



Parc Ynni Calon y Gwynt

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# ENVIRONMENTAL STATEMENT

## Chapter 5 Ecology





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## Chapter 5 Ecology

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## 5 ECOLOGY

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### 5.1 INTRODUCTION

- 5.1.1. This chapter presents the assessment of the likely significant effects of the Proposed Development with respect to Ecology (excluding Ornithology, which is detailed in **Chapter 6: Ornithology**). The assessment is based on information obtained to date.
- 5.1.2. This chapter refers to the areas of the Proposed Development site as follows:
- 'Main Site' refers to the area to be covered by the construction of the proposed wind farm and associated infrastructure, shown as **Figure 5A.1** in **Appendix 5A**.
  - 'Access Road' refers to the proposed access road which extends south of the Main Site, as shown in **Figure 5B.1** in **Appendix 5B**.
  - 'Site' refers to both the Main Site and Access Road combined.
- 5.1.3. This chapter should be read in conjunction with the Proposed Development description provided in **Chapter 4: Description of the Proposed Development** and with respect to relevant parts of the following chapters and Appendices:
- **Chapter 6: Ornithology** (due to bird species being ecological features/receptors);
  - **Chapter 7: Landscape and Visual** (due to the association between habitats and landscape);
  - **Chapter 9: Hydrology** (due to the close association between ecological features and local hydrology, including the presence of Ground Water Dependent Terrestrial Ecosystems (GWDTE));
  - **Chapter 10: Geology and Soils** (due to the close association between ecological features and soil sensitivity, including the presence of peatland within the Site);
  - **Chapter 11: Noise** (due to the potential for fauna to be disturbed or displaced by noise and vibration associated with the Proposed Development).
  - **Appendix 5A: Main Site Preliminary Ecological Appraisal (PEA);**
  - **Appendix 5B: Access Road PEA;**
  - **Appendix 5C: Notable Habitats Report;**
  - **Appendix 5D: Main Site Badger Survey Report;**
  - **Appendix 5E: Access Road Badger Survey Report;**
  - **Appendix 5F: Main Site Aquatic Survey Report;**
  - **Appendix 5G: Main Site Bat Activity Survey Report;**
  - **Appendix 5H: Access Road Ground Level Tree Assessment Survey Report;**
  - **Appendix 5I: Main Site Great Crested Newt Report;**
  - **Appendix 5J: Main Site Reptile Survey Report;**

- **Appendix 5K: Main Site Riparian Mammal Survey Report;**
- **Appendix 5L: Access Road Riparian Mammal Survey Report;**
- **Appendix 5M: Access Road Dormouse Survey Report;**
- **Appendix 5N: Habitats Regulations Assessment Screening Report;**
- **Appendix 5O: Outline Habitat Management Plan;**
- **Appendix 5P: Biodiversity Scoping;**
- **Appendix 5Q: Arboricultural Desk Study; and**
- **The Net Benefit for Biodiversity Report, which forms an appendix to the Green Infrastructure Statement.**

5.1.4. This chapter describes:

- The legislation, policy and technical guidance that has informed the assessment (**Section 5.2**);
- Consultation and engagement that has been undertaken and how comments from consultees relating to Ecology have been addressed (**Section 5.3**);
- The methods used for baseline data gathering (**Section 5.4**);
- Overall baseline (**Section 5.5**);
- Embedded mitigation measures relevant to Ecology (**Section 5.8**);
- The scope of the assessment for Ecology (**Section 5.6**);
- Sensitive Ecology receptors (**Section 5.6**);
- The methods used for the assessment (**Section 5.7**);
- The assessment of likely Ecology effects (**Section 5.9**);
- Additional mitigation and enhancement measures proposed (**Section 5.9**);
- Proposed monitoring measures (**Section 5.9**);
- The assessment of cumulative (inter-project) effects (**Section 5.10**);
- A summary of the significance conclusions (**Section 5.11**);
- Ecology residual effects (**Section 5.11**); and
- Any further assessment/works to be adopted (**Section 5.12**).

## **LIMITATIONS AND ASSUMPTIONS**

5.1.5. The following limitation and assumptions relating to the collection of the ecological baseline data are relevant to the assessment. Survey specific limitations are captured in the reports appended to this Chapter (**Appendix 5A to Appendix 5J**).

- Ecological survey data is typically valid for 18-24 months unless otherwise specified, for example if conditions are likely to change more quickly due to ecological processes or anticipated changes in management<sup>1</sup>. In this case, all ecological survey data has been collected in 2025 or 2026, or ratified by an updated PEA in 2026, and therefore can confidently contribute towards our understanding of the current ecological baseline of the Site.
  - Habitat and botanical surveys are seasonally limited and throughout the spring and summer period certain botanical species will be more or less evident at different times (i.e. depending on the flowering season). The most recent habitat surveys of the Main Site (**Appendix 5C**) were carried out in May 2026, within the optimal season for most of the habitat types identified. It is outside of the optimal survey season for upland mire grassland and rush pasture; however, as the survey was completed in late May, and following an unusually warm spring, many plants had already begun to enter their flowering period. The most recent habitat surveys of the Access Road were undertaken in February 2026, and earlier habitat survey was carried out in June 2023 (**Appendix 5B**). It is considered that sufficient information has been gathered to enable an assessment of the habitat types present, in line with standard National Vegetation Classification (NVC) or Phase 1 habitat categories, and the potential for these to support protected or notable species.
  - There was one area of the Access Road (0.2ha) which has not been accessed nor assigned a habitat type from a vantage point. It is associated with the southern-most agricultural complex and is shown on **Figure 5.4**. Although this area is within the Access Road, it will not be affected by the Proposed Development, and therefore it has not been considered necessary to apply a precautionary approach by assigning a high value habitat type or to apply any additional mitigation measures in relation to this area.
- The Access Road passes through an area identified on the Ancient Woodland Inventory (AWI) as Ancient Semi Natural Woodland (ASNW). An existing track is already in place in this location. This may be subject to further widening as part of the Proposed Development. This will be minimised as far as possible. In the absence of a detailed measurement of this area, a worst-case basis of 0.43 ha requiring clearance has been assumed.
- It was not possible to determine the aquatic plants present within the pond identified within the Main Site due to health and safety restrictions, and as such it is not possible to rule out the pond as supporting protected and/or notable plant species. Therefore it is not possible to rule out the pond as a Priority Habitat, and so for the purposes of this assessment it has been assumed that the pond is a Priority Habitat. It will not be directly impacted by the Proposed Development.
  - There have not been bat activity surveys carried out within the Access Road. Owing to the habitats within the Site and the proximity of Main Site and Access Road, it is assumed that the bat assemblage identified within the Main Site will be present within the Access Road. It is also assumed that bats will use suitable habitat features, such as tree lines, streams, woodlands and hedgerows, within the Access Road to commute and forage.

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<sup>1</sup> CIEEM (2019). Advice Note: On the Lifespan of Ecological Reports & Surveys. CIEEM.

- Due to the scale of the Site, it is not feasible to undertake a detailed survey of the entirety of the Site for all evidence of badger. As the targeted badger survey focussed on identifying setts, there is the potential that some evidence of badger, such as hairs or snuffle holes, may not have been identified. Similarly, dense vegetation, especially in areas of bracken, may have concealed sett entrances. Badger are known to be present within the Site. As there will be an additional survey of the Site prior to the construction of the Proposed Development, there is not considered to be any additional mitigation in relation to these limitations.
- It was not possible to safely deploy dormouse *Muscardinus avellanarius* tubes within woodland blocks in the north of the Access Road as steep banks made suitable features inaccessible. However, the tubes deployed within connected habitat are considered suitable to provide a robust survey effort as such there is no limitation on the survey findings, and no additional mitigation is required.
- Watercourse 4 and watercourse 5, identified within **Appendix 5K**, were surveyed for riparian mammals 150m and 30m downstream respectively before they flowed into a steep ravine and were not accessible. Llyn Mawr was not surveyed due to access issues and was also outside the Site boundary. This is not considered to be a requirement for any additional mitigation as all areas that will be affected by the Proposed Development have been subject to a thorough targeted riparian mammal survey.
- Due to the scale of the Main Site, there is the potential that some refugia or hibernacula suitable to support reptiles and amphibians may have been undetected. However, areas assessed as being directly affected by the Proposed Development were targeted during the survey, and a thorough walkover of all of these areas was undertaken. Therefore, this is not considered to affect the conclusions of this assessment and no additional mitigation is required.
- One pond within 250m of the Site, but outside the Site, was not subject to a Habitat Suitability Index (HSI) assessment for great crested newts *Triturus cristatus* as it is located on private land and could not be accessed. However, it is not considered to present an ecological constraint, as the pond is sufficiently distant from the proposed works such that significant impacts on great crested newts and other amphibians are considered unlikely, and therefore no additional mitigation is required.
- Survey data collected up to June 2026 has been used to inform the assessment, conclusions and recommendations in this Chapter (dated August 2026). Further surveys will be undertaken to identify the presence/likely absence of trees identified as having Potential Roost Features (PRFs) suitable to support roosting bats within the Access Road. The results of these surveys, and subsequent recommendations, will form part of the Final ES submission. For the purposes of this chapter, in the absence of survey results, it has been assumed on a precautionary, worst-case basis that a roost of high conservation value of a rare bat species is present within the Access Road.

5.1.6. Survey specific limitations are captured in the reports appended to this ES (**Appendix 5A to Appendix 5J**). Overall, it is not considered that these limitations affect the Environmental Impact Assessment (EIA).

## 5.2 RELEVANT LEGISLATION, PLANNING POLICY AND TECHNICAL GUIDANCE

5.2.1. This section identifies the legislation, planning policy and technical guidance that has informed the assessment of effects with respect to Ecology.

### LEGISLATION

5.2.2. A summary of the relevant legislation is provided in **Table 5-1**.

**Table 5-1 – Legislation relevant to the Ecology assessment**

| Legislation                                                            | Legislative context                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The Conservation of Habitats and Species Regulations 2017 <sup>2</sup> | <p>The Conservation of Habitats and Species Regulations 2017 (“the Habitats Regulations”) transposed the Habitats Directive into English and Welsh law. The Habitats Regulations provided for the designation and protection of European sites, the protection of certain species (referred to as European Protected Species or EPS) and the adaptation of planning and other controls for the protection of European sites.</p> <p>Note that The Conservation of Habitats and Species Regulations 2017 were amended by the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 to reflect the UK’s exit from the EU. These largely carried forward the provisions and terminology of the 2017 Habitats Regulations, and so the term ‘European site’ is currently retained and for all practical purposes the definition is essentially unchanged, although the UK European sites are no longer legally part of the ‘Natura 2000’ network of protected sites, with this being replaced in the UK by the ‘national site network’ which comprises all existing Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) and any new SACs and SPAs designated under the 2019 Regulations (Ramsar sites do not form part of the network). This also has relevance if compensation measures are required for an adverse effect, as the relevant metric is the overall coherence of the ‘national site network’. The 2019 Regulations establish management objectives for the ‘national site network’ which contribute to the conservation of UK habitats and species that are also of pan-European importance, and to the achievement of their favourable conservation status within the UK.</p> |
| The Environment (Wales) Act 2016 <sup>3</sup>                          | <p>The Environment (Wales) Act 2016 (“the Act”) makes provisions within Wales for the planning and managing of natural resources at national and local level. Section 6 of the Act introduces the biodiversity and resilience of ecosystems duty whereby public authorities are required to seek to maintain and enhance biodiversity so far as it is consistent with the proper exercise of those functions. Section 7 of the Act introduces a list of living organisms and types of habitat in Wales, known as Priority Species or Habitats, which in Wales are considered of key significance to sustain and improve biodiversity.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

<sup>2</sup> Conservation of Habitats and Species Regulations 2017 (“the Habitats Regulations”) has been amended by (*inter alia*) the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 [online]. Available at: <https://www.legislation.gov.uk/ukdsi/2019/9780111179512/contents?sort=year> [Accessed 16 March 2026].

<sup>3</sup> The Environment (Wales) Act 2016. Available at: <https://www.legislation.gov.uk/anaw/2016/3/contents> [Accessed 16 March 2026].

| Legislation                                                | Legislative context                                                                                                                                                                                                                                                                                                                                                              |
|------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The Wildlife and Countryside Act 1981 (WCA) <sup>4</sup>   | This Act consolidates and amends existing national legislation to implement the Bern Convention. This piece of legislation remains the primary UK mechanism for statutory site designations (e.g. Sites of Special Scientific Interest (SSSI)) and the protection of individual species listed under Schedules 5 and 8 of the Act, each subject to varying levels of protection. |
| Countryside and Rights of Way Act 2000 <sup>5</sup>        | This Act details further measures for the management and protection of SSSIs and strengthens wildlife enforcement legislation.                                                                                                                                                                                                                                                   |
| The Hedgerows Regulations 1997 <sup>6</sup>                | The Hedgerows Regulations is intended to protect important countryside hedges from damage or destruction.                                                                                                                                                                                                                                                                        |
| Protection of Badgers Act 1992 <sup>7</sup>                | The Protection of Badgers Act provides protection to badgers <i>Meles meles</i> and their places of shelter (setts).                                                                                                                                                                                                                                                             |
| Salmon Act 1986 <sup>8</sup>                               | The Salmon Act provides protection to salmon <i>Salmo salar</i> , trout <i>Salmo trutta</i> , eels <i>Anguilla anguilla</i> , lampreys <i>Lampetra sp.</i> , smelt <i>Osmerus eperlanus</i> and freshwater fish against illegal fishing.                                                                                                                                         |
| The Eels (England and Wales) Regulations 2009 <sup>9</sup> | The Eels Regulations aim to allow the recovery of eel stocks, including relating to constructions, alterations other maintenance of structures likely to affect the passage of eels.                                                                                                                                                                                             |

## PLANNING POLICY

5.2.3. A summary of the relevant national and local planning policy is provided in **Table 5-2** below.

**Table 5-2 – Planning policy relevant to the Ecology assessment**

| Policy                                             | Policy context                                                                                                                                                                                                                                                                                                                                      |
|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>National Planning Policy</b>                    |                                                                                                                                                                                                                                                                                                                                                     |
| Future Wales: The National Plan 2040 <sup>10</sup> | The Welsh national development framework sets the direction for development in Wales to 2040 and includes a Habitats Regulations Assessment. Policy 9 – Resilient Ecological Networks and Green Infrastructure outlines measures to ensure the enhancement of biodiversity, the resilience of ecosystems and the provision of green infrastructure. |

<sup>4</sup> The Wildlife and Countryside Act 1981. Available at: <https://www.legislation.gov.uk/ukpga/1981/69> [Accessed 16 March 2026].

<sup>5</sup> Countryside and Rights of Way Act 2000. Available at: <https://www.gov.uk/guidance/open-access-land-management-rights-and-responsibilities> [Accessed 16 March 2026].

<sup>6</sup> The Hedgerows Regulations 1997. Available at: <https://www.legislation.gov.uk/uksi/1997/1160/contents/made> [Accessed 16 March 2026].

<sup>7</sup> Protection of Badgers Act 1992. Available at: <https://www.legislation.gov.uk/ukpga/1992/51/introduction/enacted?view=plain> [Accessed 16 March 2026].

<sup>8</sup> Salmon Act 1986. Available at: <https://www.legislation.gov.uk/ukpga/1986/62/contents> [Accessed 19 June 2026].

<sup>9</sup> The Eels (England and Wales) Regulations 2009. Available at: <https://www.legislation.gov.uk/uksi/2009/3344/made> [Accessed 19 June 2026].

<sup>10</sup> Welsh Government (2021) Future Wales: The National Plan 2040, February 2021. [online]. Available at: <https://gov.wales/future-wales-national-plan-2040>. [Accessed 16 March 2026].

| Policy                                                                                                | Policy context                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Planning Policy Wales – Chapter 6 Distinctive and Natural Places (12th Ed.; 2024)<sup>11</sup></p> | <p>Chapter 6 of Planning Policy Wales (PPW) sets out the Welsh Government's (WG) objectives for Distinctive and Natural Places theme of planning policy topics covers historic environment, green infrastructure, landscape, biodiversity and ecological networks, coastal areas, water and flood risk, air quality and soundscape, and lighting. In particular, the Biodiversity and Ecological Networks section puts emphasis on planning authorities to have regard for the State of Natural Resources Report (SoNaRR) and Area Statements published by Natural Resources Wales (NRW). The policy details that net benefits for biodiversity and ecosystem resilience should be secured through following the 'step-wise' approach<sup>12</sup> and the DECCA framework<sup>13</sup>.</p> <p>Biodiversity enhancements that achieve Net Benefit for Biodiversity (NBB) must be delivered following the implementation of the 'stepwise approach' of firstly avoiding, then minimising, mitigating and, as a last resort, compensating for adverse impacts on the environment that occur as part of a development. Therefore, compensation should only be considered as a last resort, where it has been demonstrated clearly that adverse effects on the environment cannot be avoided or fully mitigated. If compensation is necessary, this must be delivered on-site where possible but off-site compensation can be sought if demonstrated that this is not possible.</p> <p>This approach will encourage the consideration of features that may not necessarily be protected, but are crucial for ecosystem functioning, leading to more joined up spaces for nature.</p> <p>NRW have developed a framework for evaluating ecosystem resilience based on five attributes and properties specified in the Environment (Wales) Act 2016. This is referred to as DECCA and comprises the objectives listed:</p> <ul style="list-style-type: none"> <li>■ <b>Diversity</b> – maintaining and enhancing diversity at every scale, including genetic, structural, habitat and between-habitat levels. This supports the complexity of ecosystem functions and interactions that deliver services and benefits.</li> <li>■ <b>Extent</b> – incorporating measures which maintain and increase the area of semi-natural habitat/features and linkages between habitats. In general, smaller ecosystems have reduced capacity to adapt, recover or resist disturbance.</li> <li>■ <b>Condition</b> – the condition of an ecosystem is affected by multiple and complex pressures acting both as short term and longer-term types of disturbance. Both direct and wider</li> </ul> |

<sup>11</sup> Welsh Government (2024) Planning Policy Wales, Edition 12, February 2024. [online]. Available at: Planning Policy Wales - Edition 12 (gov.wales). [Accessed 16 March 2026].

<sup>12</sup> The 'step-wise' approach should be used to demonstrate steps which have been taken to secure a net benefit for biodiversity.

<sup>13</sup> DECCA is the NRW framework for evaluating ecosystem resilience, based on five attributes and properties specified in the Environment (Wales) Act.

Welsh Government (2009). Planning Policy Wales Technical Advice Note 5: Nature Conservation and Planning.

| Policy                                                                                     | Policy context                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                            | <p>impacts should be considered, for example avoiding or mitigating pressures such as climate change, pollution, invasive species, land management neglect etc.</p> <ul style="list-style-type: none"> <li>■ <b>Connectivity</b> – this refers to the links between and within habitats, which may take the form of physical corridors, stepping stones in the landscape, or patches of the same or related vegetation types that together create a network that enables the flow or movement of genes, species and natural resources. Developments should take opportunities to develop functional habitat and ecological networks within and between ecosystems, building on existing connectivity.</li> <li>■ <b>Adaptability to change</b> – ecosystem resilience is a product of the above four attributes. Adaptability, recovery and resistance to/from a disturbance are defining features of ecosystem resilience. NRW define ecosystem resilience as <i>“An environment that can respond to pressures by resisting, recovering or adapting to change, and is able to continue to provide natural resources and benefits to people”</i>.</li> </ul> |
| <p>Technical Advice Note 5 (TAN5) Nature Conservation and Planning (2009)<sup>14</sup></p> | <p>WG policy on positive planning for nature conservation and developments affecting designated sites and habitats, along with protected Priority Habitats and Species. It brings together advice on sources of legislation relevant to various nature conservation topics which may be encountered by local planning authorities. It sets out the key principles of planning for nature conservation and addresses nature conservation in development control procedures. It also deals with the conservation of protected and Priority Species. It also outlines that developments that may adversely impact on sites designated for their national nature conservation interest will generally not be permitted.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <p><b>Local Planning Policy</b></p>                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <p>Powys Local Development Plan (LDP) 2011-2026 (adopted 2018)<sup>15</sup></p>            | <p>The LDP acts as a framework for the control of development and land use within Powys County Council administrative boundary. It brings together both development and conservation interests to ensure that there is a practical and detailed basis for the control of development and use of land, whilst affording protection to the natural and built environment.</p> <p>Policy DM2 – The Natural Environment outlines the requirement of new developments to protect, positively manage and enhance biodiversity, including improving the resilience of biodiversity through the enhanced connectivity of habitats within and beyond the site.</p> <p>The policy states that any proposal which would have a negative impact on a European, nationally or locally protected site, species or habitat (unless adequately mitigated) will be refused.</p>                                                                                                                                                                                                                                                                                               |

<sup>14</sup> Welsh Government (2009). Planning Policy Wales Technical Advice Note 5: Nature Conservation and Planning.

<sup>15</sup> Powys County Council (2018). Powys Local Development Plan 2011-2026. [online]. Available at: <https://en.powys.gov.uk/article/4898/Adopted-LDP-2018>. [Accessed 16 March 2026].

| Policy                                                 | Policy context                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Powys Nature Recovery Action Plan (NRAP) <sup>16</sup> | <p>The Powys NRAP takes an ecosystem approach with the aim to halt and reverse the declines in biodiversity across Powys. The NRAP sets the six objectives from the Wales NRAP in the context of local priorities.</p> <p>It builds on and updates the Powys Local Biodiversity Action Plan, combining the Habitat Action Plans into ecosystem groups and taking account of new information that is available.</p> <p>One of the focuses of the Powys NRAP is to create bigger, better, and more joined up ecological networks.</p> |

## TECHNICAL GUIDANCE

- 5.2.4. A summary of the technical guidance for Ecology is provided in **Table 5-3** below. Technical guidance that has been used to guide the survey methods to inform this assessment is referenced in **Appendices 5A-5I** as required.

**Table 5-3 – Technical guidance relevant to the Ecology assessment**

| Technical Guidance Document                                                                                                                                                                                                | Context                                                                                                                                                                                                |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Guidelines for the Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine (Chartered Institute of Ecology and Environmental Management (CIEEM), 2018, updated 2024) <sup>17</sup> | Sets out the industry standard approach to Ecological Impact Assessment (EclA) for assessing the potential effects of a project on ecological receptors.                                               |
| NatureScot pre-application guidance for onshore wind farms <sup>18</sup>                                                                                                                                                   | Sets out NatureScot's pre-application advice to developers and consultants who are preparing applications and EIA reports for onshore wind farm developments.                                          |
| BS 42020:2013 Biodiversity                                                                                                                                                                                                 | Provides recommendations and guidance primarily for ensuring that actions and decisions taken at each stage of the planning process are informed by sufficient and appropriate ecological information. |

<sup>16</sup> Powys Nature Partnership 2022-2023. Powys Nature Recovery Action Plan. [online]. Available at: <https://en.powys.gov.uk/article/2573/Powys-Nature-Recovery-Action-Plan>. [Accessed 17 March 2026].

<sup>17</sup> CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine, Version 1.1. [online]. Available at: <https://cieem.net/wp-content/uploads/2018/08/ECIA-Guidelines-2018-Terrestrial-Freshwater-Coastal-and-Marine-V1.1Update.pdf> [Accessed 21 August 2024].

<sup>18</sup> NatureScot. (2025) NatureScot pre-application guidance for onshore wind farms [Online] Available at: <https://www.nature.scot/doc/naturescot-pre-application-guidance-onshore-wind-farms> [Accessed 10 June 2026].

## 5.3 CONSULTATION AND ENGAGEMENT

### OVERVIEW

- 5.3.1. The assessment has been informed by consultation response and ongoing stakeholder engagement. An overview of the approach to consultation is provided in **Section 4 of Chapter 2: Approach to EIA**.

### SCOPING DIRECTION

- 5.3.2. A Scoping Direction (**Appendix 1B**) was issued by Planning and Environment Decisions Wales (PEDW) on behalf of the Welsh Ministers, on 14 May 2025. A summary of the relevant responses received in the Scoping Direction in relation to Ecology and confirmation of how these have been addressed within the assessment to date is presented in **Table 5-4**.

