Contents

2 Approach to Environmental Impact Assessment

2.1 The Environmental Impact Assessment Process

2.1.1 EIA is a process for identifying the likely significant environmental effects (positive and negative) of a project to inform the decision-making process when considering an application for development consent.

2.1.2 The preparation of an ES is one of the key stages in the EIA process, as it brings together information about any significant environmental effects, which the decision makers will use to inform their decision about whether the Proposed Development should be allowed to proceed.

2.1.3 This Draft ES has been prepared to allow consultees an opportunity to comment on its contents, and for the Applicant to consider and respond to any comments received, in accordance with paragraph 3.23 of Developments of National Significance: Procedural Guidance[1,2]. Prior to submission of the DNS application, the Final ES will be updated as necessary following comments received during statutory consultation. Any amendments to the Draft ES prior to submission will be identified within the application documents (either in the submitted Final ES or in the Pre-application Consultation Report).

2.1.4 The EIA process culminates in the provision of an ES written in accordance with the EIA Regulations[3]. The Final ES will accompany the DNS application seeking the formal grant of planning permission for the Proposed Development. The Final ES will help to inform the determination of the application. In particular, the Final ES will provide a final assessment of the likely significant effects associated with the Proposed Development.

Overview of EIA

2.1.5 This chapter sets out the EIA process, the relevant regulations, guidance, terminology, methodology, scoping process and the requirement for the consideration of alternatives (also see **Chapter 3: Scheme Need, Alternatives and Iterative Design Process**). The chapter then explains in more detail the particular scope of this EIA.

2.1.6 EIA is a systematic procedure that must be followed for certain types of developments, which aims to identify a project's likely significant environmental effects, identify (where necessary) environmental (mitigation) measures to reduce or offset the level of adverse effects and finally to assess residual effects with these measures incorporated or applied. This process helps to ensure that the predicted likely significant effects and the scope for any mitigation of these effects are properly understood by the public, and by the determining authority (in this instance,

[1] Planning and Environment Decisions Wales (2024). Developments of National Significance (DNS): Procedural Guidance.. (online). Available at: https://www.gov.wales/sites/default/files/pdf-versions/2025/2/5/1740703183/developments-national-significance-dns-procedural-guidance.pdf (Accessed September 2025)
[2] On 01 October 2021 The Planning Inspectorate Wales became the Planning and Environment Decisions Wales (PEDW) (or Penderfyniadau Cynllunio ac Amgylchedd Cymru) and will be referenced as so hereafter.
[3] UK Government (2017). The Town and Country Planning (Environmental Impact Assessment) Regulations 2017. (online) Available at: https://www.legislation.gov.uk/uksi/2017/571/introduction (Accessed September 2025).

PEDW and ultimately the Welsh Ministers) before it decides on whether consent should be granted.

2.1.7 A robust EIA is defined by a number of characteristics:

- It is systematic, comprising a sequence of tasks defined both by regulation and by good practice;
- It is analytical, requiring the application of specialist skills from the environmental sciences;
- It is impartial, its objective being to inform decision-making rather than to promote the project;
- It is consultative, with provision being made for obtaining information and feedback from interested parties including local authorities, members of the public and statutory and non-statutory agencies; and
- It is iterative, allowing opportunities for environmental concerns to be addressed during the planning and design of a project.

2.1.8 The EIA process identifies the potential for effects to arise and identifies environmental measures (mitigation) to be incorporated into the design of the Proposed Development, or the method of construction and operation that may reduce or eliminate negative effects or enhance positive effects. Typically, numerous design iterations take place in response to environmental constraints identified during the EIA process (in effect, incorporating environmental mitigation measures to avoid, reduce or compensate for identified adverse effects). Further details of such measures identified for the Proposed Development are presented in **Chapter 3**, and the corresponding environmental topic chapters.

Need for EIA

2.1.9 Under Regulation 4A of The Developments of National Significance (Specified Criteria and Prescribed Secondary Consents) (Wales) (Amendment) Regulations 2016[4], and paragraph 1.10 of the Developments of National Significance: Procedural Guidance**Error! Bookmark not defined.** consent is required from the Welsh Ministers for the construction and operation of all energy generation projects between 10MW and 350MW[5].

2.1.10 The EIA Regulations apply to DNS applications and the Proposed Development falls within Schedule 2, paragraph 3(i) (*"Installations for the harnessing of wind power for energy production (wind farms)").* As noted in **Chapter 1: Introduction** of this Draft ES, Schedule 2 development constitutes EIA development if the development is likely to have significant effects on the environment by virtue of factors such as its nature, size or location. Wind farms of the scale proposed generally give rise to some significant environmental effects. However, it should be noted that a significant effect is not necessarily an unacceptable one when weighed against the benefits in the overall balance of acceptability of a Proposed Development. This balance is set out in the **Planning Statement** which will accompany the submission of the DNS application, a draft version of which is provided alongside this Draft ES.

[4] UK Government (2016). The Developments of National Significance (Specified Criteria and Prescribed Secondary Consents) (Wales) Regulations 2016. (online) Available at: https://www.legislation.gov.uk/wsi/2016/53/contents/made (Accessed April 2025).

[5] Paragraph 1.11 of the Developments of National Significance: Procedural Guidance also states that overhead electric lines of up to 132kV which are associated with a devolved generation station are to be captured by the DNS system. As noted in paragraph 1.1.7 however the overhead line element of the grid connection will be delivered by National Grid as a separate DNS application.

