2 ENVIRONMENTAL IMPACT ASSESSMENT APPROACH

2.1 THE ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

2.1.1. The preparation of the EIA Report is one of the key stages in the EIA process, as it presents the assessment of likely significant environmental effects, which PEDW will use to inform their decision about whether consent should be granted for the Project.

2.1.2. The EIA process culminates in the provision of an Environmental Statement (ES) which provides environmental information in accordance with the Town and Country Planning (Environmental Impact Assessment) (EIA) (Wales) Regulations 2017. The ES provides an assessment of the likely significant effects associated with the Project during its construction, operation, and decommissioning.

2.1.3. The environmental aspect assessments have been carried out using the general approach and processes set out in this chapter. In each topic chapter, specific methodologies for those assessments are explained.

2.2 EIA TERMINOLOGY

IMPACTS AND EFFECTS

2.2.1. In some EIA Reports, the terms ‘impacts’ and ‘effects’ are used interchangeably, whilst in others, the terms are given different meanings. The convention used in this EIA Report is to use ‘impacts’ only within the context of the term EIA, which describes the process from scoping through EIA Report preparation to subsequent monitoring and other work.

2.2.2. Otherwise, this document uses the word ‘effects’ when describing the environmental consequences of the Project, which may, for example, come about as a result of physical activities that would take place if the development were to proceed. The environmental changes that occur as a result of these activities may in some cases cause another change, which in turn results in another environmental effect.

2.2.3. The predicted environmental effects are the consequences of the environmental changes for specific environmental receptors.

2.2.4. This EIA Report is concerned with assessing the significance of the environmental effects of the Project, which requires the activities that will be undertaken to be understood and the resultant changes to be identified and quantified, often based on predictive assessment work before reaching a conclusion on the significant environmental effect.

SPATIAL AND TEMPORAL SCOPE

2.2.5. Spatial scope is the area over which changes to the environment are predicted to occur as a result of the Project. In practice, an EIA should focus on those areas within which any identified effects are likely to be significant.

2.2.6. Within this EIA Report, the spatial scope varies between environmental topics and is therefore described in each of the topic chapters.

2.2.7. The temporal scope covers the time period over which changes to the environment and the resultant effects are predicted to occur. As the Project nears the end of its intended operational life, a decision will be taken as to whether or not a life extension, repowering or decommissioning will be required. However, for assessment purposes, the EIA Report assumes the proposed grid connection will remain in situ, as it has the potential to become integrated into the Distribution Network Operator (DNO) wider distribution network.

2.2.8. Therefore, the focus of the assessments is on the potential effects during construction, operation & maintenance, though decommissioning is considered where appropriate. Should the assessment of an individual technical topic deviate from this general approach, it will be clarified within the technical chapter. For example, traffic and transport assessments for developments typically focus on the construction period as this is when there is greatest potential for significant effects to occur because of the increase in the volume of Heavy Goods Vehicles (HGVs). During operation however, traffic is generally restricted to occasional monitoring and maintenance visits which is unlikely to result in significant effects. The potential effect on users of the road network as a result of operational is therefore typically scoped out of detailed assessment. Changes as a result of the Project that occur during construction, operation and/ or decommissioning may result in effects that persist beyond these phases. The effects are typically defined as either being temporary or permanent.

2.3 EIA SCOPING

2.3.1. The EIA scoping process aims to identify the scope and level of detail of information to be provided within the EIA Report. In particular, the process involves identifying the following:

- The people and environmental resources (collectively known as the 'receptors') that could be significantly affected by the Project;
- The methodology for the assessment of those effects identified as being potentially significant;
- Environmental effects which have the potential of being significant, and therefore are required to be considered within an Environmental Statement; and
- Environmental effects which are not anticipated to be significant and, therefore, are not required to be considered further within an Environmental Statement.

2.3.2. The preparation of a scoping report is informed by the legislative and policy context that will influence the scheme as well as the environmental information relevant to the Project and its surroundings. It is also informed by the simple rule that, to be significant, an effect must be of sufficient importance that it should influence the process of decision-making about whether consent should be granted for a project or an element of it.

