Moderate' effects may also be deemed as significant. Whether they do so shall be determined by a qualitative analysis of the specific impact to the environment and will be based on professional judgement. If/where this is the case, the basis for any judgement will be outlined through organised reasoning and supportive evidence. Where applicable, professional judgement will be applied, with justification on how significance has been determined detailed within each technical assessment of the ES, as appropriate. The threshold of significance for predicted effects differs between environmental topics and is detailed in the sections of this SR relating to each assessment topic.

2.5 Mitigation of Environmental Effects

2.5.1 Regarding mitigation of environmental effects, Paragraph 7 of Schedule 4 of the EIA Regulations notes that the ES should include: "*A description of the measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment and, where appropriate, of any proposed monitoring arrangements (for example the preparation of a post-project analysis). That description should explain the extent to which significant adverse effects on the environment are avoided, prevented, reduced or offset, and should cover both the construction and operational phases.*" These measures are termed mitigation.

2.5.2 A hierarchical approach is taken to the mitigation of environmental effects during the EIA process (Institute of Environmental Management (IEMA), 2024[6]) (IEMA now known as Institute of Sustainability and Environmental Professionals (ISEP) as of July 2025). This hierarchy consists of:

- "***Avoid:*** *Identify and avoid potential environmental and social impacts from the outset through considering carefully, for example, the project need, scale, design, location and duration;*
- ***Prevent:*** *Where impacts from a proposal still pose risk of significant adverse effects to receptor, seek to prevent those effects from occurring by taking action/s to either remove the impact at source or intervene in its pathway to prevent it affecting the receptor;*

[6] ISEP (formerly IEMA). *Impact Assessment Guidelines: Implementing the Mitigation Hierarchy from Concept to Construction,*. Available at: https://www.iema.net/media/oone2qce/iema-mitigation-in-eia-guidance-final.pdf [Accessed 15/09/2025]

- ***Reduce:*** *If further avoidance and/or prevention are not possible for any remaining aspects, all remaining impacts must be mitigated with guidance from a competent expert with the aim of minimising adverse effects. Mitigation can take many forms and should be specific to the project conditions and context, whilst drawing on good practice and guidance. Mitigation should be reliable, achievable and secured by condition, requirement or legal agreement; and*
- ***Offset:*** *Lastly, any remaining unmitigated or residual impacts should be offset and compensated for."*

2.5.3 Diagram 2.5.1 summarises the EIA mitigation hierarchy (ISEP 2024). This approach will be adopted as part of the EIA process for the Proposed Development. The hierarchy of mitigation is also in line with the step wise approach in Planning Policy Wales (PPW) Edition12 (Figure 12)[7].

Diagram 2.5.1: Summary of the EIA mitigation hierarchy approach



Source (IEMA, 2024)

[7] Page 148 Planning Policy Wales - Edition 12 [Accessed 15/09/2025]

2.5.4 In terms of the EIA Regulations, mitigation can be defined as the measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment. Typically, mitigation measures will be considered for each likely significantly adverse effect, although mitigation measures may be adopted even if a significant adverse effect hasn't been identified. The ES will include a description of the measures envisaged mainly to prevent, reduce and, where possible, remedy any significant adverse effects.

2.5.5 Mitigation will be discussed in two ways:

- Embedded mitigation: mitigation which is an integral part of the design or design evolution, and/or mitigation which is imposed through current regulations and/or standard best practice. These have a high degree of confidence in their successful implementation and effectiveness. Such measures will be described within the ES but considered prior to assessment of the likely effects of the Proposed Development. Examples of embedded mitigation in terms of design includes choice for location, size and nature of infrastructure in relation to landscape and visual impacts, and the use of Sustainable Drainage Systems (SuDS). An example in terms of standard best practice and/or employment of mitigation in accordance with current regulations include a site-specific Construction Environment Management Plan (CEMP).
- Additional mitigation: mitigation measures to be applied for effects that are unavoidable through design, or unavoidable via applying standard best practice and/or imposed through current regulations. Additional mitigation measures may be necessary to avoid, prevent or reduce and, if possible, offset potentially significant adverse effects, and are considered prior to undertaking an evaluation of the likely significance of the residual effects. As such, the residual effect takes into account the additional mitigation applied. Examples of additional mitigation are a Conservation Management Plan, Habitat Management Plan (HMP) or Access Management Plan.

2.5.6 In addition, any significant positive effects arising from enhancement measures will be identified. These positive effects could be as a result of:

- Direct mitigating impacts arising from the Proposed Development; or
- Enhancement measures that are incorporated into the Proposed Development – but not as a direct result of mitigation for significant effects.

2.5.7 In line with the EIA Regulations, when identifying mitigation measures, the author should take into account the practicability and cost effectiveness of the proposal and their efficiency in reducing environmental impacts. Where practical, mitigation measures will be set out as commitments which will ensure they are implemented. Where the effects of the impact are significant, and where there is uncertainty in the mitigation proposed, monitoring may be proposed to ensure that the mitigation is both required and effective. Monitoring will allow for adaptation of the mitigation measures to ensure that they are fit for purpose and will be proportionate to the level of significance experienced.

2.6 Securing Commitments and Mitigation through Conditions

2.6.1 Commitments to deliver mitigation proposed within the ES will be secured if the Proposed Development receives consent through the use of appropriate planning conditions.

2.7 Cumulative Effects

2.7.1 The EIA Regulations require that, in assessing the effects of a particular development proposal, consideration is also given to the cumulative effects which might arise from the proposal in conjunction with other existing and/or approved development proposals in the vicinity.

2.7.2 The assessment of cumulative effects will take into account guidance set out in the UK Government's "*Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment*" guidance[8] which, although produced for Nationally Significant Infrastructure Projects (NSIPs), is used widely across the UK as best practice guidance for assessing cumulative effects.

2.7.3 The following two types of cumulative assessment will be considered within the EIA:

- Cumulative: The effects when the impacts of a project are worsened or exacerbated by the presence of other reasonably foreseeable projects, whether in construction, consented, or yet to be built.
- Synergistic: the effects occurring when a single receptor (e.g., a local resident, a sensitive area) is affected by multiple types of impacts arising from different aspects of the same project.

2.7.4 A planning application search will be conducted in the first instance using relevant planning portals to identify developments that are under-construction, consented, submitted or in scoping (for the latter to be included, they must have a layout in the public domain, and have submitted a request for a scoping direction or opinion), and that meet the following criteria:

- Within 2 km of the Project;
- Considered an EIA development;
- Considered to be a major development (subject to IC, Transport and Works Act (TWA), DNS or Hybrid Bill);
- Over 50 units for residential development; and
- Over 2,500 m^2 for commercial development.

2.7.5 Once the list of schemes is established based on the above criteria, this will be refined to come up with a shortlist based on the following criteria:

- The cumulative development has a construction and/or operational phase which has the potential to coincide with the Proposed Development;

[8] Available at: https://www.gov.uk/guidance/nationally-significant-infrastructure-projects-advice-on-cumulative-effects-assessment [Accessed 05/09/2025]

- The cumulative development shares common sensitive receptors/resources which are assessed and described in the supporting environmental documentation, and have the potential to be significantly affected by the combination of the consented, submitted or in scoping development and the Proposed Development; and
- The cumulative development has sufficient environmental assessment information freely and publicly available to inform a cumulative effects assessment.

2.7.6 Any developments that are operational or expected to be completed and operational prior to construction of the Proposed Development will be considered as part of the baseline underpinning the assessment.

2.7.7 Any developments identified as having been refused planning permission will not be considered as cumulative developments. Any refusal that is subject to appeal procedures and not yet determined would however be included.

2.7.8 It should be noted that the list of schemes identified as having the potential to give rise to significant cumulative effects may differ between environmental topics. Not all of the developments would necessarily have cumulative effects in respect of any particular environmental topic and therefore each technical assessment will provide a full justification for the list of schemes considered in their respective assessments.

2.7.9 As the cumulative baseline is constantly evolving, the schedule of cumulative schemes to be included in the assessment will be finalised following consultation with the relevant consultees but likely at least one month prior to submission.

2.7.10 Cumulative effects will be assessed and reported on as a section within each technical chapter of the ES. The same approach is taken for the technical sections within this SR.

2.8 Environmental Statement (ES) and accompanying documentation

2.8.1 The application will be accompanied by an ES. The EIA Regulations (Regulation 17(3)) specify that:

"*An environmental statement is a statement which includes at least —*

(a) description of the proposed development comprising information on the site, design, size and other relevant features of the development;

(b) a description of the likely significant effects of the proposed development on the environment;

(c) a description of any features of the proposed development, or measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment;

(d) a description of the reasonable alternatives studied by the applicant or appellant, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the significant effects of the development on the environment;

(e) a non-technical summary (NTS) of the information referred to in sub-paragraphs (a) to (d); and

(f) any additional information specified in Schedule 4 relevant to the specific characteristics of the particular development or type of development and to the environmental features likely to be significantly affected."

2.8.2 The ES is likely to follow the structure below:

- Volume 1: Main Report/Written Statement;
  - Chapter 1: Introduction and Approach to EIA;
  - Chapter 2: Proposed Development;
  - Chapter 3: Design Evolution and Alternatives;
  - Chapter 4: Ecology;
  - Chapter 5: Ornithology;
  - Chapter 6: Geology, Hydrology and Hydrogeology and Soils;
  - Chapter 7: Landscape and Visual Impact Assessment;
  - Chapter 8: Cultural Heritage;
  - Chapter 9: Traffic & Movement;
  - Chapter 10: Noise;
  - Chapter 11: Other Matters;
  - Chapter 12: Schedule of Mitigation and Residual Effects.
- Volume 2: Supporting Figures and Visualisations;
- Volume 3: Appendices; and
- Volume 4: Non-Technical Summary.

Non-Technical Summary (NTS)

2.8.3 A standalone NTS of the findings of the ES will also be produced as required by Part 9 of Schedule 4 of the EIA Regulations. This will detail the main components of the Proposed Development and summarises the main findings of the environmental studies carried out to build and operate the Proposed Development. It is designed to be an easily readable document that will communicate the main elements of the EIA to any interested party without the need for the reader to have specialist background knowledge. It will also contain maps that show the extent and geographical location of the development. The NTS report and the accompanying maps will be bilingual.

Pre-Application Consultation (PAC) Report

2.8.4 The PAC Report will include an account of the statutory consultation undertaken; a summary of all issues raised by any person consulted, including detail of how the issues raised have been addressed; and the particulars of all responses received from persons consulted, including from specialist consultees, and the account taken of these.

Planning and Energy Policy, Design & Access Statement (PEPDAS)

2.8.5 The Planning and Energy Policy, Design & Access Statement will provide a commentary of the EIA findings and assess the Proposed Development accounting for residual effects (both positive and negative) against national policy and legislation, the Development Plan and other material planning considerations relevant to the Proposed Development. The purpose of the Design and Access Statement (DAS) section is to outline the issues, constraints and decision-making processes that have led to the design of the Proposed Development. The DAS section will be a supporting document to the ES and will be written in conjunction with Chapter 3: Design Evolution and Alternatives. The Planning and Energy Policy, Design & Access Statement will be a standalone report accompanying the application.

Green Infrastructure Statement

2.8.6 The Green Infrastructure Statement will describe how the Proposed Development will take a proactive approach to green infrastructure and will demonstrate how the step-wise approach presented in PPW 12 has been complied with. By referring to relevant baseline data and assessments that have been undertaken for the Proposed Development, it will identify how green infrastructure has been incorporated into the proposals. The Green Infrastructure Statement will be in accordance with PPW 12 and the Well-being of Future Generations (Wales) Act 2015.

Question to Consultees

- **Question 2.1:** Do consultees agree with the approach to the EIA and the associated approach that consideration of various standard good practice measures as 'pre-mitigation' is appropriate to mitigation and monitoring?
- **Question 2.2:** Do consultees agree with the proposed chapters of the ES?
- **Question 2.3:** Do consultees agree with proposed approach for cumulative assessment?

3. Consultation

3.1 Community Consultation

3.1.1 Whether the Application ultimately is a SIP or a DNS it will be accompanied by an appropriate Pre-Application Consultation report.

3.1.2 Natural Power and the Applicant believe that public consultation is important throughout the development of a renewable energy project.

3.2 Other Stakeholder Consultation

3.2.1 Consultation carried out by Natural Power and the Applicant with statutory consultees at the time of publishing this SR is summarised below.

Table 3.1: Statutory consultation conducted to date

Consultee	Position	Key topics of discussion
PEDW	Planning Officers	Inception Meeting 24/07/2025 to introduce the Proposed Development
Neath Port Talbot County Borough Council	Senior Planner	Email to introduce the Proposed Development 17/07/2025. Meeting to be arranged.

4. Project Description

4.1 Introduction to the Project Design Process

4.1.1 The Proposed Development has been chosen due to its necessity to connect Y Bryn Wind Farm to the proposed 275kV NGET substation.

i. Components of the Proposed Development are detailed in the below section.

ii. The Scoping boundary can be seen in Figure 1.1.

iii. Constraints to site design that are known at this time can be seen on Figure 2.1: Constraints Plan, within Appendix A of this report.

iv. The FEED (Front End Engineering Design) will follow a structured process from alignments at a desktop level to a finalised design.

v. The alignment will be influenced by and progressed using 2D environmental constraint data, underground/overhead utilities, and 3D topography data.

vi. 2D Alignments will be developed within ArcGIS, incorporating design workshops with inclusion of the wider team for full transparency of decision making. These workshops will be the basis of progressing potential areas of change, considering every discipline.

vii. Following full team comment / change control processes and on-site verification an alignment can be frozen, and the technical design progressed. The layout design will continue to evolve throughout the assessment period.

viii. Technical design may be in the form of cable / substation design and drawings, refined overhead line structure utilisation, and temporary construction areas.

ix. Temporary construction areas will be developed following the alignment freeze, to develop the project Red Line Boundary for the final application.

4.2 Scoping Area Description

4.2.1 The scoping area comprises a corridor between Y Bryn Wind Farm on-site substation and NGET's Margam substation. In the section north of the motorway, the route is expected to broadly follow along existing forestry access tracks and field boundaries, before arriving at a location adjacent to the existing dual 132/275 kV steel tower at the edge of Woodland

Trust Wales' Graig Fawr woodlands. After crossing over the motorway, the corridor widens to provide potential a number of alternative routes towards Margam substation, with potential alternative locations for a necessary transformer yard.

4.3 Components of the Proposed Development

4.3.1 The Proposed Development comprises the following elements:

- Approximately 3-4 km of 132 kV (UGC and OHL) and 275 kV (UGC only) cabling;
- A number of wooden 'H' poles at approximately 100 metres separation;
- Minimum of two steel towers (to cross the motorway);
- A 132/275 kV Air Insulated Substation (AIS) transformer yard;
- Associated temporary construction access tracks and working areas.

4.4 Decommissioning

4.4.1 When the operational life of the Proposed Development ends, it is possible the infrastructure may be re-equipped with new conductors, insulators and refurbished. However, the OHL may also be fully decommissioned.

4.4.2 The activities, plant and programme required to decommission the Proposed Development cannot be defined with any reasonable certainty, which renders any assessment at this stage inconsequential in terms of assigning significance to potential impacts. For clarity, it is assumed that decommissioning works will mirror the construction phase but are likely to have a lower environmental impact. Therefore, decommissioning has been excluded from the technical assessments.

4.4.3 Decommissioning will, however, take account of the environmental legislation and technology available at that point in time, with notice being given to PEDW and the local planning authorities in advance of commencing such works. It is recognised that baseline conditions may have changed as a result of climate change and further assessment of the environmental baseline may be necessary. Decommissioning would be timed to minimise its environmental impact and all necessary licenses or permits would be acquired.

5. Design Evolution and Alternatives

5.1.1 Whilst it is customary, particularly for longer and/or more complex new grid connection or transmission lines for a number of potentially feasible route corridors to be identified and assessed in detail before alighting on a "preferred corridor", in the particular case of the Proposed Development this is not considered to be necessary given:

(i) the short straight-line distance of the route from start to end points, and

(ii) the particular geography and environmental constraints.

5.1.2 Notably, a (longer) route to the south is considered to be precluded by the presence of both extensive ancient woodland and Margam Registered Park & Gardens; whilst a (longer)

route to the north would be required to cross underneath the motorway via Brombil village, entering into the middle of urban Port Talbot, where it is considered not to be practically feasible to bury new transmission lines within metalled roads and roadside paths. Therefore, the corridor represented by the scoping area is essentially the sole feasible, with only relatively small variations of alignments within the corridor, which will be the subject of iterative design and assessments.

6. Legislation and Policy Context

6.1.1 At present, both the currently operating Developments of National Significance (DNS) regime (introduced by the Planning (Wales) Act 2015 and the Developments of National Significance (Wales) Regulations 2016 (as amended)) and the soon to be live Significant Infrastructure Projects (SIPs) regime (introduced by the Infrastructure (Wales) Act 2024) are potentially viable routes for submission of an application for the Proposed Development. Under either route the application will be submitted under Section 62 of the Town and Country Planning Act 1990 to PEDW for determination by the Welsh Ministers. However, since the SIPs regime provides a single "one-stop-shop" Infrastructure Consent (IC), incorporating all secondary consents including compulsory acquisition powers, it is anticipated that the Proposed Development will be submitted as a SIP in early 2026.

6.1.2 This section presents an overview of the legislation and planning policy context for the Proposed Development. A summary of the relevant policies will be included and reviewed in a PEPDAS in support of the Proposed Development. The PEPDAS will consider the extent to which the Proposed Development complies with identified planning policy objectives. The planning and energy related policy and legislation which will be considered are set out below.

Energy Legislation and Policy

6.1.3 The Proposed Development would be assessed against renewable energy policy and emissions reduction legislative framework with reference to relevant international, UK and Welsh Government provisions. The Proposed Development would be considered against a background of UK and Welsh Government energy and climate policy and legislative provisions, as well as national planning policy and advice, as set out below:

6.1.4 International Commitments:

- The Paris Agreement (2016)
- The Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report (2021 & 2022)
- UN Emissions Gap Report (October 2022)
- IPCC Report (March 2023)

6.1.5 UK Climate Change & Energy Legislation & Policy:

- The Climate Change Act 2008 & Carbon Budgets - the UK's climate change and energy legislation and policy framework is built around the Climate Change Act 2008, which establishes legally binding targets for reducing greenhouse gas emissions.
- The UK Energy White Paper (December 2020)
- The UK Net Zero Strategy (October 2021)
- The British Energy Security Strategy (April 2022)
- CCC (Climate Change Committee) Progress Report to Parliament (2025)
- Powering up Britain (March 2023)
- 10-Year Infrastructure Strategy (June 2025)
- DESNZ (Department for Energy Security and Net Zero) Onshore Wind Taskforce Strategy (July 2025)

6.1.6 Wales: Climate Change & Energy Legislation & Policy:

- The Wellbeing of Future Generations (Wales) Act 2015
- The Climate Change (Wales) Regulations 2021
- The Environment (Wales) Act 2016
- Prosperity for All: A Low Carbon Wales (2019)
- Climate Emergency declared in Wales (2019)
- Net Zero Wales, Carbon Budget 2 (2021)
- Renewable Energy in Wales (2022)
- Energy Generation in Wales 2021 (published October 2022)
- Review of Wales' Renewable Energy Targets: Consultation (2023)

Planning Policy Context

6.1.7 In accordance with Section 38(6) of the Planning and Compulsory Purchase Act 2004 Act, the application for the Proposed Development should be determined in accordance with the Development Plan, unless material considerations indicate otherwise. Under Section 38(4) of that Act, the Development Plan in Wales comprises the following:

- The National Development Framework for Wales;
- The Strategic Development Plan (SDP) for any strategic planning area that includes all or part of that area; and
- The Local Development Plan (LDP) for that area.

Future Wales: The National Plan 2040

6.1.8 Future Wales: The National Plan 2040 (Future Wales) was published in February 2021 and is the National Development Framework for Wales setting out the overall context for development planning across the country to 2040. Future Wales seeks to provide a strategy for addressing key national priorities through the planning system, including achieving decarbonisation. As the national development framework, Future Wales is the highest tier of development plan and is focussed on solutions to issues and challenges at a national scale.

6.1.9 Future Wales states that Wales can become a world leader in renewable energy technologies, highlighting its wind resources, support for large scale projects and commitment to ensuring that the planning system provides a strong lead for renewable energy development. Decarbonisation is a key aim of the document, which sets a number of target outcomes including the planning system helping Wales lead the way in promoting and delivering a sustainable decarbonised society.

6.1.10 Of particular note is Policy 17 (Renewable and Low Carbon Energy and Associated Infrastructure). Policy 17 strongly supports the principle of developing renewable and low carbon energy from all technologies, and states that decision makers must give significant weight to the need to meet Wales' international commitments and targets. In particular it states "*new strategic grid infrastructure for the transmission and distribution of energy should be designed to minimise visual impact on nearby communities. The Welsh Government will work with stakeholders, including National Grid and Distribution Network Operators, to transition to a multi-vector grid network and reduce the barriers to the implementation of new grid infrastructure*."

Planning Policy Wales (Edition 12)

6.1.11 Planning Policy Wales (PPW) was published by the Welsh Government in February 2024, providing the key policy principles for the planning system in Wales and is a material consideration in the planning process alongside Future Wales.

6.1.12 Paragraph 5.9.19 is clear that the contribution that a project has towards cutting greenhouse gas emissions and meeting government targets should be considered by the determining authority.

6.1.13 Section 5.7 relates specifically to energy and paragraph 5.7.8 states "*an effective electricity grid network is required to fulfil the Welsh Government's renewable and low carbon ambitions. An integrated approach should be adopted towards planning for energy developments and additional electricity grid network infrastructure*."

6.1.14 Additionally, Paragraph 5.7.9 states that "*the Welsh Government's preferred position on new power lines is that, where possible, they should be laid underground. However, it is recognised that a balanced view must be taken against costs which could render otherwise acceptable projects unviable. Where undergrounding of lines is not possible or applicable, proactive engagement with energy companies and the public to mitigate the visual impact of any potential new transmission lines should take place."*

6.1.15 PPW is supplemented by a series of Technical Advice Notes (TANs), Circulars and policy clarification letters, which together with PPW provide the national planning policy framework for Wales. TANS considered relevant are:

- TAN5: Nature conservation and planning;
- TAN11: Noise;
- TAN12 Design;
- TAN15: Development, Flooding and Coastal Erosion;

- TAN18: Transport; and
- TAN24: The Historic Environment.

Neath Port Talbot County Borough Council Local Development Plan (2011-2026)

6.1.16 The NPTCBC Local Development Plan (LDP) was adopted in January 2016. This document is designed to guide when, where and how much future development will take place in NPTCBC area in the period until 2026. The Council held an 8-week consultation on the Replacement Local Development Plan Preferred Strategy between 12th December 2024 and 6th February 2025. All comments received are being considered and work will now progress on the Deposit Plan.

6.1.17 The key policies relating to the Proposed Development are outlined in the following paragraphs.

6.1.18 The following objectives in the LDP are of relevance to the Proposed Development:

- Overarching Objective 1 '*Minimise the causes and consequences of climate change through reduced greenhouse gas emissions and adapt to climate change through consideration of its effects in the design and location of new development.*'; and
- Area Based Objective 19 '*To make a proportionate contribution towards the energy needs of Wales with a focus on renewable energy*'.

6.1.19 The principal policy of relevance to the Proposed Development is Policy SP1 Climate Change aims to address the causes and consequences of climate change including by making provision for the County Borough's appropriate contribution to renewable and low carbon energy generation. Policy SP4 Infrastructure expects developments to "*make adequate provision for new infrastructure, ensuring that there are no detrimental effects on the area and community.*"

6.1.20 Parts of the site appear to be covered by designations in the LDP including a Special Landscape Area, Green Wedge, safeguarded minerals area, settlement protection zone and within a landscape of historic interest.

6.1.21 In addition to SP1 and SP4, relevant policies within the LDP which have informed the proposed assessment scope include:

- Strategic Policy SP14 The Countryside and the Undeveloped Coast;
- Strategic Policy SP15 Biodiversity and Geodiversity;
- Strategic Policy SP16 Environmental Protection;
- Strategic Policy SP18 Renewable and Low Carbon Energy;
- Strategic Policy SP21 Built Environment and Historic Heritage;
- Policy RE1 Criteria for the Assessment of Renewable and Low Carbon Energy Development;
- Policy EN2 Special Landscape Areas;
- Policy EN3 Green Wedge;
- Policy M1 Development in Mineral Safeguarding Areas;

- Policy SP21 Built Environment and Historic Heritage;
- Policy EN6 Important Biodiversity and Geodiversity Sites;
- Policy EN7 Important Natural Features; and
- Policy EN8 Pollution and Land Stability.

Question to Consultees

- **Question 6.1:** Do consultees agree with the list of relevant policies?

7. Ecology

7.1 Introduction

7.1.1 This section describes the ecological and nature conservation interests present within the Proposed Development Area. This includes any locally, nationally, or internationally designated sites. A high-level description of potential impacts on ecological receptors arising from construction, operation and decommissioning phases of the Proposed Development is provided to determine the requirements for the assessment that will be included within the ES.

This section of the SR is supported by the following figures:

- Figure 7.1: Ecology Survey Areas 2025;
- Figure 7.2: Statutory Sites Designated for Ecological Features; and
- Figure 7.3: Extended Phase1 Survey Results 2025.

7.2 Legislation and Guidance

7.2.1 Legislative, policy and guidance documents with specific relevance to ecology are:

Legislation

- Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (the Habitats Directive)[9];
- Council Directive 2000/60/EC ('Water Framework Directive')[10];
- The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) (the Habitats Regulations), which transposes the Habitats Directive into law in England and Wales[11];

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9 European Commission (1992). Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (2013). Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A31992L0043 [Accessed 15/09/2025]

10 European Commission (2000). Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 Establishing a Framework for Community Action in the Field of Water Policy. Available at: https://eurlex.europa.eu/resource.html?uri=cellar:5c835afb-2ec6-4577-bdf8-756d3d694eeb.0004.02/DOC_1&format=PDF [Accessed 15/09/2025]

11 The Conservation (Natural Habitats, &c.) Regulations (1994). Available at https://www.legislation.gov.uk/uksi/1994/2716/contents/made [Accessed 15/09/2025]

- The Conservation of Habitats and Species Regulations 2017[12];
- Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, which ensures domestic implementation of the Habitats Directive continues from 1 January 2021[13];
- Wildlife and Countryside Act 1981 (as amended)[14];
- The Environment (Wales) Act 2016[15];
- Protection of Badgers Act 1992[16]; and
- Well-being of Future Generations (Wales) Act 2015[17].

Policy

- Planning Policy Wales: Edition 12 (2024)[18];
- Future Wales – the National Plan 2040 (2021)[19];
- Technical Advice Note 5: Nature Conservation and Planning (2009)[20];
- UK Post 2010 UK biodiversity framework[21];
- The Welsh Biodiversity Strategy compromising:
- The Nature Recovery Plan for Wales (2015)[22]; and
- The Nature Recovery Action Plan (NRAP) for Wales 2020-2021[23].

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12 UK Government (2017). The Conservation of Habitats and Species Regulations. Available at: https://www.legislation.gov.uk/uksi/2017/1012 [Accessed 15/09/2025]

13 The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations (2019). Available at: https://www.legislation.gov.uk/ukdsi/2019/9780111176573/regulation/30 [Accessed 15/09/2025]

14 Wildlife and Countryside Act (1981). Available at: https://www.legislation.gov.uk/ukpga/1981/69 [Accessed 15/09/2025]

15 Environment (Wales) Act (2016). Available at: http://www.legislation.gov.uk/anaw/2016/3/ [Accessed 15/09/2025]

16 UK Government (1992). Protection of Badgers Act 1992. Available at: http://www.legislation.gov.uk/ukpga/1992/51/contents [Accessed 15/09/2025]

17 Welsh Government, (ND). *The Well-being of Future Generations.* Available at: https://gov.wales/well-being-of-future-generations-wales [Accessed 15/09/2025]

18 Welsh Government (2024). *Planning Policy Wales. Edition 12.* Available at: https://www.gov.wales/sites/default/files/publications/2024-07/planning-policy-wales-edition-12.pdf [Accessed 15/09/2025]

19 Welsh Government (2021). *Future Wales: the national plan 2040.* Available at: https://www.gov.wales/future-wales-national-plan-2040 [Accessed 15/09/2025]

20 Welsh Assembly Government (2009). *Technical Advice Note. 5: Nature Conservation and Planning.* Available at: https://gov.wales/sites/default/files/publications/2018-09/tan5-nature-conservation.pdf [Accessed 15/09/2025]

21 JNCC and Defra (on behalf of the Four Countries' Biodiversity Group). (2012). *UK Post-2010 Biodiversity Framework. July 2012.* Available at: https://jncc.gov.uk/our-work/uk-post-2010-biodiversity-framework / [Accessed 15/09/2025]

22 Welsh Government (2015). *The Nature Recovery Plan for Wales: Setting the course for 2020 and beyond.* Available at: https://gov.wales/sites/default/files/publications/2019-05/nature-recovery-action-plan-2015.pdf [Accessed 15/09/2025]

23 Welsh Government (2020). *The Nature Recovery Action Plan for Wales (2020-21).* Available at: https://gov.wales/sites/default/files/publications/2020-10/nature-recovery-action-plan-wales-2020-2021.pdf [Accessed 15/09/2025]

- Neath Port Talbot Nature Recovery Action Plan (PNRAP) 2020-2023[24].

Guidance

- Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine[25];
- British Standard 42020:2013 Biodiversity – code of practice for planning and development; and
- Wildlife Sites Guidance Wales: a guide to develop local wildlife systems in Wales[26].

7.3 Existing Conditions

Ecological Survey Area

7.3.1 The survey area comprises the Scoping boundary, surrounding survey-specific buffers, where access is available, and desk study search area buffers up to 10 km. The survey-specific buffers and survey locations are shown on Figures 7.1, and desk study search area buffers are shown alongside statutory designated sites on Figure 7.2. Some areas within the 250 m buffer west of the M4 motorway were not surveyed during the extended phase 1 survey due to no permitted access.

Desk Study

Historic Records

7.3.2 The following organisations will be consulted for relevant information to support the assessment, including records of all protected and/or notable species within 1 km of the Scoping boundary (extended to 10 km for bats) within the last 10 years:

- Biodiversity Information Service (BIS); and
- Natural Resources Wales (NRW).

7.3.3 A review of any relevant contextual data will also be conducted, including relevant ES/EIA Reports and associated technical reports from other proposed, consented and operational developments in the local area.

Designated Sites

7.3.4 A web-based search was undertaken to identify and provide information on statutory and non-statutory designated sites of nature conservation with ecological qualifying features.

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[24] Neath Port Talbot, *Neath Port Talbot Nature Recovery Action Plan 2020-2023.* Available at: https://www.npt.gov.uk/culture-and-tourism/countryside-and-wildlife/wildlife-law-and-advice/biodiversity-duty-plan/biodiversity-duty-plan-2020-2023/ [Accessed 15/09/2025]

[25] Chartered Institute of Ecology and Environmental Management (CIEEM) (2018). *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.3.* Chartered Institute of Ecology and Environmental Management, Winchester.

[26] Wales Biodiversity Partnership. (2008). *Wildlife Sites Guidance Wales: A Guide to Develop Local Wildlife Systems in Wales.* Available at: http://biodiversitywales.org.uk [Accessed 15/09/2025]

The search was carried out using the NRW Designated Sites Search website[27], Multi-Agency Geographic Information for the Countryside (MAGIC) Map application tool[28] and the Geographic Information System tool DataMapWales[29]. The search focussed on identifying the following sites:

- Special Areas of Conservation (SACs) within 10 km of the Scoping boundary;
- Sites of Special Scientific Interest (SSSIs) within 2 km of the Scoping boundary;
- Local and National Nature Reserves (LNRs/NNRs) within 1 km of the Scoping boundary; and
- Local Wildlife Sites (LWSs) and proposed LWSs (pLWS) and Ancient Woodland within 1 km of the Scoping boundary.

7.3.5 Additional records of local sites within 1 km of the Scoping boundary with relevance to ecology will be requested from BIS for inclusion in the ES.

7.3.6 Five statutory sites designated for ecological features including one with multiple designations were identified, within the specified distances (see Paragraph 7.3.4) of the Scoping boundary and have been included in Table 7.1 and Figure 7.2.

7.3.7 29 non-statutory sites designated for Ancient Woodland were identified within the specified distances (see Paragraph 7.3.4) of the Scoping boundary: six Ancient Semi Natural Woodland sites, nine Restored Ancient Woodland sites, ten Plantation on Ancient Woodland Sites and four Ancient Woodland sites of unknown category. These have been included in Table 7.2 and included in Figure 7.2.

7.3.8 There are five Ancient Woodland sites that lie within the Scoping boundary, four of which are part of the Graig Fawr Woodland, the other site being categorised as Restored Ancient Woodland which lies west of the M4.

Table 7.1: Summary of protected sites designated for their ecological interest, within the survey area of the Scoping boundary

Site name	Designation	Approximate distance from the Scoping boundary*	Qualifying ecological features
Margam Moors	SSSI	0.77 km	• Mesotrophic marsh, fen meadow and ditch communities supporting plant and nationally important invertebrates.

[27] NRW Designated Sites Search. Available at: https://naturalresources.wales/guidance-and-advice/environmental-topics/wildlife-and-biodiversity/protected-areas-of-land-and-seas/find-protected-areas-of-land-and-sea/?lang=en [Accessed 15/09/2025]

[28] DEFRA MAGIC Map tool. Available at: https://magic.defra.gov.uk/ [Accessed 15/09/2025]

[29] Welsh Government Data Map tool. Available at: https://datamap.gov.wales/ [Accessed 15/09/2025]

Site name	Designation	Approximate distance from the Scoping boundary*	Qualifying ecological features
Kenfig / Cynffig Kenfig Pools and Dunes	SAC/ SSSI NNR/ LNR	2.6 km	• Fixed dunes with herbaceous vegetation. • Atlantic salt meadows. • Dunes with Salix repens ssp. Argentea. • Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.
Glaswelltiroedd Cefn Cribwr / Cefn Cribwr Grasslands	SAC	6.5 km	• Marsh fritillary butterfly • Molinia meadows on calcareous, peaty or clayey-silt-laden soils
Crymlyn Bog / Cors Crymlyn	SAC/ NNR/ RAMSAR/ SSSI	9.6 km	• Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior*. • Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae*. • Transition mires and quaking bogs.