EIA Regulations

2.1.11 Schedule 4 of the EIA Regulations[3] specifies that the ES should describe those factors likely to be significantly affected by the Proposed Development: population, human health, biodiversity (for example flora and fauna), land (for example land take), soil (e.g. organic matter, erosion, compaction, sealing), water (for example hydromorphological changes, quantity and quality), air, climate (for example greenhouse gas emissions, impacts relevant to adaptation), material assets, cultural heritage, including architectural and archaeological aspects, and landscape.

2.1.12 Establishing which aspects of the environment and associated issues are relevant for a particular project can be captured in the EIA scoping process. The proposed scope of the assessment is provided to the determining authority by the Applicant, and the determining authority provides its opinion on the scope, taking account of feedback it obtains from key consultees. The scoping exercise undertaken for the Proposed Development is described in **Section 2.3** and a copy of the Scoping Report and Scoping Direction are set out in **Appendix 1A** and **1B**, respectively.

EIA Guidance

2.1.13 A range of reference material and guidance has been drawn upon in developing the EIA methodology adopted for the Proposed Development. Principal sources of reference material and guidance over and above the EIA Regulations[3] are noted in each environmental topic chapter.

2.2 EIA Terminology

Impacts and Effects

2.2.1 In some ESs, the terms 'impacts' and 'effects' are used interchangeably, whilst in others the terms are given different meanings. Some use ‘impact’ to mean the cause of an ‘effect’, whilst others use the converse meaning. This variety of definitions has led to a great deal of confusion over the terms, both among the authors and the readers of ES.

2.2.2 The convention used in this Draft ES is to use 'impacts' only within the context of the term EIA, which describes the process from scoping through ES preparation to subsequent monitoring and other work. Otherwise, this document uses the word 'effects' when describing the environmental consequences of the Proposed Development. For example, such effects may come about as a result of the following impacts:

- Physical activities that would take place if the development were to proceed (e.g., vehicle movements during construction operations); and
- Environmental changes that are predicted to occur as a result of these activities (e.g., loss of vegetation prior to the start of construction work or an increase in noise levels). In some cases, one change causes another change, which in turn results in an environmental effect.

2.2.3 The predicted environmental effects are the consequences of the environmental changes or impacts for specific environmental receptors. For example, with respect to bats, the loss of roosting sites or foraging areas could affect the bats’ population size; with regard to people, an increase in noise levels could affect people’s amenity.

2.2.4 The ES is concerned with assessing the significance of the environmental effects of the Proposed Development, rather than the activities or changes that cause them. However, this requires these activities to be understood, and the resultant changes identified and quantified, often based on predictive assessment work.

Spatial and Temporal Scope

2.2.5 Spatial scope is the area over which changes to the environment are predicted to occur as a consequence of the Proposed Development. In practice, an EIA should focus on those areas where these effects are likely to be significant.

2.2.6 In this Draft ES, the spatial scope varies between environmental topics and is therefore described in each of the topic chapters. For example, the effects of a development with respect to landscape and visual amenity would generally be expected to cover a much greater area than biodiversity related effects which are often more localised.

2.2.7 The temporal scope covers the time period over which changes to the environment and the resultant effects are predicted to occur and are typically defined as either being temporary or permanent and related to the construction and/or operational phases of development.

2.3 EIA Scoping

2.3.1 Regulation 17(4)(c) of the EIA Regulations[3] requires that, where a Scoping Opinion (or Direction) has been adopted, an ES must "…be based on the most recent scoping opinion or direction issued (so far as the proposed development remains materially the same as the proposed development which was the subject of that opinion or direction)". This effectively allows the determining authority to control the scope of the assessment. As such, it is important to set out as much information as possible about the development and the proposed work scope when preparing a Scoping Report with the objective of achieving a Scoping Opinion or Direction that ideally does not require amendment.

2.3.2 Scoping involves identifying the following:

- The people and environmental resources (collectively known as 'receptors') that could be significantly affected by the Proposed Development; and
- The work required to take forward the assessment of these potentially significant effects.

2.3.3 Scoping starts at the outset of the EIA process, with the initial identification of potentially significant effects as a result of the Proposed Development being set out in a Scoping Report (**Appendix 1A**). The preparation of the Scoping Report is informed by the legislative and policy context to the Proposed Development. 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 or not consent should be granted for the Proposed Development or an element of it. In this Draft ES, this is referred to as the 'significance threshold'.

2.3.4 At the scoping stage, the conclusion that is made using the significance threshold is based upon professional judgement, with reference to the Proposed Development description at that stage, and available information about:

- The magnitude and other characteristics of the potential changes that are expected to be caused by the Proposed Development;

- The sensitivity of receptors to these changes;
- The effects of these changes on relevant receptors; and
- The value of receptors.

2.3.5 As a precautionary approach if the information that is available at the scoping stage does not enable a robust conclusion to be reached that a potential effect is not likely to be significant, the effect is taken forward for further assessment.

Scope of the Environmental Impact Assessment

2.3.6 The environmental topic **Chapters** (**6 to 16**) of this Draft ES detail the scope of the assessment, with effects that are not referred to being unlikely to be significant.

2.3.7 The Scoping Report for the Proposed Development (**Appendix 1A**) was submitted for comment to PEDW[6] on 18 September 2024. The Scoping Report sets out that the following environmental topics were proposed to be scoped into the EIA:

- Landscape and Visual;
- Historic Environment;
- Biodiversity;
- Ornithology;
- Water Environment;
- Ground Conditions;
- Traffic and Transport;
- Noise;
- Aviation and Telecommunications;
- Shadow Flicker;
- Socio-economics; and
- Cumulative effects.