2.3.3. An EIA Scoping Report was submitted on 22nd November 2024 to PEDW, and is included in **Appendix 2A**.

2.3.4. The EIA Scoping Opinion (**Appendix 2B**) has been used to inform and shape the scope of the assessments, based on responses from the local councils and consultees. At the time of writing the draft EIA Report, further consultations beyond that of PAC have not been requested. However, any additional consultation undertaken with stakeholders will be captured as appropriate within the final EIA report.

2.4 CONSULTATION

EIA SCOPING OPINION

2.4.1. PEDW formally issued the Scoping Opinion in response to the Scoping Report on 12th March 2025 (**Appendix 2B**). As noted in **Section 2.3**, at the time of writing no further consultations have been requested. A summary of all consultations following issue of the EIA Scoping Opinion will be captured in the final EIA Report.

2.5 OVERVIEW OF ASSESSMENT METHODOLOGY

INTRODUCTION

2.5.1. All the topic assessments presented in the draft EIA Report have been undertaken on the Project, as described within **Chapter 4: Description of the Project**.

2.5.2. The assessment of effects has been undertaken by competent experts with relevant specialist skills, drawing on their experience of working on other development projects, good practice in EIA and relevant published information. A list of these experts, their qualifications and competencies have been provided within **Appendix 1A**.

2.5.3. For some topics, use has been made of modelling or other methodologies, as appropriate.

2.5.4. For each topic considered in this EIA Report, where appropriate, the chapters use the following format:

- Introduction;
- Limitations of the Assessment;
- Policy, Legislation and Guidance;
- Consultation;
- Data Gathering Methodology;
- Overall Baseline;
- Scope of the Assessment;
- Embedded Measures;
- Assessment Methodology;
- Assessment of Effects;
- Assessment of Cumulative Effects;
- Mitigation and Residual Effects;
- Conclusions of Significance Evaluation;
- References.

2.6 IDENTIFICATION OF BASELINE CONDITIONS

2.6.1. To determine the baseline conditions that should be used for the assessment of the likely significant effects of the Project, it is necessary to define the current baseline conditions and then to decide whether these conditions are likely to change by the 'assessment years' that are selected for the construction, operation and maintenance of the Project. If this future baseline is more likely to occur that the current baseline, the future baseline is used for the assessment of effects. However, if the

current baseline is just as likely, or even more likely, to occur in the assessment years, the current baseline is used for the assessment.

2.6.2. As the various elements of the Project would be built over a period of 9 months, from an estimated start date of January 2028, it cannot be assumed that the baseline conditions would be the same as the current baseline at the time of construction or during construction or operation. Where relevant, technical chapters, therefore, provide a description of the likely changes to the baseline in the absence of the Project. The baseline is determined for the *'Study Area'* for each environmental topic by a combination of desk-based research, together with field survey work (where required). The Study Area encompasses the Site boundary but may also include land outside this, where effects are likely to extend beyond such geographical limits. Zones of Influence (ZoIs), where the Project could affect off-site areas, are therefore considered where relevant for each technical topic considered in the EIA.

2.6.3. Where relevant, details of the ZoIs are discussed in the baseline section of the environmental topic chapter considered and the basis for the Study Area explained. These chapters also explain the basis for defining the future baseline conditions, where this is appropriate. This is based on the following:

- Changes to the baseline that can be predicted based on reasonable assumptions and modelling calculations, e.g. the application of traffic growth factors based on relevant guidance;
- Information relating to other likely and predictable changes; and
- Information about other relevant developments, including the nature of the development proposals, their likely timing and their location relative to the Project.

2.7 OVERVIEW OF APPROACH TO SIGNIFICANCE EVALUATION METHODOLOGY

INTRODUCTION

2.7.1. One of the requirements of an EIA Report is to set out the conclusions that have been reached on the likely significant environmental effects arising from the Project. Reaching a conclusion about which effects, if any, are likely to be significant is the culmination of an iterative process that involves the following stages:

- Identifying those effects that could potentially be significant;
- Assessing the effects of a proposed development against the baseline conditions; and
- Concluding whether these are likely to be significant.

2.7.2. **Chapters 6 to 10** describe the approaches that have been used, in relation to the stages outlined in the bullet points above, for each of the environmental topics that are considered in this draft EIA Report.