*Source: NRW Designated Sites Search website[27]; *At the closest point.*

Table 7.2: Summary of non-statutory designated sites present within 1 km of the Scoping boundary

Designation		Approximate distance from the Scoping boundary*	Qualifying ecological features
Graig Fawr	Ancient semi-natural woodland	Within the of Scoping boundary	2 categorised sites
	Restored Ancient Woodland Site	Within the of Scoping boundary	1 categorised site
	Plantation on Ancient Woodland Site	Within the of Scoping boundary	1 categorised site

Designation	Approximate distance from the Scoping boundary*	Qualifying ecological features
Ancient Woodland Site of Unknown Category	Within the of Scoping boundary	1 categorised site
Ancient semi-natural woodland	Within 1 km buffer of Scoping boundary	4 categorised sites
Restored Ancient Woodland Site	Within 1 km buffer of Scoping boundary	8 categorised sites
Plantation on Ancient Woodland Site	Within 1 km buffer of Scoping boundary	9 categorised sites
Ancient Woodland Site of Unknown Category	Within 1 km buffer of Scoping boundary	3 categorised sites

Source: Welsh Government Data Map tool

Completed Field Surveys

Extended Phase 1 Habitat survey

7.3.9 An extended Phase 1 habitat survey of the Scoping boundary and a 250 m buffer (access permitting) was undertaken in May and August with habitats present mapped digitally in the field and assigned a Phase 1 habitat code[30]. A minimum polygon size of 25 m^2 were used. Areas of habitat smaller than this were recorded as target notes or mosaics - whichever was considered most appropriate. Where mosaics were recorded, target notes were included with a description of the mosaic and the proportions of each habitat within the polygon. Target notes were taken for any other notable observations e.g. habitat patches that were considered botanically rich, protected or where invasive plant species were present. In addition, the survey was extended in order to identify the likely presence of protected species, including badger, pine marten and red squirrel. The methodology described in Cresswell *et al.*[31] and Bang and Dahlstrøm (2001)[32] was followed, looking for signs such as scats, dreys/dens, and feeding signs. Signs were recorded following standard guidance on identifying field signs of those species (e.g. Neal & Cheeseman[33]).

7.3.10 Habitats present within the survey area comprise largely of coniferous woodland and improved grassland with smaller areas of broad-leaved woodland and scattered scrub/ continuous bracken. Marshy grassland, of which two areas were present, have the potential

30 JNCC, 2010. Handbook for Phase 1 habitat survey: a technique for environmental audit. JNCC, Peterborough.

31 Cresswell, W. J., Birks, J. D. S., Dean, M., Pacheco, M., Trewhella, W. J., Wells, D. & Wray, S. (eds) (2012) UK BAP Mammals: Interim Guidance for Survey Methodologies, Impact Assessment and Mitigation. Mammal Society, Southampton.

32 Bang, P. & Dahlstrøm, P. 2001. Animal Tracks and Signs. Oxford University Press, Oxford.

33 Neal, E. & Cheeseman, C. (1996). Badgers. Poyser Natural History, London.

to consist of Groundwater Dependent Terrestrial Ecosystems (GWDTE). The Phase 1 habitats are listed in Table 7.3.

Table 7.3: Extended Phase 1 habitat survey results

Phase 1 habitat code and type	Area (ha) within Scoping boundary	Conservation value*
A1.1.1: Broadleaved woodland – semi-natural	9.95	Sec 7
A1.2.2: Coniferous woodland - plantation	77.82	-
A1.3.1: Mixed woodland – semi-natural	0.01	Sec 7
A1.3.2: Mixed woodland – plantation	1.87	Sec 7
A2.1: Scrub – dense/continuous	7.12	-
A2.2: Scrub – scattered	0.07	-
A2.2/C1.1: Scrub – scattered/Bracken – continuous	5.20	-
A4.2: Coniferous woodland – recently felled	4.54	-
B4: Improved grassland	53.26	-
B5: Marsh/marshy grassland	1.48	-
B6: Poor semi-improved grassland	1.06	-
C1.1: Bracken – continuous	7.61	-
G1: Standing water	0.43	Sec 7

*Source: Natural Power 2025, *Annex I = on Annex I of the EC Habitats Directive; and Sec 7 = on Section 7 of the Environment (Wales) Act 2016.*

Protected Mammal Species

7.3.11 During the extended Phase 1 habitat survey a sighting of a brown hare was recorded. Brown hare are listed in Section 7 of the Environment (Wales) Act 2016. No evidence was recorded of any other protected species.

7.3.12 Habitat was considered suitable for supporting badger as well as foraging/commuting and roosting bats. Maps also show drainage ditches present in the unsurveyed area west of the M4 motorway so there is potential habitat for otters and water voles[34].

7.3.13 The area to the west of the M4 within the Scoping boundary is shown on DataMapWales[35] as having records of or suitability for great crested newts, although NGETs surveys for the

[34] Noting that NGET's Screening Report for Margam GIS identifies potential enhancement works to certain ditches for benefit of water voles.

[35] Potential Habitat for Great Crested Newts. Available at: WOM21 Potential Habitat for Great Crested Newts | DataMapWales [Accessed 15/09/2025]

Margam GIS project confirm "*all eDNA surveys negative and no known records nearby*"[36]. The remainder of the route has been assessed as not suitable for great crested newts.

7.3.14 Similarly, though the route includes areas of woodland and hedgerows, the areas of woodland and hedgerow to be impacted by the Proposed Development were small and therefore not considered highly suitable habitat for dormice.

Survey Limitations

7.3.15 As ecology surveys commenced early in the project an indicative grid route (and 250 m buffer) was used for the extended Phase 1 habitat survey area, this differs from the current Scoping boundary shown in Figures 7.1 and 7.3. Therefore, existing Phase 1 habitat data from the Y Bryn Wind Farm application was used and an additional site visit was undertaken in August 2025 to fill gaps and ensure coverage of a 250 m buffer of land east of the M4 motorway.

7.3.16 Access to parts of the 250 m survey buffer for the extended Phase 1 habitat survey was limited. East of the M4 motorway the survey was carried out using the public footpath that runs through Crugwyllt Fawr Farm and NRW owned roads/tracks only. West of the M4 motorway the survey was carried out from public footpaths. However, this is not considered to be a significant limitation as the majority of habitats were visible and identifiable from the accessible areas.

7.3.17 Access permission is being sought to survey areas within the 250 m buffer that have not been surveyed in the area west of the M4 motorway.

7.4 Proposed Surveys and Assessment Methodologies

Proposed Field Surveys

7.4.1 Based on the results of the extended Phase 1 habitat survey the following surveys are proposed:

- Phase 1 habitat survey of unsurveyed areas in a 250 m buffer of Scoping boundary (access permitting);
- National Vegetation Classification (NVC) survey of marshy grassland to identify potential GWDTEs;
- Badger survey in 150 m buffer of Scoping boundary;
- Otter and water vole surveys of watercourses/drainage ditches within 250 m buffer of Scoping boundary (access permitting); and
- Bat roost potential survey in 150 m buffer of Scoping boundary.

[36] See NPTCBC planning portal, ref P2025/0309 "*Request for Screening Opinion under Regulation 6 of the Town and Country Planning (Environment Impact Assessment) (Wales) Regulations 2017 for a new 275 kV double busbar substation to replace and extend the existing Margam Substation, including a GIS hall and amenities building and 6no cables of 275 kV between Margam and Port Talbot substations to include cable trenching and Horizontal Directional Drilled (HDD) cable.*"

7.4.2 Other species-specific surveys are not proposed due to lack of suitable habitat or low risk of significant impacts due to the limited scope of the Proposed Development.

Approach to Impact Assessment

7.4.3 The approach to the Ecological Impact Assessment (EcIA) adopted within this assessment follows current CIEEM guidelines[25]. It should be noted that these criteria are intended as a guide and are not definitive; professional judgement will also be applied in determining the value level for important ecological features (IEFs). IEFs have been scoped in or out of further assessment based on these guidelines and with consideration of effects that are potentially significant as set out under the EIA Directive.

7.4.4 The guidelines set out the EcIA process, through the following stages:

- Identification of IEFs through field survey and/or desk study research;
- Determination of the importance of each identified IEF;
- Assessment of impacts affecting those IEFs and or resources, using a defined importance threshold with reference to ecological processes and functions as deemed appropriate;
- Determining the extent, magnitude, duration, timing and frequency of the impacts;
- Assessing the potential for impact reversibility;
- Determining the level of confidence in the above impact predictions;
- Identification of likely significant effects in the absence of mitigation above embedded measures; and
- The identification of residual effects following implementation of any further mitigation.

Approach to Potential Cumulative Effects

7.4.5 The ES chapter will present the potential impact of the Proposed Development, cumulatively with other operational, consented, submitted or scoping developments that are discussed in Section 2 (those that have a layout in the public domain and have submitted a scoping request). The cumulative study area for the ecological environment would consider a 5 km search area from the Scoping boundary. The assessment will also present the potential impact of concurrent phases of construction with identified cumulative schemes which have an ecological connection to the Proposed Development.

Approach to Consultation

7.4.6 This section of the SR commences consultation with statutory consultees regarding the completed and proposed scope of ecology surveys for the Proposed Development. Specific questions to consultees are provided in Section 7.10. Feedback regarding the sufficiency of the scope of surveys to inform the ES would be gratefully received.

7.4.7 Where further consultation is required regarding the scope of surveys, this will be completed following receipt of a scoping opinion.

7.5 Approach to Mitigation

7.5.1 To ensure compliance with legislation, and to follow good practice guidance, a number of embedded mitigation measures will be applied should the application be consented. The Applicant would suggest that in order to ensure these practices are adopted that they be included as planning conditions. The proposed wording of these conditions, which can easily be transposed into the planning consent, is as follows:

- Appropriate buffers surrounding potential protected species shelters and watercourses shall be implemented during construction and operation;
- A maximum of eight months prior to commencement of works, pre-construction ecology walkover surveys will be carried out, including surveys for potential bat roosts, badger setts, and a check of all riparian habitat for signs of otter or water vole. This will enable any refinements to be made to the final design solution and , if necessary, to mitigation, micrositing and/or the construction programme to take account of any updated distribution or presence of protected species, with a suitable mitigation plan adopted on a case-by-case basis;
- No development shall take place (including demolition, ground works, vegetation clearance) until a Construction Environmental Management Plan (CEMP), incorporating a Construction Method Statement (CMS), has been submitted to and approved in writing by the Local Planning Authority (LPA). The CEMP shall include the following:
  - Practical measures (both physical measures and sensitive working practices) to avoid or reduce impacts during the construction phase (may be provided as a set of method statements) including a Pollution Prevention Plan (PPP) outlining measures to control pollution and a Drainage Management Plan (DMP) outlining measures for management of surface and groundwater;
  - The location and timing of sensitive works to avoid harm to ecological features;
  - The times during construction when specialist ecologists need to be present onsite to oversee works;
  - Species Protection Plans (SPPs) outlining specific measures to avoid and reduce impacts on protected species;
  - Responsible persons and lines of communication; and
  - The role and responsibilities onsite of an Ecological Clerk of Works (ECoW) or similarly competent person.
- No development shall commence until the role, responsibilities and operations to be overseen by an appropriately competent ECoW have been submitted to, and approved in writing by, the LPA. The appointed person shall undertake all activities, and works shall be carried out, in accordance with the approved details. The ECoW will monitor and advise on potential effects on ecological features during construction in order that impacts are minimised through good practice. This includes maintaining water quality and minimising the potential for disturbance or risk of injury/death for protected species which may be using the Proposed Development.

7.5.2 The approved CEMP shall be adhered to and implemented throughout the construction phase strictly in accordance with the approved details, unless otherwise agreed in writing by the LPA.

Net Benefit for Biodiversity

7.5.3 Net benefit for Biodiversity (NBB) is a requirement in Wales, and is secured via Edition 12 of Planning Policy Wales (PPW)[18]. The policy direction in PPW intends to deliver an overall improvement in biodiversity. The approach does not utilise a metric but instead assesses the improvement in biodiversity qualitatively. Proposed biodiversity enhancements must follow implementation of the 'stepwise approach' by first avoiding, minimising, mitigating and lastly compensating for any adverse impacts caused by the Proposed Development.

7.5.4 NBB will be considered as part of the design and assessment process of the Proposed Development.

7.6 Potential Significant Effects of the Proposed Development

7.6.1 The baseline information outlined in Section 7.3 has been used to identify IEFs that could sustain positive or negative impacts as a result of the Proposed Development. A description of the predicted impacts on ecological receptors that have been scoped into the assessment, along with justification, is provided in Table 7.4.

Table 7.4: Ecological receptors scoped into the assessment

Ecological receptor	Type	Justification
Graig Fawr Woodland	Ancient Woodland	Includes 3 sites that lie within the Scoping boundary. Connectivity to site boundary for qualifying features.
	Restored Ancient Woodland Site	Includes 1 site lies within the Scoping boundary. Connectivity to site boundary for qualifying features.
	Plantation on Ancient Woodland Site	Includes 1 site lies within the Scoping boundary. Connectivity to site boundary for qualifying features.
	Ancient Woodland Site of Unknown Category	Includes 1 site lies within the Scoping boundary. Connectivity to site boundary for qualifying features.
Margam Moors SSSI		Lies approximately 0.77 km south of the Scoping boundary. Qualifying features may have connectivity to the site boundary.
Habitats		Protected Annex I and Sec 7 habitats identified within the Scoping boundary.

Ecological receptor	Type	Justification
Badger		Suitable habitat present. Further survey data required.
Otter		Suitable habitat present. Further survey data required.
Water vole		Suitable habitat present. Further survey data required.
Bats		Suitable habitat present. Further survey data required.

7.7 Impacts Scoped Out

7.7.1 Where likely non-significant effects are identified, Natural Power proposes that these are 'scoped out' of the ES. Ecological receptors that have been scoped out of the assessment, along with justification, is provided in Table 7.5.

Table 7.5: Ecological receptors scoped out of the assessment

Ecological receptor	Justification
Ancient Woodland	Six Ancient Semi Natural Woodland Sites lie outwith the Scoping boundary. Feature shares no connectivity to the Scoping boundary.
Restored Ancient Woodland Site	Seven Restored Ancient Woodland Sites lie outwith the Scoping boundary. Feature shares no connectivity to the Scoping boundary.
Plantation on Ancient Woodland Site	Nine Plantation on Ancient Woodland Sites lie outwith the Scoping boundary. Feature shares no connectivity to the Scoping boundary.
Ancient Woodland Site of Unknown Category	Three Ancient Woodland Sites of Unknown Category lie outwith the Scoping boundary. Feature shares no connectivity to the Scoping boundary.
Eglwys Nunydd Reservoir SSSI	Lies approximately 0.56 km south of the Scoping boundary. Qualifying features share no connectivity to the Scoping boundary.
Kenfig / Cynffig SAC/ SSSI Kenfig Pools and Dunes LNR/ NNR	Lies approximately 2.6 km south of the Scoping boundary. Qualifying features share no connectivity to the Scoping boundary.

Ecological receptor	Justification
Glaswelltiroedd Cefn Cribwr / Cefn Cribwr Grasslands SAC	Lies approximately 6.5 km south-east of the Scoping boundary. Qualifying features share no connectivity to the Scoping boundary.
Crymlyn Bog / Cors Crymlyn SAC/ RAMSAR	Lies approximately 9.6 km north-west of the Scoping boundary. Qualifying features share no connectivity to the Scoping boundary.
Dormouse	Habitat not optimal. Unlikely significant impact would occur from the Proposed Development.
Brown hare	Unlikely that a significant impact would occur from the Proposed Development.
Reptiles	Unlikely that a significant impact would occur from the Proposed Development.
Amphibians	Unlikely that a significant impact would occur from the Proposed Development.
Invertebrates	Unlikely that a significant impact would occur from the Proposed Development.
Fish	Unlikely that a significant impact would occur from the Proposed Development.

7.8 Conclusion

7.8.1 An assessment of the potential effects outlined in Section 7.7 on ecological receptors included in Table 7.4 will be provided within the ES. Where further ecological receptors are identified during ongoing and proposed surveys, these will also be included in the ES, including those ecological receptors listed in Table 7.5, where there is justification to do so.

7.9 Questions to Consultees

7.9.1 The questions below are for consultees regarding the information provided in this scoping chapter, for which it would be useful to receive feedback. Not all questions will be relevant to all consultees, therefore we request that consultees provide feedback only on those questions appropriate to them. The questions should not be considered an exhaustive list, and consequently consultees are welcome to provide feedback on any issue they consider relevant to the Proposed Development. If consultees elect not to respond, the Applicant will assume that consultees are satisfied with the approach adopted/proposed.

- **Question 7.1:** Do consultees have any comments regarding the EIA only concentrating on those receptors which may be subject to significant effects from the Proposed Development (either directly or indirectly)?
- **Question 7.2:** Are consultees satisfied that ecological survey effort of all completed surveys and proposed surveys provides a robust assessment of effects?

- **Question 7.3:** Table 7.4 above notes the receptors and potential impacts proposed to be included within the EIA. Do consultees agree with the list of receptors and impacts to be included within the EIA?

8. Ornithology

8.1 Introduction

8.1.1 This section describes the ornithological and nature conservation interests present within the Proposed Development Area. This includes any locally, nationally, or internationally designated sites. A high-level description of potential impacts on ornithological receptors arising from construction, operation and decommissioning phases of the Proposed Development is provided to determine the requirements for the assessment that will be included within the Environmental Statement (ES).

8.1.2 This section of the SR is supported by the following figures:

- Figure 8.1: Ornithology Survey Areas 2025;
- Figure 8.2: Vantage Point Survey Results, Breeding Season 2025 (May-August);
- Figure 8.3: Breeding Bird Survey Results 2025;
- Figure 8.4: Raptor Survey Results 2025; and
- Figure 8.5: Statutory Sites Designated for Ornithological Features.

8.2 Legislation and Guidance

8.2.1 Legislative, policy and guidance documents with specific relevance to ornithology are:

Legislation

- Directive 2009/147/EC on the Conservation of Wild Birds (the Birds Directive)[37];
- Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (the Habitats Directive)[9];
- The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) (the Habitats Regulations), which transposes the Habitats Directive into law in England and Wales[11];
- Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, which ensures domestic implementation of the Habitats Directive continues from 1 January 2021[13];
- Wildlife and Countryside Act 1981 (as amended)[14];
- The Environment (Wales) Act 2016[15]; and
- Well-being of Future Generations (Wales) Act 2015[17].

[37] Directive 2009/147/EC of the European Parliament of the Council of 30 November 2009 on the conservation of wild birds (2019). Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32009L0147&qid=1669635009762 [Accessed 15/09/2025]

Policy

- Planning Policy Wales: Edition 12 (2024)[18];
- Future Wales – the National Plan 2040 (2021)[19];
- Technical Advice Note 5: Nature Conservation and Planning (2009)[20];
- UK Post 2010 UK biodiversity framework[21];
- The Welsh Biodiversity Strategy compromising:
  - The Nature Recovery Plan for Wales (2015)[22]; and
  - The Nature Recovery Action Plan (NRAP) for Wales 2020-2021[23]; and
  - Powys Nature Recovery Action Plan (PNRAP) 2022-2032[24].

Guidance

- Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine[25];
- Recommended bird survey methods to inform impact assessment of onshore wind farms[38];
- Assessing connectivity with Special Protection Areas (SPAs)[39];
- A Review of Disturbance Distances in Selected Bird Species[40];
- British Standard 42020:2013 Biodiversity – code of practice for planning and development;
- Wildlife Sites Guidance Wales: a guide to develop local wildlife systems in Wales[26]; and
- Birds of Conservation Concern (BoCC) 5: the population status of birds in the United Kingdom, Channel Islands and the Isle of Man[41].

8.3 Existing conditions

Survey Area

8.3.1 The survey area comprises the grid connection route and surrounding survey-specific buffers, where access is available, and desk study search area buffers up to 10 km. The survey-specific buffers and survey locations are shown on Figures 8.1-8.4, and desk study search area buffers are shown alongside statutory designated sites on Figure 8.5.

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38 Scottish Natural Heritage (SNH) (2017). *Recommended bird survey methods to inform impact assessment of onshore wind farms.* Scottish Natural Heritage (now NatureScot), Battleby.

39 SNH (2016). *Assessing connectivity with Special Protection Areas (SPAs) (Guidance note: Version 3).* Scottish Natural Heritage (now NatureScot), Edinburgh.

40 NatureScot (2022). *Disturbance Distances in selected Scottish Bird Species – NatureScot Guidance.* Available at: https://www.nature.scot/doc/disturbance-distances-selected-scottish-bird-species-naturescot-guidance [Accessed 15/09/2025]

41 Stanbury, A., Eaton, M., Aebischer, N., Balmer, D., Brown, A., Douse, A., Lindley, P., McCulloch, N., Noble, D., and Win I. (2021). *The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain.* British Birds 114: 723-747.

Desk Study

Historic Records

8.3.2 The following organisations will be consulted for relevant information to support the assessment, including records of all protected and/or notable species within 1 km of the Scoping boundary within the last 10 years:

- Biodiversity Information Service (BIS);
- Royal Society for the Protection of Birds (RSPB); and
- Natural Resources Wales (NRW).

8.3.3 Relevant information includes records of bird species listed on Annex I of the European Commission (EC) Birds Directive (2009)[37]; Schedule 1 of the Wildlife and Countryside Act 1981 (as amended)[14]; Section 7 of the Environment (Wales) Act (2016)[15] and the UK BoCC[41] Red or Amber Lists, within 1 km of the Scoping boundary within the last 10 years.

8.3.4 A review of any relevant contextual data will also be conducted, including relevant ES/EIA Reports and associated technical reports from the proposed Y Bryn Wind Farm development and other proposed, consented and operational developments in the local area.

Designated Sites

8.3.5 A web-based search was undertaken to identify and provide information on statutory and non-statutory designated nature conservation sites, with ornithological qualifying features. The search was carried out using the NRW Designated Sites Search website[42] and the Multi-Agency Geographic Information for the Countryside (MAGIC) Map application tool[43]. The search focussed on identifying the following sites:

- SPAs and Ramsar sites within 10 km of the Scoping boundary;
- Sites of Special Scientific Interest (SSSIs) within 2 km of the Scoping boundary;
- Local and National Nature Reserves (LNRs/NNRs), including RSPB reserves within 1 km of the Scoping boundary; and
- Local Wildlife Sites (LWSs) and proposed LWSs (pLWS) within 1 km of the Scoping boundary.

8.3.6 LNRs and LWSs (non-statutory sites that are predominantly designated for their habitat or overall biodiversity assemblage, and not specifically for their ornithological interest) were searched for indications of ornithological use. Additional records of local sites within 1 km of the Scoping boundary with relevance to ornithology will be requested from BIS for inclusion in the ES.

8.3.7 No SPAs or RAMSAR sites were identified within 10 km of the Scoping boundary.

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[42] NRW Designated Sites Search. Available at: https://naturalresources.wales/guidance-and-advice/environmental-topics/wildlife-and-biodiversity/protected-areas-of-land-and-seas/find-protected-areas-of-land-and-sea/?lang=en [Accessed 15/09/2025]

[43] DEFRA MAGIC Map tool. Available at: https://magic.defra.gov.uk/ [Accessed 15/09/2025]

8.3.8 One statutory designated site with ornithological interest was identified within the search area to the Scoping boundary, Eglwys Nunydd Reservoir SSSI located approximately 0.5 km to the south. Wintering bird species are noted to use this SSSI.

Table 8.1: Summary of protected sites designated for their ornithological interest, within 10 km of the Proposed Development

Site name	Designation	Approximate distance from the Scoping boundary*	Qualifying ornithological features
Eglwys Nunydd Reservoir	SSSI	0.56 km	• Notable for wintering wildfowl and passage migrants

*Source: NRW Designated Sites Search website[42]; *At the closest point*

Completed Field Surveys

8.3.9 Ornithological surveys were undertaken in 2025 in order to inform the ES for the Proposed Development. These comprised the following surveys:

- Vantage Point surveys at VPs 1-2 (May – August 2025);
- Breeding bird surveys (May – June 2025);
- Raptor surveys (May – June 2025); and
- Nightjar survey (May 2025).

8.3.10 A summary of the methods and results of each of the aforementioned surveys is provided below.

Vantage Point Surveys

8.3.11 All Vantage Point (VP) surveys were completed following the standard methods outlined in NatureScot guidance[38]. Details of VP locations and view bearings are provided in Table 8.2, with survey effort per VP between May and August 2025 shown in Table 8.3. VP locations and viewsheds of VPs 1-2 are shown on Figure 8.1.

Table 8.2: VP locations, bearings and survey dates

VP	Grid Reference	Bearing (degrees)
1	SS 80681 88083	225
2	SS 79166 86603	45

Source: Natural Power 2025

Table 8.3: VP survey effort in hours

VPs	May*	June	July	Aug	Total hours
1	18	6	6	6	**36**
2	18	6	6	6	**36**

*Source: Natural Power 2025, *Includes additional VP hours undertaken for the March and April surveys*

8.3.12 VP surveys focused on recording flight paths and flight heights of the following target species:

- All raptor and owl species listed on Annex I of the EC Birds Directive, Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) and/or Section 7 of the Environment (Wales) Act 2016;
- All wildfowl species (excluding Canada goose and mallard);
- All wader species;
- Large gulls (comprising herring, lesser black-backed and great black-backed gull); and
- Black-headed gull.

8.3.13 During surveys detailed flight lines were drawn for target species, with the flight height noted for every 15 second interval at the following height bands:

- A = 0-10 m;
- B = 10-30 m; and
- C = >30 m.

8.3.14 Flight activity of secondary species (species of lesser conservation concern) was also recorded. They included the following:

- All other raptor and owl species (including buzzard, sparrowhawk and tawny owl);
- All other waterfowl (e.g. grey heron and cormorant);
- All other gull species;
- Raven;
- Schedule 1 passerines (e.g. crossbill); and
- Any large aggregations of UK BoCC Red-listed passerines.

8.3.15 A total of nine target species were recorded during the VP surveys completed between May and August 2025. Greylag goose was mistakenly recorded as a secondary species and therefore the flight was not mapped and is not included in the VP results figure. Details of the number of flights and individuals recorded are provided in Table 8.4 and flight height data provided in Table 8.5 with mapped flights shown on Figure 8.2.

Table 8.4: Target species number of flights recorded between May and August 2025

Species	Flights per month				Total	
	May	June	July	August	No. of flights	No. of individuals
Greylag goose	1	-	-	-	1	2
Curlew	1	-	1	-	2	3
Black-headed gull	-	1	1	-	2	9
Herring gull	7	3	2	1	13	55
Lesser black-backed gull	2	-	1	4	7	33
Goshawk	-	2	-	-	2	2
Red kite	5	2	2	1	10	10
Kestrel	-	1	1	-	2	2
Merlin	-	1	1	-	2	2
Total	**15**	**10**	**9**	**6**	**40**	**116**

Source: Natural Power 2025

Table 8.5: Target species flight height data recorded between May and August 2025

Species	No. of flights (individuals) at 0-10m	No. of flights (individuals) at 10-30m	No. of flights (individuals) at >30m
Greylag goose	-	1 (2)	-
Curlew	-	2 (3)	-
Black-headed gull	-	1 (3)	1 (6)
Herring gull	-	4 (15)	9 (40)
Lesser black-backed gull	-	-	7 (33)
Goshawk	-	2 (2)	-
Red kite		2 (2)	8 (8)
Kestrel	-	2 (2)	-
Merlin	-	2 (2)	-

Source: Natural Power 2025

8.3.16 Table 8.6 summarises the secondary species recorded during the VP surveys. Buzzard and raven were seen the most frequently during VP surveys.

Table 8.6: Summary of secondary species recorded during VP surveys

Species	No. of flights recorded	No. of individuals recorded
Canada goose	4	14
Mallard	5	17
Sparrowhawk	5	5
Buzzard	12	12
Raven	13	25
Crossbill	5	17

Source: Natural Power 2025

Breeding Bird Surveys

8.3.17 Breeding bird surveys (BBS) were carried out in 2025 following an adapted version of the Common Birds Census described in Gilbert *et al.* (1998)[44]. Four survey visits were carried out between May and June, during which surveyors walked to within 100 m of suitable habitat within the Survey Area. During the surveys, the location and behaviour of all birds seen and/or heard were recorded on 1:10,000 scale maps, using standard British Trust for Ornithology (BTO) behavioural and species codes. Behaviour codes recorded included all indicators of possible/probable/definite breeding, for example: singing, alarm-calling, territorial disputes, carrying nesting material and presence of recently fledged juveniles.

8.3.18 After completion of the four survey visits, the data were analysed to estimate the number of territories of each species present within the survey area. Species recorded in a location on more than one visit were considered to be holding territory. A single territory was identified where registrations of the same species were separated by less than 500 m on the same survey visit, or by less than 1000 m on different survey visits (non-passerines) or where registrations of the same species were separated by less than 200 m on either the same or a different survey visit (passerines) (except cuckoo which used a separation distance of 500 m on the same visit or 1000 m on different visits).

8.3.19 A typical bird assemblage was recorded within the open ground and forested areas within the survey area mainly consisting of common commercial woodland, open scrub and grassland species. The estimated number of breeding territories identified for each species is shown in Table 8.7 and on Figure 8.3.

Table 8.7: Number of breeding territories

Species	No. of territories	Conservation status*
Cuckoo	1	Red
Coal tit	2	
Skylark	7	Red, Sec 7

[44] Gilbert, G., Gibbons, D.W. & Evans, J. (1998). Bird Monitoring Methods. RSPB, Sandy.

Species	No. of territories	Conservation status*
Willow warbler	5	Amber
Chiffchaff	4	
Blackcap	2	
Lesser whitethroat	1	
Whitethroat	1	
Goldcrest	7	
Wren	7	
Blackbird	3	
Song thrush	1	Amber, Sec 7
Robin	3	
Stonechat	2	
Pied wagtail	2	
Chaffinch	6	

*Source: Natural Power 2025, *Red = Birds of Conservation Concern (BoCC) red-listed species; Amber = BoCC amber-listed species; and Sec 7 = on Section 7 of the Environment (Wales) Act 2016.*

Raptor Surveys

8.3.20 Breeding raptor surveys following methods described in Hardey *et al.* (2013)[45] were carried out in 2025. Five survey visits to suitable habitat within the Survey Area were carried out between May and June.

8.3.21 No confirmed territories or nests of target species were identified within the survey area. A single red kite was recorded in May flying over the Survey Area. Buzzard were infrequently recorded during the surveys. Mapped flights are shown on Figure 8.4.

Incidental Records

8.3.22 Two visits were timed to cover the period around dusk, during which nightjar were recorded holding territory within the forested area north of the Scoping boundary and was considered to be same breeding bird that was recorded during the nightjar survey.

Nightjar Survey

8.3.23 A nightjar survey was carried out using methods described in Gilbert *et al.* (1998)[46]. A single visit to suitable habitat within the Survey Area (same area used for the BBS) was carried out in May.

[45] Hardey, J., Crick, H., Wernham, C., Riley, H., Etheridge, B. & Thompson, D. (2013). *Raptors: a field guide to survey and monitoring (3rd Edition).* The Stationery Office, Edinburgh.

[46] Gilbert, G., Gibbons, D.W. & Evans, J. (1998). Bird Monitoring Methods. RSPB, Sandy.

8.3.24 Nightjar, an amber listed species[37], was considered to be holding territory within the forested area north of the Scoping boundary. The results are provided in Table 8.8 and are included in the BBS Figure 8.3.

Table 8.8: Number of breeding territories

Species	No. of territories	Conservation status*
Nightjar	1	Amber, Sec 7

*Source Natural Power 2025, * Amber = BoCC amber-listed species*

Survey Limitations

8.3.25 VP surveys typically cover the breeding season between March and August. VPs did not commence until May 2025. An additional 12 VP hours (per VP) were conducted in May to account for this.

8.3.26 As site surveys commenced early in the project the BBS and raptor walkover surveys covered a 500 m buffer of an earlier indicative grid route than the current Scoping boundary shown in Figure 8.1. However, this is not considered to be a significant limitation as a minimum survey buffer of 150 m was maintained with the majority of the route having a 200 m buffer or greater. The results of the survey are still considered to reflect the species composition of the area.

8.3.27 During the BBS and raptor surveys observers could only survey the open ground within the survey area east of the M4 motorway by using the public footpath which runs through the Crugwyllt Fawr Farm and the NRW forestry track that runs adjacent to the northern field edges of the farm. However, this is not considered to be a significant limitation as the majority of habitats were visible and target species were still visible and audible, with a species composition consistent with the habitats present recorded.

8.4 Proposed Surveys and Assessment Methodologies

Proposed Field Surveys

8.4.1 Following guidance[47] the following surveys are proposed:

- Non-breeding VP surveys: September – February (inclusive). A total of 36 hours to be completed at each VP during the non-breeding period (6 hrs per VP per month).

Approach to Impact Assessment

8.4.2 The approach to the Ecological Impact Assessment (EcIA) adopted within this assessment follows current CIEEM (Chartered Institute of Ecology and Environmental Management) guidelines[20]. It should be noted that these criteria are intended as a guide and are not definitive; professional judgement will also be applied in determining the value level for

[47] NatureScot (2025). *Assessment and mitigation of impacts of power lines and guyed meteorological masts on birds – NatureScot Guidance.* Available at: Guidance - Assessment and mitigation of impacts of power lines and guyed meteorological masts on birds | NatureScot [Accessed 02/09/2025]

Important Ornithological Features (IOFs). IOFs have been scoped in or out of further assessment based on these guidelines and with consideration of effects that are potentially significant as set out under the EIA Directive.

8.4.3 The guidelines set out the EcIA process, through the following stages:

- Identification of IOFs through ornithological field survey and/or desk study research;
- Determination of the importance of each identified IOF;
- Assessment of impacts affecting those IOFs and or resources, using a defined importance threshold with reference to ecological processes and functions as deemed appropriate;
- Determining the extent, magnitude, duration, timing and frequency of the impacts;
- Assessing the potential for impact reversibility;
- Determining the level of confidence in the above impact predictions;
- Identification of likely significant effects in the absence of mitigation above embedded measures; and
- The identification of residual effects following implementation of any further mitigation.

Approach to Potential Cumulative Effects

8.4.4 The ES chapter will present the potential impact of the Proposed Development, cumulatively with other operational, consented, submitted or scoping developments that are discussed in Section 2 (those that have a layout in the public domain and have submitted a scoping request). The cumulative study area for the ornithological environment would consider a 10 km search area from the Scoping boundary. The assessment will also present the potential impact of concurrent phases of construction with identified cumulative schemes which have an ornithological connection to the Proposed Development.

Approach to Consultation

8.4.5 This section of the SR commences consultation with statutory consultees, including NRW and NPTCBC, regarding the completed and proposed scope of ornithology surveys for the Proposed Development. Specific questions to consultees are provided in Section 8.10. Feedback regarding the sufficiency of the scope of surveys to inform the ES would be gratefully received. Where further consultation is required regarding the scope of surveys, this will be completed following receipt of the scoping opinion.

8.5 Approach to Mitigation

8.5.1 To ensure compliance with legislation, and to follow good practice guidance, a number of embedded mitigation measures will be implemented should the application be consented. The Applicant suggests that in order to ensure these practices are adopted, that they be included as planning conditions. The proposed wording of these conditions, which can easily be transposed into the planning consent, is as follows:

- If the removal of vegetation (trees, shrubs, etc.) is due to take place during the bird breeding season then a competent Environmental Clerk of Works (ECoW) will undertake a careful, detailed check of vegetation for active birds' nests in advance of vegetation being cleared and provided written confirmation that no birds will be harmed and/or that there are appropriate measures in place to protect nesting bird interests at the Proposed Development. Any such written confirmation will be submitted to the LPA;
- No development will take place (including demolition, ground works, vegetation clearance) until a Construction Environmental Management Plan (CEMP), incorporating a Construction Method Statement (CMS), has been submitted to, and approved in writing by, the LPA. The CEMP will include the following:
  - Risk assessment of potentially damaging construction activities;
  - Identification of "biodiversity protection zones";
  - Practical measures (both physical measures and sensitive working practices) to avoid or reduce impacts during the construction phase (may be provided as a set of method statements);
  - The location and timing of sensitive works to avoid harm to ornithological features;
  - The times during construction when specialist ornithologists need to be present to oversee works.
  - Responsible persons and lines of communication;
  - The role and responsibilities onsite of an ECoW or similarly competent person; and
  - Use of protective fences, exclusion barriers and warning signs.
- No development will commence until the role, responsibilities and operations to be overseen by an appropriately competent ECoW have been submitted to, and approved in writing by, the LPA. The appointed person shall undertake all activities, and works will be carried out, in accordance with the approved details. The ECoW will monitor and advise on potential effects on ornithological features during construction in order that impacts are minimised through good practice. This includes maintaining water quality and minimising the potential for disturbance or risk of injury / death for birds which may be using the Proposed Development; and
- Should there be any other specific impacts as a result of the EcIA, there may also be further planning conditions specific to the particular impact that the Applicant will discuss with consultees on a case-by-case basis such as implementation of Species Protection Plans (SPP).

