

# Contents

---

<b>8.</b>	<b>Biodiversity</b>	<b>8-1</b>
8.1	Introduction	8-1
	Limitations and assumptions	8-1
8.2	Relevant legislation, planning policy and technical guidance	8-2
	Legislation	8-2
	Planning policy	8-3
	Technical guidance	8-5
8.3	Consultation and engagement	8-6
	Overview	8-6
	Scoping Opinion	8-6
	Draft Biodiversity Impact Assessment Consultation	8-7
	Final Submission Consultation	8-9
8.4	Data gathering methodology	8-10
	Study area	8-10
	Desk study	8-11
	Survey work	8-12
8.5	Overall baseline	8-13
	Current baseline	8-13
	Future baseline	8-32
8.6	Embedded measures	8-32
8.7	Scope of the assessment	8-37
	Overview	8-37
	The Proposed Development	8-38
	Spatial scope	8-38
	Temporal scope	8-39
	Potential receptors	8-39
	Likely significant effects	8-41
8.8	Assessment methodology	8-45
	Evaluation Methodology	8-45
	Geographical Context	8-45
	Valuing Species	8-45
	Characterising Potential Impacts	8-46
	Significance Criteria	8-46
8.9	Assessment of Biodiversity Effects	8-47
	Internationally and Nationally Designated Sites	8-47
	Locally Designated Sites	8-48
	Protected Species	8-51
8.10	Assessment of cumulative (inter-project) effects	8-58
	PPW 12 Chapter 6: Step-Wise Approach	8-63
8.11	Significance conclusions	8-65
8.12	Additional measures	8-73
8.13	Residual effects assessment	8-73
8.14	Further work to be undertaken	8-73
	Baseline	8-73
	Assessment	8-73

## Environmental measures

8-73

---

Table 8.1	Legislation relevant to the Biodiversity assessment	8-2
Table 8.2	Planning policy relevant to the Biodiversity assessment	8-3
Table 8.3	Technical guidance relevant to the Biodiversity assessment	8-5
Table 8.4	Summary of EIA Scoping Direction responses for Biodiversity	8-7
Table 8.5	Summary of Draft Biodiversity Impact Assessment Responses	8-8
Table 8.6	Summary of Final Submission Consultation Responses	8-9
Table 8.5	Data sources used to inform the Biodiversity assessment	8-11
Table 8.6	Statutory and Non-Statutory Designations Within the Site's Potential Zone of Influence	8-15
Table 8.7	Potential IEFs (habitats) present within the Site's potential Zone of Influence	8-21
Table 8.8	Potential IEFs (species) within the Site's Potential Zone of Influence	8-24
Table 8.10	Ecological receptors subject to potential effects	8-40
Table 8.11	Ecological receptors scoped in for further assessment	8-42
Table 8.12	Summary of effects scoped out of the biodiversity assessment	8-44
Table 8.14	Wind Farm Schemes included within the cumulative effects analysis	8-59
Table 8.15	Other Schemes included within the cumulative effects analysis	8-60
Table 8.16	Application of the Step-Wise Approach at the Site	8-63
Table 8.17	Summary of significance of effects	8-66

# 8. Biodiversity

---

## 8.1 Introduction

8.1.1 This chapter presents the assessment of the likely significant effects of the Proposed Development with respect to Biodiversity (non-ornithology), including terrestrial and aquatic ecology. The assessment is based on information obtained to date. It should be read in conjunction with the development description provided in **Chapter 4: Description of the Proposed Development** and with respect to relevant parts of the following chapters:

- **Chapter 7: Landscape;**
- **Chapter 9: Ornithology;**
- **Chapter 10: Water Environment;** and
- **Chapter 13: Noise.**

8.1.2 This chapter describes:

- The legislation, policy and technical guidance that has informed the assessment (**Section 8.2**);
- Consultation and engagement that has been undertaken and how comments from consultees relating to non-ornithology Biodiversity have been addressed (**Section 8.3**);
- The methods used for baseline data gathering (**Section 0**);
- Overall baseline (**Appendix 8A**);
- Embedded measures relevant to non-ornithology Biodiversity (**Section 8.6**);
- The scope of the assessment for non-ornithology Biodiversity (**Section 8.7**);
- The methods used for the assessment (**Section 8.8**);
- The assessment of non-ornithology Biodiversity effects (**Section 8.9**);
- Assessment of cumulative (inter-project) effects (**Section 8.10**);
- A summary of the significance conclusions (**Section 8.11**);
- Additional measures proposed (**Section 8.12**); and
- Non-ornithology Biodiversity residual effects assessment (**Section 8.13**).

## Limitations and assumptions

8.1.3 The vast majority of ecology surveys have been undertaken in suitable weather conditions at optimum times of year with reference to best practice guidance. All of the surveys have been completed by suitably qualified surveyors and any limitations in the survey work are detailed in full in **Technical Appendix 8A**. Where any limitations in the collation of baseline information are identified, a precautionary approach to the consideration of potentially significant effects and mitigation is adopted.

- 8.1.4 In summary, limitations to the field surveys include: felling activities affecting woodland habitat subject to dormouse surveys; access restrictions to some buildings during the completion of internal and emergence surveys for bats; restricted access to parts of the Tirpentwys Cut Sites of Importance for Nature Conservation (SINC) quarry due to health and safety reasons; and invertebrate surveys limited to sampling across a number of points onsite so as to be representative of habitat types and elevations experienced across the site, given the limitations of sampling the entirety of the site due to its extensive size. Limitations relating to field surveys are described in full detail in **Appendix 8A**.
- 8.1.5 Additionally, and due to the evolution of the scheme design, turbine locations were changed (added, moved and removed) after completion of the bat surveys. The new turbine locations were assessed in relation to the automated bat detector locations, with automated detectors lying within the impact zone (280m) of all but one turbine location (turbine 4). As there are no woodland or individual trees within the impact zone of this turbine, and as an automated detector has instead been placed along the edge of the nearest woodland (circa 310m to the south of turbine 4), it is considered that this limitation would not have adversely affected the results obtained or the assessment made.
- 8.1.6 Given the above, there are no limitations relating to Biodiversity that affect the robustness of the assessment of the potential likely significant effects of the Project.

## 8.2 Relevant legislation, planning policy and technical guidance

- 8.2.1 This section identifies the legislation, planning policy and technical guidance that has informed the assessment of effects with respect to Biodiversity. Further information on policies relevant to the Project is provided in **Chapter 5: Legislation and policy overview**.

### Legislation

- 8.2.2 A summary of the relevant legislation is given in **Table 8.1**.

**Table 8.1 Legislation relevant to the Biodiversity assessment**

Legislation	Legislative context
<b>The Conservation of Habitats and Species Regulations 2017 (as amended)<sup>1</sup></b>	<p>The Habitat Regulations transpose the Habitats Directive<sup>2</sup> into English and Welsh law.</p> <p>The regulations provide 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>
<b>The Environment (Wales) Act 2016<sup>3</sup></b>	<p>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</p>

<sup>1</sup> UK Government (2017). 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).

<sup>2</sup> Council Directive 92/43/EEC on the Conservation of natural habitats and wild flora and fauna, May 1992.

<sup>3</sup> 2 UK Government (2016). The Environment (Wales) Act 2016. (Online). Available at: <https://www.legislation.gov.uk/anaw/2016/3/contents/enacted> (Accessed June 2023).

Legislation	Legislative context
	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 which are of principal importance for the purpose of maintaining and enhancing biodiversity in relation to Wales, referred to as priority species and habitats.
<b>The Wildlife And Countryside Act 1981 (as amended) (WCA)<sup>4</sup></b>	This act consolidates and amends existing national legislation to implement the Bern Convention <sup>5</sup> . 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.
<b>Countryside &amp; Rights of Way Act 2000<sup>6</sup></b>	This act details further measures for the management and protection of SSSIs and strengthens wildlife enforcement legislation
<b>The Hedgerows Regulations 1997<sup>7</sup></b>	The Hedgerows Regulations is intended to protect important countryside hedges from damage or destruction.
<b>Protection of Badgers Act 1992<sup>8</sup></b>	The Protection of Badgers Act provides protection to badgers and their places of shelter (setts).

## Planning policy

8.2.3 A summary of the relevant national and local planning policy is given in **Table 8.2**.

**Table 8.2 Planning policy relevant to the Biodiversity assessment**

Policy	Policy context
<b>National planning policy</b>	
<b>Future Wales: The National Plan 2040<sup>9</sup></b>	The Welsh national development framework sets the direction for development in Wales to 2040. 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.
<b>Planning Policy Wales (PPW) Edition 12, February 2024 - Chapter 6 Distinctive</b>	Chapter 6 of Planning Policy Wales 12 (PPW) sets out the Welsh Government's objectives for Distinctive and Natural Places. Planning policy topics cover the historic environment, landscape, biodiversity and habitats, coastal characteristics, air quality, soundscape, water services, flooding and other environmental (surface and sub-surface) risks. This

<sup>4</sup> UK Government (1981). The Wildlife and Countryside Act 1981 (as amended). (Online) Available at: <https://www.legislation.gov.uk/ukpga/1981/69/contents> (Accessed August 2024).

<sup>5</sup> The Convention on the Conservation of European Wildlife and Natural Habitats, 1982. Available at: <https://www.coe.int/en/web/conventions/full-list?module=treaty-detail&treaty-num=104> Accessed August 2024).

<sup>6</sup> UK Government (2000). Countryside and Rights of Way Act 2000. (Online) Available at: <https://www.legislation.gov.uk/ukpga/2000/37> (Accessed August 2024).

<sup>7</sup> UK Government (1997). The Hedgerows Regulations 1997 (Online). Available at: <https://www.legislation.gov.uk/uksi/1997/1160/contents/made> (Accessed 20 August 2024).

<sup>8</sup> UK Government (1992). Protection of Badgers Act 1992. (Online) Available at: <https://www.legislation.gov.uk/ukpga/1992/51/contents> (Accessed August 2024).

<sup>9</sup> Welsh Government (2021). Future Wales: The National Plan 2040. (Online). Available at: <https://gov.wales/future-wales-national-plan-2040> (Accessed August 2024).

Policy	Policy context
<b>and Natural Places (12th Ed.; 2024)<sup>10</sup></b>	latest revision focuses on green infrastructure; net benefit for biodiversity and the step-wise approach; protection for SSSI; and trees and woodland. The revisions seek to clarify Wales' intentional, diverging approach to Biodiversity Net Gain in respect of the Environment Act 2021, with a focus instead on ecosystem resilience.
<b>PPW supplementary Technical Advice Note 5 (TAN5) Nature Conservation and Planning (2009)<sup>11</sup></b>	Technical Advice Note 5 (TAN5) supplements Planning Policy Wales (PPW) and sets out statutory, protection-specific policies in relation to the protection of biodiversity and geological conservation through the planning system. Such policies include those receiving statutory protection under existing legislative provisions (as well as those sites, habitats and species outwith such protection), and aim to ensure that the potential impacts of planning decisions on biodiversity and geological conservation are fully considered.
<b>Local planning policy</b>	
<b>Torfaen County Borough Council (TCBC) Local Development Plan (LDP) up to 2021 (adopted December 2013)<sup>12</sup></b>	<p>The Torfaen Local Development Plan sets out additional policies including Strategic Policy S7 which requires development proposals to ensure the conservation and enhancement of biodiversity resources.</p> <p>Policy BG1 (Locally Designated Sites for Biodiversity and Geodiversity) also requires development to not be permitted where they would cause significant adverse effects to local nature conservation designated sites unless the development could not reasonably be located elsewhere, and the benefits of the development outweigh the nature conservation value of the site. In addition, adequate mitigatory and/or compensatory provision proportionate to the ecological resources lost will be required alongside enhancements to the ecological resource.</p>
<b>Blaenau Gwent County Borough Council (BGCBC) Local Development Plan (LDP) up to 2021 (adopted November 2012)<sup>13</sup></b>	<p>The BGCBC LDP includes a number of policies relating to biodiversity. Strategic Policy 10 (SP10) Protection and Enhancement of the Natural Environment: outlines the measures to protect, and, where appropriate, enhance Blaenau Gwent's natural environment and designated landscape, measures include ensuring that:</p> <ul style="list-style-type: none"> <li>• The development does not have a significant effect on the neighbouring Usk Bat Site, Cwm Clydach Woodlands and Aberbargoed Grasslands;</li> <li>• The locally identified Site of Importance for Nature Conservation (SINC) and Local Biodiversity Action Plan (LBAP) species are protected and enhanced; and</li> </ul>

<sup>10</sup>Welsh Government (2024) Planning Policy Wales, Edition 12, February 2024. (Online). Available at: [https://www.gov.wales/sites/default/files/publications/2024-02/planning-policy-wales-edition-12\\_1.pdf](https://www.gov.wales/sites/default/files/publications/2024-02/planning-policy-wales-edition-12_1.pdf) (Accessed August 2024).

<sup>11</sup>Welsh Government, (2009). Planning Policy Wales Technical Advice Note 5: Nature Conservation and Planning. (Online) Available at: <https://gov.wales/technical-advice-note-tan-5-nature-conservation-and-planning> (Accessed August 2024).

<sup>12</sup>Torfaen County Borough Council (December 2013). Local Development Plan (LDP) up to 2021. Available at: <https://www.torfaen.gov.uk/en/PlanningAndDevelopment/Planningpolicy/LocalDevelopmentPlan/Local-Development-Plan.aspx> (Accessed August 2024)

<sup>13</sup>Blaenau Gwent County Borough Council (November 2012) Local Development Plan up to 2021. Available at: <https://www.blaenau-gwent.gov.uk/en/resident/planning/local-development-plan/> (Accessed August 2024).

Policy	Policy context
	<ul style="list-style-type: none"> <li>The development seeks to produce a net gain in nature conservation by designing in wildlife, and ensuring any avoidable impacts are appropriately mitigated for.</li> </ul> <p>Additionally, proposal should conform to policies DM14, DM15 and DM16.</p> <p>Policy DM14 refers directly to developments within 10km of the Usk Bat Sites SAC, as well as impacts of developments on Local Nature Reserves (LNRs) and SINC, ecological corridors and priority habitats and species. Policy DM15 relates to the protection of green spaces, while Policy DM16 relates to the protection to tree, woodlands and hedgerows.</p>
<b>Blaenau-Gwent Local Biodiversity Action Plan 2015</b>	The national strategy for biodiversity is delivered at local level via LBAP. Blaenau Gwent's LBAP is the driver to protect, enhance and manage the biodiversity resource, by setting out objectives, targets and actions for the conservation of biodiversity within Blaenau Gwent.

## Technical guidance

8.2.4 A summary of the technical guidance for Biodiversity is given in **Table 8.3**, this guidance was used to define the survey methods employed to inform this assessment.

**Table 8.3 Technical guidance relevant to the Biodiversity assessment**

Technical guidance document	Context
<b>CIEEM (2022)<sup>14</sup> Guidelines for Ecological Impact Assessment in the UK and Ireland. Terrestrial, Freshwater, Coastal and Marine (version 1.2 updated April 2022)<sup>15</sup></b>	Provides practical advice for all professionals involved with ecological evaluation and assessment for proposed developments in terrestrial, freshwater, marine and coastal environments.
<b>Joint Nature Conservation Committee (2010) Handbook for Phase 1 Habitat Survey: A Technique for Environmental Audit; JNCC, Peterborough.<sup>16</sup></b>	Presents a standardised system for classifying and mapping wildlife habitats in all parts of Great Britain, including urban areas. The Phase 1 habitat classification and associated field survey technique provides a relatively rapid system to record semi-natural vegetation and other wildlife habitats. Each habitat type/feature is defined by way of a brief description and is allocated a specific name, an alpha-numeric code, and unique mapping colour. The system has been widely used and continues to act as the standard 'Phase 1' technique for habitat survey across the UK.
<b>Bat Surveys for Professional Ecologists.</b>	A reference guide for ecological consultants working on bat surveys. They are not a prescription for professional bat work and do not aim to override

<sup>14</sup>The CIEEM guidelines were published in September 2018 and updated April 2022, hereafter referenced as CIEEM 2022.

<sup>15</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/resource/guidelines-for-ecological-impact-assessment-ecia/> Accessed August 2024.

<sup>16</sup>JNCC (2016) Handbook for Phase 1 habitat survey – a technique for environmental audit (JNCC, Peterborough). Available online at: <https://data.jncc.gov.uk/data/9578d07b-e018-4c66-9c1b-47110f14df2a/Handbook-Phase1-HabitatSurvey-Revised-2016.pdf> (accessed August 2024).

Technical guidance document	Context
<b>Good Practice Guidelines (3rd<sup>17</sup> and 4th Editions<sup>18</sup>)</b>	professional judgment and cannot be used to replace experience. Deviations from the methods described are acceptable providing professional rationale is clear and the ecologist is suitably qualified and experienced.
<b>Bats and Onshore Wind Turbines: Survey Assessment and Mitigation.<sup>19</sup></b>	This guidance updates best practice information for developers and planners to ensure that onshore wind energy developments post minimal risk to bats. The purpose of this document is to help planners, developers and ecological consultants to consider the potential effects of onshore wind energy developments on bats. The emphasis is on direct impacts such as collision mortality, but there is reference throughout to the need for a full impact assessment requiring a wider consideration of other (indirect) effects.
<b>Priority Habitats of Wales – A Technical Guide<sup>20</sup></b>	This document provides the evidence base to support the key messages included in Chapter 3 of The State of Natural Resources Report, which presents a summary of the available evidence on the extent, condition and trends of natural resources and ecosystems in Wales.

## 8.3 Consultation and engagement

### Overview

- 8.3.1 The assessment has been informed by consultation responses and ongoing stakeholder engagement. An overview of the approach to consultation is provided in **Section 2.4 of Chapter 2: Approach to preparing the Environmental Statement**. The consultation responses set out below are from the withdrawn Mynydd Llanhilleth Wind Farm Application (DNS/3273368), this application constituting a resubmission of the withdrawn application following the removal of Turbine 5 and minor amendment to the grid connection location from the Proposed Development. Consultation responses received as part of the withdrawn application have been included here where relevant.