IDENTIFICATION OF LIKELY SIGNIFICANT EFFECTS

2.7.3. The technical assessments have been carried out on the Project, as summarised within **Chapter 4: Description of the Project** of this draft EIA Report.

2.7.4. The technical assessment undertaken in **Chapters 6 to 10** of this draft EIA Report describe how environmental changes resulting from the Project as assessed to determine the significance of effects, together with the topic-specific approaches that have been used to identify the receptors that could be significantly affected by the Project.

TYPES OF EFFECTS

2.7.5. Paragraph 5 of Schedule 4 of the EIA Regulations states that *'the description of the likely significant effects on the factors specified in regulation 4(2) should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term, and long-term, permanent and temporary, positive and negative effects of the development'*.

2.7.6. Where appropriate, this EIA Report considered these types of effects within the individual topic chapters as relevant. A description of the different types of effects is set out below, with the exception of cumulative effects which are dealt with separately in **Section 2.8**.

Direct Effects

2.7.7. Direct effects are those that result directly from a project. For example, where a machine compresses an area of habitat, this physical activity results in a change to this receptor.

Indirect and Secondary Effects

2.7.8. Indirect and secondary effects are those that result from consequential change caused by a project. As such they would normally occur on a different receptor, later in time or at locations farther away than direct effects. An example would be where an area of habitat disturbed by machinery results in loss of vegetation and soil compaction which increases silted run-off rates into nearby watercourses.

Local, Regional, National and Transboundary Effects

2.7.9. Transboundary effects are those that would affect the environment in another state within the European Economic Area (EEA).

Temporal Effects

2.7.10. As discussed in **Section 2.2**, temporal effects are typically defined as being permanent or temporary as follows:

- Permanent - these are effects that will remain even when a project is complete, although these effects may be caused by environmental changes that are permanent or temporary; and
- Temporary – these are effects that are related to environmental changes associated with a particular activity and that will cease when that activity finishes. Where effects are temporary, they may be defined as short-, medium- or long-term, the duration of which may depend on the receptor in question and would therefore be defined in technical chapters as appropriate.

SIGNIFICANCE EVALUATION

Overview

2.7.11. The receptors that could be significantly affected by the Project are identified within each topic chapter. The approach that is adopted to determine whether the effects on these receptors are

significant is to apply a combination of professional judgement and a topic-specific significance evaluation methodology that draws on the results of the assessment works that has been carried out.

2.7.12. There is a degree of flexibility within the EIA Report when reporting the significance of effects in terms of the EIA Regulations. This is determined using professional judgment, with reference to the project description and available information about the magnitude and other characteristics of the potential changes that are expected to be caused by the Project, the receptors' sensitivity to these changes, and the effects of these changes on relevant receptors.

2.7.13. In some cases, use of the 'significance test' alone will enable a conclusion to be reached in the 'Scope of the assessment' section of the topic chapter, without the need for more detailed work to assess whether or not a potential effect is likely to be significant. For example, this could be because additional baseline date or detail on the Project description has been obtained which has allowed potential effect to be scoped out after the scoping stage. However, in other cases, effects identified in the 'scope of the assessment' section are taken forward for further assessment in the subsequent section(s) of each topic chapter.

2.7.14. All topic-specific chapters, the methodology follows the approach detailed in this section. However, for some of the topics there is published guidance available about significance evaluation. Where such guidance exists, it has been used to inform the development of the significance evaluation methodologies that are used in this draft EIA Report. For other topics, it has been necessary to develop methodologies without the benefit of guidance. This has involved technical specialists drawing on their previous experience of significance evaluation in EIA. Having applied the relevant topic-specific significance evaluation methodology, the topic specialists assess the conclusions against the significance evaluation matrix (**Table 2-2**).

2.7.15. While there may be variation depending on the technical topic being considered, significance evaluation generally involves combining information about the sensitivity, importance or value of a receptor, and the magnitude and other characteristics of the changes that affect the receptor. The approach to using this information for significance evaluation is outlined below.

RECEPTOR SENSITIVITY, IMPORTANCE, OR VALUE

2.7.16. The sensitivity or value of a receptor is largely a product of its importance, as informed by legislation and policy, and as qualified by professional judgement. For example, receptors for landscape, biodiversity or the historic environment may be defined as being of international or national importance. Lower-value receptors may be defined as being sensitive or important at a county or district level.