8.5.2 The approved CEMP shall be adhered to and implemented throughout the construction phase strictly in accordance with the approved details, unless otherwise agreed in writing by the LPA.

Net Benefit for Biodiversity

8.5.3 As stated in the Ecology Section (Paragraph 7.8.3) NBB will be considered as part of the design and assessment process of the Proposed Development. An outline Habitat Management Plan (HMP) will also be included in the ES.

8.6 Potential Significant Effects of the Proposed Development

8.6.1 The baseline information outlined in Section 8.3 has been used to identify IOFs that could sustain positive or negative impacts as a result of the Proposed Development. A description of the predicted impacts on ornithological receptors that have been scoped into the assessment, along with justification, is provided in Table 8.9.

Table 8.9: Ornithological receptors scoped into the assessment

Ornithological receptor	Justification
Nightjar	A single breeding territory was located [redacted] during the BBS and raptors surveys. Given there is suitable breeding and foraging habitat for nightjar, there is the potential for disturbance/displacement effects posed by the Development during construction to this species.

8.7 Impacts Scoped Out

8.7.1 Where likely non-significant effects are identified, Natural Power proposes that these are 'scoped out' of the ES. Ornithological receptors that have been scoped out of the assessment, along with justification, is provided in Table 8.10. All other species not recorded during the surveys are not included are also scoped out of the assessment.

Table 8.10: Ornithological receptors scoped out of the assessment

Ornithological receptor	Justification
Eglwys Nunydd Reservoir SSSI	No specific bird species listed as notified features.
Curlew	Two flights were recorded outwith the Scoping boundary during the VP surveys. The level of recorded flight activity was low and therefore collision risk from the Proposed Development is considered negligible. No breeding territories were recorded in 2025.Given there is no suitable habitat for curlew within the Scoping boundary there is no potential for disturbance/displacement effects posed by the Development to this species.

Ornithological receptor	Justification
Black-headed gull	Two flights were recorded during VP surveys. The level of recorded flight activity was low and therefore collision risk from the Proposed Development is considered negligible. No breeding territories recorded in 2025. Given there is no suitable habitat for black-headed gull within the Scoping boundary there is no potential for disturbance/displacement effects posed by the Development to this species.
Herring gull	13 flights were recorded during the VP surveys, the majority of which were observed flying along a north west-south east axis above the M4. The level of recorded flight activity was low and therefore collision risk from the Proposed Development is considered negligible. No breeding territories recorded in 2025. Given there is no suitable habitat for herring gull within the Scoping boundary there is no potential for disturbance/displacement effects posed by the Development to this species.
Lesser black-backed gull	Seven flights were recorded during the VP surveys. The level of recorded flight activity was low and therefore collision risk from the Proposed Development is considered negligible. No breeding territories recorded in 2025. Given there is no suitable habitat for lesser black-backed gull within the Scoping boundary there is no potential for disturbance/displacement effects posed by the Development to this species.
Goshawk	Two flights recorded above NRW forestry during the VP surveys. The level of recorded flight activity was low and therefore collision risk from the Proposed Development is considered negligible. No breeding territories were recorded in 2025. There is suitable habitat for breeding goshawk within the Scoping boundary. Pre-construction surveys would be undertaken and appropriate mitigation applied to protected nesting goshawk should any be found. Therefore should mitigation be applied then any effects posed by the Development during construction to this species is considered negligible.
Red kite	10 flights were recorded during the VP surveys with most flights to the south-west of the Proposed Development. The level of recorded flight activity was low and therefore collision risk from the Proposed Development is considered negligible.

Ornithological receptor	Justification
	No breeding territories were recorded in 2025. There is suitable habitat for breeding red kite within the Scoping boundary. Pre-construction surveys would be undertaken and appropriate mitigation applied to protected nesting red kite should any be found. Therefore should mitigation be applied then any effects posed by the Development during construction to this species is considered negligible.
Kestrel	Two flights were recorded outwith the Proposed Development during the VP surveys. The level of recorded flight activity was low and therefore collision risk from the Proposed Development is considered negligible. No breeding territories were recorded in 2025. There is suitable habitat for breeding kestrel within the Scoping boundary. Pre-construction surveys would be undertaken and appropriate mitigation applied to protected nesting kestrel should any be found. Therefore should mitigation be applied then any effects posed by the Development during construction to this species is considered negligible.
Merlin	One flight was recorded outwith the Scoping boundary during the VP surveys. The level of recorded flight activity was low and therefore collision risk from the Proposed Development is considered negligible. No breeding territories were recorded in 2025. Given there is no suitable habitat for merlin within the Scoping boundary there is no potential for disturbance/displacement effects posed by the Development to this species.
Secondary raptor species	Displacement and collision during the construction of the Development is a potential risk for these species, particularly buzzard which spend a considerable amount of time hunting over open ground. However, any such effects are considered unlikely to have any more than a local impact on these populations.
Passerines	Passerines of conservation concern were recorded breeding within the Scoping boundary in 2025. However, it is considered that the extent of predicted effects, habitat loss and disturbance and/or displacement, would be negligible.

8.8 Conclusion

8.8.1 An assessment of the potential effects outlined in Section 8.7 on ornithological receptors included in Table 8.9 will be provided within the ES. Where further ornithological receptors are identified during ongoing and proposed ornithology surveys, these will also be included in the ES where there is justification to do so.

8.9 Questions to Consultees

8.9.1 The questions below are for consultees regarding the information provided in this section of the SR, for which it would be useful to receive feedback. Not all questions will be relevant to all consultees, therefore we request that consultees provide feedback only on those questions appropriate to them. The questions should not be considered an exhaustive list, and consequently consultees are welcome to provide feedback on any issue they consider relevant to the Proposed Development. If consultees elect not to respond, the Applicant will assume that consultees are satisfied with the approach adopted/proposed.

- **Question 8.1:** Are consultees satisfied that completed (and proposed) ornithological survey effort provides an acceptable robust baseline to support the assessment?
- **Question 8.2:** Do consultees have any comments regarding the EIA only concentrating on those receptors which may be subject to significant effects from the Proposed Development (either directly or indirectly)?
- **Question 8.3:** Table 8.9 notes the receptors and potential impacts proposed to be included within the EIA. Do consultees agree with the list of receptors and impacts to be included within the EIA?

9. Geology, Hydrology, Hydrogeology and Soils

9.1.1 This section of the Scoping Report has been completed by Natural Power and outlines the baseline conditions (based on available data at the time of writing) applicable to the geological, hydrological, and hydrogeological environment in the study area for the Proposed Development. The proposed survey and assessment methodology is also defined in this section of the Scoping Report. This section should be considered in conjunction with Section 7: Ecology as receptors considered within this assessment may overlap, such as designated sites, peatland and Groundwater Dependent Terrestrial Ecosystems (GWDTEs).

9.1.2 The intended approach is for the Environmental Impact Assessment (EIA) to focus on aspects of the Proposed Development that are likely to have a significant effect on known geological, hydrological and hydrogeological receptors (including soils and peat), as well as those receptors that are currently unknown. Where the impacts on geological, hydrological and hydrogeological features (direct or indirect) from the Proposed Development are not likely to cause a significant effect these have been detailed below and are therefore proposed to be 'scoped out' of the EIA.

9.1.3 As part of the EIA, a Geological, Hydrological, and Hydrogeological Impact Assessment will be undertaken on those receptors that have potential to experience a significant effect from the construction, operation and decommissioning of the Proposed Development.

9.2 Legislation and Guidance

9.2.1 The assessment considers the requirements of the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017[48] which transpose the Water Framework Directive (WFD) (2000/60/EC)[49] into law in England and Wales. The WFD aims to protect and enhance the quality of surface freshwater (including lakes, rivers and streams), groundwater, groundwater dependent ecosystems (GWDTE), estuaries and coastal waters. The key objectives of the WFD relevant to this assessment are:

- To prevent deterioration and enhance aquatic ecosystems; and
- To establish a framework of protection for surface freshwater and groundwater.

Legislation

9.2.2 The following legislation and policy will be taken into account in the assessment:

- The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017[48];
- Land Drainage Act 1994[50];
- Flood and Water Management Act 2010[51];
- Water Act 2014[52];
- The Pollution Prevention and Control (England and Wales) Regulations 2000[53];
- The Water Supply (Water Quality) Regulations 2018[54];
- The Private Water Supplies (Wales) Regulations 2017[55];
- The Waste (England and Wales) Regulations 2011[56];

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[48] The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017. Available at: https://www.legislation.gov.uk/uksi/2017/407/contents [Accessed 15/09/2025]

[49] European Council (2000) *Water Framework Directive*. Available at: https://environment.ec.europa.eu/topics/water/water-framework-directive_en [Accessed 15/09/2025]

[50] Land Drainage Act (1994). Available at: https://www.legislation.gov.uk/ukpga/1994/25/contents [Accessed 15/09/2025]

[51] Flood and Water Management Act (2010). Available at: https://www.legislation.gov.uk/ukpga/2010/29/contents [Accessed 15/09/2025]

[52] Water Act (2014). Available at: https://www.legislation.gov.uk/ukpga/2014/21/contents [Accessed 15/09/2025]

[53] UK Government (2000) *The Pollution Prevention and Control (England and Wales) Regulations 2000 (revoked)*. Available at: https://www.legislation.gov.uk/uksi/2000/1973/contents [Accessed 15/09/2025]

[54] UK Government (2018) *The Water Supply (Water Quality) Regulations 2018*. Available at: https://www.legislation.gov.uk/wsi/2018/647/contents [Accessed 15/09/2025]

[55] UK Government (2017) *The Private Water Supplies (Wales) Regulations 2017*. Available at: https://www.legislation.gov.uk/wsi/2017/1041/contents [Accessed 15/09/2025]

[56] UK Government (2012). *The Waste (England and Wales) Regulations 2011*. Available at: https://www.legislation.gov.uk/uksi/2011/988/contents [Accessed 15/09/2025]

- Part IIa of the Environment Protection Act 1990[57]; and
- The Town and Country Planning (EIA) (Wales) Regulations 2017[58]; and
- The Environment (Wales) Act 2016[59].

Policy and Guidance

9.2.3 The following national and regional policies will also be taken into account during the assessment:

- Future Wales; The National Plan 2040;[60]
- Planning Policy Wales (PPW) (Edition 12) – February 2024;[61]
- TAN 15: Development and Flood Risk (2025);[62]
- Statutory standards for SuDS (2018);[63]
- Sustainable Drainage (SuDS) Statutory Guidance (2019);[64]
- Natural Resources Wales (NRW) The National Peatland Action Programme;[65]
- Neath Port Talbot County Borough Council (NPTCBC) LDP 2011-2026 (2016);[66]
- NPTCBC LDP Supplementary Planning Guidance (SPG):[67]
  - Biodiversity and Geodiversity SPG;
  - Renewable & Low Carbon Energy SPG;

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57 Environmental Protection Act (1990). Available at: https://www.legislation.gov.uk/ukpga/1990/43/part/IIA [Accessed 15/09/2025]

58 UK Government (2017). *The Town and Country Planning. (Environmental Impact Assessment) (Wales) Regulations 2017*. Available at: https://www.legislation.gov.uk/wsi/2017/567/contents [Accessed 15/09/2025]

59 Environment Act (Wales) (2016). Available at: https://www.legislation.gov.uk/anaw/2016/3/contents [Accessed 15/09/2025]

60 Welsh Government (2021) *Future Wales: The National Plan 2040*. Available at: https://www.gov.wales/future-wales-national-plan-2040-0. [Accessed 15/09/2025]

61 Welsh Government (2024) *Planning Policy Wales (Edition 12) February 2024*. Available at: https://www.gov.wales/sites/default/files/publications/2024-07/planning-policy-wales-edition-12.pdf [Accessed 15/09/2025]

62 Welsh Government (2025) *Technical Advice Note (TAN) 15: Development and Flood Risk* Available at: https://www.gov.wales/technical-advice-note-tan-15-development-flooding-and-coastal-erosion [Accessed 15/09/2025]

63 Welsh Government (2018) Statutory standards for sustainable drainage systems – designing, constructing, operating and maintaining surface water drainage systems. Available at: https://www.gov.wales/sites/default/files/publications/2019-06/statutory-national-standards-for-sustainable-drainage-systems.pdf [Accessed 15/09/2025]

64 Welsh Government (2019) *Sustainable Drainage (SuDS) Statutory Guidance*. Available at: https://www.gov.wales/sites/default/files/publications/2019-06/statutory-guidance.pdf [Accessed 15/09/2025]

65 Natural Resources Wales (n.d.) *The National Peatland Action Programme*. Available at: https://naturalresources.wales/evidence-and-data/maps/the-national-peatland-action-programme/?lang=en [Accessed 15/09/2025]

66 Neath Port Talbot County Borough Council (2016) *Adopted Local Development Plan 2011–2026*. Available at: https://www.npt.gov.uk/planning-and-building-control/planning-policy/adopted-ldp-2011-2026/ [Accessed 15/09/2025]

67 Neath Port Talbot County Borough Council (n.d.) *Supplementary Planning Guidance*. Available at: https://www.npt.gov.uk/planning-and-building-control/planning-policy/supplementary-guidance/ [Accessed 15/09/2025]

- Pollution SPG; and
- Design SPG.

9.2.4 Table 9.1 lists other guidance and best practice documentation which will be considered as part of the assessment.

Table 9.1: Guidance and good practice

Topic	Source of information
Guidance for Pollution Prevention (GPP)*[68]	GPP 1: Understanding your environmental responsibilities - good environmental practices. GPP 2: Above ground oil storage tanks. GPP 4: Treatment and disposal of wastewater where there is no connection to the public foul sewer. GPP 5: Works and maintenance in or near water. GPP 6: Working on construction and demolition sites. GPP 8: Safe storage and disposal of used oil. GPP 13: Vehicle washing and cleaning. GPP 21: Polluting incident response planning. GPP 22: Dealing with spills. GPP 26: Safe Storage - drums and intermediate bulk containers.
Construction Industry Research and Information Association (CIRIA)[69]	CIRIA C811 Environmental Good Practice on Site (fifth edition). CIRIA C753 The Sustainable Drainage Systems (SuDS) Manual. CIRIA C741 Control of Water Pollution from Construction Sites. CIRIA C624 Development and Flood Risk – guidance for the construction industry. CIRIA C648 Control of Water Pollution from Linear Construction Projects. CIRIA C786 Culvert, Screen and Outfall Manual CIRIA C758D Abandoned mine workings manual
Other Guidelines	Environment Agency, The Environment Agency's approach to groundwater protection (2018).[70]

[68] NetRegs (n.d.) *Guidance for Pollution Prevention (GPP) documents.* Available at: https://www.netregs.org.uk/environmental-topics/guidance-for-pollution-prevention-gpp-documents/ [Accessed 15/09/2025]

[69] CIRIA (2024) *Full list of CIRIA Guidance* Available at: https://www.ciria.org/ [Accessed 15/09/2025]

[70] Environment Agency (2018) *The Environment Agency's approach to groundwater protection.* Available at: https://assets.publishing.service.gov.uk/media/5ab38864e5274a3dc898e29b/Envirnment-Agency-approach-to-groundwater-protection.pdf [Accessed 15/09/2025]

Topic	Source of information
	Scottish Renewables Joint Publication, (2019) Good Practice During Wind Farm Construction Version 4.[71]**
	Forestry Civil Engineering, Scottish National Heritage, (2010), Floating Roads on Peat.[72]**
	Scottish Renewables, Joint Publication (2012), Development of Peatland: Guidance on the Assessment of Peat Volumes, Reuse of Excavated Peat and the Minimisation of Waste.[73]**
	Department for Environment, Food and Rural Affairs (2009) Construction Code of Practice for the Sustainable Use of Soils on Construction Sites.[74]
	Scottish Environment Protection Agency (SEPA) (2024). Guidance on Assessing the Impacts of Developments on Groundwater Dependent Terrestrial Ecosystems.[75]**

* GPPs are the new series (that replace the Pollution Prevention Guidelines, PPGs) providing environmental good practice guidance for the whole UK, and environmental regulatory guidance directly to Northern Ireland, Scotland and Wales.

** Welsh Legislation and Guidance used where available. Scottish Guidelines cited where there is not a suitable Welsh alternative.

Source: <Insert Source text here>

9.3 Existing Conditions

Study Area

9.3.1 The study area used within this hydrological scoping assessment is defined as the full extent of the Scoping area as well as the upper and lower reaches of the watercourse catchments within the Scoping area. For designated sites, the study area includes the full extent of the Scoping area plus a 2 km buffer.

[71] Scottish Renewables (2019) *Guidance – Good Practice during Wind Farm Construction*. Available at: https://www.scottishrenewables.com/publications/498-guidance-good-practice-during-wind-farm-construction [Accessed 15/09/2025]

[72] Forestry Civil Engineering & Scottish Natural Heritage (2010) *Floating Roads on Peat*. Available at: https://www.roadex.org/wp-content/uploads/2014/01/FCE-SNH-Floating-Roads-on-Peat-report.pdf [Accessed 15/09/2025]

[73] Scottish Renewables & SEPA (2012) *Guidance on the Assessment of Peat Volumes, Reuse of Excavated Peat and the Minimisation of Waste*. Available at: https://www.gov.scot/publications/assessment-of-peat-volumes-reuse-of-excavated-peat-and-minimisation-of-waste-guidance/ [Accessed 15/09/2025]

[74] Department for Environment, Food and Rural Affairs (2009), *Construction Code of Practice for the Sustainable Use of Soils on Construction Sites*. Available at: https://assets.publishing.service.gov.uk/media/5b2264ff40f0b634cfb50650/pb13298-code-of-practice-090910.pdf [Accessed 15/09/2025]

[75] Scottish Environment Protection Agency (n.d.) *Guidance and Advice Notes – Land and Planning*. Available at: https://www.sepa.org.uk/environment/land/planning/guidance-and-advice-notes/ [Accessed 15/09/2025]

Desktop Review

9.3.2 A desktop review has been undertaken to establish geological, hydrological, hydrogeological and peat conditions underlying the study area and surrounding land use where relevant. A detailed review of documentation and data sources has been undertaken, as shown in Table 9.2.

Table 9,2: Data sources for desktop study

Data	Source/type of data	Details
Topography and features	1:10,000 Ordnance Survey (OS) Raster Data 1:25,000 OS Raster Data	Mapping used for desk-based analysis to understand baseline environment.
Designated Sites	NRW – Find Protected Areas of Land and Sea[76]	Online portal that allows for the searching of protected areas in Wales.
Geology	British Geological Survey (BGS) – Geoindex Onshore[77] Mining Remediation Authority – Map Viewer[78]	Mapping used to establish and understand the baseline environment. Mapping used to establish and understand coal mining activities within the area.
Soils and Peat	Cranfield University – LandIS Soilscapes Viewer[79] NRW – Peatland of Wales Map,[80] UK Centre for Ecology & Hydrology (UKCEH), BGS & NRW –Unified Peat Map for Wales[81]	Mapping of soils to help establish baseline conditions relative to soil and peat. Mapping of peat studied to help establish baseline conditions and anticipate and verify the results of surveys at the Proposed Development.

[76] Natural Resources Wales (n.d.) *Find protected areas of land and sea*. Available at: https://naturalresources.wales/guidance-and-advice/environmental-topics/wildlife-and-biodiversity/protected-areas-of-land-and-seas/find-protected-areas-of-land-and-sea/?lang=en [Accessed 15/09/2025]

[77] British Geological Survey (n.d.) *GeoIndex (Onshore)*. Available at: https://www.bgs.ac.uk/map-viewers/geoindex-onshore [Accessed 15/09/2025]

[78] Mining Remediation Authority (2025) *Mining Remediation Authority Map Viewer*. Available at: https://datamine-cauk.hub.arcgis.com/ [Accessed 15/09/2025]

[79] Cranfield University (n.d.) *Soilscapes Viewer*. Available at: https://www.landis.org.uk/soilscapes/ [Accessed 15/09/2025]

[80] Natural Resources Wales (n.d.) *Peatland Data Portal Map Layers*. Available at: https://naturalresources.wales/evidence-and-data/maps/peatland-data-portal-map-layers/?lang=en [Accessed 15/09/2025]

[81] Welsh Government (n.d.) DataMapWales: *Unified Peat Map for Wales*. Available at: https://datamap.gov.wales/maps/new?layer=inspire-wg:wg_unified_peat_2019#/ [Accessed 15/09/2025]

Data	Source/type of data	Details
	Y Bryn Wind Farm Environmental Statement, Chapter 10: Hydrology, Geology and Hydrogeology[82] Margam Port Talbot National Grid Upgrade Works EIA Screening Report[83]	
Surface Water	Water Watch Wales – Cycle 3 River and Waterbodies Map (2024)[84] Flood Estimation Handbook (FEH): FEH Web Service[85] NRW – Main Rivers map[86]	Provision of information on existing water quality and catchment pressures. Provides flow estimates. Provides information relating to statutory main rivers in Wales to help establish the hydrological environment.
Water Resources	Water Watch Wales – Cycle 3 River and Waterbodies Map (2024)84 DataMapWales Licenced Water Abstractions[87] Y Bryn Wind Farm Environmental Statement, Chapter 10: Hydrology, Geology and Hydrogeology[82]	Provision of information on reservoirs and catchment pressures. For details of licensed water abstractions. For details of Private Water Supplies (PWSs)
Flood Risk	NRW – Wales Flood Map[88]	Used for establishing and assessing on site,

[82] Natural Power (2023) *Y Bryn Wind Farm Environmental Statement, Chapter 10: Hydrology, Geology and Hydrogeology*. Available at: https://www.ybryn-windfarm.cymru/wp-content/uploads/2023/06/Y-Bryn-Wind-Farm-Chapter-10-Hydrology-Geology-and-Hydrogeological-Assessment.pdf [Accessed 15/09/2025]

[83] Stantec (2025) *Margam Port Talbot National Grid Upgrade Works Environmental Impact Assessment Screening Report*. Available at: https://appsportal2.npt.gov.uk/ords/idocs12/f?p=Planning:2:0::NO::P2_REFERENCE:P2025/0309 [Accessed 15/09/2025]

[84] Natural Resources Wales (n.d.) *Water Watch Wales*. Available at: https://waterwatchwales-nrw.hub.arcgis.com/ [Accessed 15/09/2025]

[85] UK Centre for Ecology & Hydrology (n.d.) *Flood Estimation Handbook Web Service*. Available at: https://fehweb.ceh.ac.uk/ [Accessed 15/09/2025]

[86] Natural Resources Wales (2022) *Main Rivers*. Available at: https://datamap.gov.wales/layers/inspire-nrw:NRW_MAIN_RIVERS [Accessed 15/09/2025]

[87] Natural Resources Wales (2025) *Licenced Water Abstractions*. Available at: https://datamap.gov.wales/layers/geonode:nrw_water_resource_permits [Accessed 15/09/2025]

[88] Natural Resources Wales (n.d.) *Flood Risk Assessment Wales Map*. Available at: https://naturalresources.wales/flooding/check-your-flood-risk-on-a-map-flood-risk-assessment-wales-map/?lang=en [Accessed 15/09/2025]

Data	Source/type of data	Details
		downstream and cumulative flood risk from various sources.
Hydrogeology	BGS – Geoindex Onshore77 Water Watch Wales – Cycle 3 River and Waterbodies Map (2024)84 NRW's Interactive Map[89]	For understanding effects on groundwater quality, quantity and flood risk.
Groundwater Dependent Terrestrial Ecosystems (GWDTE)	Water Watch Wales – Cycle 3 River and Waterbodies Map (2024)84	Provides information relating to GWDTE to help identify if the habitat is present within the Scoping area or within a 250 m buffer.

Field Surveys

9.3.3 Phase 1 peat probing, which allows for the collection of thickness values by advancing "peat probes" through to the underlying substrate, is currently being undertaken. Initial results are available for some of the scoping area, and these have been used to inform the development of the baseline results.

Baseline Results

9.3.4 Through the desktop study and review of the initial Phase 1 peat probe data the current baseline conditions have been established and are outlined below.

Topography and Landscape Characteristics

9.3.5 The north-eastern area of the Scoping area is situated within a landscape characterised by commercial forestry (coniferous woodland), with areas of agricultural grazing on the eastern upland slopes of the grid connection corridor, interspersed with small valleys. The grid connection corridor begins near a local high point at approximately 330 m AOD (metres Above Ordnance Datum), close to the headwaters of the Nant Cwmcaetreharn (which flows generally south-west before joining the Nant Cwm Philip). Moving towards the coastline, the grid connection corridor follows the north-north-eastern slope of a ridgeline rising from the south-west toward this high point, with ground here sloping down towards a watercourse which flows generally westwards within a valley feature.

9.3.6 As the corridor approaches Margam, it turns south, passing over broadleaved woodland and vegetated steep terrain immediately north-east of the M4 motorway (where elevations drop from around 150 m AOD to around 20 m AOD). The western section of the Scoping area lies within an industrial zone near the coast, although much of this area appears to be

[89] Natural Resources Wales (n.d.) *ArcGIS Experience*. Available at: https://experience.arcgis.com/experience/dd852f0e12864928973e3e165a1b4631/page/English?views=Layers [Accessed 15/09/2025]

vegetated and containing a network of drainage ditches. This lower-lying coastal area (with mapped elevations as low as 3 m AOD) is dominated by large-scale industrial infrastructure, transport corridors, and residential settlements at Margam (near to Port Talbot to the north), creating a sharp contrast with the rural upland character of the eastern corridor.

Agricultural land quality

9.3.7 Land quality is determined using the (Agricultural Land Classification) ALC of England and Wales revised guidelines (MAFF, 1988).

9.3.8 Welsh Government's Predictive ALC Map 2[90] depicts the majority of land within the Scoping boundary to be grade 4 (i.e. not Best and Most Versatile (BMV) land). A small amount of BMV (subgrade 2) is predicted south of the A48 and north of the A4241 adjacent to the roundabout so is unlikely to ever be used for farming going forwards due to its location and relatively small area. There is no Grade 1 or 3a within the Scoping boundary and the predominant grade of land in the study area is predicted to be grade 4. Based on the predictive ALC map, the percentage of BMV land in the study area is not likely to exceed 5%. The predicted ALC within the study area is shown on Figure 2.1: Constraints Plan, in Appendix A.

Designated Sites

9.3.9 According to NRW76, designated sites within 2 km of the Scoping boundary include the Eglwys Nunydd Reservoir and the Margam Moors, both of which are designated as Sites of Special Scientific Interest (SSSIs). Further summaries of both these SSSIs are presented in Table 9.3

Table 9.3: Designated sites within the hydrological study area

Name	Designation	Distance from Scoping Area	Reason for Designation
Eglwys Nunydd Reservoir[91]	SSSI	c. 590 m South	The largest sheet of fresh water [freshwater body] in the county which attracts a large number of wintering waterfowl and passage migrants.
Margam Moors[92]	SSSI	c. 770 m South	The site is the last remaining example of the once extensive coastal levels in West Glamorgan. Bounded by dunes seaward and high ground landward, it forms an agriculturally managed

[90] Available at: https://datamap.gov.wales/maps/new?layer=inspire-wg:wg_predictive_alc2#/ [Accessed 15/09/2025]

[91] Natural Resources Wales: Eglwys Nunydd Reservoir SSSI Citation. Available at: http://citations.lercwales.org.uk/sssi/331.pdf [Accessed 15/09/2025]

[92] Natural Resources Wales: Marham Moors SSSI Citation. Available at: http://citations.lercwales.org.uk/sssi/584.pdf [Accessed 15/09/2025]

Name	Designation	Distance from Scoping Area	Reason for Designation
			freshwater habitat of marsh, fen meadow and ditch communities. The area is important for supporting plants at the edge of their geographical range and for hosting nationally significant invertebrate populations.

9.3.10 It is considered that both of these SSSIs are water-dependent. The Eglwys Nunydd Reservoir is unlikely to be in hydraulic connection to the Proposed Development due to its engineered containment and there are no mapped inflows that would have a direct hydraulic connection to the Scoping area. Rainfall is considered to be the likely primary source of recharge. OS mapping indicates overflow channels are present to the north and west of the reservoir, further indicating that there is no likely direct hydraulic connection between it and the Scoping area.

9.3.11 There is a mapped network of ditches within and between the Scoping area and Margam Moors. Flow direction within these ditches is not immediately obvious from review of OS mapping and topography due to the relatively flat nature of the area. However, assessment undertaken at land in close proximity to the Scoping area has previously reported that none of the flow within these ditches is southwards towards the Margam Moors through the mapped network of drainage ditches[93]. Furthermore, it is reported within the Margam Port Talbot National Upgrade Works EIA Screening Report[83] that the Upper Mother Ditch drains through a culvert beneath the railway line and the Tata Steel site, passing through a sluice to a reservoir at the western side of the Tata Steel site. The reservoir is then drained to the sea. It is also reported that groundwater levels along the proposed cabling route are typically within 1–2 m of ground level and are controlled by surface water drainage and local topography, with a general northwards groundwater flow direction towards the Upper Mother Ditch and then west towards the coast. Therefore, effects on the Margam Moors SSSI are also not anticipated on the basis that is upgradient of the Scoping area and there is no plausible hydrological or hydrogeological pathway that would result in impacts from the Proposed Development.

Geology

Bedrock Geology

9.3.12 The desktop study has been informed by the BGS GeoIndex Onshore resource, which provides a 1:50,000 Bedrock Geology map and a 1:1,000,000 Bedrock Engineering Geology map. The BGS 1:50,000 Bedrock Geology map indicates that sandstone of the

[93] Neath Port Talbot County Borough Council, Report of the Head of Planning, 2 September 2009, Application for land to the east of Corus Steelworks, adjacent to the existing National Grid 275kV substation, Margam, Port Talbot. Available at: https://democracy.npt.gov.uk/Data/Planning%20and%20Development%20Control%20Committee/20090902/Agenda/%24PLANDEV-020909-REP-EN-GW.doc.pdf [Accessed 15/09/2025]

Pennant Sandstone Formation underlies the majority of the grid connection corridor, and this formation extends several kilometres to the north, east, and west of the Scoping area. The mapped south-western boundary of this formation coincides with the steep terrain immediately north of the M4 Motorway.

9.3.13 Areas of the Scoping area located at lower elevations, closer to the coastline, are mapped as being underlain by mudstone, siltstone, and sandstone of the South Wales Coal Measures Group.

9.3.14 The entirety of the Scoping area and the surrounding area is shown on the 1:1,000,000 Bedrock Engineering Geology map as being mudstone and strong sandstone (Coal-bearing).

9.3.15 The BGS 1:50,000 Linear Features map indicates the presence of numerous coal seams across the Scoping area. In addition, inferred linear faults, typically oriented north-south, are identified in the eastern portion of the site. North-west to south-east trending fault lines are mapped to cross the south-western area, which is underlain by the South Wales Coal Measures Group. Inferred reverse or thrust faults are also shown in this south-western part of the Scoping area and the surrounding area.

9.3.16 A summary of bedrock geology is presented in Table 9.4 with a summary of the 1: 1,000,000 bedrock engineering geology provided in Table 9.5.

Table 9.4: Bedrock geology within the Scoping area

Bedrock Unit	Parent Unit	Type	Description
Rhondda Member - sandstone	Pennant Sandstone Formation	Sedimentary	Green-grey, lithic arenites ('Pennant sandstones') with thin mudstone/siltstone and seatearth interbeds and mainly thin coals.
Llynfi Member - mudstone, siltstone and sandstone		Sedimentary	Green-grey and blue-grey, feldspathic, micaceous lithic arenites ('Pennant sandstones') with thin mudstone/siltstone and seatearth interbeds and mainly thin coals.
South Wales Upper Coal Measures Formation - mudstone, siltstone and sandstone	South Wales Coal Measures Group	Sedimentary	Grey (productive) coal-bearing mudstones/siltstones with seatearths and minor grey, quartz-rich sandstones, coals and ironstones.

Bedrock Unit	Parent Unit	Type	Description
South Wales Middle Coal Measures Formation - mudstone, siltstone and sandstone		Sedimentary	Grey, (productive) coal-bearing mudstones/siltstones, with seatearths and minor sandstones.

Source: BGS (2025)

Table 9.5: Bedrock engineering geology within the Scoping area

Engineering Classification	Unit	Description
Mudstone and strong sandstone (Coal-bearing) 2:1.	Mudstone	Very weak to medium strong usually fissured mudstone. Weathers to a firm to stiff silty clay generally within 2-6 m of ground surface highly weathered mudstone clasts in a silt/clay matrix may occur to depths of 10-15 m. Generally low permeability, higher permeability in fissured near-surface material flow dominantly through discontinuities. Includes siltstone and calcareous types.
	Strong sandstone	Medium strong to extremely strong medium to widely jointed thinly to thickly bedded fine to coarse-grained sandstone may contain slate or mudstone and siltstone beds. Weathers to a loose to very dense sand, gravel or silty/clayey sand. Low to high permeability flow is through matrix and discontinuities. Includes greywackes.

Source: BGS (2025)

Superficial Deposits

9.3.17 The following information has been obtained using the BGS Geoindex Onshore resource77 that provides a 1:50,000 Superficial deposits map and a 1:1,000,000 Superficial Engineering geology map.

9.3.18 The Scoping area to the north-east at higher elevations, including the steep slope immediately north of the M4 motorway, is mapped by the BGS as being absent of superficial deposits.

9.3.19 The lower-elevation areas at the base of the steep slope within the Scoping area are predominantly underlain by Tidal Flat Deposits composed of clay, silt, and sand. Devensian Glaciofluvial Deposits (sand and gravel) are also present within the Scoping area south of

the steep slope, with similar deposits mapped at the base of this steep slope both to the north and south of the Scoping area. Alluvial Fan Deposits (sand and gravel), which underlie a large portion of southern Margam to the north of the Scoping area at the lower elevations, are shown to slightly overlap a narrow area of the Scoping area associated with a watercourse and the valley terminus.