**Table 5-4 - Summary of EIA Scoping Direction responses for Ecology**

| Consultee and comment ID | Consideration                                                                                                                                                                                                                                                                                                                                                                                                                               | How this has been addressed in this Draft ES                                                                                                                                                                                                                                                                                                       |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PEDW (ID.9)              | PEDW notes that no comments have been provided by Powys County Council (PCC). PEDW recommends that the applicant liaises with PCC's ecology team on potential impacts.                                                                                                                                                                                                                                                                      | The Applicant has sought to engage with PCC through the Planning Performance Agreement process; however, no ecology-specific consultation response has been received to date. Consultation with PCC's ecology team will continue where possible and any relevant feedback received prior to submission of the Final ES will be taken into account. |
| NRW/PEDW (ID.10)         | NRW advise that provisions of the EIA audit compliance regarding relevant nature conservation legislation (UK and Wales) together with relevant local and national policies including BS 42020:2013 are also considered.                                                                                                                                                                                                                    | The legislation, planning policy and technical guidance that has been used to inform this assessment are included in <b>Section 5.2</b> . BS 42020:2013 is a code of practice and is considered throughout the assessment.                                                                                                                         |
| NRW/PEDW (ID.11)         | The assessment should include habitats and species listed in the relevant Local Biodiversity Action Plan. NRW note that the applicant should contact other relevant people/organisations for relevant ecological information including the relevant Local Records Centre and any local ecological interest groups. PEDW welcome that the Powys Nature Recovery Action Plan and Powys Local Biodiversity Action Plan are included in the SR. | Habitats and species listed in the PCC NRAP, which builds on and enhances the PCC Local Biodiversity Action Plan, are included as part of this assessment.<br><br>A desk study, including collating records from the Local Records Centre, has been undertaken which informs this assessment and is described in <b>Section 5.5</b> .              |
| NRW/PEDW (ID.12)         | The ES must include a description of all the existing natural resources and wildlife interests within and in the                                                                                                                                                                                                                                                                                                                            | A description of the existing baseline is included in <b>Section 5.5</b> .                                                                                                                                                                                                                                                                         |

| Consultee and comment ID | Consideration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | How this has been addressed in this Draft ES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                          | vicinity of the site. The baseline should inform a detailed assessment of the likely impacts and significance of those impacts.                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| PEDW (ID.13)             | <p>PEDW welcome that the habitat surveys were undertaken in accordance with the Joint Nature Conservation Committee (JNCC) Phase 1 survey guidelines.</p> <p>The Phase 1 should be undertaken during the summer to ensure the best chance of identifying the habitats present. If the PEAs undertaken were not completed in the summer months, this should be highlighted in survey limitations and justification provided for their relevance. NRW note that Habitats Directive Annex 1 habitats should also be identified as part of this assessment.</p> | <p>The Phase 1 survey was undertaken in June 2023. The Site was subject to an update Phase 1 survey in spring 2026. Justifications for the update Phase 1 habitat survey and PEA being undertaken in the spring, as well as an explanation as to why this is not considered to be a limitation, are included in <b>Appendix 5A: Main Site PEA</b> and <b>Appendix 5B: Access Road PEA</b>.</p> <p>Habitats Directive Annex 1 habitats have also been identified during this assessment, which will be refined further following detailed analysis of NVC data gathered within the Site.</p> |
| NRW/PEDW (ID.14)         | <p>The applicant should refer to NRW's comments at appendix 1 for detailed comments on the requirements for the impact assessment on protected species.</p> <p>Where the potential for significant impacts on protected species is identified, NRW recommend that a Conservation Plan for the relevant species is included as a technical appendix to the ES.</p>                                                                                                                                                                                           | <p>Detailed comments from <b>Appendix 1B</b> (EIA Scoping Direction) are addressed below.</p> <p>No significant effects on protected species have been identified, and therefore no Conservation Plans are appended.</p>                                                                                                                                                                                                                                                                                                                                                                    |
| NRW/PEDW (ID.15)         | The development includes the installation of solar arrays. However, no detailed information has been provided on the extent or location of the arrays. NRW therefore highlight that the list of receptors will need to be reconsidered following provision of this information.                                                                                                                                                                                                                                                                             | There will no longer be a solar array element included as part of the Proposed Development.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| NRW/PEDW (ID.16)         | <p>NRW welcome the scoping of bats into the ES. The surveys undertaken should cover the full application site and should accord with the following:</p> <ul style="list-style-type: none"> <li>• NatureScot guidance titled Bats and onshore wind turbines - survey, assessment and mitigation.</li> <li>• Bat Surveys for Professional Ecologists: Good Practice Guidelines 4th edition.</li> </ul>                                                                                                                                                        | <p>Surveys of bats have been undertaken in accordance with the relevant guidance as outlined by NRW, across the entirety of the Main Site. Bat surveys are in process along the Access Road.</p> <p>There are no potentially important roost features within 200 m of any of the proposed turbines.</p>                                                                                                                                                                                                                                                                                     |

| Consultee and comment ID | Consideration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | How this has been addressed in this Draft ES                                                                                                                                                                              |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                          | <p>In accordance with NRW's advice, all trees with potential to support roosting bats within the stated buffer of each turbine, and those needing to be felled or pruned to facilitate development, are subject to both ground-based assessments and further surveys in accordance with the published best practice survey guidance (E.g. climbed, endoscope surveys). Where potentially important roost features may be located within 200 m of a turbine, NRW advise that further surveys will be undertaken.</p> <p>NRW advise that impacts of the proposals on bats are assessed using the EcoBat tool. The assessment should include weather monitoring data at the time of bat activity surveys and assess the proportion of recorded bat activity in relation to the generating speed of the proposed turbines.</p> <p>The impact assessment should be provided for all bat species, not only those that are high risk.</p> | <p>The impacts of the Proposed Development on bats has been assessed using the EcoBat tool (see <b>Appendix 5G: Main Site Bat Activity Survey Report</b>, and summarised in <b>Paragraph 5.5.18</b> of this Chapter).</p> |
| NRW/PEDW (ID.17)         | PEDW welcome the intention to undertake updated badger surveys in accordance with best practice.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Updated badger surveys have been undertaken and are described in <b>Section 5.6</b> .                                                                                                                                     |
| NRW/PEDW (ID.18)         | NRW welcome the approach set out in the SR with relation to survey methodology for riparian mammals.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Riparian mammal surveys have been undertaken and are described in <b>Section 5.6</b> .                                                                                                                                    |
| NRW/PEDW (ID.19)         | <p>NRW note that initial survey results confirm presence of dormouse within the site.</p> <p>Therefore, dormouse can be assumed as present within suitable connective habitat within and adjacent to the Site. It is welcomed that surveys be undertaken in all suitable habitat likely to be impacted by the development and a minimum of 50 m from the Site within continuous habitat in accordance with current best practice. PEDW concur with the survey methodology set out in the SR.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                   | Dormouse presence has been assumed within suitable connective habitat within and adjacent to the Site.                                                                                                                    |
| NRW/PEDW (ID.20)         | NRW welcome that the SR proposes to undertake surveys for watercourses considered suitable to                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Great crested newt surveys have been undertaken and are described in <b>Section 5.6</b> .                                                                                                                                 |

| Consultee and comment ID | Consideration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | How this has been addressed in this Draft ES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                          | support great crested newt within the Site, in accordance with best practice guidance.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| PEDW (ID.21)             | PEDW welcome the intention to undertake detailed NVC Surveys.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | NVC surveys have been undertaken and an NVC a report is included as <b>Appendix 5C</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| NRW/PEDW (ID.22)         | The SR proposes to scope out impacts on fish. NRW highlight that the release of fine sediment from construction activities to watercourses has the potential to impact fish habitat and fish populations both within and outside the site. Watercourse crossings may also impact fish habitat quality and connectivity through the creation of barriers to fish migration. Further information is therefore required in order to assess potential impacts on fish species. This should include the location, number and type of watercourse crossings, and any other physical modifications to watercourses. Potential hydrological changes will also need to be considered within a WFD assessment. PEDW therefore direct that impacts on fish are scoped into the ES. | Fish species have been considered as part of this assessment in <b>Section 5.10</b> .<br><br>A walkover aquatic species survey has been undertaken and is described in <b>Section 5.6</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| NRW/PEDW (ID.23)         | NRW concur with the scoping of impacts regarding protected sites. As noted above, this will need to be reviewed once additional information is provided on the extent and location of the solar arrays, or if alterations are made to the site layout.<br><br>The applicant is therefore encouraged to keep this list under review.                                                                                                                                                                                                                                                                                                                                                                                                                                     | There will no longer be a solar array element included as part of the Proposed Development.<br><br>In relation to identification of notable habitats, NVC surveys have been undertaken and, whilst detailed analysis is ongoing, an interim report is included as <b>Appendix 5C</b> . Full analysis will be undertaken and reported on prior to full submission of the ES. Whilst the likely NVC classifications and the specific Priority Habitats/GWDTEs may change, it is considered unlikely that additional areas not identified will be identified as Notable Habitats following the data analysis. Therefore, the information within the interim memo is considered appropriate to allow for the assessment of potential effects of |

| Consultee and comment ID | Consideration                                                                                                                                                                                                                                                           | How this has been addressed in this Draft ES                                       |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|                          |                                                                                                                                                                                                                                                                         | the Proposed Development with respect to Notable Habitats.                         |
| NRW/PEDW (ID.24)         | NRW note that Llyn Mawr SSSI overlaps the boundary of the application site. Any impact on the SSSI must be fully addressed in the ES. The applicant's attention is drawn to NRW's comments at appendix 1 regarding the policy position regarding development in a SSSI. | Llyn Mawr SSSI is considered as part of this assessment (see <b>Section 5.9</b> ). |

## 5.4 DATA GATHERING METHODOLOGY

### STUDY AREA

5.4.1. The study area encompasses the area for which desk-study and field-survey data were collected to inform the biodiversity assessment. The level and type of data collection varies across the study area due to the presence of multiple ecological features and effect-pathways. The study area comprises:

- The land within the Site boundary (as shown on **Figure 1-1**);
- The desk study areas for sites designated for their nature conservation interest at the European, national and local levels (these areas are described in **Paragraph 5.4.3**);
- The area of search for legally protected and notable ecological features; and
- The field survey areas for each ecological feature covered during baseline data collection activities.

5.4.2. The extent of the areas of search and field survey areas were determined based on best practice guidance, a high-level overview of the types of ecological features present, informed by the desk study and PEA, the project design and relevant project information, and the potential effects that could occur. The study area was defined on a precautionary basis to ensure that the Zone of Influence (Zol) relevant to all ecological features was covered during baseline data collection activities. Zols are the areas within which a potentially significant effect associated with the Proposed Development may be identified for a particular ecological feature. Zols vary between ecological features depending on the environmental change.

### DESK STUDY

5.4.3. A data-gathering exercise was undertaken in February 2024 and April 2026 to obtain information relating to: statutory and non-statutory biodiversity sites; Priority Species or Habitats listed on Section 7 of the Environment (Wales) Act 2016; legally protected species; and other conservation-notable habitats or species. Given the potential for the Proposed Development to affect ecological features located off-Site as well as on-Site, data were obtained for:

- European sites and other biodiversity sites of European importance within 10 km of the Site boundary, extended to 30 km for biodiversity sites of European importance with bat interest;
- Statutory designated biodiversity sites of national/local importance within 2 km of the Site boundary, extended to 10 km for biodiversity sites of national importance with bat interest;
- Non-statutory designated biodiversity sites areas within 2 km of the Site boundary;
- Protected species, Priority Species for the conservation of biodiversity, or other conservation-notable species recorded within 2 km of the Site;
- Protected habitats, including Priority Habitats and AWI woodlands, within 2 km of the Site; and
- Water bodies within 500 m of the Site.

5.4.4. A summary of the organisations that have supplied data, together with the nature of that data, is outlined in **Table 5-5**.

**Table 5-5 – Data sources used to inform the Ecology assessment**

| Aspect                                                                              | Data Source                                                                                                                                                                                                                                                                                        | Data Provided                                                                                                                                                                                             |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statutory sites                                                                     | <ul style="list-style-type: none"> <li>■ Magic: <a href="http://www.magic.gov.uk">www.magic.gov.uk</a></li> <li>■ JNCC: <a href="http://jncc.defra.gov.uk/page-4">http://jncc.defra.gov.uk/page-4</a></li> <li>■ NRW: <a href="http://lle.gov.wales/home">http://lle.gov.wales/home</a></li> </ul> | Boundary data<br>Citations<br>Other site information e.g. Conservation Objectives; Management Plans; etc.                                                                                                 |
| Non-statutory sites                                                                 | <ul style="list-style-type: none"> <li>■ Biodiversity Information Service for Powys and Brecon Beacons National Park (BIS)<sup>19</sup></li> </ul>                                                                                                                                                 | Boundary data<br>Citations                                                                                                                                                                                |
| Priority Habitats, including AWI woodlands, and other conservation-notable habitats | <ul style="list-style-type: none"> <li>■ BIS</li> </ul>                                                                                                                                                                                                                                            | Boundary data                                                                                                                                                                                             |
| Species records, including Priority Species and other conservation-notable species  | <ul style="list-style-type: none"> <li>■ BIS</li> </ul>                                                                                                                                                                                                                                            | Species records, including location, year, number of records, and specific information relating to the record (e.g. if an otter record was for, for example, a live sighting, a holt, or other evidence). |

<sup>19</sup> Available at: <https://www.bis.org.uk/> [Accessed 19 June 2026]

|                 |                                                                                                                                                                                                                 |                                                                                |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| Waterbodies     | <ul style="list-style-type: none"> <li>Ordnance Survey mapping</li> </ul>                                                                                                                                       | Boundary data                                                                  |
| Aquatic species | <ul style="list-style-type: none"> <li>NRW Freshwater Fish Surveys<sup>20</sup></li> <li>NRW Freshwater River Macroinvertebrates<sup>21</sup></li> <li>NRW Freshwater River Macrophytes<sup>22</sup></li> </ul> | Fish species count and length values<br><br>Sample metric and taxa information |

## SURVEY WORK

- 5.4.5. The biodiversity field survey programme was designed to provide sufficient information on legally protected and conservation-notable species, and the general status and condition of all habitats within the relevant Zol based on relevant good practice guidelines.
- 5.4.6. The assessment areas for each ecological receptor were defined on a precautionary basis to ensure that the Zol relevant to each ecological feature was covered during baseline data collection activities. The field survey programme was also informed by the results of the desk study and consultation as described in **Section 5.3**.
- 5.4.7. A summary of the surveys carried out to inform the preparation of this chapter is provided in **Table 5-6**, with the methods and results of these detailed in **Appendices 5A to 5M**.

**Table 5-6 – Surveys conducted to inform the biodiversity assessment of the Site**

| Assessment Type | Scope of Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Assessment Status                                                                                                                                         | Location of Assessment Report                                       |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| PEA             | A Phase 1 habitat survey of the Site plus 30m around the Site was undertaken to classify, map and evaluate the vegetation communities, in accordance with best practice guidelines <sup>23</sup> . The survey was 'extended' to identify the presence or potential presence of species of importance for biodiversity conservation and/or species that are afforded legal protection. This included a Daytime Bat Walkover (DBW), to assess the suitability of the habitats within the Site to support bats <sup>24</sup> . | Extended Phase 1 habitat survey completed in June 2023 and updated in April 2026.<br><br>Desk study completed in February 2024 and updated in April 2026. | <b>Appendices 5A and 5B – Main Site and Access Road PEA reports</b> |

<sup>20</sup> Natural Resource Wales (NRW) Freshwater Fish Surveys. [Online]. Available at: [https://datamap.gov.wales/layergroups/geonode:nrw\\_freshwater\\_fish\\_surveys](https://datamap.gov.wales/layergroups/geonode:nrw_freshwater_fish_surveys) [Accessed September 2025]

<sup>21</sup> Natural Resource Wales (NRW) Freshwater River Macroinvertebrates. [Online]. Available at: [https://datamap.gov.wales/layergroups/geonode:nrw\\_river\\_macroinvertebrates](https://datamap.gov.wales/layergroups/geonode:nrw_river_macroinvertebrates) [Accessed September 2025]

<sup>22</sup> Natural Resource Wales (NRW) Freshwater River Macrophytes. [Online]. Available at: [https://datamap.gov.wales/layergroups/geonode:nrw\\_river\\_macrophyte](https://datamap.gov.wales/layergroups/geonode:nrw_river_macrophyte) [Accessed September 2025]

<sup>23</sup> Chartered Institute of Ecology and Environmental Management (CIEEM) (2017a). Guidelines for Preliminary Ecological Appraisal. CIEEM, Winchester.

<sup>24</sup> Collins J. (ed.) (2023) Bat Surveys for Professional Ecologists, Good Practice Guidelines (4th Edition). The Bat Conservation Trust, London.

| Assessment Type      | Scope of Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Assessment Status                                                                                                                                                                        | Location of Assessment Report                   |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
|                      | <p>Habitats were described and mapped following the JNCC Phase 1 classification within the entirety of the Site<sup>25</sup>.</p> <p>A desk study was completed to support the PEA. The desk study was undertaken using publicly available data sources and data from BIS. An update desk study was completed in 2026 to review existing baseline ecological information available in the public domain, excluding records from BIS. <b>Paragraph 5.4.3</b> details the Zol used for the desk study.</p> |                                                                                                                                                                                          |                                                 |
| NVC survey           | <p>An NVC survey of habitats that are to be affected by the turbine locations, and habitats that were identified during the PEA as Priority Habitats and likely to be affected by the Proposed Development infrastructure, was carried out to classify, map and evaluate the vegetation communities<sup>26</sup>. This was used to identify Priority Habitats that will be affected by the Proposed Development.</p>                                                                                     | <p>Survey completed in May 2026.</p> <p>At this stage, detailed analysis has not yet been undertaken. NVC classifications have been assigned based on the floristic tables and keys.</p> | <b>Appendix 5C – NVC Survey Report</b>          |
| Bat activity surveys | <p>Ten bat detectors were deployed during three monitoring periods (spring, summer, and autumn) at proposed turbine locations<sup>27</sup>. Detectors were deployed during each monitoring period for a minimum of ten consecutive nights of monitoring.</p>                                                                                                                                                                                                                                             | <p>Surveys completed spring (May 2024), summer (August-September 2025), and autumn (October 2025).</p>                                                                                   | <b>Appendix 5G – Bat Activity survey report</b> |
| Bat roost surveys    | <p>Ground Level Tree Assessments (GLTA) of all trees, and Preliminary Roost Assessments (PRA) of all buildings/structures within 200 m of proposed turbine locations and within 20 m of the</p>                                                                                                                                                                                                                                                                                                          | <p>Surveys completed in March 2026 (Access Road) and April 2026 (Main Site).</p>                                                                                                         | <b>Appendix 5H – Bat roost survey report</b>    |

<sup>25</sup> JNCC (2016). Handbook for Phase 1 habitat survey – a technique for environmental audit. JNCC, Peterborough.

<sup>26</sup> Rodwell, J.S. (2006) NVC Users' Handbook, JNCC, Peterborough, ISBN 978 1 86107 574 1.

<sup>27</sup> Nature Scot (2019) Bats and onshore wind turbines – survey, assessment, and mitigation (Version: August 2021). Available at: Bats and onshore wind turbines - survey, assessment and mitigation | NatureScot [Accessed: October 2025].

| Assessment Type         | Scope of Assessment                                                                                                                                                                                                                                                                                                                                        | Assessment Status                                                                | Location of Assessment Report                                                          |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
|                         | Access Road have been undertaken <sup>24,27</sup> .                                                                                                                                                                                                                                                                                                        |                                                                                  |                                                                                        |
| Badger survey           | <p>Walkover badger surveys have focussed on identifying signs of activity and places of shelter (setts) inside the Main Site within areas previously highlighted being suitable to support badger, and within the Access Road plus 30m either side of the Access Road.</p> <p>Surveys were informed by good practice guidelines<sup>28,29,30</sup>.</p>    | Survey completed in November 2024 (Access Road) and January 2026 (Main Site)     | <b>Appendices 5D and 5E – Main Site and Access Road Badger Survey reports</b>          |
| Dormouse surveys        | <p>Dormouse surveys to determine presence/likely absence were undertaken of suitable habitats within the Access Road<sup>31</sup>. Dormouse surveys were not undertaken within the Main Site due to a lack of habitats with the potential to support dormice.</p>                                                                                          | Survey completed in November 2024.                                               | <b>Appendix 5M – Dormouse survey report</b>                                            |
| Riparian mammal surveys | <p>A detailed inspection of the watercourses within the Site plus 200 m up and downstream (where accessible) from the Proposed Development footprint, was undertaken to check for otter and water vole field signs<sup>32,33</sup>. Where access constraints prevented survey of the full extent, the limitations are described in <b>Section 5.5</b>.</p> | Survey complete. Completed in July 2024 (Access Road) and April 2026 (Main Site) | <b>Appendices 5K and 5L – Main Site and Access Road Riparian Mammal Survey Reports</b> |
| Reptile survey          | The proposed layout of the Proposed Development plus a 10 m buffer was subject to a reptile walkover survey, in which the suitability of the habitats to                                                                                                                                                                                                   | Surveys completed in March and April 2026.                                       | <b>Appendix 5J – Reptile survey report</b>                                             |

<sup>28</sup> Harris S, Cresswell P and Jefferies D (1991) (Report) Surveying Badgers. The Mammal. Society, Bristol.

<sup>29</sup> Andrews, R (2013) The Classification of Badger Meles meles Setts in the UK: A review and Guidance for Surveyors. In Practice. Bulletin of the Chartered Institute of Ecology and Environmental Management. Issue 82. December 2013.

<sup>30</sup> Scottish Badgers (2018). Surveying for Badgers: Good Practice Guidelines. Version 1.

<sup>31</sup> Bright, P., Morris, P. & Mitchell-Jones, T. (2006) The Dormouse Conservation Handbook (2<sup>nd</sup> Edition). English Nature.

<sup>32</sup> Chanin, P., (2003) Monitoring the Otter, Lutra lutra. Conserving Natura 2000 Rivers Monitoring Series No. 10., English Nature, Peterborough

<sup>33</sup> Dean, M., Strachan, R., Gow, D. and Andrews, R. (2016) The Water Vole Mitigation Handbook (The Mammal Society Mitigation Guidance Series). Eds Fiona Mathews and Paul Chanin. The Mammal Society, London.

| Assessment Type            | Scope of Assessment                                                                                                                                                                                                                                                                                                                                                | Assessment Status                                                                                                                            | Location of Assessment Report                         |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
|                            | support reptiles was assessed, and potential hibernacula were mapped <sup>34</sup> .                                                                                                                                                                                                                                                                               |                                                                                                                                              |                                                       |
| Great crested newt surveys | HSI assessments were undertaken of waterbodies within 500 m of the Site where access was possible <sup>35</sup> . Where relevant, environmental DNA (eDNA) surveys were subsequently undertaken. A population size class assessment was undertaken of one pond which returned a positive result for great crested newt eDNA <sup>36</sup> .                        | HSI assessment completed in June 2023.<br>eDNA survey completed in June 2024.<br>Population size class assessment undertaken in spring 2026. | <b>Appendix 5I – Great crested newt survey report</b> |
| Aquatic surveys            | An aquatic habitat walkover survey supported by a desk study was undertaken where access tracks bisect identified watercourses and up to 200 m upstream and downstream. The potential for aquatic habitats to support legally protected and/or notable species was assessed through field observations of channel and bank characteristics <sup>37, 38, 39</sup> . | Surveys completed in August 2025.                                                                                                            | <b>Appendix 5F – Aquatic Survey Report</b>            |

## 5.5 OVERALL BASELINE

- 5.5.1. This section summaries the baseline Ecology conditions determined through the course of desk-based and field survey investigations. This section identifies and evaluates those Ecology features/receptors that lie within the relevant Study Area(s) and which are pertinent in the context of the Proposed Development. Further technical details are provided in **Appendices 5A to 5M**.
- 5.5.2. The baseline here includes Ecology conditions that are both scoped into and out of further assessment.

<sup>34</sup> Gent, A and Gibson, S. (1998) Herpetofauna Workers Manual, Joint Nature Conservation Committee, Peterborough

<sup>35</sup> ARG UK (2010, updated 2024). Great Crested Newt Habitat Suitability Index (HSI) Guidance. Amphibian and Reptile Groups of the UK.

<sup>36</sup> English Nature (2001). Great Crested Newt Mitigation Guidelines. English Nature, Peterborough.

<sup>37</sup> Hendry, K. and Cragg-Hine, D. (1997). Restoration of riverine salmon habitats. Fisheries Technical Manual 4 Environment Agency, Bristol.

<sup>38</sup> Peay, S. (2002). Guidance on Habitat for White-clawed Crayfish. R&D Technical Report W1-067/TR. Environment Agency, Bristol.

<sup>39</sup> Tesch, F. (2003). Biology and Management of Anguillid Eels, 5th Edition. Wiley-Blackwell.

## CURRENT BASELINE

### Site context and surrounding habitats

- 5.5.3. The Site comprises a range of habitats, including grasslands, bracken *Pteridium aquilinum* and scrub, and coniferous woodland. There are several streams running throughout the Site, including the Nant y Llyn Mawr, a stream that flows northwards through the Site from Llyn Mawr and a lake immediately south of the Site. The Site overlies a bedrock of sandstone and mudstone (Penstrowed Grits Formation), with rocky outcrops in several places, and superficial deposits of peat and till (British Geological Survey, 2024).
- 5.5.4. The Access Road extends southwards across grazed grassland fields and some arable land, which are separated by lines of trees, hedges and fencelines. Some streams flow westwards throughout the Access Road within field boundaries. There are discrete areas of woodland and bracken. The wider area comprises a similar mosaic of grazed fields and arable land, with broadleaved woodland blocks and lines of trees and hedgerows forming connectivity between these woodland blocks.

### Designated sites

- 5.5.5. One designated site of European importance is located within 10 km of the Site: Coedydd Llawr-y-glyn SAC.
- 5.5.6. Two statutory designated sites of European importance designated for birds are located within 20 km of the Site: Berwyn SPA and Elenydd-Mallaen SPA. These are discussed in the **Chapter 6: Ornithology** and are not discussed further here.
- 5.5.7. Two statutory designated sites of European importance designated for bats are located within 30 km of the Site. The Tanat and Vyrnwy Bat Sites/Safleoedd Ystlumod Tanat ac Efyrrwy SAC is 23 km northeast of the Site; and the Coedydd Derw a Safleoedd Ystlumod Meirion/Meirionnydd Oakwoods and Bat Sites SAC is located 29 km northwest of the Site. The interest features of these designated sites are summarised in

- 5.5.9. Table 5-7 and shown on Figure 5N.1 of Appendix 5N.
- 5.5.10. One statutory designated site of national importance is located within 2 km of the Site. The Llyn Mawr Site SSSI lies partially within the Site, with its northern extent being within the south of the Main Site, and its eastern extent extending into the north of the Access Road. Due to its presence within the Site, this SSSI is included in the current baseline. One statutory designated site of national importance designated for bats is located within 10 km of the Site: Gregynog SSSI is 6 km east of the Site. The interest features of these designated sites are summarised in

- 5.5.12. Table 5-7 and they are shown on **Figure 5-1**.
- 5.5.13. Tanat and Vyrnwy Bat Sites/Safleoedd Ystlumod Tanat ac Efyrrwy SAC, Coedydd Derw a Safleoedd Ystlumod Meirion/Meirionnydd Oakwoods and Bat Sites SAC and Gregynog SSSI are all designed for the presence of lesser horseshoe bats *Rhinolophus hipposideros*. Lesser horseshoe bats have a Core Sustenance Zone (CSZ) of 2 km<sup>40</sup>. However, lesser horseshoe bats may travel between 5 and 10 km from their roost sites.
- 5.5.14. The statutory designated sites are considered to have nature conservation values at the geographic scale appropriate to their designation (i.e. SPAs and SACs are of European nature conservation value, and SSSIs are of national nature conservation value).