2.7.17. The use of a location or physical element that may be representative of receptors, e.g. people, would also play a part in its classification in terms of sensitivity, importance, or value. For example, when considering effects on the amenities of people, a location used for recreational purposes may be considered more sensitive to change or be valued more than a place of work.

2.7.18. The sensitivity, importance, or value of receptors that may be affected by the Project would be identified on a scale from *very low* to *very high*. For each environmental topic, it is necessary to

provide a detailed rationale that explains how the categories of sensitivity/importance/value detailed in **Table 2-2** have been used.

MAGNITUDE OF CHANGE

2.7.19. The magnitude of change affecting a receptor as a result of the Project would be identified on a scale from *very low* to *very high*. As with receptor sensitivity and value, a rationale is provided in each topic chapter that explains how the categories of environmental change are defined. For certain topics, the magnitude of change would be related to guidance on what levels of change are acceptable (e.g. for noise) and be based on numerical parameters. For other changes, it will be a matter of professional judgement to determine the magnitude of change detailed in **Table 2-1**, using descriptive terms.

DETERMINATION OF SIGNIFICANCE

2.7.20. The significance of effects is determined with reference to information about the nature of the development, the receptors that could be affected and their sensitivity, importance or value, together with the magnitudes of environmental change that are likely to occur.

2.7.21. Significance evaluation of the effects of the Project for many environmental topics can be guided by the use of matrices that combine sensitivity/importance/value and the magnitude of environmental changes as shown in the example in **Table 2-1**. In addition, professional judgment is applied because, for certain environmental topics, the lines between the sensitivities or magnitudes of change may not be clearly defined and the resulting assessment conclusions may need clarifying. It should be noted that as directed by topic-specific guidelines issued by institutions governing a particular discipline, some environmental topics avoid the use of matrices to assess significance.

Table 2-1 - Significance Evaluation Matrix

		Magnitude of change				
		Very high	High	Medium	Low	Very low
Sensitivity/importance/value	Very high	Major (Significant)	Major (Significant)	Major (Significant)	Major (Significant)	Moderate (Probably significant)
	High	Major (Significant)	Major (Significant)	Major (Significant)	Moderate (Probably significant)	Minor (Not significant)
	Medium	Major (Significant)	Major (Significant)	Moderate (Probably significant)	Minor (Not significant)	Negligible (Not significant)
	Low	Major (Significant)	Moderate (Probably significant)	Minor (Not significant)	Negligible (Not significant)	Negligible (Not significant)
	Very Low	Moderate	Minor	Negligible	Negligible	Negligible

	(Probably significant)	(Not significant)	(Not significant)	(Not significant)	(Not significant)

2.7.22. Within the matrix that is used in most significant evaluation exercises, reference is made to:

- Major effects, which will always be determined as being significant in EIA terms;
- Moderate effects, which are likely to be significant, although there may be circumstances where such effects are considered not significant based on professional judgement; and
- Minor or negligible effects, which will always be determined as not significant.

2.7.23. Variations to this approach, which may be applicable to specific environmental topics, will be detailed in the relevant 'assessment methodology' sub-section contained in each environmental topic chapter.

2.7.24. Definitions of how the categories that are used in the matrix are derived for each topic are also set out in each environmental topic chapter, along with the relevant explanation and descriptions of receptor sensitivity, magnitude of change and levels of effect that are considered significant under the EIA Regulations.

2.8 ASSESSMENT OF CUMULATIVE EFFECTS

2.8.1. For each environmental topic that is dealt with in this draft EIA Report, an assessment is undertaken within each technical chapter of how the environmental effects resulting from the Project could combine with the same topic-related effects generated by other developments to affect a common receptor. To do this, it is important to first identify which other developments need to be included in the cumulative effects assessment ('CEA') under each environmental topic assessment undertaken. The starting point for this is to determine for each environmental topic considered the ZoIs of the Project for each receptor that could be significantly affected.

2.8.2. Identifying the other developments that should be considered in the CEA involves first acknowledging that the availability of information necessary to conduct this will partly depend on the prevailing status of the other relevant developments. Cumulative developments relevant to the Project are shown in **Figure 2-1** and **Table 2-2**.