9.3.20 A summary of superficial deposits is presented in Table 9.6.

Table 9.6: Superficial deposits within the Scoping area

Unit Name	Lithology	Depositional Environment	Description	Engineering Classification
Tidal Flat Deposits – clay, silt and sand	Clay, silt and sand	Intertidal (Estuarine)	Tidal flat deposits, including mud flat and sand flat deposits, form extensive nearly horizontal marshy land in the intertidal zone that is alternately covered and uncovered by the rise and fall of the tide. They consist of unconsolidated sediment, mainly mud and/or sand. They may form the top surface of a deltaic deposit.	Fine Soil. Very soft to very stiff sometimes sandy clay or silt. Desiccation of top few metres may result in firm to stiff material overlying soft to very soft deposits at depth. Generally, very low to moderate permeability flow dominantly through fissures. Includes lacustrine deposits, glaciolacustrine deposits, fine marine deposits, estuarine alluvium and lowland river alluvium (any of which may contain peat beds or lenses) and loess/loessic soils.
Glaciof-luvial Deposits, Devensian – sand and gravel	Sand and gravel	Glaciofluvial (Outwash)	Sand and gravel deposited by glacial meltwater.	Coarse Soil. Loose to dense fine to coarse-grained sand or sand and gravel with some cobbles. Sandy clay and silt,

Unit Name	Lithology	Depositional Environment	Description	Engineering Classification
				sometimes laminated, occur locally, especially within terrace deposits which may also contain peat. High to very high permeability flow is through matrix. Includes glaciofluvial sand and gravel, river terrace deposits, blown sand, coarse marine, coarse alluvium, head and talus deposits.
Alluvial Fan Deposits - sand and gravel	Sand and gravel	Fluvial	These sedimentary deposits are fluvial in origin. They are detrital, ranging from coarse- to fine-grained and form beds and lenses of deposits reflecting the channels, floodplains and levees of a river or estuary (if in a coastal setting).	Map extent does not cover area mapped as being Alluvial Fan Deposits

Source: BGS (2025)

Artificial Ground

9.3.21 According to the BGS 1:50,000 Artificial Ground mapping, the extent of any artificial ground within the Scoping area is very limited with a minor part indicated as containing artificial ground located directly to the south of Margam. Further areas of mapped artificial ground are located directly west of the Scoping area towards the coastline, and in the area directly south (in-between the Scoping area and the Eglwys Nunydd Reservoir).

Soils and Peat

9.3.22 Soils found within the Scoping area, according to Cranfield University's LandIS Soilscapes viewer[79], are presented in Table 9.7.

9.3.23 In summary, areas within the north-eastern part of the Scoping area are mapped as being underlain by very acid loamy upland soils with a wet peaty surface (ID 16), changing into freely draining acid loamy soils over rock (ID 13) as the grid connection corridor moves downslope to the south-west (within the central parts of the Scoping area). Both freely draining slightly acid loamy soils (ID 6) and loamy and clayey soils of coastal flats with naturally high groundwater (ID 21) are mapped within the Scoping area at lower elevations (after the steep drop in elevations).

Table 9.7: Mapped soils within Scoping area

Soil-scapes ID	Soil Type	Texture	Drainage	Land Cover	Habitats
16	Very acid loamy upland soils with a wet peaty surface	Peaty	Surface wetness	Moorland rough grazing forestry and grassland	Grass moor and heather moor with flush and bog communities in wetter parts
13	Freely draining acid loamy soils over rock	Loamy	Freely draining. Drains to local groundwater and the river network	Grassland and rough grazing	Steep acid upland pastures dry heath and moor; bracken gorse and oak woodlands
6	Freely draining slightly acid loamy soils	Loamy	Freely draining. Drains to local groundwater and rivers	Arable and grassland	Neutral and acid pastures and deciduous woodlands; acid communities such as bracken and gorse in the uplands
21	Loamy and clayey soils of coastal flats with naturally	Loamy and clayey	Naturally wet. Drains to local groundwater	Arable some grassland	Wet brackish coastal flood meadows

Soil-scapes ID	Soil Type	Texture	Drainage	Land Cover	Habitats
	high ground-water				

Source: Cranfield University (2025)

9.3.24 According to the National Peatland Action Programme (NPAP)65, peat soils are defined as the following:

- More than 40 cm of organic (O horizon) material within the upper 80 cm, excluding fresh litter (L) and living moss; or
- More than 30 cm of organic (O horizon) material resting directly on the bedrock (R or Cr) or extremely stony material; and
- No overlying non-humose material mineral horizon that has a colour value of 4 or more and extends below 30 cm depth.

9.3.25 NRW mapping of Welsh peatlands80 and the Welsh Governments unified peat map of Wales[81] both indicate that there are no known peat deposits within the Scoping area. This is consistent with the BGS 1:50,000 Superficial deposits map which does not map any peat within the Scoping area. Furthermore, peat surveys undertaken for the Y Bryn Wind Farm DNS application identified that the Wind Farm site is generally underlain by a thin layer of peaty soil over clay. Limited pockets of peat were recorded on the north facing slopes of Mynydd Margam; however, the findings of those surveys, together with the initial peat depth surveys actioned for this Proposed Development have indicated that the Proposed Development is unlikely to encounter peat deposits, certainly in the area to the east of the M4.

9.3.26 The initial peat probing, undertaken as part of a Phase 1 peat survey, in July 2025 took peat depth measurements at 50 m intervals with both 10 m and 20 m offsets along an indicative proposed cable route, starting from the top of the steep ground north of the M4 motorway to the edge of the forestry at NGR 279500, 187034. These results indicated that deposits of peat (defined as organic material exceeding 30 cm in depth) were largely absent. Of the three locations where depths greater than 30 cm were recorded, after core analysis, only one was classified as peat, with a measured depth of 40 cm.

9.3.27 A summary of initial peat probing results relevant to the proposed cable route are provided below in Table 9.8.

Table 9.8: Available phase 1 peat survey probe depths along the proposed cable route (including a 10 m and 20 m offset)

Measured Depth (m)	Number of corresponding Points	Percentage of total points probed at corresponding depth
0.1	184	59.35%
0.2	104	33.55%
0.3	19	6.13%
0.4	2*	0.65%
0.7	1**	0.32%

Table notes:

*One of these depths considered not to be peat. Over half of the core was mineral soil.

**Not considered to be peat. Cored as predominately mineral soil.

Source: Natural Power (2025)

9.3.28 Based on a combination of data sources and available peat probing within the grid connection corridor it can be concluded that there is likely to be no significant peat deposits present along the proposed cable route, in the northern part of the Scoping area. The Scoping area to the south of the M4 will be surveyed in due course, but is it is anticipated that peat deposits are likely to be limited in this area.

Coal Mining

9.3.29 The Proposed Development lies within the South Wales Coal Mining Reporting Area.

9.3.30 The Mining Remediation Authority's online planning and coal mining map viewers[78] shows that there are coal mining considerations within the local area, including at the Scoping area.

9.3.31 Numerous mine entry locations are recorded within the local area, including several within the valley feature immediately to the north (Cwm y Brombil). However, no mine entries are identified within the Scoping boundary. An extensive area of probable historic workings is mapped to the north of this valley feature, but it does not overlap with the Scoping area.

9.3.32 Extensive underground workings are recorded to the north-north-west of the Scoping area, and are mapped to extend beneath the central portion of the site. The central part of the Scoping area is also designated by the Mining Remediation Authority as a high-risk area for development.

Surface Water

WFD Classifications

9.3.33 The Scoping area extends into two WFD waterbody catchments, which are presented in Table 9.9 alongside details relating to their WFD status from the latest Cycle 3 (Interim 2024) results84.

Table 9.9: WFD catchments within the Scoping area

WFD ID	Water-body (WB) Type	WB Name	Overall Status (Interim 2024)	Overall Ecol-ogical Status (Interim 2024)	Overall Chemical Status (Interim 2024)	Heavily Modified Status
GB11005 8026190	River	Nant Cwm Philip – head-waters to confluence with Kenfig	Poor (driving element – fish)	Poor	High	Natural
GB11005 8026100	River	Ffrwd Wyllt – head-waters to tidal limit	Moderate (driving element fish; Mitigation Assess-ment)	Moderate	High	Heavily modified

Source: Welsh Government (2025)

9.3.34 It is again noted that the Eglwys Nunydd Reservoir (WFD Waterbody ID GB31042079) is unlikely to receive water draining from the Scoping area. The Eglwys Nunydd Reservoir has a moderate overall status, with a moderate ecological status and high chemical status according to the WFD Lake Waterbodies Cycle 3 (interim 2024) assessment.

9.3.35 With respect to WFD groundwater bodies the entirety of the Scoping area is underlain by the Swansea Carboniferous Coal Measures (GB41002G201000), which has a Cycle 3 assigned overall waterbody status of Poor. Its quantitative status is assessed as Good, and its chemical status as Poor.

Surface Waterbodies & Features

9.3.36 Statutory Main Rivers are designated by NRW and are typically larger streams and rivers, however small watercourses can be categorised as a main river depending on their significance.

9.3.37 There are no Main Rivers within the Scoping area or in likely direct hydraulic connection. The Ffwrd Wyllt lies approximately 2.2 km to the north, and only small marginal areas at the northern edge of the Scoping area are located on land that slopes towards it or associated tributaries. Intervening valley features, including the Cwm Y Brombil, further separate the Proposed Development from this watercourse.

9.3.38 Similarly, the section of the Tu Du Brook designated as a Main River is located around 1.5 km to the south-east. However, local topography, together with the presence of tributaries, drainage ditches, reservoirs, and coastal moors at lower elevations, makes a direct hydraulic connection between the Proposed Development and this Main River unlikely.

9.3.39 Every watercourse in Wales, other than those determined as Main Rivers, are classified as an "ordinary watercourse"86. The Upper Mother Ditch, located within the Scoping area at lower elevations south of Margam, is the only named watercourse present within the Scoping area, although a further network of unnamed ditches and small ponds are also shown on Ordnance Survey (OS) mapping within this part of the Scoping area. According to previous assessment[83,93] flow within the Upper Mother Ditch, the Middle Ditch and Lower Mother Ditch is not southwards towards the Margam Moors SSSI and on that basis there is not a feasible flow pathway via surface water flow from the Proposed Development.

9.3.40 The watercourse mapped on OS mapping within the Cwm y Brombil valley, sometimes referred to as the Arnallt Brook, lies directly north of the central and northern parts of the Scoping area. This watercourse likely receives drainage from the Scoping area, both via overland flow and potentially shallow groundwater pathways to associated tributaries. A mapped spring-fed watercourse at NGR 279402, 187354, located within the Scoping area, also discharges to this feature via an unnamed tributary.

9.3.41 The Nant Cwmcaetreharn is another named watercourse which likely receives drainage from unnamed tributaries located directly southwest of the northern part of the Scoping area. Mapped springs suggest that this watercourse is partially supported by groundwater, which may also originate from the Scoping area.

Effects of Coal Mining on Water Quality

9.3.42 The Proposed Development lies within the Western Wales River Basin District, an area with a long history of mining and quarrying. This mining legacy has placed pressure on water quality from two main sources: underground workings and surface waste materials. Groundwater leaching from abandoned mines can be contaminated with heavy metals and may also be highly acidic. Such pollution can have significant ecological impacts.

9.3.43 The legacy of coal mining in the area surrounding the Proposed Development continues to influence the baseline water quality of both surface and groundwater regionally. Even after mining has ceased, there remains potential for river pollution, posing risks to aquatic fauna and overall ecosystem health. It is noted that water quality is reported as being of High Status for both of the surface WFD catchments within the Scoping area, whilst the WFD Swansea Carboniferous Coal Measures groundwater body, which covers an extensive area, is assessed as being of Poor Status.

Water Resources

Public Water Supplies and Drinking Water Protected Areas

9.3.44 According to NRW's publicly available mapping[87] there are licensed water abstractions in relatively close proximity to the Scoping area. Licenced water abstractions within 2 km of the Scoping area are summarised in Table 9.10 below.

Table 9.10: Licenced abstractions within 2 km of Scoping area

Permit No.	Abstra-ction Type	Supply Source	Available Grid Reference	Distance from Scoping area	Purpose
21/58/34/0003	Borehole	Groundwater, superficial gravels	E:279040 N:185740	c.400 m south	Industrial/commercial/public services – evaporative cooling
21/58/34/0003	Borehole	Groundwater, superficial gravels	E:278900 N:185690	c.400m south	Industrial/commercial/public services – evaporative cooling
21/58/34/0002	Point source	Surface water, ditch passing through Abbey Works	E:277730 N:186460	c.680 m west	Industrial/commercial/public services – evaporative cooling
WA/058/0051/0002	Point source	Surface water, Fishpond on Nant Cwm Philip	E:280270 N:186360	c.930 m east	Production of energy, hydro-electric
21/58/51/0004	Point source	Surface water, Tydu Brook	E:280400 N:185370	c.1550 m south-east	Industrial/commercial/public services – process water

Source: NRW (2025)

9.3.45 There is the potential for the licensed abstraction under permit no. WA/058/0051/0002 to be hydraulically connected to the Proposed Development based on the flow regime of the drainage network. However, its use in evaporative cooling is unlikely to be impacted by the Proposed Development.

9.3.46 There is limited potential for hydraulic connectivity between the Proposed Development and the boreholes associated with permit no. 21/58/34/0003 but, based on the understanding of likely groundwater flow directions, and their use for evaporative cooling, they are considered unlikely to be affected. Licensed abstractions 21/58/51/0004 and WA/058/0051/0002 are also unlikely to be hydraulically connected to the Proposed Development, noting also their uses in energy production and process water, respectively, and, as such they are unlikely to be impacted.

9.3.47 According to NRW's Water Watch Wales84, there are no drinking water protected areas within the Scoping area or within potential hydraulic connection. This includes both drinking water protected lakes and river catchments.

9.3.48 All groundwater bodies in Wales are designated as Drinking Water Protected Areas (DWPAs). The Swansea Carboniferous Coal Measures (GB41002G201000) were considered as not being at risk in the 2020 risk assessment[84].

9.3.49 The Scoping area is not within a groundwater source protection zone (SPZ).

Private Water Supplies (PWS)

9.3.50 As part of the EIA Private Water Supply (PWS), information previously provided by NPTCBC in September 2020, in support of the Y Bryn Wind Farm ES[82], will be used to identify any PWS within the Scoping area or within a 2 km radius. Given this data is relativity recent, it is considered that it is still valid. PWSs within 2 km of the Scoping area as per the Y Bryn Wind Farm ES are detailed below in Table 9.11.

Table 9.11: Known PWS within 2 km of Scoping area

ID within Y Bryn Wind Farm ES	PWS Supply Name	Abstraction Type	Supply Source	Local Authority	Available NGR	Distance from Scoping area
4	The Grange Cottage	Unknown	Unknown	NPTCBC	280105, 189883	c.1.73 km North
5	Crugwyllt Fawr Farm	Spring and Borehole	Ground-water	NPTCBC	279767, 187050	c.0.21 km East
8	Brombil House	Unknown	Surface	NPTCBC	279766, 187911	c.0.19 km North
9	The Grange Hafod Farm	Unknown	Unknown	NPTCBC	280105, 189884	c.1.73 km North
17	Crugwyllt Fach Farm	Unknown	Unknown	NPTCBC	279783, 187009	c.0.24 km East
25	Llety Piod Farm	Spring and Borehole	Ground-water	NPTCBC	278420, 189334	c.1.98 km North

ID within Y Bryn Wind Farm ES	PWS Supply Name	Abstrac-tion Type	Supply Source	Local Author ity	Available NGR	Distance from Scoping area
29	Tyla Farm	Spring	Ground-water	NPTCBC	279195, 187635	c.0.16 km West
35*	Tyn wyn	Unknown	Unknown	NPTCBC	280009, 185548	c.1.13 km South

Table notes:

*Details inferred from Y Bryn Windfarm ES Figure 10.1a and supportive database of results, scoped out of further assessment within main ES chapter.

Source: NPTCBC (2020) and Natural Power (2023)

9.3.51 Several properties with a PWS as reported in the Y Bryn Wind Farm ES[82] are located near the Scoping area. These known PWS will be assessed as part of the EIA, taking into account any possible hydrological connectivity between the PWS sources and the Proposed Development.

9.3.52 A review of the topography and landscape indicates that any PWS within Bridgend County Borough Council (BCBC), approximately 1.35 km west of the Scoping area at its closest point, will be hydraulically separate from the Proposed Development. Consequently, PWS within BCBC are proposed to be 'scoped out' of further assessment.

Flood Risk

9.3.53 According to the Wales Flood Map88 there is no significant flood risk from rivers within the northern upland part of the Scoping area. However, areas at lower elevations south of Margam are shown to be at flood risk, including areas designated as high risk.

9.3.54 The Wales Flood Map also identifies a flood risk from reservoirs within the Scoping area south of Margam.

9.3.55 Within the northern upland part of the Scoping area, only very limited areas are mapped as being at risk of flooding from surface water and small watercourses. In contrast, a substantial proportion of the Scoping area at lower elevations south of Margam is mapped as being at risk from such sources, including areas classified as high risk.

9.3.56 There is no mapped flood risk from the sea.

9.3.57 The Scoping area is not located within a flood storage area.

Hydrogeology

9.3.58 According to the BGS Geoindex Onshore77 Hydrogeology 1:625,000 map, the Scoping area is underlain by the South Wales Upper Coal Measures Formation.

9.3.59 This formation is characterised as being a Moderately productive aquifer, summarised as being a "*regional, cyclic multi-layered aquifer with moderate yields from sandstones and many springs. Mine water quality poor but elsewhere reasonable*".

9.3.60 NRW89 classifies this bedrock aquifer as Secondary A which means that it may support water supplies at a local scale and in some cases form an important source of baseflow to rivers. Additionally, it is classified as being medium to high in groundwater vulnerability. The high vulnerability area correlates with the area lacking superficial deposits in the upland part of the Scoping area.

9.3.61 The superficial deposits within the Scoping area are either classified as Secondary A or Secondary (undifferentiated). Secondary (undifferentiated) aquifers are instances where it is not possible to attribute to either Secondary A or Secondary B aquifers.

9.3.62 Through a review of the 1:25,000 OS mapping it was identified that a number of the watercourses within the hydrological study area receive flow from springs, indicating that groundwater forms an important source of baseflow to rivers.

9.3.63 Furthermore, in relation to the Proposed Development, at lower elevations, south of Margam, as stated earlier a preliminary Hydrogeological Impact Assessment undertaken by Envireau Water (2025) in support of the Margam Port Talbot National Grid Upgrade Works EIA Screening Report[83], it has been determined that groundwater levels are typically within 1–2 m of ground level. These shallow groundwater levels are controlled by surface water drainage and local topography. The general groundwater flow direction in this area is reported to be to the north, towards the Upper Mother Ditch and then west towards the coast.

Groundwater Dependent Terrestrial Ecosystems (GWDTEs)

9.3.64 According to NRW's Water Watch Wales84, there are no Groundwater Dependent Terrestrial Ecosystems (GWDTEs) within the Scoping area.

9.3.65 The Margam Moors Fen is the nearest GWDTE mapped by NRW, circa 1.5 km to the south-east of the Scoping area. There are no further GWDTE mapped by NRW within 2 km.

9.3.66 As detailed in Section 7 of this Scoping Report there has been an extended Phase 1 habitat survey of the Scoping boundary and a 250 m buffer (where access has been permitted).

9.3.67 Habitats identified within the extended Phase 1 habitat survey comprise largely of coniferous woodland and improved grassland with smaller areas of broad-leaved woodland and scattered scrub/ continuous bracken. Marshy grassland, of which two areas were present, have the potential for GWDTE habitats and will be subject to NVC surveys.

9.4 Proposed Surveys and Assessment Methodologies

9.4.1 The generic project-wide approach to the assessment methodology is set out in Section 2 of this Scoping Report. This section describes how this methodology would be applied, and

adapted as appropriate, to address the specific needs of the Geology, Hydrology, and Hydrogeology and Soils assessment.

9.4.2 The ES chapter will summarise the findings of the desktop study, surveys and consultation, together forming the baseline against which the potential impact of the Proposed Development, alone and cumulatively with other developments, would be assessed.

Study Area

9.4.3 The hydrological study area is defined as the full extent of the Scoping area as well as the upper and lower reaches of watercourse catchments that are present within this area. To assess designated sites and water resources (i.e. PWS), the geological and hydrogeological environment, a 2 km search area buffer will be applied from the site boundary.

Determination of the significance of effects

9.4.4 The significance of the effects resulting from the Proposed Development would be primarily determined by the sensitivity value of a given feature and the magnitude of change.

9.4.5 Table 9.12 provides the definitions of sensitivity values and the respective criteria.

9.4.6 The magnitude of change definition and criteria is presented in Table 9.13.

Table 9.12: Definition of sensitivity values

Sensitivity	Definition	Criteria
High	**National importance.** Receptor with a high quality and rarity, local scale and limited potential for substitution/replacement or receptor with a medium quality and rarity, regional or national scale and limited potential for substitution / replacement.	Water Watch Wales Water Framework Directive Classification: High-Good or is close to the boundary of a classification Moderate to Good or Good to High Receptor is of high ecological importance or national or international value (e.g. SSSI, Special Area of Conservation (SAC), habitat for protected species or Geological Conservation Review (GCR) sites) which may be dependent upon soil, geology or the hydrology of the development area; Receptor is at high risk from flooding above 0.5% Annual Exceedance Probability (AEP) and / or water body acts as an active floodplain or flood defence;

Sensitivity	Definition	Criteria
		Receptor is used for public and / or private water supply (including DWPAs); and; Groundwater vulnerability is classified as high; and if a GWDTE is present and identified as being of high sensitivity. Peat present on site will be identified as being of high sensitivity
Medium	**Regional importance.** Receptor with a medium quality and rarity, local scale and limited potential for substitution/replacement or receptor with a low quality and rarity, regional or national scale and limited potential for substitution / replacement.	Water Watch Wales Water Framework Directive Classification: Moderate or is close to the boundary of a classification Low to Moderate; Receptor is at moderate risk from flooding (0.1% AEP to 0.5 % AEP), but does not act as an active floodplain or flood defence; and Moderate classification of groundwater aquifer vulnerability.
Low	**Local importance.** Receptor with a low quality and rarity, local scale. Environmental equilibrium is stable and is resilient to changes that are greater than natural fluctuations, without detriment to its present character.	Water Watch Wales Water Framework Directive Classification: Poor or Bad; Receptor is at low risk from flooding (less than 0.1% AEP); and Receptor not used for water supplies (public or private). Peat soils that are present with depths <0.3 m will be identified as being of low sensitivity.

Table 9.13: Magnitude of change

Magnitude	Criteria	Definition
High	**Total loss** of or major/substantial alteration to key elements/features of the baseline (pre-development) conditions such that the post development character/composition/attributes will be fundamentally changed.	Fundamental (long term or permanent) changes to geology, soils, hydrology, water quality and hydrogeology.

Magnitude	Criteria	Definition
Medium	**Loss or alteration** to one or more key elements/features of the baseline conditions such that post development character/composition/attributes of the baseline will be materially changed.	Material but non-fundamental and short to medium term changes to the geology, soils, hydrology, water quality and hydrogeology.
Low	**A minor shift** away from baseline conditions. Change arising from the loss/alteration will be discernible/detectable but not material. The underlying character/composition/attributes of the baseline condition will be similar to the pre-development circumstances/situation.	Detectable but non-material and transitory changes to the geology, soils, hydrology, water quality and hydrogeology.
Negligible	**Very little change** from baseline conditions. Change barely distinguishable, approximating to a 'no change' situation.	No perceptible changes to the geology, soils, hydrology, water quality and hydrogeology.

9.4.7 In terms of the hydrology and hydrogeology, the key types of effects would relate to water quantity (level and flow) and quality. However, depending on the effects on surface water flows, there may also be effects on immediate and downstream morphology and sediment dynamics and flood risk.

9.4.8 In the assessment, all mitigation considered necessary would be identified and residual effects with this mitigation in place would be determined. It is intended that no residual significant effects would remain following adoption of the proposed mitigation, but whether this is achievable would be investigated as part of the EIA.

Cumulative Assessment

9.4.9 The ES chapter will present the potential impact of the Proposed Development, cumulatively with other operational, consented, submitted or scoping developments that are discussed in Section 2 (those that have a layout in the public domain and have submitted a scoping request). The cumulative study area for the hydrological environment is defined as a 2 km buffer from the site boundary. Within this area, it is noted that the Tu Du Brook (designated as a Main River) is unlikely to be in direct hydraulic connection with the Proposed Development and only small marginal areas at the northern edge of the Scoping Area lie on land that drains towards the Ffwrd Wyllt, located approximately 2.2 km to the north, or its associated tributaries. On this basis, a 2 km cumulative study area is considered

sufficient to capture the potential for significant cumulative effects on water environment receptors, including ordinary watercourses.

9.4.10 The assessment will also present the potential impact of concurrent phases of construction with identified cumulative schemes which have a hydrological connection to the Proposed Development.

Approach to Consultation

9.4.11 Consultation will be undertaken during the course of the assessment and will involve the following:

- Consultation with relevant stakeholders, including NRW (statutory consultee function), to ensure that the layout and the approach to EIA is considered appropriate.
- **Flood Risk and Drainage:** NPTCBC will be consulted due to their status as the SuDS Approving Body (SAB). The Proposed Development will implement principles of sustainable drainage management and will require approval from NPTCBC. Consultation and advice will be sought throughout the course of the assessment and prior to submitting the planning application.
- **Soils and Peat:** The relevant stakeholders (NRW and LQAS) will be contacted to ensure the approach to peat is agreed. By engaging with these stakeholders throughout the course of the assessment it will ensure that the application has fully considered peat as a receptor whilst also exploring the potential for peatland restoration (if deemed appropriate).
- **Coal Mining Risk Assessment (CMRA):** Due to the presence of a mapped Development High Risk Area within the Scoping area the Mining Remediation Authority (formerly the Coal Authority) will be consulted to check for any pertinent records available relating to mining activity in the area. A Statutory Search Report will be requested including digital data and abandonment plans through the Mining Remediation Authority and consultation with NPTCBC to agree the scope and methodology of the CMRA. The assessment will be based on a desk-based review of historic mining records, geological mapping and previous studies, to identify potential risks such as abandoned mine shafts, shallow seams and underground workings and also include an onsite survey of the Proposed Development by a qualified Geotechnical Engineer. Engagement with the Authority throughout the process will ensure that legacy mining risks are fully considered and that appropriate mitigation measures are developed to support the safe design and delivery of the Proposed Development.
- **Contaminated Land:** NPTCBC are requested to provide any relevant details pertaining to any potential contaminated land issues within the Scoping area.

9.4.12 As data on known PWSs provided in the Y Bryn Win Farm EIA[82] is considered valid and provides adequate coverage of data required for this assessment it is considered that further consultation on the subject of PWSs with either NPTCBC or BCBC will not be necessary.

Proposed Surveys and Reporting Outputs

9.4.13 Phase 1 peat probing is proposed within the southern Scoping area to confirm whether peat is present in the area. It is anticipated that no significant peat deposits will be present, should it be proven that peat deposits are limited it is considered that will be no need for an Outline Peat Management Plan (OPMP). On the basis of slope angle within the flat topography of the Proposed Development area south of Margam a Peat Landslide Hazard Risk Assessment (PLHRA) is considered as unnecessary. A PLHRA will also not be required where peat deposits are already indicated as not being present within the eastern upland area of the Proposed Development.

9.4.14 To support the assessment, a Flood Consequence Assessment (FCA) is likely to be necessary. If the final design avoids significant infrastructure in lower-elevation areas at risk of flooding, the FCA may be incorporated within the main chapter; otherwise, it will be prepared as a standalone appendix addressing flood risks from rivers, the sea, surface water, groundwater, sewers, and artificial sources, using the latest flood data, historical events, and topography, and following TAN15 guidance and the Wales Flood Map.

9.4.15 There is sufficient data to complete a risk assessment in relation to PWSs and licensed abstractions based on currently available data sourced from the Y Bryn Wind Farm EIA[82] and NRW database of licenced abstractions[87]. It is considered that the risk assessment to PWS and licenced abstractions based on any hydrological connectivity between the Proposed Development could be contained to the main Geology, Hydrology, Hydrogeology and Soils Chapter of the ES, and will not require a standalone technical appendix.

9.4.16 A WFD assessment contained within the main chapter will also be to ensure the Proposed Development does not affect WFD-designated waterbodies or their targets.

9.4.17 A CMRA will be produced to identify potential risks from current or historical coal mining, including abandoned shafts, shallow seams, and underground workings. The assessment will involve a desk-based review of historical mining records and geological data, to identify potential hazards relating to ground instability, mine gas emissions, mine water and unrecorded mine workings and inform any mitigation measures. The assessment will include the request of a Statutory Search Report including digital data and abandonment plans through the Mining Remediation Authority. An onsite survey will also be conducted as part of the assessment across the Proposed Development by a qualified Geotechnical Engineer to identify potential onsite hazards and verify desk study findings. The site visit will be required to identify any unrecorded mining activity historic or present, carry out visual inspection and of any site-specific risks. A site visit report will be integrated into the CMRA. The CMRA will be included as a technical appendix to the Geology, Hydrology, Hydrogeology and Soils chapter.

9.4.18 A Watercourse Crossing Assessment (WCA) involving a field survey by a suitably qualified hydrologist will be required if access tracks or underground cable installations intersect watercourses (likely limited to ditches in the western site area south of Margam). If only a limited number of watercourse crossings are required it is anticipated that water crossings

could be assessed in the Geology, Hydrology, and Hydrogeology and Soils ES chapter without the need for a standalone WCA report.

9.4.19 A GWDTE Assessment may be required if any potential GWDTEs are identified are within the relevant buffer zones of below ground works associated with the Proposed Development. This would review the hydrogeological context of any potential GWDTEs to determine the likelihood of them being actually dependent on groundwater.

9.4.20 If a Borrow Pit is needed in addition to those already applied for as part of Y Bryn Wind Farm DNS application, a Borrow Pit Assessment (BPA) will identify potential temporary extraction sites for construction materials.

9.4.21 A summary of survey work and reporting outputs to support the Geology, Hydrology, Hydrogeology and Soils chapter is listed below:

Survey Work:

- Completion of Phase 1 peat probing to confirm absence of peat in the southern part of the site.
- A field survey in support of a WCA if access tracks intersect watercourses.
- A site visit relevant to the CMRA to identify any unrecorded mining activity historic or present and carry out visual inspection and of any site-specific risks.

Technical Assessments:

9.4.22 Production of a FCA, either within the main chapter or as a standalone appendix, assessing flood risk from rivers, sea, surface water, groundwater, sewers, and artificial sources.

9.4.23 A WFD assessment within the main chapter to ensure no adverse effects on WFD-designated waterbodies.

9.4.24 A PWS and licensed abstractions risk assessment included in the main Geology, Hydrology, Hydrogeology and Soils chapter based on currently available data.

9.4.25 A CMRA to identify risks from historical/current coal mining, produced as technical appendix to the Geology, Hydrology, Hydrogeology and Soils chapter.

9.4.26 A GWDTE Assessment, if potential GWDTEs are identified within 100 m or 250 m buffers of below ground works (with the buffer dependent upon whether the depth of below ground works exceeds 1 m) associated with the Proposed Development.

Possibly needed (depending on final design/available information):

9.4.27 A WCA, including a field survey, if access tracks and underground cable installations intersect watercourses.

9.4.28 An OPMP if significant peat deposits are encountered.

9.4.29 A Borrow Pit Assessment (BPA) if temporary extraction of rock is required for construction in addition to those already applied for as part of Y Bryn Wind Farm DNS application.

9.4.30 A Phase 1 Contaminated Land Study if contaminated land is identified as a potential concern.

Outline Construction Environmental Management Plan

9.4.31 Outline Construction Environmental Management Plan (OCEMP) measures will also be presented, detailing best practice guidance to be followed, as well as incorporating specific recommendations made in the ES.

9.5 Approach to Mitigation

9.5.1 In the assessment of effects, account would be taken of both embedded mitigation measures and additional mitigation. The approach to mitigation will be informed by the EIA mitigation hierarchy of: avoid, prevent, reduce and offset. This is consistent with the stepwise approach presented in PPW and embedded within the design of the Proposed Development.

9.5.2 With respect to geology, hydrology, and hydrogeology and soils the mitigation measures could include, but are not limited to, the following:

- Avoidance of steep gradients and flood zones (and peat if encountered) when establishing the footprint of the Proposed Development;
- Application of a 50 m buffer zone applied to the entire OS watercourse network;
- Application of 100 m (for excavations less than 1 m in depth), 250 m (for excavations deeper than 1 m), and 10 m (for all activities) buffers around abstractions, PWS and actual GWDTEs, if any. SEPA guidance will be used as there is no equivalent in Wales;
- Use of micrositing if unforeseen ground conditions are encountered;
- Adoption of sensitive track and drainage design, with all drainage measures set out in the Water Management Plan (WMP) that will accompany a CEMP;
- Adherence to best practice guidance with respect to watercourse crossings;
- Deeper excavations would be designed so that they can freely drain by gravity where possible and incorporate perimeter cut-off drains. Any required dewatering and associated discharge would be undertaken in accordance with best practice, as well as an appropriate permit issued by NRW;
- Measures based on best practice guidelines (as detailed in Table 9.1) would be adopted during construction to prevent pollution, with all contractors aware of a pre-planned pollution incident response procedure. Ground investigation would be undertaken at all borrow pit search locations, if required, to determine the presence and extent of any shallow soil contaminants;
- Fuel would be stored in a suitably sized bunded area or self-bunded above-ground storage tank, and maintenance and refuelling of machinery would be undertaken offsite or within designated areas of temporary hardstanding; and
- A CEMP produced prior to the commencement of construction activities (based on the OCEMP measures set out in the application) that would present best practice guidance to be followed, as well as incorporating specific recommendations made in the ES. The

elements within the CEMP relevant to the hydrological, geological and hydrogeological environment may include, but not limited to:

- A Pollution Prevention Plan (PPP);
- A Water Management Plan (WMP);
- A Site Waste Management Plan (SWMP); and
- A Soil Management Plan (SMP), and/or a OPMP if significant peat deposits are encountered.

9.6 Potential Significant Effects of the Proposed Development

9.6.1 The potentially significant geological, hydrological, and hydrogeological effects that will be taken forward for assessment are summarised in Table 9.14.

Table 9.14: Potentially significant geological, hydrological and hydrogeological effects

Activity	Effects	Receptors
Construction Phase and Decommissioning Phase		
Earthworks and excavation (including pylon foundations, installation of underground cables, any borrow pits and land preparation works)	Ground disturbance leads to sediment loading and pollution of watercourses. Contamination of soils, surface waters and groundwater due to accidental release of pollutants during works. Excavation and fill leads to disruption of surface and near-surface flow paths and changes to the drainage regime, most typically increased runoff and flood risk. Dewatering interception of groundwater leading to a loss of water resource and disruption of groundwater support (baseflow) to watercourses. Erosion of peat / carbon rich soil including localised drying of the peat and resultant oxidation.	Groundwater within bedrock and associated WFD groundwater body. Watercourses and associated WFD surface waterbodies. Abstractions, springs, ponds and water resource use, including PWSs. Water conditions supporting conservation sites. Peat, if present.
Soil compaction and temporary hardstanding	Contamination of soils, surface waters and groundwater due to accidental release of pollutants during works. Reduced infiltration capacity results in increased runoff and flood risk, and reduced recharge to groundwater,	Groundwater within bedrock and associated WFD groundwater body. Watercourses and associated WFD surface waterbodies.

Activity	Effects	Receptors
	leading to loss of water resource and disruption of baseflow to watercourses. Ground disturbance and destruction of geological (including peat) structures.	Abstractions, springs, ponds and water resource use, including PWSs. Water conditions supporting conservation sites. Peat, if present.
Land clearance (i.e. removal of vegetation)	Land clearance and ground disturbance leads to sediment loading and pollution of watercourses. Contamination of soils, surface waters and groundwater due to accidental release of pollutants during works. Land clearance leads to disruption of surface and near-surface flow paths and changes to the drainage regime, most typically increased runoff and flood risk. Land clearance leads to breakdown of peat structure and disturbance of peat hydrology.	Groundwater within bedrock and associated WFD groundwater body. Watercourses and associated WFD surface waterbodies. Abstractions, springs, ponds and water resource use, including PWSs. Water conditions supporting conservation sites. Peat, if present.
Material stockpiling / removal (quarrying)	Ground disturbance leads to sediment loading and pollution of watercourses. Contamination of soils, surface waters and groundwater due to accidental release of pollutants during works. Excavation and fill leads to disruption of surface and near-surface flow paths and changes to the drainage regime, most typically increased runoff and flood risk. Dewatering interception of groundwater leading to a loss of water resource and disruption of groundwater support (baseflow) to watercourses.	Groundwater within bedrock and associated WFD groundwater body. Watercourses and associated WFD surface waterbodies. Abstractions, springs, ponds and water resource use, including PWSs. Water conditions supporting conservation sites. Peat soils.