Population and Human Health

2.3.8 As set out in the Scoping Report, and set out in **Table 1.2** of **Chapter 1**, population and human health effects are considered within relevant technical chapters including:

- Chapter 6: Landscape and Visual;
- Chapter 12: Traffic and Transport;
- Chapter 13: Noise; and
- Chapter 14: Shadow Flicker.

[6] On 1 October 2021 PINS Wales became the Planning and Environment Decisions Wales (PEDW) (or Penderfyniadau Cynllunio ac Amgylchedd Cymru)

Major Accidents and Disasters

2.3.9 The scope for the EIA to consider the vulnerability of the Proposed Development to major accidents and disasters has been considered in **Table 5-41** of the Scoping Report (**Appendix 1A**). Major accidents or disasters have been scoped in where they represent a risk to, or because of, the Proposed Development, either from the proposed location or from the project itself and where there is reasonable likelihood of the accident or disaster occurring, or where the effect of the accident or disaster would lead to mitigation which is beyond the usual scope of construction or operational activities. Where an accident or disaster has been scoped in, the Draft ES chapter(s) identified consider the matter in more detail, and therefore no specific chapter on major accidents and disasters is included (as agreed in the Scoping Direction). Following further data collection, design and assessment work since the Scoping Report, the following topic areas are considered in the relevant chapters as set out below:

- Chapter 10 Water Environment: Floods – There is potential for damage to turbines or infrastructure from flooding or increase in flood risk elsewhere;
- Chapter 12 Traffic and Transport: Transport accidents - Abnormal loads and increase in traffic from construction works could lead to an increased risk of accidents. Highway network may be unsuitable for such traffic, further increasing accident risk;
- Chapter 12 Traffic and Transport: Transport accidents – Abnormal loads or an increase in traffic could lead to an increased risk of accidents;
- Chapter 8 Biodiversity, and Chapter 10 Water Environment: Industrial accidents – There is potential for accidents to occur during construction and maintenance activities; for example, manual labour, working at height and use of specialist plant all bring risk of industrial accidents;
- Chapter 11 Ground Conditions: Landslide / subsidence - The Site of the Proposed Development is located in an area of previous coal mining. A Coal Authority Consultants Coal Mining Report (CCMR) is appended to the Draft ES within **Appendix 11A**; and
- Chapter 4: Development Description and Chapter 16 Aviation and Telecommunications: Electricity, gas, water supply or sewerage systems failures – The Site of the Proposed Development contains electricity infrastructure; therefore, construction activities or turbine collapse could damage this infrastructure.

Climate Change

2.3.10 The vulnerability of the Proposed Development to climate change and extreme climate events is considered as part of the scope of other relevant environmental topics, namely **Chapter 6: Landscape and Visual**; **Chapter 8: Biodiversity**; and **Chapter 10: Water Environment**. Where relevant the Proposed Development has been designed so that it is not vulnerable to the effects of Climate Change.

2.3.11 As set out in Section 5.10.15 of the Scoping Report (**Appendix 1A**) and accepted in the Scoping Direction (**Appendix 1B**), a carbon balance assessment including a full lifecycle assessment to determine carbon benefit, considering greenhouse gas emissions in the production, transportation, erection, operation and decommissioning phases will be included alongside the Final ES, and provided as **Appendix 2B**.

Sustainable Resource Use and Waste Management

2.3.12 As proposed in Section 5.10.16 – 5.10.20 of the Scoping Report, and agreed in the Scoping Direction, this Draft ES does not present a stand-alone assessment of sustainable resource use.

2.3.13 The tracks, turbine foundations, hardstanding and other site infrastructure have been designed to minimise the amount of soil disturbance. Where soils would be excavated, they would be stored on the Site in accordance with the Construction Environmental Management Plan (CEMP) which would be produced prior to construction and then used in the restoration of the development Site post construction to minimise the loss of soil resource. A Draft Outline CEMP has been prepared and is provided alongside this ES as **Appendix 4A**. The potential effects on soil resources are considered in **Chapter 11: Ground Conditions**. A Soils Management Plan, including a baseline soil resources and physical characteristics report to set out how all soils and their functions will be conserved and reinstated at decommissioning, will be undertaken and provided at Final ES stage

2.3.14 The potential environmental effects on water resources would be the use of water during the construction, operational and decommissioning phases and the potential increase in flood risk and the disturbance of surface and groundwater as a result of construction activities**.** Any effects are considered in **Chapter 10: Water Environment** of the Draft ES. During the construction phase, water resource would be managed in accordance with procedures set out in the CEMP.

2.3.15 The potential effects of the Proposed Development on biodiversity resources are considered in **Chapter 8: Biodiversity** and **Chapter 9: Ornithology** of the Draft ES, within which appropriate environmental measures are set out in order to minimise the potential damage to habitats and species during the construction, operation and decommissioning. Environmental measures will also be detailed in a Landscape and Ecological Management Plan (LEMP) which will be submitted at Final ES submission.

Consideration of Alternatives

2.3.16 The EIA Regulations[3] require an ES to include "A description of the reasonable alternatives (for example in terms of project design, technology, location, size and scale) 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 selecting the chosen option, including a comparison of the environmental effects."