### Scoping Opinion

- 8.3.2 A Scoping Direction was previously issued by PEDW, on behalf of the Welsh Ministers, on 06 August 2021, in respect of DNS application (reference DNS/3273368) for the Site, since withdrawn to allow for revisions to the scheme. As such, previous responses received as part of the Scoping Opinion in relation to Biodiversity and confirmation of how these have been addressed within the assessment remain relevant, a summary of which is presented in **Table 8.4**.

<sup>17</sup>Collins (ed.) (2023). Bat surveys for professional ecologists: Good practice guidelines. 3rd Edition. Bat Conservation Trust, London.

<sup>18</sup>Collins (ed.) (2016). Bat surveys for professional ecologists: Good practice guidelines (4th Edition). Bat Conservation Trust, London.

<sup>19</sup>SNH, Natural England, Natural Resources Wales, RenewableUK, Scottish Power Renewables, Ecotricity Ltd, the University of Exeter & Bat Conservation Trust (BCT) (2021). Bats and Onshore Wind Turbines: Survey Assessment and Mitigation Available at: <https://www.nature.scot/doc/bats-and-onshore-wind-turbines-survey-assessment-and-mitigation> Accessed August 2024.

<sup>20</sup>Jones PS, Stevens DP, Blackstock TH, Burrows CR, Howe EA. 2003. Priority Habitats of Wales – a Technical Guide. Bangor: Countryside Council for Wales.



**Table 8.4 Summary of EIA Scoping Direction responses for Biodiversity**

Consultee	Consideration	How this is addressed in this ES
<b>Natural Resources Wales (NRW)</b>	<p>NRW returned a preliminary opinion in March 2021 (the Discretionary Advice Service was not available at the time of the request, limited to European Protected Species (EPS), and advised for liaison to be undertaken with the relevant Ecology Officers.</p> <p>NRW broadly agreed with the assessment methodology and scope of survey work, although identified the need to provide further consideration in respect of otter and water vole, and that all ponds within 250m of ancillary infrastructure also be considered.</p>	<p>A consultation request was made to the Ecology Officers at Torfaen County Borough Council (TCBC) and Blaenau Gwent County Borough Council (BGCBC) in April 2021.</p> <p>Survey work was subsequently extended to include the grid connection corridor and access points, as well as to include consideration of otter, water vole, common reptiles, great crested newt and invertebrates in accordance with the NRW response and PEDW Scoping Direction.</p>
<b>Planning and Environment Decisions Wales (PEDW)</b>	<p>PEDW confirmed within the Scoping Direction their agreement with the general scoping approach proposed in respect of designated sites (ID.9 &amp; ID.10), habitats, dormouse (ID.6), badgers (ID.8) and bats (ID.12), although they concur with NRW with respect to needing further otter and water vole surveys (ID.5) as well as surveys for common reptiles (ID.4) and all ponds within 250m of associated ancillary infrastructure (ID.7). PEDW also set out a requirement for a targeted suitability survey to be undertaken in respect of invertebrates (ID.13).</p>	<p>Survey work was subsequently extended to include consideration of otter, water vole, common reptiles, great crested newt and invertebrates.</p>
<b>TCBC and BGCBC</b>	<p>TCBC and BGCBC have confirmed their agreement with the scope of the survey work proposed, assessment methodology and designated sites to be scoped into the assessment.</p> <p>TCBC highlighted the need to the Environmental Impact Assessment (EIA) to also cover the access point and grid connection corridor.</p>	<p>Survey work was subsequently extended to include the grid connection corridor and access points.</p>

## Draft Biodiversity Impact Assessment Consultation

- 8.3.3 Subsequent to scoping, a draft ES, including an EIA Chapter, was submitted for Pre-application Consultation (PAC). The PAC is being repeated in 2024 to fulfil statutory requirements under the resubmission, however, it is considered relevant to include the previous correspondence given the absence of changes to the baseline and only limited changes to the proposals (primarily the removal of a single turbine, T5, and amendment to the grid connection location). The previous consultation provides useful context to the assessment. Only NRW provided a response on biodiversity to the previous draft

submission<sup>21</sup>, a summary of which, together with confirmation of how their comments have been addressed within the assessment, is presented in **Table 8.5**.

**Table 8.5 Summary of Draft Biodiversity Impact Assessment Responses**

Consultee	Consideration	How this is addressed in this ES
NRW	Requested that the bat report and Chapter 8 Biodiversity document are updated, including: Automated static detector monitoring at the location of each of the proposed turbines, for the minimum advised recording period for each season; Analysis of updated bat survey data using Ecobat separated by season and for each turbine location;	Detailed justification for the extent of survey undertaken of the Site included within <b>Appendix 8A</b> and <b>Appendix 8B</b> and within this ES in respect of the Ecobat assessment.
NRW	Details of mitigation and post-construction monitoring proposals where the potential impact of the proposals on bat species at moderate or high risk of collision with wind turbines is anything other than low;	Additional clarity provided within this ES at Section 8.9, with mitigation measures including feathering, curtailment and monitoring.
NRW	Review and revision of turbine locations to achieve the minimum advised separation distance buffers between turbines and nearest bat habitat features, with the following options implemented as appropriate: I. Removal of turbines from hedgerows/tree lines; II. Re-siting of turbines; III. Habitat manipulation to achieve the minimum separation distance between turbine and nearest bat habitat; IV. Turbine curtailment for the duration of the active bat season where the minimum separation distance between turbine and nearest bat habitat cannot be achieved by the other means above.	Additional information provided within <b>Appendix 8C</b> and <b>Figure 8.1</b> and within this ES at Section 8.9 confirming adequate separation distance buffers between turbine locations and the nearest bat habitat features.
NRW	A table which provides the following details for each turbine: I. the nature of the habitat at the turbine location; II. the distance between the turbine and the nearest bat habitat feature; III. the nature of the nearest bat habitat feature (e.g. woodland edge, hedgerow, tree line) and its height above ground level; and IV. The separation distance required between each turbine and the nearest habitat feature (according to the	Additional information provided within <b>Appendix 8A</b> , <b>Appendix 8C</b> , <b>Figure 8.1</b> and within this ES.

<sup>21</sup> Set out within NRW's letter dated 22.01.2024 (NRW reference CAS-244356-W6X1)

Consultee	Consideration	How this is addressed in this ES
	calculation in Figure 1 of the joint agency guidance).	
NRW	Clarification regarding whether the cable connection route will impact buildings or trees with potential to support bats and, if so, details of the further surveys carried out along with details of all the mitigation that will be put in place as appropriate.	Additional clarity provided within this ES.

## Final Submission Consultation

8.3.1 Subsequent to PAC, a further consultation response was received from NRW in relation to the final ES submission<sup>22</sup>, a summary of which, together with confirmation of how their comments have been addressed within this draft ES resubmission, is presented in **Table 8.6**.

**Table 8.6 Summary of Final Submission Consultation Responses**

Consultee	Consideration	How this is addressed in this Draft ES
NRW	Automated detector locations were not positioned at the proposed turbine locations, such that detectors are likely too far to detect bat passes in the area of the proposed turbine locations. As such, robust mitigation measures including those embedded into the scheme will be of increasing importance to reduce any risks from the proposal on bats.	Additional clarity regarding detector locations is provided within <b>Appendix 8A</b> and within section 8.9 of this ES.
NRW	<p>Advises that a 50m buffer distance should be universally applied between turbine blade tip and nearest bat habitat features and is also applicable in determining the final position of turbines as part of utilising any micro-siting allowance controlled through planning condition.</p> <p>The required minimum stand-off buffer from the nearest bat habitat should be achieved; for some turbines (T1, T2, T6) there will be little/no room to utilise any micro-siting allowance and still meet the minimum required buffer.</p>	Bat buffer distances have been applied to all turbines, as detailed within this ES and illustrated at <b>Figure 8.1</b> .
NRW	The grid connection route surveys identified one building (at Rhiw Frank) and trees with potential to support bats; and the buildings at British Ironwork are also identified to have potential to support bats,	Further clarity is provided within this ES, reconfirming no impacts to these built structures.

<sup>22</sup> Set out within NRW's letter dated 22.01.2024 (NRW reference CAS-244356-W6X1)

Consultee	Consideration	How this is addressed in this Draft ES
	adjacent to the access track route. If these buildings will be altered or demolished by the proposed development, further bat surveys are required to support the application. At this juncture, it is not clear whether these buildings will be affected by the proposals.	

8.3.2 Torfaen CBCs and Blaenau CBCs LIR set out broad agreement with the conclusions of the ecology chapter.

## 8.4 Data gathering methodology

8.4.1 All survey methodologies used within the assessment followed published guidelines current at the time of the survey and accepted by statutory and non-statutory agencies, including NRW and the Chartered Institute for Ecology and Environmental Management (CIEEM). This Ecological Impact Assessment (EclA) follows the standard current guidance in place at the time of writing, as set out by the CIEEM and recommended by NRW.

8.4.2 The scope of the EclA has been determined by current ecological investigations of the Site and in respect of the previous Scoping Direction from PEDW and previous consultation responses received as part of an ES submission from NRW, TCBC and BGCBC. Whilst the previous DNS submission has since been withdrawn to allow for revisions to the scheme (most notably the removal of turbine 5), this process has informed the identification of Important Ecological Features (IEFs) pertinent to the proposals, and the likely scope of potential impacts on these receptors.

### Study area

8.4.3 The Site is centred at approximate Ordnance Survey National Grid Reference S0 235 017 and occupies part of Mynydd Llanhilleth Common located between Abersychan (within TCBC) and Abertillery (within BGCBC), in addition to encompassing former quarry areas and associated areas of coniferous woodland across its southern extents. The Site was initially subject to ecological survey during 2020, which was expanded to encompass additional land parcels, and was subject to additional survey during 2021, 2022, 2023 and 2024.

8.4.4 The Study Area comprises the following:

- The land within the Site boundary (as shown on **Figure 1.2**);
- The search area for international, national and local designations;
- The search area for protected/notable species; and
- for the Wind Farm development and Grid Connection Corridor<sup>23</sup>, the field survey areas for each ecological feature covered during baseline data collection activities.

<sup>23</sup> The Grid Connection comprises an underground line which runs from the onsite substation to the connection point with the existing network.

## Desk study

- 8.4.5 The desk study comprises an important element of the baseline ecological appraisal of a site proposed for development, enabling the initial collation and review of contextual information such as designated sites and past records of protected and priority<sup>24</sup> species.
- 8.4.6 The desk study involved collating information from both statutory and non-statutory bodies, including:
- South-East Wales Biodiversity Records Centre (SEWBRcC);
  - Aderyn (the Biodiversity Information and Reporting Database of Local Environmental Records Centres Wales); and
  - Multi-Agency Geographic Information for the Countryside (MAGIC<sup>25</sup>).
- 8.4.7 The desk study was undertaken during April 2020 and updated in April 2022 and August 2024 with the following information requested:
- International statutory designations (30km search radius);
  - National statutory designations (15km);
  - Non-statutory local sites (5km);
  - Annex II bat species<sup>26</sup> records (6km search radius); and
  - All other protected/notable species records (2km).
- 8.4.8 These search areas are considered sufficient to cover the potential Zones of Influence (Zoi)<sup>27</sup> of the Proposed Development in relation to designated sites, habitats and species.
- 8.4.9 A summary of the organisations that have supplied data, together with the nature of that data is outlined in **Error! Reference source not found..**

**Table 8.5 Data sources used to inform the Biodiversity assessment**

Organisation	Data source	Data provided
<b>South East Wales Biological Records Centre (SEWBRcC)</b>	SEWBRcC via Aderyn	Species records on or within the vicinity of the study area including all bat species (10km radius), all other protected and priority species (2km radius), international designations (30km radius), National designations (15km radius) and local designations (5km radius).
<b>Multi-Agency Geographic Information for the Countryside (MAGIC) (<a href="http://www.magic.gov.uk">www.magic.gov.uk</a>)</b>	MAGIC	International designations (30km radius), National designations (15km radius) and priority habitats (2km radius).

<sup>24</sup> Species which are considered to be of key significance to sustain and improve biodiversity in Wales, as listed under Section 7 of the Environment (Wales) Act 2016.

<sup>25</sup> [www.magic.gov.uk](http://www.magic.gov.uk)

<sup>26</sup> Annex II species comprise those listed under Annex II of the Habitats Directive which occur in the UK and for which SACs are designated. The objectives of the National Site Network, which includes all SACs and SPAs, are to maintain or, where appropriate, restore such species to a favourable conservation status. In respect of bats, these include greater horseshoe bat, lesser horseshoe bat, barbastelle and Bechstein's bat.

<sup>27</sup> Zone of Influence - the areas and resources that may be affected by the Proposed Development.

## Survey work

8.4.10 A suite of surveys has been carried out within the Site, comprising the following surveys:

- Extended Phase 1 survey of the Site in April 2020;
- Extended Phase 1 survey of the proposed access route in July 2022 and July 2024;
- Extended Phase 1 survey of the proposed grid connection corridor in August 2022 and July 2024;
- Detailed botanical surveys<sup>28</sup> of the Site in May 2020, June 2021, May 2022 and July 2024;
- Bat roost surveys: ground-level visual assessment of trees associated with the proposed turbine locations during March, April and May 2021 and during April 2022; ground-level and aerial tree inspections of those trees with potential roost features during July and September 2021 and during April and May 2022; update ground-level visual assessment on 15 and 16 July 2024 to determine any material changes during the interim period; ground-level visual assessment of trees and built structures associated with proposed improvement works to the access route during June 2023; aerial tree inspections of those trees with potential roost features associated with the proposed improvement works to the access route during April 2024; ground-level building assessments of the Site in March and May 2021; dusk emergence surveys of buildings onsite between May and August 2021; ground-level assessments of quarry/rock faces onsite in March 2021; dusk emergence/dawn back-tracking surveys of quarry rock faces onsite between June and September 2021; and dusk emergence/dawn back-tracking surveys of agricultural land across the eastern extents of the Site between June and September 2021;
- Bat foraging/commuting activity surveys: manual transects on seven occasions between May and October 2020 and on four occasions between June and September 2021; automated detector surveys carried out monthly between May and October 2020 and between April and October 2021; deployment of a weather station between August 2020 and October 2021;
- Badger surveys in April 2020, updated through subsequent visits to Site throughout the survey period;
- Dormouse surveys with tubes deployed in April 2020 and checked between May to November 2020 and April to November 2021;
- Otter and water vole surveys in April 2020, updated in April 2022 and July 2024;
- Great crested newt surveys comprising Habitat Suitability Index (HSI) assessment in May 2020, May 2021 and July 2024; environmental DNA (eDNA) surveys in May 2020 and May 2021; and
- Invertebrate surveys between June and August 2021.

8.4.11 The methodology used for these surveys is further detailed in Section 2 of **Appendix 8A**, the Ecology Baseline.

---

<sup>28</sup> Detailed botanical surveys adopted DAFOR methodology whereby plant species are identified according to their abundance (Dominant, Abundant, Frequent, Occasional, or Rare). National Vegetation Classification (NVC) methodology was also utilised where appropriate to classify distinct plant communities and sub-communities supported with respect to their species composition and relative abundance, in addition to determining their botanical value and relative nature conservation value.

- 8.4.12 Although surveys for common reptiles were scoped out, incidental sightings of common lizard were recorded within the moorland across the Site, and of slow-worm in association with the main access route.

## 8.5 Overall baseline

- 8.5.1 This section summarises the baseline ecological conditions determined through the course of desk-based and field-based investigations. This section identifies and evaluates those ecological (non-ornithology) features/receptors that lie within the Site's potential Zol, and which are pertinent in the context of the Proposed Development. Further technical details are provided within **Appendix 8A**.

### Current baseline

#### Site Context and Surrounding Habitats

- 8.5.2 The Proposed Development occupies part of Mynydd Llanhilleth Common located between Abersychan (within TCBC) and Abertillery (within BGCBC), in addition to encompassing a former quarry and associated area of coniferous woodland across its southern extents. It lies in the centre of a large, north-south trending ridge of high land between the Cwm Afon valley (Abersychan, Pontypool etc.) to the east, and the Ebbw Fach valley (Abertillery) to the west. This ridge comprises a series of plateaux typically between 400m and 550m above sea level and is characterised by much unenclosed land grazed by sheep, and to a lesser extent cattle and horses. There is much evidence of historic industrial activity on the slopes of the ridge, particularly in the Cwm Afon valley. Areas of plantation forestry are common elsewhere on the slopes of the ridge and drystone walls augmented with post and wire fencing demarcate the edge of the unenclosed area from the surrounding enclosed pastures. These are managed in a relatively intensive manner and appear to be relatively species-poor.
- 8.5.3 A minor public highway, running north-east to south-west, from Abersychan to Llanhilleth, bisects the Study Area. Numerous unmetalled tracks otherwise cross the Study Area. A small stream/flush arises from the block of coniferous woodland/quarry area and flows southwards. Additionally, there are several waterbodies, several being located within the former quarry and created from former quarry workings.
- 8.5.4 Other than the coniferous plantation and former quarry dominating the southern extents of the Study Area, habitats supported by the wider Common area typically comprise five distinct plant communities: heather-dominated dry dwarf shrub heath on the areas of highest elevation; a crowberry-dominated community on elevations slightly below the heather-dominated areas; a bilberry-dominated community below that; a small area dominated by bracken in the east; and relatively species-poor acidic grassland and species-poor rush pasture across the remainder. In addition, there is an area in the north-east of the Study Area where bracken overlies areas of both crowberry-dominated and bilberry-dominated communities.
- 8.5.5 There are several areas where some of these habitats/communities intergrade or form complex mosaics but in general the main distinct habitats predominate. The most complex area of intergraded or mosaic habitat is in the south where acidic grassland and marshy grassland are very difficult to separate into distinct blocks of homogenous habitat.
- 8.5.6 In respect of the proposed access route, this extends circa 3.6km along an existing, surfaced public highway from the urban area of Talywain in the north-east, heading south-westwards towards the Site to a point on the high plateau of Mynydd Llanhilleth Common. Given its length and altitudinal range, the route supports a variety of habitats

either side of the highway, with areas of dwarf shrub heath dominated by common heather together with bell heather, bilberry and species-rich grassland being of greatest botanical significance. Such habitats most frequently occur in road cuttings along the middle slopes, and upon spoil tips present across the northern section of the route. Neutral grassland is also supported along the northern section of the route, whilst unimproved and semi-improved acid grassland occurs along the middle section of the proposed access route. The upper reaches (southern section) of the access route where it overlaps with Common typically supporting species-poor acid grassland and species-poor marshy grassland.