Activity	Effects	Receptors
Watercourse crossings	Bank and bed disturbance leads to sediment loading, changes in morphology and pollution of watercourses. Contamination of watercourses due to accidental release of pollutants during works.	Watercourses and associated WFD surface waterbodies. Abstractions, springs, ponds and water resource use, including PWSs. Water conditions supporting conservation sites.
Hardstanding placement (if required)	Ground disturbance leads to sediment loading and pollution of watercourses. Contamination of soils, surface waters and groundwater due to accidental release of pollutants during works. Hardstanding placement leads to disruption of surface and near-surface flow paths and changes to the drainage regime, most typically increased runoff and flood risk. Ground disturbance.	Groundwater within bedrock and associated WFD groundwater body. Watercourses and associated WFD surface waterbodies. Abstractions, springs, ponds and water resource use, including PWSs. Water conditions supporting conservation sites. Peat, if present.
Operational Phase		
Operational facilities and activities	Exposed ground leads to continued sediment loading and pollution of watercourses. Contamination of soils, surface waters and groundwater due to accidental release of pollutants during maintenance activities. Contamination of soils, surface waters and groundwater due to control building and substation chemical leaks and concrete leaching. Continuation of flow disruption (including preferential flow pathways	Groundwater within bedrock and associated WFD groundwater body. Watercourses and associated WFD surface waterbodies. Abstractions, springs, ponds and water resource use, including PWSs.

Activity	Effects	Receptors
	created by underground cable installations if higher permeability infill material is used), reduced infiltration capacity and peat disruption effects.	Water conditions supporting conservation sites. Peat, if present.

9.6.2 If sources of contamination e.g. contaminated made ground, fuel tanks etc, are identified within the Proposed Development area, this could pose a potential risk to human health and water environment receptors. This risk is most relevant to the construction phase which will include excavations and earthworks and is likely to be restricted to the more industrialised section of the Scoping area at lower elevations, west of the M4 Motorway.

9.6.3 From the consideration of the baseline and the Proposed Development, receptors for which significant effects could arise, and that therefore need to be taken forward for further consideration in the ES i.e. 'scoped in', are outlined in Table 9.15. These receptors will be considered for construction, operation, and decommissioning phases.

Table 9.15: Receptors scoped in to the assessment

Receptor/Topic Areas	Reason
Soils	Peaty soils are present within the Proposed Development area, and an Outline Soil Management Plan (OSMP) will be produced to ensure soil is managed effectively.
Surface Water	WFD watercourses and catchments present within the hydrological study area.
Water Resources	PWS and licensed abstractions are present within the hydrological study area and require further consideration.
Flood Risk	Areas of flood risk are present within the Scoping area, with rivers, surface water and small watercourses, and reservoirs being identified sources of flooding.
Hydrogeology	The Proposed Development is underlain by Secondary aquifers with springs being identified within and near to the boundary of the Scoping area. These springs act as tributaries with larger catchments and may contribute to the baseflow of these rivers.
GWDTEs	The actual dependency of any identified potential GWDTEs identified from NVC surveys proposed within areas of marshy grassland will be assessed.
Coal Mining Risk	The presence of coal mining and a Development High Risk Area within the Scoping area.

9.7 Receptors Scoped Out

9.7.1 It is proposed that the wider geological environment not relevant to the CMRA is 'scoped out' of further consideration for the construction, operation, and decommissioning phases of the Proposed Development. This is on the basis that the underlying geology is consistent with the wider area and no designated geological conservation sites are present.

9.7.2 Should peat probing confirm the absence of peat across the remaining targeted parts of the indicative proposed cable route (including a 20 m buffer) and Scoping area at lower elevations south of Margam, it is considered appropriate to scope peat out of further assessment. Absence of peat would also remove the requirement for a PMP and PLHRA.

9.7.3 It is noted that, due to the land use east of the M4 motorway and its undeveloped nature, contamination sources are unlikely to be present in this part of the Proposed Development area. We are also currently unaware of any potential contaminated land issues within the Scoping area west of the M4 Motorway. Therefore, unless the statutory consultees disagree, it is proposed that contaminated land issues within the Scoping area, both to the east and to the west of the M4, are 'scoped out' of the EIA.

9.7.4 In relation to designated sites it is noted that the Eglwys Nunydd Reservoir is scoped out on the basis that there is no direct hydraulic connection with the Proposed Development. Similarly, the Margam Moors SSSI is proposed to be scoped out on the basis of no direct hydrological or hydrogeological pathways from the Proposed Development.

9.8 Conclusion

9.8.1 This section considers the potential effects of the Proposed Development with respect to geology, hydrology, hydrogeology and soils.

9.8.2 The section outlined the existing conditions for the following receptors:

- Designated Sites;
- Geology (including the risk from Coal Mining on Development);
- Soils and Peat;
- Surface Water;
- Water Resources;
- Flood Risk;
- Hydrogeology; and
- GWDTE.

9.8.3 The subsequent ES chapter will assess fully the effects of the construction, operation and decommissioning of the Proposed Development on the receptors described in Table 9.15Table 9.15.

9.9 Questions to Consultees

- **Question 9.1:** Do consultees agree with the proposed EIA scope of the Geology, Hydrology, and Hydrogeology and Soils assessment?
- **Question 9.2:** Do consultees agree with the potential receptors 'scoped in' that are presented in Table 9.15 and receptors that are scoped out?
- **Question 9.3:** Do consultees agree with the geological environment (asides from where relevant to the Coal Mining Risk Assessment) being 'scoped out' based on the justification provided in Section 9.7?
- **Question 9.4:** If only a limited number of PWS are identified as being hydrologically connected to the Proposed Development, do consultees agree that PWS can be assessed in the Geology, Hydrology, and Hydrogeology and Soils ES chapter alone without the need for a standalone PWS Assessment report?
- **Question 9.5:** If only a limited number of watercourse crossings are required, do consultees agree that water crossings can be assessed in the Geology, Hydrology, and Hydrogeology and Soils ES chapter without the need for a standalone WCA report?
- **Question 9.6:** Do consultees agree with the cumulative study area proposed i.e. a 2 km search radius from the site boundary or within the relevant hydrological catchments?
- **Question 9.7:** Do consultees have any concerns with respect to the interaction of the Proposed Development with the designated sites identified?
- **Question 9.8:** Do consultees know of any locally specific flood risk issues downstream that the Proposed Development has a potential to impact on, either adversely or beneficially?
- **Question 9.9:** Do consultees agree that the Flood Consequence Assessment can potentially be assessed in the Geology, Hydrology, Hydrogeology and Soils ES chapter without the requirement for a standalone technical appendix, dependent on the final design of the Proposed Development?
- **Question 9.10:** Do consultees agree that the WFD Assessment can be undertaken as part of the Geology, Hydrology, Hydrogeology and Soils ES chapter without the requirement for a standalone technical appendix?
- **Question 9.11:** Can consultees confirm that the legislation, policy and guidance listed in this Chapter will be appropriate for the geological, hydrological, hydrogeological and soils assessment as part of the EIA?
- **Question 9.12:** Do consultees hold any information on contamination sources or contaminated land studies relevant to the Scoping area, and if no sources or details of contaminated land are identified, that contaminated land be 'scoped out' of further assessment?
- **Question 9.13:** Do consultees hold any information on peat depth data relevant to the Scoping area?
- **Question 9.14:** Do consultees agree with the methodology of assessment proposed?
- **Question 9.15:** The reservoir within the Tata Steel steelworks site at Port Talbot is understood to receive flows from the Upper Mother Ditch. However, this is considered

unlikely to be a source of drinking water supply, rather used for industrial cooling processes. Are the consultees able to confirm its primary use and whether it can be scoped out of the hydrological, hydrogeological and geological further assessment?

10. Landscape and Visual

10.1 Introduction

10.1.1 This chapter has been prepared by SLR Consulting Limited. This chapter of the Scoping Report sets out the proposed methodology and approach to be applied in the production of the Landscape and Visual Impact Assessment (LVIA) to accompany the Application for the Proposed Development. It presents the proposed scope of the LVIA in terms of those landscape and visual receptors to be scoped in and scoped out of the assessment process based on a preliminary assessment of relevant receptors to the Proposed Development. The purpose of the LVIA is to identify and record the potential impacts and effects that the Proposed Development may have on physical elements of the landscape; landscape character; areas that have been designated for their scenic or landscape-related qualities; and views from various locations such as settlements, travel and recreational routes, and other sensitive locations.

10.2 Legislation and Guidance

Legislation and Policy

10.2.1 The LVIA will accord with the following legislation and policy:

- European Landscape Convention[94];
- National Policy Future Wales: The National Plan 2040[95];
- Planning Policy Wales (PPW) Edition 12, 2024[96]; and
- Neath Port Talbot Local Development Plan (LDP) (2011-2026)[97].

[94] The European Landscape Convention 2000 (binding in the UK from 2007 March 2007 and remains a signatory after 2020 when the UK left the European Union). Available at: https://www.coe.int/en/web/landscape/the-european-landscape-convention [Accessed 15/09/2025]

[95] Future Wales: The National Plan 2040, Welsh Government (2021). Available at: https://www.gov.wales/future-wales-national-plan-2040 [Accessed 15/09/2025]

[96] Planning Policy Wales, Edition 12. Welsh Government (2024). Available at: https://www.gov.wales/sites/default/files/publications/2024-07/planning-policy-wales-edition-12.pdf [Accessed 15/09/2025]

[97] Neath Port Talbot CBC Local Development Plan (2011-2026) (January 2016). Available at: https://www.npt.gov.uk/planning-and-building-control/planning-policy/adopted-ldp-2011-2026/ [Accessed 15/09/2025]

Guidance

10.2.2 The LVIA will accord with the 'Guidelines for Landscape and Visual Impact Assessment: Third Edition' ('GLVIA3')[98] (including 2024 clarifications[99]), the key source of guidance for LVIA. Other sources of guidance that will be used and referenced in the LVIA include the following:

- Landscape Institute (2019). Visual Representation of Development Proposals: Landscape Institute Technical Guidance Note 06/19;[100]
- Landscape Institute (2019). Technical Guidance Note 2/19 Residential Visual Amenity Assessment;[101]
- Landscape Institute (2021). Technical Guidance Note 2/21 Assessing landscape value outside of national designations;[102]
- Christine Tudor, Natural England (2nd version March 2018). An Approach to Landscape Character Assessment;[103]
- Natural Resources Wales (2021) LANDMAP Guidance Note 46: Guidance for Wales, Using LANDMAP in Landscape and Visual Impact Assessments;[104]
- Natural Resources Wales (as updated). LANDMAP the Welsh landscape baseline;[105]
- Design Commission for Wales (2023). Designing for Renewable Energy in Wales;[106]
- NatureScot (2021). Assessing the Cumulative Impact of Onshore Wind Energy Developments.[107]

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[98] Landscape Institute and Institute for Environmental Management and Assessment (2013) 'Guidelines for Landscape and Visual Impact Assessment: Third Edition' ('GLVIA3').

[99] Landscape Institute, Technical Guidance Note LITGN – 2024-01, Published August 2024. Available at: https://www.landscapeinstitute.org/wp-content/uploads/2024/08/LITGN-2024-01-GLVIA3-NC_Aug-2024.pdf [Accessed on 15/09/25]

[100] Visual Representation of Development Proposals (Technical Guidance Note 06/19), Landscape Institute. Available at: https://www.landscapeinstitute.org/visualisation/ [Accessed 15/09/2025]

[101] Residential Visual Amenity Assessment (Technical Guidance Note 02/19), Landscape Institute. Available at: https://www.landscapeinstitute.org/technical-resource/rvaa/ [Accessed 15/09/2025]

[102] Assessing landscape value outside of national designations (Technical Guidance Note 02/21), Landscape Institute. Available at: https://www.landscapeinstitute.org/publication/tgn-02-21-assessing-landscape-value-outside-national-designations/ [Accessed 15/09/2025]

[103] Christine Tudor, Natural England (2nd version March 2018). An Approach to Landscape Character Assessment. Available at: [Accessed 15/09/2025]

[104] Natural Resources Wales (2021), 'LANDMAP Guidance Note 46: Guidance for Wales, Using LANDMAP in Landscape and Visual Impact Assessments'. Available at: https://naturalresources.wales/guidance-and-advice/business-sectors/planning-and-development/evidence-to-inform-development-planning/using-landmap-in-landscape-and-visual-impact-assessments-gn46/?lang=en [Accessed 15/09/2025]

[105] Natural Resources Wales (as updated). LANDMAP the Welsh landscape baseline. Available at: https://naturalresources.wales/guidance-and-advice/business-sectors/planning-and-development/evidence-to-inform-development-planning/landmap-the-welsh-landscape-baseline/?lang=en [Accessed 15/09/2025]

[106] Design Commission for Wales (2023). Designing for Renewable Energy in Wales. Available at: https://www.gov.wales/designing-renewable-energy-wales [Accessed 15/09/2025]

[107] NatureScot (2021). Assessing the Cumulative Impact of Onshore Wind Energy Developments. Available at: https://www.nature.scot/doc/guidance-assessing-cumulative-landscape-and-visual-impact-onshore-wind-energy-developments [Accessed 15/09/2025]

10.3 Existing Conditions

Study Area

10.3.1 The initial step in the LVIA is the establishment of the study area for the assessment. LANDMAP Guidance Note 46 by NRW provides guidance on study areas relating to development types and scales and recommends a study area of 2-5 km for structures of 26 to 49 m in height. Taking this into account along with assessment experience of similar types of development, a 5 km study area is proposed for the LVIA. The 5 km radius is shown on Figures 10.1 to 10.5:

- Figure 10.1: Bare-earth ZTV with Viewpoints
- Figure 10.2: LANDMAP Visual and Sensory Evaluation
- Figure 10.3: Landscape Character with Bare-Earth ZTV
- Figure 10.4: Landscape Designations with Bare-Earth ZTV
- Figure 10.5: Principal Visual Receptors with Bare-Earth ZTV
- Figure 10.6: Screened ZTV with Viewpoints

10.3.2 The LI Residential Visual Amenity Assessment (RVAA) guidance[101], highlights that a much smaller study area of 150 m is required for the assessment of individual properties for overhead transmission lines within an RVAA. There are currently no individual properties within this proximity to the overhead line or red line boundary. In line with this guidance, therefore it is considered that an RVAA is not required.

Baseline overview

10.3.3 The site area is a combination of three key areas of landscape character and topographical change. The first of these is an upland area, where the proposed grid corridor will connect with Y Bryn Wind Farm on-site substation. This area is partly within the larger forested areas of Mynydd Margam but also has a swathe of upland pasture following the incised Cwm y Brombil valley. The second area is where the proposed grid route will drop sharply towards the M4 road corridor, these steep scarp slopes are densely wooded and inaccessible other than via the footpaths along ridge tops. The third area is within the coastal strip that lies between the M4 corridor and the Port Talbot steel works and associated industries.

10.3.4 The wider study area can be similarly categorised with uplands in the north-eastern half of the study area and coastal areas in the south-western half. The settlements of Maesteg, Bryn and Cwmafan are found at the edges of the north-eastern half of study area, but the area is largely forested uplands stretching across Mynydd Margam, Mynydd Bach and Moel Gallt-y-cwm.

10.3.5 Within the south-western half of the study area, the coastal strip lies between North Cornelly / Kenfig Burrows to the south and port Talbot to the north. The settlements of Margam, Taibach, Eglwys Nunydd, Coedhirwaun and Pyle are also within this area. Much of the area is however unsettled either due to the large areas occupied by the Port Talbot steel works and associated industries, Port Talbot Docks, other large industrial estates or the large

areas of coastal moorland found at Kenfig Burrows, Margam Moors and surrounding the Eglwys Nunydd Reservoir.

10.3.6 Along with the settlements and various road corridors connecting to the M4 corridor, there are many recreational routes crossing the study area. Key routes include the Wales Coastal Path, St Illtyd's Way, Cistercian Way and Celtic Way, these routes cross both the coastal parts of the study area and traverse the scarp slope into the forested uplands. Margam Country Park, located to the south-east of the Proposed Development; it is a popular visitor attraction in the area and a Registered Historic Park and Garden with a large Deer Park that includes elevated parts of the uplands to the north-east. Along with the tall stacks and chimneys associated with the Port Talbot steel works, the existing turbines of the Mynydd Brombil scheme and the existing overhead line are notable vertical features in close proximity to the Proposed Development Site.

10.4 Proposed Surveys and Assessment Methodologies

Desk-based Reviews and Survey Methodology

10.4.1 The analysis of key receptors within this chapter has been carried out based on a good working knowledge of the 5 km LVIA study area and detailed desk study and Geographic Information Systems (GIS) analysis. To inform the LVIA and layout design process, field surveys will be undertaken throughout the LVIA study area. Field surveys will be concentrated within the areas shown on the Zone of Theoretical Visibility (ZTV) mapping (ZTVs use terrain data to calculate the areas of the study area and landscape and visual resource where the Proposed Development is theoretically visible). The field survey work will include visits to viewpoints as well as extensive travel around the LVIA study area to consider potential effects (including cumulative) on landscape character and on the experience of views seen from travel routes through the landscape. These visits will allow the landscape character and the visual amenity of the study area to be experienced in a range of different conditions and across seasonal variations. The field survey will also allow the assessors to judge the likely scale, distance, extent, and prominence of the Proposed Development directly. Viewpoint photography will be captured during field survey visits in periods of good visibility.

Impact Assessment Methodology

10.4.2 Aspects of the landscape and visual resource that will need to be considered in the LVIA, are identified as follows:

- Landscape character typology;
- Landscape-related planning designations;
- LANDMAP;[108]
- Properties and settlements;
- Routes (including roads, National Cycle Routes and long-distance walking routes); and

[108] LANDMAP is the Welsh landscape baseline, maintained and updated by Natural Resources Wales.

- Potential cumulative developments.

10.4.3 The desk study has also utilised GIS software to explore the potential visibility of the Proposed Development. The resultant ZTV diagrams (Figures 10.3 to 10.5) provide an indication of which landscape and visual receptors are likely to have key sensitivities to the Proposed Development.

10.4.4 The LVIA is intended to determine the significant effects that the Proposed Development would have on the landscape and visual resource. For the purpose of assessment, the potential effects on the landscape and visual resource are grouped into the following categories:

- Physical effects: physical effects are restricted to the area within the Site boundary and are the direct effects on the existing landscape fabric. This category of effects is made up of landscape elements, which are the components of the landscape that may be directly and physically affected by the Proposed Development.
- Effects on landscape character and landscape planning designations: landscape character is the distinct and recognisable pattern of elements that occurs consistently in a particular type of landscape and the way that this pattern is perceived. Effects on landscape character arise either through the introduction of new elements that physically alter this pattern of elements or through visibility of the Proposed Development that may alter the way in which the pattern of elements is perceived. This category of effects is made up of landscape character receptors, which fall into two groups: landscape character types and landscape-related designated areas.
- Effects on views: the assessment of the effects on views is an assessment of how the introduction of the Proposed Development would affect views throughout the study area. The assessment of effects on views is carried out in relation to representative viewpoints and principal visual receptors.
- Cumulative effects: cumulative effects arise where two or more developments are experienced at a proximity where they may have a greater incremental effect, or where developments may combine to have a sequential effect. In accordance with guidance[107], the LVIA assesses the effect arising from the addition of the Proposed Development to the cumulative situation within the various cumulative scenarios that may arise when considering other development that is consented or application stage. In line with GLVIA3, the cumulative assessment will focus on cumulative developments of a similar type or scale.

10.4.5 The objective of the assessment of the Proposed Development is to predict the likely significant effects on the landscape and visual resource. In line with the EIA regulations, the LVIA effects are assessed to be either Significant or Not Significant. The significance of effects is assessed through a combination of two considerations: the sensitivity of the landscape receptor or view and the magnitude of change that would result from the addition of the Proposed Development.

10.4.6 The 'nature of effects' relates to whether the effects of the Proposed Development are adverse, neutral, or beneficial. Guidance provided in GLVIA3 states that *'thought must be given to whether the likely significant landscape and visual effects are judged to be positive (beneficial) or negative (adverse) in their consequences for landscape or for views and visual amenity'* but does not provide an indication as to how that may be established in practice. The nature of effect is therefore one that requires interpretation and reasoned professional opinion. A precautionary approach will be adopted which assumes that significant landscape and visual effects will be weighed on the negative side of the planning balance, although positive or neutral effects may arise in certain situations.

10.5 Approach to Mitigation

10.5.1 The design and layout of the Proposed Development and associated infrastructure is a vital part of the EIA process and is the stage where the biggest contribution can be made to mitigate potential landscape and visual effects. A key design objective will be minimising the potential landscape and visual effects through careful design and location of infrastructure. The design of the Proposed Development will evolve as part of an iterative process which aims to provide an optimal design in environmental, as well as technical and economic terms and the mitigation of landscape and visual effects will be a key consideration in this process.

10.6 Potential Significant Effects of the Proposed Development

Zone of Theoretical Visibility (ZTV) Overview

10.6.1 The ZTV is based on the current indicative routing of the Proposed Development (at an indicative height of 15 m for the overhead line route and indicative 40 m height at the M4 crossing) along with indicative substation options at indicative heights of 14 m. Whilst illustrating indicative design options for the Proposed Development, the ZTV is considered to represent a relative worst case visibility extents given that it includes multiple options across the scoping site boundary that will be refined through the design process. The ZTV illustrates where more or less of the Proposed Development could be visible within the study area and also illustrates where there would likely be no potential visibility. See Figure 10.1: ZTV with viewpoints. The ZTV is also shown alongside landscape character, landscape designations and visual receptors on Figures 10.3 to 10.5.

10.6.2 The ZTVs show the areas in which the Proposed Development would be theoretically visible assisting in the identification of viewpoints and providing an understanding of the potential extent of landscape and visual effect within the study area. The ZTVs illustrate the 'bare ground' situation based on an Ordnance Survey (OS) terrain model and do not take into account the screening effects of vegetation, buildings, or other local features that may prevent or reduce visibility. By using a bare ground elevation model, the results will be an over-representation of maximum visibility, as many areas could, in reality, be blocked by surface features not included in the model. A further limitation of the ZTV is that it indicates

'higher' or 'lower' theoretical visibility based on the amount of the Proposed Development visible, not on the amount of each element visible or its scale relative to the study area. Therefore, areas indicated with higher visibility may only have views of very small parts of the Proposed Development at long range, and/ or may also have intervening landscape elements that creates a screening effect.

10.6.3 The ZTV for the Proposed Development shows that there is no theoretical visibility found across the north-eastern half of the 5 km study area. Within the other half of the study area, land-based theoretical visibility is largely limited to the coastal strip of land between North Cornelly / Kenfig Burrows to the south and port Talbot to the north. This is due to the visual containment provided by the steep scarp slopes that run along the south-west side of Mynydd Margam. This strip of coastal land is shown on the ZTV to have a largely medium level of theoretical visibility with some patches of higher-level visibility on more elevated land within Margam or where line of sight towards Cwm y Brombil and the indicative route of the overhead line is possible from the industrial areas and steel works, west of Margam. Areas of lower-level theoretical visibility are also found to the south-east, stretching across elevated parts of Margam Park towards Pyle at the edges of the study area. Visibility from these elevated areas towards the Proposed Development is typically within areas that have existing visibility of the large-scale industrial units and associated works surrounding the steel works and biomass plants.

10.6.4 Large areas of the theoretical visibility across this coastal strip would be limited by built up settlement, large industrial units, areas of commercial and non-commercial woodland and mature trees along roadsides and at settlement edges. For the LVIA it is therefore proposed that the screening effect of woodland and buildings is shown on a separate 'screened ZTV', based on the final design of the Proposed Development. For scoping, a screened ZTV has been produced (see Figure 10.6) based on the same indicative parameters used in the bare ground ZTV, as outlined above. As can be seen in Figure 10.6, actual visibility of the Proposed Development is more localised due to surrounding buildings and trees. For example, the screened ZTV shows little to no visibility across the Margam settlement or within the forested uplands adjacent to the overhead line route, there is also greatly reduced visibility within the steel works and docks areas, Margam Moors and Kenfig Burrows and very limited within Margam Park.

Effects on Landscape Character

10.6.5 Landscape Character Areas (LCAs) have been identified within a variety of characterisation studies within the 5 km landscape character assessment study area. It is considered that these LCAs represent the most appropriate scale 'reporting units'[109] for the Proposed Development and will therefore be used as the basis for Landscape Character Assessment

[109] See section titled 'Using LANDMAP in the detailed LVIA study' within Natural Resources Wales (2021), 'LANDMAP Guidance Note 46: Guidance for Wales, Using LANDMAP in Landscape and Visual Impact Assessments'. Available at: https://naturalresources.wales/guidance-and-advice/business-sectors/planning-and-development/evidence-to-inform-development-planning/using-landmap-in-landscape-and-visual-impact-assessments-gn46/?lang=en [Accessed 15/09/2025]

in the LVIA. LCAs and Seascape Character Areas (SCAs) have been identified in the following published studies:

- Neath Port Talbot LANDMAP Landscape Assessment 2004 (NPTLLA);[110]
- Landscape Character Assessment for Bridgend County Borough (2013); and[111]
- Carmarthen Bay, Gower and Swansea Bay, local Seascape Character Assessment (2017).[112]

10.6.6 The site boundary lies across several LCAs as identified in NPTLLA but is largely contained[113] within: LCA50 Port Talbot Docks & Margam works; LCA1 Margam Marsh; LCA6 Mynydd Bromil, Mynydd Emroch & Mynydd Dinas; and LCA7 Mynydd Margam. Key characteristics of these LCAs within the site boundary is described within NPTLLA as follows (following the Proposed Development site boundary from west to east):

LCA50 Port Talbot Docks & Margam works

- '*Industrial area sited on coastal plain.*
- *Dominance of steel works.*
- *Development of smaller commercial units.*
- *Docks constitute large expanse of water'.*

LCA1 Margam Marsh

- '*Flat wetland pasture, veined with drainage ditches and with significant wetland vegetation.*
- *Strong visual influence of surrounding heavy industry.*
- *Largest area of inland still water within the County Borough.*
- *Significant areas of marsh, eutrophic water and wetland habitats, with SSSI designation.*
- *Historically and culturally linked to Margam Abbey.*
- *Eglwys Nunydd reservoir is a significant leisure facility for sailing'.*

LCA6 Mynydd Bromil, Mynydd Emroch & Mynydd Dinas;

- '*Steep slopes with rounded plateau tops.*
- *Unenclosed slopes are dominant by bracken cover.*
- *Plateau tops comprise of sheep grazed pasture, enclosed by broken down walls and post & wire fences.*
- *Provides a solid backcloth and prominent landform adjacent to the coastal plain.*
- *Upland character contrasts with settlements and industry of the coastal plain.*
- *Wide views and sense of exposure from higher elevations.*

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[110] Neath Port Talbot LANDMAP Landscape Assessment 2004. Available at: https://api.npt.gov.uk/asset?url=https%3A%2F%2Fmedia.npt.gov.uk%2Fmedia%2Fponjgtte%2Fspg_landmap_landscape_assessment_2004.pdf%3Fv%3D20241209172433 [Accessed 15/09/2025]

[111] Landscape Character Assessment for Bridgend County Borough (2013). Available at: https://www.bridgend.gov.uk/media/t4fbnxyp/landscape-character-assessment.pdf [Accessed 15/09/2025]

[112] Carmarthen Bay, Gower and Swansea Bay, local Seascape Character Assessment (2017). Available at: https://www.swansea.gov.uk/sca?lang=en [Accessed 15/09/2025]

[113] Small amounts of LCA3 and LCA49 are also found at the edges of the site boundary.

- *A wealth of multi-period activity, evident from the sites present – Bronze Age cairns, Pillow mounds.*
- *The area is untrammelled by industrial exploitation*'.

LCA7 Mynydd Margam

- '*Large expanse of coniferous woodland across high ground of Mynydd Margam and forming side of Cwm Dyffryn.*
- *Limited access to area develops sense of isolation.*
- *Woodland creates an abrupt edge against open ground.*
- *Concentration of Iron Age forts, forming chain across the southern fringe of the mountain.*
- *Designated in Register of Landscapes of Historic Interest in Wales.*
- *Area untrammelled by industrial exploitation'.*

LANDMAP

10.6.7 LANDMAP, also referred to by NRW as 'the Welsh landscape baseline', is a GIS based landscape resource and dataset 'where landscape characteristics, qualities and influences on the landscape are recorded and evaluated into a nationally consistent dataset'.

10.6.8 The LVIA will provide an assessment of relevant LANDMAP aspect areas following LANDMAP Guidance Note 46 (GN46)[104] LANDMAP will also be referred to in the LVIA baseline assessment. GN46 defines a 4-step filtering process to ascertain the aspect areas that are required to be assessed in the LVIA. The filtering approach varies depending on the aspect layers being considered and the guidance divides the approach into two distinct groups.

10.6.9 Geological Landscape, Landscape Habitats and Cultural Landscape Services - the initial search area (Filter 1) includes the aspect areas that immediately overlap or are adjacent to the site boundary. Filters 2, 3 and 4 relate to the relationship to other aspect areas, theoretical visibility, and evaluation scoring.

10.6.10 Visual and Sensory and Historic Landscape - the initial search area (Filter 1) includes the aspect areas that lie within 5 km of the Proposed Development. This is based on the scale of the Proposed Development when reflecting on the table of search and study areas provided in GN46. Filters 2, 3 and 4 relate to theoretical visibility, evaluation scoring and high sensitivity visual receptors.

10.6.11 LANDMAP visual and sensory aspect areas have been mapped for this initial study to show LANDMAP evaluation in relation to the landscape within the site boundary and immediate context (See Figure 10.2). LANDMAP attributes a combination of 'Low' and 'Moderate' evaluation for the visual and sensory aspect areas that cover the majority of the site boundary (including Low for NPTVS277[114] – Margam Moor; Moderate for NPTVS897 - Mynydd Brombil & Scarp tops; and Moderate for NPTVS927 - Mynydd Margam). The

[114] NPTVS is the abbreviation used in LANDMAP for visual and sensory aspect area UID's (Unique Identities) within Neath Port Talbot.

exception to this is a narrow area of 'High' evaluation on aspect areas that cover the steep scarp slope to the east of the M4 (including NPTVS403 – Margam Country Park; and NPTVS811 – Margam Scarp).

10.6.12 The LANDMAP evaluation for 'Landscape Habitat' aspect areas within the site boundary is a mix of 'High' and 'Moderate'; for 'Historic Landscape' aspect areas a mix of 'Moderate' and 'Outstanding'; and for 'Geological' aspect areas a mix of 'Low' and 'Moderate'.

Effects on Landscape Designations

10.6.13 Landscape designations found within the 5 km study area are shown on Figure 10.4. Part of the overhead line route lies within the Margam Special Landscape Area (SLA). Other SLAs within the study area include the Western Uplands SLA to the east and the Kenfig Burrows SLA to the south. The site is to the north-west of the Margam Park Registered Historic Parks and Garden (RHPG) (also a country park). The Talbot Memorial Park RHPG also lies within the study area.

10.6.14 In addition to landscape designations, part of the site is located within the Margam Mountain Historic Landscape and the Merthyr Mawr, Kenfig and Margam Burrows Historic Landscape is within the study area to the south. The Register of Historic Landscapes is a non-statutory, advisory register. Registered Historic Landscapes are principally a cultural heritage designation and are discussed further in Section 11 (Cultural Heritage) of this Scoping Report. However, the heightened value that these cultural heritage designations may bring to the underlying historic character of the landscape within the study area is recognised and will be taken into account in the Landscape Character sensitivity assessment.

Effects on Visual Receptors

10.6.15 The LVIA will undertake an assessment of the likely visual effects from the Proposed Development through consideration of the specific visual effects at a selection of representative viewpoints and by considering the wider effects on visual amenity with reference to principal visual receptors (viewpoints are shown on Figure 10.1 with the ZTV and principal visual receptors are shown on Figure 10.5). Principal visual receptors include residents of settlements, motorists using roads and people using recreational routes, features and attractions throughout the study area.

10.6.16 A preliminary viewpoint list is shown in Table 10.1 and on Figure 10.1. Viewpoint visualisations (wirelines / photomontages and a computerised 3D model) will be produced to NatureScot's standards as set out in 'Visual Representation of Wind farms: Version 2.2' (February 2017) and Landscape Institute Technical Guidance Note 06/19 - Visual Representation of Development Proposals (2019). The visualisation type for each viewpoint is also stated in Table 10.1. A 3D model will also be produced to support the application. The preliminary viewpoints were selected to represent a range of visual receptors within the LVIA study area based on an initial review of the Proposed Development location and surrounding landscape and visual resource and in consideration of the potential for

cumulative effects to arise. The final viewpoint locations will be established through fieldwork and the EIA scoping process.

Table 10.1: Preliminary representative viewpoints

ID	Viewpoint	Grid Ref (Preliminary) Easting	Northing	Distance to Site (m)	Receptors	Visualis-ation Type
1	Cistercian Way on Cefn Crugwyllt	280611	187980	130	Recreational Walkers	Photomontage
2	Wales Coast Path above Crugwyllt-fawr	279729	186869	300	Recreational Walkers	Wireline
3	Beechwood Road, Margam	278863	187127	474	Settlement / Road Users	Wireline
4	Longlands Lane, M4 Margam Interchange	279398	186126	347	Road Users	Photomo-ntage
5	Wales Coast Path above Brombil	278698	187787	856	Recreational Walkers	Photomo-ntage
6	Wales Coast Path, Margam Moor	278793	185423	659	Recreational Walkers	Wireline
7	Margam Country Park	280636	186001	1422	Visitors	Photomo-ntage
8	St Illtyds Walk, Margam Deer Park	281379	186386	1847	Recreational Walkers	Wireline

Potential Cumulative Effects

10.6.17 Following a detailed review of the cumulative developments within the study area, a plan will be produced showing the locations of other relevant energy and infrastructure developments that are under construction, consented, or which are at application stage.

10.6.18 Due to the uncertainty surrounding the timing and level of information available for scoping stage cumulative developments, these schemes will only be included by exception where there is specific justification to do so. The list of developments to be considered within the detailed cumulative assessment will be determined closer to the application submission

date, taking account of changes to the cumulative situation and will take account of consultation feedback from key consultees.

Conclusion

10.6.19 Based on the initial assessment in this Scoping Report the key sensitivities and potential for significant effects can be summarised as follows:

- Potential effects on landscape character, including cumulative effects, particularly on the host landscape character types of LCA50 Port Talbot Docks & Margam works; LCA1 Margam Marsh; LCA6 Mynydd Bromil, Mynydd Emroch & Mynydd Dinas; and LCA7 Mynydd Margam.
- Potential effects on the landscape designations of Margam Park RHPG and Margam SLA;
- Potential visual effects from principal visual receptors within the local context of surrounding communities including nearby settlements and roads;
- Potential effects on the recreational routes of the Wales Coast Path, St Illtyd's Walk, Celtic Way and Cistercian Way;
- Potential Residential Visual Amenity effects from properties within close proximity to the overhead line route (within 150m); and
- Potential cumulative effects with other energy / infrastructure developments.