2.3.17 **Chapter 3: Project Need, Alternatives and Iterative Design Process** describe the identification process and design criteria for the Site of the Proposed Development. In EIA terms, the requirement is only to report on reasonable alternatives that have been considered. The examination of alternatives in this Draft ES is therefore restricted as appropriate to alternative designs that were considered for the Development Site. An assessment of a 'do nothing' scenario constitutes a continuation of the baseline conditions of the Site accounting for climate change. This has been addressed under the 'future baseline' sections of each technical chapter, where relevant. Given the critical need for renewable energy development as set out in **Chapter 3**, a 'do nothing' scenario has therefore not been formally considered as a reasonable alternative.

Scoping Direction

2.3.18 The Scoping Direction received from PEDW on the 4th December 2024, is included as **Appendix 1B**. Details on how the scoping responses are addressed in the EIA are summarised in each individual topic chapter.

2.4 Consultation

2.4.1 Consultation is an essential element of the EIA process. The Applicant has undertaken consultation and engaged with a range of statutory and non-statutory consultees, local communities, organisations and individuals to refine the Proposed Development, the EIA and assist in the development of any required mitigation. Specific information on any feedback received is presented in the individual environmental topic chapters (**Chapters 6-16**) which include a 'Consultation and stakeholder engagement' section.

2.4.2 A website was set up on 20th June 2025 at the start of the project to provide information about the proposals and feedback mechanisms to enable local communities and stakeholders to comment on the emerging proposals.

2.4.3 Early engagement with the local planning authorities, local community and interested parties took place from May 2025 to September 2025 through a series of meetings. Meetings were undertaken with the local Ward Member, the then Leader of Caerphilly County Borough Council and the Deputy Leader of the Council, as well as the MP for the area.

2.4.4 The project website was updated to include information about the early development proposals.

2.4.5 A Pre-Application Consultation Report will form part of the final DNS application and will summarise how pre-application consultation was undertaken and set out how feedback received was considered.

2.5 Overview of Assessment Methodology

Introduction

2.5.1 All the topic assessments presented in this ES have been undertaken on the basis of a common understanding of the nature of the Proposed Development as it currently stands, as described in **Chapter 4: Description of the Proposed Development**.

2.5.2 For each technical chapter (**Chapter 6 - 16**), the assessment of likely significant effects has been undertaken by competent experts with relevant specialist skills (see **Table 1.1**), drawing on their experience of working on other development projects, good practice in EIA and on relevant published information in line with Regulation 17(4)(e)[7]. For some topics, use has been made of modelling or other methodologies, as appropriate.

2.5.3 With a few exceptions, each topic chapter follows a common format, as outlined below:

- Introduction;

[7] Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017 (online). Available at: https://www.legislation.gov.uk/wsi/2017/567/contents (Accessed October 2025).

- Relevant legislation, planning policy and technical guidance;
- Consultation and engagement;
- Data gathering methodology;
- Overall baseline (where appropriate), with the detailed baseline being set out within 'Assessment of effects';
- Embedded measures;
- Scope of the assessment;
- Assessment methodology;
- Assessment of effects;
- Assessment of cumulative (inter-project) effects;
- Significance conclusions;
- Additional measures (if required);
- Residual effects assessment (if required); and
- Further work to be undertaken (if required).

General EIA Methodology

2.5.4 Following the confirmation of the scope of the EIA, individual environmental topics are subject to survey, investigation and assessment, and individual topic chapters are prepared for the ES. The assessment methodologies are based on recognised good practice and guidelines specific to each topic area, details of which are provided in the appropriate chapter.

2.5.5 In general terms, the technical studies undertaken for each topic area and chapter include:

- Collection and collation of existing baseline information about the receiving environment and original surveys to fill any gaps in knowledge or to update any historic information, together with identification of any relevant trends in, or evolution of, the baseline;
- Consultation with experts and relevant consultees to define the scope of the assessment and Study area and subsequent consultation in response to emerging Study findings;
- Consideration of the potential effects of the Proposed Development on the baseline, followed by identification of design changes to seek to avoid or reduce any predicted adverse effects;
- Engagement with other technical topic specialists and engineers / designers in a design iteration process seeking to optimise the Proposed Development for the differing environmental effects and to identify any appropriate environmental (mitigation) measures;
- Assessment of the final Proposed Development design and evaluation of significant effects, together with an evaluation of any residual significant effects that remain after mitigation measures have been implemented; and
- Compilation of the Draft ES chapters (see **Chapter 1** for details of the environmental topic chapters).

2.5.6 Many of the changes as a result of the Proposed Development are relevant to more than one environmental topic area and the resulting effects in one topic area may affect receptors considered under another topic (for example change to water quality may affect aquatic biodiversity receptors). Careful attention has therefore been paid to interrelationships to avoid

overlap or duplication between topic chapters. For example, the assessment of effects on cultural heritage features has been aided by the assessment in the landscape and visual chapter. Similarly, secondary effects on ecological resources arising from hydrological change have been considered in the ecology chapter with a cross-reference to the relevant direct effect in the hydrology chapter.

2.5.7 In some cases, technical data and analysis is presented in a technical appendix (these are included in **Volume 3** of this Draft ES). It is also necessary to recognise that information on some topics, such as the nesting location of certain bird species, is highly sensitive and may create a risk of persecution if published. In those cases, all relevant information to inform the assessment process has been provided to relevant statutory consultees only. The Applicant will consider requests for this information from other parties, but may, at its or relevant statutory consultees' discretion, withhold such information.