- 8.5.7 Regarding the proposed grid connection corridor, this route is primarily centred on an unsurfaced track, with the north-western three quarters of the surveyed area supporting a mosaic of unimproved acid grassland and semi-improved acid grassland with abundant bilberry. Dense bracken frequently occurs to the north of the track. The remainder of the surveyed area otherwise largely comprises semi-improved acid grassland with small areas of dense bracken, marshy grassland and mature and semi-mature parkland trees. A mosaic of scrub, bracken and unimproved acid grassland also occurs at the far south-eastern end of the proposed corridor. Generally, habitats south of the track are tightly grazed or mown/topped and of reduced botanical value.

## Designated Sites

- 8.5.8 Statutory designations represent the most significant ecological receptors, being of recognised importance at an international and/or national level. International designations include Special Protection Areas (SPAs), Special Areas of Conservation (SACs) and Ramsar sites. National designations include SSSIs and National Nature Reserves (NNRs). Local level statutory designations include LNRs.
- 8.5.9 No part of the Site is covered by any statutory designations. However, there are a number of such designations within the Site's potential Zol, as further detailed in **Appendix 8A**.
- 8.5.10 Non-statutory designations are also commonly referred to in planning policies as 'local sites' and are typically considered to be of importance at a County level. In the counties of Blaenau Gwent, Caerphilly and Torfaen, such designations are named SINC. Additional designated sites which should be considered at this level include LNRs and Ancient Semi Natural Woodland (ASNW), where these are not covered by other designations.
- 8.5.11 There are several SINC which are partly present within the Site itself, as well as several blocks of ancient woodland and two local nature reserves. These are further detailed in **Appendix 8A**.
- 8.5.12 Those designated sites that considered to be IEFs, and which are subject to further assessment, are set out in Table 8.6 below.



**Table 8.6 Statutory and Non-Statutory Designations Within the Site's Potential Zone of Influence**

Designation	Approximate Distance from Site & Key Attributes	Nature Conservation Importance
<b>International Sites</b>		
<b>Aberbargoed Grasslands SAC</b>	Measures 42.5 hectares (ha) and situated circa 6km south-west. Qualifying features include <i>Molinia</i> meadows on calcareous, peaty or clayey-silt-laden soils and the large and relatively isolated population of marsh fritillary butterfly ( <i>Euphydryas aurinia</i> ) located across a series of damp pastures and heaths, representing the species on the eastern edge of its range.	International
<b>Usk Bat Sites SAC</b>	Situated circa 8km to the north (closest section), supporting one of the largest maternity roosts of lesser horseshoe bat and a number of important hibernacula within the cave systems, supporting up to 5% of the UK population.	International
<b>Cwm Clydach Woodlands SAC</b>	9km north-west. Cwm Clydach is of particular importance for its stands of beech ( <i>Fagus sylvatica</i> ) dominated woodland which also support a number of rare and scarce vascular plants and fungi assemblages.	International
<b>River Usk SAC</b>	Located 10km east (closest section). Important for its fish populations including twaite shad ( <i>Alosa fallax</i> ), allis shad ( <i>Alosa alosa</i> ), Atlantic salmon ( <i>Salmo salar</i> ), bullhead ( <i>Cottus gobio</i> ), river lamprey ( <i>Lampetra fluviatilis</i> ), brook lamprey ( <i>Lampetra planeri</i> ) and sea lamprey ( <i>Petromyzon marinus</i> ). The Site is also important for its otter ( <i>Lutra lutra</i> ) population and diverse and high-quality riparian habitats supported.	International
<b>Sugar Loaf Woodlands SAC</b>	14km north-east. This SAC supports an internationally important area of western sessile oak woodland as well as beech plantation woodland, heathland, bracken, scrub and grassland.	International
<b>Coed y Cerrig SAC</b>	18km north-east. Coed y Cerrig supports alluvial forests dominated by alder ( <i>Alnus glutinosa</i> ) and ash ( <i>Fraxinus excelsior</i> ).	International
<b>Severn Estuary SPA/ SAC/ Ramsar</b>	18km south-east. The Severn Estuary is important for migratory birds with its tidal flats and associated wetlands regularly supporting over 20,000 wintering waterfowl. Internationally important populations of five species of waterfowl are regularly supported by the estuary. These include European white-fronted goose ( <i>Anser albifrons albifrons</i> ), shelduck ( <i>Tadorna tadorna</i> ), gadwall ( <i>Anas strepera</i> ), dunlin ( <i>Calidris alpina alpina</i> ) and redshank ( <i>Tringa totanus</i> ). In addition, the islands of Flat Holm and Steep Holm support a nationally important breeding population of lesser black-backed gull ( <i>Larus fuscus</i> ). The Severn Estuary also regularly supports an internationally important population of Bewick's swan ( <i>Cygnus columbianus bewickii</i> ), an Annex I species.	International

Designation	Approximate Distance from Site & Key Attributes	Nature Conservation Importance
<b>Cardiff Beech Woods SAC</b>	18km south-west. The SAC represents an area of semi-natural broadleaved woodland dominated by beech. Features of particular interest include Asperulo-Fagetum beech forests (45ha) and Tilio-Acerion forests of slopes, screes and ravines (30ha)	International
<b>Llangorse Lake SAC</b>	24km north-west. Important for its aquatic and marginal plants, including several that are rare in this part of Wales. The site also supports several important habitats including submerged and floating plant beds, marginal swamp, fen vegetation, marshy grassland, unimproved grassland, willow scrub and wet woodland.	International
<b>Brecon Beacons SAC</b>	26km north-west. Designated for a range of habitats including calcareous and siliceous rocky slopes supporting rich flora, in addition to dry heaths and hydrophilous tall herb fringe communities of plains and of the montane to alpine levels.	International
<b>Cwm Cadlan SAC</b>	26km north-west. Cwm Cadlan is particularly important for its excellent examples of Molinia meadows and alkaline fens.	International
<b>River Wye SAC</b>	27km east. The site supports an important fish assemblage including species such as twaite shad, allis shad, Atlantic salmon, river lamprey, brook lamprey and sea lamprey. The Site is also important for its otter and white-clawed crayfish ( <i>Austropotamobius pallipes</i> ) populations. A diverse and high-quality riparian corridor is also supported by the SAC.	International
<b>Blaen Cynon SAC</b>	27km north-west. Supports the largest metapopulation of marsh fritillary butterfly on the southern edge of the Brecon Beacons National Park (BBNP).	International
<b>Wye Valley and Forest of Dean Bat Sites SAC</b>	28km east. The Wye Valley and Forest of Dean Bats SAC is situated across the Wales-England border and is underpinned by four SSSI in Wales and nine in England. The SAC is particularly important for lesser horseshoe bat and greater horseshoe bat ( <i>Rhinolophus ferrumequinum</i> ) with breeding colonies for both species located within the SAC.	International
<b>Wye Valley Woodlands SAC</b>	28km east. A large woodland site which has some of the best examples of Tilio-Acerion forests of slopes, screes and ravines, Asperulo-Fagetum beech forests and <i>Taxus baccata</i> woods of the British Isles. In addition, lesser horseshoe bats use the woodlands for foraging during the breeding period.	International
<b>National Sites</b>		
<b>Ty'r Hen Forwyn SSSI</b>	0.7km south. Ty'r Hen Forwyn is of special interest for its species-rich neutral grassland and for the association of this habitat with others including acid grassland, scrub, bracken and well-developed hedgerows.	National

Designation	Approximate Distance from Site & Key Attributes	Nature Conservation Importance
<b>Cwm Merddog Woodlands SSSI</b>	5km north-west. Cwm Merddog Woodlands is of special interest for its stands of beech woodland close to the westerly limit of its geographical range. The lower slopes of the Site support large areas of acid flushes with an open carr community dominated by alder and willows ( <i>Salix</i> spp.).	National
<b>Blorengre SSSI</b>	6km north-west. A large upland site supporting sub-montane heath with large areas of <i>Calluna</i> – <i>Empetrum</i> - <i>Vaccinium vitis-idaea</i> , a community which is of local distribution in south Wales.	National
<b>Aberbargoed Grasslands SSSI/NNR</b>	6km south-west. Aberbargoed Grasslands SSSI is of special interest for its marshy grassland communities and population of marsh fritillary butterfly. Part of Aberbargoed Grasslands SAC.	National
<b>Llandegfedd Reservoir SSSI</b>	6km east. Llandegfedd Reservoir is the largest inland open water habitat in the County and a regionally important area for overwintering wildfowl in Wales. The site is particularly important for the overall numbers and variety of wintering wildfowl, with large numbers of wigeon ( <i>Anas penelope</i> ), pochard ( <i>Aythya ferina</i> ) and mallard ( <i>Anas platyrhynchos</i> ).	National
<b>Memorial Park Meadows Pontllanfraith SSSI</b>	7km south-west. The site supports a large area of unimproved grassland made up of four fields which are the remnants of a traditionally managed farm.	National
<b>Penllwyn Grasslands SSSI</b>	7km south-west. This site supports a mosaic of habitats including wet acid grassland, woodland, scrub and tall herb vegetation, alongside an extensive area of species-rich <i>Molinia</i> grassland representing the <i>Juncus acutiflorus</i> – <i>Erica tetralix</i> sub-community of the <i>Molinia caerulea</i> – <i>Cirsium dissectum</i> fen meadow type which is of very local distribution and confined to south-western Britain. The Site also supports a diversity of macro-invertebrate communities with more than 12 species of butterfly and 90 species of macro-moths recorded including colonies of marsh fritillary butterfly.	National
<b>Siambre Ddu SSSI</b>	Situated circa 8km north of the Site and comprising a component SSSI unit of the Usk Bat Sites SAC, supporting hibernating lesser horseshoe bats within its cave comprising the third largest hibernation site in Gwent for lesser horseshoe bat.	National
<b>Henllys Bog SSSI</b>	8km south-east. Henllys Bog comprises a small fen with a species-rich ground flora. It is the only site in the County for marsh helleborine ( <i>Epipactis palustris</i> ).	National
<b>Cefn Y Brithdir SSSI</b>	8km west. The steep slopes of Cefn Y Brithdir hill support the best example in mid Glamorgan of a dwarf shrub heath community in which crowberry occurs as a co-dominant species.	National
<b>Gilwern Hill SSSI</b>	9km north. Gilwern Hill is particularly important for its areas of limestone grassland which support several species that are rare in the county.	National

Designation	Approximate Distance from Site & Key Attributes	Nature Conservation Importance
<b>Cwm Llanwenarth Meadows SSSI</b>	9km north-east. Two unimproved meadows supporting a diverse range of plant communities.	National
<b>Mynydd Llangattock SSSI (encompassing Craig Y Cilau NNR)</b>	Situated circa 9km to the north-west of the Site and comprising a component SSSI unit of the Usk Bat Sites SAC, supporting one of the five most important hibernation sites in the UK for lesser horseshoe bat.	National
<b>Cwm Clydach SSSI/NNR</b>	9km north-west. Cwm Clydach is of particular importance for its stands of beech dominated woodland which also support a number of rare and scarce vascular plants including whitebeams ( <i>Sorbus</i> spp.) and soft-leaved sedge ( <i>Carex disperma</i> ). Part of Cwm Clydach Woodlands SAC.	National
<b>Coed-Y-Person SSSI</b>	10km north-east. A large area of ancient semi-natural woodland on the steep north facing lower slopes of the Bloreng mountain, which includes one of the most extensive areas of coppice beech in the county.	National
<b>Penpergwm Pond SSSI</b>	10km north-east. Penpergwm Pond is the best example of a natural mesotrophic water body in the county with a diverse emergent flora and a number of national and county rarities.	National
<b>River Usk (Lower Usk) SSSI</b>	10km east. The River Usk (Lower Usk) is particularly important as a rare example of a large mesotrophic lowland river which has not been subject to significant manmade modification. The site is also important for its invertebrate assemblage, otter population, diverse flora, breeding bird assemblage and diverse and high-quality riparian habitats. Part of the River Usk SAC.	National
<b>Priory Wood SSSI</b>	11km north-east. Priory Wood is assessed to be the best remaining example of ancient semi-natural woodland on the Silurian rocks of the Usk Inlier.	National
<b>Nelson Bog SSSI</b>	11km south-west. Nelson Bog is of special interest for its range and diversity of mire communities. The SSSI is also an important ornithological site with over 90 species recorded.	National
<b>River Usk (Upper Usk) SSSI</b>	12km north. The River Usk (Upper Usk) is assessed to be a fine example of an upland river flowing in part over hard sandstones, creating steeply graded sections with rocks, cascades, boulders and cliff-bound banks. The biological diversity of the site is also of partial interest with important populations of fish, breeding, birds, otter, mosses and lichens. Part of the River Usk SAC.	National
<b>River Usk (Tributaries) SSSI</b>	13km north. The Usk system, comprising the River Usk and including its upper tributaries, represents a large, linear ecosystem that acts as an important wildlife corridor, an essential migration route and key breeding area for many nationally and internationally important species. The Usk tributaries support internationally important populations of otter, Atlantic salmon, bullhead, brook lamprey and river lamprey. Part of the River Usk SAC.	National

Designation	Approximate Distance from Site & Key Attributes	Nature Conservation Importance
<b>Plas Machen Wood SSSI</b>	13km south. The site comprises coppice woodland dominated by alder and supporting a diverse ground flora. A number of streams and waterlogged areas support an interesting flora.	National
<b>Ruperra Castle &amp; Woodlands SSSI</b>	13km south. The site is of special interest for its maternity roost of greater horseshoe bat. The buildings at Ruperra Castle support a colony of greater horseshoe bats of national and international importance. Coed Craig Ruperra, the woodland area to the north of the roost, is also well used by the bats for foraging and commuting to more distant feeding and roosting areas. Also of interest are the Site's populations of great crested newt and hazel dormouse.	National
<b>Sugar Loaf Woodlands SSSI</b>	14km north-east. Sugar Loaf Woodlands SSSI supports three extensive areas of ancient coppice woodland on the south and east slopes of the Sugar Loaf Mountain.	National
<b>Severn Estuary SSSI</b>	18km south-east. Notified for its internationally important populations of wintering and wading birds of passage, supporting estuarine habitats of ornithological significance. The estuary as a whole supports about 10.5% of the British wintering population and is the single most important wintering ground of dunlin in Britain. The SSSI also supports large populations of migratory fish and a range of saltmarsh habitats which are important for their botanical diversity, supporting several nationally scarce species. The estuary's intertidal zone of mudflats, sand banks, rocky platforms and saltmarsh is one of the largest and most important in Britain. Also designated as an SPA/SAC/Ramsar site.	National
<b>Local Sites</b>		
<b>Blaen-y-cwm Upland Pasture SINC (T6)</b>	Overlapping with common land occurring across the centre of the Site and with Mynydd Llanhilleth Common SINC. Supports sheep grazed acid grassland/marshy grassland. Suitable for important bird species.	Local
<b>Blaensychan Valley SINC (T5)</b>	Abuts the north-eastern edge of the Site. A post-industrial site including ancient woodland, revegetated colliery spoil, bare ground, neutral and calcareous grassland. Important for invertebrates, reptiles and flora.	Local
<b>Cwm Ddu Woods, Blaenserchan SINC (T27)</b>	Overlaps with the north-eastern extent of the Site. This SINC supports ancient woodland, dwarf shrub heath, hedgerows, colliery spoil, a stream, small ponds and disused buildings.	Local
<b>Cefn y Crib SINC (T11)</b>	A small part of this SINC overlaps with the southernmost field onsite. Primarily supports acid and calcareous grassland.	Local
<b>Graig Ddu/Gelli-Deg Wood SINC (T42)</b>	A small part of this SINC overlaps with broadleaved woodland occurring at the far eastern end of the Site. An ancient woodland site on relatively high ground dominated by beech and oak.	Local

Designation	Approximate Distance from Site & Key Attributes	Nature Conservation Importance
<b>Mynydd Llanhilleth Common SINC (T55)</b>	Common land occurring across the centre of the Site (and overlapping with Blaen-y-cwm Upland Pasture SINC), in addition to fields to the south, this SINC supports a mosaic of upland habitat types including acid grassland, dwarf shrub heath, wet and dry heath and mire communities. Notable species supported include red grouse, wintering short-eared owl, upland breeding birds, olive earthtongue and reptiles.	Local
<b>Tirpentwys Cut SINC (B39/T92)</b>	Overlapping with coniferous plantation and former quarry areas situated across the southern extent of the Site. This SINC supports a mosaic of habitats including bog habitats and flushes, standing open water, post-industrial quarry and rock exposures. A significant site for breeding birds with several schedule 1 and notable bird species recorded within the Site including peregrine falcon, hobby, merlin, long-eared owl, reed bunting, crossbill, cuckoo, kestrel, linnet, tree pipit, raven, redpoll and redstart.	Local
<b>Waun Wen &amp; Cwmybyrgwm SINC (T108)</b>	Overlapping with the far north-eastern extent of the Site. Comprises a large expanse of dry heath/acid grassland mosaic.	Local
<b>Mulfran, Mynydd Coity, Mynydd James &amp; Gwastad SINC (B25)</b>	Overlapping with the north-western corner of the Site. Comprises an area of upland common land between two valleys and supports extensive dry heathland communities, as well as smaller areas of wet heathland, blanket mire, acid grassland, heather and bracken. This SINC also supports the Silurian moth ( <i>Eriopygodes imbecilla</i> ) (a priority species).	Local
<b>Disused Quarry colonised by acidic grassland and dry acidic heath SINC (T35)</b>	Overlapping with the access route in the north-east of the Site. Comprises acidic grassland and dry acidic heathland.	Local
<b>Mount View, Blaen-y-Cwm SINC (T51)</b>	Overlapping with a very small part of the south-eastern part of the Site and access route. Comprises acidic grassland (some on colliery spoil).	Local
<b>Penrhiwfid Fields SINC (T68)</b>	Overlapping with the very eastern end of the Site. Comprises neutral species-rich grassland.	Local
<b>Rhiw Frank Meadows SINC (T82)</b>	Overlapping with the eastern end of the grid connection corridor. Comprises neutral/acid grassland.	Local
<b>The British SINC (T91)</b>	Overlapping with the access route in the north-east of the Site. Comprises a high value mosaic habitat including ancient woodland.	Local
<b>Blaen-y-cwm Upland Pasture SINC (T6)</b>	Overlapping with Mynydd Llanhilleth Common SINC occurring across the centre of the Site. Sheep grazed acid grassland with marshy grassland.	Local

## Habitats

8.5.13 The distribution of different habitat types within and adjacent to the Site is described in detail within **Appendix 8A**.