10.7 Impacts Scoped Out

10.7.1 Those receptors proposed to be scoped in or out of the LVIA following initial desk-based review are listed below in Table 10.2.

Table 10.2: LVIA topics scoped in / out

Receptor / Effect	Scoped In	Scoped Out
Physical landscape effects	Physical landscape effects within the footprint of the Proposed Development.	Physical changes to the landscape not caused by the Proposed Development.
Landscape Character	Effects on LCAs within 5 km of the Proposed Development including cumulative effects. Effects on LANDMAP aspect areas included in line with the filtering process advocated in LANDMAP Guidance Note 46.	LCAs beyond 5 km from the Proposed Development or where limited visibility occurs. Effects on LANDMAP aspect areas excluded in line with the filtering process advocated in LANDMAP Guidance Note 46.

Receptor / Effect	Scoped In	Scoped Out
Landscape Designations	Margam Park RHPG and Margam SLA.	All other Landscape Designations.
Visual	Effects on representative viewpoints (see Table 10.1) including cumulative visual effects. Effects on principal visual receptors within the 5 km LVIA study area. Residential Visual Amenity Effects within 150m.	Principal visual receptors with limited or no visibility.
Cumulative L&V Effects	Cumulative developments under construction, consented or at application stage. Including other energy or infrastructure development types within 5 km of the Proposed Development.	Other cumulative development types or cumulative developments beyond 5 km.

10.8 Questions to Consultees

- **Question10.1:** Do consultees have any comments on the proposed approach and methodology for the LVIA?
- **Question10.2:** Are consultees content with the proposed 5 km LVIA study area?
- **Question10.3:** Do consultees agree with the scoped in effects on landscape character and landscape designations identified in Table 10.2?
- **Question10.4:** Do consultees have any comments or suggestions in relation to the Preliminary Representative Viewpoint Locations listed in Table 10.1 and illustrated on Figure 10.1?
- **Question10.5:** Do Consultees agree with the approach to cumulative assessment or have any comments relating to the cumulative developments in the study area?

11. Cultural Heritage

11.1 Introduction

11.1.1 This section details the proposed approach to the EIA for cultural heritage. The assessment will consider the potential effects of the Proposed Development on cultural heritage receptors (hereafter 'historic assets'), both during construction and operation.

11.1.2 This section is supported by the following figures:

- Designated Historic Assets;

- Historic Environment Record (HER) Entries; and
- Registered Historic Landscapes.

11.2 Legislation and Guidance

11.2.1 The Historic Environment (Wales) Act (HEWA) 2023 forms the legislative framework for the management and protection of the historic environment. HEWA Part 2 relates to scheduled monuments and the need for Scheduled Monument Consent for works to such assets. HEWA Part 3 covers Listed Buildings and includes that works to these assets must be authorised by Listed Building Consent and that planning decisions must have regard to the preservation of the asset and its setting. HEWA Part 4 relates to Conservation Areas and includes that planning decisions must have regard to preservation of their character and appearance.

11.2.2 National policy for this topic is set out within Chapter 6 of Planning Policy Wales, Edition 12 (PPW12). has the following objectives for the historic environment:

- Protect the Outstanding Universal Value of the World Heritage Sites;
- Conserve archaeological remains, both for their own sake and for their role in education, leisure and the economy;
- Safeguard the character of historic buildings and manage change so that their special architectural and historic interest is preserved;
- Preserve or enhance the character or appearance of Conservation Areas, while at the same time helping them remain vibrant and prosperous;
- Preserve the special interest of sites on the register of historic parks and gardens; and
- Protect areas on the register of historic landscapes in Wales.

11.2.3 These objectives cover both designated and non- designated assets. They are supported by asset-type specific polices in PPW12 and Technical Advice Note 24: The Historic Environment (TAN24).

11.2.4 The following topic guidance is relevant to the Proposed Development:

- Cadw (2011) Conservation Principles for the sustainable management of the historic environment in Wales;
- Cadw (2017) Setting of Historic Assets in Wales;
- Cadw (2017) Heritage Impact Assessment in Wales;
- Chartered Institute for Archaeologists (CIfA) (2020) Standard and guidance for historic environment desk-based assessment;
- IEMA, Institute of Historic Building Conservation (IHBC) and CIfA (2021) Principles of Cultural Heritage Impact Assessment in the UK (PCHIA)

- Cadw, Countryside Council for Wales[115] and Welsh Assembly Government[116] (2007) Guide to Good Practice on Using the Register of Landscapes of Historic Interest in Wales in the Planning and Development Process (2nd edition) (aka ASIDOHL2)[117].

11.3 Existing Conditions

11.3.1 The following sources were reviewed to inform the Scoping Report:

- Cadw data, comprising:
  - Listed Buildings;
  - Scheduled Monuments;
  - Conservation Areas;
  - Historic Parks and Gardens;
  - World Heritage Sites; and
  - Historic Landscapes.
- Heneb Historic Environment Record (HER) data[118];
- Published information on registered historic landscapes available on the Cadw and Heneb websites;
- Recent digital aerial photography (available via Google Earth).

11.3.2 A study area of land lying within 3 km of the Scoping boundary was used for data gathering.

Scoping boundary

11.3.3 The Scoping boundary lies partly within a Registered Historic Landscape (RHL), the Margam Mountain Landscape of Special Historic Interest (LSHI)[119]. There are no other designated historic assets within the Scoping boundary. The Margam Mountain LSHI is a multi-period landscape with evidence of human use from the Bronze Age onwards. Although much of the LHSI was afforested in the 20th century, areas of upland and agricultural land remain. The Scoping boundary incudes sections of three of the LSHI's component Historic Landscape Character Areas (HLCAs):

- Mynydd Margam HLCA – land within the Scoping boundary is between the summit of Mynydd Margam and Geulan Las and is mainly under forestry;

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[115] The Countryside Council for Wales no longer exists and the majority of its functions are the remit of Natural Resources Wales (NRW). NRW do not retain a remit to comment on registered historic landscapes within historic environment assessment as this responsibility lies with Cadw as historic environment advisor to the Welsh Government.

[116] Now Welsh Government/Llywodraeth Cymru.

[117] If ASIDOHL2 is not required then this guidance will not be applicable.

[118] Heneb Enquiry Ref. 9201, received 19/08/2025.

[119] https://heneb.org.uk/archive/ggat/cadw/historic_landscape/margam/english/mynydd_margam_main.html [Accessed 15/09/2025]

- Cefn Crugwyllt and Cwm Maelwg HLCA - land within the Scoping boundary lies between Geulan Las and Crugwyllt-Fawr and comprises sections of upland pasture fields; and
- Cwm Brombil and Graig Fawr HLCA - land within the Scoping boundary lies on the southwest-facing slope of Crugwyllt-Fawr and is part of a deciduous woodland on the steep slope down to the coastal plain.

11.3.4 A Scheduled Monument, Chain Home Low Radar Station, Margam (SM Ref. GM488), lies immediately west of the Scoping boundary at Crugwyllt-Fawr. The station was part of a system that operated along the British coast to monitor enemy submarines and surface craft between 1941 and 1943. The remains of the station consist of three squat concrete buildings, one of which has an associated gantry which thought to be a unique survivor amongst similar assets.

11.3.5 The HER contains several records related to Roman roads. These include the possible line of the Roman road between forts at Cardiff and Neath (Margary Road 60c) and milestones associated with it (HER refs. GGAT00790W, GGAT00803w). Although the possible course of the road runs through the Scoping boundary, following the course of the present A48, none of the recorded milestones lies in or near it. The HER contains four further entries for the Scoping boundary. One is for the Margam Mountain LSHI[120] and the others relate to medieval and later routes[121], industry[122] and land-use[123].

Study Area

11.3.6 The following designated historic assets (DHAs) lie within the study area.

- 17 Scheduled Monuments.
- 62 Listed Buildings:
  - Six Grade I;
  - 10 Grade II*;
  - 46 Grade II.
- One Conservation Area – Margam Park.
- Two Registered Historic Parks and Gardens:
  - Margam Park.
  - Talbot Memorial Park, Port Talbot.
- One Historic Landscape – Merthyr Mawr, Kenfig & Margam Burrows.

11.3.7 There are 699 HER entries within the study area. These have not been reviewed in detail for the Scoping Report so at the time of report preparation it is unclear how many unique historic assets this equates. This is as the HER commonly includes entries for assets

[120] HER Ref. 04684m.

[121] Medieval trackways (HER Ref. 01069.0w)

[122] Post-medieval colliery, Bromail Coal Level (HER Ref. 01378w), at Crugwyllt-Fawr.

[123] Post-medieval boundary stone (HER Ref. 03886w).

recorded in other datasets (e.g. listed buildings, scheduled monuments) as well as other aspects which do not constitute assets in their own right[124].

11.3.8 The distribution of DHAs and HER entries is heavily focussed on the valleys running from the summit of Margam Mountain to the coast. The majority lie in either Cwm Dyffryn, which runs down toward Port Talbot to the north of the Scoping boundary, or around Margam and Cwm Philip in the south of the study area.

11.3.9 Activity of prehistoric and later date is present within the study area. There is a particular focus of activity in the southeast of the study area around Margam. This ranges from prehistoric ritual and funerary activity to post-medieval landscape parkland. The core of this activity relates to the religious activity at Margam since the early medieval period. The earliest aspect of this is the Margam Inscribed and Sculptured Stones (SM Ref. GM011) which date to between the 6th and 11th centuries. The area continued to be a focus of religious activity into the medieval period with the creation of Cistercian abbey in 1147. There are multiple DHAs associated with remains of the abbey, the core of the abbey is a Scheduled Monument (SM Ref. GM005) and the Abbey church, chapter house and undercroft are Grade I listed buildings (LB Refs. 14148-50). After the Reformation, the abbey became a country house set in a landscaped parkland. The core of this was to the east of main abbey buildings and was focussed on Margam Castle, a 'Tudor-Gothic' country house designed in the late 18th century by Thomas Hopper. It is a Grade I Listed Building (LB Refs.14170). The parkland which complements the house is a Grade I Registered Historic Park and Garden (RHPG Ref. PGW(Gm)52(NEP)). Although much of the park is contemporary with Margam Castle it incorporates earlier aspects, such as a medieval deer park, and later features, such as an Arts and Crafts kitchen garden and lawns as well as a 1940s garden.

11.3.10 The remainder of the study area varies in character. The east is more upland in nature and has assets typical of such landscapes, such as Bronze Age burial mounds, Iron Age hillforts and more recent features such as mines and collieries at the lower slopes of Margam Mountain. The lower-lying land on the valley floor in the north has a high concentration of assets, largely related to post-medieval and later settlement and industry. The west comprises the coastal plan and is dominated by industrial development, including much of the Port Talbot steelworks and docks. Assets in this area are mostly recent and industrial.

11.4 Proposed Surveys and Assessment Methodologies

11.4.1 The assessment will be undertaken in line with the guidance listed under sub-section 11.2 Legislation and Guidance above.

11.4.2 A 3 km study area is proposed for in the cultural heritage assessment. This aligns with study areas used for assessment of this topic in recent and ongoing assessments for grid connection in Wales (e.g. GreenGEN Towy-Usk). This study area will allow contextual

[124] E.g. records of assets that have been destroyed, records for individual components of assets (e.g. separate entries for leats and buildings at a watermill site) and landscape features that were thought to be the result of human activity but have since been reinterpreted as natural features.

understanding of asset which may experience direct physical effects and identification of assets which may be susceptible to effects related to setting change.

11.4.3 The following sources will be used

- Cadw data, comprising:
  - Listed Buildings;
  - Scheduled Monuments;
  - Conservation Areas;
  - Historic Parks and Gardens;
  - World Heritage Sites; and
  - Historic Landscapes.
- Heneb Historic Environment Record (HER) data;
- Published information on registered historic landscapes available on the Cadw and Heneb websites;
- Zones of Theoretical Visibility (ZTVs);
- LiDAR data;
- Historic mapping;
- Recent digital aerial photography (available via Google Earth);
- Visualisations (e.g. wirelines, photomontages, and a computerised 3D model) of the Proposed Development.
- Findings of other topics where relevant (e.g. LVIA, noise and vibration).

11.4.4 A walkover survey of the Scoping boundary will be undertaken. This will review the condition and nature of any known assets or HER entries. The walkover will also aim to identify any hitherto unrecorded assets. All assets noted during the walkover will be subject to a basic record (e.g. photography) which will be used to inform the Historic Environment Desk Based Assessment (HEDBA). Assets identified as susceptible to effects related to setting change will also be subject to field visits to understand their setting. Selected images from the walkover and setting surveys will be used to illustrate the HEDBA.

11.4.5 Historic assets will be considered in terms of their level of 'historic significance' in line with Cadw Conservation Principles. To avoid confusion with use of the 'significance' in EIA practice to refer to the level of effect a receptor would experience as a result of a development, historic significance will be referred to as the 'value' of the asset. Value will be ascribed using the following criteria:

- High: historic assets of national significance – designated historic assets and non-designated assets of demonstrably equivalent significance.
- Medium: historic assets of regional significance - identified with reference to regional priorities, such as outlined in 'A Research Framework for the Archaeology of Wales'[125].
- Low: historic assets of local significance.

[125] https://www.archaeoleg.org.uk/intro.html

11.4.6 Effects will be assessed in terms of how the Proposed Development will, either physically or through change in setting, affect the value of the historic asset. This will be explained in terms of how the change would affect the historic values detailed in Cadw's Conservation Principles. In explaining effects, a description of the level of negative or positive change a historic asset will experience as a result of the Development, supported by an appropriate narrative linking this to how the asset will have its value changed.

11.4.7 There is no industry-wide accepted methodology for assessment of cumulative effects to cultural heritage receptors in EIA. Assessment of cumulative effects will use the agreed list of cumulative schemes for the Proposed Development to identify whether any further effects (i.e. those not caused solely by the Development itself) will arise. This assessment will be undertaken and articulated in the same terms as the assessment of the effect of the Proposed Development in its own right.

11.4.8 All narrative statements on the nature of effects will close with a clear statement as to whether the effect is a significant effect in EIA terms. For assets with specific legislative tests, e.g. Listed Buildings and Conservation Areas, the statement on the effect will also state whether or not the test is fulfilled.

11.5 Approach to Consultation

11.5.1 The following consultees' remit covers historic assets:

- Cadw;
- Heneb;
- Neath Port Talbot Council.

11.5.2 They will be consulted at appropriate times during the EIA process.

11.6 Approach to Mitigation

11.6.1 Due to the nature of the scheme, mitigation is likely to focus on addressing direct physical effects to historic assets, particularly archaeological remains. The approach to mitigation will be guided by industry common practice and appropriate procedures as laid out in relevant CIfA Standard and guidance documents.

11.7 Potential Significant Effects of the Proposed Development

11.7.1 The following potential effects have the potential to arise as a result of the Proposed Development and are scoped in:

- Direct physical effects to historic assets within the Project arising during the construction period; and
- Effects related to setting change for assets within the study area during the operational period.

11.8 Impacts Scoped Out

11.8.1 The following effects are proposed to be scoped out:

- Direct physical effects during operation and maintenance – ground disturbance is envisaged only during construction so there is no source of impact once the Proposed Development is operational.
- Direct physical effects to assets beyond the Proposed Development during operation and maintenance – there will be no physical disturbance to assets lying outside of the Proposed Development so there is no source of impact when it is operational.
- Direct physical effects to assets beyond the land required for construction during the construction period – disturbance of ground beyond the footprint Proposed Development does not form part of the application so there is no source of impact.
- Effects related to setting change for assets during the construction period – the kind of temporary change in setting an asset's that may occur during construction is not considered likely to be of such a scale that a significant effect would arise.

11.9 Conclusion

11.9.1 The assessment will consider the potential effects of the Proposed Development on cultural heritage historic assets, both during construction and operation. It will be undertaken in line with appropriate Welsh Government, Cadw and sector guidance (see 'Proposed Surveys and Assessment Methodologies' above). Baseline data will be drawn from datasets on historic assets held by Welsh Government, Cadw, Neath Port Council, published sources and surveys.

11.10 Questions to Consultees

- **Question 11.1:** Do consultees agree that a 3 km study area is appropriate for the cultural heritage assessment?
- **Question 11.2:** Does Cadw consider that the Proposed Development would have a more than local impact on the Margam Mountain LSHI which requires assessment using the ASIDOHL2 methodology?
- **Question 11.3:** Do consultees agree that all supplementary guidance relevant to assessment of effects to historic assets has been captured in sub-section 11.2?
- **Question 11.4:** Do consultees agree that the approach to assessment of effects, including those effects scoped in and out and the cumulative assessment, is appropriate?
- **Question 11.5:** Do consultees agree that the approach to surveys is appropriate?

12. Traffic and Movement

12.1 Introduction

12.1.1 This section sets out the proposed scope of assessment for Traffic and Movement for the Y Bryn Grid Connection. It draws on the baseline and assessment experience gained through the Y Bryn Wind Farm project and focuses on the potential effects of construction-phase traffic associated with underground cabling (UGC), overhead line (OHL) works including new steel towers, and a 132/275 kV transformer yard.

12.1.2 Construction access for the section from the on-site wind farm substation to the new steel tower north of the motorway will be via the southern block of the Y Bryn Wind Farm DNS site. It is expected that access to this work area will be taken using the proposed Y Bryn Wind Farm access, however this assumption will be confirmed as the design evolves.

12.1.3 Access to works south of the motorway is expected from M4 Junction 38 and the A48, with potential use of Cefn Gwrgan Road (including the private road to Margam Substation), the A4241 (Harbour Way) and/or the road into Margam Energy Park. Final access routing will be confirmed during preparation of the assessment as the design evolves.

12.1.4 Abnormal Indivisible Loads (AILs) may be required for delivery of an electrical transformer and potentially for other components related to the OHL depending on the final design. If AILs are required, an AIL assessment will be undertaken and will be appended to the Traffic and Movement chapter.

12.2 Legislation and Guidance

12.2.1 The assessment will be undertaken in accordance with the legislation, policy and professional guidance listed below, as relevant to Wales. Where documents are updated during the EIA, the latest versions will be used.

- Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017[126];
- ISEP (2023) Environmental Assessment of Traffic and Movement[127];
- Planning Policy Wales (latest edition) and Technical Advice Note (TAN) 18: Transport (Welsh Government)[128];
- Welsh Transport Appraisal Guidance (WelTAG) 2022 (principles for appraisal and engagement)[129];

[126] UK Government, *The Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017*, SI 2017 No. 567 (W. 136), 16 May 2017. Available at: https://www.legislation.gov.uk/wsi/2017/567/contents [Accessed 15/09/2025]

[127] ISEP (formerly IEMA), 2023. Environmental Assessment of Traffic and Movement.

[128] Welsh Government, 2007. Technical Advice Note (TAN) 18: Transport. Cardiff: Welsh Government. Available at: https://www.gov.wales/technical-advice-note-tan-18-transport [Accessed 15/09/2025]

[129] Welsh Government, 2022. Welsh Transport Appraisal Guidance (WelTAG) 2022 (Summary). Cardiff: Welsh Government. Available at: https://www.gov.wales/welsh-transport-appraisal-guidance-weltag-2022-summary-html [Accessed 15/09/2025]

- Design Manual for Roads and Bridges (DMRB) and Manual of Contract Documents for Highway Works (MCHW) as applicable to the Welsh trunk road network[130]; and
- Highways Act 1980; Road Traffic Regulation Act 1984; and Special Types General Order (STGO) framework for abnormal loads (including Welsh Government Procedure and Advice Guidance (PAG) 'Pulling Together' best practice)[131].

12.2.2 The assessment will also be informed by local transport policies and any applicable Neath Port Talbot County Borough Council (NPTCBC) guidance on construction routing, temporary traffic management and public rights of way (PRoW) protection.

12.3 Baseline Traffic Data

12.3.1 At the time of preparing this Scoping Report the exact construction methodology and design of the grid route has not been finalised. As such the routes which will be taken by construction traffic are not fully understood. Once these details have been established a review of the proposed routes will be undertaken to establish what traffic data is available for use in the assessment.

12.3.2 Due to the timescales for submission of this application, it will not be possible to capture new traffic flow data during a neutral month. Therefore, the following sources of data will be considered:

- Publicly available data such as that published by the DfT, or sourced from NPTCBC through consultation;
- Traffic survey data from a non-neutral month (if required) ;and
- Count data which was captured during preparation of the Y Bryn Wind Farm DNS application, or which is obtainable from other current or recent relevant local applications.

12.3.3 When selecting data, preference will be given to the most recent available data source. For each data source a traffic growth factor will be established between the year of data collection and the anticipated year of commencement of construction of the Proposed Development. Traffic growth factors will be established using the Trip End Model Presentation Program (TEMPro) core scenario for the South Wales region.

12.4 Assessment Methodology

12.4.1 The Traffic Impact Assessment (TIA) will estimate the number of vehicle movements anticipated to be associated with the construction phase of the Proposed Development and

[130] UK Highways, 2025. Design Manual for Roads and Bridges (DMRB). Birmingham: National Highways (with the Governments of Wales, Scotland and Northern Ireland). Available at: https://www.standardsforhighways.co.uk/dmrb [Accessed 15/09/2025]

[131] Welsh Government, 2020. Procedure & Advice Guidance: 'Pulling Together' – Best Practice for Transporting Abnormal Loads in Wales. Cardiff: Welsh Government. Available at: https://www.gov.wales/sites/default/files/publications/2022-01/rhoscrowther-wind-farm-rep003-welsh-government-transport-attachment-20-12-2021.pdf [Accessed 15/09/2025]

will indicate the vehicle type and anticipated routing. The estimated number of vehicles will then be applied across the anticipated construction programme to understand the month-by-month traffic levels which can be expected on the surrounding highway network in a 'realistic worst-case scenario', as per the ISEP guidance.

12.4.2 Screening will identify links where total traffic or HGV flows increase by >30% (Rule 1) and any sensitive links where flows increase by ≥10% (Rule 2). Where thresholds are exceeded, further assessment will be undertaken.

12.4.3 Cumulative assessment will consider other committed developments and infrastructure schemes with overlapping construction periods and shared receptors. The main development which this is expected to comprise is Y Bryn Wind Farm, however other nearby developments will be considered as required.

12.5 Approach to Consultation

12.5.1 Consideration will be given to any responses received to this Scoping Report, and any further consultation which is required in relation to these responses. Approach to Mitigation

12.5.2 Embedded mitigation will include use of agreed construction routes, contractor induction and driver protocols, timing restrictions where appropriate, measures to maintain road cleanliness (e.g. wheel washing), and clear advance signage at site access points.

12.5.3 Outline Construction Traffic Management Plan (CTMP) measures will be presented within the ES, setting out routing, methods for communication with local communities, temporary traffic controls, staff travel/parking arrangements, and PRoW/active travel protections. The Outline CTMP measures will be prepared with consideration given to the CTMP which has been proposed for Y Bryn Wind Farm.

12.5.4 Where EIA indicates potential significant effects, additional measures will be identified (e.g. banksman control at access, temporary speed management, or minor physical works within highway land, subject to separate consents).

12.6 Potential Significant Effects of the Proposed Development

12.6.1 Potential effects relate to temporary increases in construction traffic on links including the A48 and local roads, with associated risks of driver delay, community severance and amenity effects for pedestrians and cyclists. Given the distribution of works across two sections (north and south of the motorway) and the intention to source materials locally where achievable, overall flows are expected to be moderate and time-limited.

12.6.2 No significant operational effects are anticipated. Any residual construction effects are expected to be temporary, reversible and manageable through embedded and additional mitigation.

12.7 Impacts Scoped Out

12.7.1 Operational and decommissioning traffic effects are proposed to be scoped out on the basis that movements would be negligible compared to construction and well below ISEP screening thresholds.

12.7.2 Delivery of the off-site electrical transformer will constitute an abnormal indivisible load (AIL). An AIL assessment will be undertaken to confirm the suitability of the chosen route to site for the AIL and will identify any accommodation works which are required to facilitate this delivery.

12.8 Conclusion

12.8.1 The Traffic and Movement assessment will concentrate on construction-phase impacts using up-to-date ISEP guidance and Welsh policy context. Baseline data will be drawn from published sources and targeted surveys, and mitigation secured through an Outline CTMP. On this basis, significant effects are unlikely but will be re-assessed once traffic generation, routing and programme are finalised.

12.9 Questions to Consultees

- **Question 12.1:** Do consultees agree with the proposed approach to establishing future baseline traffic flow information ?
- **Question 12.2:** Do consultees agree with the use of ISEP (2023) guidance as the basis of the assessment methodology?
- **Question 12.3:** Are consultees aware of any local constraints (e.g. schools, PRoW links, regular events, known safety issues) that should inform routing and timing restrictions?
- **Question 12.4:** Do consultees agree that operational and decommissioning phases can be scoped out?
- **Question 12.5:** Are consultees aware of any cumulative schemes that should be included in the assessment baseline?

13. Noise

13.1 Introduction

13.1.1 This section addresses potential noise impacts associated with the Proposed Development. The grid connection will comprise a combination of underground cabling (UGC), overhead line (OHL) supported on double wooden poles, and a limited number of steel towers required to span the M4 motorway and A48. A 132/275 kV transformer yard will also be required near the Margam Grid Supply Point (GSP).

13.1.2 Potential noise effects will be primarily associated with noise from construction activities, including:

- Excavation of trenches;
- Installation of poles;
- Erection of towers; and
- Establishment of the transformer yard.

13.1.3 During operation, potential sources of noise include corona discharge from overhead lines during damp conditions, noise from electrical equipment at the transformer yard, and aeolian noise associated with wind interaction with OHL conductors and/or cables. Noise associated with decommissioning activities is expected to be similar to or quieter than construction noise, and of shorter duration.

13.2 Legislation and Guidance

Legislation

13.2.1 The principal legislation relevant to noise are:

- **The Control of Pollution Act 1974**[132] **(CoPA 1974)** provides local authorities with powers to control construction site noise, including through Section 61 consents for prior approval of working methods and hours.
- **The Environmental Protection Act 1990**[133] **(EPA 1990)** establishes the statutory nuisance regime, including for noise. This would be applicable to operational noise if significant disturbance were to occur.
- **The Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017**[134] require likely significant effects, including on population and human health, to be assessed. The noise assessment will be prepared in accordance with these requirements, reporting both construction and operational effects and identifying any necessary mitigation.

National Policy

13.2.2 The national policies relevant to noise are:

- **Planning Policy Wales**[135] **(Edition 12, 2024)** sets out that the planning system should contribute towards health and well-being by managing environmental risks, including noise.

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[132] Control of Pollution Act 1974. London: HMSO. Available at: https://www.legislation.gov.uk/ukpga/1974/40 [Accessed 15/09/2025]

[133] Environmental Protection Act 1990. London: HMSO. Available at: https://www.legislation.gov.uk/ukpga/1990/43 [Accessed 15/09/2025]

[134] The Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017. SI 2017/567 (W.136). London: HMSO. Available at: https://www.legislation.gov.uk/wsi/2017/567/contents [Accessed 15/09/2025]

[135] Welsh Government (2024). Planning Policy Wales (Edition 12). Cardiff: Welsh Government. Available at: https://www.gov.wales/planning-policy-wales [Accessed 15/09/2025]

- **Noise and Soundscape Plan for Wales 2023-2028**[136] (Welsh Government, 2023) sets out the Welsh Government's strategic approach to improving the sound environment across Wales, with objectives to reduce harmful noise exposure, promote positive soundscapes, and embed soundscape considerations in planning and infrastructure decisions. It is a relevant material consideration for major infrastructure projects.
- **Technical Advice Note (TAN) 11: Noise**[137] **(Welsh Government, 1997)** provides guidance on how the planning system should consider and control noise impacts from development. It is noted that TAN 11 is in the process of being updated, with a draft revised version[138] published for consultation in 2023. The draft introduces stronger emphasis on soundscape principles, aligning with current legislation and government policies, and places greater focus on protecting tranquil areas and managing cumulative noise. Although not yet adopted, it may become policy before determination of any application for the Proposed Development, in which case the assessment will take account of its requirements.
- **Future Wales: The National Plan 2040**[139] supports the development of strategic grid infrastructure, subject to minimising adverse effects on communities, including through the control of environmental effects such as noise.

Local Policy

13.2.3 The local policies relevant to noise are:

- **Neath Port Talbot Local Development Plan (2011–2026)**[140] includes Policy SP16 (Environmental Protection) and Policy EN8 (Pollution and Land Stability), both of which require that developments do not give rise to unacceptable levels of noise or disturbance.

Technical Guidance

13.2.4 The noise assessment will have regard to the following technical standards:

- **BS 5228-1:2009+A1:2014**[141] provides methodologies for predicting construction noise levels from typical plant and activities. It also sets out guidance for mitigation through the application of Best Practicable Means (BPM). For this project, BS 5228 will be

[136] Welsh Government (2023). Noise and Soundscape Plan for Wales 2023-2028. Cardiff: Welsh Government. Available at: https://www.gov.wales/noise-and-soundscape-plan-for-wales-2023-2028 [Accessed 15/09/2025]

[137] Welsh Government (1997). Technical Advice Note (TAN) 11: Noise. Cardiff: Welsh Office. Available at: https://www.gov.wales/technical-advice-note-tan-11-noise [Accessed 15/09/2025]

[138] Welsh Government (2023). Technical Advice Note (TAN) 11: Air Quality, Noise and Soundscape: Draft. Cardiff: Welsh Office. Available at: https://www.gov.wales/revised-planning-guidance-relation-air-quality-noise-and-soundscape [Accessed 15/09/2025]

[139] Welsh Government (2021). *Future Wales: The National Plan 2040*. Cardiff: Welsh Government. Available at: https://www.gov.wales/future-wales-national-plan-2040 [Accessed 15/09/2025]

[140] Neath Port Talbot County Borough Council (2016). Local Development Plan 2011–2026: Adopted January 2016. Port Talbot: Neath Port Talbot CBC. Available at: https://www.npt.gov.uk/planning-and-building-control/planning-policy/adopted-ldp-2011-2026/ [Accessed 15/09/2025]

[141] British Standards Institution (2014). BS 5228-1:2009+A1:2014: Code of practice for noise and vibration control on construction and open sites – Part 1: Noise. London: BSI.

applied to predict construction noise levels at receptors along the route and to assess compliance with the threshold criteria.

- **BS 4142:2014+A1:2019**[142] sets out methods for rating and assessing the impact of industrial and commercial sound, including comparison of source noise against background sound levels, and the application of penalties where the sound has tonal, impulsive, or intermittent characteristics. It is relevant for assessing operational noise from corona discharge, as this may present as tonal or intermittent sound.
- **National Grid TR(T)94 (1994)**[143] specifically addresses the environmental assessment of overhead line noise, including corona discharge. TR(T)94 recognises the influence of rainfall on background sound and sets out approaches for assessing audibility and acceptability of OHL noise under wet weather conditions. It will be used alongside BS 4142 to ensure both UK planning practice and sector-specific guidance are considered.

13.3 Existing Conditions

13.3.1 The acoustic environment varies along the grid connection corridor depending on proximity to settlements, infrastructure, and local activities. Two broad receptor types have been identified; urban dwellings in Margam and southern Port Talbot, and isolated rural dwellings along the cable route.

Urban Dwellings in Margam and Southern Port Talbot

13.3.2 These receptors lie adjacent to the M4 motorway and A48, and close to the established industrial areas. Strategic noise mapping prepared under the Environmental Noise (Wales) Regulations 2006, most recently updated in 2022, indicates prevailing ambient noise levels of approximately 45–55 dB L_{Aeq} during the day. These communities are therefore subject to relatively high background levels, dominated by road traffic and industrial activity.

Isolated Rural Dwellings

13.3.3 Several isolated residential properties are located in valleys adjacent to the cable route to the north. These dwellings are set in a predominantly rural environment with intermittent agricultural activity. The same strategic noise mapping suggests road traffic noise levels below 40 dB L_{Aeq} daytime, indicating that background sound levels are likely to be lower than in Margam. However, they are not expected to be at the lowest levels typical of remote rural areas, especially in south-westerly wind conditions favourable to noise propagation from the M4, A48, and industrial facilities towards those receptors. Noise contributions from natural sources (e.g. wind, animals) are likely to be more noticeable here than in Margam.

[142] British Standards Institution (2019). BS 4142:2014+A1:2019: Methods for rating and assessing industrial and commercial sound. London: BSI.

[143] National Grid Company plc (1994). Technical Report TR(T)94: The environmental effects of overhead line noise. Coventry: National Grid Company plc.

Baseline Data

13.3.4 Existing baseline noise measurement data is available for locations around 1-2 km from the Scoping boundary and greater distances still from the receptors likely to be worst affected by noise from the Proposed Development. This data is potentially suitable to support general categorisation under BS 5228 for construction noise and may represent a worst-case background sound level for use in a BS 4142 operational assessment. However, at scoping stage, it is assumed that additional targeted baseline monitoring may be required for operational assessments.

13.3.5 Baseline noise measurement locations and other aspects of the measurement methodology will be discussed with NPTCBC as part of the assessment consultation.

Other considerations

13.3.6 It is noted that an existing 132/275 kV tower and OHL is situated approximately 400 m from a noise-sensitive receptor.

13.4 Proposed Surveys and Assessment Methodologies

Proposed Surveys

13.4.1 Baseline noise measurements are proposed to be conducted, where required, at one or more receptors potentially affected by construction and/or operational noise, to quantify the existing ambient and background sound levels.

13.4.2 Where operational noise predictions are low, background noise information may not be required, whereby worst-case assumptions could be adopted with sufficient robustness to evaluate potential noise effects. The need for noise measurements will be kept under review.

13.4.3 Any noise measurements conducted would be undertaken following relevant standards (e.g. BS 7445[144]) using equipment compliant with Class 1 specifications. Locations and durations will be discussed with Neath Port Talbot County Borough Council (NPTCBC)

Study Area

13.4.4 The assessment study area will identify all noise-sensitive receptors potentially significantly affected by the Proposed Development. Noise-sensitive receptors in this case are residential dwellings, which are assumed to have a high sensitivity.

13.4.5 The study area for both operational and construction noise will comprise all dwellings within 500 m of proposed construction activities or Proposed Development infrastructure. In some instances, where receptors are clustered close together, noise levels may be assessed at the closest receptors, with the assumption that noise effects at greater distances would be the same as or lower than at the nearest, for any given cluster of dwellings.

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[144] British Standards Institution (2003). BS 7445:2003: Description and measurement of environmental noise. London: BSI.

Construction Noise Assessment

13.4.6 The Construction noise assessment will be undertaken with reference to BS 5228-1, applying the 'ABC' method set out in Annex E. Given the baseline environment, the lowest (Category A) noise thresholds resulting in noise limits of 45, 55 and 65 dB L_{Aeq}, for night-time (23:00-07:00), evening and weekends, and daytime (07:00-19:00 weekdays and Saturdays 07:00-13:00) respectively. Existing ambient noise levels in Margam may be higher, with higher thresholds potentially adopted, where justified and as required.

13.4.7 Where evening, weekend, or night works are proposed, these will require case-by-case approval via a Section 61 application to NPTCBC under CoPA. Construction noise during these time periods is therefore not proposed to be specifically assessed.