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<sup>40</sup> Bat Conservation Trust (2016). Core Sustenance Zone: Determining Zone Size.

**Table 5-7 – Statutory designated nature conservation sites of national and European importance within the search areas**

| Site                                                                            | Distance and direction from Site boundary | Summary of interest features                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Coedydd Llaur-y-glyn SAC                                                        | 7.6 km southwest                          | <ul style="list-style-type: none"> <li>Designated for the presence of old sessile oak <i>Quercus petraea</i> woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Tanat and Vyrnwy Bat Sites/Safleoedd Ystumod Tanat ac Efyrrwy SAC               | 23 km northeast                           | <ul style="list-style-type: none"> <li>Designated for the presence of lesser horseshoe bats.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Coedydd Derw a Safleoedd Ystumod Meirion/Meirionnydd Oakwoods and Bat Sites SAC | 29 km northwest                           | <ul style="list-style-type: none"> <li>Designated for the presence of lesser horseshoe bats.</li> <li>Designated for the presence of old sessile oak <i>Quercus petraea</i> woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles, and alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i>.</li> <li>Additional Annex I habitats that are present as a qualifying feature are water courses of plain to montane levels with the <i>Ranunculus fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation, Northern Atlantic wet heaths with <i>Erica tetralix</i>, European dry heaths, <i>Tilio-Acerion</i> forests of slopes, screes and ravines, and bog woodland.</li> </ul> |
| Llyn Mawr SSSI                                                                  | Within the Site                           | <ul style="list-style-type: none"> <li>An upland lake partially modified by agricultural improvement with marginal vegetation.</li> <li>Ornithological importance for waterfowl such as whooper swan <i>Cygnus cygnus</i> and Greenland white-fronted geese <i>Anser albifrons flavirostris</i>.</li> <li>Botanically rich habitats surround the lake catchment.</li> </ul>                                                                                                                                                                                                                                                                                                                                        |
| Gregynog SSSI                                                                   | 6 km east                                 | <ul style="list-style-type: none"> <li>This site supports foraging lesser horseshoe bats.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

5.5.15. There are four non-statutory nature conservation sites within 2 km of the Site, comprising one B-Line<sup>41</sup>, one Wildlife Site (Llyn Du Wildlife Site), which is shown on **Figure 5.2** as a Site of Importance for Nature Conservation (SINC), one Wildlife Trust Reserve (Llyn Mawr Wildlife Trust Reserve), and one Road Verge Nature Reserve (Grofftydd Road Verge Nature Reserve). The B-Line and Llyn Mawr Wildlife Trust Reserve are partially located within the Site. Llyn Mawr Wildlife Trust Reserve is beyond the construction footprint. The B-Line is a locally important insect pollinator dispersal pathway, between areas of existing wildflower-rich habitat. Llyn Mawr Wildlife Trust Reserve has the same extent as Llyn Mawr SSSI and

<sup>41</sup> B-lines are locally important insect pollinator dispersal pathways between areas of existing wildflower-rich habitat.

therefore supports the same habitats and species. Llyn Mawr Wildlife Trust Reserve is known to support aquatic plants, waterfowl, dragonflies and damselflies, and associated wetland habitats. Non-statutory designated sites are shown on **Figure 5-2** and listed in **Appendix 5A**.

- 5.5.16. Eighty-four parcels of AWI woodlands, all of which are Ancient Semi Natural Woodland (ASNW), are present within 2 km of the Site. Four of these parcels are within the Site, all of which are within the Access Road. Ancient Woodlands are considered to be of national importance, due to the significant amount of time that it would take to restore, recreate or replace. These areas are shown on **Figure 5-3**.

#### **Habitats**

- 5.5.17. The habitats present within and immediately adjacent to the Site are summarised in **Table 5-8**, with the approximate areas within the blue line boundary on **Figure 5-4** also noted. Where habitats are large enough to map these are shown in **Figure 5-4**, overlain by the Proposed Development.

**Table 5-8 - Habitats within the Site and their approximate areas within the blue line boundary shown on Figure 5-4.**

| Phase 1 habitat type                       | S.7 Priority Habitat <sup>42</sup>     | Potential Groundwater Dependent Terrestrial Ecosystem <sup>43</sup> | Summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Area in Site boundary (ha) <sup>44</sup> | Area to be subject to permanent loss (ha) <sup>45</sup> |
|--------------------------------------------|----------------------------------------|---------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|---------------------------------------------------------|
| A1.1.1 – Broadleaved semi-natural woodland | Yes – lowland mixed deciduous woodland | No                                                                  | Within the Access Road, broadleaved semi-natural woodland forms field boundaries, particularly in the southern half of the Access Road. The woodland parcels connect with wider woodland habitat beyond the Site. Tree species present within these parcels includes silver birch <i>Betula pendula</i> , hazel <i>Corylus avellana</i> , hawthorn <i>Crataegus monogyna</i> , ash <i>Fraxinus excelsior</i> , oak <i>Quercus</i> sp., willow <i>Salix</i> sp, and holly <i>Ilex aquifolium</i> . | 2.08                                     | 0.28                                                    |
| A1.2 – Coniferous woodland                 | No                                     | No                                                                  | Within the Main Site, there are two small parcels of coniferous woodland, dominated by Scots pine <i>Pinus sylvestris</i> . The trees within these woodlands are densely planted, with a very sparse understorey where present. The ground is covered by leaf litter.                                                                                                                                                                                                                             | 0.65                                     | 0                                                       |
| A1.3.2 – Mixed plantation woodland         | No                                     | No                                                                  | Within the Access Road, there is one parcel of plantation woodland. It is a small parcel located towards the middle of the Access Road and formed part of an agricultural residency, isolated from surrounding woodland parcels.                                                                                                                                                                                                                                                                  | 0.08                                     | 0                                                       |

<sup>42</sup> In the absence of definitions of S.7 Priority Habitats, professional judgement and reference to UK BAP Priority Habitat definitions have been used to assess whether habitats identified qualify as S.7 Priority Habitats. Where it is not possible to confidently assess a habitat as not qualifying as a S.7 Priority Habitat, a precautionary approach has been assumed.

<sup>43</sup> Determined based on the current Land Use Planning System SEPA Guidance Note 31.

<sup>44</sup> Linear habitats are measured in metres. Lengths in metres are shown where relevant.

<sup>45</sup> It is assumed that all habitats within the footprint of the Proposed Development are to be subject to permanent loss.

| Phase 1 habitat type                       | S.7 Priority Habitat <sup>42</sup>                                        | Potential Groundwater Dependent Terrestrial Ecosystem <sup>43</sup> | Summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Area in Site boundary (ha) <sup>44</sup> | Area to be subject to permanent loss (ha) <sup>45</sup> |
|--------------------------------------------|---------------------------------------------------------------------------|---------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|---------------------------------------------------------|
| A2.1 – Dense scrub                         | No                                                                        | No                                                                  | Within the Main Site, three parcels of scrub have been identified. Each of these is co-dominated by hawthorn, with Scots pine and willow sp. also present.<br>Within the south of the Access Road, dense scrub parcels are dominated by bramble <i>Rubus fruticosus</i> agg. and common nettle <i>Urtica dioica</i> . One parcel is located within a field of improved grassland as a boundary feature, it includes young tree and shrub species such as blackthorn <i>Prunus spinosa</i> , hawthorn, ash, dog rose <i>Rosa canina</i> agg. and grey willow <i>Salix cinerea</i> . | 0.25                                     | 0.01                                                    |
| A3.1 – Broadleaved scattered trees         | Partially yes – native hedgerows (where lines of trees are over 20m long) | No                                                                  | Within the Main Site, a line of semi-mature hawthorn trees exists along a section of fence line. This line of trees is less than 20 m long and so does not qualify as a Priority Habitat.<br>Within the Access Road, broadleaved scattered trees are present as tree lines forming field boundaries and as ornamental features. Species within the field boundaries are comprised of a wide variety of native broadleaved trees including hazel, hawthorn, ash and rowan.                                                                                                          | 611.1 m                                  | 250.1 m                                                 |
| A3.2 – Coniferous parkland/scattered trees | No                                                                        | No                                                                  | A line of Scots pine trees 170 m long with gaps of up to 22 m is present in the eastern extent of the Main Site.                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 163.7 m                                  | 0 m                                                     |
| A3.3 – Mixed scattered trees               | Yes – native hedgerows                                                    | No                                                                  | Within the Access Road, mixed scattered trees are present as broadleaved scattered trees habitat, however, some tree lines contain conifers such as juniper <i>Juniperus communis</i> , cypress <i>Cupressus</i> sp. and spruce <i>Picea</i> sp.                                                                                                                                                                                                                                                                                                                                   | 235.4 m                                  | 60.9 m                                                  |

| Phase 1 habitat type                   | S.7 Priority Habitat <sup>42</sup> | Potential Groundwater Dependent Terrestrial Ecosystem <sup>43</sup> | Summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Area in Site boundary (ha) <sup>44</sup> | Area to be subject to permanent loss (ha) <sup>45</sup> |
|----------------------------------------|------------------------------------|---------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|---------------------------------------------------------|
| B1.2 – Semi-improved acid grassland    | No <sup>46</sup>                   | No                                                                  | <p>Semi-improved acid grassland is present throughout the northern extent of the Main Site. The grassland is mainly sheep-grazed, although some areas are cow-grazed, with a short sward. Some areas have increased abundance of plants indicative of wet conditions such as rushes, and there is scattered purple moor-grass <i>Molinia caerulea</i>, bilberry <i>Vaccinium myrtillus</i>, gorse and bracken <i>Pteridium aquilinum</i> within the grassland habitat parcels. One area of upland grassland is fenced off and protected from sheep-grazing. Here, sward height is taller (up to 40 cm), and structural diversity is increased.</p> <p>Frequent species found in the semi-improved acid grassland habitat in the Site are heath bedstraw <i>Galium saxatile</i>, heath rush <i>Juncus squarrosus</i>, mat-grass <i>Nardus stricta</i>, sheep's fescue <i>Festuca ovina</i> agg., sweet vernal-grass <i>Anthoxanthum odoratum</i>, tormentil <i>Potentilla erecta</i> and Yorkshire-fog <i>Holcus lanatus</i>.</p> | 134.1                                    | 3.52                                                    |
| B2.2 – Semi-improved neutral grassland | No                                 | No                                                                  | <p>Within the Main Site, parcels of semi-improved neutral grassland are predominantly in the east and south. These are sheep-grazed, with areas of locally frequent rushes. The semi-improved neutral grassland habitat in the Main Site comprise frequent sheep's sorrel <i>Rumex</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 76.9                                     | 1.91                                                    |

<sup>46</sup> Although lowland acid grassland is a recognised Priority Habitat, the identified acid grassland parcels are above 300 m and therefore does not align with this category.

| Phase 1 habitat type    | S.7 Priority Habitat <sup>42</sup>      | Potential Groundwater Dependent Terrestrial Ecosystem <sup>43</sup> | Summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Area in Site boundary (ha) <sup>44</sup>                                  | Area to be subject to permanent loss (ha) <sup>45</sup> |
|-------------------------|-----------------------------------------|---------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|---------------------------------------------------------|
|                         |                                         |                                                                     | <p><i>acetosella</i>, tufted hair-grass <i>Deschampsia caespitosa</i> and Yorkshire-fog.</p> <p>Within the Access Road, semi-improved neutral grassland is located predominantly in the north. The northmost parcels are heavily grazed by cattle, sheep and horses.</p> <p>Further south, parcels of semi-improved neutral grassland are less intensively grazed with a medium to long sward height. Marsh thistle <i>Cirsium palustre</i> and rushes <i>Juncus</i> sp. are scattered within these parcels, with increased bracken and also foxglove <i>Digitalis purpurea</i>.</p> |                                                                           |                                                         |
| B4 – Improved grassland | No                                      | No                                                                  | <p>In the Main Site, two parcels of improved grassland are grazed by cattle. They are dominated by perennial ryegrass <i>Lolium perenne</i>.</p> <p>Improved grassland is the most dominant habitat within the Access Road. Parcels are heavily grazed by sheep and dominated by perennial ryegrass with common nettle and creeping thistle abundant at the field boundaries.</p>                                                                                                                                                                                                    | 15.7                                                                      | 2.57                                                    |
| B5 – Marshy grassland   | Yes – Upland heath and grassland (where | Yes                                                                 | <p>Parcels of marshy grassland are located throughout the Main Site. These are sheep-grazed, and have a heterogeneous sward height between 3 cm (heavily grazed graminoids) and 70 cm (in less intensively grazed areas), with some marsh thistle <i>Cirsium</i></p>                                                                                                                                                                                                                                                                                                                 | 65.9 (of which 0.69 ha has been identified as blanket bog <sup>48</sup> ) | 1.04 (of which 0.07 ha is blanket bog)                  |

<sup>48</sup> Because only the habitats that would be affected by the Proposed Development were surveyed as part of the 2026 NVC survey, it is likely that additional areas of blanket bog exist within the site, but have not been identified.

| Phase 1 habitat type | S.7 Priority Habitat <sup>42</sup>                                              | Potential Groundwater Dependent Terrestrial Ecosystem <sup>43</sup> | Summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Area in Site boundary (ha) <sup>44</sup> | Area to be subject to permanent loss (ha) <sup>45</sup> |
|----------------------|---------------------------------------------------------------------------------|---------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|---------------------------------------------------------|
|                      | located in the Main Site) <sup>47</sup><br>Yes – Three locations of blanket bog |                                                                     | <p><i>palustre</i> up to 100 cm. Some habitat parcels host scattered and discrete parcels of bracken, whilst other parcels host scattered willow species and hawthorn. The parcels of marshy grassland are varied, with most parcels dominated by purple moor-grass, and some dominated by rush species <i>Juncus spp.</i> The purple moor-grass forms dense tussocks, with layers of dead vegetation within the habitat.</p> <p>There is one parcel of marshy grassland in the north of the Access Road. In this parcel, the habitat is damp with dense clumps of rushes throughout.</p> <p>The NVC survey undertaken in 2026 identified three areas of blanket bog: on the proposed access track between turbine 3 and turbine 4; on the proposed access track between turbine 4 and turbine 5; and the laydown area for turbine 8. Within each of these three areas, the condition of the blanket bog is considered to be in moderate to good condition; there is a &gt;50% cover of indicator species, with a &lt;50% cover of deergrass <i>Trichophorum germanicum</i>. There are no trees, shrubs or non-native species, and there is no browsing or burning damage or peat erosion identified. Surface water is frequently</p> |                                          |                                                         |

<sup>47</sup> Marshy grassland within the Main Site is assumed to align with the Priority Habitat 'Montane heaths and grasslands' in the absence of a definition at this time. Montane habitats are those habitats which are above the tree line (the limit at which trees are able to grow). In Wales, this is between 300 m and 600 m. As the Main Site is above 300 m, marshy grasslands within the Main Site have been assumed to qualify as the Priority Habitat montane heaths and grassland, although it should be noted that these were species-poor and dominated by purple moor-grass.

| Phase 1 habitat type                 | S.7 Priority Habitat <sup>42</sup> | Potential Groundwater Dependent Terrestrial Ecosystem <sup>43</sup> | Summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Area in Site boundary (ha) <sup>44</sup> | Area to be subject to permanent loss (ha) <sup>45</sup> |
|--------------------------------------|------------------------------------|---------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|---------------------------------------------------------|
|                                      |                                    |                                                                     | encountered. The sward height is approximately 20 cm. Although there is no active drainage resulting from ditches, heavy trampling or tracking, the substrate comprises peaty soils in degraded condition (see <b>Chapter 10: Geology and Soils</b> ). Plant species include hare's tail cottongrass <i>Eriophorum vaginatum</i> , heath rush <i>Juncus squarrosus</i> . Sphagnum mosses recorded include <i>S. fallax</i> and <i>S. subnitens</i> . Other mosses present are <i>Polystichium commune</i> and <i>Pleurozium schreberi</i> . |                                          |                                                         |
| C1.1 – Continuous bracken            | No                                 | No                                                                  | Within the Main Site, bracken parcels are dense and up to 2 m high. There are bracken-dominant parcels scattered throughout the Access Road, present as discrete parcels located at field margins.                                                                                                                                                                                                                                                                                                                                          | 53.9                                     | 0.81                                                    |
| D1.1 – Acidic dry dwarf shrub heath  | Yes – upland heathland             | No                                                                  | The acidic dry dwarf shrub heath habitat parcels are predominantly located in the north-west of the Main Site. Bilberry and dwarf gorse <i>Ulex minor</i> dominate and there is also occasional bracken, deergrass <i>Trichophorum germanicum</i> , heath bedstraw, sheep's fescue and western gorse <i>Ulex gallii</i> .                                                                                                                                                                                                                   | 18.2                                     | 0.47                                                    |
| D5 – Dry heath/acid grassland mosaic | Yes – upland heathland             | No                                                                  | There are two parcels of dry heath/acid grassland mosaic identified within the Access Road. These parcels are dominated by gorse and scattered trees including rowan and willow. Other species within the habitat include bilberry <i>Vaccinium myrtillus</i> , sheep's fescue, deergrass                                                                                                                                                                                                                                                   | 0.2                                      | 0                                                       |

| Phase 1 habitat type | S.7 Priority Habitat <sup>42</sup>                                                                     | Potential Groundwater Dependent Terrestrial Ecosystem <sup>43</sup> | Summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Area in Site boundary (ha) <sup>44</sup> | Area to be subject to permanent loss (ha) <sup>45</sup> |
|----------------------|--------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|---------------------------------------------------------|
|                      |                                                                                                        |                                                                     | <i>Trichophorum germanicum</i> , heath bedstraw <i>Galium saxatile</i> and heather <i>Calluna vulgaris</i> .                                                                                                                                                                                                                                                                                                                                                                                                            |                                          |                                                         |
| G1 – Standing water  | Assumed yes - pond <sup>49</sup>                                                                       | Yes                                                                 | One pond is present within the Main Site in a sheep-grazed field of marsh/marshy grassland. The pond is considered to have good water quality, with no waterfowl evidence and fish presence considered unlikely. The shallow banks are vegetated with rushes.                                                                                                                                                                                                                                                           | 0.02                                     | 0                                                       |
| G2 – Running water   | Yes – small, medium altitude rivers on acidic geology and small, low altitude rivers on acidic geology | Yes                                                                 | Within the Main Site numerous streams are present, each of which contains slow flowing water. Most of the streams are surrounded by steep banks that are vegetated and marshy grassland was typically adjacent to the ditch banks. A mixture of rock, stone and mud ditch substrates are present.<br>Running water is present in the Access Road in the form of shallow streams and wet ditches choked with rushes. Such networks of running water have connectivity with Afon Carno which flows into the River Severn. | 1971.1 m                                 | 334.53 m <sup>50</sup>                                  |
| 11.1 – Inland cliff  | Yes – inland rock outcrop and scree habitats                                                           | No                                                                  | There are several areas of inland cliff within the Main Site. These areas are exposed and there is no vascular vegetation associated with this habitat.                                                                                                                                                                                                                                                                                                                                                                 | 0.8<br>Plus 1105.0 m                     | 0.08<br>Plus 36.3 m                                     |

<sup>49</sup> As it was not possible to determine the aquatic plants present within the pond, it is not possible to rule out the pond as supporting protected and/or notable plant species, and therefore it is not possible to rule out the pond as a Priority Habitat. Therefore, it has been assumed to qualify as a Priority Habitat for the purpose of this assessment.

<sup>50</sup> Although the Proposed Development footprint crosses areas of running water, as identified here, all streams and rivers will be culverted and there will be no loss of running water habitat.

| Phase 1 habitat type                | S.7 Priority Habitat <sup>42</sup> | Potential Groundwater Dependent Terrestrial Ecosystem <sup>43</sup> | Summary                                                                                                                                                                                                                                  | Area in Site boundary (ha) <sup>44</sup> | Area to be subject to permanent loss (ha) <sup>45</sup> |
|-------------------------------------|------------------------------------|---------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|---------------------------------------------------------|
| I2 – Scree                          | No                                 | No                                                                  | Scree habitat is exposed in the north of the Access Road. Here there is exposed rock with several piles of stone and logs.                                                                                                               | 0.06                                     | 0                                                       |
| J1.1. – Arable land                 | No                                 | No                                                                  | Arable land is present in the form of ploughed fields in the south of the Access Road.                                                                                                                                                   | 4.8                                      | 0.77                                                    |
| J2.1.1 – Intact species-rich hedge  | Yes – native hedgerows             | No                                                                  | Intact species-rich hedges within the Access Road consist of species such as sycamore, hawthorn, dog rose, hazel, blackthorn, elder <i>Sambucus nigra</i> , field maple <i>Acer campestre</i> , honeysuckle <i>Lonicera sp.</i> and oak. | 491.5 m                                  | 48.7 m                                                  |
| J2.1.2 – Intact species-poor hedge  | Yes – native hedgerows             | No                                                                  | Intact species-poor hedges within the Access Road consist of similar species as in the species-rich hedges described above, however, each hedge consists of fewer than five woody, native species.                                       | 1839.9 m                                 | 1370.0 m                                                |
| J2.2.2 – Defunct species-poor hedge | Yes – native hedgerows             | No                                                                  | There are two species-poor defunct hedges within the south of the Access Road. These consist of hawthorn, hazel and blackthorn, with some meadowsweet <i>Filipendula ulmaria</i> dispersed amongst the woody species.                    | 560.0 m                                  | 147.9 m                                                 |
| J2.5 – Wall                         | No                                 | No                                                                  | Disused dry stone walls in poor condition are present in the north and south of the Main Site. Stone walls within the Access Road are present as boundary features between land parcels.                                                 | 804.9 m                                  | 78.8 m                                                  |
| J2.6 – Dry ditch                    | No                                 | No                                                                  | Three dry ditches are present within Main Site. These are likely drainage ditches, with varying levels of rush presence. Depth varied from a few centimetres to 150 cm.                                                                  | 266.2 m                                  | 0 m                                                     |

| Phase 1 habitat type | S.7 Priority Habitat <sup>42</sup> | Potential Groundwater Dependent Terrestrial Ecosystem <sup>43</sup> | Summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Area in Site boundary (ha) <sup>44</sup> | Area to be subject to permanent loss (ha) <sup>45</sup> |
|----------------------|------------------------------------|---------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|---------------------------------------------------------|
| J3.6 – Buildings     | No                                 | No                                                                  | Two permanent buildings are present within the south of the Main Site.<br>One of the buildings is an agricultural barn, used for the storage of agricultural vehicles and hay. The roof is constructed of corrugated metal with large windows, and the walls are concrete and corrugated metal. The second building is a residential building constructed of stone with a multi-pitch tile roof. In the centre of the Main Site is a third building, an agricultural shed with a corrugated metal roof and corrugated metal walls. The shed is single pitched, with an open front and open windows on the roof.<br>Three agricultural or residential complexes and a barn were recorded within the Access Road. | 0.06                                     | 0                                                       |
| J4 – Bare ground     | No                                 | No                                                                  | Within the north of the Access Road, bare ground was present as the country lane which was running north-south.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1.5                                      | 0.19                                                    |
| J5 – Other habitat   | No                                 | No                                                                  | An area with two permanent buildings located on it (as described previously), along with a storage container, are present in the south of the Main Site.<br>A number of farm single tracks are present throughout the north of the Main Site. These are either mud or gravel and are used infrequently by agricultural vehicles or 4x4s.<br>Other habitat was assigned to built-up areas within the Access Road which could not be assigned as buildings or hardstanding.                                                                                                                                                                                                                                       | 5.2                                      | 0.13                                                    |



| Phase 1 habitat type | S.7 Priority Habitat <sup>42</sup> | Potential Groundwater Dependent Terrestrial Ecosystem <sup>43</sup> | Summary                                                                                                                                                                           | Area in Site boundary (ha) <sup>44</sup> | Area to be subject to permanent loss (ha) <sup>45</sup> |
|----------------------|------------------------------------|---------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|---------------------------------------------------------|
| HS – Hardstanding    | No                                 | No                                                                  | Hardstanding was present within the Access Road surrounding built up areas for agricultural or residential purposes.                                                              | 0.9                                      | 0.69                                                    |
| N/A – Not accessed   | No                                 | No                                                                  | There was one area of the Access Road which has not been accessed nor assigned a habitat type from a vantage point. It is associated with the southern-most agricultural complex. | 0.2                                      | 0                                                       |

## Bats

- 5.5.18. There are two European designated sites that are designated for bat conservation within 30 km of the Site. Both sites are designated for lesser horseshoe bat, for which one record was returned within 2 km of the Site during the desk study.
- 5.5.19. The desk study identified records of at least seven different bat species within 2 km of the Site, none of which were from within the Site, or were relating to bat roosts. These were for brown long-eared bat, common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, Daubenton's bat *Myotis daubentonii*, lesser horseshoe bat, Natterer's bat *Myotis nattereri* and noctule *Nyctalus noctula*.
- 5.5.20. A summary of bat records identified during the desk study is shown in **Table 5-9**.