8.5.14 Those habitat types considered likely to be impacted by the Proposed Development which require further consideration are listed in **Table 8.7** below.

**Table 8.7 Potential IEFs (habitats) present within the Site's potential Zone of Influence**

Potential IEF	Approximate Distance from Site and Key Attributes	Nature Conservation Importance
<b>Habitats - Onsite</b>		
<b>Former quarry areas and associated coniferous woodland</b>	Former quarry areas located centrally within the Site. Surrounding block of coniferous woodland subject to clear felling at the time of writing. Overlaps with Tirpentwys Cut SINC.	Local
<b>Broadleaved semi-natural woodland</b>	Areas of broadleaved woodland onsite overlap with Cwn Ddu Woods SINC and Graig Ddu/Gelli-Deg Wood SINC.	Local
<b>Heathland (including heathland/bracken mosaic)</b>	Dominates the northernmost extents of the Site and overlaps with Mynydd Llanhilleth Common, Blaen-y-cwm Upland Pasture and Waun Wen & Cwmyregwyn SINC.	Regional
<b>Acid grassland (unimproved and semi-improved)</b>	Areas supporting acid grassland onsite overlap with Mynydd Llanhilleth Common, Blaen-y-cwm Upland Pasture, Waun Wen & Cwmyregwyn and Cefn y Crib SINC.	Local
<b>Bracken</b>	Bracken is frequent across the Site, predominantly forming mosaics with dwarf shrub heath and grassland habitats. Dense stands also present.	Site
<b>Marshy grassland</b>	Areas of marshy grassland often forms a mosaic with smaller areas of species-poor acid grassland. Overlaps with Mynydd Llanhilleth Common and Blaen-y-cwm Upland Pasture SINC.	Local
<b>Improved grassland</b>	Agricultural fields occur across the western, south-western, south-eastern and north-eastern extents of the Site and support species-poor, semi-improved and improved grassland dominated by agricultural grasses.	Negligible
<b>Semi-improved neutral grassland</b>	Limited in extent, present across a field to the north-west and a further field south-east of the Site and subject to sheep and horse grazing. Frequent populations of eyebright notable within the north-western field.	Site
<b>Scrub (including mosaic of semi-improved acid</b>	Scrub habitat recorded in association with the field boundaries, margins of waterbodies and scattered across valley slopes and quarry faces. Also recorded in association	Negligible

Potential IEF	Approximate Distance from Site and Key Attributes	Nature Conservation Importance
<b>grassland and scattered scrub)</b>	with the boundaries of the residential properties adjacent to the Site.	
<b>Hedgerows and tree lines</b>	Limited in extent and quality, confined to agricultural field boundaries and comprise native hedgerows which are predominantly defunct and species poor.	Local
<b>Aquatic features</b>	Includes waterbodies, watercourses and wet/dry ditches. Widespread across the Site.	Local
<b>Hardstanding and buildings</b>	Associated with the Blaen-nant-y-caws farm.	Negligible
<b>Habitats – Main Access Route</b>		
<b>Dwarf shrub heath</b>	Dwarf shrub heath recorded in the road cuttings along the middle slopes but also occurs in the lower parts (northern sections) of the main access route upon old spoil tips.	Regional
<b>Unimproved &amp; semi-improved acid grassland</b>	Present across the middle reaches of the main access route. The upper reaches (Mynydd Llanhilleth Common; southern section) typically support species-poor acid grassland. Two populations of common cudweed recorded here.	Local
<b>Unimproved &amp; semi-improved neutral grassland</b>	Species-rich sections of neutral grassland occur across the lower reaches (northern section) of the main access route.	Local
<b>Marshy grassland</b>	Small pockets scattered along the main access route.	Site
<b>Broadleaved semi-natural woodland &amp; dense scrub</b>	Semi-mature broadleaved woodland present across the middle reaches of the access road, near the former British Ironworks Colliery compound. Dense scrub otherwise dominates the lower reaches (northern section) of the main access route, forming a mosaic in places with neutral grassland and tall herbs.	Local
<b>Dense bracken</b>	Dense stands occur over acid grassland on steep slopes. Bracken invasion common along the road verge across the middle reaches.	Site
<b>Aquatic features</b>	A steep-sided stream valley traverses the main access route north-west – southeast by the former British Ironworks Colliery compound. A shallow area of standing water lies along the existing hardstanding track	Local
<b>Built Structures</b>	Buildings associated with the derelict British Ironworks Colliery compound, including a brick-built engine house and other structures of more modern construction.	Negligible



Potential IEF	Approximate Distance from Site and Key Attributes	Nature Conservation Importance
<b>Habitats – grid connection corridor</b>		
<b>Dwarf shrub heath</b>	Present across the north-western area of proposed corridor forming areas of open vegetation. Forms a mosaic with acid grassland, bracken and scattered scrub.	Local
<b>Unimproved &amp; semi-improved acid grassland</b>	Present across the north-western area of proposed corridor, in association with dwarf shrub heath and an area of dense bracken.	Local
<b>Marshy grassland</b>	Limited to a small, species-poor area at southern most end of the grid connection corridor (area B).	Site
<b>Poor semi-improved grassland</b>	Species-poor semi-improved grassland limited to far southern end of the grid connection corridor (area B) and along area E.	Negligible
<b>Bracken &amp; scrub</b>	Scattered bracken and scrub occurs at the far south-eastern end of the grid connection corridor (area A). Dense bracken also dominates habitats to the north of the track.	Site
<b>Broadleaved semi-natural woodland &amp; secondary woodland</b>	Present across the south-eastern extent of proposed corridor in association with a small stream (Nant Ddu).	Local
<b>Coniferous plantation woodland &amp; recently felled woodland</b>	A small plantation dominated by Sitka spruce ( <i>Picea sitchensis</i> ) is located on the northern side of the track towards the eastern end of the grid connection corridor (T4), with trees likely less than 40 years old with poor growth. An area of felled woodland is also present here (area D), where semi-mature coniferous trees have been felled within the past five years or so, with dense bracken now dominant. Occasional spruce and larch ( <i>Larix</i> sp.) trees exist here, alongside beech and silver birch standards and young rowan and hawthorn trees.	Site
<b>Built structures</b>	Ruined stone dwelling present on an area of hillside known as Rhiw Frank (area T6).	Negligible

## Protected and/or Notable Species

- 8.5.15 Details of the surveys undertaken for protected species and their distributions within the Site are described in detail in **Appendix 8A**.
- 8.5.16 Pertinent desk study results for those species considered likely to be impacted by the Proposed Development which require further consideration are listed in **Table 8.8** below.

**Table 8.8 Potential IEFs (species) within the Site's Potential Zone of Influence**

Species (excluding birds)	Desk Study Records Pertinent to the Site (Undertaken April 2020 and updated April 2022 and August 2024)	Nature Conservation Importance
<b>Bats</b>	<p>The desk study returned multiple bat activity records within 10km of the Site, representing a combined total of 13 species as well as numerous records relating to <i>Myotis</i> and pipistrelle bat species. Bat species records are relatively evenly distributed within 10km of the Site. However, there are noticeable concentrations of bat species records around urban settlements and at lower elevations, the majority of which relate to small numbers of commuting/ foraging bats. Bat species records become noticeably sparse at higher elevations with only single records for noctule and common pipistrelle within the boundary of the Site. However, despite limited records for the Site itself, there are several records relating to common pipistrelle, brown long-eared bat, lesser horseshoe bat and myotis bat species roosts from within a variety of structures situated between Pontypool and Talywain, with the closest confirmed roost supporting low numbers of lesser horseshoe bat approximately 900m to the north-east of the Site's eastern boundary.</p> <p>With respect to roosting bats, a common pipistrelle and noctule bat were recorded to be roosting onsite within Tirpentwys Quarry during 2011. In addition, roosts comprising low numbers of common pipistrelle, lesser horseshoe bat and brown long-eared bat are present within 2km of the Site. The closest of these relates to a pipistrelle maternity roost located approximately 700m to the north-west of the Site within the village of Six Bells. Further afield and within 10km of the Site, numerous roosts relating to Brandt's bat, brown long-eared bat, common pipistrelle, Daubenton's bat, greater horseshoe bat, lesser horseshoe bat, Myotis sp., Natterer's bat, noctule, soprano pipistrelle, serotine and whiskered bat are present.</p> <p>Regarding Annex II bat species, several roosts for both lesser horseshoe bat and greater horseshoe bat are located within 10km of the Site. The majority of these records are associated with built structures at Pontypool and Cwmbran, with a cluster of roosts also identified along the section of the A465 between Brynmawr and Gilwern. Those records along the A465 corridor are primarily associated with the nearby cave network, road culverts and disused railway tunnels and have been identified through long-term detailed surveys and monitoring associated with the dualling of the A465. Comparatively, there are significantly fewer greater horseshoe bat records compared to lesser horseshoe bat records, with those for greater horseshoe bat predominantly confined to the Brynmawr to Gilwern A465 corridor, with a record for a bat roosting within a cave close to Blaenavon and a night roost located at a farm near Llandegveth. A single record for barbastelle bat was also returned from 2021, situated circa 4.9km to the south-west of the Site near Newbridge. No records for Bechstein's bat within 10km of the Site were returned during the desk study.</p>	Local
<b>Badger</b>	<p>A total of five records for badger were returned during the desk study. Two records relate to road kill circa 1.7 and 2.2km to the south of the Site, dated 2002 and 2017 respectively. Remaining records relate to badger evidence recorded circa 1.7km to the north</p>	Local

Species (excluding birds)	Desk Study Records Pertinent to the Site (Undertaken April 2020 and updated April 2022 and August 2024)	Nature Conservation Importance
	of the Site in 1995 and 2km to the south of the Site in 2007, with a more recent record of badger captured on a trail camera during 2023 circa 2.3km north of the Site.	
<b>Dormouse</b>	No records were returned for dormouse within 2km of the Site during the initial desk study searches. The update desk study in 2024 returned a single record of a dormouse nest located circa 600m south of the Site's boundary (circa proposed 900m south east of turbine location 8), dated 2022. In addition, a record for this species dating back to 2003 also exists for a block of woodland situated circa 5km south of the Site. Habitat connectivity between the Site and the recorded locations is limited however, whilst habitats supported by the Site are assessed as being sub-optimal for this species.	Site
<b>Otter and water vole</b>	Numerous records relating to otter field signs (predominantly spraints) were returned during the desk study assessment, the majority of which are associated with the River Ebbw located approximately 1km to the west of the Site. This includes a collection of nine spraint sites found along a section of this river close to the village of Aberbeeg, located approximately 1.4km to the west of the Site, recorded as recently as 2013. An otter field sign was also recorded for the edge of the western quarry area within the Site, dated 2017.	Local
<b>Great crested newt</b>	A desk study assessment returned no records for great crested newt within a 2km radius of the Site. There is, however, a record for great crested newt located approximately 2.3km to the south of the Site at Pen-y-caeau Farm, dating from 2010. However, numerous barriers of dispersal, most notably the A472 road, are present between this record and the Site.	Local
<b>Common reptiles</b>	A number of records for common lizard and slow-worm occurring within and adjacent to the Site were received during the desk study assessment. The most recent common lizard record retrieved during the desk study assessment relates to a record in 2018 of an individual seen within Tirpentwys Cut SINC located within the southern portion of the Site. As for slow-worm, the closest record dates back to 2015 and relates to a dead individual recorded circa 213m to the north-east of the Site. In addition, a record was also returned circa 450m to the north-east of the Site for a sighting of six individuals in 2017. More generally, whilst the majority of records relate to only small numbers of slow-worm, approximately 30 individuals were recorded during a 2007 survey located approximately 800m to the north-east of the Site, at an area of old ironworks known as the 'British'. In respect of grass snake, two records were returned for a location circa 1.9km north-east of the Site, dated 2000 and 2015, near the village of Talywain.	Local
<b>Invertebrates</b>	With respect to invertebrates, the desk study returned several records of notable invertebrate species, mostly of the order lepidoptera, within a 2km radius of the Site. Of those lepidoptera, SEWBReC returned several records of priority butterfly species. In addition, several notable dragonfly and damselfly species were returned from within a 2km radius of the Site.	County

## Bats

### Roosting

- 8.5.17 In respect of roosting bats, detailed tree inspections undertaken between March 2021 and April 2022 of all suitable trees within the vicinity of the proposed turbine locations (refer to **Appendix 8a, 8C** and **Figure 8.1**) did not confirm the presence of any bat tree roosts. However a number of trees within close vicinity of the proposed turbine locations are considered to have some suitability to support roosting bats, including, 11 trees with high potential, 36 trees with moderate potential and 21 trees with low potential.
- 8.5.18 Of these, tree T35 and T90 with low bat roost potential and trees T36, T45, T84 and T88 with moderate bat roost potential are also located within the footprint of the proposed grid connection corridor, whilst trees T42 and T43 with low bat roost potential, T12 and T87 with moderate bat roost potential and T14 and T43 with high bat roost potential lie adjacent to the proposed working area such that impacts to root protection zones may arise. A number of mature- and semi-mature trees, occurring at the south-easternmost end of the proposed grid connection corridor route are also considered to have potential to support roosting bats.
- 8.5.19 In respect of trees and built structures potentially impacted by the proposed improvement works to the main access route (refer to **Appendix 8E**), a preliminary bat roost assessment undertaken in June 2023 and subsequent aerial inspections in April 2023 confirmed the presence of two trees/tree groups, G189(1) and T215 with potential to support individual and multiple roosting bats respectively (**Appendix 8A**). Additionally, two former bridge abutments located either side of Farm Road, and the large, disused brick-built Engine House associated with the redundant British Ironworks Colliery compound are considered of high potential to support roosting bats.
- 8.5.20 With regards to built structures across the Proposed Development Site itself, a visual assessment completed between March and May 2021 identified 18 built structures (B1-B18) associated with the Site. Of these, eight structures (B1, B2, B3, B6, B9, B9a, B10 and B15) are considered to have moderate potential to support roosting bats, whilst one structure (B11) is considered to have low potential. All other remaining structures assessed are considered to be of negligible potential to support roosting bats. In addition, quarry faces associated with Tirpentwys Cut SINC are considered to have high summer roosting and hibernation potential.
- 8.5.21 Dusk emergence surveys undertaken of buildings B6, B9, B9a, B10, B11 and B15 between July and August 2021 confirmed the presence of a summer day roost for low numbers of common pipistrelle bats supported by B10. No bats were recorded emerging from buildings B6, B9, B9a, B11 and B15 however, such that bat roosts are presumed absent from these buildings. No access to buildings B1-B3 with moderate bat roost potential was permitted.
- 8.5.22 Bat roost back tracking surveys undertaken of the central, northern and southern quarry faces associated with Tirpentwys Cut SINC did not confirm any evidence of bat roosts, with no discernible emergence, commuting or roost swarming behaviour noted. Despite the potential of the central quarry faces to support roosting features for crevice dwelling bats, there was no observable commuting behaviour from the central areas to the northern or southern edges of the quarry, with the first registrations of bat activity often recorded sometime after sunset. However, access constraints including low light levels, uneven ground and dense vegetation prevented any meaningful tracking of a bat assemblage to a specific roosting location. Bat activity was instead dominated by foraging individuals predominantly travelling east-west along the edge of coniferous woodland however.

- 8.5.23 Bat roost back tracking surveys undertaken of agricultural land associated with the eastern extents of the Site did record early registrations of bat activity however, predominantly originating from the south and likely back tracked to building B10 confirmed to support a common pipistrelle summer roost. Several common pipistrelle bats were also observed commuting west to east from offsite woodland and from woodland habitats offsite to the north. Although originating from offsite, such that activity could not be tracked back to a definitive location, it is likely that woodland habitat to the west and north supports potential roosts of this species. Grazed pastures delineate these habitats, providing a suitable foraging resource and cover for a bat assemblage commuting across the immediate landscape. The Site is otherwise dominated by open pasture associated with Llanhilleth Common, with no bats observed commuting across such habitats to/from potential roost sites.
- 8.5.24 In respect of the main access route, bridge abutments at the northern end of the route and the brick-built Engine House associated with the redundant British Ironworks Colliery compound are considered to have high potential to support roosting bats. With regards to the proposed grid connection corridor, the ruined structure at Rhiw Frank situated north of the track and proposed route is also considered to support a number of potential roost features, given the presence of a number of gaps within the surviving stonework, together with the structure's south facing and sheltered position.