Table 2-2 - Cumulative Developments

Planning Authority Area	Planning Application Reference	Category	Summary of Development	Approved/ Application
NPTCBC	P2022/0517	Energy/ Wind Farm	Foel Trawsnant Wind Farm associated with Project - consisting of 11 turbines with a maximum tip height of 145m. Amendment to the plans referred to in condition 3 of planning permission reference P2014/0825 to allow for approval of revised plans for the development.	Approved
NPTCBC	P2022/0344	Energy/ Wind Farm	Foel Trawsnant Wind Farm Wind Farm associated with Project - consisting of 11 turbines with a maximum tip height of 145m. Non Material Amendment of planning permission.	Approved
BCBC	P/23/621/APN	Agricultural	Agricultural Storage Building. Prior notification for a new building to store hay and farm machinery.	Approved
BCBC	P2020/1002	Energy/ Wind Farm	Upper Ogmore Wind Farm. Application made to the Welsh Ministers under The Developments of National Significance (Wales) Regulations 2016 Notice for a Development of National Significance (DNS): seven wind turbines - four	Approved

Planning Authority Area	Planning Application Reference	Category	Summary of Development	Approved/ Application
			turbines are up to a maximum tip height of 149.9m, and three turbines are up to a maximum tip height of 130m.	
NPTCBC	P2022/0694	Energy/ Solar	Installation of Solar Farm, with a capacity of 3.80MW, on a former colliery soil heap between the B284 and A48 northwest of Pyle.	Approved
NPTCBC	P2024/0820	Residential	Mixed-use Residential Development, comprising of 600 apartments and 100-bed hotel.	Approved
NPTCBC	P2024/0029	Energy/ Wind Farm	Y Bryn Wind Farm; consisting of 18 turbines with a maximum height ranging between up to 206m, up to 203m, and up to 250m to blade tip.	Application
BCBC	P/12/877/BCB	Community Infrastructure	Create Wildlife & Sustainable Urban Drainage Scheme Ponds To Enhance The Ecological Potential Of The Welfare Park	Approved
BCBC	P/16/291/FUL	Community Infrastructure	Creation Of Community Wood- Land On Reclaimed Colliery & Washery & Tip Site, Inc Tree Planting Create Infrastructure	Approved

Planning Authority Area	Planning Application Reference	Category	Summary of Development	Approved/ Application
BCBC	P/16/128/FUL	Minerals	Restoration of former mine. Alternative restoration & aftercare scheme inc. pumping, earthworks, soil relocation, rights of way.	Application
NPTCBC	P2023/0498	Energy/ Solar	Proposed 50 MW ground mounted photovoltaic solar farm with associated equipment, infrastructure, grid connection and ancillary works.	Application
BCBC	P/19/915/RES	Residential	Residential Development of 405 units. Reserved matters to P/16/366/OUT for 405 residential units, link road and temporary car park	Application

2.8.3. Paragraph 5 (e) of Schedule 4 of the EIA Regulations (Wales) 2017 states that *'the cumulation of effects with existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources'*.

2.8.4. Therefore, such developments, where they are located within the ZoI for a given environmental topic, have been subject to CEA. These developments are discussed, as appropriate, in the sub-section of each environmental topic chapter that deals with the assessment of cumulative effects.

2.9 MITIGATION MEASURES

2.9.1. As specified within Schedule 4, Paragraph 7 of the EIA Regulations, appropriate mitigation measures will be identified to avoid, prevent, reduce, or if possible offset identified potential significant environmental effects.

2.9.2. The following will be considered:

- Embedded mitigation –which is built-in to the Project during the design process;
- Any additional mitigation – aimed to avoid, prevent, reduce, or if possible offset significant effects; and
- Enhancement measures.

2.9.3. A key feature of the EIA approach will be to ensure a robust assessment which will address significant issues and provide workable mitigation.

2.10 RESIDUAL EFFECTS

2.10.1. Following the identification of mitigation and monitoring measures to address significant adverse effects, an assessment of the significance of any residual impacts (i.e., those remaining after the implementation of addition mitigation) will be completed.