**Table 5-9 - Bat species for which records have been returned within 2 km of the Site**

| Species Common Name     | Species Scientific Name          | No. of Records | Legal / Conservation Status <sup>51</sup> |
|-------------------------|----------------------------------|----------------|-------------------------------------------|
| Brown long-eared bat    | <i>Plecotus auritus</i>          | 12             | EPS, LBAP, S7, WCA5                       |
| Common pipistrelle      | <i>Pipistrellus pipistrellus</i> | 355            | EPS, LBAP, S7, WCA5                       |
| Daubenton's bat         | <i>Myotis daubentonii</i>        | 5              | EPS, WCA5, LBAP                           |
| Lesser horseshoe bat    | <i>Rhinolophus hipposideros</i>  | 1              | EPS, LBAP, S7, WCA5                       |
| Myotis bat species      | <i>Myotis</i> sp.                | 6              | EPS, WCA5                                 |
| Natterer's bat          | <i>Myotis nattereri</i>          | 5              | EPS, LBAP, WCA5                           |
| Noctule bat             | <i>Nyctalus noctula</i>          | 7              | EPS, LBAP, S7, WCA5                       |
| Soprano pipistrelle     | <i>Pipistrellus pygmaeus</i>     | 22             | EPS, LBAP, S7, WCA5                       |
| Pipistrelle bat species | <i>Pipistrellus</i> sp.          | 1              | EPS, S7, WCA5                             |

- 5.5.21. A DBW identified the potential value of habitats within the Site for bats, which was assessed as being of moderate suitability overall; linear habitats in the Site, such as hedgerows, tree lines, dry-stone walls and rivers, provide suitable commuting corridors and foraging opportunities for bats, whilst areas of heterogeneous habitat such as woodlands and waterbodies provide suitable foraging opportunities.
- 5.5.22. The GLTA identified no trees with suitability to support bats within 200m of any turbine locations. The GLTA identified trees with suitability to support bat roosts within the Access Road. One building

<sup>51</sup> EPS = Habitats Regulations, S7 = Environment (Wales) Act 2016 (Section 7), WCA = Wildlife and Countryside Act (1981), BAP = UK Biodiversity Action Plan Priority Species.

identified in the Main Site during the PEA is within 200 m of a proposed turbine location. This building has negligible suitability to support roosting bats. The data from the bat activity surveys was processed using the online tool EcoBat<sup>52</sup>. The surveys recorded a 'low' level of bat activity levels within the Site for species that were identified as having a high risk of turbine collision, with the exception being noctule bat that was recorded as having Low/Moderate activity at one detector location<sup>53</sup>. The site-wide collision risk considered the individual risk of collision at the highest level of activity recorded and was assessed as 'medium' in line with NatureScot guidance<sup>54</sup>.

- 5.5.23. Species recorded included common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, Daubenton's bat, noctule, Leisler's bat *Nyctalus leisleri*, serotine *Cnephaeus serotinus*, brown long-eared bat, greater horseshoe and lesser horseshoe. An unidentified *Myotis sp* was also recorded.

### **Badger**

- 5.5.24. One record of badger was returned during the desk study, the closest of which was 445 m from the Access Road.
- 5.5.25. The extended Phase 1 habitat survey undertaken in support of the PEA did not identify any evidence of badger presence, with most of the Main Site being open upland sheep pasture with mostly sub-optimal habitat for setts (with the exception of areas of dense bracken, woodland and only poor foraging habitat. The Access Road was optimal for sett building opportunities within woodland and grassland habitats.
- 5.5.26. Targeted badger surveys within the Site undertaken in 2024 and 2026 did not identify any confirmed evidence of badger. Mammal paths were recorded throughout the woodland area, although these were not confirmed as badger.
- 5.5.27. During a habitat survey conducted in support of the Proposed Development in May 2026, an active outlier badger sett was identified within the construction footprint, in an area of dense bracken.

### **Dormouse**

- 5.5.28. No records of dormouse were returned from the desk study. Dormouse are known to be present in Powys<sup>55</sup>, although there are areas of suitable habitat within Powys which have been lacking dormouse presence historically<sup>56</sup>. Records for dormouse in Wales indicate that the numbers are stable.
- 5.5.29. The PEA considered that there is no suitable habitat to support dormice within the Main Site, although the Access Road provided suitable dormouse habitat in the form of a network of connected hedgerows, broadleaved woodland and dense scrub.

<sup>52</sup> Lintott, P.R., Davison, S., van Breda, J., Kubasiewicz, L., Dowse, D., Daisley, J., Haddy, E. & Mathews, F. (2018) Ecobat: An online resource to facilitate transparent, evidence-based interpretation of bat activity. *Ecology and Evolution*, 8(2), 935-941.

<sup>53</sup> Activity level is split into six categories on EcoBat which are 'Low', 'Low/mod', 'Mod', 'Mod/high', 'High' and 'Exceptional'.

<sup>54</sup> Nature Scot (2019) Bats and onshore wind turbines – survey, assessment, and mitigation (Version: August 2021). Available at: Bats and onshore wind turbines - survey, assessment and mitigation | NatureScot [Accessed: October 2025].

<sup>55</sup> People's Trust for Endangered Species. Current Dormouse Distribution Map. Available at: <https://ptes.org/house-a-dormouse/dormice-in-decline/current-dormouse-distribution-map/> [Accessed 19/06/2026].

<sup>56</sup> Bright, P. W. (1995). Distribution of the dormouse *Muscardinus avellanarius* in Wales, on the edge of its range. *Mammal Review*, 25(3), 101-110.

- 5.5.30. A dormouse survey carried out within the Access Road in 2024 confirmed dormouse presence within the Site. In July 2024, two adult male dormice and a partially completed dormouse nest were recorded, and in November two partially completed dormouse nests were recorded. Dormouse presence has been assumed to be present within suitable connected habitat within and adjacent to the Site.

#### **Otter**

- 5.5.31. One record of otter was returned during the desk study, 1 km from the Site.
- 5.5.32. The extended Phase 1 habitat survey identified that watercourses within the Site, both within the upland Main Site and the Access Road, were considered to have suitability to support otter.
- 5.5.33. A targeted presence/likely absence otter survey of the Access Road identified no evidence of otter. However, the watercourses within the Access Road were considered suitable to support commuting otters from the Afon Carno, approximately 200 m downstream. The wider woodlands surrounding the watercourses may also support otter resting places, although none were identified.
- 5.5.34. During a targeted presence/likely absence otter survey of the Main Site, an otter spraint was identified, indicating that the watercourse is likely used as a commuting corridor. No confirmed resting places or otter holts were identified (although camera traps were not deployed to confirm this); however potential resting places were recorded and it is considered probable that these may be used by otter periodically.

#### **Water vole**

- 5.5.35. No records of water vole were returned during the desk study.
- 5.5.36. The extended Phase 1 habitat survey identified that watercourses within the Site and the surrounding habitats were considered to have potential suitability to support water vole.
- 5.5.37. A targeted presence/absence water vole survey of the Main Site and Access Road both identified no evidence of water vole. Further, the watercourses were assessed as being unsuitable to support water vole.

#### **Other mammals**

- 5.5.38. The desk study returned nine records of brown hare *Lepus europaeus* within 1km of the Site, but outside the Site. Brown hare were observed during the PEA survey and the riparian mammal survey of the Main Site. Habitats within both the Main Site and the Access Road were considered suitable to support brown hare, owing to the open farmland nature of the Sites. This habitat provides opportunity for foraging, commuting, and creating forms.
- 5.5.39. One record of hedgehog *Erinaceus europaeus* was returned during the desk study, within 1km of the Site, but outside the Site. Although no evidence of hedgehog was observed during the PEA of the Site, suitable habitat for hedgehog exists in the form of scrub, grassland and woodland habitat. This habitat is suitable for foraging and commuting.
- 5.5.40. No records of pine marten *Martes martes* was returned during the desk study. Although no evidence of pine marten was observed during the field survey, the woodland habitats within the Site, particularly those with rowan *Sorbus aucuparia* present, may provide suitability for foraging, commuting and nesting pine martens.

- 5.5.41. No records of polecat *Mustela putorius* were returned during the desk study. Although no evidence of polecat was identified during the field survey, woodland, river and neutral grassland in the Site provide suitable habitat for foraging, commuting and nesting polecat. There is evidence of rabbit *Oryctolagus cuniculus* in the form of rabbit warrens. polecats can also be found in rabbit burrows as rabbits are polecats' primary prey species.

### Reptiles

- 5.5.42. Two records of common lizard *Zootoca vivipara* were returned during the desk study, within 1 km of the Site but outside of the Site.
- 5.5.43. The extended Phase 1 habitat survey undertaken to support the PEA of the Access Road identified habitat considered suitable to support a range of reptile species, particularly along hedgerows, woodland edges, areas of scrub and unmanaged grassland. These habitats could provide suitability for reptiles commuting through but also provide hibernating potential. Additionally, suitable hibernacula are present in the form of sheets of corrugated metal, stone, brick, wood, and log piles.
- 5.5.44. A dedicated reptile walkover survey was undertaken to map the location of reptile hibernacula. Most of the rock outcrops within the Site are heavily grazed pasture, so have a lower suitability to support hibernating reptiles. Rocky outcrops or stone walls considered suitable to support hibernating reptiles were scattered throughout the Site, but the area between turbines 3 and 4 were considered to be most suitable to support hibernating reptiles; it comprises a basin flanked by stony outcrops. Areas of tussocky grassland, bracken and gorse occur within the basin, as well as an area of blanket bog.
- 5.5.45. Owing to the suitable habitat on Site to support reptiles and the results of the desk study, reptile presence has been assumed within the Site, and it has been assumed that all potential refugia are used by reptiles.

### Amphibians

- 5.5.46. Two records each of common frog *Rana temporaria* and common toad *Bufo bufo* were returned during the desk study.
- 5.5.47. Four ponds (P1-4, as identified on **Figure 1 of Appendix 5I**) were identified with the Main Site, of which three were subject to HSI assessment, with scores of 0.59 (below average), 0.55 (below average) and 0.35 (poor) respectively. These ponds were subsequently subject to an environmental DNA (eDNA) survey, which returned a positive result for great crested newt presence in P2. Subsequent population surveys of P2 identified that a population count of a maximum of four great crested newts across six visits, as well as confirmation of breeding with the recording of one great crested newt egg.
- 5.5.48. The PEA survey identified suitable terrestrial habitat for amphibian species in the form of scrub and woodland habitat, which is limited within the Site. Common and widespread species of amphibian such as common frog and common toad may make use of wetter marshy grassland habitat and wet ditches.

### Terrestrial Invertebrates

- 5.5.49. Thirteen terrestrial invertebrate species listed as Priority Species were returned from the desk study, including broom moth *Ceramica pisi*, shaded broad-bar *Scotopteryx chenopodiata*, small pearl-

bordered fritillary *Boloria selene*, and wall *Lasiommata megera*. These were all outside of the Site, but were within connected habitats to the Site.

- 5.5.50. The PEA identified habitats considered suitable to support many of these invertebrate species; for example, *Holcus-Juncus* neutral grassland with marsh violet *Viola palustris* and common dog-violet *Viola canina* can support small pearl-bordered fritillary; and grasslands can support shaded broad-bar and wall. However, these habitats are largely fragmented or very widely distributed within the Site. Further, much of these habitats, particularly hedgerows and woodlands, are beyond the construction footprint of the Proposed Development, and will not be impacted by direct land take as a result of the Proposed Development.

### **Fish**

- 5.5.51. No NRW fish survey data exist for watercourses/drains within the Site boundary. However, NRW fish survey data does exist for the Afon Carno, which receives flow from several small watercourses/drains within the Site boundary. The Afon Carno confluences with the upper River Severn approximately 2.4 km to the south of the Site.
- 5.5.52. A NRW site, last surveyed in September 1999, located approximately 2.15 km upstream of where watercourses/drains within the Site boundary confluence with the Afon Carno, recorded; salmon, brown trout, minnow *Phoxinus phoxinus*, stone loach *Barbatula barbatula* and bullhead *Cottus gobio*.
- 5.5.53. The aquatic survey identified that watercourses within the Main Site have limited potential to support protected and/or notable fish species. P2 is unlikely to support fish species and is the only pond present within the Site. However, the Afon Carno, which receives flow from watercourses within the Site, is known to support protected and/or notable aquatic species (as identified during the desk study undertaken as part of the aquatic assessment), including salmon, brown trout, lamprey sp. and bullhead.

### **Aquatic Invertebrates**

- 5.5.54. No records of notable native aquatic invertebrate species were returned from the desk study.
- 5.5.55. The Phase 1 habitat survey identified habitats considered suitable to support mainly common and widespread invertebrate species, noting that most suitable habitats are Priority Habitats identified on Site. The aquatic survey identified that watercourses within the Main Site have limited potential to support protected and/or notable aquatic invertebrate species.

### **Invasive Non-Native Invertebrate Species**

- 5.5.56. No records of an invertebrate invasive non-native species were returned during the desk study.
- 5.5.57. River and stream habitats within the Site may support *Crangonyx pseudogracilis i floridanus*. National legislation requires action to be taken to prevent the spread of invasive non-native aquatic invertebrates.

### **Invasive Non-Native Plant Species**

- 5.5.58. One invasive non-native plant species was returned during the desk study within 1 km of the Site, variegated yellow archangel *Lamium galeobdolon ssp. argentatum*. This was outside of the Site boundary.

- 5.5.59. The PEA of the Site did not identify any invasive non-native plant species (of either terrestrial or aquatic habitats), including variegated yellow archangel; however this does not demonstrate absence from the Site as a full survey of the Site for all INNS was not undertaken.
- 5.5.60. All habitats within the Site are considered suitable to support invasive non-native plant species, and national legislation requires action to be taken to prevent the spread of certain invasive non-native plant species.

#### **Notable plants**

- 5.5.61. One notable plant species was returned during the desk study, outside of the Site but within connected habitats. This was bluebell *Hyacinthoides non-scripta*, listed on Schedule 8 of the WCA.
- 5.5.62. There are no notable plant species listed on Schedule 8 of the WCA within the citations for the designated sites identified during the desk study.
- 5.5.63. Bluebell was not identified during the Phase 1 habitat survey, although the woodlands within the Site are suitable to support bluebell and it is reasonable to assume this species is present within the Site.

#### **Fungi**

- 5.5.64. No notable fungus species were returned from the desk study. Similarly, no notable fungus species listed on Section 7 of the Environment (Wales) Act 2016<sup>3</sup> have been recorded during Site surveys, although targeted surveys have not been undertaken.
- 5.5.65. Habitats recorded on Site provide suitable conditions for a range of fungi species. Effects upon habitats and the species they support are considered separately, and therefore fungi are not considered as part of this assessment.

#### **FUTURE BASELINE**

- 5.5.66. Determining a future baseline draws upon information about the likely future use and management of the Site in the absence of the Proposed Development, known population trends (for species), climate change and any other proposed developments (consented or otherwise) that may act cumulatively to affect ecological features.
- 5.5.67. The State of Mammals in Wales report<sup>57</sup> identifies that badger, dormouse, brown hare, and hedgehog numbers are stable across Wales, with otter, pine marten and polecat numbers increasing. Although for certain species, such as otter, other data sources indicate decline<sup>58</sup>. Given the lack of optimal habitat to support these species within the Site, it can be assumed that numbers are not likely to increase within the Site at such a level that the conservation status of these species with respect to the Site would change. The same is true for bats species, whose individual numbers across Wales are either increasing, stable, or data deficient (although greater horseshoe bats, Leisler's bat and serotine have been identified as species in peril<sup>59</sup>).

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<sup>57</sup> Mathews F, Smith B, Harrower C, Coomber F in association with the Wales Mammal Biodiversity Action Forum. (2020). *The State of Mammals in Wales*. A report by the Mammal Society for Natural Resources Wales, produced in association with Wales Mammal Biodiversity Action Forum. The Mammal Society, London. ISBN: 978-0-9935673-6-0

<sup>58</sup> Kean EF, and Chadwick EA 2021. Otter Survey of Wales 2015-2018. NRW Report No: 519, NRW.

<sup>59</sup> Bosanquet, S., Howe, M., Dyer, S., Halliwell, E., Hatton-Ellis, T., Lindley, P. & Woodland, J. 2025. Terrestrial and Freshwater Species in Peril in Wales. Natural Resources Wales.

- 5.5.68. Similarly, the Plant Atlas summary report<sup>60</sup> identifies that invasive non-native species are increasing in abundance within Wales. Whilst no invasive non-native plant species have been identified within the Site, they are present in the local area as shown by desk study records and have potential to colonise the Site in the future. It is not possible to predict with confidence, how this will affect the future baseline nature conservation value. Mitigation to reduce/avoid spread as a result of the Proposed Development is however, incorporated into measures set out in this assessment.
- 5.5.69. Climate change is likely to lead to changes in plant species abundance and diversity, which, in turn, is likely to affect species distributions and abundance. However, owing to the abundance of factors which may influence a site, and the unknown nature of these variables, it is not possible to provide further detail.
- 5.5.70. In the absence of further data or analysis, in this instance, the future baseline in the absence of the Proposed Development is unlikely to be markedly different from the current baseline, as land use/management within the Site is anticipated to remain largely unchanged. It is therefore considered appropriate to focus on the current baseline for the purpose of this assessment.

## 5.6 SCOPE OF THE ASSESSMENT

### OVERVIEW

- 5.6.1. The scope of the following assessment is based upon a review of the baseline information detailed in **Section 5.6**.
- 5.6.2. The CIEEM guidelines for EclA<sup>17</sup> recognise that an appropriate EclA cannot consider in detail every individual species or habitat that may potentially be present at a site or affected by a development. The EclA process therefore aims to focus the assessment on those ecological features that could be 'significantly' affected by the Proposed Development (i.e. where the effects on the ecological features are of sufficient concern that they could influence the decision about whether or not planning permission should be consented; the 'significance test'), or for which the development could result in the contravention of relevant legislation. The EclA process therefore includes a 'scoping' stage which excludes those ecological features that will not be 'significantly' affected, and a 'detailed assessment' stage, which examines more closely the potential effects of the scheme on those ecological features that could be subject to 'significant' effects. Detailed assessments may also be undertaken where it is considered appropriate to examine the predicted effects on a feature in more detail, for example due to consultee comments. This section summarises the approach to and outcomes of the EIA scoping stage.

### SPATIAL SCOPE

- 5.6.3. The spatial scope of the assessment of biodiversity covers the area of the Proposed Development contained within the red line boundary together with the Zols that have formed the basis of the study area described in **Section 5.4**.
- 5.6.4. Through an understanding of the activities associated with the Proposed Development and the resulting environmental change, it is possible to identify ecological features that will not be subject to potentially significant effects (for example due to an absence of effect pathways or where the predicted magnitude of change is low), or certainty that incorporated measures will be entirely

<sup>60</sup> Walker, K.J., Stroh, P.A., Humphrey, T.A., Roy, D.B., Burkmar, R.J. & Pescott, O.L. 2023. *Britain's Changing Flora. A Summary of the Results of Plant Atlas 2020*. Durham: Botanical Society of Britain and Ireland.

successful in preventing a significant effect occurring. In order to identify such ecological features, all the activities and consequent environmental changes associated with the construction, operation and decommissioning of the Proposed Development have therefore been considered.

5.6.5. The construction, operation and decommissioning of the Proposed Development will result in the following environmental changes, which have the potential to cause significant effects on ecological features at or near the Site. Many of these impact pathways may operate additively or synergistically to affect ecological features.

- Construction:
  - permanent or temporary land-take/changes to habitats;
  - increased light levels;
  - production of aural and visual stimuli and vibration;
  - hydrological changes;
  - contamination of Site run-off; and
  - injury/death of individuals of protected/notable species as a result of vehicle movements.
- Operation:
  - physical changes to the spatial environment;
  - injury/death of individuals of bats as a result of collision risk;
  - injury/death of individuals of protected/notable species as a result of vehicle movements;
  - hydrological changes beyond those assessed at construction stage; and
  - increased light levels.
- Decommissioning:
  - as per construction stage.

5.6.6. It should be noted that the avoidance of potential effects through design are implicitly taken into account through the consideration of each Zol.

## **TEMPORAL SCOPE**

5.6.7. The temporal scope of the assessment of effects on Ecology is consistent with the period over which the development would be carried out, as defined in Chapter 4, and therefore covers the construction and operational periods. Effects during decommissioning are considered to be similar or no worse than during construction and have therefore not been considered. Furthermore, given the timescales involved (40 years' operation) it is considered that an accurate assessment of decommissioning effects cannot be undertaken at this stage.

## IDENTIFICATION OF IMPORTANT ECOLOGICAL FEATURES

- 5.6.8. Assessment methods for all potentially significant effects upon ecological features are based on the methodology described in the Guidelines for EclA in the UK<sup>61</sup>.
- 5.6.9. CIEEM<sup>17</sup> defines a significant effect as one “that either supports or undermines biodiversity conservation objectives for ‘important ecological features; or for biodiversity in general’.
- 5.6.10. When considering potentially significant effects on ecological features, whether these be adverse or beneficial, the following characteristics of environmental change are taken into account<sup>62</sup>:
- Extent – the spatial or geographical area over which the environmental change may occur;
  - Magnitude – the size, amount, intensity or volume of the environmental change;
  - Duration – the length of time over which the environmental change may occur;
  - Frequency – the number of times the environmental change may occur;
  - Timing – the periods of the day/year etc. during which an environmental change may occur; and
  - Reversibility – whether the environmental change can be reversed through restoration actions.
- 5.6.11. The importance and sensitivity of ecological features have been evaluated with reference to the quality or extent of designated sites or habitats, habitat or species rarity, the extent to which they are threatened throughout their range, their rate of decline, and their legal status. This level of importance was then qualified at a relevant geographical scale.
- 5.6.12. Effects were deemed significant if they are anticipated to affect the structure and function of a site, or impact upon the conservation status of a habitat, species or constituents of a species assemblage.
- 5.6.13. The starting point for defining which ecological features are taken forward to the detailed assessment stage was to use the baseline data collected through the desk study and field surveys to determine which of those are ‘important’ at the level of the project. Following CIEEM guidance, the importance of ecological features was determined using a geographic scale and described in relation to UK legislation and policy, and with regard to the extent of habitat or size of population that may be affected by the Proposed Development. This is presented in **Appendix 5P: Biodiversity Scoping**.
- 5.6.14. The importance of ecological features can differ from that which would be conferred solely by legislative protection or identification as a conservation notable species. For example, a small length of hedgerow (a Section 7 Priority Habitat), even if deemed to be ‘important’ with regard to the Hedgerows Regulations 1997, is unlikely to be considered to have greater than ‘local’ importance due to the extent of this habitat type across a given county.

<sup>61</sup> CIEEM (2024) Guidelines for Ecological Impact Assessment in the UK.

<sup>62</sup> The definitions of the characteristics of environmental change are based on the descriptions provided in CIEEM (2019). Other chapters in this ES may use some of the same terms albeit with a different definition.

5.6.15. Where possible, information regarding the extent and population size, population trends and distribution of the ecological features has been used to inform the categorisation and determine importance at the project level. Where detailed criteria or contextual data are not available, professional judgement has been used to determine importance. Standard EIA terminology uses generic criteria to define the level of sensitivity, whereas the CIEEM Guidelines details the significance of effects within a relevant geographic frame of reference. In order to provide a standardised approach to the EIA, whilst still being compliant with the approach detailed within the CIEEM EclA Guidelines, **Table 5-10** provides a comparison of the two approaches. It provides a high-level description of features assigned to respective geographic scale of importance and displays the corresponding level of sensitivity as set out in the CIEEM EclA Guidelines. It should be noted that for the purposes of this Chapter, the terms relating to geographic context of importance will be used, in line with CIEEM guidelines<sup>17</sup>.

**Table 5-10 – High-level description of features relative to the geographic scale of importance**

| Geographic context of importance (Nature Conservation Value as amended from CIEEM EclA Guidelines <sup>17</sup> Geographic Scale) | Corresponding Sensitivity (EIA Criteria) as per Table 2-1 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>International</b>                                                                                                              | Very high                                                 | <ul style="list-style-type: none"> <li>European sites (SPAs, SACs, cSACs and SCI), plus sites treated as such by national planning policy (pSPA, pSAC and Ramsar sites (designated under international convention)).</li> <li>Areas of habitat or populations of species which meet the published selection criteria for designation as a European site, but which are not themselves currently designated at this level (this would be agreed with NRW where applicable).</li> </ul>                                                                                                                                                                                                                                                                                           |
| <b>National (UK)</b>                                                                                                              | High                                                      | <ul style="list-style-type: none"> <li>Nationally designated sites including SSSIs and NNRs.</li> <li>Areas (and the populations of species which inhabit them) which meet the published selection criteria guidelines for selection of biological SSSIs but which are not themselves designated (this would be agreed with NRW where applicable).</li> <li>Section 7 habitats and species, Red listed and legally protected species that are not addressed directly in Part 2 of the “Guidelines for Selection of Biological SSSIs” but can be determined to be of national importance using the principles described in Part 1 of the guidance<sup>63</sup>.</li> <li>Areas of Ancient Woodland e.g. woodland listed within the AWI and ancient and veteran trees.</li> </ul> |
| <b>National (Wales)</b>                                                                                                           | Medium                                                    | <ul style="list-style-type: none"> <li>Regularly occurring Section 7 habitats or populations of Section 7 species, Red listed and legally protected species may be of regional (Wales) importance in the</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

<sup>63</sup> JNCC (2022). Guidelines for the Selection of biological SSSIs. Parts 1 and 2.

| Geographic context of importance (Nature Conservation Value as amended from CIEEM EcIA Guidelines <sup>17</sup> Geographic Scale) | Corresponding Sensitivity (EIA Criteria) as per Table 2-1 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                   |                                                           | context of published information on population size and distribution.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| County (Powys)                                                                                                                    | Medium                                                    | <ul style="list-style-type: none"> <li>LNRs and Non-Statutory Designated sites including Biodiversity Areas and County Wildlife Sites.</li> <li>Areas which based on field data collected to inform the EcIA meet the published selection criteria for those sites listed above (for habitats or species, including those listed in relevant Local Biodiversity Action Plans) but which are not themselves designated.</li> <li>Species populations or assemblages which, based on their abundance, distribution, conservation status, rarity, or function within the wider ecological network, are considered important within Powys but do not meet the criteria for national importance.</li> </ul> |
| Local                                                                                                                             | Low                                                       | <ul style="list-style-type: none"> <li>Section 7 habitats and species, Red listed and legally protected species that based on their extent, population size, quality etc are determined to be at a lesser level of importance than the geographic contexts above.</li> <li>Or</li> <li>Common and widespread semi-natural habitats and species that do not occur in levels elevated above those of the surrounding area.</li> <li>Areas of heavily modified or managed land uses (e.g. hard standing used for car parking, as roads etc.)</li> </ul>                                                                                                                                                   |

5.6.16. All ecological features that were determined to be of ecological importance at a 'Local' or 'Negligible' level were scoped out of the assessment at this stage, with the exception of species receiving specific legal protection or subject to legal control (e.g. invasive species).