#### Activity

- 8.5.25 A total of nine bat species/species groups (*Myotis* and *Plecotus* species were not always identified to species level) were recorded foraging and/or commuting across the Site between May and October 2020 and May and October 2021, including the following species: common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, long-eared bat, *Myotis* bat species, noctule, serotine, greater horseshoe bat and lesser horseshoe bat.
- 8.5.26 During 2020, the vast majority of registrations recorded by the automated detectors relate to common pipistrelle (93%), which was similarly the case in respect of the walked transect surveys (94% on average). *Myotis* bat species, soprano pipistrelle and noctule otherwise dominated the remainder of bat registrations in respect of the automated detectors (2.5%, 1.5% and 1.5% respectively) and walked transects (1.3%, 2.8% and 1.2% respectively).
- 8.5.27 In respect of long-eared bat, lesser horseshoe bat, serotine, greater horseshoe bat and Nathusius' pipistrelle, these species were otherwise infrequently recorded during 2020, together comprising only c. 1.5% combined of combined registrations recorded by the automated detectors and 0.7% combined of combined registrations recorded during the walked transect surveys. Nathusius' pipistrelle (comprising 0.01% of total registrations) and greater horseshoe bat (comprising 0.07% of total registrations) were the least encountered species during the automated detector surveys. With respect to Nathusius' pipistrelle, this species was only registered by a single automated detector in June (two registrations at detector location L05) and September (two registrations at detector location L03). With respect to greater horseshoe bat, registrations were recorded during the manual walked transect in September 2020 and by automated detectors in July (one registration at detector location L08), August (three registrations at detector location L03 and one registration at detector location L08) and September (detector locations L02, L03, L04, L06, L08 and L09; between one and five registrations per detector) only.
- 8.5.28 During 2021, The vast majority of registrations recorded by the automated detectors also relate to common pipistrelle (93%). *Myotis* bat species, lesser horseshoe bat and soprano pipistrelle otherwise dominate the remainder of bat registrations in respect of the automated detectors (2.8%, 1.9% and 1.5% respectively). In respect of the walked transect surveys, only very low levels of bat activity was observed across the northern

extents of the Site, attributed primarily to common pipistrelle, with exception to five passes recorded during the August 2021 survey for soprano pipistrelle.

- 8.5.29 In respect of noctule, serotine, long-eared bat, greater horseshoe bat and Nathusius' pipistrelle, these species were only infrequently recorded by the automated detectors during 2021, comprising only c. 0.8% of registrations. Similarly, to 2020, Nathusius' pipistrelle (comprising 0.01% of total registrations) and greater horseshoe bat (comprising 0.03% of total registrations) were the least encountered species during the automated detector surveys. With respect to Nathusius' pipistrelle, this species was only registered by a single automated detector in June (two registrations at detector location L07) and September (one registration at detector location L04), and by two automated detectors in August (two registrations at detector location L05 and one registration at detector location L06). With respect to greater horseshoe bat, registrations were recorded by automated detectors each month between June and October, with a single registration in June, 13 in July, 12 in August, 22 in September and 3 in October.

#### *Ecobat (Collision Risk) Assessment*

- 8.5.30 In accordance with best practice guidance<sup>29</sup> and following the results of the Ecobat (collision risk) assessment undertaken of the Site (**Appendix 8B**) in respect of turbine locations, Turbines 3, 4, 7 and 8 are considered as having a low habitat risk given the absence of potential roosting features nearby and low-quality foraging habitat within close proximity. Turbines 1, 2 and 6 are considered as having a moderate habitat risk, due to the proximity of buildings and/or trees with moderate to high potential to support roosting bats, including the presence of a summer day roost supporting low numbers of common pipistrelle bats within building B10 which lies to the east of turbine 6, in addition to the presence of suitable habitat which could otherwise be extensively used for foraging purposes. It is not considered that any of the turbine locations would have a high habitat risk however, given the absence of mature semi-natural woodland nearby, and whilst a common pipistrelle roost supporting a low number of individuals is confirmed for built structure B10 located to circa 305m to the east of turbine 6, this is not considered to be a 'key roost and/or swarming site'. As such, the location of turbine 6 can be considered to be of moderate habitat risk.
- 8.5.31 The Site as a whole is therefore considered to have an overall moderate habitat risk for bats.
- 8.5.32 With respect to project size, the Proposed Development is considered to be small with regards to the number of turbines (fewer than 10 turbines). However, a number of other wind energy developments exist within 5km of the Site, whilst proposed turbine heights are over 100m. As such, the project size is deemed to be 'large' for the purposes of this assessment.
- 8.5.33 With a large project size and an overall moderate habitat risk for the Site therefore, the site risk level, in accordance with best practice guidance, is considered to be a 'high site risk'.
- 8.5.34 In respect of detector locations, five detector locations have 'high' levels of activity, as well as having an overall risk assessment<sup>30</sup> of 'high', these being detector locations L01, L03, L04, L06 and L10. Of these, location L01 lies nearest to turbine 2, whilst L03 lies nearest

<sup>29</sup> NatureScot (2019) Bats and Onshore Wind turbines – Survey, Assessment and Mitigation (<https://www.nature.scot/doc/bats-and-onshore-wind-turbines-survey-assessment-and-mitigation>; last accessed 29/09/2022).

<sup>30</sup> SNH, Natural England, Natural Resources Wales, RenewableUK, Scottish Power Renewables, Ecotricity Ltd, the University of Exeter & Bat Conservation Trust (BCT) (2021). Bats and Onshore Wind Turbines: Survey Assessment and Mitigation Available at: <https://www.nature.scot/doc/bats-and-onshore-wind-turbines-survey-assessment-and-mitigation> Accessed 05.05.22

to turbine 3. Locations L04, L06 and L10 lie over 280m away from a turbine location (i.e. outside of the impact zone of turbines, considered to be a 200m buffer plus turbine rotor blade radius, assumed to be 80m).

- 8.5.35 Given that five detector locations (L01, L03, L04, L06 & L10) / two turbine locations (turbine 2 and turbine 3) have an overall risk assessment of 'high', the maximum, overall risk assessment for the Site is therefore 'high'. However, the average risk assessment for the Site is considered to be 'medium' (being the most frequently occurring overall risk assessment), which has been calculated by taking the average overall risk assessment score for the Site, as per best practice guidance<sup>31</sup>.
- 8.5.36 In Wales, lesser horseshoe and brown long-eared bats are species with a low vulnerability to collision (as well as being low collision risk species), whilst common pipistrelle and soprano pipistrelle (high collision risk species), as well as *Myotis* and greater horseshoe bat (low collision risk species) are species with a medium vulnerability to collision. Serotine (a medium collision risk species), noctule and Nathusius' pipistrelle (both high collision risk species) are species with a high vulnerability to collision<sup>32</sup>. Further consideration is given to species with a high or medium vulnerability to collision below.
- 8.5.37 In respect of those species with a high vulnerability to collision, the greatest impacts on serotine, noctule and Nathusius' pipistrelle (albeit significantly lower levels of activity from this species were recorded) are considered likely to occur in August and September.
- 8.5.38 For those species with a medium vulnerability to collision, the greatest impacts on greater horseshoe bat are also considered likely to occur in August and September. In respect of common pipistrelle, soprano pipistrelle and *Myotis*, these species are present within the Site in similar levels throughout the year. However, it is considered that the greatest impacts on common pipistrelle are considered likely to occur during June/July and September/October, during August for soprano pipistrelle, and between August and October for *Myotis*.
- 8.5.39 Overall, therefore, the greatest impacts upon bat species considered to be of high and medium vulnerability to collision risk are likely to occur between August and September/October.
- 8.5.40 An assessment of the overall risk assessment has also been undertaken for each species in accordance with best practice guidance whereby the vulnerability of the bat population of each species recorded within the Site has been assessed both using the highest median and maximum percentiles (**Appendix 8A** and **8B**).
- 8.5.41 Using the median percentile, the majority of species have an overall risk assessment of 'medium'. However, Nathusius' pipistrelle, long-eared bat and greater horseshoe bat all have an overall risk assessment of 'high', although these species all have low detection rates within the Site, being recorded on only 1.83%, 5.14% and 4.5% of all recording nights, which indicates that overall, they do not use the Site frequently and are not present at all locations.
- 8.5.42 In respect of those species considered to have an overall risk assessment of 'high', long-eared bat and greater horseshoe bat have collision risks of medium (low and medium vulnerability to collision respectively), whilst Nathusius' pipistrelle has a collision risk of high (and a high vulnerability to collision).

<sup>31</sup> NatureScot (2019) Bats and Onshore Wind turbines – Survey, Assessment and Mitigation: Table 3b: Stage 2 – Overall risk assessment. Calculated as follows:  $15+9+15+15+12+15+12+9+8+15+12+9 / 12 = 12 =$  'Medium' risk assessment.

<sup>32</sup> As detailed at Table 2 (Wales) within NatureScot (2019) Bats and Onshore Wind turbines – Survey, Assessment and Mitigation (<https://www.nature.scot/doc/bats-and-onshore-wind-turbines-survey-assessment-and-mitigation>; last accessed 29/09/2022).

8.5.43 Considering Nathusius' pipistrelle specifically therefore, this species was only recorded on six nights out of 60 at location L12 relating to turbine 6. This species was also recorded on one night out of 60 for locations L04, L05, L06 and L07, all of which occur over 280m from any turbine. This species was also not recorded at any other locations within the Site and is thus considered to rarely use the Site and is not reliant on its habitats. As such, although the collision risk of this species is high, it is considered that very few Nathusius' pipistrelle individuals would enter the Site. As the risk to the population of Nathusius' pipistrelle is very low therefore, it is considered that the conservation status of this species will not be significantly adversely affected by the proposed turbine locations.

#### *Badger*

8.5.44 No evidence of badger activity or their setts were recorded during the initial survey nor during subsequent survey visits to the Site between 2020 and 2024.

8.5.45 Based upon the findings to date, badgers are likely absent from the Site and are thus scoped out from further assessment.

#### *Dormouse*

8.5.46 Dormouse surveys conducted between May and November 2020 and between April and November 2021 found no evidence of dormice. In addition, no evidence of wood mouse (including individuals, nests and food caches), or signs of other mammal usage were recorded during the surveys.

8.5.47 Based upon the findings to date, dormouse is likely absent from the Site and is therefore scoped out from further assessment.

#### *Otter and water vole*

8.5.48 Otter surveys conducted in April 2020, April 2022 and July 2024 of the main Site confirmed all aquatic features present to be of negligible value to support otter, being small in size, ephemeral and subject to drying in the summer months and/or isolated from more suitable aquatic features otherwise present in the wider landscape. A survey of the grid connection corridor during August 2022 and July 2024 also confirmed the absence of suitable habitat for this species.

8.5.49 With respect to the main access route however, an otter spraint was recorded in April 2022 upon a large boulder located alongside the stream Cwmsychn Brook, immediately downstream of the road bridge to the east of the redundant colliery buildings at the British. No evidence of actual or potential otter breeding or resting places have been recorded along the section of this Brook however, such that this species likely uses this section of the brook for foraging and dispersal only.

8.5.50 With respect to water vole, surveys conducted in April 2020, April 2022 and July 2024 of the main Site confirmed all waterbodies to be of negligible importance to support this species, particularly given the absence of any surface water connectivity between aquatic features onsite and suitable aquatic habitat in the wider landscape. Former excavation and mining operations within the quarry areas also likely preclude the presence of water vole within waterbodies P1, P3, P8, P9 and P10, whilst their stony bankside substrate is assessed to be largely unsuitable for burrowing. Similarly, there is an absence of suitable habitat/burrowing and foraging opportunities across other aquatic features onsite, with many features onsite being dry or ephemeral in nature and of shallow water depth. Suitable habitats for this species were also deemed absent or of negligible potential along the main access route and grid connection corridor. Based upon the findings to date



therefore, water vole is likely absent from the Site and is therefore scoped out from further assessment.

### *Great crested newt*

- 8.5.51 Twelve waterbodies occur within the Site, primarily situated in and around the central quarry areas. The habitat suitability assessment undertaken in May 2020, May 2021 and July 2024 confirmed pond P1 to be of 'excellent' suitability to support great crested newt, whilst ponds P3, P13, and P14 are assessed to have 'good' suitability. In addition, ponds P10 and P11 are assessed to be of 'average' suitability, whilst ponds P2, P2a, P4, P5, P7, P7a and P12 are of 'below average' suitability and ponds P4a, P4b, P6 and P9 of 'poor' suitability. In addition, a small area of impeded drainage was noted along the proposed access route connecting turbines 4 and 8 through the central quarry area during August 2022. This feature is deemed of negligible potential to support great crested newt, comprising a shallow, ephemeral pool created by wheel ruts and subject to regular disturbance by vehicular movements.
- 8.5.52 With respect to the main access route, a further three ponds, A-C, occur within 250m of the route, all of which were confirmed to be dry during the July 2022 survey. A fourth pond, pond D, situated circa 285m to the south of the route was confirmed to hold water however, and was assessed as having 'good' suitability to support great crested newt.
- 8.5.53 Water sampling surveys undertaken in May 2020 and May 2021 of ponds P1-P4 and P7-P10 (with no access possible to pond P5 and P6 being dry at the time of the survey) confirmed the absence of great crested newt eDNA. With respect to pond D, given that the access route occurs circa 285m from this feature at its closest point, with proposed works to the existing surfaced highway limited to widening by circa 2m, no impacts are considered likely to arise upon this species should a population be present in the locality.
- 8.5.54 As such great crested newt is considered absent from the Site and thus can be scoped out from further assessment.

### *Reptiles*

- 8.5.55 During the course of the ecological surveys undertaken across the Site between 2020 and 2022, only occasional incidental sightings of common lizard were recorded, with sightings confined to moorland habitats present across the Site. An incidental sighting of slow-worm was also observed in association with the main access route. The Site is therefore confirmed to support at least a low population of common lizard<sup>33</sup>, whilst a low population of slow-worm is also likely present in association with those habitats aligning the main access route. The presence of grass snake and adder should also not be ruled out however, given the general suitability of habitats across the landscape more generally.
- 8.5.56 Given the relative widespread distribution of common reptiles across South Wales<sup>34</sup> therefore, this species group is considered to be of importance at the Local Level only.

### *Invertebrates*

- 8.5.57 Overall, the Site provides an important refuge for uncommon invertebrates declining in the wider countryside and/or habitat specialists with restricted distributions in Britain. Circa 12% of those species recorded are considered to be of conservation importance in a

<sup>33</sup> As set out in Evaluating Local Mitigation/Translocation Programmes: Maintaining Best Practice and Lawful Standards. HGBI Advisory Notes for Amphibian and Reptile Groups (Args). HGBI, 1998.

<sup>34</sup> As illustrated by the distribution maps found at <http://www.arc-trust.org/advice/species-id/reptiles>

regional (vice-county), Welsh and/or British context, including: one priority<sup>35</sup> species; 1 near threatened<sup>36</sup> species; 7 nationally scarce/notable<sup>37</sup> species; 32 nationally local<sup>38</sup> species; and 5 other species of conservation importance. Nevertheless, there is an absence of highly threatened species (e.g., Critically Endangered, Endangered or Vulnerable) occurring onsite, whilst the majority of species of 'conservation interest' within the Site are Nationally Local and not currently considered to be 'threatened'.

- 8.5.58 The invertebrate population supported by the Site is therefore considered to be County Level importance.

## Future baseline

- 8.5.59 Should the Proposed Development not proceed, it is considered that land practices would likely remain the same, with the majority of the grassland and moorland areas continuing to be grazed and the coniferous plantation commercially managed. Current recreational use within the Survey Boundary is also likely to remain the same or potentially increase slightly over time in line with population growth in the local area. The future baseline is therefore unlikely to be markedly different from the current baseline in respect of habitat types and species assemblages supported.
- 8.5.60 In respect of climate change, predicted changes to temperature and precipitation would likely change the landscape around us over time in a number of ways. However, it is unlikely that such subtle changes would lead to wholesale change to the future ecology baseline within the lifetime of the Development. Changes could see certain habitats and species becoming more prevalent or declining as their ranges contract or expand. However, given that those species identified for the Site are generally widespread, and that the Survey Boundary is not near the edge of any of their ranges, the projected change in temperature and precipitation is not anticipated to result in any significant changes to IEFs.

## 8.6 Embedded measures

- 8.6.1 A range of environmental measures have been embedded into the Proposed Development as outlined in **Section 4.4** and further detailed below.

### Construction Environmental Management Plan

- 8.6.2 An outline Construction Environmental Management Plan (CEMP) supports this Submission and will be implemented during the entirety of the construction stage to ensure appropriate management and operational systems are in place to avoid or minimise adverse pollution effects
- 8.6.3 The CEMP can be secured by way of a suitably worded pre-commencement planning condition attached to the planning permission.

<sup>35</sup> Species listed under Section 7 of Environment (Wales) Act 2016 as being of principal importance for conservation of biological diversity in Wales.

<sup>36</sup> Near Threatened (NT) = Species which do not qualify for Red Data Book (RDB) categories 'Critically Endangered', 'Endangered' or 'Vulnerable' now but are close to qualifying for, or are likely to qualify for, a threatened category in the near future.

<sup>37</sup> Nationally Scarce (NS) or Notable (Na or Nb) = species which do not fall within RDB categories but which are none-the-less uncommon in Great Britain and occur within the range of 16 to 100 ten-kilometre squares of the British National Grid system since 1970.

<sup>38</sup> Nationally Local (Local) = Species which, whilst fairly common, are evidently less widespread than truly common species, but also not qualifying as 'Nationally Scarce' having been recorded from over 100, but less than 300, ten-kilometre squares of the British National Grid system since 1970.

## Ecological Construction Method Statement

- 8.6.4 An Ecological Construction Method Statement (ECMS) will be prepared which will set out in detail the measures to be implemented to protect IEFs during the construction phase of the Proposed Development. It is proposed that the methodologies prescribed within the ECMS will be overseen by an appointed Ecological Clerk of Works (ECoW), whose scope and remit will be set out within the ECMS. The ECMS will also identify clearly the responsibilities of key personnel including the Site manager(s) and ECoW. This document will also cross reference with the CEMP, where relevant.
- 8.6.5 The ECMS and appointment of the ECoW can be secured by way of a suitably worded pre-commencement planning condition attached to the planning permission.