13.4.8 Where noise from heavy duty vehicles accessing the Site is required, a construction traffic noise-change screening exercise will be undertaken with reference to Calculation of Road Traffic Noise[145] (CRTN) and the Design Manual for Roads and Bridges LA111[146] (DMRB).

Operational Noise Assessment

13.4.9 The operational noise assessment will be undertaken with reference to BS 4142, utilising a comparison between rating levels (the predicted sound levels from the development plus a penalty for potential distinctive acoustic characteristics) and background sound levels.

13.4.10 Corona discharge noise will be predicted at noise-sensitive receptors within the study area. Consideration will be given to operational noise from the Proposed Development, and cumulative noise from the Proposed Development and other similar noise sources. Suitable prediction methods will be discussed with NPTCBC as part of the consultation stage.

13.4.11 Where required, measurements will be undertaken at one or more selected sensitive receptors or suitably representative locations, to quantify representative background sound levels.

13.4.12 Where rating levels are below the background sound levels, this would be an indication of a low impact, subject to an evaluation of the context, i.e. not significant.

13.4.13 Where rating levels are around 5 dB greater than the background sound levels, this would be an indication of an adverse impact, subject to an evaluation of the context, i.e. of marginal significance.

13.4.14 Where rating levels are around 10 dB greater than the background sound levels, this would be an indication of a significant adverse impact, subject to an evaluation of the context.

13.4.15 The dominant sound source from the Proposed Development is anticipated to be corona discharge noise. The assessment will consider corona onset thresholds, influence of

[145] Department of Transport and Welsh Office (1988). Calculation of Road Traffic Noise. London: HMSO.

[146] Highways England (2020). Design Manual for Roads and Bridges (DMRB) LA 111 Revision 2: Noise and vibration. London: Highways England. Available at: https://www.standardsforhighways.co.uk/search/cc8cfcf7-c235-4052-8d32-d5398796b364 [Accessed 15/09/2025]

rainfall, and the potential for audibility under damp conditions, considering how the background and specific sound levels may vary with rainfall rate.

13.4.16 TR(T)94 provides specific criteria for assessment under rainfall conditions, which will be considered alongside the BS 4142 assessment methodology.

13.5 Approach to Consultation

13.5.1 Consultation will be undertaken with NPTCBC Environmental Health Department to agree:

- Proposed monitoring locations;
- Assessment criteria and methodology;
- Assumptions regarding construction methods and working hours; and
- Use of TR(T)94 alongside BS 4142 for corona noise assessment.

13.6 Approach to Mitigation

13.6.1 Embedded construction noise mitigation will include Best Practicable Means (BPM), secured through the Construction Environmental Management Plan (CEMP). If required, additional mitigation measures will be discussed in the assessment, such as equipment selection or construction management.

13.6.2 Significant operational noise effects are not anticipated. However, if required, additional potential mitigation options will be discussed in the assessment.

13.7 Potential Significant Effects of the Proposed Development

13.7.1 Noise from construction and operation of the Proposed Development has the potential to cause adverse effects at identified noise-sensitive receptor locations. Potential construction noise effects may occur from the noise during trenching, pole erection, and tower construction, and due to the movements of heavy-duty vehicles. Potential operational noise effects may occur due to corona discharge noise, which may be audible during damp conditions.

13.7.2 Noise criteria will be set based on relevant current guidance in relation to both construction and operational noise respectively. Due to the distances between receptors and the Proposed Development, and the availability of mitigation options, it is likely that all significant noise effects can be avoided through the careful and responsible design, construction, and operation of the Proposed Development.

13.8 Impacts Scoped Out

13.8.1 The following topics are proposed to be scoped out of further assessment, for the reasons set out below:

Construction Vibration

13.8.2 Conventional plant such as excavators, lorries and cranes rarely generate significant vibration impacts beyond around 20 m from the source. No receptors are expected to lie within this distance. Therefore, construction vibration is proposed to be scoped out. Blasting is not expected to be required.

Decommissioning Noise

13.8.3 Noise during decommissioning is anticipated to result in similar or lower noise levels compared to construction noise, and with a shorter in duration. With application of standard best practice measures, significant effects are not anticipated. Decommissioning noise would be assessed at the time when preparing for the decommissioning of the Proposed Development and is therefore scoped out.

Cumulative Construction Noise

13.8.4 Given the short and localised construction programme, and the absence of major concurrent developments identified as planned to take place in the vicinity, significant cumulative construction noise effects are unlikely. This is proposed to be scoped out.

Operational Traffic Noise

13.8.5 Once constructed, the Proposed Development will not generate significant traffic movements, aside from occasional maintenance visits. These are not expected to materially affect the existing road traffic noise environment and operational traffic noise is scoped out.

Operational Vibration

13.8.6 No significant sources of vibration are associated with the operation of the grid connection. Operational vibration is therefore scoped out.

Low-frequency Noise

13.8.7 Low frequency components of corona noise, if present, will be encompassed within the overall operational assessment, and is therefore not proposed to be specifically assessed.

13.9 Conclusion

13.9.1 The assessment will focus on construction noise with reference to BS 5228, and operational noise associated with corona discharge with reference to BS 4142 and TR(T)94. No significant noise effects are currently anticipated, subject to confirmation through assessment and consultation. Mitigation measures are anticipated to be secured through embedded BPM measures and, if required, minor operational refinements.

13.10 Questions to Consultees

- **Question 13.1:** Do consultees agree that BS 5228-1 (ABC method) is the appropriate methodology for assessing construction noise?

- **Question 13.2:** Do consultees agree that corona discharge noise should be assessed with reference to both BS 4142 and TR(T)94?
- **Question 13.3:** Do consultees agree that a 500 m study area around the proposed grid connection is appropriate for identifying receptors for both construction and operational noise assessments?
- **Question 13.4:** Do consultees agree with the proposals to scope out construction vibration, operational vibration, cumulative construction noise, and low-frequency noise, on the basis described above?

14. Other Matters

14.1 Introduction

14.1.1 A single ES chapter will be prepared to address any effects and impacts that the Proposed Development may have on matters that are not covered within the other technical chapters of the ES. The following matters are discussed in this section of the SR along with justification for either scoping them out, or explanation on the scope to be included in the ES chapter or technical appendices:

- Major Accidents and Disasters;
- Population and Human Health;
- Climate and Air Quality;
- Material Assets & Waste;
- Existing Infrastructure; and
- Forestry.

14.2 Major Accidents & Disasters

14.2.1 The requirement to consider major accidents and disasters in UK EIA practice was introduced via the EIA Regulations in 2017.

14.2.2 Paragraph 8 of Schedule 4 to the EIA Regulations requires that an Environmental Statement, where relevant to the Proposed Development and the environment likely to be affected, includes: "*A description of the expected significant adverse effects of the development on the environment deriving from the vulnerability of the development to risks of major accidents and/or disasters which are relevant to the project concerned. Relevant information available and obtained through risk assessments pursuant to EU legislation such as Directive 2012/18/EU of the European Parliament and of the Council or Council Directive 2009/71/Euratom or UK environmental assessments may be used for this purpose provided that the requirements of this Directive are met. Where appropriate, this description should include measures envisaged to prevent or mitigate the significant adverse effects of such events on the environment and details of the preparedness for and proposed response to such emergencies.*"

14.2.3 The EIA Regulations state in Regulation 4(3b) that an EIA needs to consider the vulnerability of their development to major accidents and disasters as well as any consequential significant environmental effects. For the purposes of this Scoping Report a major accident is defined as an occurrence that threatens immediate or delayed serious environmental effects to human health, welfare and/or the environment and requires the resources beyond those of the Applicant or its contractors to manage.

14.2.4 It has been determined that an assessment of major accidents and disasters is not required for the Proposed Development and is therefore scoped out of further assessment. Justification for this conclusion is presented below.

14.2.5 The potential major accidents and disasters that could arise due to the Proposed Development have been appraised from the definition of both man-made and natural hazards within the Major Accidents and Disaster in EIA Primer (ISEP, 2020b)[147] as follows:

- Physical accidents during the construction of the project e.g. crane topple;
- Electrical accidents associated with the commissioning of the infrastructure;
- Fire/ explosion during construction;
- Security threats;
- External interference; and
- Adverse weather.

14.2.6 The Applicant will apply a comprehensive risk management framework both during construction and operation of the Proposed Development to reduce risks and to ensure the risk of significant effects are as low as reasonably practicable and not significant. The Proposed Development will also be designed to manage vulnerabilities to fire risk and to withstand the extremes of the UK climate (including climate change predictions) and therefore external impacts on the OHL are not considered to be significant.

14.2.7 Risks relating to Major Accidents and Disaster presented in the EIA Primer (ISEP, 2020b) address risks that cannot be mitigated though good working and construction practices to a level that is as low as reasonably practicable. Following the process in the flow chart provided in Figure 1 of the ISEP Primer, it was determined that all of the risks listed above can be mitigated through good working and construction practices to a level that is as low as reasonably practicable (ALARP).

14.2.8 Therefore, the likelihood of these potential major accident and disaster events is considered so low that the risks are considered to not be significant and it is appropriate to scope this topic out of the Environmental Statement

14.3 Population & Human Health

14.3.1 It is proposed that the consideration of the potential effects to population and human health as a result of the Proposed Development will not be presented as a factor-specific assessment chapter in the Environmental Statement and will instead be covered through the findings of other factor assessments undertaken as part of the EIA process. This is due to the inherent nature of potential impacts on health and wellbeing that are associated with other factors that will be scoped into the EIA such as:

- Air quality;
- Visual impacts;
- Noise and vibration; and
- Traffic impacts.

14.3.2 These environmental factor assessments will identify relevant sensitive receptors that make up the baseline environment that could be affected by the Proposed Development such as

[147] ISEP (formerly IEMA) Major Accidents and Disasters in EIA: A Primer [Accessed 15/09/2025]

nearby residents, road users, users of recreational features such as public footpaths and sporting facilities, and other community services such as schools, hospitals and places of worship.

14.3.3 Where there are synergistic effects (where a single receptor is potentially affected by more than one source of environmental impact), this would be considered in the synergistic cumulative effects assessment.

Electro-Magnetic Frequency Assessment

14.3.4 An Electric and Magnetic Field (EMF) can occur naturally but they are also produced by any equipment that generates, distributes or uses electricity.

14.3.5 All equipment that generates, distributes or uses electricity produces electromagnetic fields (EMFs) which vary depending on the operating voltage of the equipment (which is measured in V/m, or volts per metre). The Proposed Development will operate at 132 kV and therefore there is a maximum current that can be carried through the OHL, although it will typically operate at levels far below what it is capable of carrying (known as the 'typical' level).

14.3.6 The UK power frequency is 50 hertz (Hz), which is therefore the principal frequency of the EMFs produced, which are also known as Extremely Low Frequency (ELF) EMFs.

14.3.7 The strength of a magnetic field that is generated by an OHL is dependent on the electrical currents flowing, which vary according to the electrical power requirements at any given time and are measured in microteslas (μT). EMFs are present in all areas where electricity is in use (e.g. offices and homes), as they arise from all electric cabling and equipment.

14.3.8 EMFs diminish rapidly with distance from the source and during a normal day, EMFs reduce to background levels approximately 45 m from an OHL (background levels being typical to those in an average home in the UK).

14.3.9 Due to the designed voltages and currents, the maximum possible exposure directly underneath the proposed OHL is anticipated to be 38.9 μT, which is a similar level of exposure to using a hairdryer or walking close to microwave when it's cooking.

14.3.10 There are limits in place for EMF exposure which have been established by independent scientific experts, who recommend safe levels of exposure for the public and workers. The exposure limit for members of the public is 360 μT (Energy Networks Association, 2012), so even directly underneath the OHL the maximum EMF levels are just a small fraction of the limit. After many decades of research and hundreds of millions of pounds spent investigating the issue, there are no established health effects below the exposure limits.

14.4 Climate and Air Quality

Approach

Climate

14.4.1 The two components of the climate change topic of an EIA are a Greenhouse Gas (GHG) Assessment, and a Climate Change Resilience and Adaptation (CCRA) Assessment.

14.4.2 The Climate sub-sections within this Scoping Report set out the scope of the detailed environmental assessment for the GHG and CCRA assessments for the Proposed Development:

14.4.3 The GHG Assessment is an assessment of the Proposed Development's impact on climate change. The GHG Assessment will provide a quantification of the GHG emissions resulting from the construction, operation and decommissioning of the Proposed Development, and an assessment against the net GHG emissions saved by the Proposed Development in facilitating the use of renewable electricity (through connection to the Y Bryn Wind Farm), which reduces reliance on fossil fuels such as natural gas.

14.4.4 The CCRA Assessment is an assessment of the impact of future climate change on the Proposed Development. It will assess the ability of the Proposed Development to adapt to and be resilient to potential future changes in climate, such as hotter dryer summers, warmer wetter winters and increased frequency and severity of storms.

14.4.5 Specifically, the Climate sub-sections of this chapter of the Scoping Report detail:

- The policy and legislative context alongside relevant technical guidance
- An overview of the study area and relevant baseline conditions within the Proposed Development.
- The assessment methodology that will be used to undertake the assessment
- An overview of how mitigation measures will be identified and implemented into the Proposed Development across its lifetime.
- The scope of assessment including, with justification, those effects that are proposed to be scoped in, and those proposed to be scoped out, of the assessment

14.4.6 Within this Chapter, the terms 'GHGs' and 'carbon' are used interchangeably to describe all GHG emissions, i.e. all emissions which might contribute to climate change, the predominant contributor of which is carbon dioxide (CO_2). The term CO_2e is also used, which refers to Carbon Dioxide equivalent, which is the main metric for quantifying GHGs.

Air Quality

14.4.7 The Proposed Development will generate additional traffic on the local road network during the construction phase and may also generate dust emissions during its construction. The Air Quality Appendix within the ES will therefore focus on the impacts of the construction of the development as a result of the emissions from road traffic and dust emissions from construction works. Air quality impacts during the operation are likely to be minimal as there will be very few operational vehicle movements associated with servicing and therefore this potential effect is anticipated to be scoped out of the ES chapter as discussed further in Paragraphs 14.4.98-14.4.99. The study will focus on assessing concentrations of nitrogen dioxide and particulate matter (PM_{10} and $PM_{2.5}$), as these are the principal pollutants of potential concern in relation to road traffic and human health and NOx and nitrogen and

acid deposition fluxes in relation to designated ecological sites. The assessment will also consider the impacts of dust generated during construction on dust soiling and concentrations of PM_{10} at sensitive receptors.

Legislation and Guidance

Climate

14.4.8 Legislation, planning policy and guidance relating to Carbon and Climate Change, and relevant to the Proposed Development, comprises:

Legislation

- Climate Change Act 2008 and 2050 Target Amendment Order 2019;
- Carbon Budget Order 2021;
- The Climate Change (Wales) Regulations 2021;
- The Environment (Wales) Act 2016;
- The Infrastructure (Wales) Act 2024;
- The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017;
- Developments of National Significance (Wales) Regulations 2016 (as amended);
- Energy Act 2023.

National Planning Policy

- Overarching National Policy Statement (NPS) for Energy (EN-1);[148]
- Draft NPS for Renewable Energy Infrastructure (EN-3);[149]
- NPS for Electricity Networks Infrastructure (EN-5);[150]
- Planning Policy Wales (PPW);[151]
- Future Wales: The National Plan 2040.[152]

Local Planning Policy

- Neath Port Talbot County Borough Council (NPTCBC) Local Development Plan (2011-2026).[153]

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[148] DESNZ (2023) Overarching National Policy Statement for Energy (EN-1). Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1147380/NPS_EN-1.pdf [Accessed 15/09/2025]

[149] DESNZ (2025) Draft National Policy Statement for Renewable Energy Infrastructure (EN-3). Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1147382/NPS_EN-3.pdf [Accessed 15/09/2025]

[150] DESNZ (2023) National Policy Statement for Electricity Networks Infrastructure (EN-5). Available: Electricity Networks National Policy Statement - EN-5 [Accessed 15/09/2025]

[151] Welsh Government (2024) Planning Policy Wales. Available: Planning Policy Wales - Edition 12 [Accessed 15/09/2025]

[152] Welsh Government (2021) Future Wales: The National Plan 2040. Available: Update to Future Wales - The National Plan 2040 [Accessed 15/09/2025]

[153] Neath Port Talbot County Borough Council (2016) Neath Port Talbot County Borough Council Local Development Plan (2011-2026). Available: https://api.npt.gov.uk/asset?url=https%3A%2F%2Fmedia.npt.gov.uk%2Fmedia%2Fca2fbumd%2Fldp_written_statement_jan16.pdf%3Fv%3D20240823155047 [Accessed 15/09/2025]

Guidance

- Institute of Sustainability & Environment Professionals (ISEP, formerly IEMA) Guide: Assessing Greenhouse Gas Emissions and Evaluating their Significance;[154]
- The Greenhouse Gas Protocol Corporate Accounting and Reporting Standard (GHG Protocol);[155]
- PAS 2080:2023 Carbon Management in Buildings and Infrastructure;[156]
- Climate Change Committee (CCC) Net Zero Technical Report;[157]
- Seventh Carbon Budget: Advice for the UK Government;[158]
- ISEP EIA Guide: Climate Change Resilience and Adaptation;[159]
- Royal Institute of Chartered Surveyors (RICS) Whole Life Carbon Assessment for the Built Environment;[160]
- UK Climate Projections 2018 ('UKCP18') Key Results Spreadsheet;[161]
- UK Climate Projections: Headline Findings;[162]
- UK Climate Change Risk Assessment 2022;[163]
- The Third National Adaptation Programme (NAP3) and the Fourth Strategy for Climate Adaptation Reporting.[164]

Air Quality

14.4.9 Legislation, planning policy and guidance relating to Air Quality, and relevant to the Proposed Development, comprises:

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[154] ISEP (formerly IEMA) (2022) Institute of Environmental Management and Assessment (IEMA) Guide: Assessing Greenhouse Gas Emissions and Evaluating their Significance. Available at: https://www.iema.net/media/xmgpoopk/2022_iema_greenhouse_gas_guidance_eia.pdf [Accessed 15/09/2025]

[155] World Resources Institute and World Business Council for Sustainable Development (2004) The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard. Available: ghg-protocol-revised.pdf [Accessed 15/09/2025]

[156] British Standards Institution (2023) PAS 2080:2023 Carbon management in buildings and infrastructure. Available at: https://knowledge.bsigroup.com/products/carbon-management-in-buildings-and-infrastructure?version=standard [Accessed 15/09/2025]

[157] Climate Change Committee (2019) Net Zero, Technical Report. Available at: https://www.theccc.org.uk/wp-content/uploads/2019/05/Net-Zero-Technical-report-CCC.pdf [Accessed 15/09/2025]

[158] Climate Change Committee (2025) The Seventh Carbon Budget: Advice for the UK Government. Available: https://www.theccc.org.uk/wp-content/uploads/2025/02/The-Seventh-Carbon-Budget.pdf [Accessed 15/09/2025]

[159] ISEP (formerly IEMA) (2020) EIA Guide to: Climate Change Resilience and Adaptation. Available at: https://www.iema.net/media/mabhqino/iema-eia-climate-change-resilience-june-2020.pdf [Accessed 15/09/2025]

[160] RICS (2023) Whole life carbon assessment for the built environment. [Accessed 15/09/2025]

[161] Defra, BEIS, Met Office & Environment Agency (2022) UK Climate Projections Key Results Spreadsheet. Available: ukcp18-key-results-2022.xlsx [Accessed 15/09/2025]

[162] Defra, BEIS, Met Office & Environment Agency (2022) UK Climate Projections: Headline Findings. Available: ukcp18_headline_findings_v4_aug22.pdf [Accessed 15/09/2025]

[163] HMSO (2022) UK Climate Change Risk Assessment 2022.

[164] HM Government (2023) The Third National Adaptation Programme (NAP3) and the Fourth Strategy for Climate Adaptation Reporting. Available: The Third National Adaptation Programme (NAP3) and the Fourth Strategy for Climate Adaptation Reporting [Accessed 15/09/2025]

- Air Quality Strategy 2007;[165]
- Air Quality (England) Regulations 2000[166], and 2002[167], 2010;[168]
- Clean Air Strategy 2019;[169];
- The Clean Air Plan for Wales;[170]
- Environment Act 2021; and
- The Building Regulations 2010 Schedule 1[171]

14.4.10 The following national planning policy is relevant to the Proposed Development:

- Planning Policy Wales Edition 12 (2024);
- Well-being of Future Generations (Wales) Act (2015);
- Technical Advice Note (TAN) 18 (2007);[172]
- The Conservation of Habitats and Species Regulations (2010);[173]
- National Parks and Access to the Countryside Act;[174]
- Welsh Government (2016) Environment (Wales) Act.

14.4.11 The following local planning policy is relevant to the Proposed Development:

- Neath Port Talbot County Borough Council's (NPTCBC) Local Development Plan;[175]

14.4.12 The following guidance is relevant to the Proposed Development:

- Defra (2025) Review & Assessment: Technical Guidance Local Air Quality Management (LAQM).TG22;[176]

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[165] Defra (2007). The Air Quality Strategy for England, Scotland, Wales and Northern Ireland. Available at: Air Quality Strategy Vol 1 [Accessed 15/09/2025]

[166] HMSO (2000). The Air Quality (Wales) Regulations 2000 Statutory Instrument 928.

[167] HMSO (2002). The Air Quality (Wales) (Amendment) Regulations 2002, Statutory Instrument 3043

[168] HMSO (2010). The Air Quality Standards Regulations 2010 Statutory Instrument 1001

[169] Defra (2019). Clean Air Strategy 2019. Available at: https://www.gov.uk/government/publications/clean-air-strategy-2019 [Accessed 15/09/2025]

[170] Welsh Government (2020) The Clean Air Plan for Wales, Available [Online] https://gov.wales/sites/default/files/publications/2020-08/clean-air-plan-for-wales-healthy-air-healthy-wales.pdf [Accessed 15/09/2025]

[171] Welsh Government (2017). Building regulations guidance: part F (ventilation). Available at: https://www.gov.wales/approved-document-f-ventilation [Accessed 15/09/2025]

[172] Welsh Government. (2007) Technical Advice Note (TAN) 18: Transport, Available at: https://www.gov.wales/sites/default/files/publications/2018-09/tan18-transport.pdf [Accessed 15/09/2025]

[173] HMSO (2010) The Conservation of Habitats and Species Regulations 2010 Statutory Instrument 490, Available at: http://www.legislation.gov.uk/uksi/2010/490/pdfs/uksi_20100490_en.pdf [Accessed 15/09/2025]

[174] National Parks and Access to the Countryside Act (1949), Available at: https://www.legislation.gov.uk/ukpga/Geo6/12-13-14/97 [Accessed 15/09/2025]

[175] Neath Port Talbot County Borough Council (2016) Local Development Plan (2011- 2026), Available at: https://www.npt.gov.uk/planning-and-building-control/planning-policy/adopted-ldp-2011-2026/ [Accessed 15/09/2025]

[176] Defra (2025) Review & Assessment: Technical Guidance LAQM.TG22 May 2025 Version, Available at: https://laqm.defra.gov.uk/wp-content/uploads/2025/05/LAQM-TG22-May-25-v2.0.pdf [Accessed 15/09/2025]

- Institute of Air Quality Management (IAQM) Land-Use Planning & Development Control: Planning for Air Quality[177]; and
- IAQM Guidance on the assessment of dust from demolition and construction.[178]

Existing Conditions - Climate

14.4.13 This sub-section sets out the known baseline conditions at this (scoping) stage of the Proposed Development.

Study Area

GHG Assessment

14.4.14 The study area for the GHG assessment is defined by the likely location of emissions sources that contribute to the Proposed Developments' lifecycle footprint. These include all on-site and off-site emissions directly and indirectly caused by the Proposed Development throughout its lifecycle. Specifically:

- Direct emissions from construction, operation and decommissioning;
- Emissions that arise throughout the supply chains of the energy, materials and components that make up the Proposed Development;
- Emissions from transportation of materials and workers to the site; and
- Emissions from the end-of-life treatment of decommissioned materials.

14.4.15 These emissions will occur both in the UK and overseas. The considered emissions sources are detailed further in Paragraph 14.4.90.

CCRA Assessment

14.4.16 The study area for the CCRA assessment, unlike other disciplines, focuses on the impact that climate change will have on the Proposed Development (as opposed to the impact of the Proposed Development on the environment). The study area is, therefore the Proposed Development, split into its constituent parts (receptors, as identified in Paragraph 14.4.35 below).

Relevant Baseline Conditions

14.4.17 The EIA will determine what the effects of the Proposed Development are likely to be by comparing the baseline conditions with the conditions that would prevail should the Proposed Development be constructed, operated, and subsequently decommissioned.

GHG Assessment

14.4.18 The impact of the Proposed Development in terms of carbon emissions relative to a baseline can be evaluated in two ways:

<u>The 'Site' Baseline:</u>

[177] IAQM (2017). Land-Use Planning & Development Control: Planning For Air Quality. Available at: https://iaqm.co.uk/text/guidance/air-quality-planning-guidance.pdf [Accessed 15/09/2025]

[178] IAQM (2024). Guidance on the assessment of dust from demolition and construction. Available at: https://iaqm.co.uk/wp-content/uploads/2013/02/Construction-Dust-Guidance-Jan-2024.pdf [Accessed 15/09/2025]

14.4.19 The grid corridor will run for a total of approximately 4kms and will cover area that is currently a mix of forestry and farmland, with a crossing over the M4 motorway and A48.

14.4.20 Forest emissions: Forests act as a 'carbon sink', absorbing carbon from the atmosphere during plant growth, and storing that carbon throughout the lifetime of the plant. When the plant dies, a portion of the carbon is re-released, but a portion remains stored in sub-soil root systems and dead organic matter, and as plant litter on the forest floor. Established forests will reach an equilibrium, where no new net carbon can be stored, and carbon absorption is equal to carbon released.

14.4.21 Farmland emissions: Agricultural activities can lead to net GHG emissions from fertilisers and the rearing of livestock.

14.4.22 Motorway emissions: Road maintenance and resealing, as well as traffic movements, all generate carbon emissions.

14.4.23 The Proposed Development will not materially impact the emissions profile of the forest, farmland, or motorway; there will be no net change in emissions (and removals) from these sources in the Proposed Development relative to the baseline.

14.4.24 The GHG emissions of the Proposed Development will therefore be evaluated against a zero-emissions Site baseline, which will remain at zero for both the **current site baseline**, and **future site baseline** scenarios.

14.4.25 Note that emissions from soil disturbances and tree removal during construction of the Proposed Development will be included in the assessment (see 14.4.47).

The 'Energy' Baseline:

14.4.26 In addition to the Site Baseline, and alternative 'Energy' baseline scenarios will be considered in the ES, in line with ISEP[179] guidance[154] recommendations. For GHG assessments in the renewable energy sector, it is common practice to consider the baseline emissions associated with the generation of electricity using alternative means of energy, including fossil fuels and natural gas but also nuclear and other renewable energy sources (solar, hydropower etc).

14.4.27 While the Proposed Development will not itself generate renewable energy, it is critical infrastructure to ensure renewable energy generated by the Y Bryn Wind Farm can be exported and used. Without the Proposed Development, renewable energy generated by the Y Bryn Wind Farm cannot be exported and used. As such it is appropriate to consider the GHG benefits the Proposed Development will provide by connecting the Y Bryn Wind Farm to the electricity grid. It is not appropriate to allow the Proposed Development full benefit of the GHG savings from the wind farm, so must be considered only as a cumulative assessment in conjunction with the GHG emissions associated with construction and operation of the wind farm.

[179] Note: The Institute of Environmental Management and Assessment (IEMA) has recently renamed as The Institute of Sustainability and Environmental Professionals (ISEP)

14.4.28 The UK's energy use contributes to global GHG emissions predominantly through the combustion of fossil fuels in the generation of electricity, and directly in the use of fuels in internal combustion engine (ICE) vehicles, boilers, and other uses. As a greater number of renewable energy projects have come online, the carbon emissions associated with the UK's energy use have decreased and are anticipated to continue to decrease into the future[180]. The change in the emissions profile of the energy mix is driven by three main factors:

- Fossil fuel electricity power stations are directly replaced by renewable stations;
- Fossil-fuel vehicles (ICE vehicles) are replaced by electric vehicles, increasing total electricity demand; and
- Energy demand is increasing in general, due in part to our increasing need for electricity for data centres in our increasingly digital world.

14.4.29 Therefore, the Proposed Development and the associated Y Bryn Wind Farm that will be connected to the grid can be compared to a UK energy baseline where the wind farm and connection are not built, and do not increase the UK's total available renewable electricity supply.

14.4.30 While the overall UK electricity grid mix is decarbonising over time, the connection of the Y Bryn Wind Farm to the grid will allow replacement of fossil electricity, rather than average electricity, whether by allowing the phase-out of an existing fossil fuel power station, or by avoiding the need for a (likely natural gas fuelled) power source to meet increasing demand.

14.4.31 The **current energy baseline** will assume that energy from the Proposed Development, in combination with the Y Bryn Wind Farm, will allow the phase out of an existing natural gas power generation facility in the UK and the energy generated by the Proposed Development will therefore displace electricity generated by use of natural gas.

14.4.32 For the **future energy baseline**, it will be assumed the natural gas power station retained in operation in the absence of the Proposed Development and Y Bryn Wind Farm would be retrofitted with Carbon Capture and Storage (CCS) technology as part of the UK's industrial decarbonisation strategy.

CCRA Assessment

14.4.33 Existing baseline conditions for the CCRA assessment relate to current, and recent historic, climate and meteorological conditions at the Proposed Development. The ES will include data gathered from the Met Office to describe the existing frequency and severity of climate hazards such as flooding, heatwaves and drought[163,164].

Receptors Identified

GHG Assessment

14.4.34 The assessment of GHGs does not include identification of sensitive receptors, as GHG emissions do not directly affect specific locations or receptors but lead to indirect effects by

[180] DESNZ (2024) Energy and emissions projections 2023 to 2050. Available at: Energy and emissions projections: 2023 to 2050 - GOV.UK [Accessed 15/09/2025]

contributing to global climate change. Identification of sensitive areas for climate change has been undertaken by the Intergovernmental Panel on Climate Change (IPCC)[181]. Impacts on specific areas will not be included within the GHG assessment, since the impacts of GHG emissions will affect the global atmosphere and therefore need to be considered in a total context, rather than focus on localised areas.

CCRA Assessment

14.4.35 The key receptors identified for inclusion in the CCRA assessment are:

- Construction staff and workers;
- Staff maintaining the Proposed Development throughout its operational lifetime;
- The Proposed Development and associated infrastructure; and
- Habitats and biodiversity.

14.4.36 ISEP guidance[159] describes that the assessment should consider the susceptibility and vulnerability of the receptors to future climate change. The guidance provides examples of low, moderate and high susceptibility and vulnerability, but is not prescriptive in defining a scale for overall receptor sensitivity, which is determined with professional judgement. For the purposes of the CCRA assessment, all receptors will be considered to be of high sensitivity, which is worst-case.

14.4.37 In addition, the CCRA will include an assessment of In-Combination Climate Change Impacts (ICCI). The receptors for the ICCI assessment will be those considered by other ES technical disciplines, as presented within the respective ES chapters, including (but not limited to) flood risk, air quality, noise etc.

Existing Conditions - Air Quality

14.4.38 Baseline conditions in the study area will be determined by collating information from a number of sources. Industrial and waste management sources that may affect the area will be identified using Defra's Pollutant Release and Transfer Register[182], as well as through examination of the BCBC and NPTCBC Air Quality Review and Assessment reports. Local monitoring data will be taken from the Council's Air Quality Review and Assessment reports and background concentrations will be defined using the national pollution maps published by Defra[183]. Consideration will be given to the presence of any Air Quality Management Areas (AQMA) including the Neath Port Talbot AQMA.

Study Area and Receptors

14.4.39 The location in which emissions will occur will be dictated by the routing of the construction traffic. It is therefore proposed to provide an air quality assessment which considers the

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[181] IPCC (2022) Sixth Assessment Report Climate Change 2022: Impacts, Adaptation, and Vulnerability. Available at: https://www.ipcc.ch/report/ar6/wg2/ [Accessed 15/09/2025]

[182] Defra (2025) UK Pollutant Release and Transfer Register, [Online], Available: https://www.gov.uk/guidance/uk-pollutant-release-and-transfer-register-prtr-data-sets [Accessed 15/09/2025]

[183] Defra (2025) Local Air Quality Management (LAQM) Support Website, [Online], Available: http://laqm.defra.gov.uk/ [Accessed 15/09/2025]

potential impacts of emissions from construction traffic on relevant designated ecological habitats and sensitive human receptors, from both existing roads and access roads.

14.4.40 The distance beyond which road traffic emissions are unlikely to have a significant adverse impact on sensitive habitats is 200 m, as advised in Natural England guidance[184], (there is no equivalent statutory guidance applicable specifically to Wales). The air quality assessment will therefore examine all sensitive designated ecological habitats within 200 m of construction traffic routes. The assessment will take account of the number and type of vehicles accessing the site during the construction works, the access routes used, the duration of construction works, and the sensitivity to air quality of the various designated sites within 200 m of relevant roads.

14.4.41 In addition to the impacts on sensitive designated ecological habitats, the assessment will also consider the potential for impacts on human health in relation on the nearby Port Talbot AQMA adjacent to the M4 Motorway.

Proposed Surveys and or Assessment Methodologies

Climate

GHG Assessment

14.4.42 The GHG assessment methodology outlined below is aligned with the requirements of Section 5.3 'Greenhouse Gas Emissions' of the NPS for Energy (EN-1)[148].

Construction

14.4.43 The embodied carbon from construction will be calculated to account for carbon emissions arising from the manufacture and production of construction materials. The assessment of embodied carbon covers "cradle to gate" emissions (i.e. carbon emissions from the extraction of raw materials through to finished construction products). Embodied carbon emissions will be calculated using a range of sources included University of Bath Inventory of Carbon and Energy (ICE), product Environmental Performance Declarations (EPDs), and published lifecycle assessment reports and research where relevant.

14.4.44 Carbon emissions from electricity and fuel use during construction will be estimated based on predicted construction phase electricity consumption and fuel usage, using the latest available carbon emissions factors published by the Department for Energy Security and Net Zero (DESNZ)[185].

[184] Natural England (2018). Natural England's approach to advising competent authorities on the assessment of road traffic emissions under the Habitats Regulations. Available at: file:///C:/Users/heatherp/Downloads/NEA001%20Advising%20CAs%20on%20Road%20Traffic%20and%20HRA%20June%202018.pdf [Accessed 15/09/2025]

[185] DESNZ (2025) Greenhouse gas reporting: conversion factors 2025. Available at: https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2025 [Accessed 15/09/2025]

14.4.45 Carbon emissions from road transport during construction will be calculated using carbon factors for transport modes derived from the Department for Transport's (DfT's) WebTAG data book[186].

14.4.46 Emissions from waste generated and water consumed during construction of the Proposed Development will be calculated where data is available, using published emissions factors from a recognised database (e.g. DESNZ[185], Climatiq, EcoInvent, etc.). Note that emissions from these sources are expected to be minimal, and exclusion based on lack of data availability will not significantly influence the results of the GHG assessment.

14.4.47 Emissions from tree felling, and from soil disturbance from construction activities will be included in the GHG assessment. The latter will be consistent with the methodology outlined in the Geology, Hydrology and Hydrogeology and Soils assessment.

Operation and Maintenance

14.4.48 Carbon emissions from road transport during operation will be calculated using carbon factors for transport modes derived from DfT's WebTAG data book[186].