5.6.17. This scoping process is undertaken because effects on features that are important at no more than a 'local' or 'negligible' level are considered to have no potential to influence the decision-making about whether or not consent should be granted for the Proposed Development (i.e. a significant effect could not occur). Ecological features that are scoped into and out of detailed assessment are listed in **Table 5-11**, and specific justification for the exclusion of the ecological features from detailed assessment is provided in **Appendix 5P: Biodiversity Scoping**.

**Table 5-11 – Ecological features scoped into and out of detailed assessment**

| Ecological features scoped into detailed assessment  | Ecological features scoped out of detailed assessment |
|------------------------------------------------------|-------------------------------------------------------|
| Llyn Mawr Site of Special Scientific Interest (SSSI) | Coedydd Llawr-y-glyn SAC                              |

|                                                                                 |                                                                                                     |
|---------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Gregynog SSSI                                                                   | Tanat and Vyrnwy Bat Sites/Safleoedd Ystlumod Tanat ac Efyrrwy SAC                                  |
| Llyn Du Wildlife Site                                                           | Coedydd Derw a Saffleoedd Ystlumod Meirion/Meirionnydd Oakwoods and Bat Sites SAC                   |
| Ancient Woodlands (AWI woodlands that are Ancient Semi-Natural Woodland (ASNW)) | Berywn Special Protection Area (SPA)                                                                |
| Priority Habitats                                                               | Elenydd-Mallaen SPA                                                                                 |
| Commuting/foraging bats                                                         | B-Lines, Llyn Mawr Wildlife Trust Reserve, and Grofftydd Road Verge Nature Reserve                  |
| Roosting bats                                                                   | Water vole <i>Arvicola amphibius</i>                                                                |
| Badger <i>Meles meles</i>                                                       | Other mammals                                                                                       |
| Dormouse <i>Muscardinus avellanaria</i>                                         | Common and widespread amphibians                                                                    |
| Otter <i>Lutra lutra</i>                                                        | Terrestrial invertebrate species                                                                    |
| Reptiles                                                                        | Aquatic invertebrate species                                                                        |
| Great crested newt <i>Triturus cristatus</i>                                    | Invasive non-native invertebrate species                                                            |
| Fish                                                                            | Invasive non-native plant species                                                                   |
| -                                                                               | Notable plants                                                                                      |
| -                                                                               | Fungus species                                                                                      |
| -                                                                               | Common and widespread habitats of negligible nature conservation importance                         |
| -                                                                               | Temporary disturbance of common and widespread species of negligible nature conservation importance |

- 5.6.18. CIEEM's EclA guidelines state that only ecological features which are important and potentially affected by a scheme should be subject to detailed evaluation. Ecological features requiring specific assessment are defined as an 'Important Ecological Feature' (IEF).

- 5.6.19. The evaluation of the local bat assemblage (and supporting habitat) has been informed by Wray et al<sup>64</sup>, and the overall risk assessment of the Proposed Development to bat species from collision has been informed by NatureScot<sup>65</sup>.

## MAGNITUDE OF POTENTIAL IMPACTS

- 5.6.20. Impacts arising from the Project can be permanent or temporary, direct or indirect, and can be cumulative. These factors are brought together to assess the magnitude of the impact on particular IEFs and, wherever possible, the magnitude of the impact is quantified. Professional judgement is then used to assign the impacts on the IEFs to one of four classes of magnitude, defined in **Table 5-12** below.

**Table 5-12 - Magnitude of Potential Impacts**

| Magnitude  | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| High       | An impact that causes a permanent or long-term effect on the extent or size or integrity of a site, habitat, species assemblage or community, population or group. If adverse, this is likely to threaten its sustainability; if beneficial, this is likely to enhance its conservation status.                                                                                                                                                                     |
| Medium     | Impact causes a permanent or long-term effect on the extent or size or integrity of a site, habitat, species assemblage or community, population or group or a short-term effect that will adversely affect the integrity of a receptor in a permanent manner. If adverse negative effect, this is unlikely to threaten its overall sustainability; if positive, this is likely to be sustainable but is unlikely to significantly enhance its conservation status. |
| Low        | Impact causes a permanent or temporary, long-term reversible or short-term effect on a site, habitat, species assemblage or community, population or group whose magnitude is detectable but will not threaten/change its conservation status.                                                                                                                                                                                                                      |
| Negligible | Impact causes a short-term reversible effect on the extent, size or integrity of a site, habitat, species assemblage or community, population or group that is within the normal range of natural variation and has no discernible lasting effect.                                                                                                                                                                                                                  |

- 5.6.21. Potential impacts are characterised initially in the absence of any mitigation, except where this is integral to the design of the Project (embedded measures).

## PATHWAYS FOR LIKELY SIGNIFICANT EFFECTS

- 5.6.22. The effects on IEF which have the potential to be significant and have been taken forward for detailed assessment are summarised in **Table 5-13** Justification for the exclusion of the ecological features not listed in Table 5-13 from detailed assessment is provided in **Appendix 5P: Biodiversity Scoping**.

<sup>64</sup> Wray S., Wells, D., Long, E., and Mitchell-Jones, T. 2010. *Valuing Bats in Ecological Impact Assessment, IEEM In Practice v.70*. December 2010.

<sup>65</sup> NatureScot. 2021. *Bats and Onshore Wind Turbines: Survey, Assessment and Mitigation*.

**Table 5-13 – Likely significant effects on Ecology receptors scoped in for further assessment**

| Receptor type                                                                                                                                                                                                                                                                                                                                                                        | Evaluation of nature conservation importance in relation to the Site | Likely Significant Effects <sup>66</sup>                                                                                                                                                                             |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Llyn Mawr SSSI                                                                                                                                                                                                                                                                                                                                                                       | National (UK)                                                        | Habitat degradation associated with dust deposition and hydrological pollution                                                                                                                                       |
| Gregynog SSSI                                                                                                                                                                                                                                                                                                                                                                        | National (UK)                                                        | Potential effects on lesser horseshoe bats associated within Gregynog SSSI through:<br>Production of aural and visual stimuli and vibration<br>Increased light levels<br>Physical changes to the spatial environment |
| Llyn Du Wildlife Site                                                                                                                                                                                                                                                                                                                                                                | County (Powys)                                                       | Habitat degradation associated with dust deposition and hydrological pollution                                                                                                                                       |
| Ancient Woodland that are within the Site (shown on <b>Figure 5.3</b> )                                                                                                                                                                                                                                                                                                              | National (UK)                                                        | Permanent or temporary land-take/changes to habitats<br>Habitat degradation associated with dust deposition and hydrological pollution                                                                               |
| All Priority Habitats identified within Site, including within Wildlife Site. These comprise: blanket bog, lowland mixed deciduous woodland, montane heath and grassland, upland heathland, inland rock outcrop and scree habitats, native hedgerows, small and medium rivers on acidic geology, and pond habitat (assessed on a precautionary basis as an assumed Priority Habitat) | National (Wales)                                                     | Permanent or temporary land-take/changes to habitats<br>Habitat degradation associated with dust deposition and hydrological pollution                                                                               |
| Foraging/commuting bats                                                                                                                                                                                                                                                                                                                                                              | Local                                                                | Permanent or temporary land-take/changes to habitats<br>Injury/death of individuals of bats as a result of collision risk                                                                                            |

<sup>66</sup> Although embedded mitigation, such as those included within the outline Construction Environment Management Plan (oCEMP), includes measures to avoid/minimise the potential effects of some of these effects (dust deposition, hydrological pollution, aural and visual stimuli and vibration, and increased light levels), the potential effect pathway is taken through to assessment to ensure that effects are fully considered and the need for any additional mitigation properly assessed.

| Receptor type        | Evaluation of nature conservation importance in relation to the Site | Likely Significant Effects <sup>66</sup>                                                                                                                                                                                     |
|----------------------|----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                      |                                                                      | Increased light levels<br>Production of aural and visual stimuli and vibration<br>Physical changes to the spatial environment                                                                                                |
| Roosting bats        | County (Powys) <sup>67</sup>                                         | Permanent or temporary land-take/changes to habitats<br>Increased light levels<br>Production of aural and visual stimuli and vibration<br>Physical changes to the spatial environment                                        |
| Badger <sup>68</sup> | Local                                                                | Permanent or temporary land-take/changes to habitats<br>Increased light levels<br>Production of aural and visual stimuli and vibration                                                                                       |
| Dormouse             | County (Powys)                                                       | Permanent or temporary land-take/changes to habitats<br>Increased light levels<br>Production of aural and visual stimuli and vibration                                                                                       |
| Otter                | Local                                                                | Habitat degradation associated with dust deposition and hydrological pollution<br>Permanent or temporary land-take/changes to habitats<br>Production of aural and visual stimulation and vibration<br>Increased light levels |
| Reptiles             | Local                                                                | Permanent or temporary land-take/changes to habitats                                                                                                                                                                         |
| Great crested newts  | County (Powys)                                                       | Habitat degradation associated with dust deposition and hydrological pollution<br>Permanent or temporary land-take/changes to habitats<br>Production of aural and visual stimulation and vibration<br>Increased light levels |

<sup>67</sup> This is a precautionary assessment, as surveys for roosting bats within the Access Road are ongoing.

<sup>68</sup> Badgers are not usually considered an IEF. However, as they are a licensable species, in accordance with the 'scoping' stage, badgers are included within this Chapter as an IEF.

| Receptor type | Evaluation of nature conservation importance in relation to the Site | Likely Significant Effects <sup>66</sup>                                                                                                                                                                                                        |
|---------------|----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Fish          | Local                                                                | <p>Habitat degradation associated with dust deposition and hydrological pollution</p> <p>Permanent or temporary land-take/changes to habitats</p> <p>Production of aural and visual stimulation and vibration</p> <p>Increased light levels</p> |

5.6.23. The pathways and effects detailed in **Table 5-14** have been scoped out from being subject to further assessment because the potential effects are not considered likely to be significant.

**Table 5-14 – Summary of pathways and effects scoped out of this assessment**

| Potential effects                                                                                                                       | Justification                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Vehicle movements                                                                                                                       | The risk to ecological receptors from vehicles from the construction site, operation or decommissioning activity will be controlled via the implementation of embedded environmental measures ( <b>Chapter 4</b> ). These measures will be effective in negating the risk to ecological features.                                                                                                   |
| Hydrological changes (specifically in relation to impacts to the water table and hydrological regimes, and excluding pollution impacts) | Changes in hydrology are assessed in <b>Chapter 9: Hydrology</b> , this does not identify any likely significant effects on the hydrological regimes across the Site due to the construction, operation or decommissioning of the Proposed Development. Therefore, the ecological features that these designated sites and habitats support will also not be subject to likely significant effects. |

## 5.7 SIGNIFICANCE ASSESSMENT METHODOLOGY

### OVERVIEW

5.7.1. The generic project-wide approach to the assessment methodology is set out in **Chapter 2: Approach to EIA**. However, whilst this has informed the approach that has used in this Ecology assessment, it is necessary to set out how this methodology has been applied, and adapted as appropriate, to address the specific needs of this Ecology assessment.

### EVALUATION OF SIGNIFICANCE

#### Evaluating Significance – adverse and beneficial effects

5.7.2. In determining the significance of a potential effect, the above factors, including the value of the feature (including an assessment of its conservation status), magnitude of the potential impact, and the duration of the impact are considered. These can either be adverse (negatively affecting an ecological feature), or beneficial (where a resulting change from baseline improves the quality of the environment). For a beneficial effect to be considered significant, the conservation status would need to positively increase in line with a magnitude of change of “high” as described in Table 5-12.

- 5.7.3. A similar procedure is used where designated sites may be affected by the Proposed Development, except that the focus is on the effects on the integrity of each site; defined as:

*“The coherence of its ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified”<sup>69</sup>.*

- 5.7.4. The assessment of effects on integrity draws upon the assessment of effects on the conservation status of the features for which the site has been designated. These features are detailed in **Appendix 5N: Habitats Regulations Screening Assessment**.

## SIGNIFICANCE EVALUATION METHODOLOGY

- 5.7.5. The significance of Ecology related effects is derived by considering both the importance of the feature and the magnitude of change. In this assessment, effects are considered to be significant or not significant according to the matrix in **Table 5-15** - Significance evaluation matrix.

**Table 5-15 - Significance evaluation matrix**

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

## 5.8 EMBEDDED MITIGATION MEASURES

- 5.8.1. A range of environmental measures have been embedded into the Proposed Development as outlined in **Section 4.6**. **Table 5-16** below outlines how these embedded mitigation measures influence the Ecology assessment.

<sup>69</sup> Guidance on the use of Habitats Regulations Assessment: Appropriate Assessment. Available at: <https://www.gov.uk/guidance/appropriate-assessment> [Accessed 31/07/2026].

- 5.8.2. Environmental measures required to avoid or reduce biodiversity impacts have been incorporated into an outline Habitat Management Plan (oHMP, see **Appendix 5N: oHMP**). The oHMP sets out the objectives for biodiversity protection mitigation, monitoring and habitat enhancement (where applicable). It sets out a framework and timetable for ecological measures throughout the lifetime of the Proposed Development, including any pre-construction measures that are required. A full HMP will be agreed with the planning authority at the pre-construction stage either as part of the Outline Construction Environmental Management Plan (oCEMP) or as a standalone document.
- 5.8.3. Although the measures within **Table 5-16** form part of the embedded design of the Proposed Development, where they have been informed by ecological surveys and subsequent design iteration, they are described within the assessment to demonstrate application of the step-wise approach. For example, infrastructure has been sited to avoid areas of blanket bog and high-sensitivity soils where practicable and working areas have been constrained to minimise impacts on Priority Habitats. Inclusion of these measures within the assessment provides transparency on how ecological constraints have shaped the design and allows the effectiveness of avoidance and minimisation measures to be clearly considered for each ecological feature.

**Table 5-16 – Summary of the embedded environmental measures**

| Receptor                                    | Potential changes and effects                                                                                                                                                                                                                                                                                  | Embedded measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Compliance mechanism                      |
|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
| <b>Construction / Decommissioning Phase</b> |                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                           |
| <b>Surface water run-off</b>                | The introduction of toxic pollutants or sediments into the environment resulting in changes, loss or damage to terrestrial or freshwater environments and the fauna they support.                                                                                                                              | Construction works would be undertaken using all necessary and practical measures to minimise the release of additional sediment-laden run-off into nearby watercourses. Full measures are detailed in <b>Chapter 9: Hydrology</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | oCEMP/Construction Method Statement (CMS) |
| <b>General species safeguarding</b>         | Death, injury or displacement during construction, e.g. due to entrapment within excavations or collisions with construction traffic; particularly relevant for: <ul style="list-style-type: none"> <li>• Badgers;</li> <li>• Dormice;</li> <li>• Otters;</li> <li>• Reptiles; and</li> <li>• Bats.</li> </ul> | Appropriate pre-construction surveys or inspections will be carried out.<br>A method statement would be prepared under which: <ul style="list-style-type: none"> <li>• Vehicle movement outside of daylight hours would be restricted, vehicle speeds controlled, and operatives warned of the presence of certain species in order to reduce the risk of collisions.</li> <li>• All excavations would have sloped sides or have a means of escape for entrapped animals. Excavations to be checked each morning by operatives prior to work within the excavation.</li> <li>• Construction activities would be restricted to normal working hours (so largely avoiding the hours of darkness, particularly in the summer when species are most active).</li> </ul> Site lighting will be controlled to prevent incidental spillage on to features that may be used by nocturnal species. | oCEMP                                     |
| <b>Habitats</b>                             | Permanent or temporary land-take/changes to habitats resulting in degradation and/or loss of habitat (shown in <b>Figure 5-5</b> )                                                                                                                                                                             | The wind farm infrastructure layout has been designed to avoid the loss of key habitats on-Site (wetland habitats/semi-natural habitats) as far as is practicable, i.e. the infrastructure is generally located within improved grassland, semi-improved grassland and areas of bracken.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Embedded in design                        |

| Receptor               | Potential changes and effects                                                                                                             | Embedded measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Compliance mechanism |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| Habitats               | Permanent or temporary land-take/changes to habitats resulting in degradation and/or loss of habitat                                      | Habitats which would be subject to temporary loss will be re-vegetated and reinstated as soon as possible after construction.<br>Construction activities will only occur in clearly defined working areas, and materials will be stored on areas of hardstanding away from hydrological features.                                                                                                                                                                                        | oCEMP, oHMP          |
| Fish                   | Death, injury, or displacement during construction. Increased light levels, and the production of aural and visual stimuli and vibration. | The design and installation of culverts will be sympathetic to fish passage. The culverts will be unlit, and there will be a designated dark area within 50 m of the entrance to each culvert.                                                                                                                                                                                                                                                                                           | Embedded in design.  |
| <b>Operation Phase</b> |                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      |
| Bats                   | Potential killing or injury to bats in flight, through direct collision with moving turbine blades or barotrauma.                         | A minimum of 50 m stand-off will be maintained between turbine blade tips and the nearest point of key habitat features which are considered more likely to be used by commuting/foraging bats, including woodlands and hedgerows. Any micro-siting of turbines will be undertaken in a manner that maintains this minimum stand-off distance. Compliance with this requirement will be secured through the detailed design process and documented within the relevant management plans. | Embedded in design   |
| Fish                   | Permanent alteration of fish passage through blocking of streams.                                                                         | The design and installation of culverts will be sympathetic to fish passage.                                                                                                                                                                                                                                                                                                                                                                                                             | Embedded in design.  |

## 5.9 ASSESSMENT OF ECOLOGY EFFECTS

- 5.9.1. In accordance with the assessment methodology set out in **Chapter 2**, the assessment first considers effects following implementation of embedded mitigation measures. Where significant or potentially significant effects remain, additional mitigation measures are identified. A residual assessment is then provided taking account of both embedded and additional mitigation. This is detailed in **Table 5-17** (relevant to the construction, operation and decommissioning phases of the Proposed Development).

## CONSTRUCTION/DECOMMISSIONING PHASE

**Table 5-17 - Assessment of potential effects, mitigation, effects, and monitoring during construction and decommissioning**

| Sensitive Receptor | Potential Effects/Additional Mitigation/Effects and Monitoring |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------|----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Llyn Mawr SSSI     | Potential Effects and Embedded Mitigation                      | <p>The Llyn Mawr SSSI lies partially within the southern extent of the Main Site, but no direct hydrological interaction is present. Although the SSSI will not be subject to direct land take or encroachment effects as a result of the Proposed Development given its location beyond the construction footprint, there is the potential for indirect effects through habitat degradation associated with dust deposition and hydrological pollution. In particular, this may impact the lake and bog habitats for which the SSSI is notified.</p> <p>As part of the embedded mitigation, implementation of an oCEMP will control the release of dust and minimise the release of run-off into streams within the Site which are indirectly hydrologically connected to Llyn Mawr SSSI.</p> <p><b>Chapter 6: Ornithology</b> details the assessment of impacts on the ornithological qualifying features of Llyn Mawr SSSI.</p> <p>Llyn Mawr SSSI is a receptor of <b>National (UK)</b> importance and therefore <b>high sensitivity</b>. Following implementation of embedded mitigation measures, the magnitude of impact is predicted to be <b>Negligible</b>, resulting in a <b>Minor adverse</b> effect which is <b>Not Significant</b>.</p> |
|                    | Additional Mitigation                                          | <p>Storage of materials will be confined to areas of hard standing and appropriately located away from sensitive features which have been identified during surveys, such as watercourses which are indirectly hydrologically connected to Llyn Mawr SSSI. This is incorporated within the oCEMP.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                    | Residual Effects and Monitoring                                | <p>Llyn Mawr SSSI is a receptor of <b>National (UK)</b> importance and therefore <b>high sensitivity</b>. Following additional mitigation, the residual effect remains <b>Minor adverse</b> and <b>Not Significant</b>.</p> <p>There is no requirement for monitoring relating to the Ecology qualifying features of Llyn Mawr SSSI.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Gregynog SSSI      | Potential Effects and Embedded Mitigation                      | <p>Gregynog SSSI is 6 km east of the Site and therefore will not be subject to direct land take or encroachment effects as a result of the Proposed Development. However, it supports foraging lesser horseshoe bats, which are known to use the Site as recorded during the bat activity surveys. Lesser horseshoe bats were identified as having a 'Low' activity level within the Site when analysed using EcoBat.</p> <p>Predominantly, within the Site, open upland habitats would be affected, as well as treelines (311.0 m to be permanently removed, within the footprint of the Access Road, and 381.5 m to be temporarily removed,</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

| Sensitive Receptor | Potential Effects/Additional Mitigation/Effects and Monitoring |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|--------------------|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                    |                                                                | <p>within the oversail areas and temporary working width) and hedgerows (1566.7 m to be permanently removed, and 1919.1 m to be temporarily removed) within the Access Road. Temporarily removed woodlands and hedgerows will be reinstated following construction. Removal may impact connectivity of the SSSI within the wider landscape. Within the Site, 15% of woodland will be permanently removed, 30% of treelines will be permanently removed, and 54% of hedgerows will be permanently removed. This equates to the permanent loss of 0.28 ha of lowland mixed deciduous woodland, a worst case permanent loss of 0.43 ha of Ancient Woodland, and 297.6 m of hedgerow.</p> <p>The development would result in the permanent loss of areas of habitats suitable to support foraging and commuting bats across the entirety of the Site.</p> <p>An offset between woodland habitat and construction activities within the Main Site is embedded within the design avoiding effects upon these features, as bat habitat. A minimum of 50 m stand-off will be maintained between turbine blade tips and the nearest point of linear/foraging features considered likely to be well-used by bats such as treelines, woodland, and some waterbodies.</p> <p>Construction will also adhere to an oCEMP which incorporates measures to minimise effects on bats. Nighttime working will be controlled in the oCEMP, such that it will not occur unless required by exception.</p> <p>Gregynog SSSI is a receptor of <b>National (UK)</b> importance and therefore <b>High</b> sensitivity. Following implementation of embedded mitigation measures, the magnitude of impact on the lesser horseshoe bat qualifying interest is predicted to be <b>Low</b>, resulting in a <b>Moderate adverse</b> effect which is <b>Potentially Significant</b>.</p> |
|                    | Additional Mitigation                                          | <p>Areas that have been identified as being suitable habitat to support commuting and foraging bats, such as treelines, hedgerows and watercourses, will not be impinged on by temporary lighting. This is incorporated within the oCEMP.</p> <p>The habitat loss represents a proportion of suitable foraging habitat for lesser horseshoe bats which may be supported by Gregynog SSSI within the Site. There will be no loss of suitable habitat outside of the Site in the wider landscape context. Additional mitigation and enhancement measures secured through the oHMP include enhancement of approximately 1.12 ha of retained woodland through supplementary planting, woodland management, selective thinning and coppicing, together with enhancement of 985 m of retained hedgerows to improve connectivity and woodland resilience (<b>Appendix 50</b>).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|                    | Residual Effects and Monitoring                                | <p>Gregynog SSSI is a receptor of <b>National (UK)</b> importance and therefore <b>High</b> sensitivity. Following implementation of additional mitigation measures, the residual magnitude of impact on the lesser horseshoe</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

| Sensitive Receptor              | Potential Effects/Additional Mitigation/Effects and Monitoring |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------------------|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                 |                                                                | <p>bat qualifying interest is predicted to be <b>Negligible</b>, resulting in a <b>Minor adverse</b> effect which is <b>Not Significant</b>.</p> <p>There is no requirement for monitoring relating to Gregynog SSSI.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Llyn Du Wildlife Site           | Potential Effects and Embedded Mitigation                      | <p>The Llyn Du Wildlife Site, 0.5 km south of the Main Site, is not directly hydrologically connected to the Site. Although the Wildlife Site will not be subject to direct land take or encroachment effects as a result of the Proposed Development given its location beyond the construction footprint, there is the potential for indirect effects through habitat degradation associated with dust deposition. In particular, this may impact the upland lake habitat for which the Wildlife Site is designated.</p> <p>Construction will adhere to measures outlined within the oCEMP to minimise construction/decommissioning stage effects on this Wildlife Site. Construction works would be undertaken using good practice measures to avoid the release of dust and additional sediment-laden run-off into nearby watercourses.</p> <p>Llyn Du Wildlife Site is of <b>County (Powys)</b> importance and therefore <b>Medium</b> sensitivity. Following implementation of embedded mitigation measures, the magnitude of impact is predicted to be <b>Negligible</b>, resulting in a <b>Negligible adverse</b> effect which is <b>Not Significant</b>.</p> |
|                                 | Additional Mitigation                                          | <p>Storage of materials will be confined to areas of hard standing and appropriately located away from sensitive features, such as watercourses which are indirectly hydrologically connected to Llyn Du Wildlife Site. This is incorporated within the oCEMP.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                                 | Residual Effects and Monitoring                                | <p>Llyn Du Wildlife Site is of <b>County (Powys)</b> importance and therefore <b>Medium</b> sensitivity. Following implementation of additional mitigation measures, the residual effect remains <b>Negligible adverse</b> and <b>Not Significant</b>.</p> <p>There is no requirement for monitoring relating to Llyn Du Wildlife Site.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Priority habitats – blanket bog | Potential Effects and Embedded Mitigation                      | <p>The Proposed Development would lead to permanent habitat loss through direct land take of blanket bog within the Site. This is to comprise 0.07 ha, of the 0.69 ha that has been identified within the Site. The area to be impacted is part of the access track between T3 and T4, and beneath the crane pad of T8.</p> <p>Turbine and access track siting has been designed to avoid blanket bog as much as is practicably possible. The design of the Proposed Development has undergone various iterations in order to avoid blanket bog habitats as far as possible. The design of the Proposed Development is such that an area of blanket bog modified by grazing identified during the NVC survey carried out in 2024 is avoided (as described in <b>Appendix 5C</b>).</p>                                                                                                                                                                                                                                                                                                                                                                                 |