2.6 EIA Assessment Area

2.6.1 The Draft DNS Application Boundary shown on **Figure 1.1** outlines the access route that will be required to access the Proposed Development from the public highway. The Proposed Development will require the construction of an offline access track between the public highway at Pantside and an unclassified road (described further in **Chapter 4**). It is noted that the draft DNS Application Boundary in this area overlaps with the DNS application boundary of Trecelyn Wind Farm (Reference: DNS CAS-02114-J9X4S6)[8]. Once the proposed access track rejoins the unclassified road, access to the Site would be taken from the proposed Mynydd Maen Wind Farm development and its network of access tracks (Reference: DNS/3276725). **Figure 1.3** shows the boundaries of each development.

2.6.2 It should be noted that the route and design of the offline access track between Pantside and the unclassified road is yet to be determined. Therefore, a preliminary assessment of effects has not been undertaken as part of the Draft ES (other than in **Appendix 12A**). A full assessment of the offline access track will be included in the Final ES.

2.6.3 It is also noted that Mynydd Maen Wind Farm is yet to obtain consent and is currently at the examination stage of the DNS application process. The location and proximity of the projects create a scenario where proposals are being progressed through planning at similar times. Therefore, the approach to the EIA assumes that the access tracks associated with Mynydd Maen would be constructed prior to the commencement of construction of the Proposed Development, meaning that construction impacts associated with the access tracks would have already been realised prior to Site mobilisation, and secured under separate planning approvals and conditions.

2.6.4 As the Proposed Development will rely on the Mynydd Maen access tracks for access, a review of the Mynydd Maen ES has been undertaken to identify any mitigation measures and residual significant effects associated with access track construction. A review of the author competency has also been undertaken to meet the requirements of the EIA Regulations. This review is contained in **Appendix 2A**. As the Proposed Development does not rely on the Trecelyn tracks for access, a review of the ES has not been undertaken. However, given the proximity between

[8] Trecelyn Wind Farm is a separate scheme being progressed as a Development of National Significance by the Applicant.

the two projects, potential cumulative effects are considered in **Section 2.9** and **Chapter 6-16** of this Draft ES.

2.6.5 The assessments within this Draft ES are based on the Proposed Development as described above and is shown on **Figure 1.2 – Site Layout** (hereafter the 'EIA Assessment Area'). This includes the Proposed Development and the access tracks which the Applicant will be responsible for constructing. Further details are provided in **Chapter 4: Development Description.**

2.7 Identification of Baseline Conditions

2.7.1 In order to assess the effects of construction, operation and decommissioning, it is necessary to determine the periods in the project programme when these 'stages' or 'phases' would occur, and when a reasonable 'worst case' of these stages/phases can be defined for use in the assessment.

2.7.2 As the various elements of the Proposed Development are expected to be built over a period of approximately 22 months (currently estimated to start in 2029 and then operated for 30 years), it cannot be assumed that the baseline conditions in the absence of the Proposed Development would be the same as the current baseline throughout this period.

2.7.3 As required by Schedule 4 (3)[9] "A description of the relevant aspects of the current state of the environment (baseline scenario) and an outline of the likely evolution thereof without implementation of the development as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge", 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 and operation of the Proposed Development. If this predicted future baseline is more likely to occur than the current baseline, it is used for the assessment. However, in many cases it will be concluded that the current baseline is just as likely, or even more likely, to occur in the assessment years than would be the case with any predicted future baseline conditions. In the case of this EIA, the current baseline is used for the assessment as, in the absence of the Proposed Development, it is anticipated that current land use and management would continue and it is therefore reasonable to assume that the future baseline would be similar to the current baseline.

2.7.4 Each technical chapter explains the basis for defining the current and future baseline conditions, where this is appropriate, based on the following:

- Information gathered about the existing environmental conditions;
- Changes 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, e.g., climate change, which could affect current prevailing environmental conditions; and
- Information about other relevant developments, including the nature of the development proposals, their likely timing and their location relative to the Proposed Development.

[9] The Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017.

2.7.5 The baseline is determined for the *'Study Area'* for each environmental topic by a combination of desk-based research, including consultation with the relevant statutory and non-statutory authorities, together with field survey work (where required).

2.7.6 As a minimum, the Study Area could comprise the Site[10]. However, for many topics, the Study Area is also likely to include land outside the Site boundary, especially where the effects of the Proposed Development are likely to extend beyond such geographical limits. Where the Proposed Development could affect off-site areas, the Study Area reflects the *'zone of influence'* (ZoI) where effects may occur. Details of the relevant ZoIs are discussed in the baseline section of each environmental topic chapter.

2.8 Overview of Approach to Significance Evaluation Methodology

Introduction

2.8.1 One of the requirements of an ES is to set out the conclusions that have been reached about the likely significant environmental effects that it is predicted would result from a Proposed Development. 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 are potentially likely to be significant (see Section 2.3 on scoping);
- Assessing the effects of the Proposed Development against the baseline (current or future, as appropriate); and
- Concluding whether these resultant effects are likely to be significant.

2.8.2 **Chapters 6** to **16** 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 ES.

Identification of Likely Significant Effects

2.8.3 To inform the identification of likely significant effects, technical specialists involved in the preparation of the ES were supplied with information about the construction, operation and decommissioning of the Proposed Development at an early stage of the assessment process.

2.8.4 As the proposals evolved, more detail became available about construction and operational activities. This enabled a progressively more refined understanding to be developed about the environmental changes that could be caused by the Proposed Development, including information about their spatial extent and other characteristics (e.g., their magnitude, frequency etc.).