14.4.49 Carbon emissions associated with the repair, maintenance and replacement of components of the Proposed Development during its operational lifetime will be calculated using the same data and resources used to calculate embodied carbon, taking account of the anticipated lifetime and replacement frequency of key components of the Proposed Development.

14.4.50 Carbon emissions savings from the renewable electricity supplied to the grid by the Proposed Development (as generated by the Y Bryn Wind Farm) will be calculated through comparison to the current carbon intensity of fossil fuel power generation with CCS. The comparison will be to the carbon emissions of the Proposed Development and Y Bryn Wind Farm in combination only as it is not appropriate to attribute the full carbon savings of the wind farm to the Proposed Development alone. This comparison is relevant as the electricity generated by the Y Bryn Wind Farm and connected to the grid by the Proposed Development will replace energy from fossil fuel combustion as part of Wales' transition to net zero. Carbon emissions factors for natural gas power generation with CCS will be obtained from the latest UK Government disclosure tables[187] and adjusted to account for CCS using the latest published data on carbon capture rates for such systems.

14.4.51 When evaluating carbon savings, the carbon emissions from the associated Y Bryn Wind Farm will be included in the assessment, which will be informed by the data from the Carbon Balance Assessment conducted as part of the Y Bryn Wind Farm (DNS/3264571). Considered emission sources will include:

- Embodied emissions in the Wind Farm materials;
- Emissions from construction, operation and decommissioning activities; and

[186] DfT (2025) TAG data book May 2025 v2.01. Available: https://www.gov.uk/government/publications/tag-data-book [Accessed 15/09/2025]

[187] DESNZ (2025) Fuel mix disclosure table. Available: Fuel mix disclosure data table - GOV.UK [Accessed 15/09/2025]

- Emissions and removals from carbon changes from peat, soil and forestry.

Decommissioning

14.4.52 Carbon emissions from deconstruction of the Proposed Development will be calculated for deconstruction site activities (fuel and energy use), decommissioning transport (including export of waste and staff travel), and waste recycling, treatment and disposal.

14.4.53 Emissions will be calculated using data on the duration of decommissioning works, estimated staff numbers and energy and fuel requirements, and mass of materials and components exported from the Proposed Development.

Assessment of Significance

14.4.54 The approach to defining likely significant effects will be carried out in three steps, in accordance with ISEP guidance[154]:

14.4.55 The first step is to compare the Proposed Development's carbon emissions in the opening year to the baseline carbon emissions to determine whether there is a net increase or decrease in carbon emissions as a result of the Proposed Development;

14.4.56 The second step is to compare the calculated change in emissions to local and national carbon emissions for context (principally national carbon budgets in accordance with EN-1 requirements). The focus will be Wales' Third and Fourth Carbon Budgets; and

14.4.57 The third step applies expert judgment on the significance of those emissions taking into account the changes in emissions, their contribution to relevant carbon budgets, their consistency with relevant policy, and an evaluation of the environmental measures proposed to avoid, reduce and compensate carbon emissions.

14.4.58 The level of significance will be taken using the criteria as defined in ISEP guidance[154] in combination with professional judgement.

CCRA Assessment

14.4.59 The CCRA assessment methodology outlined below is aligned with the requirements of Section 4.10 'Climate Change Adaptation and Resilience' of the NPS for Energy (EN-1)[148].

14.4.60 The assessment of CCRA of the Proposed Development to future changes in climate will be undertaken in accordance with the methodology described in ISEP guidance[159].

14.4.61 The CCRA assessment will establish potential climate risks and consider the significance of that risk through an assessment of likelihood and consequence, taking into account embedded design measures adopted by the Proposed Development.

14.4.62 Future meteorological conditions will be obtained from the Met Office climate projections for the UK (UKCP18)[163,164] to identify likely future changes in local climate. The assessment will set out the measures incorporated into the design of the Proposed Development that will ensure the Proposed Development is resilient to future climate risks such as increased extreme weather events and warmer summer temperatures.

14.4.63 A high emissions scenario (using the Representative Concentration Pathway (RCP) 8.5 projections) will be utilised as this is worst-case and is advised in ISEP guidance[159].

14.4.64 UKCP18 projections for the future period 2080-2099 will be utilised, as this takes account of the anticipated lifetime of the Proposed Development (50 years), with 2030 the anticipated first year of operation.

14.4.65 A systematic risk assessment of conditions listed in Paragraph 14.4.93 will be undertaken during the design of the Proposed Development to identify the impact of expected extreme weather conditions arising from climate change on the Proposed Development, during the construction phase, over its operational lifetime and during decommissioning.

14.4.66 As a further step, the CCRA assessment will identify additional mitigation (as required) to address any significant effects and concludes on the residual risks.

Assessment of Significance

14.4.67 The assessment of significance takes embedded mitigation adopted by the Proposed Development into account.

In-Combination Climate Change Impact Assessment

14.4.68 As part of the CCRA assessment piece, an In-Combination Climate Change Impact (ICCI) assessment will also be undertaken and presented within the ES. This will assess the extent to which potential future climate change alters the environmental effects assessed by other EIA disciplines such as (but not limited to) flood risk, air quality, and noise and vibration.

Air Quality

Construction Dust Assessment

14.4.69 It is anticipated that a construction dust assessment will be required as part of the air quality chapter of the ES. The assessment methodology will follow that set out in the IAQMs Guidance on the Assessment of Dust from Demolition and Construction[178]. It will identify the potential for dust to be generated and the sensitivity of the surrounding area and will combine these to determine the risk of dust impacts without appropriate mitigation. This information will then be used to determine the appropriate level of mitigation required to ensure that there are no significant effects.

Construction Road Traffic Emissions Assessment

14.4.70 The Proposed Development will generate additional traffic on the local road network during its construction that could affect air quality conditions at existing roadside receptors, thus it is anticipated that a detailed air quality assessment will be required, to be presented within the air quality chapter of the ES.

14.4.71 In relation to human health, the development and its traffic generation will initially be screened against the criteria set out in the IAQM guidance document on Planning for Air Quality[177]. The approach compares the changes in vehicle flows on local roads that a development will lead to against specified screening criteria. The screening inside an AQMA

are a change in flows of more than 25 Heavy Duty Vehicles (HDVs) or 100 Light Duty Vehicles (LDVs) per day; outside of an AQMA the thresholds are 100 HDVs or 500 LDVs. Where these criteria are exceeded, a detailed assessment is likely to be required, although the guidance advises that "*the criteria provided are precautionary and should be treated as indicative*", and "*it may be appropriate to amend them on the basis of professional judgement*".

14.4.72 In relation to designated ecological sites, firstly the proximity of construction routes to designated ecological sites and their potential sensitivity to NOx and nitrogen and acid deposition will be reviewed. If required the development and its traffic generation will be screened using the National Highways screening criteria of 1,000 annual average daily traffic (AADT) or 200 HDVs. These values are used to define when a more detailed consideration of air quality impacts is required and not to define a Likely Significant Effect (LSE). Depending on the designation of the sensitive habitats (either locally, nationally or internationally designated) these criteria may need to be applied in combination with other plans and projects.

14.4.73 Where the screening criteria are exceeded, roadside pollutant concentrations, and the impacts of the development-generated traffic, will be predicted using the ADMS-Roads dispersion model[188]. The model will be verified against local monitoring data.

In combination

14.4.74 This development is critical infrastructure to connect the Y Bryn wind farm to the grid. Construction of the wind farm and the grid connection may occur concurrently, albeit is slightly different geographical areas. Therefore the potential for cumulative impacts with the wind farm will also be considered.

Likely Significant Effects

14.4.75 The IAQM guidance on the Assessment of Dust from Demolition and Construction[178] advises that, with appropriate mitigation in place, the effects of construction dust will be 'not significant'. The assessment will thus focus on determining the appropriate level of mitigation to be applied so as to ensure that effects will normally be 'not significant'.

14.4.76 In relation to road traffic and human health, where the screening criteria are exceeded, predicted concentrations at existing nearby sensitive receptors will be compared with the relevant air quality objectives and the significance of impacts at individual receptors will be determined following the IAQM Planning for Air Quality[177].

14.4.77 In relation to impacts on designated ecological sites the presence of designated sites close to access roads and their sensitivity to air quality impacts will be considered, along with the potential traffic generation to determine the potential for a Likely Significant Effect.

[188] Cambridge Environmental Research Consultants (CERC) (2025) ADMS-Roads Dispersion Modelling Software. Available: https://www.cerc.co.uk/environmental-software/ADMS-Roads-model.html

14.4.78 The overall significance of the air quality effects will then be determined. Where necessary, appropriate mitigation measures will be recommended to ensure that there are no significant effects.

Approach to Consultation

Climate

14.4.79 The approach to the GHG and climate change assessment will be discussed with Neath Port Talbot County Borough Council as required to ensure that any requirements set out in the Scoping Opinion are adequately addressed in the ES.

Air Quality

14.4.80 The approach to the air quality assessment will be discussed with the Environmental Health Officer at Neath Port Talbot County Borough Council. It is expected that the project ecologists with liaise with Natural England in relation to air quality impacts on designated ecological sites.

Approach to Mitigation

Climate

GHG Assessment

14.4.81 The GHG assessment will consider and help develop mitigation and carbon management measures delivered as part of the Proposed Development. These will be set out in relevant management plans and documents (see Paragraphs 14.4.83 to 14.4.85). This will include measures to minimise embodied carbon emissions and promote cradle-to-cradle circular economy, as these emissions are likely to represent the largest component of the Proposed Development's lifecycle footprint.

14.4.82 Consideration will be paid to the opportunity to introduce mitigation measures that will help to avoid or reduce the potential for an adverse significant effect to occur. In accordance with Schedule 4(7) of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017, the ES will be based on an EIA mitigation hierarchy which seeks to avoid, prevent, reduce and offset (where appropriate) likely significant effects. Specific environmental measures relevant to GHG emissions will be identified and will be considered as part of the assessment (i.e. the assessments of likely significant effects have been undertaken with the inclusion of the environmental measures, as these measures will form part of the Proposed Development). At this stage of the Proposed Development, the following environmental measures will be implemented and included within the Proposed Development.

<u>Construction</u>

14.4.83 It is anticipated that measures to minimise GHG emissions during the construction phase of the Proposed Development will be included within the suite of environmental

management plans that will accompany the DNS submission. These include (but are not limited to) the following:

- Outline Construction Environmental Management Plan (oCEMP);
- Outline Construction Traffic Management Plan (oCTMP);
- Outline Site Waste Management Plan (oSWMP).

Operation and Maintenance

14.4.84 It is anticipated that measures to minimise GHG emissions during the operational phase of the Proposed Development will be included within the suite of environmental management plans that will accompany the DNS submission. These include (but are not limited to) the following:

- Outline Operational Environmental Management Plan (oOEMP);
- Outline Site Waste Management Plan (oSWMP).

Decommissioning

14.4.85 It is anticipated that measures to minimise GHG emissions during the decommissioning phase of the Proposed Development will be included within the suite of environmental management plans that will accompany the DNS submission. These include (but are not limited to) the following:

- Outline Decommissioning Environmental Management Plan (oDEMP)
- Outline Site Waste Management Plan (oSWMP).

CCRA Assessment

14.4.86 A comprehensive list of mitigation measures will be developed, and evaluated in terms of risk to receptors, as part of the climate resilience assessment.

Air Quality

14.4.87 The air quality will focus on determining the appropriate level of mitigation to be applied during the construction phases so as to ensure that effects from dust emissions will normally be 'not significant'. Construction dust mitigation measures would be written into the Construction and Environmental Management Plan (CEMP) for the development which is anticipated would be secured via condition.

14.4.88 Measures which could be incorporated into the design of the development to minimise emissions from vehicle movements will be outlined and the requirement for any additional measures, to ensure impacts are not significant (which is judged to be unlikely), will be provided. These could be incorporated into the CTMP for the development which is anticipated would be secured via condition.

Potential Significant Effects of the Proposed Development

Climate

GHG Assessment

14.4.89 The Proposed Development will lead to the release of GHG emissions from its construction, operation and decommissioning. As previously discussed, the key GHG emitted will be CO_2; however, the assessment will include quantification of GHG emissions as carbon dioxide equivalent (CO_2e), which includes the contribution of all other GHGs (i.e. gases with a Global Warming Potential (GWP)) that will be released.

14.4.90 The key GHG emissions sources included in the GHG assessment are as follows:

Construction

- The embodied carbon in components and materials used to construct the Proposed Development;
- Emissions associated with traffic generated by the construction of the Proposed Development. This includes transportation of materials and components to the Proposed Development, including shipping from overseas;
- Emissions associated with fuel and energy consumption for worker accommodation and plant use during construction works; and
- Emissions from transport and treatment of construction waste.

Operation

- Emissions associated with the operational maintenance, repair, and replacement of the Proposed Development;
- Emissions from operational waste generation; and
- Emissions associated with traffic generated by the operation of the Proposed Development.

Decommissioning

- Emissions from energy and fuels consumed in the deconstruction of the Proposed Development at the end of its life;
- Emissions from deconstruction transport; and
- Emissions from transport, reuse, recycling, treatment or disposal of the Proposed Development at the end of its life.

14.4.91 As all carbon emissions have the potential to affect climate change, it is important to assess the effect of the Proposed Development on climate change as a result of carbon emissions from the construction, operational and decommissioning phases together. The GHG assessment will therefore be primarily based on the net effects of all construction, operational and decommissioning phase emissions. The significance of effects for individual emissions sources will not be considered.

14.4.92 The assessment will include a quantification of the carbon benefits of the Proposed Development provided by the enabling of the transmission to the grid of the renewable energy generated at the Y Bryn windfarm.

CCRA Assessment

14.4.93 The CCRA assessment will examine potential future climate risks which may affect the Proposed Development including:

- Flooding (pluvial and fluvial);
- Sea level rise;
- Extreme weather;
- Heat waves (inc. temperature increases);
- Drought (inc. reduced summer rainfall);
- Chronic increase in average temperatures;
- Increased precipitation; and
- Subsidence or ground movement.

14.4.94 The CCRA assessment will assess the potential impacts and effects during the construction, operation and decommissioning phases.

Air Quality

14.4.95 The Proposed Development will lead to emissions of NOx, PM_{10} and $PM_{2.5}$ and nuisance dust emissions during the construction phase could impact existing human and ecological receptors.

14.4.96 Due to the distances between receptors and the Proposed Development, and the availability of mitigation options, it is likely that all significant air quality effects can be avoided through the careful and responsible design, construction, and operation of the Proposed Development.

Impacts Scoped Out

Climate

14.4.97 There are no effects for Carbon and Climate Change that are proposed to be explicitly scoped out of the ES, however, minor emission sources will only be included should data be available (for example, emissions related to water use). These excluded emissions will either be not relevant or causally linked to the Proposed Development, or would not contribute more than 1% of the lifecycle carbon emissions in isolation and 5% in total, in line with ISEP guidance[154]. Any emissions sources not considered in this Scoping Report that are identified during PEIR, consultation or production of the final ES will either be scoped into or scoped out of the final ES. Where sources are scoped out, the rationale will be clearly justified and evidenced.

Air Quality

14.4.98 Air quality impacts during the operation are likely to be minimal as there are very few sources during the operation of the grid connection. Emissions are anticipated to only relate to vehicle movements associated with servicing and maintenance of the equipment, which is anticipated to be infrequent. The number of vehicle movements will low and therefore impacts have been scoped out of the ES chapter.

14.4.99 The air quality impacts associated with any unplanned emissions or incidents from accidents and disasters have been scoped out of the ES chapter as the likelihood of these occurring are considered to be so low that the risks are not significant.

Conclusion

Climate

14.4.100 The GHG Assessment and CCRA Assessment are SCOPED IN to the ES. The GHG Assessment will provide a quantification of the GHG emissions resulting from the construction, operation and decommissioning of the Proposed Development, and an assessment against the net GHG emissions saved by the Proposed Development in providing renewable electricity, which reduces reliance on fossil fuels such. The CCRA Assessment will assess the ability of the Proposed Development to adapt to and be resilient to potential future changes in climate, such as hotter dryer summers, warmer wetter winters and increased frequency and severity of storms.

Air Quality

14.4.101 The air quality assessment will consider the impacts of the construction phase on air quality in relation to nuisance dust impacts as well as emissions from road traffic. No significant effects are currently anticipated, subject to confirmation through assessment and consultation. Mitigation measures are anticipated to be secured through the Construction Environmental Management Plan and Construction Logistics Plan.

14.5 Material Assets & Waste

14.5.1 Material assets can be defined as

"*substances used in each lifecycle stage of a development, with particular focus on the construction, operation and maintenance, and decommissioning or 'end of life' (deconstruction, demounting, demolition and disposal) phases*" (ISEP, 2020a. p 13)[189].

14.5.2 Material assets can include 'materials' (i.e. physical resources that are used across the lifecycle of a development) and 'excavated arisings' (i.e. soil, rock, or similar resource generated by excavations).

14.5.3 Waste is defined as "any substance or object which the holder discards or intends or is required to discard", according to the Waste Framework Directive 2008. This definition includes any substances or object that is discarded for disposal or that has not been subject to acceptable recovery (including reuse and recycling). The main impacts (changes) and effects (consequences) of materials consumption and waste disposal are presented in Table 14.1 below.

[189] ISEP (formerly IEMA) IEMA guide to: Materials and Waste in Environmental Impact Assessment [Accessed 15/09/2025]

Table 14.1: Changes and effects of material consumption and waste disposal

Matter	Direct Impact	Adverse effect	Applicable development phase
Materials	Consumption of resources.	Depletion of resources, resulting in the temporary or permanent degradation of the natural environment	Construction
Waste	Generation and disposal of waste	Reduction in landfill capacity. Unsustainable use or loss of resources to landfill resulting in the temporary or permanent degradation of the natural environment.	Construction

14.5.4 An ES needs only to include the information that is relevant to the Proposed Development and to the environment likely to be affected, as set out by Regulation 18(3)(f) of the EIA Regulations.

14.5.5 As such, the indirect impacts typically associated with materials consumption and waste disposal (e.g. release of GHGs (addressed in Climate sub-section), water consumption, odour emissions) are not considered to be relevant or significant due to the nature and purpose of the Proposed Development.

14.5.6 Similarly, the indirect impacts of any off-site waste management facilities and material production facilities are expected to be assessed (and where necessary, mitigated) under the planning and permitting regime for those sites. As a consequence these impacts do not form part of an EIA for a development that uses such facilities for material supply or waste management.

14.5.7 A description of the potential streams and volumes of construction materials and waste disposal will be described within the Proposed Development chapter of the ES. In addition to this, the outline CEMP will set out how construction materials and waste will be managed on site, and opportunities to recycle waste will be explored. Where possible, development-specific commitments for sustainable resource management will be presented within the ES.

14.5.8 As part of the detailed CEMP (following the submission of the DNS application), there would be a requirement to develop and implement a Site Waste Management Plan and Materials Management Plan in advance of the construction works.

14.5.9 It is also not intended to remove significant quantities of excavated arisings from the site during construction (there are currently no demolition works proposed, for example). There may, however, be a need to remove some soils from the site for treatment or disposal, if found to be contaminated, and it is not practical to treat this onsite. However, where possible, soil arisings will be balanced through a cut and fill exercise to retain volumes on site.

14.5.10 For the operational phase, the potential streams/ volumes of construction materials and waste disposal will be described within the Proposed Development chapter within the ES. There will be relatively little waste produced during the operation phase and the requirement for material assets will be limited to maintenance and replacement parts, as required.

14.5.11 During decommissioning, the removal of any material assets and waste will be recycled or disposed of in accordance with good practice and market conditions at that time. If items can be recycled, this will be the first choice option.

14.5.12 Taking the above into account, and given the total demand for concrete and steel is a tiny fraction of UK and Welsh productions as described for GHGs, significant impacts on material assets and waste as a result of the Proposed Development are not anticipated and therefore, it proposed to scope this out of the EIA.

14.6 Existing Infrastructure

14.6.1 This section of the SR will be split into two further sub-sections to cover public access and utilities.

Public Access

14.6.2 Figure 2.1: Constraints Plan show public rights of way including Cistercian Way Long Distance Footpath (LDP) runs along the NRW owned section of the boundary between the on-site substation on the proposed wind farm heading south to the farmland. There are six footpaths and Wales Coast Path that cross the Scoping boundary. There is a national cycle network route that crosses the Scoping boundary just west of the A48. There are the Celtic Way and St Illtyd's Walk LDP's and some open access land within 2 km of the Scoping boundary. There are no bridleways or byways open to all traffic that cross the Scoping boundary. The location of all PRoW will be considered in the iterative design process.

14.6.3 Any potential impacts on the PRoWs associated with the Proposed Development will be considered and any necessary mitigation implemented which could involve temporarily diverting. Consideration will be given to opportunities for enhancement where appropriate. This section of the Other Matters chapter will indicate the restrictions for users and any proposed mitigation (including through temporary management measures, temporary diversions, and enhancement opportunities).

14.6.4 The Applicant will seek to engage with the NPT PRoW officer to explore options for the PRoW that will be temporarily impacted by construction works. As the construction works will be temporary across a relatively short duration it is anticipated that the effect of the Proposed Development on the PRoW will be not significant.

14.6.5 During construction and decommissioning, health and safety requirements would make it necessary to manage the use of PRoW, where they come within close proximity to infrastructure. The relevant statutory requirements would be adhered to. All potentially hazardous areas would be fenced off and all unattended machinery would be stored in the site compounds or immobilised to prevent unauthorised use. In addition, temporary construction safety signs, as well as access and information signs, would be placed at each possible entrance to the Proposed Development, and areas where there may be further danger.

14.6.6 Wider potential impacts to public access will be assessed as part of the Traffic and Movement chapter in the ES, and in regard to landscape and amenity effects as a part of Landscape and Visual Chapter.

Utilities

14.6.7 Potential utilities including water, gas, electricity and telecommunication links will be identified and assessed during the EIA with the final layout design either to avoid potential direct effects, or else for suitable mitigation measures to be presented if direct and unacceptable effects are identified. Consultation with utility providers will be undertaken and has already been initiated with some providers. A summary of the findings and consultation will be presented in this sub-section of the Other Matters ES chapter, and any utilities present will be included on the site constraints figure and presented as part of a technical appendix where appropriate.

14.6.8 A desk-based data collection is ongoing to ensure that a full suite of utilities data is collected to cover the Scoping boundary and a 2 km study area. Data has been obtained or requested from Open Government sources under license v3.0, Ofcom/BBC, NGET, National Grid UK, Wales & West Utilities, emapsite and linesearch before u dig.

14.6.9 Some overhead and underground cables have been identified that cross the Scoping boundary in some areas which can be seen on Figure 2.1: Constraints Plan in Appendix A.

14.7 Forestry

14.7.1 This section of the Scoping Report has been prepared by ARC Woodlands Ltd and provides an overview of existing information and baseline conditions related to forestry within the area surrounding the Proposed Development. For the purposes of this report, "Forestry" includes woodland areas recorded in the 2020 National Forest Inventory (NFI). Woodland listed in the NFI has been included due to relevant legislation and policies—particularly *Planning Policy Wales*—which highlight the importance of native woodlands, and the broader benefits associated with all tree species.

14.7.2 In addition to surveys and assessments carried out as part of the Y Bryn Wind Farm DNS application, a baseline desktop survey was carried out in August 2025 and will be supplemented by a site survey scheduled for September 2025. The baseline data primarily consist of geographic information sourced from the Welsh Government's DataMapWales[190] platform and are presented below.

14.7.3 The current Scoping boundary of the Proposed Development encompasses land situated between elevations of 10 m and 325 m, featuring a range of forestry and woodland cover. Of the approximately 83 hectares within the Site boundary, around 31 hectares (ha) have been identified as Forestry areas.

Legislation and Guidance

14.7.4 The UK Forestry Standard[191] (Forestry Commission 2024) is founded upon internationally recognised principles of sustainable forest management, adapted to reflect the UK's specific environmental conditions and climate obligations. This standard—known as UKFS—is applied by all governing bodies across the UK to evaluate forestry projects in both public and private domains, as well as to oversee regulatory compliance and enforcement.

14.7.5 In Wales, national forestry policy is established by the Welsh Government through its Woodlands for Wales strategy[192] (Welsh Government, 2018), which is further supported by the Woodlands for Wales: action plan[193] (Welsh Government, 2018). In 2021, a further consultation led to the creation of the Trees and Timber Task Force[194] whose recommendations can be summarised as follows:

- Making tree planting guidance clearer and providing additional resources from the Welsh Government
- Introducing new funding streams and improving integration with the Sustainable Farm Scheme, with a more straightforward application procedure
- Creating an industrial timber strategy and reviewing the Natural Resources Wales (NRW) timber strategy
- Providing support for forestry skills development and the tree nursery sector
- Assessing the management of existing woodlands and ways to promote better stewardship

14.7.6 In July 2025 the Welsh Government launched its Timber Industrial Strategy[195] which aims to grow the forestry and timber sectors through the following areas:

- Increasing timber supply;
- Increasing forest resilience;

[190] Available at: https://www.datamap.gov.wales [Accessed 15/09/2025]

[191] Available at: https://www.gov.uk/government/publications/the-uk-forestry-standard [Accessed 15/09/2025]

[192] Available at: https://www.gov.wales/wooalnds-wales-stratergy [Accessed 15/09/2025]

[193] Available at: https://www.gov.wales/woodlands-wales-action-plan [Accessed 15/09/2025]

[194] Available at: https://www.gov.wales/trees-and-timber-task-force-recommendations [Accessed 15/09/2025]

[195] Available at: https://www.gov.wales/timber-industrial-strategy [Accessed 15/09/2025]

- Resource efficiency;
- Creating confidence in demand; and
- Developing sector capacity.

14.7.7 Woodlands can achieve sustainable management certification through two principal organisations: the Forest Stewardship Council[196] (FSC) and the Programme for the Endorsement of Forest Certification (PEFC). The forests managed by NRW on behalf of the WG are certified under both schemes whilst it is less common to find privately owned woodlands certified.

14.7.8 Forestry management proposals are also supported by guidance produced by NRW along with documents from Forest Research, Forestry Scotland and Forestry England.

14.7.9 NRW maintains a dataset that identifies the boundaries of Ancient Woodland Sites (AWS). NRW classify the woodlands as follows:

- Ancient Semi Natural Woodland (ASNW);
- Restored Ancient Woodland Site (RAWS);
- Plantation on Ancient Woodland Site (PAWS); and
- Ancient Woodland of Unknown Category (AWSU).

14.7.10 National Policy identified in Planning Policy Wales (PPW), states that AWS are irreplaceable natural resources and should be afforded protection unless there are exceptional and clearly defined public benefits.

Existing Conditions

14.7.11 The Proposed Development contains approximately 83 ha of forestry according to the National Forest Inventory 2020. The areas can be characterised in association with their location where stands of coniferous trees dominate the higher elevations and broadleaved trees the lower elevations of the Proposed Development.

14.7.12 The main coniferous stands of trees are managed by NRW and occur on the western side of Mynydd Margam which is part of the Margam Forest Resource Plan[197] (FRP). These trees extend over approximately 17.5 ha and all are contained within the Site boundary of the Y Bryn Wind Farm DNS application. The FRP is used by NRW to manage the forest and sets out their short- and long-term plans for the forest which includes harvesting plans and other objectives. Further to the west the Site includes a steep section of woodland called Graig Fawr which is owned and managed by the Woodland Trust (WT). This wood is described by the WT as "mostly planted beech on an ancient woodland site". They also state the site is important for its archaeological interest and public access.

14.7.13 To the west of the M4 motorway there is a very small area of woodland running between the A48 and M4 and part of this woodland appears on the Ancient Woodland Inventory

[196] Available at: https://fsc.org/en [Accessed 15/09/2025]

[197] Available at: https://www.cyfoethnaturiolcymru.gov.uk/about-us/what-we-do/stratergies-plans-and-policies/forest-resource-plans/margam-forest-resource-plan [Accessed 15/09/2025]

(AWI) 2021. A further area of broadleaved area of woodland surrounds the Western Bio Energy plant which also appears on the AWI 2021 but does not appear on the AWI 2004.

Assessment Methodology

14.7.14 The Forestry study area will follow the Scoping boundary, including the whole of any commercial forestry coupes that fall within the Scoping boundary. Figure 14.1: Forestry Extent, illustrates the Scoping boundary and the study area. Field surveys are required to confirm the accuracy of existing forest data and to understand and identify the character of the forestry outside of WG ownership.

14.7.15 A forestry baseline will be prepared from site visits, aerial photography and the GIS datasets held by NRW at the time of the ES preparation. The GIS used by NRW contains live datasets and up to date versions will be used up to design freeze stage.

14.7.16 It is proposed that forestry is not regarded as a receptor for a formal impact assessment for the Proposed Development. Forestry does not fit the EIA process well as the potential impacts from the Proposed Development mimic regular forestry practice and other natural processes that occur in forests. Forest management regularly changes the forest through felling, thinning and replanting. Other natural events such as Windthrow, pest and diseases can also rapidly alter the composition and structure of these forests.

14.7.17 Sections of forestry within the site appear on the AWI and as such will be excluded during the design stage from having proposed infrastructure that directly impacts them. The Grid connection will pass over AWI forestry suspended by Overhead lines.

14.7.18 Forestry will appear as a technical appendix or standalone chapter that describes the changes required by the Proposed Development to areas of forestry in relation to the baseline and existing forestry planning.

Approach to Consultation

14.7.19 NRW will be consulted during the assessment and asked to provide current outputs from their FRP and other databases to build the baseline.

14.7.20 The WT will be asked to provide forest data to build the baseline for the area under their management.

14.7.21 Tree Preservation Order data will be requested from the Local Authority so that trees or woodland of special interest can be noted and identified within the baseline.

Approach to Mitigation

14.7.22 The design and construction process for the Proposed Development will include several mitigation features which are best practice for developments within or near forestry. These measures are described in Tables 14.2 and 14.3:

Table 14.2: Embedded Mitigation

Mitigation Measure	Justification
Approval of any felling and restocking required by NRW	NRW will require details of any felling required on the WG estate to ensure it can be designed into existing felling programmes and FRP's.
Felling designed to windfirm edges and or "keyholes"	Felling to incorporate the Proposed Development will seek to reduce the potential effects of this felling on the wider forest by using either "keyhole" felling or felling to windfirm edges.
Construction buffer zones for Ancient Woodland and Veteran trees	Root Protection Area (RPA) calculations will be used for trees identified as either Veteran or within Ancient Woodland.

Source: ARC Woodland Ltd

Table 14.3: Additional Mitigation

Mitigation Measure	Justification
Compensatory tree planting to replace trees/woodland felled for infrastructure	PPW states that where unavoidable loss of trees occurs a part of a development then compensatory planting is required at a scale appropriate to that of the woodland lost. The Applicant is obliged under their land agreements with Welsh Government to contribute to a fund for compensatory tree planting. Should the Proposed Development require tree felling on NRW land then the fund will provide for trees planted across the wider national estate wherever such planting cannot be carried out within the Proposed Development.
Cable route crossing points within WG forest	Where underground cable routes pass through the forest there may be a requirement to provide crossing points for forestry harvesting equipment to ensure access can be maintained to all parts of the forest

Source: ARC Woodlands Ltd

Potential Effects of the Proposed Development

14.7.23 Effects from the Proposed Development on forestry are led by the impact of felling trees to prepare the site prior to construction. Infrastructure construction may require the felling or clearance of trees to create the space required for cable routes, the upgrading or construction of access roads and compounds for permanent or temporary infrastructure.

14.7.24 Further tree felling work may be required during the operational phase to ensure cable routes are not impeded by new tree growth and to ensure trees are at safe distances from infrastructure in the event of windthrow events.

14.7.25 Decommissioning of the infrastructure may require tree trimming or felling to allow specialist vehicle access and to remove trees which have grown during the operational phase.

14.7.26 The cumulative effects the felling required will lead to a possible small increase in felling required for the Y Bryn Windfarm DNS proposal. The amount will be quantified within the Forestry Appendix of the ES.

14.7.27 The effects of the Proposed development:

- On the NRW FRP which may have trees felled outside of their scheduled date;
- A potential for windthrow of trees in new forest edges created by felling for infrastructure; and
- Access for standard forestry management created by new access infrastructure

Conclusion

14.7.28 The Proposed Development may require tree felling to enable the construction stage to take place. A substantial part of the current Scoping boundary includes areas of forestry previously assessed in the Y Bryn Windfarm ES. This can be quantified in the ES chapter.

14.8 Questions to Consultees

- **Question 14.1:** Do consultees agree that major accidents and disasters can be scoped out of the EIA as the potential for such events is considered so low that the risks are considered to not be significant?
- **Question 14.2:** Do consultees agree that assessment of operational impacts on Population and Human Health can be scoped out of the EIA?
- **Question 14.3:** Do consultees agree that potential impacts on Population and Human Health during construction can be sufficiently assessed and presented in other environmental chapters, such as noise?
- **Question 14.4:** Do consultees agree that an Electro-Magnetic Field Assessment can be scoped out of the EIA on the basis that no significant effects are predicted?
- **Question 14.5:** Do consultees agree that an assessment of Material Assets and Waste can be scoped out of the EIA on the basis that these topics are sufficiently covered throughout specific environmental chapters where appropriate and addressed through mitigation such as safe working practises as detailed in an outline CEMP?
- **Question 14.6**:Do consultees agree with the proposed methodology for the greenhouse gas and climate change assessments?
- **Question 14.7:** Do consultees agree that air quality impacts associated with the operation of the Proposed Development including incidents, accidents and disasters (e.g. fires) can be scoped out of the EIA?
- **Question 14.8:** Can consultees confirm the PRoW displayed on Figure 2.1 to be accurate?
- **Question 14.9:** Are consultees aware of any updates to any of the PRoW within 2 km of the Scoping boundary?

- **Question 14.10:** Can consultees confirm the utilities displayed on Figure 2.1 to be accurate?
- **Question 14.11:** Are consultees aware of any additional data within 2 km of the Scoping boundary?
- **Question 14.12:** Do consultees agree with the proposed methodology for forestry?
- **Question 14.13:** Are consultees aware of any other guidance or information that they wish to share about forestry at this site?
- **Question 14.14:** Do consultees agree that AWI status woodlands and other broadleaved woodlands should be considered as part of the forestry assessment in addition to any reference made to them in other chapters?

15. Schedule of Mitigation and Residual Effects

15.1.1 This Chapter of the ES will summarise the anticipated residual effects associated with the construction, operation and decommissioning of the Proposed Development. The Chapter will identify all predicted mitigation measures, including the mitigation by design, that will be undertaken to reduce any such effects, should the development be consented. This section will also give consideration to any synergistic effects anticipated.

15.1.2 In addition, any significant positive effects arising from enhancement measures – whether directly mitigating impacts arising from the Proposed Development or otherwise incorporated into the Proposed Development – will be identified.

16. Responding to the Scoping Report

16.1.1 The SR has identified the baseline resource at the site for different topics and presented where any potential significant effects to these may be experienced from the Proposed Development (either indirectly or directly).

16.1.2 It is intended that any responses provided by consultees will ensure that they agree with the baseline and scope for likely impact assessment so that the ES is focussed. Where features or receptors are deemed to have a possible significant effect the methodologies to assess the impact have been provided for comment. Responses on these would help ensure that the detailed methodology, survey and assessment are carried out with appropriate consideration to all statutory consultees and key stakeholders. This approach is in line with good practice in the planning system and an emphasis being communicated at a national level to focus the content of the EIA and ES on key elements identified at the scoping stage.

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