| Sensitive Receptor | Potential Effects/Additional Mitigation/Effects and Monitoring |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
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|                    |                                                                | <p>Embedded mitigation will ensure that there are no indirect effects on blanket bog habitats through ensuring that there is no dust deposition or watercourse pollution. Further, any changes to the hydrological regime will not be significant (see <b>Chapter 9: Hydrology</b>) and will therefore not lead to significant effects on the blanket bog habitat. Where access tracks overlie areas of blanket bog, these will be floated and therefore will not have a significant effect on the hydrological regime of the blanket bog.</p> <p>Blanket bog is of <b>National (Wales)</b> importance and therefore <b>Medium</b> sensitivity. Following implementation of embedded mitigation measures, permanent habitat loss would result in a <b>Medium</b> magnitude impact and a <b>Moderate adverse</b> effect which is <b>Potentially Significant</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                    | Additional Mitigation                                          | <p>Additional mitigation put in place to minimise effects on blanket bog habitats have informed the oCEMP and the design of the Proposed Development. These measures include provision of a Tool Box Talk (TBT) in relation to blanket bog. A TBT is a short briefing delivered to personnel working on a construction site to raise awareness of environmental constraints and remind personnel of working practices. In relation to blanket bog, the TBT will include measures to ensure construction and construction activities only occur in clearly defined working areas which exclude blanket bog as far as possible, and storage of materials on areas of hardstanding away from blanket bog or hydrological features.</p> <p>To mitigate the loss of 0.07 ha blanket bog (10.1% of the identified blanket bog within the Site) which will occur during the construction phase and seek to achieve enhancement in the longer term, the <b>Net Benefit for Biodiversity Report</b> and <b>Appendix P: oHMP</b> provide further details of additional mitigation measures to be adopted by the Applicant. The oHMP sets out long-term habitat management and monitoring of habitats including blanket bog. An area comprising high sensitivity soils, marshy grassland and blanket bog, covering an area of 3.88 ha, has been proposed to be enhanced, which includes the area of blanket bog identified in the 2024 NVC. A final HMP is to be agreed following discussion with landowners. The oHMP includes measures such as:</p> <ul style="list-style-type: none"> <li>• Hydrological enhancement (change in specific locations, such as existing areas of degraded peat habitats), to create additional areas suitable to create areas of blanket bog.</li> <li>• Bracken clearance and scrub management in areas identified as being potentially suitable to support Priority Habitats, including blanket bog.</li> <li>• Changes in stock management, such as through the introduction of fences and walls to alter grazing pressures designed to enhance the condition of existing enhanced habitats.</li> </ul> |

| Sensitive Receptor              | Potential Effects/Additional Mitigation/Effects and Monitoring                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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|                                 | <ul style="list-style-type: none"> <li>Enhancement of areas of the Site to compensate for Priority Habitat removed to facilitate the Proposed Development. An NBB assessment has been undertaken to ensure appropriate and proportionate mitigation is offered.</li> </ul> <p>To reduce the magnitude of effect, habitat management and restoration measures will be delivered through the oHMP. These measures include:</p> <ul style="list-style-type: none"> <li>enhancement of approximately 3.88 ha of retained Blanket Bog, marshy grassland and high-sensitivity soil habitats;</li> <li>restoration of site hydrology through ditch blocking within areas affected by historical drainage;</li> <li>reduction and management of grazing pressure to minimise trampling, erosion and degradation of peat-forming vegetation;</li> <li>bracken control to reduce competitive pressure and encourage development of more diverse wetland and peatland vegetation communities; and</li> <li>long-term management, monitoring and adaptive review through the oHMP over the operational life of the Proposed Development.</li> </ul> <p>These measures are intended to improve hydrological function, habitat condition and the resilience of retained peatland habitats across an area greater than that affected by the Proposed Development.</p> <p>Due to the nature of blanket bog, the enhancement of new areas is likely to take time and may require adaptive management (for example in relation to hydrological processes)</p> |
| Residual Effects and Monitoring | <p>There will be no indirect effects as a result of the Proposed Development on blanket bog, as there are to be no significant effects on the hydrological regime of the Site (see <b>Chapter 9</b>), and providing measures detailed in the oCEMP are adhered to. These measures include good practice measures relating to dust deposition and pollution of water courses, as well as ensuring construction activities only occur in clearly defined working areas which exclude blanket bog as far as possible, and storing materials on areas of hardstanding away from blanket bog or hydrological features.</p> <p>There will be permanent loss of 0.07 ha blanket bog as a result of the Proposed Development.</p> <p>Blanket bog is of <b>National (Wales)</b> importance and therefore <b>Medium</b> sensitivity. Following implementation of habitat enhancement and management measures within the oHMP, a residual <b>Moderate adverse</b> effect remains. The effect is <b>Significant</b> due to the permanent loss of blanket bog habitat and the timescales</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

| Sensitive Receptor                                                                                                                                                                                                  | Potential Effects/Additional Mitigation/Effects and Monitoring |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
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|                                                                                                                                                                                                                     |                                                                | <p>required for restoration and habitat development.</p> <p>Blanket bog habitats within the Site will be subject to NVC surveys in the first year post-construction to establish the baseline. Following this, NVC surveys will be undertaken in years 1, 2, 3, 5, and then every 5 years for 25 years following the baseline survey, or as appropriate. Variables to be recorded, in addition to standard NVC data, include sphagnum cover, proportion of ground with standing water, and proportion of wet/waterlogged ground. Walkover surveys will be undertaken every other year for 25 years to provide a high-level review of the management.</p> <p>Dipwells will be installed at a range of monitoring points, and monitored for at least one year prior to drain-blocking, and will continue for at least five years. The monitoring measures will be secured through the HMP, which will be secured by planning condition.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Priority Habitats – lowland mixed deciduous woodland, montane heaths and grassland, upland heathland, inland rock outcrops and scree habitats, hedgerows and small, medium altitude rivers on acidic geology, ponds | Potential Effects and Embedded Mitigation                      | <p>The Proposed Development would lead to permanent habitat loss through direct land take of the following Priority Habitats within the Site:</p> <ul style="list-style-type: none"> <li>• Lowland mixed deciduous woodland (0.43 ha);</li> <li>• Montane heaths and grassland (1.04 ha);</li> <li>• Upland heathland (0.47 ha);</li> <li>• Inland rock outcrops and scree habitats (0.08 ha);</li> <li>• Hedgerows (297.6 m); and</li> <li>• Small, medium altitude rivers on acidic geology (334.53 m)</li> </ul> <p>These are shown in <b>Figure 5-5</b>.</p> <p>Embedded measures have minimised the effect of the Proposed Development on Priority Habitats as far as possible through the design of the Proposed Development, through minimising land-take across multiple iterations of the Proposed Development design. All rivers will be culverted to avoid loss of rivers and streams, although riparian habitat associated with the rivers and streams will be lost. There will be no permanent habitat loss of ponds within the Site. Further, the use of good practice measures will ensure that Priority Habitats would not be subject to indirect effects, such as through dust deposition or hydrological pollution.</p> <p>The Priority Habitats are of <b>National (Wales)</b> importance and therefore <b>Medium</b> sensitivity. Following implementation of embedded mitigation measures, the loss of habitat would result in a <b>Medium</b> magnitude impact and a <b>Moderate adverse</b> effect which is <b>Potentially Significant</b>.</p> |
|                                                                                                                                                                                                                     | Additional Mitigation                                          | <p>Additional mitigation put in place to minimise effects on Priority Habitats have informed the oCEMP and the design of the Proposed Development. These measures include provision of a TBT in relation to Priority Habitats, ensuring construction activities only occur in clearly defined working areas which exclude Priority</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

| Sensitive Receptor | Potential Effects/Additional Mitigation/Effects and Monitoring |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
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|                    |                                                                | <p>Habitats as far as possible, and storing materials on areas of hardstanding away from Priority Habitats or hydrological features.</p> <p>In order to mitigate this habitat loss that will occur during the construction phase and seek to achieve enhancement in the longer term, an oHMP has been devised. The oHMP sets out long-term habitat management and monitoring focussing on key habitats (such as these Priority Habitats). The oHMP includes measures such as:</p> <ul style="list-style-type: none"> <li>• Hydrological alterations to create additional areas suitable to support areas of montane heaths and grasslands.</li> <li>• Bracken clearance and scrub management at areas identified as being potentially suitable to support these Priority Habitats, such as where bracken is presently dominating potential upland heathland.</li> <li>• Changes in stock management, such as through the introduction of fences and walls to alter grazing pressures designed to enhance the condition of existing and newly created habitats.</li> <li>• Replacement and enhancement of Priority Habitats removed to facilitate the Proposed Development. A NBB assessment (<b>Net Benefit for Biodiversity report</b>) has been undertaken to ensure appropriate and proportionate mitigation is offered.</li> </ul> <p>This has been informed by the baseline and incorporates long term management and monitoring of the habitats present within the Site. Candidate areas to compensate loss are within the Site and are adjacent to the existing habitats being lost to avoid negative effects relating to fragmentation/reduction in habitat connectivity in the longer term.</p> |
|                    | Residual Effects and Monitoring                                | <p>There will be permanent loss of:</p> <ul style="list-style-type: none"> <li>• Lowland mixed deciduous woodland (0.43 ha);</li> <li>• Montane heaths and grassland (1.04 ha);</li> <li>• Upland heathland (0.47 ha);</li> <li>• Inland rock outcrops and scree habitats (0.08 ha); and</li> <li>• Hedgerows (297.6 m).</li> </ul> <p>This represents a medium magnitude change, resulting in a reduction in habitat coverage on Site, although one that is a relatively small proportion of the habitat resource at a wide scale (i.e. County or National scale), and is not considered to significantly affect the continued presence or function of retained habitat.</p> <p>The oHMP details enhancement of retained habitats present within the Site. The enhancement of these habitats is expected to be delivered in the short- to medium-term during the construction and operational</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

| Sensitive Receptor | Potential Effects/Additional Mitigation/Effects and Monitoring |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
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|                    |                                                                | <p>phase. Given the nature of these Priority Habitats, it is anticipated that habitat enhancement will be successful and the target is for overall change to be beneficial.</p> <p>Areas of upland heathland, grassland and woodland habitats within the Site will be subject to NVC surveys in the first year post-construction to establish the baseline. Following this, NVC surveys will be undertaken in years 1, 2, 3, 5, and then every 5 years for 25 years following the baseline survey, or as appropriate. Walkover surveys will be undertaken every other year to provide a high-level review of the management.</p> <p>The Priority Habitats are of <b>National (Wales)</b> importance and therefore <b>Medium</b> sensitivity. Following habitat enhancement secured through the oHMP, the residual impact is predicted to reduce to <b>Low magnitude</b>, resulting in a <b>Minor adverse</b> effect which is <b>Not Significant</b>.</p>                                                                                                                                                                                                                                                                        |
| Ancient Woodland   | Potential Effects and Embedded Mitigation                      | <p>Where the Access Road passes through an area identified as an ASNW, an existing track is already in place in this location. This may be subject to further widening as part of the Proposed Development. This will be minimised as far as possible. In the absence of a detailed finalised design of this area, a worst case basis of 0.43 ha requiring clearance has been assumed.</p> <p>Access Road siting has been designed to avoid removal of Ancient Woodland as much as is practicably possible. The design of the Proposed Development has undergone various iterations in order to avoid woodland habitats, including Ancient Woodland, as far as possible.</p> <p>Construction will adhere to measures outlined within the oCEMP to minimise construction/decommissioning stage effects relating to habitat degradation of Ancient Woodland associated with dust deposition and hydrological pollution.</p> <p>Ancient Woodland is of <b>National (UK)</b> importance and therefore <b>High</b> sensitivity. Following implementation of embedded mitigation measures, permanent habitat loss would result in a <b>Medium</b> magnitude impact and a <b>Major adverse</b> effect which is <b>Significant</b>.</p> |
|                    | Additional Mitigation                                          | <p>Additional mitigation put in place to minimise effects on Ancient Woodland have informed the oCEMP. These measures include provision of a TBT in relation to Ancient Woodland, ensuring construction and construction activities only occur in clearly defined working areas which exclude Ancient Woodland as far as possible, and storing materials on areas of hardstanding away from Ancient Woodland.</p> <p>The following additional mitigation measures are subject to further review of the extent of the Ancient Woodland to be permanently lost as a result of the construction phase of the Proposed Development.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

| Sensitive Receptor              | Potential Effects/Additional Mitigation/Effects and Monitoring                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
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|                                 | <p>Recommendations relating to Ancient Woodland as detailed in <b>Appendix 5Q: Arboricultural Desk Study</b> will be followed:</p> <ul style="list-style-type: none"> <li>• Compensatory planting will be implemented where loss or deterioration of Ancient Woodland is unavoidable.</li> <li>• Semi-natural native broadleaf planting will be stocked at a minimum density of 1,600 stems per hectare.</li> <li>• Detailed designs for any approved development should incorporate existing trees where possible, but where this is not reasonably practicable the losses could be mitigated by suitable post-construction landscape design including a Tree Replacement Strategy.</li> </ul> <p>Areas subject to temporary impacts will be reinstated following construction, with woodland reinstatement undertaken as early as possible. These habitats will then be managed and monitored through the HMP to promote successful establishment and long-term development.</p> <p>Planting of trees will aim to deliver enhancement of woodland habitat during the construction phase, which will establish during the operational phase.</p> <p>Further, the oHMP (<b>Appendix 5O</b>) details measures to enhance lowland deciduous woodland within the Site as follows:</p> <ul style="list-style-type: none"> <li>• Supplementary planting of deciduous trees within existing woodland areas.</li> <li>• Selective thinning and rotational coppicing within existing woodland to promote a varied age structure, increase light penetration, and encourage natural regeneration and ground flora development.</li> </ul> |
| Residual Effects and Monitoring | <p>There will be a loss of Ancient Woodland within two land parcels within the Site, totalling a maximum of 0.43 ha of permanent loss. This will be minimised as far as possible. The oHMP (<b>Appendix 5O</b>) considers the Ancient Woodland, it incorporates habitat enhancement, management and monitoring.</p> <p>Ancient Woodland is of <b>National (UK)</b> importance and therefore <b>High</b> sensitivity. Woodland enhancement elsewhere provides biodiversity benefits but does not replace Ancient Woodland. Therefore the enhancement reduces the magnitude of effect but does not result in a beneficial effect. Despite compensatory planting and woodland enhancement measures, a <b>Major adverse</b> effect remains due to the permanent loss of Ancient Woodland. The residual effect is <b>Significant</b>.</p> <p>Ancient Woodland habitats within the Site will be subject to NVC surveys in the first year post-construction to establish the baseline. Following this, NVC surveys will be undertaken in years 1, 2, 3, 5, and then every 5</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

| Sensitive Receptor      | Potential Effects/Additional Mitigation/Effects and Monitoring |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
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|                         |                                                                | years for 25 years following the baseline survey, or as appropriate. Walkover surveys will be undertaken every other year to provide a high-level review of the management.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Commuting/foraging bats | Potential Effects and Embedded Mitigation                      | <p>The Proposed Development will result in a loss of habitats used for foraging or commuting. Predominantly, within the Site, open upland habitats would be affected, as well as treelines (311.0 m to be permanently removed, and 381.5 m to be temporarily removed) and hedgerows (1566.7 m to be permanently removed, and 1919.1 m to be temporarily removed) within the Access Road. The development would result in the permanent loss of areas of open upland habitats and woodlands and treelines.</p> <p>Embedded within the design, a minimum of 50 m stand-off will be maintained between turbine blade tips and the nearest point of linear/foraging features considered likely to be well-used by bats such as treelines, woodland, and some waterbodies.</p> <p>Construction will also adhere to an oCEMP which incorporates measures to minimise effects on bats. Specifically, it will ensure that temporary lighting does not impinge on features that are known to be favoured by bats for commuting or foraging. Night time working will also be controlled in the oCEMP, such that it will not occur unless required by exception.</p> <p>There will be loss of woodland and linear features such as treelines and hedgerows which have been assumed to be used by commuting/foraging bats to facilitate the construction of the Access Road. The design of the Access Road is such that this loss has been minimised as far as possible.</p> <p>The commuting and foraging bat assemblage is of <b>Local</b> importance and therefore <b>Low</b> sensitivity. Following implementation of embedded mitigation measures, the magnitude of impact is predicted to be <b>Low</b>, resulting in a <b>Negligible adverse</b> effect which is <b>Not Significant</b>.</p> |
|                         | Additional Mitigation                                          | <p>Areas that have been identified as being suitable habitat to support commuting and foraging bats, such as treelines, hedgerows and watercourses, will not be impinged on by temporary lighting. This is incorporated within the oCEMP.</p> <p>Planting of trees and enhancement of retained linear features such as hedgerows will deliver the enhancement of woodland habitat and linear features during the construction phase, as detailed in the oHMP (<b>Appendix 50</b>). These features are assumed to be suitable to support commuting and foraging bats. In the longer term, this will result in an increase in the area of and quality of habitats suitable to support foraging bats. For example, the enhancement of tree lines and hedgerows would lead to an increase in connectivity, leading to increased commuting opportunity for bats.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

| Sensitive Receptor | Potential Effects/Additional Mitigation/Effects and Monitoring |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
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|                    | Residual Effects and Monitoring                                | <p>Effects upon bats during the construction phase will be avoided through measures set out in the oCEMP to avoid the risk of disturbance or changes to habitat availability relating to increased light levels, and aural and visual stimuli. There will be some severance of commuting routes for bats along the Access Road, with 1877.7 m of tree lines and hedgerows requiring permanent removal (out of 3901.6 m of tree lines and hedgerows within the Site). However, this will be compensated for by enhancement of tree lines, hedgerows and woodlands directly adjacent Access Road (covering 6.2 ha).</p> <p>Habitat enhancement measures will further reduce effects, and the residual effect remains <b>Not Significant</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Roosting bats      | Potential Effects and Embedded Mitigation                      | <p>The Main Site does not have any trees or structures suitable to support roosting bats within 200 m of the turbine blade tips.</p> <p>There are no known bat roosts within the Access Road. However, surveys to assess the presence/likely absence of roosting bats within trees which may be affected by the construction of the Access Road are ongoing and will be detailed in the final ES. For the purposes of this assessment, a precautionary approach has been taken and it has been assumed that roosts of high conservation status and rare species are present.</p> <p>The design has been developed to avoid habitats that would be potentially suitable for roosting bats, including woodlands, treelines, and individual trees, as far as practicable. This included design changes to avoid areas of mature woodland, as described in <b>Appendix 5H</b>.</p> <p>The commuting and foraging bat assemblage is of <b>Local</b> importance and therefore <b>Low</b> sensitivity. Roosting bats are assessed on a precautionary basis as being of <b>County (Powys)</b> importance and therefore <b>Medium</b> sensitivity. Following implementation of embedded mitigation measures, the magnitude of impact is predicted to be <b>Low</b>, resulting in a <b>Minor adverse</b> effect which is <b>Not Significant</b>.</p> |
|                    | Additional Mitigation                                          | <p>Should a bat roost be identified within trees within the Access Road, an EPS Licence (EPSL) will be obtained to facilitate development. This will set out mitigation measures in detail.</p> <p>Regardless of whether a bat roost is identified, all trees with suitability to support roosting bats which are to be directly affected by the Proposed Development will be fully inspected by a licenced bat ecologist immediately prior to works to ensure no bats are present. In the event bats are found to be present, works would be postponed, and advice sought from NRW. It may be necessary to apply for an EPSL.</p> <ul style="list-style-type: none"> <li>■ Bats roosting in trees exhibit an increased frequency of roost switching behaviours, and therefore all trees with roosting suitability should be considered an important part of the roosting resource. Mitigation for the loss of PRFs will comprise installation of bat boxes prior to removal of trees with PRFs. These measures</li> </ul>                                                                                                                                                                                                                                                                                                                 |

| Sensitive Receptor | Potential Effects/Additional Mitigation/Effects and Monitoring |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
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|                    |                                                                | will be secured through the ecological mitigation commitments for the Proposed Development and maintained through the HMP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                    | Residual Effects and Monitoring                                | The commuting and foraging bat assemblage is of <b>Local</b> importance and therefore <b>Low</b> sensitivity. Following implementation of roost-specific mitigation measures, the residual effect remains <b>Minor adverse</b> and <b>Not Significant</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Badger             | Potential Effects and Embedded Mitigation                      | <p>There would be a permanent and temporary habitat loss required to facilitate construction on Site, in areas that could be used for foraging, commuting or sett-building. Predominantly, open upland habitats will be affected, which would affect the value of the Site for supporting badger. The Proposed Development would result in the permanent loss of relatively small areas of open upland habitats, which have suitability for sett-building badger.</p> <p>An active outlier badger sett is present within the construction footprint (<b>Appendix 5D</b>). Construction activities therefore have the potential to result in the loss of this sett, together with temporary disturbance to commuting and foraging badgers associated with vegetation clearance, construction traffic and site activity. There is also potential for injury or mortality during construction works if appropriate mitigation measures are not implemented.</p> <p>Further, there is the potential for badger to be impacted by increased light levels, and the production of aural and visual stimuli and vibration during construction/decommissioning.</p> <p>Construction will adhere to measures outlined within the oCEMP to minimise construction/decommissioning stage effects on badger.</p> <ul style="list-style-type: none"> <li>• All excavations would have sloped sides or a means of escape for entrapped animals. Excavations are to be checked each morning by operatives prior to work within the excavation.</li> <li>• Construction activities would be restricted to normal working hours, largely avoiding working during hours of darkness.</li> </ul> <p>Badger is of <b>Local</b> importance and therefore <b>Low</b> sensitivity. Following implementation of embedded mitigation measures, the magnitude of impact is predicted to be <b>Low</b>, resulting in a <b>Negligible adverse</b> effect which is <b>Not Significant</b>.</p> |
|                    | Additional Mitigation                                          | Additional measures specific to badger are incorporated within the oCEMP. This includes provision of a TBT, an ecologist undertaking a pre-works check for badgers, and control of site lighting to prevent incidental spillage onto features that are suitable for badger, such as woodland.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

| Sensitive Receptor | Potential Effects/Additional Mitigation/Effects and Monitoring |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------------------|----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                    |                                                                | <p>A licence will be procured from NRW in order to exclude<sup>70</sup> and destroy the sett.</p> <p>Pre-construction badger surveys will be undertaken to identify any changes in badger activity prior to commencement of works. Where newly established setts are identified, these will be avoided through the use of exclusion zones and appropriate buffer distances where practicable. Where avoidance is not practicable due to infrastructure constraints, an appropriate mitigation strategy will be developed and implemented, which may include sett closure under licence where required.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                    | Residual Effects and Monitoring                                | <p>An active outlier sett is present within the construction footprint and will require closure to facilitate the Proposed Development. Mitigation will involve pre-construction checks, implementation of an agreed badger mitigation strategy, and closure of the sett under the supervision of a suitably qualified ecologist.</p> <p>Any new setts that are constructed pre-construction will be protected through measures contained within the oCEMP (and delivered under licence from NRW as required).</p> <p>The Proposed Development would result in the loss of an active outlier sett. Mitigation measures, including pre-construction surveys, supervised sett closure and implementation of an agreed badger mitigation strategy, would reduce the risk of injury or mortality and maintain the local badger population. Where required, works would be undertaken under an appropriate licence.</p> <p>There is not considered to be any requirement for monitoring of badger following the construction of the Proposed Development.</p> <p>Badger is of <b>Local</b> importance and therefore <b>Low</b> sensitivity. Following implementation of species protection measures and licensing requirements, the residual effect is <b>Negligible adverse</b> and <b>Not Significant</b>.</p> |
| Dormouse           | Potential Effects and Embedded Mitigation                      | <p>The Proposed Development would result in a permanent and temporary habitat loss required to facilitate construction on Site, in areas that could be used for foraging, commuting or nest-building. Predominantly, open upland habitats will be affected, which would not affect the value of the Site for supporting dormice. The Proposed Development would result in the permanent loss of areas of woodland (0.43 ha of the 2.81 ha on Site), treelines (311.0m of the 1010.2 m on Site) and hedgerows (1566.7 m of the 2891.4 m on Site), which have suitability for dormice.</p> <p>Further, there is the potential for dormice to be impacted by increased light levels, and the production of aural and visual stimuli and vibration during construction/decommissioning.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

<sup>70</sup> 'Exclusion' in this context refers to removing, or 'excluding', badgers from their setts.