2.8.5 The identification of receptors that need to be considered draws on available information about environmental changes, which in some cases can be translated into ZoIs outside of which the environmental changes are predicted to be sufficiently small that receptors are not likely to be significantly affected. In addition, for some environmental topics (e.g., Biodiversity and Historic Environment), a valuation is undertaken to define those receptors that are of sufficient

[10] As defined in Chapter 4 and illustrated on **Figure 1.2.**

importance or value that they could be significantly affected. Only those receptors that are of sufficient importance or value and that are located within the defined ZoIs, where effects could be significant, are taken forward for further assessment.

2.8.6 The technical assessments, undertaken in **Chapters 6** to **16** of this Draft ES, describe how environmental changes and resulting effects for different environmental topics are assessed, together with the topic specific approaches that have been used to identify the receptors that could be significantly affected by the Proposed Development, based on information available at this stage of the project. If necessary, conclusions about significance will be updated for the final ES based on responses from statutory consultation and further survey work.

Types of effects

2.8.7 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." Where appropriate, this ES considers all these types of effects where they are relevant to different environmental topic chapters.

Direct effects

2.8.8 Direct effects are those that result directly from a Proposed Development. For example, where a machine disturbs an area of habitat, the associated physical activity would result in a change to that habitat.

Indirect and Secondary effects

2.8.9 Indirect and secondary effects are those that result from consequential change caused by the development. 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, smothering gravel beds downstream used by spawning salmon.

Transboundary effects

2.8.10 Transboundary effects are those that would affect the environment in another state within the European Economic Area (EEA). No such effects are anticipated as a result of the Proposed Development.

Temporal effects

2.8.11 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 the Proposed Development is complete, although these effects may be caused by environmental changes that are permanent or temporary. For example, an excavator that is temporarily driven over an area of valuable

habitat could cause so much damage that the effect on this vegetation would be permanent; and

- Temporary – these are effects that are related to environmental changes associated with a particular activity and that will cease when that activity finishes. For example, an increase in noise levels during construction may affect nearby residential receptors, but any effects would cease on completion of this phase of a proposed development. Where effects are temporary, they may be defined as short-, medium- and long-term, the duration of which may depend on the receptor in question and would therefore be defined in technical chapters as appropriate.

Positive / Negative effects

2.8.12 Most predicted effects will be obviously positive or negative and will be described as such (or alternatively 'beneficial' or 'adverse'). However, in some cases it is appropriate to identify that the interpretation of a change is a matter of professional opinion, and such effects will be described as 'subjective'.

Stages of Development

2.8.13 Effects from wind farm development are generally considered in relation to the following key stages of the Proposed Development and it is unlikely that there would be an interaction and therefore cumulative effect between the phases (i.e., construction phase must complete before operation phase would take place):

- Construction – Effects may arise from the construction activities themselves, or from the temporary occupation of land. Effects are often of limited duration although there is potential for permanent effects. Where construction activities create permanent change, the effects will continue into the operational period;
- Operation – Effects may be permanent, or they may be temporary, intermittent, or limited to the life of the Proposed Development until decommissioning (as in the case of wind power developments which gain planning permission for a defined and finite number of years); and
- Decommissioning – Effects may arise from the decommissioning activities themselves, or from the temporary occupation of land. The effects would generally be temporary and of limited duration. Additional permanent change would normally be unlikely unless associated with restoration.

Significance evaluation

Overview

2.8.14 The receptors that could be significantly affected 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 work that has been carried out.

2.8.15 In applying this approach to significance evaluation, it is necessary to ensure that there is consistency between each environmental topic in the level at which effects are considered to be significant. Therefore, it is inappropriate for the assessment of one topic to conclude that minor effects are significant, when, for another topic, only comparatively major effects are significant.

2.8.16 In order to achieve the desired level of consistency, each environmental topic lead has been guided in their decision-making about likely significance by the *'significance threshold'* that informed the preparation of the Scoping Report (see **Section 2.3**), as well as the relevant topic-specific significance evaluation methodology.

2.8.17 The conclusion about significance is arrived at using professional judgement, with reference to the project description, and available information. This information includes the magnitude and other characteristics of the potential changes that are expected to be caused by the Proposed Development, receptors' sensitivity to these changes and the effects of these changes on relevant receptors.

2.8.18 In some cases, use of the 'significance threshold' alone will enable a conclusion to be reached in the 'Scope of the assessment' section of the topic chapter (bullet point five in paragraph 2.5.3), without the need for more detailed assessment, that a potential effect is not likely to be significant. 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.

2.8.19 For some of these effects, relatively little assessment work may be required to reach a conclusion that an effect is not significant. But, in other cases, more extensive assessment work is required. Sometimes the application of the 'significance threshold' is sufficient to support this conclusion but, in other cases, the relevant topic-specific significance evaluation methodology is used to inform the evaluation of significance (to determine whether an effect is or is not significant).

2.8.20 Having applied the relevant topic-specific significance evaluation methodology, the topic specialists check the conclusions against the significance threshold. If this threshold results in a different conclusion to that reached using the significance evaluation methodology, a detailed justification is provided as to why this different conclusion is valid.

2.8.21 For some of the topics that are assessed in this Draft ES, 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 the Draft ES. 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.