## Landscape and Ecological Management Plan

- 8.6.6 A Landscape and Ecological Management Plan (LEMP) will be prepared for the Proposed Development (excluding Common Land) to ensure the appropriate management and maintenance of all retained and newly created habitats/features proposed over the lifetime of the development. The LEMP will set out in the detail those ecological management prescriptions for defined management compartments to be retained and/or created, in addition to the monitoring of biophysical changes to sensitive habitats including: terrestrial succession and scrub encroachment within retained, enhanced and newly created habitats; botanical monitoring of sensitive habitats retained, translocated and restored; the monitoring of new habitats/features installed/created across the Site; and any additional monitoring and remedial action required.
- 8.6.7 The LEMP can be secured by way of a suitably worded pre-commencement planning condition attached to the planning permission.

## Collision Mitigation Monitoring Strategy (CMMS)

- 8.6.8 A detailed Collision Mitigation Monitoring Strategy (CMMS) will be prepared, which will set out in detail the measures to be implemented to reduce the impacts on bats from killing due to barotrauma. The CMMS will set out the detailed mitigation measures to be employed, including feathering of the blade, curtailment for specific turbines at specific times of year (e.g., curtailment during the autumn months when there are peaks in bat activity from high collision risk species) and/or during specific weather conditions (e.g., during warm nights with little wind, which are considered favourable conditions for bats). Monitoring details will also be set out, to include the level and duration of monitoring required (such as acoustic monitoring and carcass searches). The CMMS will allow for adaptation of the mitigation strategy if the monitoring surveys find that mitigation measures are not preventing bat deaths and will allow for additional curtailment measures to be included to prevent such fatalities.
- 8.6.9 The CMMS can be secured by way of a suitably worded pre-commencement planning conditions attached to the planning permission.
- 8.6.10 **Table 8.9** outlines how these embedded measures will influence the biodiversity assessment.

**Table 8.5 Summary of the embedded environmental measures**

Receptor	Potential changes and effects	Embedded measures	Compliance mechanism
<b>Construction</b>			
<b>Internationally and nationally designated sites: Usk Bat Sites SAC, Siambre Ddu SSSI, and Mynydd Llangattock SSSI (encompassing Craig Y Cilau NNR)</b>	No direct impacts on habitats given that the SAC and component SSSIs lie at least 8km from the Site.	None required. However, construction works to be carried out during daylight hours, and/or during the winter months when bats will be in hibernation. A sensitive lighting regime can also be incorporated if works need to be carried out at night.	CEMP
<b>Locally designated sites: Cefn y Crib SINC (T11), Graig Ddu/Gelli-Deg Wood SINC (T42), Mynydd Llanhilleth Common SINC (T55), Tirpentwys Cut SINC (B39/T92), Waun Wen &amp; Cwmbryrgwm SINC (T108), Disused Quarry colonised by acidic grassland and dry acidic heath SINC (T35), Mount View, Blaen-y-Cwm SINC (T51), Rhiw Frank Meadows SINC (T82), Blaen-y-cwm Upland Pasture SINC (T6) and The British SINC (T91). Potential impacts on: Cwm Ddu Woods, Blaenserchan SINC (T27), Mulfran, Mynydd Coity, Mynydd James &amp; Gwastad SINC (B25), Penrhiwfid Fields SINC (T68)</b>	Impacts arising from habitat loss on SINC habitats present within the Site as a result of construction of the access route, grid connection corridor and turbines.	Habitats that are subject to temporary loss to be reinstated at the earliest opportunity and enhanced where possible. Habitats that are permanently lost to be offset through habitat creation and enhancements to retained habitats within the wider Site.	ECMS/LEMP

Receptor	Potential changes and effects	Embedded measures	Compliance mechanism
<b>Habitats</b>	Direct and indirect impacts upon sensitive habitats upon construction of turbine locations and associated infrastructure, including direct loss of habitat, and indirect loss arising from disturbance impacts, dust deposition, and polluted run-off.	Habitats that are subject to temporary loss to be reinstated at the earliest opportunity and enhanced where possible. Habitats that are permanently lost to be offset through habitat creation and enhancements to retained habitats within the wider Site.	ECMS/LEMP
<b>Commuting, foraging and roosting bats</b>	Potential disturbance to foraging, commuting and roosting bats as a result of use of night-time lighting during construction works.	The Site lies outside the CSZ of lesser horseshoe bat using the Usk Bat Sites SAC for roosting. No adverse impacts will therefore arise upon this SAC. Minimum 50m stand-off from turbine blade tip and any linear or woodland habitat. Turbines sited away from nearby roosts. In respect of local bat populations utilising the Site, construction works to be carried out during daylight hours, ideally over winter when bats will be in hibernation, and/or implementation of a sensitive lighting regime should works need to be carried out at night.	ECMS/CEMP
<b>Otter</b>	Potential killing/injury of otter as a result construction activities associated with the upgrading of the main access route. Potential disturbance to dispersing or foraging otters from lighting at night during construction of access route.	Update survey of stream adjacent to access route and any other affected watercourses prior to construction. In unlikely event that holts are recorded, exclusion of animals from the affected area and provision of alternative habitat (under NRW EPS licence) prior to works. Construction activities will be restricted to daylight hours as far as possible to mitigate effects of increased visual and noise disturbance, with the use of temporary, artificial lighting avoided during the hours between dusk and dawn, with directional and low-level lighting used away	ECMS/CEMP

Receptor	Potential changes and effects	Embedded measures	Compliance mechanism
		from sensitive habitat corridors to mitigate effects relating to increased use of artificial lighting.	
<b>Common reptiles</b>	Potential killing/injury of common reptiles during construction phase from habitat clearance and construction traffic.	Suitable reptile habitat to be subject to a habitat manipulation exercise prior to construction works commencing. Any reptiles found to be moved to retained habitats away from the working corridors, to prevent killing or injury. The construction areas to be retained as unsuitable habitat for the duration of the construction works.	ECMS/CEMP
<b>Invertebrates</b>	Loss of habitat supporting 46 species of conservation importance.	Habitats that are subject to temporary loss to be reinstated at the earliest opportunity and enhanced where possible. Habitats that are permanently lost to be offset through habitat creation and enhancements to retained habitats within the wider Site.	ECMS/LEMP
<b>Operation</b>			
<b>Internationally designated sites</b>	Potential impacts on lesser horseshoe bat, a qualifying feature of the Usk Bat Sites SAC, albeit the Site lies outside of the Core Sustainance Zone (CSZ) for lesser horseshoe from the SAC/SSSIs.	The Site lies outside the CSZ of lesser horseshoe bat using this SAC for roosting. As such, there will be no adverse impacts upon the population of lesser horseshoe (a qualifying feature) within the SAC.	N/A
<b>Locally designated sites</b>	No additional impacts during the operational phase.	N/A	N/A
<b>Habitats</b>	No additional impacts during the operational phase.	N/A	N/A
<b>Invasive species</b>	Potential spread of non-native, invasive species including Japanese knotweed wall cotoneaster, Japanese rose, New Zealand	Specialist removal and control measures to be employed during construction, including removal of controlled waste to prevent spread, and an	ECMS/LEMP

Receptor	Potential changes and effects	Embedded measures	Compliance mechanism
	willowherb and giant hogweed during construction/improvement works proposed to the access route	ongoing control and monitoring programme to ensure invasive species are eradicated from site.	
<b>Commuting and foraging bats</b>	Potential killing/injury by turbines within close proximity to commuting and foraging routes for bats.	Minimum 50m stand-off from turbine blade tip to be maintained in respect of existing bat habitat and new tree planting. Feathering of blades during idling. Curtailement during bat sensitive periods (e.g., at certain times of year, between sunset and sunrise, and/or during good weather conditions when bats are active).	Collision Mitigation Monitoring Strategy (CMMS)
<b>Roosting bats</b>	Potential killing/injury by turbines within close proximity to bat roosts.	Pre-commencement checks of trees and built structures with bat potential in vicinity of turbines to confirm continued absence of roosts. Implementation of mitigation measures prior to felling of trees with confirmed bat roost potential (or in accordance with an NRW EPS licence where bat roosts are confirmed).	ECMS/LEMP/CMMS
<b>Common reptiles and invertebrates</b>	No additional impacts during the operational phase.	N/A	N/A

## 8.7 Scope of the assessment

### Overview

- 8.7.1 Best practice guidelines for EclA (CIEEM 2019) recognise that not every species that is potentially present at a site or affected by a development can be assessed. The guidelines advocate that the EclA process includes an initial ‘scoping stage’ to identify ecological features that are unlikely or likely to be significantly affected by the Proposed Development, thereby allowing the assessment to focus on those ecological features that are pertinent to the Proposed Development and planning decision. This process is informed by the site investigations and consultation with key stakeholders, including the formal EIA Scoping response. This section summarises the approach to, and outcomes of, the EclA scoping stage, including those ecological (non-ornithology) features that have been scoped into or out of the assessment.

## The Proposed Development

- 8.7.2 The Proposed Development is described in full in **Chapter 4 Description of the Proposed Development**. It comprises a wind farm consisting of up to seven wind turbines, each with a three-bladed rotor with a diameter of up to 150m, a hub height of up to 122m and maximum height to blade tip of 180m.
- 8.7.3 The application also includes associated infrastructure, including: access works - improvements to the existing access together with new and improved internal wind farm tracks off the main internal access road; crane pads at each turbine location; turbine foundations; underground power cables linking the turbines and on-site substation; temporary construction compounds, laydown and storage areas; , and grid connection infrastructure, including the on-site substation, control building and underground cables linking the Site to the distribution network, together with construction enabling works.
- 8.7.4 The wind farm will have an operational life of 30 years. For the purposes of this assessment, it is assumed that the wind farm would be decommissioned at this point, though there is also the option for the developer to apply for an extension or upgrades in technology.

## Spatial scope

- 8.7.5 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 0**. This has been determined through a review of the baseline ecology conditions relative to the project in the context of the proposed activities. It has also been informed by liaison with consultees and other specialists involved in assessing the effects in other disciplines of the project, as considered within this ES and other supporting documentation.
- 8.7.6 The potential impacts of the Proposed Development are largely confined to the turbine locations, access route and grid connection corridor, although given the continuity of habitats outside the Site, consideration has also been given to the following effects upon habitats and species extending beyond these areas which could arise as a result of the construction of the Proposed Development, in the absence of mitigation:
- Disturbance to populations from noise, visual and human disturbance;
  - Fragmentation of dispersal corridors used by adjacent populations;
  - Direct habitat loss, damage and degradation due to land take upon habitats and species;
  - Disruption to habitats or populations within range of dust deposition;
  - Disturbance to populations within dispersal distance of the Site; and
  - Pollution to groundwater and surface water flows.
- 8.7.7 As such, the scope of the desk study and survey areas reflects the sensitivity and value of potential ecological receptors, extending to 30km and 2km from the Survey Boundary respectively. The spatial scope of the surveys was subject to small variations between the year one and year two surveys due to minor changes in the potential turbine and infrastructure locations.



## Temporal scope

8.7.8 The temporal scope of the assessment of biodiversity is consistent with the period over which the Project would be carried out as set out in **Chapter 3**. This includes an anticipated 22-month construction period and 30 year operation. Effects during decommissioning have not been specifically assessed at this stage; however, it is considered that they will be similar or no worse than construction effects.

### Construction Phase

8.7.9 Generalised effects which could arise as a result of the construction of the Proposed Development in the absence of mitigation include the following:

- Effects of direct habitat loss, damage and degradation due to land take upon habitats and species;
- Impacts of noise, light and human disturbance to species; and
- Pollution of groundwater and surface water flows, as described further in **Chapter 10: Water Environment**.

### Operational Phase

8.7.10 Generalised effects which could arise as a result of the operation of the Proposed Development, in the absence of mitigation, include the following:

- Effects of light and noise/visual/human disturbance to habitats and species;
- Increased risk of collision to species arising from increased traffic movements;
- Increased levels of airborne pollutants due to dust; and
- Alteration of surface water and groundwater flow quality and quantity **Chapter 10: Water Environment**.

### Decommissioning

8.7.11 Generalised effects which could arise as a result of decommissioning of the Proposed Development in the absence of mitigation include the following:

- Effects of additional habitat loss, damage and degradation due to land take upon habitats and species;
- Impacts of noise, light and human disturbance to species; and
- Increased risk of collision to species arising from increased traffic movements.

## Potential receptors

8.7.12 The principal ecological receptors that have been identified as being potentially subject to effects are summarised in **Table 8.10**.

**Table 8.10 Ecological receptors subject to potential effects**

Receptor	Reason for consideration
<b>International Sites</b>	
<b>Usk Bat Sites SAC</b>	Situated circa 8km to the north of the Site (closest section), supporting one of the largest maternity roosts of lesser horseshoe bat and a number of important hibernacula within the cave systems, supporting up to 5% of the UK population.
<b>National Sites</b>	
<b>Siambre Ddu SSSI</b>	Situated circa 8km north of the Site and comprising a component SSSI unit of the Usk Bat Sites SAC, supporting hibernating lesser horseshoe bats within its cave comprising the third largest hibernation site in Gwent for lesser horseshoe bat.
<b>Mynydd Llangattock SSSI (encompassing Craig Y Cilau NNR)</b>	Situated circa 9km to the north-west of the Site and comprising a component SSSI unit of the Usk Bat Sites SAC, supporting one of the five most important hibernation sites in the UK for lesser horseshoe bat.
<b>Local Sites</b>	
<b>SINCs within the Site</b>	Those SINCs situated within the Site and to be affected by construction of the turbines, access road and grid connections: Mulfran, Mynydd Coity, Mynydd James & Gwastad SINC (B25) Tirpentwys Cut SINC (B39/T92) Waun Wen & Cwmbryrgwm SINC (T108) Cefn y Crib SINC (T11) Cwm Ddu Woods, Blaenserchan SINC (T27) Disused Quarry colonised by acidic grassland and dry acidic heath SINC (T35) Graig Ddu/Gelli-Deg Wood SINC (T42) Mount View, Blaen-y-Cwm SINC (T51) Mynydd Llanhilleth Common SINC (T55) Blaen-y-cwm Upland Pasture SINC (T6) Penrhiwfid Fields SINC (T68) Rhiw Frank Meadows SINC (T82) The British SINC (T91)
<b>Habitats</b>	
<b>Broadleaved semi-natural woodland</b>	To be impacted by construction of the grid connection corridor and access route.
<b>Heathland (including heathland/bracken mosaic)</b>	Present within the grid connection corridor and access route.
<b>Acid grassland (unimproved and semi-improved)</b>	Present within the grid connection corridor, access route and turbine locations.
<b>Neutral grassland (unimproved and semi-improved)</b>	Present within the grid connection corridor, access route and turbine locations.
<b>Aquatic features</b>	Present within the access route.

Receptor	Reason for consideration
<b>Marshy grassland</b>	Present within the grid connection corridor, access route and turbine locations.
<b>Hedgerows and tree lines</b>	Present within the turbine locations.
<b>Former quarry areas and associated coniferous woodland</b>	Present within the main Site.
<b>Improved grassland</b>	Present within the main Site.
<b>Amenity grassland</b>	Present within the access route.
<b>Scrub</b>	Present within the grid connection corridor, access route and turbine locations.
<b>Tall ruderal and tall herb</b>	Present within the grid connection corridor, access route and main Site.
<b>Hardstanding and buildings</b>	Present within the grid connection corridor, access route and turbine locations.
<b>Invasive plant species</b>	Non-native and invasive species occur in association with the access road, including Japanese knotweed, wall cotoneaster, Japanese rose, New Zealand willowherb and giant hogweed.
<b>Protected Species</b>	
<b>Commuting and foraging bats</b>	Common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, long-eared bat, myotis, noctule, serotine, greater horseshoe bat and lesser horseshoe bat recorded foraging and commuting across the Site.
<b>Roosting bats</b>	Building B10 supports a summer day roost for low numbers of common pipistrelle bats. Numerous trees with potential to support bats also present across the Site.
<b>Otter</b>	Otter spraint present along the Cwmsychn Brook in association with the access route.
<b>Common reptiles</b>	Presence of a common reptile population assumed based on local records and habitat suitability, with incidental sightings of common lizard recorded across the Site and of slow-worm along the access route.
<b>Invertebrates</b>	46 species of conservation importance recorded across the Site.

## Likely significant effects

8.7.13 The effects on ecological receptors which have the potential to be significant and have been taken forward for detailed assessment are summarised in **Table 8.11**. This has been informed by best practice guidance and professional judgement.

**Table 8.11 Ecological receptors scoped in for further assessment**

Receptor	Likely significant effects
<b>International Sites</b>	
<b>Usk Bat Sites SAC</b>	Potential impacts on bat populations within this SAC.
<b>National Sites</b>	
<b>Siambre Ddu SSSI</b>	Potential impacts on bat populations within this SSSI.
<b>Mynydd Llangattock SSSI (encompassing Craig Y Cilau NNR)</b>	Potential impacts on bat populations within this SSSI.
<b>Local Sites</b>	
<b>Blaen-y-cwm Upland Pasture SINC (T6)</b>	Potential impacts from land-take causing temporary and permanent damage/loss to habitats within the SINC from construction of the access route and turbines.
<b>Cwm Ddu Woods, Blaenserchan SINC (T27)</b>	Potential impacts from land-take causing temporary and permanent damage/loss to habitats within the SINC from construction of the access route.
<b>Cefn y Crib SINC (T11)</b>	Potential impacts from land-take causing temporary and permanent damage/loss to habitats within the SINC from construction of the access route.
<b>Graig Ddu/Gelli-Deg Wood SINC (T42)</b>	Potential impacts from land-take causing temporary and permanent damage/loss to habitats within the SINC from construction of the turbines.
<b>Mynydd Llanhilleth Common SINC (T55)</b>	Potential impacts from land-take causing temporary and permanent damage/loss to habitats within the SINC from construction of the access route and turbines.
<b>Tirpentwys Cut SINC (B39/T92)</b>	Potential impacts from land-take causing temporary and permanent damage/loss to habitats within the SINC from construction of the access route.
<b>Waun Wen &amp; Cwmbyrgwm SINC (T108)</b>	Potential impacts from land-take causing temporary and permanent damage/loss to habitats within the SINC from construction of the access route, turbines and grid connection connector.
<b>Mulfran, Mynydd Coity, Mynydd James &amp; Gwastad SINC (B25)</b>	Potential impacts from land-take causing temporary and permanent damage/loss to habitats within the SINC from construction of the access route.
<b>Disused Quarry colonised by acidic grassland and dry acidic heath SINC (T35)</b>	Potential impacts from land-take causing temporary and permanent damage/loss to habitats within the SINC from construction of the access route.
<b>Mount View, Blaen-y-Cwm SINC (T51)</b>	Potential impacts from land-take causing temporary and permanent damage/loss to habitats within the SINC from construction of the access route.