| Sensitive Receptor | Potential Effects/Additional Mitigation/Effects and Monitoring |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------------|----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                    |                                                                | <p>The design has been developed to avoid habitats that would be suitable for dormice, including woodlands, hedgerows, and treelines, as far as practicable. Commuting connectivity has also been retained as far as possible. Existing tracks are being used as far as possible.</p> <p>Dormice are known to be present within the Access Road and are assumed to be present within all suitable habitats that were not surveyed (woodlands, hedgerows, treelines and scrub) within the Site.</p> <p>Dormouse is of <b>County (Powys)</b> importance and therefore <b>Medium</b> sensitivity. Following implementation of embedded mitigation measures, the magnitude of impact is predicted to be <b>Low</b>, resulting in a <b>Minor adverse</b> effect which is <b>Not Significant</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                    | Additional Mitigation                                          | <p>Additional measures specific to dormice are incorporated within the oCEMP. This includes provision of a TBT, an ecologist undertaking a pre-works check for dormice, and control of site lighting to prevent incidental spillage onto features that are increasingly suitable for dormice, such as woodland, tree lines and hedgerows.</p> <p>A EPSL will be obtained to facilitate development. This will set out mitigation measures in detail. The mitigation measures will be contained within the licence, and are likely to comprise:</p> <ul style="list-style-type: none"> <li>• A pre-works check of habitats suitable to support dormice within the Site by a suitably experienced and qualified ecologist.</li> <li>• An ecological watching brief of vegetation clearance works by a suitable experienced and qualified ecologist acting as an Ecological Clerk of Works (ECoW).</li> <li>• Seasonal timing of clearance works and appropriate phasing to reduce the risk of incidental killing and/or injury of dormice.</li> <li>• Protection of retained habitat through clearly demarcated exclusion zones.</li> <li>• Enhancement of new habitat to offset habitat loss arising from the Proposed Development.</li> </ul> <p>Individual dormice will be protected from direct effects (such as incidental injury during vegetation clearance) through precautions set out in the EPSL method statement and will have access to the majority of existing foraging, commuting, and nest-building habitat throughout the construction period.</p> |
|                    | Residual Effects and Monitoring                                | <p>Effects on dormice that may be present within the Site will be avoided or minimised through measures that will be set out in an EPSL method statement.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

| Sensitive Receptor | Potential Effects/Additional Mitigation/Effects and Monitoring |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                    |                                                                | <p>The monitoring requirements for dormice following the construction of the Proposed Development will be detailed within the EPSL method statement.</p> <p>Dormouse is of <b>County (Powys)</b> importance and therefore <b>Medium</b> sensitivity. Following implementation of the EPS licence and associated mitigation measures, the residual effect remains <b>Minor adverse</b> and <b>Not Significant</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Otter              | Potential Effects and Embedded Mitigation                      | <p>There will be no permanent or temporary loss of habitats considered optimal to support commuting or foraging otter within the Site. Watercourses that will be impacted as a result of the Proposed Development are considered to be of suitability to support otter, with otter evidence identified within the Main Site. In the absence of mitigation, there is potential for habitat degradation resulting from dust deposition and hydrological pollution.</p> <p>The Proposed Development also has the potential to impact otter through the production of aural and visual stimuli, increased light levels, and vibration within the Site.</p> <p>Direct effects upon locations identified as potential otter resting sites are avoided through embedded design measures, to include retention of watercourse connectivity, stand-offs from potential resting places, and implementation of pollution prevention measures.</p> <p>Construction will adhere to measures outlined within the oCEMP to minimise construction/decommissioning stage effects on watercourses within which otters may be present. Specifically, construction works will be undertaken using all necessary and practical measures to avoid the release of additional sediment-laden run-off into nearby watercourses.</p> <p>Otter is of <b>Local</b> importance and therefore <b>Low</b> sensitivity. Following implementation of embedded mitigation measures, the magnitude of impact is predicted to be <b>Low</b>, resulting in a <b>Negligible adverse</b> effect which is <b>Not Significant</b>.</p> |
|                    | Additional Mitigation                                          | <p>Additional measures specific to otter are incorporated within the oCEMP. This includes provision of a TBT, an ecologist undertaking a pre-works check for otter, and control of site lighting to prevent incidental spillage onto features that are increasingly suitable for otter, such as watercourses.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                    | Residual Effects and Monitoring                                | <p>Otters are unlikely to be subject to residual effects following the implementation of measures within the oCEMP to minimise the release of run-off into rivers as a result of the construction of the Proposed Development.</p> <p>There is not considered to be any requirement for monitoring of otter following the construction of the Proposed Development.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

| Sensitive Receptor | Potential Effects/Additional Mitigation/Effects and Monitoring |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------------|----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                    |                                                                | Otter is of <b>Local</b> importance and therefore <b>Low</b> sensitivity. The residual effect remains <b>Negligible adverse</b> and <b>Not Significant</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Reptiles           | Potential Effects and Embedded Mitigation                      | <p>There would be both permanent and temporary habitat loss associated with the Site, which could be used by reptiles. Predominantly, open upland habitats and heathland would be affected, which could affect the value of the Site for supporting reptiles. Further, hibernacula are present within the Site. Overall, a relatively small proportion of the habitat available to reptiles would be impacted by the Proposed Development. In the absence of mitigation there is potential for direct killing and injury of reptiles, in addition to a reduction in habitat availability.</p> <p>The design was developed to minimise the construction footprint required, thereby retaining the majority of semi-natural habitats on Site, minimising effects on species including reptiles.</p> <p>Where construction will occur in habitat suitable for reptiles this will adhere to measures outlined within the oCEMP to minimise the risk of direct killing and injury of reptiles. This will be implemented under the supervision of an EcoW and include the avoidance of reptile hibernacula in the first instance and micro-siting around such hibernacula where appropriate. Habitat will be checked to confirm the likely absence of reptiles prior to works.</p> <p>Reptiles are of <b>Local</b> importance and therefore <b>Low</b> sensitivity. Following implementation of embedded mitigation measures, the magnitude of impact is predicted to be <b>Low</b>, resulting in a <b>Negligible adverse</b> effect which is <b>Not Significant</b>.</p> |
|                    | Additional Mitigation                                          | <p>To facilitate construction, there will be localised habitat removal which will be mitigated through habitat enhancement on Site (as set out with respect to Priority Habitats). This includes creation of hibernacula where these are required to be removed to facilitate the Proposed Development.</p> <p>To protect retained habitat during the construction phase, reptile exclusion fencing should be installed for any construction access routes that sit adjacent to habitats with high suitability, to create a barrier between the working areas and suitable habitat. Fencing locations and extent should be agreed upon following consultation with a suitably experienced ecologist.</p> <p>Any vegetation clearance and removal of refugia should be conducted between April and September.</p> <p>A suitable experienced ECoW should be appointed to oversee all works with the potential to affect reptiles. The ECoW would be responsible for implementing and overseeing any reptile mitigation measures, including oversight of capture and exclusion operations (if required) and destructive searches. This has been incorporated within the oCEMP.</p>                                                                                                                                                                                                                                                                                                                                                                                     |

| Sensitive Receptor | Potential Effects/Additional Mitigation/Effects and Monitoring |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------|----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                    | Residual Effects and Monitoring                                | <p>The habitat loss represents a small proportion of suitable habitat for reptiles, both on Site and in the wider landscape context.</p> <p>There is not considered to be any requirement for monitoring of reptiles following the construction of the Proposed Development.</p> <p>Reptiles are of <b>Local</b> importance and therefore <b>Low</b> sensitivity. Following implementation of reptile-specific mitigation measures, the residual effect remains <b>Negligible adverse</b> and <b>Not Significant</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Great crested newt | Potential Effects and Embedded Mitigation                      | <p>The Proposed Development would result in a permanent and temporary habitat loss required to facilitate construction on Site, in areas that could be used for commuting great crested newts. A pond identified as supporting great crested newts would not be subject to direct land take.</p> <p>Construction will adhere to measures outlined within the oCEMP to avoid the release of dust and additional sediment-laden run-off into nearby watercourses.</p> <p>Further, there is the potential for great crested newt to be impacted by increased light levels, and the production of aural and visual stimuli and vibration during construction/decommissioning.</p> <p>The design has been developed to avoid habitats that would be suitable for great crested newt, including the pond which supports a population of great crested newts, as far as practicable.</p> <p>Great crested newt is of <b>County (Powys)</b> importance and therefore <b>Medium</b> sensitivity. Following implementation of embedded mitigation measures, the magnitude of impact is predicted to be <b>Low</b>, resulting in a <b>Minor adverse</b> effect which is <b>Not Significant</b>.</p> |
|                    | Additional Mitigation                                          | <p>Additional measures specific to great crested newt are incorporated within the oCEMP. This includes provision of a TBT, an ecologist undertaking a pre-works check (a fingertip search) for great crested newt, and control of site lighting to prevent incidental spillage onto features that are increasingly suitable for great crested newt, including a pond identified as supporting great crested newts.</p> <p>Great crested newts are known to be present within a pond in the north of the Site. A EPSL will be obtained to facilitate development. This will set out mitigation measures in detail. The mitigation measures are likely to comprise:</p> <p>Seasonal timing of clearance works and appropriate phasing to reduce the risk of incidental killing and/or injury of great crested newt.</p> <p>Protection of retained habitat.</p>                                                                                                                                                                                                                                                                                                                             |

| Sensitive Receptor | Potential Effects/Additional Mitigation/Effects and Monitoring |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------------|----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                    |                                                                | Enhancement of new habitat to offset habitat loss arising from the Proposed Development.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                    | Residual Effects and Monitoring                                | <p>Effects on great crested newt that are present within the Site will be avoided or minimised through measures that will be set out in an EPSL method statement.</p> <p>Individual great crested newt will be protected from direct effects (such as incidental injury during vegetation clearance) through precautions set out in the EPSL method statement, and will have access to the majority of existing foraging, commuting and breeding habitat throughout the construction period.</p> <p>Effects upon great crested during the construction phase will be avoided through embedded mitigation and implementation of a licence procured from NRW.</p> <p>The monitoring requirements for great crested newts following the construction of the Proposed Development will be detailed within the EPSL method statement.</p> <p>Great crested newt is of <b>County (Powys)</b> importance and therefore <b>Medium</b> sensitivity. Following implementation of the EPS licence and associated mitigation measures, the residual effect remains <b>Minor adverse</b> and <b>Not Significant</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                    |
| Fish               | Potential Effects and Embedded Mitigation                      | <p>The Proposed Development requires the installation or upgrading of culverts within the Site. Whilst it is unlikely that protected and/or notable fish species will frequent the watercourses that will require culverting, fish species may be present. Fish species are considered likely absent within the pond identified within the Site.</p> <p>There is the potential for fish to be affected through culvert installation that would result in injury/killing of fish. Further, there is the potential for fish to be impacted by increased light levels, and the production of aural and visual stimuli and vibration during construction/decommissioning.</p> <p>The design has been developed to avoid habitats that would be suitable for fish as far as practicable.</p> <p>Where construction will occur in habitat suitable for fish this will adhere to measures outlined within the oCEMP to minimise the risk of direct killing and injury of fish. These include restriction of construction activities to defined working areas, storage of fuels/chemicals away from watercourses, water-quality control measures, and minimising noise and vibration as far as possible.</p> <p>Fish are of <b>Local</b> importance and therefore <b>Low</b> sensitivity. Following implementation of embedded mitigation measures, the magnitude of impact is predicted to be <b>Negligible</b>, resulting in a <b>Negligible adverse</b> effect which is <b>Not Significant</b>.</p> |

| Sensitive Receptor | Potential Effects/Additional Mitigation/Effects and Monitoring |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------|----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                    | Additional Mitigation                                          | Additional measures specific to fish are incorporated within the oCEMP. This includes provision of a TBT, and control of site lighting to prevent incidental spillage onto watercourses. Further, the installation of the culverts will be sympathetic to fish passage. The culverts will be unlit, and there will be a designated dark area within 50 m of the entrance to each culvert.                                                                                        |
|                    | Residual Effects and Monitoring                                | <p>Fish are highly unlikely to be subject to residual effects following the implementation of measures within the oCEMP and the sympathetic installation of culverts.</p> <p>There is not considered to be any requirement for monitoring of fish following the construction of the Proposed Development.</p> <p>Fish are of <b>Local</b> importance and therefore <b>Low</b> sensitivity. The residual effect remains <b>Negligible adverse</b> and <b>Not Significant</b>.</p> |

## OPERATION PHASE

**Table 5-18 - Assessment of potential effects, mitigation, effects, and monitoring during operation**

| Sensitive Receptor      | Potential Effects/Embedded Mitigation/Effects and Monitoring |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------------------|--------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Commuting/foraging bats | Potential Effects and Embedded Mitigation                    | <p>Bat species can be affected by operational wind turbines, sometimes fatally through collision or barotrauma<sup>71</sup>. However, the behavioural responses of bats to wind farms are complex and not fully understood, with responses varying between sites, species, sexes and times of year. For example, whilst some studies have suggested that active avoidance of wind farms by some bats may occur (e.g., Roeleke <i>et al.</i> 2016<sup>72</sup>), there is good evidence that some bat species are attracted to wind turbines (Cryan <i>et al.</i> 2014<sup>73</sup>) for a range of possible reasons, including the presence of insect aggregations around the structures (Cryan <i>et al.</i> 2014); ultrasound emissions (Kunz <i>et al.</i> 2007<sup>74</sup>); or even attraction to red navigation lights (Voigt <i>et al.</i> 2018<sup>75</sup>).</p> <p>During operation, the Proposed Development has the potential to affect bat species through the following mechanisms:</p> <ul style="list-style-type: none"> <li>• Disruption of flightlines or behavioural alterations due to turbines (e.g. due to presence of turbines, noise, lighting etc);</li> <li>• Increased mortality due to collisions with turbines; and</li> <li>• Fatalities/injuries caused by barotrauma.</li> </ul> <p>Fatalities/injuries caused by collision with wind turbines and barotrauma are collectively referred to herein as 'collision risk'.</p> |

<sup>71</sup> Damage to lungs caused by air pressure variations associated with the blades.

<sup>72</sup> Roeleke, M., Blohm, T., Kramer-Schadt, S., Yovel, Y., & Voigt, C. C. (2016). Habitat use of bats in relation to wind turbines revealed by GPS tracking. *Scientific Reports*, 6, 28961. doi:10.1038/srep28961

<sup>73</sup> Cryan, P.M., Gorresen, P.M., Hein, C.D., Schirmacher, M.R., Diehl, R.H., Huso, M.M., Hayman, D.T.S., Fricker, P.D., Bonaccorso, F.J., Johnson, D.H., et al. (2014). Behaviour of bats at wind turbines. *Proc. Natl. Acad. Sci. USA* **111**, 15126–15131.

<sup>74</sup> Kunz, T.H., Arnett, E.B., Erickson, W.P., Hoar, A.R., Johnson, G.D., Larkin, R.P., Strickland, M.D., Thresher, R.W., and Tuttle, M.D. (2007). Ecological impacts of wind energy development on bats: questions, research needs, and hypotheses. *Front. Ecol. Environ.* 5, 315–324.

<sup>75</sup> Voigt CC, Rehnig K, Lindecke O, Pētersons G (2018): Migratory bats are attracted by red light but not by warm-white light: Implications for the protection of nocturnal migrants. *Ecology and Evolution* 2018;8:9353–9361.

| Sensitive Receptor | Potential Effects/Embedded Mitigation/Effects and Monitoring |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                    |                                                              | <p>The bat species assemblage on Site (detailed in <b>Appendix 5G: Bat Activity Survey Report</b>) comprised common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, Daubenton's bat, noctule, Leisler's bat, serotine, brown long-eared bat, greater horseshoe bat, lesser horseshoe bat, and unidentified <i>Myotis</i> species. EcoBat was used to determine activity levels within the Site. For species identified as having a high risk of turbine collision, activity levels were 'Low', with the exception of noctule that was recorded as having a 'Low/Moderate' activity at one detector location. In accordance with guidance from NatureScot<sup>27</sup>, the Proposed Development is of a 'medium' size. Using this information, the collision risk is predicted to be 'medium' across the Site.</p> <p>Lesser horseshoe, which is supported by Gregynog SSSI, has a 'low' collision risk, and activity levels were 'Low' across the Site.</p> <p>As part of the embedded measures, turbines have been located to maintain a minimum 50 m blade tip stand off from features that are predicted to be favoured by foraging and commuting bats.</p> <p>The commuting and foraging bat assemblage is of <b>Local importance</b> and therefore <b>Low sensitivity</b>. Following implementation of embedded mitigation measures, including the 50 m blade tip stand-off from key habitat features, the magnitude of impact is predicted to be <b>Low</b>, resulting in a <b>Negligible adverse effect</b> which is <b>Not Significant</b>.</p> <p>Gregynog SSSI is of <b>National (UK) importance</b> and therefore <b>High sensitivity</b>. Following implementation of embedded mitigation measures, the magnitude of impact on the lesser horseshoe bat qualifying interest is predicted to be <b>Low</b>, resulting in a <b>Moderate adverse effect</b> which is <b>Potentially Significant</b>.</p> |
|                    | Additional Mitigation                                        | Turbine feathering will be implemented, secured via DNS condition, to mitigate potential effects on commuting/foraging bats. This may reduce fatality rates by up to 50%.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                    | Residual Effects and Monitoring                              | Effects on commuting and foraging bats during the operational stage will be minimised through embedded mitigation and turbine feathering. Effects as a result of the operation of the Proposed Development are predicted to be of low magnitude and unlikely to result                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

| Sensitive Receptor | Potential Effects/Embedded Mitigation/Effects and Monitoring |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------|--------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                    |                                                              | <p>in change to the conservation status of the bat populations on Site (and, by extension, Gregynog SSSI which supports foraging lesser horseshoe bats).</p> <p>Following implementation of turbine feathering, the residual magnitude of impact on commuting and foraging bats remains <b>Low</b>, resulting in a <b>Negligible adverse effect</b> which is <b>Not Significant</b>. There would be no change to the conservation status of the local bat assemblage.</p> <p>Gregynog SSSI is of <b>National (UK) importance</b> and therefore <b>High sensitivity</b>. Following implementation of turbine feathering, the residual magnitude of impact on Gregynog SSSI is predicted to be <b>Negligible</b>, resulting in a <b>Minor adverse effect</b> which is <b>Not Significant</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                                              |
| Badger             | Potential Effects and Embedded Mitigation                    | <p>There is some evidence to suggest that badger within 1 km of wind farms can be affected by operational wind turbines, through increased levels of stress owing to the sound generated by wind turbines<sup>76</sup>. This can lead to increased incidence of disease as immune systems are weakened, although this does not lead to direct mortality, and does not prevent badgers from utilising these areas. Overall, the responses of badgers to operational turbines are not fully understood.</p> <p>An outlier badger sett is present within the Site, within the construction footprint. Although this will be excluded and destroyed prior to the operational phase of the Proposed Development, it demonstrates that badger are present within the Site.</p> <p>During operation, the Proposed Development has the potential to affect badgers through the following mechanisms:</p> <ul style="list-style-type: none"> <li>• Increased stress due to sound from operational turbines; and</li> <li>• Behavioural alterations due to presence of turbines, noise or lighting.</li> </ul> <p>Turbines have been located as far as is practicable from the badger sett identified in the Site.</p> |

<sup>76</sup> Agnew, R. C., Smith, V. J., & Fowkes, R. C. (2016). Wind turbines cause chronic stress in badgers (*Meles meles*) in Great Britain. *Journal of Wildlife Diseases*, 52(3), 459-467.

| Sensitive Receptor | Potential Effects/Embedded Mitigation/Effects and Monitoring |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------------------|--------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                    |                                                              | Badger is of <b>Local importance</b> and therefore <b>Low sensitivity</b> . Following implementation of embedded mitigation measures, the magnitude of impact is predicted to be <b>Negligible</b> , resulting in a <b>Negligible adverse effect</b> which is <b>Not Significant</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                    | Additional Mitigation                                        | <p>The outlier badger sett will be excluded and destroyed under licence from NRW as required. Any new setts that are established prior to construction will also be included within the licence.</p> <p>Measures set out in the oHMP (<b>Appendix 50</b>), including grassland management, woodland and hedgerow enhancement, will increase the availability and quality of foraging and commuting habitat for badger across the Site.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                    | Residual Effects and Monitoring                              | <p>Any new setts that are constructed within the Site will be protected through measures delivered under licence from NRW as required. Badgers will not be prevented from using the habitats within the Site for foraging or sett-building, and the suitability of habitats or foraging badger will be improved across much of the Site.</p> <p>There is not considered to be any requirement for monitoring of badgers following the construction of the Proposed Development.</p> <p>Badger is of <b>Local importance</b> and therefore <b>Low sensitivity</b>. Following implementation of habitat enhancement measures within the oHMP, the residual magnitude of impact remains <b>Negligible</b>, resulting in a <b>Negligible adverse effect</b> which is <b>Not Significant</b>. There would be no change to the conservation status of badger within the Site.</p> |
| Fish               | Potential Effects                                            | <p>The Proposed Development requires the creation and upgrading of culverts within the Site. Whilst it is unlikely that protected and/or notable fish species will frequent the watercourses that will require culverting, fish species may be present as conditions can alter substantially between seasons, with subsequent impacts on the ecological value of riverine habitats.</p> <p>There is therefore the potential for fish to be affected through culvert design that would result in limiting fish movements during operation of the Proposed Development.</p> <p>The design has been developed to avoid habitats that would be suitable for fish as far as practicable.</p>                                                                                                                                                                                     |

| Sensitive Receptor | Potential Effects/Embedded Mitigation/Effects and Monitoring |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                    |                                                              | Fish are of <b>Local importance</b> and therefore <b>Low sensitivity</b> . Following implementation of embedded mitigation measures, the magnitude of impact is predicted to be <b>Negligible</b> , resulting in a <b>Negligible adverse effect</b> which is <b>Not Significant</b> .                                                                                                                                                                                                                                                    |
|                    | Additional Mitigation                                        | The design of the culverts will be sympathetic to fish passage, considering topography, river characteristics, flow, and species to be accommodated. Culverts will be the shortest reasonably practicable length and located as close to the existing watercourse alignment as is reasonably practicable. The culverts will be unlit, and there will be a designated dark area within 50 m of the entrance to each culvert.                                                                                                              |
|                    | Residual Effects and Monitoring                              | <p>Fish are highly unlikely to be subject to residual effects following the sympathetic installation and design of culverts.</p> <p>There is not considered to be any requirement for monitoring of fish following the construction of the Proposed Development.</p> <p>Fish are of <b>Local importance</b> and therefore <b>Low sensitivity</b>. No additional mitigation is required. The residual magnitude of impact remains <b>Negligible</b>, resulting in a <b>Negligible adverse effect</b> which is <b>Not Significant</b>.</p> |

## 5.10 ASSESSMENT OF CUMULATIVE (INTER-PROJECT) EFFECTS

- 5.10.1. A cumulative effects assessment (CEA) has been undertaken for the construction and operation of the Proposed Development which considers the combined impacts with other developments on the same single receptor or resource (inter-project effects). The detailed method followed in identifying and assessing potential cumulative effects, including identification of other developments, is set out in **Section 2.8 of Chapter 2: Approach to EIA**.
- 5.10.2. The CEA includes the consideration of effects summarised in **Appendix 5N: Habitat Regulations Screening Assessment** that are not significant, as a number of minor effects on an ecological feature from multiple projects may result in a significant cumulative effect.
- 5.10.3. Cumulative effects would generally be either:
  - Cumulative 'Zol' effects whereby two or more developments affect the same specific receptor (e.g. two developments in the same river catchment); or
  - Cumulative effects on the total resource (or population) of an ecological feature in a region due to two or more developments (e.g. two developments affect the same habitat type in a region, reducing its overall area).
- 5.10.4. Assessment of these is complex and relies on the definition of a reasonable scope for cumulative effects, and the availability of a reasonable baseline for other developments. The assessment focuses on those occasions where two 'not significant' effects might operate cumulatively to result in a significant effect (rather than where the effects of one development on an ecological feature are already, on their own, considered significant).
- 5.10.5. The cumulative assessment has been undertaken with reference to the developments identified within the cumulative assessment shortlist presented in Chapter 2. Only those developments with potential for cumulative ecological effects have been considered within this assessment.
- 5.10.6. No developments have been identified which are likely to affect spatially discrete or range-limited features present on the Site or in close proximity; therefore, there will be no possibility of significant cumulative effects on:
  - SSSIs identified within the relevant Zol, as there would be negligible impacts on these sites from the Proposed Development following the implementation of mitigation measures to be detailed in the oCEMP. Therefore, there is no possibility for cumulative effects on these sites.
  - Any Site habitats that have not been identified as being subject to a significant effect, as the Zol of other developments will not affect these, therefore the impact of the Proposed Development will not function cumulatively with others.
  - Any species present or potentially present at the Site, except for bats (all species other than bats will have relatively limited ranges and so the populations associated with the Proposed Development would not be exposed to the effects of other developments; and the Proposed Development itself will have a very low- negligible effect on these populations, ensuring that it would make a negligible contribution to any effects on county-wide populations that may occur cumulatively with other developments).
- 5.10.7. The following section therefore examines the potential cumulative effects on Ancient Woodland and blanket bog, given that they have been identified as being subject to a significant effect as a result of the Proposed Development, and bats, given the often extensive range of bats and their dependence on a range of habitats through their life-cycle.

## ANCIENT WOODLAND AND BLANKET BOG

- 5.10.8. Potential cumulative effects on Ancient Woodland and blanket bog from the identified other cumulative projects have been reviewed.
- 5.10.9. Data regarding the effect of the identified developments on habitats is available only for Carno III Wind Farm, Esgair Cwmowen Wind Farm and Llyn Lort Energy Park.
- 5.10.10. A HMP for Carno III Wind Farm includes measures to restore and maintain areas of peat habitat and blanket bog. Therefore, there is not anticipated to be any significant additive effect on blanket bog beyond the significant effect resultant from the Proposed Development.
- 5.10.11. Esgair Cwmowen Wind Farm concludes that there is no significant effect to habitats as a result of the development, and therefore there is not anticipated to be any cumulative significant effect on any habitats, including Ancient Woodland and blanket bog.
- 5.10.12. Llyn Lort Energy Park does not directly impact bog habitat through design, with unavoidable indirect impacts minimised by standard mitigation measures. Therefore effects on bog habitats as a result of Llyn Lort Energy Park are predicted to be non-significant, and there is not anticipated to be any significant additive effect beyond the significant effect resultant from the Proposed Development.
- 5.10.13. Every development must mitigate its effects on Priority Habitats under EIA principles and the mitigation hierarchy. As the Zol of other developments does not affect Priority Habitats, including Ancient Woodland and blanket bog, within the Site, it is reasonable to conclude that residual cumulative effects would not be significant in the context of the areas of habitat being impacted. There will therefore be no significant cumulative effect on Ancient Woodland or blanket bog.
- 5.10.14. However, it should be noted that effects on blanket bog and Ancient Woodland as a result of the Proposed Development alone will be significant.