2.8.22 While there may be variation depending on the technical topic being considered, significance evaluation 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

2.8.23 The sensitivity or value of a receptor is largely a product of the importance of an asset, 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 resources may be defined as being sensitive or important at a county or district level. For each environmental topic, it is necessary to provide a detailed rationale that explains how the categories of sensitivity / importance / value have been used.

2.8.24 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 amenity of people, a location used for recreational purposes may be valued more than a place of work.

Magnitude of Change

2.8.25 The magnitude of change affecting a receptor as a result of the Proposed Development 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 air quality or noise) and be based on numerical parameters. For other changes, it will be a matter of professional judgement to determine the magnitude of change, using descriptive terms.

Determination of Significance

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

2.8.27 Significance evaluation for many environmental topics can be guided by the use of matrices that combine sensitivity / value and the characteristics of environmental changes as shown in the example in **Table 2.1** which is a five by five matrix used to offer granularity (though individual topic chapters may use reduced versions (e.g. four by four, four by three etc.) as appropriate). In addition, professional judgement 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.

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

2.8.29 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.

2.8.30 Within the matrix that is used in most significance evaluation exercises, reference is made to:

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

Table 2.1 Significance Evaluation Matrix

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

Note: Significant effects are those identified as 'Major'. 'Moderate' effects may be deemed to be significant, depending on the environmental topic and the application of professional judgment.

2.9 Assessment of Cumulative Effects

2.9.1 The EIA process includes consideration as to whether any of the individual effects of the Proposed Development would combine to create a cumulative effect greater than the sum of the individual effects. There are two types of cumulative effects to be considered:

- cumulative effects: effects that arise as a result of the Proposed Development in combination with other large-scale developments or projects; and
- combined effects: effects that occur as a result of two or more environmental topic effects acting together (i.e., combined), to result in a new or changed effects on a single receptor. These are discussed further in **Chapter 17**.

Cumulative effects

2.9.2 Whilst there is no standard approach to the cumulative effects assessment (CEA), the Planning Inspectorate published updated guidance in 2024 (superseding advice note seventeen) which sets out a process for the identification and assessment of 'other development'. Hence, the EIA will follow the methodology as defined in the 2024 guidance[11]. This is a four-stage approach shown in **Table 2.2**.

Table 2.2 Summary of PINS 2024 CEA Guidance Note process

Stage	Title	Description
Stage 1	Establish the ZoI and identify the long list of 'other development'	Each environmental topic assessment included in the ES will have a ZoI within which the potential for cumulative effects will be considered. These have been established through desk studies and modelling. A desk Study of DNSapplications, development plans and frameworks and other available sources will be completed within this ZoI to

[11] Planning Inspectorate (2024), Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment

		form a long list of 'other developments'. The ZoI is measured from the red line boundary for the Proposed Development.
Stage 2	Identify a short list of 'other development' for CEA	Professional judgement from technical specialists will refine the long list of 'other developments' to identify those that could give rise to a significant effect cumulatively with the Proposed Development.
Stage 3	Information gathering	Information will be gathered on the 'other developments' in the shortlist to inform the assessment.
Stage 4	Assessment	Each of the environmental aspects will complete an assessment of the relevant 'other developments' in the shortlist within their ZoI.

4.1.1. Identifying 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 relevant other developments. Developing this concept further, other developments can be grouped into tiers, which reflect the likely degree of certainty attached to each development, with Tier 1 being the most certain and Tier 3 the least certain, as illustrated in **Table 2.3**.

Table 2.3 Scoping of Other Developments to be Considered in the CEA

Hierarchy of other developments	Certainty of other developments
Tier 1	Under construction*.
	Permitted application(s), whether under the *Town and Country Planning Act 1990,* DNS or other regimes, but not yet implemented.
	Submitted application(s), whether under the *Town and Country Planning Act 1990,* DNS or other regimes, but not yet determined.
Tier 2	Projects on the Welsh Government's register of DNS, and/or received by a relevant local planning authority, and where a scoping report has been submitted
Tier 3	Identified in the relevant Development Plan (and emerging Development Plans - with appropriate weight being given as they move closer to adoption) recognising that much information on any relevant proposals will be limited.
	Identified in other plans and programmes (as appropriate) which set the framework for future development consents/approvals, where such development is reasonably likely to come forward.

Decreasing level of detail likely to be available

* Where other projects (i.e., new permanent development such as new housing estates etc) are expected to be completed before construction of the Proposed Development, and the effects of those projects are fully determined, effects arising from these are considered as part of the baseline and therefore as part of the assessment of both the construction and operational phases.

2.9.3 In the context of the Proposed Development, and in accordance with the EIA Regulations, sufficiently detailed information required to undertake a CEA is available only for Tier 1 and Tier 2 developments as described in **Table 2.3**.

2.9.4 In the course of completing this ES, a number of other wind farm developments have been identified for consideration in the assessment of inter-project cumulative effects. The register of applications for DNS[12] has also been interrogated, and the following local planning authorities have been contacted for details of other major development proposals within the ZoIs identified by the technical topics (up to a maximum of 27km from the Site red line boundary for Landscape and Visual); this corresponds to Stage 1 in **Table 2.2**:

- Caerphilly County Borough Council;
- Cardiff City Council;
- Merthyr Tydfil County Borough Council;
- Monmouthshire County Council;
- Powys County Council;
- Rhondda Cynon Taff County Borough Council; and
- Torfaen County Borough Council.