Receptor	Likely significant effects
<b>Rhiw Frank Meadows SINC (T82)</b>	Potential impacts from land-take causing temporary and permanent damage/loss to habitats within the SINC from construction of the grid connection.
<b>The British SINC (T91)</b>	Potential impacts from land-take causing temporary and permanent damage/loss to habitats within the SINC from construction of the access route.
<b>Habitats</b>	
<b>Heathland (including heathland/bracken mosaic)</b>	Potential impacts from land-take causing temporary and permanent damage/loss to this habitat from construction of the access route and grid connection corridor.
<b>Acid grassland (unimproved and semi-improved)</b>	Potential impacts from land-take causing temporary and permanent damage/loss to this habitat from construction of the access route, grid connection corridor and turbines.
<b>Broadleaved semi-natural woodland</b>	Potential impacts from land-take causing temporary and permanent damage/loss to this habitat from construction of the access route and grid connection corridor.
<b>Marshy grassland</b>	Potential impacts from land-take causing temporary and permanent damage/loss to this habitat from construction of the access route, grid connection corridor and turbines.
<b>Hedgerows and tree lines</b>	Potential impacts from land-take causing temporary and permanent damage/loss to this habitat from construction of the turbines.
<b>Aquatic features</b>	Potential impacts from land-take causing temporary and permanent damage/loss to this habitat from construction of the access route.
<b>Neutral grassland (unimproved and semi-improved)</b>	Potential impacts from land-take causing temporary and permanent damage/loss to this habitat from construction of the access route, grid connection corridor and turbines.
<b>Invasive species</b>	Potential for spread of invasive, non-native species during construction works, with Japanese knotweed, wall cotoneaster, Japanese rose, New Zealand willowherb and giant hogweed recorded, particularly in association with the proposed access route.
<b>Protected Species</b>	
<b>Commuting and foraging bats</b>	Potential for killing/injury of bats commuting and foraging within and through the Site.
<b>Roosting bats</b>	No trees confirmed to have roosting bats, but a number of trees with potential to support bats present within the vicinity of the turbine locations (but outside of the bat buffer zone (50m from blade tip) calculated per turbine location). Potential loss of bat roosts and killing/injury of bats if bats colonise these trees, as well as indirect effects on bats in other nearby roosts.
<b>Otter</b>	Potential for loss of foraging/dispersal habitat and fragmentation of habitat during construction of the access route. Potential for killing/injury of otters during construction, from an increase in vehicles on the access route.

Receptor	Likely significant effects
<b>Common reptiles</b>	Loss of suitable habitat. Potential killing/injury during habitat clearance and construction works.
<b>Invertebrates</b>	Loss of habitat supporting species of conservation importance.

8.7.14 The receptors/effects detailed in **Table 8.2** have been scoped out from being subject to further assessment because the potential effects are not considered likely to be significant.

**Table 8.12 Summary of effects scoped out of the biodiversity assessment**

Receptors/potential effects	Justification
<b>International Sites</b>	
<b>Usk Bat Sites SAC</b>	No likely significant effects given distance from the Site and nearest turbine.
<b>National Sites</b>	
<b>Siambre Ddu SSSI</b>	No likely significant effects given distance from the Site and nearest turbine.
<b>Mynydd Llangattock SSSI (encompassing Craig Y Cilau NNR)</b>	No likely significant effects given distance from the Site and nearest turbine.
<b>Local Sites</b>	
<b>Penrhiwfid Fields SINC (T68)</b>	No likely significant effects. Only a small area within the Site and does not lie within the access route, grid connection corridor or turbine locations.
<b>Habitats</b>	
<b>Former quarry areas and associated coniferous woodland, bracken, semi-improved grassland, poor semi-improved &amp; improved neutral grassland, scrub, tall ruderal and tall herb, amenity grassland, and hardstanding and buildings.</b>	No likely significant effects as these habitats either do not lie within the access route, grid connection corridor or turbine locations, or loss of these habitats is of negligible significance.
<b>Protected species</b>	
<b>Dormouse</b>	Not present within the Site or surrounding area subject to survey.
<b>Great crested newt</b>	Not present within the Site or surrounding area subject to survey.

Receptors/potential effects	Justification
Badger	Not present within the Site or surrounding area subject to survey.
Water vole	Not present within the Site or surrounding area subject to survey.

## 8.8 Assessment methodology

### Evaluation Methodology

- 8.8.1 The generic project-wide approach to the assessment methodology is set out in **Chapter 2: Approach to Environmental Impact Assessment**. However, whilst this has informed the approach that has been used in this Biodiversity assessment, it is necessary to set out how this methodology has been applied, and adapted as appropriate, to address the specific needs of this biodiversity assessment.
- 8.8.2 The evaluation of IEFs will be made with reference to the guidelines published by the CIEEM. The guidelines propose an approach to valuing ecological features that involve professional judgement based on available guidance and information, together with advice from experts who know the locality of the project and/or the distribution and status of the species or features that are being considered. In addition, best practice guidance in relation to survey techniques and mitigation measures will also be taken into account.

### Geographical Context

- 8.8.3 The Guidelines recommend that the value or potential value of the important ecological resource or feature be determined within a defined geographical context and recommends that the following frame of reference be used:
- International;
  - National (Wales);
  - County (Torfaen and Blaenau Gwent); and
  - Local (considered as the 2km Study Area around the Survey Boundary).
- 8.8.4 Where a feature has value at more than one designation level, its overriding value is that of the highest level.

### Valuing Species

- 8.8.5 The guidelines require consideration of all protected species as 'important' features where there is the potential for a breach in legislation. Additionally, both species and habitats should be assessed according to their biodiversity value, measured against published selection criteria where available, such as those protected under the Conservation of Habitats and Species Regulations 2017 (as amended), or those listed as priority species or habitats under Section 7 of the Environment (Wales) Act 2016. In assigning value to a species, it is necessary to consider its distribution and status, including a consideration of trends based on available historical records, as well as their legal protection, whilst using any relevant published evaluation criteria available at the time of assessment. Where habitats do not meet the necessary criteria for designation at a specific level, the guidelines recommend that the ecologist may consider the local context if appropriate. Additionally, consideration should also be given to the potential value of those habitats,

particularly where habitats are in a degraded or unfavourable condition at the time of the assessment.

## Characterising Potential Impacts

- 8.8.6 The guidelines state that the assessment of impacts should be undertaken in relation to the baseline conditions within the Zol that are expected to occur if the Development were not to take place. Having identified the activities likely to cause significant impacts, it is then necessary to describe the resultant changes and to assess the impact on valued ecological features as well as further consider impacts to the relevant ecosystem as a whole. The process of identifying impacts should make explicit reference to aspects of ecological structure and function on which the feature depends. Impacts must be assessed in the context of the baseline conditions within the Zol during the lifetime of the Development.
- 8.8.7 When describing changes/activities and impacts on ecosystem structure and function, it is necessary to take into account the following parameters:
- Beneficial or adverse;
  - Extent;
  - Magnitude;
  - Duration;
  - Timing;
  - Frequency; and
  - Reversibility.

## Significance Criteria

- 8.8.8 The CIEEM guidance defines an ecologically significant impact as an '*effect that either supports or undermines biodiversity conservation objectives for 'important ecological features' or for biodiversity in general*'. Once a potential significant impact is identified as likely to affect the integrity/ favourable conservation status of a potential IEF, the value of the receptor will be used to help determine the geographical scale at which the impact is significant. If an impact is not found to be significant at the level at which the resource or feature has been valued, it may still be significant at a more local level. An impact that is of significance below a local level, or is deemed not to be significant, will be scoped out of the impact assessment.
- 8.8.9 Although certain species may not constitute IEFs based upon their nature conservation value, they may still warrant consideration during the design and mitigation of the Development on the basis of their legal protection, their implications for policies and plans, or other issues such as animal welfare issues.
- 8.8.10 The guidance advocates the use of professional judgement, informed by relevant best practice guidance, in determining significant effects over the use of matrices.
- 8.8.11 Due to the application of the CIEEM Guidelines, the impact assessment presented in this chapter differs slightly in approach to the remainder of the ES, with each IEF being assessed in terms of whether or not an impact (beneficial or adverse) is significant (assessment of impact), alongside the geographical scale at which this occurs (importance of feature). In each case, for consistency with the remainder of the ES, a conclusion is then presented as to whether or not a significant effect will occur, with such



effects being described as either adverse or beneficial. No scale is ascribed to the assessment of effects (i.e., they are either significant or not significant) except in relation to the geographic context.

- 8.8.12 The significance of the potential impacts upon IEFs will be assessed both before and after consideration of the additional mitigation measures. The latter represents the assessment of the residual impacts of the Development. Consideration will also be given to the potential future impacts to IEFs arising as a result of global trends and climate change.
- 8.8.13 Additionally, and in accordance with Conservation of Habitats and Species Regulations 2017 (as amended), screening will also be required to determine if likely significant effects upon pertinent designated sites comprising the National Site Network (i.e., SACs and SPAs) would arise as a result of the Development and, if this is the case, for an appropriate assessment (AA) to be undertaken. Whilst the Habitats Regulations Assessment is the responsibility of the Competent Authority, information to inform this process will be prepared if required.

## 8.9 Assessment of Biodiversity Effects

- 8.9.1 An assessment of likely significant effects of the Proposed Development on those IEFs identified above has been undertaken based on the application plans. The quantum and layout of the Proposed Development incorporate inherent or embedded ecological mitigation as a result of an iterative assessment and design process, as set out above.
- 8.9.2 The likely effects are assessed with the inherent mitigation included, but in the absence of the additional mitigation measures required to address potentially significant effects. Anticipated effects during the construction and operation/post-completion stage of the Proposed Development are discussed in turn below.

### Internationally and Nationally Designated Sites

Usk Bat Sites SAC, Siambre Ddu SSSI, and Mynydd Llangattock SSSI (encompassing Craig Y Cilau NNR)

- 8.9.3 With regards to the Usk Bat Sites SAC (as well as its constituent SSSIs) the Habitat Regulations Assessment (HRA) of the Torfaen Replacement Local Development Plan<sup>39</sup> recommends that the Local Development Plan (LDP) includes '*protective policy wording into the Deposit Plan that recognises the 2km Core Sustainance Zone (CSZ) for lesser horseshoe bats*' given that '*Scientific evidence indicates that foraging and/or commuting habitat within this buffer is essential for the integrity of the bat populations in the SAC*'. As the Site lies 8km from the SAC and is therefore well outside the CSZ for lesser horseshoe bat, no adverse impacts are anticipated upon this SAC either alone or in combination with any other plans of projects.
- 8.9.4 However, Policy DM14 of the Local Development Plan up to 2021<sup>40</sup> states that 'development proposals within 10 km of the Usk Bat Sites Special Area of Conservation (SAC) that would have an impact on connectivity corridors or cause direct or indirect disturbance to the features must be subject to a project level Habitat Regulation Assessment (HRA)'. The supporting text of this policy also states 'Development proposals on land which although a considerable distance away (10km), could impact upon the Usk

<sup>39</sup> Habitat Regulations Assessment of the Torfaen Replacement Local Development Plan – Preferred Strategy (draft). AECOM on behalf of Torfaen County Borough Council. Available at: <https://www.torfaen.gov.uk/en/PlanningAndDevelopment/Planningpolicy/Local-Development-Plan-Review/Replacement-Torfaen-Local-Development-Plan.aspx> accessed June 2023).

<sup>40</sup> Local Development Plan up to 2021. Blaenau Gwent County Borough Council. Adopted 2012.

Bat Sites SAC. A key aspect of the Lesser Horseshoe Bat is its mobility, which means that it could potentially travel many kilometres from Usk Bat Sites SAC. Therefore, mitigation measures are necessary in respect of potential development in all areas with the exception of the very southern parts of the Borough. Consequently, any potential development proposals that would have an impact on connectivity corridors or cause direct or indirect disturbance to the features (such as light, noise etc.) must be subject to a project level HRA'. However, whilst the Site lies circa 8km from this SAC, the nearest turbine location lies circa 9.9km south of this SAC (turbine 2), whilst all other turbine locations lie beyond 10km from the boundary of this SAC. As such, taking into account the findings of the Torfaen County Borough Council's HRA, and given that the CSZ for lesser horseshoe is 2km, no adverse impacts either alone or in combination with any other plans of projects upon this SAC are considered likely to arise, such that a project HRA is not deemed necessary.

- 8.9.5 As such, **no significant adverse** construction or operational effects upon the Usk Bat Sites SAC or its constituent SSSIs are considered likely to arise as a result of the Proposed Development.

## Locally Designated Sites

### SINCs within the Site

- 8.9.6 The construction of the turbines along with associated infrastructure including the grid connection corridor and access routes will result in the loss of habitats associated with the following SINCs: Blaen-y-cwm Upland Pasture SINC (T6), Cwm Ddu Woods, Cefn y Crib SINC (T11), Blaenserchan SINC (T27), Disused Quarry colonised by acidic grassland and dry acidic heath SINC (T35), Graig Ddu/Gelli-Deg Wood SINC (T42), Mount View, Blaen-y-Cwm SINC (T51), Mynydd Llanhilleth Common SINC (T55), Rhiw Frank Meadows SINC (T82), Tirpentwys Cut SINC (B39/T92), Waun Wen & Cwmybyrgwm SINC (T108), The British SINC (T91) and Mulfran, Mynydd Coity, Mynydd James & Gwastad SINC (B25). The locations of these SINCs are further described in **Appendix 8A**.
- 8.9.7 In respect of the main access route to the north east of the Site, junction improvements at Talywain, widening of the existing track together with required cut and fill, particularly at existing bends along this route will be required to facilitate access for construction vehicles. This will result in minor losses to those habitats bordering the existing track, including the following SINCs: The British SINC (T91), Disused Quarry colonised by acidic grassland and dry acidic heath SINC (T35), Waun Wen & Cwmybyrgwm SINC (T108), Mynydd Llanhilleth Common SINC (T55) and Mulfran, Mynydd Coity, Mynydd James & Gwastad SINC (B25).
- 8.9.8 Improvements to the access route between turbines, in particular the route between turbine 4 and turbine 8 which extends through the former quarry area, will also result in minor losses to the habitat bordering the existing track, including the following SINCs: Tirpentwys Cut SINC (B39/T92), Mynydd Llanhilleth Common SINC (T55), Cefn y Crib SINC (T11), and Blaen-y-cwm Upland Pasture SINC (T6).
- 8.9.9 Along the route of the grid connection corridor, impacts from construction activities will also result in the minor loss of habitats associated with the following SINCs: Rhiw Frank Meadows SINC (T82), Waun Wen & Cwmybyrgwm SINC (T108), and Mynydd Llanhilleth Common SINC (T55).
- 8.9.10 During construction of the turbines direct loss of habitats will also occur within SINCs associated with turbine locations 1, 2, and 4, as well as loss of habitats along the access routes to these turbines. Turbines 1 and 2 will result in the minor loss of habitats within the Waun Wen & Cwmybyrgwm SINC (T108). Turbine 4 will result in the minor loss of habitats

within both the Mynydd Llanhilleth Common SINC (T55) and the Blaen-y-Cwm Upland Pasture SINC (T6).

- 8.9.11 The location of Turbines 3, 6, 7 and 8 lies outside SINC designations, although construction works to access routes to these turbine locations may also result in loss of habitats within the aforementioned SINC.
- 8.9.12 Prior to mitigation, effects during the construction phase will be both direct and indirect, permanent and temporary, certain, adverse and **significant** at the **Local** level. There will be no additional effects during the operational phase.

### *Mitigation*

- 8.9.13 Areas of marshy grassland and acid grassland subject to temporary loss during the construction of the turbines will be restored following completion. Where possible, acid and marshy grassland turves will be subject to sensitive cutting and storage during the construction period for translocation following completion of construction, reinstating turves and those plant communities established therein so as to minimise the extent of habitat loss.
- 8.9.14 Where losses are permanent, the translocation of turves otherwise lost to construction will be undertaken so as to further enhance retained areas of acid and marshy grassland subject to degradation. All areas of retained acid grassland and marshy grassland will also be subject to a sensitive management regime to further maintain and enhance its floristic diversity. Areas of encroaching scrub and bracken will be cut back to encourage grassland regeneration. Within the vicinity of turbines where any translocated turves have failed, or where areas of bare ground occur, a green hay cut will be taken from the surrounding acid/marshy grassland for spreading over the areas of bare ground to allow natural regeneration of these areas.
- 8.9.15 Where there are to be minor, temporary losses to heathland habitats, such habitats will be restored through the spreading of 'green hay' taken from adjacent heathland areas to be retained, to enable natural regeneration and establishment across impacted areas. Where permanent loss of heathland habitats cannot be avoided, habitat creation will be undertaken focusing on adjacent areas of dense scrub and bracken, with the translocation of turves otherwise lost to construction utilised to reinstate areas of heathland elsewhere, together with the use of 'green hay' to speed up establishment.
- 8.9.16 Areas of broadleaved woodland subject to temporary loss will be restored following completion of construction, through the provision of new, native tree planting utilising species of local provenance to further enhance SINC habitats. Where there is to be permanent loss of woodland area, such losses will be compensated for through the provision of new native tree planting across areas of scrub, with sensitive grassland habitats avoided.
- 8.9.17 An ECMS will be prepared pre-commencement which will set out in detail those measures to be implemented to protect IEFs during the construction phase of the Proposed Development. It is proposed that the implementation of the ECMS will be overseen by an appointed ECoW, whose scope and remit will be set out within the ECMS.
- 8.9.18 A Construction Environment Management Plan (CEMP) has been prepared and will be continually updated and implemented during the entirety of the construction stage to ensure appropriate management and operational systems are in place to avoid or minimise adverse pollution effects during construction.
- 8.9.19 A LEMP will also be prepared for the Proposed Development (excluding Common Land), which will set out in the detail those measures to be implemented to ensure the successful establishment/installation of new habitats/features and the long-term maintenance and management of the retained and enhanced habitats/features.