## BATS

- 5.10.15. There are no accepted protocols or methods for assessing the cumulative effects of developments on local bat populations, and in reality, the range of conceivable cumulative effects is as variable as the range of developments or activities that could conceivably affect bats. For example, the loss of a roost due to a barn conversion could arguably have a cumulative effect with a wind farm if this increases collision risk as bats travel further to forage.
- 5.10.16. Furthermore, it is acknowledged that accurately establishing bats' use of the wider landscape (away from a development site) is very difficult. This is due to severe practical constraints on meaningful field surveys across substantially larger areas and the inherent limitations of current bat survey techniques (e.g. areas that can be covered, effective range of detection, and so on).
- 5.10.17. The range of conceivable effects and the patchiness of survey data in the wider area outside the Site therefore present some difficulties when assessing any potential cumulative effects on bats. In order to keep the assessment manageable, only wind farms with turbines with a height of 50 m or over and which are either built, consented, going through the consenting process (scoping etc) or with submitted planning applications within 10 km of the Proposed Development are considered for cumulative effects. This is because:
- It is considered that the principal risks to bat populations from wind farm developments are increased collision risk and (to a lesser extent) possible reductions in available upland habitat if displacement occurs. Other than vehicles, wind farms are likely to

present the main collision risk for bats in rural Wales. Since very few other developments are likely to significantly increase collision risk, it is most relevant to consider cumulative collision risk from wind farm developments only. Similarly, few (if any) other developments are likely to significantly affect the availability or accessibility of upland habitat resources;

- Most other developments do not take place on the same geographical scale as wind farms, and therefore it is likely that any effects that other developments may have on bats can be fully mitigated locally, without significant risk of cumulative effects with local wind farms. This is particularly relevant when considering the possible cumulative effects of wind farm developments with the lowland developments that are typical of rural Wales; and
- The flight range of bat species is very variable (with some flying substantial distances between winter and summer roosts), but most species tend to forage within ~5 km of their roost (based on BCT<sup>77</sup> guidelines) with the Core Sustenance Zone (CSZ)<sup>78</sup> for the bat species recorded on Site being between 2-4 km. On this basis, bats roosting ~5 km from the Proposed Development could also be affected by other wind farms ~10 km from the Site.

5.10.18. The wind energy developments within 10 km of the Site which are considered as part of the cumulative assessment are detailed within **Table 5-19**. Only those with information available relating to bat activity within the respective sites have been assessed.

**Table 5-19 - Cumulative assessment wind energy developments within 10 km of the Site**

| Name of wind farm                         | Local authority      | Number of wind turbines | Height to blade tip (m) | Approximate distance from boundary of Proposed Calon y Gwynt Main Site (km) | Status      |
|-------------------------------------------|----------------------|-------------------------|-------------------------|-----------------------------------------------------------------------------|-------------|
| Carno III Wind Farm (P/2010/0762/20/1610) | Powys County Council | 13                      | 150                     | 7.9                                                                         | Consented   |
| Esgair Cwmowen Wind Farm (P/2010/0890)    | Powys County Council | 18                      | 125                     | Directly to the north                                                       | In Planning |
| Llanbrynmair Wind Farm 1                  | Powys County Council | 30                      | 126.5                   | 7.6                                                                         | Consented   |

<sup>77</sup> J. Collins (ed.). 2023. Bat surveys for professional ecologists: Good practice guidelines (4<sup>th</sup> edition). *Bat Conservation Trust, London*.

<sup>78</sup> A CSZ refers to the area surrounding a communal bat roost within which habitat availability and quality will have a significant influence on the resilience and conservation status of the colony using the roost.

|                                                            |                      |    |     |     |                 |
|------------------------------------------------------------|----------------------|----|-----|-----|-----------------|
| (CAS-03719-R0C2Z0)                                         |                      |    |     |     |                 |
| Llanbrynmair Wind Farm 2 (CAS-03719-R0C2Z0)                | Powys County Council | 15 | 230 | 7.6 | Pre-application |
| Llandinam Wind Farm Repowering (BERR/2008/00 0319/1087/SO) | Powys County Council | 34 | 121 | 9.2 | Operational     |
| Llyn Lort Energy Park (DNS CAS-02362-P3S4H4)               | Powys County Council | 24 | 220 | 3.0 | Pre-application |
| Mynydd Cloagau Wind Farm                                   | Powys County Council | 17 | 66  | 0.8 | Operational     |
| Mynydd Lluest y Graig Energy Project (DNS/3213154)         | Powys County Council | 16 | 200 | 7.5 | Pre-application |
| TirGwynt Wind Farm                                         | Powys County Council | 12 | 116 | 3.0 | Operational     |

- 5.10.19. Of the developments listed in **Table 5-20**, bat survey data sufficient to inform a cumulative assessment was available for Carno III Wind Farm, Esgair Cwmowen Wind Farm and Llyn Lort Energy Park.
- 5.10.20. The remaining developments were not considered further due to an insufficient publicly available bat activity information.
- 5.10.21. Direct comparison of bat survey results from different developments is not possible due to the variability in site conditions and survey effort. However, studies for bats carried out in relation to the Carno Wind Farm report similar patterns and conclusions, i.e.:
- Pipistrelle species are referenced as the species with higher levels of activity;
  - Noctule bats have been recorded;
  - Bat activity within the sites in more 'exposed' areas away from features typically used by bats is typically low; and

- Some areas of the site experiences relatively higher levels of activity, but these areas invariably have features that are typically favoured by foraging or commuting bats (e.g. woodland edges) which are away from turbine locations.

- 5.10.22. The primary cumulative effects of multiple wind farms are considered to be increased collision risk (and hence direct effects on population size) and the possibility of indirect effects on habitat use (i.e. the displacement of bats from foraging areas due to the presence of turbines, or 'barrier effects' (the loss or modification of flight paths, although Jones et al.<sup>79</sup> report no documented cases of barrier effects occurring at wind farms)).
- 5.10.23. The data for Carno III Wind Farm indicates that bat activity is "generally low, and the risk of collision is therefore also low". The Carno III Wind Farm avoids features used by bats as far as possible. It is considered that Carno Wind Farm has taken appropriate measures to minimise collision risk and avoid potentially significant effects on local bat populations with the overall effects on bat species for these schemes being considered to be **not significant**.
- 5.10.24. Furthermore, Carno III Wind Farm is sited in predominantly upland or upland margin habitats, away from the valley environments that are likely to provide the most significant foraging and roosting habitats locally, and the principal commuting and migration routes. The inter-connectivity of the valley systems in this area will not be meaningfully affected by the wind farms, and so the general 'permeability' of the landscape to bats is unlikely to be significantly reduced. As noted, there are no documented cases of wind farms having 'barrier effects'<sup>79</sup>.
- 5.10.25. The data for Llyn Lort Energy Park, analysed using EcoBat, indicates that bat activity levels were assessed to be generally 'low' across the monitoring period although there were periods/nights during which bat activity levels were assessed to be 'moderate' or 'high'.
- 5.10.26. In combination with the Proposed Development, the cumulative effect on bats is assessed as **Minor and Not Significant**.
- 5.10.27. Esgair Cwmown Wind Farm concludes that there will be no significant effects on commuting or foraging bats, following the implementation of mitigation.
- 5.10.28. There is little evidence to suggest that the upland areas provide a significant habitat resource for local bat populations. However, given the proximity of Esgair Cwmowen Wind Farm to the Site, Esgair Cwmowen Wind Farm and the Proposed Development may operate cumulatively to affect local bat populations. Despite this, in the absence of available mitigation measures for Esgair Cwmowen Wind Farm, it is assumed that Esgair Cwmowen Wind Farm has employed mitigation to reduce bat collision with turbines, such that cumulative effects are still predicted to be **Not significant**.

## 5.11 SIGNIFICANCE CONCLUSIONS

- 5.11.1. A summary of the results of the Ecology assessment is provided in **Table 5-20** below.

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<sup>79</sup> Jones, G., Cooper-Bohannon, R., Barlow, K. & Parsons, K., 2009. Determining the potential ecological impact of wind turbines on bat populations in Britain. *Scoping and Method Development Report, Defra*.

**Table 5-20 – Summary of significance of effects**

| Receptor and summary of potential effects in the absence of mitigation                                                                                                                                                                                                                                                                                                                  |  | Sensitivity/ importance/ value of receptor | Sensitivity | Magnitude of change | Level of effect    | Significance    | Summary rationale                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------------------------------|-------------|---------------------|--------------------|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Construction and decommissioning phase                                                                                                                                                                                                                                                                                                                                                  |  |                                            |             |                     |                    |                 |                                                                                                                                                                                                                                                                                                                                                                                                            |
| Llyn Mawr SSSI <ul style="list-style-type: none"> <li>Habitat degradation of lake and bog habitats associated with dust deposition and hydrological pollution.</li> <li>Mortality of rare plant species associated with Llyn Mawr SSSI as a result of habitat degradation.</li> <li>Mortality of species dependent on the Llyn Mawr SSSI as a result of habitat degradation.</li> </ul> |  | National (UK)                              | High        | Negligible          | Minor adverse      | Not significant | Construction and decommissioning works will be undertaken adhering to measures outlined in the oCEMP, to include measures to control the release of dust and minimise the release of sediment-laden run-off into nearby watercourses. Impacts to the lake and bog habitats and thus protected species which are dependent on the Llyn Mawr SSSI habitats, would be negligible with no significant effects. |
| Gregynog SSSI <ul style="list-style-type: none"> <li>Disturbance of protected species dependent on the SSSI commuting and foraging within the Site, specifically lesser horseshoe bats, as a result of aural and visual stimuli.</li> </ul>                                                                                                                                             |  | National (UK)                              | High        | Negligible          | Minor adverse      | Not significant | Construction and decommissioning works will be undertaken adhering to measures outlined in the oCEMP, to include measures to minimise the risk of disturbance or changes to habitat availability relating to increased light levels, and aural and visual stimuli.                                                                                                                                         |
| Llyn Du Wildlife Site <ul style="list-style-type: none"> <li>Habitat degradation of the lake habitat associated with dust deposition and hydrological pollution.</li> </ul>                                                                                                                                                                                                             |  | National (Wales)                           | Medium      | Negligible          | Negligible adverse | Not significant | Construction and decommissioning works will be undertaken adhering to measures outlined in the oCEMP, to include measures to control the release of dust and minimise the release of sediment-laden run-off into nearby watercourses. Impacts to the                                                                                                                                                       |

| Receptor and summary of potential effects in the absence of mitigation                                                                                                                                      | Sensitivity/ importance/ value of receptor | Sensitivity | Magnitude of change | Level of effect             | Significance                     | Summary rationale                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|-------------|---------------------|-----------------------------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                             |                                            |             |                     |                             |                                  | lake and bog habitats, and thus protected species which are dependent on the Llyn Du habitats, would be negligible with no significant effects.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Priority Habitats: blanket bog<br>• Direct land take or habitat alteration                                                                                                                                  | National (Wales)                           | Medium      | Medium              | Modera<br>te<br>advers<br>e | Signifi<br>cant                  | <p>Turbine and access track siting has been placed in order to avoid blanket bog as much as is practicably possible. Habitat severance is minimal, to be limited to the width of the construction footprint of the access tracks.</p> <p>During construction, this loss of blanket bog (0.07 ha) will be <b>Significant</b> at the County scale. However, in order to compensate for the loss of blanket bog, measures are detailed in the <b>Net Benefit for Biodiversity Report</b> and <b>Appendix 50: oHMP</b>. The oHMP includes habitat enhancement of 139.16 ha of retained habitat on Site which supports sensitive soils, marshy grassland and blanket bog. In the longer term, the overall change is considered to be Significant and adverse, due to the nature of the blanket bog habitat.</p> |
| Priority Habitats: lowland mixed deciduous woodland, montane heaths and grassland, upland heathland, inland rock outcrops and scree habitats, hedgerows and small, medium altitude rivers on acidic geology | National (Wales)                           | Medium      | Low                 | Minor adverse               | Not significant in the long term | <p>Turbine and access track siting has been selected in order to avoid these habitats as much as is practicably possible. Habitat severance is considered to be minimal.</p> <p>There will be permanent loss of:</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

| Receptor and summary of potential effects in the absence of mitigation                                                                                                          | Sensitivity/ importance/ value of receptor | Sensitivity | Magnitude of change | Level of effect | Significance | Summary rationale                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|-------------|---------------------|-----------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Direct land take or habitat alteration of these Priority Habitats</li> </ul>                                                           |                                            |             |                     |                 |              | <ul style="list-style-type: none"> <li>• Lowland mixed deciduous woodland (0.43 ha);</li> <li>• Montane heaths and grassland (1.04 ha);</li> <li>• Upland heathland (0.47 ha);</li> <li>• Inland rock outcrops and scree habitats (0.08 ha);</li> <li>• Hedgerows (297.6 m); and</li> <li>• Riparian habitats associated with small, medium altitude rivers on acidic geology (334.53 m)</li> </ul> <p>within the Site. In order to mitigate this habitat loss and aim for enhancement, an oHMP sets out habitat enhancement measures within the Site. Enhancement of these habitats is considered to be short- to medium-term, such that effects are Not Significant.</p> |
| <p>Ancient Woodland</p> <ul style="list-style-type: none"> <li>• Loss of Ancient Woodland habitats.</li> </ul> <p>Indirect habitat degradation of areas of Ancient Woodland</p> | National (UK)                              | High        | Medium              | Major adverse   | Significant  | <p>Turbine and access track siting has been selected in order to avoid Ancient Woodland as far as possible. Where the Access Road passes through an area of Ancient Woodland, an existing track is already in place in this location. This may be subject to further widening as part of the Proposed Development. This will be minimised as far as possible. In the absence of a detailed final design of this area, a worst case basis of 0.43 ha requiring clearance has been assumed.</p>                                                                                                                                                                              |

| Receptor and summary of potential effects in the absence of mitigation                                                                                                                                                           | Sensitivity/ importance/ value of receptor | Sensitivity | Magnitude of change | Level of effect    | Significance                                      | Summary rationale                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|-------------|---------------------|--------------------|---------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                  |                                            |             |                     |                    |                                                   | <p>Recommendations relating to Ancient Woodland as detailed in <b>Appendix 5Q: Arboricultural Desk Study</b> will be followed.</p> <p>Construction and decommissioning works will be carried out in accordance with the oCEMP, which will avoid dust deposition and hydrological pollution which could lead to habitat degradation.</p>                                                                                                                                                                                                                               |
| <p>Commuting/foraging bats</p> <ul style="list-style-type: none"> <li>• Loss of habitats used for foraging and commuting.</li> <li>• Increased light levels and production of aural and visual stimuli and vibration.</li> </ul> | Local                                      | Low         | Low                 | Negligible adverse | Not significant<br>(Local scale effects assessed) | <p>Vegetation removal would predominantly comprise sub-optimal upland open grassland habitats. Minimal loss of optimal foraging habitat or flightlines would occur, and the area of loss with regard to the areas of similar or more optimal habitat which will be retained on Site and in the wider landscape will be inconsequential.</p> <p>Temporary changes in habitat use due to Site lighting or construction activities would be short-term, and will be largely prevented with embedded best-practice construction measures to be included in the oCEMP.</p> |
| <p>Roosting bats</p> <ul style="list-style-type: none"> <li>• Loss of habitats used for roosting.</li> <li>• Injury/killing as a result of vegetation clearance to facilitate the Proposed Development.</li> </ul>               | County                                     | Medium      | Low                 | Minor adverse      | Not significant                                   | <p>Effects on roosting bats that may be present within the Site following completion of the roosting bat surveys will be avoided or minimised through measures that will be set out in an EPSL method statement (assuming that roosting bats are found to be present).</p>                                                                                                                                                                                                                                                                                            |

| Receptor and summary of potential effects in the absence of mitigation                                                                                                                                                                                                                                                                                      | Sensitivity/ importance/ value of receptor | Sensitivity | Magnitude of change | Level of effect    | Significance    | Summary rationale                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|-------------|---------------------|--------------------|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Badger</p> <ul style="list-style-type: none"> <li>• Injury/killing as a result of construction of the Proposed Development.</li> <li>• Loss of an active outlier sett.</li> <li>• Loss of habitats used for foraging, commuting or sett-building.</li> <li>• Increased light levels and production of aural and visual stimuli and vibration.</li> </ul> | Local                                      | Low         | Negligible          | Negligible adverse | Not significant | <p>Vegetation removal will include the loss of habitats that are suitable for badger foraging, commuting, and sett-building, although the majority of vegetation clearance will be in areas that are considered to be sub-optimal to support badger.</p> <p>A badger outlier sett within the construction footprint will be excluded and destroyed under licence.</p> <p>Construction will adhere to measures outlined within the oCEMP to minimise effects on badger. This would include all excavations having a means of escape for entrapped animals; controls on night-time working; and controls on Site lighting to prevent incidental spillage onto features that are considered to have high suitability to support badger, such as woodland.</p> <p>A pre-construction survey of the footprint of the Site and a suitably sized buffer will be conducted prior to works to ascertain if new badger setts have been built within the Site, given that badgers are a mobile species and can build new setts in a short amount of time. If a sett is identified during this survey, it may require inclusion within the licence sought from NRW.</p> <p>Further, the loss of habitat suitable to support badger will be mitigated for.</p> |

| Receptor and summary of potential effects in the absence of mitigation                                                                                                                                                          | Sensitivity/ importance/ value of receptor | Sensitivity | Magnitude of change | Level of effect    | Significance    | Summary rationale                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|-------------|---------------------|--------------------|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                 |                                            |             |                     |                    |                 | Mitigation measures for habitats suitable to support badger, including woodlands, hedgerows, and grasslands, are detailed in an oHMP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <p>Dormouse</p> <ul style="list-style-type: none"> <li>• Loss of habitats used for foraging, commuting or nest-building.</li> <li>• Increased light levels and production of aural and visual stimuli and vibration.</li> </ul> | County                                     | Medium      | Negligible          | Minor adverse      | Not significant | <p>Vegetation removal will include the loss of habitats that are suitable for dormouse foraging, commuting, and nest-building, although the majority of vegetation clearance will be in areas that are considered to be sub-optimal to support dormouse.</p> <p>Construction will adhere to measures outlined within a dormouse EPSL to minimise effects on dormouse. This would include seasonal timings of clearance works and appropriate phasing, protection of retained habitat, and enhancement of habitat to offset habitat loss.</p> <p>Further, the loss of habitat suitable to support dormouse will be mitigated for. Mitigation measures for habitats suitable to support dormice, including hedgerows and woodlands, are detailed in an oHMP.</p> |
| <p>Otter</p> <ul style="list-style-type: none"> <li>• Loss of habitats used for foraging, commuting or resting places.</li> <li>• Increased light levels and production of aural and visual stimuli and vibration.</li> </ul>   | Local                                      | Low         | Low                 | Negligible adverse | Not significant | <p>Vegetation removal will include the loss of habitats that are suitable for otter foraging, commuting, and resting.</p> <p>There would be no effect as a result of the Proposed Development on potential otter holts identified during the otter survey.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

| Receptor and summary of potential effects in the absence of mitigation                                                                                                                                                            | Sensitivity/ importance/ value of receptor | Sensitivity | Magnitude of change | Level of effect    | Significance                                      | Summary rationale                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|-------------|---------------------|--------------------|---------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                   |                                            |             |                     |                    |                                                   | Construction will adhere to measures outlined within the oCEMP to minimise effects on otter. This would include all excavations having a means of escape for entrapped animals; controls on night-time working; and controls on Site lighting to prevent incidental spillage onto features that provide suitable habitat to support otter, including river habitats.                                                 |
| Reptiles <ul style="list-style-type: none"> <li>• Loss of habitats used for foraging, commuting, refuges, or hibernating</li> </ul>                                                                                               | Local                                      | Low         | Low                 | Negligible adverse | Not significant<br>(Local scale effects assessed) | Vegetation removal will include the loss of habitats that are considered suitable to support reptiles. Reptiles are assumed to be present within the Site.<br><br>Construction will adhere to measures outlined within the oCEMP to minimise effects on reptiles. Further, the loss of habitat suitable to support reptiles will be mitigated for, as detailed in an oHMP.                                           |
| Great crested newt <ul style="list-style-type: none"> <li>• Loss of habitats used for foraging, commuting, or hibernating.</li> <li>• Increased light levels and production of aural and visual stimuli and vibration.</li> </ul> | County                                     | Medium      | Low                 | Minor adverse      | Not significant                                   | The Proposed Development will lead to the loss of habitats that are suitable for great crested newt foraging, commuting, or hibernating.<br><br>Construction will adhere to measures outlined within a great crested newt EPSL to minimise effects on great crested newt. This would include seasonal timings of clearance works, protection of retained habitat, and enhancement of habitat to offset habitat loss. |

| Receptor and summary of potential effects in the absence of mitigation                                                                                                                                               | Sensitivity/ importance/ value of receptor | Sensitivity | Magnitude of change | Level of effect    | Significance    | Summary rationale                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|-------------|---------------------|--------------------|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                      |                                            |             |                     |                    |                 | Further, the loss of habitat suitable to support great crested newt will be mitigated for, as detailed in an oHMP.                                                                                                                                                                                                                                                                                                                                                                         |
| Fish <ul style="list-style-type: none"> <li>• Death or injury to individual fish during culvert installation.</li> <li>• Increased light levels and production of aural and visual stimuli and vibration.</li> </ul> | Local                                      | Low         | Negligible          | Negligible adverse | Not significant | <p>The Proposed Development requires the installation of culverts across streams where fish may be present. Therefore, fish may be affected through direct death/injury, as well as increased light levels and production of aural and visual stimuli and vibration during installation.</p> <p>Construction will adhere to measures outlined within the oCEMP to minimise effects on fish. Further, the installation of the culverts will be sympathetic to fish that may be present.</p> |
| Operational phase                                                                                                                                                                                                    |                                            |             |                     |                    |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Commuting/foraging bats <ul style="list-style-type: none"> <li>• Physical changes to spatial environment.</li> </ul>                                                                                                 | Local                                      | Low         | Low                 | Negligible adverse | Not significant | <p>Given the size of the Proposed Development, the bat species assemblage on Site, and the quantities that bats have been recorded on Site, the collision risk is predicted to be low.</p> <p>Embedded measures have therefore been designed into the Proposed Development to ensure the risk to bat populations from collision risk are reduced. Measures include a minimum 50 m stand-off between all turbine blade tips and the nearest point of</p>                                    |

| Receptor and summary of potential effects in the absence of mitigation                                                                                                               | Sensitivity/ importance/ value of receptor | Sensitivity | Magnitude of change | Level of effect    | Significance    | Summary rationale                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|-------------|---------------------|--------------------|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                      |                                            |             |                     |                    |                 | <p>linear/foraging features likely to be well-used by bats.</p> <p>It is likely that the proposed wind farm would increase the mortality risk for bats locally. However, inclusive of the embedded measures, in addition to the implementation of feathering, these changes are not considered to have adverse effects on bat populations at a significant level.</p>                                                |
| <p>Badger</p> <ul style="list-style-type: none"> <li>• Production of aural stimuli and vibration.</li> </ul>                                                                         | Local                                      | Low         | Negligible          | Negligible adverse | Not significant | <p>A study has shown that badger can be affected by operational wind turbines, particularly within 1 km of a turbine.</p> <p>Habitat enhancement measures including grassland management, woodland and hedgerow enhancement, will increase the availability and quality of foraging and commuting habitat for badger across the Site.</p>                                                                            |
| <p>Fish</p> <ul style="list-style-type: none"> <li>• Physical changes to spatial environment, leading to restriction of movement as a result of installation of culverts.</li> </ul> | Local                                      | Low         | Negligible          | Negligible adverse | Not significant | <p>The Proposed Development requires the installation of culverts across streams where fish may be present. Therefore, fish may be affected through restriction of passage during the operational phase of the Proposed Development.</p> <p>The design of the culverts will be sympathetic to fish passage. Culverts will be as short as reasonably practicable and located as close to the existing watercourse</p> |

| Receptor and summary of potential effects in the absence of mitigation | Sensitivity/ importance/ value of receptor | Sensitivity | Magnitude of change | Level of effect | Significance | Summary rationale                                                                                                                   |
|------------------------------------------------------------------------|--------------------------------------------|-------------|---------------------|-----------------|--------------|-------------------------------------------------------------------------------------------------------------------------------------|
|                                                                        |                                            |             |                     |                 |              | alignments as is reasonably practicable. The culverts will be unlit, with a designated dark area proximal to the culvert entrances. |

## 5.12 FURTHER WORK TO BE UNDERTAKEN

- 5.12.1. NVC surveys have been undertaken at turbine locations and within Priority Habitats that will be affected by the Proposed Development to ensure that the habitat classifications have been accurately assessed, and that habitat management as outlined in the oHMP are relevant and achievable within the Proposed Development. The data returned from these surveys has been used to inform an assessment of notable habitats within the Site; however, a detailed analysis, including assigning to NVC habitat classifications, has not yet been undertaken. These will be detailed in a full report.
- 5.12.2. The GLTA identified trees with suitability to support bat roosts within the Access Road. Surveys are ongoing within these trees to identify the presence/likely absence of bats.



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