2.9.5 The 'long list' of other developments was reduced to a 'short list' by considering those with the potential to give rise to significant cumulative effects with the Proposed Development. This was on the basis that the developments omitted from the short list:

[12] Developments of National Significance (DNS) Applications. Available online at: Developments of national significance (DNS): applications | GOV.WALES (Accessed September 2025)

- Do not comprise ‘major’ development as defined in the Town and Country Planning (Development Management Procedure) (Wales) Order 2012 (as amended)13 (i.e. development of 10 or more dwellings, over 1ha in area, buildings of more than 1,000m^2, waste development, or development involving the winning and working of minerals or the use of land for mineral-working deposits);
- Are understood to have already undergone construction or will be complete and operational before construction of the Proposed Development and therefore form part of the current baseline or will form part of the future baseline conditions and have been considered on that basis;
- Are unlikely to have commenced prior to the completion of the Proposed Development and/or insufficient information is available to complete an assessment at this time. Therefore, any cumulative effects assessment would need to be completed by the developer/applicant for that particular proposal; or
- Are of sufficient distance from the Proposed Development, or of a size and nature that significant cumulative effects are considered unlikely to occur.

2.9.6 Major developments which have been taken forward in relation to cumulative effects that have been assessed in the Draft ES are summarised in **Table 2.4** and are discussed within the individual topic chapters as appropriate (**Chapters 6 to 16**), based on currently available information. This corresponds to Stages 3 and 4 in **Table 2.2**.

[13] UK Government (2016). Town and Country Planning, Wales (Development Management Procedure) (Wales) Order 2016 (online). (Accessed April 2025).

Table 2.4 Cumulative effects assessment: developments scoped in

Development name (reference if applicable)	Brief description	Planning status	Indicative timescales
Committed developments			
Mynydd Y Glyn (DNS/3280378)	Erection of 7 Wind Turbines, with tip heights of up to 180m, and associated infrastructure.	Consented	The development is expected to be commissioned in 2031, so is likely to overlap with construction of the Proposed Development.
Twyn Hywel (DNS/3272053)	Erection of 14 Wind Turbines, with tip heights of up to 200m, and associated infrastructure.	Consented	The development is in pre-construction. Timescales are currently not available; however, it is likely to overlap with construction of the Proposed Development.
Manmoel (DNS/3239181	Erection of 5 Wind Turbines, with tip heights of up to 180m, and associated infrastructure.	Consented	The development is in pre-construction. Timescales are currently not available; however, it is likely to overlap with construction of the Proposed Development.
Cwm Ifor Solar Farm (DNS/3266623)	Solar farm (approximately. 20 MW) with overhead cable connection (32 KV) and associated infrastructure	Consented	The development is in pre-construction. Timescales are not available, but construction could last for approximately six months.
Pre-application/pre-approval stage projects			
Developments of National Significance			
Trecelyn Wind Farm (DNS CAS-02114-J9X4S6	Erection of 4 Wind Turbines, with tip heights of up to 145m, and associated infrastructure.	Examination	Construction is anticipated to commence in Q2/Q3 2029. There is potential to overlap with construction of the Proposed Development.
Cil-Lonydd Solar Farm (DNS/CAS-02446-R8X8W2)	A solar photovoltaic electricity generating station (or 'solar farm') with an installed generation capacity of approximately 35MW and associated ancillary development, including battery storage.	Examination	Timescales are not available. However, if consented it is assumed construction would last for approximately six to nine months.
Pentre Bach Solar Farm (DNS/3239190)	Proposed ground-mounted photo-voltaic solar farm with an electrical generating of approximately 30 MW.	Examination	It is assumed that construction would commence in 2029 and last for approximately 12 to 18 months.
Mynydd Maen Wind Farm (DNS/3276725)	Erection of 13 Wind Turbines, with tip heights of up to 149.9m, and associated infrastructure.	Examination	Timescales are currently not available, however it is likely to overlap with construction of the Proposed Development.
Convatec Green	Erection of 3 turbines, with tip heights of up to	Examination	Timescales are currently not available, however it is likely to overlap with construction

Development name (reference if applicable)	Brief description	Planning status	Indicative timescales
Manufacturing Hub Rhymney	150m, and associated infrastructure		of the Proposed Development.
Mynydd Llanhilleth Wind Farm Resubmission (DNS/3273368)	Erection of 7 Wind Turbines, with tip heights of up to 180m, and associated infrastructure.	Application	Timescales are currently not available, however it is likely to overlap with construction of the Proposed Development.
Abertillery Wind Farm (DNS/3278009)	Erection of 6 Wind Turbines, with tip heights of up to 200m, and associated infrastructure.	Application	Timescales are currently not available, however it is likely to overlap with construction of the Proposed Development.
Mynydd Bedwellte Wind Farm (DNS-CAS-M9J3F4)	Erection of 9 Wind Turbines, with tip heights of up to 180m, and associated infrastructure.	Application	Timescales are currently not available, however it is likely to overlap with construction of the Proposed Development.
Llanwonno Energy (DNS CAS-02125-Q0T5P0)	Erection of 8 Wind Turbines, with tip heights up to 200m, and associated infrastructure.	Application	Timescales are currently not available, however it is likely to overlap with construction of the Proposed Development.
Local Authority DNS Applications			
Phase 6 Maesgwyn South Sebastopol (25/P/0135/RES)	The proposals comprise 158 homes, a LEAP within a central green area, LAPs in green areas throughout the Site and associated infrastructure. The proposals account for necessary woodland planting and buffers at the boundaries and along the canal.	Application	Timescales are currently not available, however it is likely to overlap with construction of the Proposed Development.