8.9.20 Post mitigation, effects will be negligible and **not significant**.

#### Habitats

- 8.9.21 The construction of Turbines 3, 4 and 6 will result in the loss of areas of marshy grassland, unimproved and semi-improved acid grassland of local importance. Construction works required to upgrade existing/create additional access routes to these turbine locations will also result in loss/damage to additional areas of such habitats. There are not considered to be any additional impacts from the construction of Turbines 1, 2, 7 and 8 given their siting within areas of improved and semi-improved grassland. No tree loss is anticipated to facilitate the construction or operation of the seven turbine locations.
- 8.9.22 In respect of the proposed access route, construction works necessary to upgrade the existing highway including widening and cut and fill works will result in minor losses to areas of unimproved neutral grassland, dwarf shrub heath, unimproved and semi-improved acid grassland, marshy grassland and broadleaved semi-natural woodland, with additional potential impacts upon Cwmsychan Brook. A total of 22 trees/tree groups will also be impacted by the proposed improvement works (**Appendix 8E**). In addition, proposed improvement works to the access route could also potentially result in the spread of non-native and invasive species including Japanese knotweed, wall cotoneaster, Japanese rose, New Zealand willowherb and giant hogweed.
- 8.9.23 In respect of the grid connection corridor, construction works necessary to facilitate the undergrounding of cables will result in the minor loss of unimproved and semi-improved acid grassland, acid grassland, dwarf shrub heath, marshy grassland, and broadleaved woodland.
- 8.9.24 All other habitats within the Site will be retained and protected from construction or operational activities.
- 8.9.25 Prior to mitigation, effects during the construction phase will be direct and indirect, permanent and temporary, certain and probable adverse and **significant** at the **Local to Regional level**. There will be no additional effects during the operational phase.

#### Mitigation

- 8.9.26 In respect of impacts upon marshy grassland, acid grassland, dwarf shrub heath and broadleaved woodland, mitigation will be delivered as per those details set out previously above in respect of locally designated sites, with details included in both and ECMS and LEMP.
- 8.9.27 In respect of impacts upon trees, compensatory tree planting will be provided onsite in accordance with PPW 12, at a minimum ratio of three trees of a similar type and compensatory size planted for every one tree lost, or, with respect to tree groups, at a minimum of 1600 trees per hectare for broadleaves, and 2500 trees per hectare for conifers. An Illustrative Compensatory Planting Strategy is included within **Appendix 8E**.
- 8.9.28 In addition, the ECMS together with the CEMP will set out in detail those measures to be implemented to protect IEFs during the construction phase of the Proposed Development, with the implementation of the ECMS overseen by an appointed ECoW. The ECMS will also cross reference the CEMP, which will include additional measures to ensure appropriate management prescriptions are in place to avoid or minimise adverse pollution effects on the Cwmsychan Brook in particular. The CEMP will also ensure the appropriate control and treatment of non-native, invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended), including those species classified as 'controlled waste' under the Environmental Protection Act 1990.

- 8.9.29 The LEMP will also set out in detail those measures to be implemented across the Proposed Development (Excluding Common Land) to ensure the successful establishment/installation of new habitats/features and the long-term maintenance and management of the retained and enhanced habitats/features.
- 8.9.30 Post mitigation, effects are considered **not significant**.

## Protected Species

### Bats

#### *Trees/roosts*

- 8.9.31 No evidence of roosting bats was identified for those trees occurring within the vicinity of the turbine locations (**Appendix 8A** and **8C**) when subject to detailed assessment. A total of 11 trees were confirmed as having high potential to support roosting bats however, with 36 trees assessed as having moderate potential and 21 trees with low potential (**Figure 8.1**).
- 8.9.32 In respect of those trees associated with the footprint of the proposed improvement works to the access route (**Appendix 8D**), tree T215, considered likely to support individual bats, will require removal.
- 8.9.33 In respect of the proposed grid connection corridor, a further 16 trees located within the proposed working area were also assessed as having potential to support bats, including: T31, T32, T33, T34, T35 and T90 with low bat roost potential, T16, T36, T45, T47, T83, T84, T87 and T88 with moderate bat roost potential and T11 and T46 with high bat roost potential. Mature and semi-mature trees occurring at the far eastern end of the proposed grid connection corridor route are also considered to have some potential to support roosting bats.
- 8.9.34 With respect to bat roosts supported by built structures occurring within the vicinity of the turbine locations, building B10 was confirmed to support a bat roost, with low numbers of common pipistrelle bats confirmed present.
- 8.9.35 In respect of the main access route, two former bridge abutments located either side of Farm Road, and the brick-built Engine House associated with the redundant British Ironworks Colliery compound are considered to have high potential to support roosting bats (**Appendix 8D**).
- 8.9.36 With regards to the proposed grid connection corridor, the ruined structure at Rhiw Frank situated north of the track and proposed route is also considered to have potential to support roosting bats.
- 8.9.37 None of the built structures present onsite, in association with the proposed improvement works to the access route, or in association with the grid connection corridor, are to be impacted by the proposals however, being located sufficiently distant from the proposed working footprint.

#### *Foraging/commuting*

- 8.9.38 A total of nine bat species/species groups were recorded foraging and/or commuting across the Site between May and October 2020 and May and October 2021, including the following species: common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, long-eared bat, Myotis bat species, noctule, serotine, greater horseshoe bat and lesser horseshoe bat.

- 8.9.39 During both 2020 and 2021, the vast majority of registrations recorded by the automated detectors relate to common pipistrelle (93%), which was similarly the case in respect of the walked transect surveys. Myotis bat species, soprano pipistrelle and noctule otherwise dominated the remainder of the bat activity recorded during 2020, with Myotis bat species, soprano pipistrelle and lesser horseshoe bat dominating the remainder of the bat activity recorded during 2021. Registrations for long-eared bat, serotine, greater horseshoe bat and Nathusius' pipistrelle were otherwise infrequently recorded throughout the 2020 and 2021 survey period.
- 8.9.40 The Ecobat assessment has concluded that there are five detector locations that have high levels of bat activity as well as also having an overall collision risk assessment of 'high', these being detector locations L01, L03, L04, L06 and L10. These detector locations relate to two turbine locations, turbine 2 (L01) and turbine 3 (L03). Detector locations L04, L06 and L10 otherwise lie over 280m from any turbine location.
- 8.9.41 In addition, those species with a high vulnerability to collision (serotine, noctule and Nathusius' pipistrelle) were recorded as having the highest levels of activity across the Site during August and September. Bat species considered to have a moderate vulnerability to collision (common pipistrelle, soprano pipistrelle, *Myotis* sp. and greater horseshoe bat) were recorded as having the highest levels of activity in August and September for greater horseshoe bat, August to October for *Myotis* sp., August for soprano pipistrelle, and June/July and September/October for common pipistrelle. The greatest level of impact upon bats will therefore likely occur between August and October.
- 8.9.42 Best practice guidance<sup>41</sup> recommends that all turbines are located at least 50m between the turbine blade tip (150m diameter, 75m radius) and the nearest bat habitat feature including woodland, tree lines and hedgerows. With a blade tip of 75m radius, this would require the placement of turbines at least 125m away from any suitable bat habitat feature when in rotation. The guidance also sets out a calculation to determine the minimum distance the centre of a turbine should be located from such vegetation, which is calculated using the following equation:  $b = \sqrt{(50+bl)^2 - (hh-fh)^2}$  whereby b equates to the distance between the edge of the feature and centre of the tower, bl is blade length, hh is the hub height, and fh is the feature height (vegetation height).
- 8.9.43 With respect to the Proposed Development, a maximum height to blade tip of 180m is proposed. This is to comprise a blade length exceeding 75m and a maximum hub height of 122m. Assuming a vegetation height of, for example, coniferous woodland being circa 25m, the distance the turbines should be from vegetation is calculated as:  $\sqrt{(50+75)^2 - (122-25)^2} = 78.8\text{m}$ . With respect to those turbines in the south west of the site where the nearest suitable vegetation comprises defunct hedgerows circa 2m in height, the distance turbines should be from this vegetation type is calculated as  $\sqrt{(50+75)^2 - (122-2)^2} = 35.0\text{m}$ .
- 8.9.44 To inform this calculation per turbine location, **Table 8.6** provides details pertaining to the habitat type at each turbine location and minimum distance of suitable bat habitat from each turbine location, informed by the results of the habitat surveys and review of aerial photography. The estimated height (maximum/mean/median) above ground level of the nearest suitable vegetation for bats is also provided, informed by the results of an update BS5837:2012 tree survey undertaken during March 2023 (**Appendix 8C**).

<sup>41</sup> NatureScot (2019) Bats and Onshore Wind turbines – Survey, Assessment and Mitigation (<https://www.nature.scot/doc/bats-and-onshore-wind-turbines-survey-assessment-and-mitigation>; last accessed 29 September 2022).

**Table 8.6 Bat habitat features in relation to turbine locations**

<b>Turbine Location</b>	<b>Habitat at turbine location</b>	<b>Distance of nearest bat habitat feature</b>	<b>Median height of nearest suitable vegetation (fh)</b>	<b>Required distance of turbine from vegetation (b) based on max/mean/median height</b>
1	Sheep grazed, poor semi-improved grassland field with patches of acid grassland/bracken/semi-improved grassland within field margins.	75m – mature line of beech trees delineating part of eastern and southern field boundary	15m	64.6m
2	Sheep grazed, poor semi-improved grassland field with field boundaries delineated by a wall to the north, fence line to the west and south-west, and mature tree line to the east and south. Line of tree partially delineates western and southern field boundaries.	70m – mature line of trees to north delineating part of northern field boundary	15m	64.6m
3	Open area of common land comprising a mosaic of marshy grassland and unimproved acid grassland.	145m – mature line of trees to north	c.25m	78.8m
4	Open area of common land comprising a mosaic of marshy grassland and unimproved acid grassland.	221m – Coniferous plantation woodland to south of turbine, populating northern cliff edge/face of former quarry. This plantation has been subject to clear felling since November 2020 however, and is now mostly clear of trees.	c.25m (albeit now primarily clear felled)	78.8m

Turbine Location	Habitat at turbine location	Distance of nearest bat habitat feature	Median height of nearest suitable vegetation (fh)	Required distance of turbine from vegetation (b) based on max/mean/median height
6	Within a horse-grazed, semi-improved grassland field, with boundaries delineated by defunct, native hedgerows.	35m – defunct native hedgerow to south of turbine, with broadleaved woodland located 90m east.	2m (hedgerow); 14.5m (woodland)	35m (hedgerow) 63.8m (woodland)
7	Within a sheep grazed, improved grassland field, with boundaries delineated by an unvegetated fence line to the south and a defunct, native hedgerow to the north, east and west.	102m – defunct native hedgerow to east of turbine, (broadleaved woodland located 276m east).	2m	35m
8	Within a grazed, poor semi-improved grassland field with boundaries delineated by unvegetated fence lines.	120m – coniferous woodland edge north of turbine. This plantation has been subject to clear felling since November 2020 however, and is now mostly clear of trees.	c.25m (albeit now primarily clear felled)	78.8m

8.9.45 The above table confirms that all suitable bat habitat otherwise occurring within the vicinity of each turbine location is situated beyond the required bat buffer zones calculated for each of the seven turbine locations, as illustrated at **Figure 8.1**.

8.9.46 In summary, impacts arising upon bats will be greatest in respect of Turbines 2 and 3 when taking into account the findings of the Ecobat (collision risk) assessment (**Appendix 8B**). However, no impacts are anticipated when taking into account the distance of the proposed turbines from suitable bat habitat features, including trees with bat roost potential.

#### *Potential effects*

8.9.47 The iterative design process has resulted in a reduction in the number of turbines proposed across the Site, from 12 to seven, which will ensure a reduction in the overall impact upon the local bat population.



- 8.9.48 Impacts upon bats will arise during the construction phase given the required loss of tree T215 associated with the access route with potential to support roosting bats, in addition to disturbance impacts arising such as through use of temporary lighting during construction works.
- 8.9.49 Impacts during the operational phase include the potential killing/injury of bats due to barotrauma when flying in close proximity to the turbines, including bats roosting within or nearby to the Site, and those migrating through the Site, particularly during the late summer and autumn months (i.e. August - October). Such impacts will be greatest upon serotine, noctule and Nathusius' pipistrelle, these species being classed as high vulnerability species confirmed to utilise the Site, with greatest impacts likely arising from Turbines 2 and 3 (i.e. turbines situated near to detector locations L01 and L03 (with turbines otherwise located over 280m away from detector locations, L04, L06 and L10) where 'high' levels of bat activity was recorded).
- 8.9.50 Prior to mitigation, effects during the construction phase will be adverse, certain, direct, permanent, and **significant** at the **Local** level. Prior to mitigation, effects during the operational stage will be certain, direct, permanent, adverse and **significant** at the **Local** level.

### *Mitigation*

#### Construction Phase

- 8.9.51 An update bat tree assessment will be required in respect of tree T215 considered to have potential to support individual bats and proposed for loss to facilitate improvement works to the access route.
- 8.9.52 Additionally, all trees previously identified as having potential to support roosting bats onsite and occurring within the construction footprint will require update inspections within 48 hours of tree works commencing to re-confirm the likely absence of tree roosting bats on-site. Potential roost features supported will require further inspections at height through aerial climbing, undertaken by a suitably qualified and NRW licensed bat ecologist, arboricultural contractor with an NRW bat licence, or with experience of working with bats and under the supervision of an NRW bat licence holder. Should absence be confirmed, then tree felling works can be completed without an NRW Development Licence.
- 8.9.53 Should a bat tree roost be subsequently confirmed however, an EPS licence from NRW will be required to derogate from the legal protection afforded to bats. To obtain a licence, it must be demonstrated that there will be no detriment to the maintenance of the favourable conservation status of the local bat population, with the loss of any confirmed roosts compensated for through the provision of new roosting habitat (e.g., bat boxes installed upon trees situated at least 200m away from the turbine locations).
- 8.9.54 Additionally, should any future tree works such as limb removal, crown reduction, or felling be required to remaining trees on-site, either as a result of poor tree health or due to public health and safety concerns, then further update inspections as described above are advised prior to commencement.
- 8.9.55 All retained trees with bat roost potential will further be included within Ecological Protection Zones throughout construction. Construction activities will be restricted to daylight hours as far as possible to mitigate effects of increased visual and noise disturbance, with the use of temporary, artificial lighting avoided during the hours between dusk and dawn, with directional and low-level lighting used away from sensitive habitat corridors to mitigate effects relating to increased use of artificial lighting.

- 8.9.56 Protection of species during construction will be ensured through implementation of the ECMS. As a general measure aimed at protecting species, "tool box talks" will be provided by suitably qualified ecologists to the principal contractor appointed by the Developer, for distribution to all employees involved in any enabling works/vegetation clearance, to ensure that identification and protection of the relevant species, their habitats is understood.
- 8.9.57 The CEMP will also be implemented during the entirety of the construction stage to ensure appropriate management prescriptions are in place, including the implementation of restricted working hours so as to avoid or minimise adverse lighting effects.
- 8.9.58 Post mitigation, effects are considered to be **not significant**.

### *Operational Phase*

- 8.9.59 Micro-siting will be undertaken to ensure the full avoidance of bat habitat features occurring within their bat buffer zone.
- 8.9.60 When the turbines are idling, the blades will be prevented from turning at low wind speeds, referred to as 'feathering'. The implementation of feathering has been shown to reduce fatality rates during idling times by 50%, with no resultant loss in output. Feathering will be included as an automated response as part of a Supervisory Control and Data Acquisitions (SCADA) system. Feathering will be applied to all turbine locations, whereby the blades of each turbine are pitched out of the wind to reduce rotation speeds below 2 revolutions per minute (rpm) whilst idling.
- 8.9.61 In combination with feathering of the blades, the turbines will also be curtailed at wind speeds below 6.5 metres per second (m/s; measured at the nacelle height), by raising the cut-in speed at which the turbine blades move and begin to generate electricity. Bats are known to fly when wind speeds are low; as such, curtailing turbine activity at low wind speeds will reduce the risk of bats being killed or injured by the turbines.
- 8.9.62 Where necessary and informed through subsequent monitoring, timing of operation will be curtailed for specific turbines during times when those bat species with a high vulnerability to collision risk (i.e. serotine, noctule and Nathusius' pipistrelle) are present and active, i.e. between sunset and sunrise during August, September and October when temperatures rise above 7°C and windspeeds drop below 6.5 m/s (measured at nacelle height). The SCADA system will also be linked to a continual acoustic monitoring system, installed at the turbine nacelle, which records bat registrations to enable real-time analysis of the data received. This will allow the acoustic monitoring system to require the curtailment of the turbine as soon as bats are recorded near to the turbine, with curtailment possible as a response to any bat species or specific bat species which are considered to be at higher risk of collision. This will reduce bat fatalities as well as reducing costs associated with blanket curtailment of all turbines across the Site when bats may otherwise not be present.
- 8.9.63 Post-construction monitoring will also be carried out to assess the effectiveness of the above feathering and curtailment measures, to inform any additional mitigation that may be required. Such monitoring will comprise the passive, acoustic monitoring of bat activity, as well as active searching for bat carcasses beneath turbines. Acoustic monitoring will determine whether there has been any reduction in bat activity at the Site following construction of the turbines, in which case the level of curtailment could potentially be reduced. Carcass searching will also be employed beneath the turbines, involving a systematic search of the ground beneath the turbine blades for the presence of bat carcasses (by hand and/or employment of a trained sniffer dog). Should an increase in bat carcasses be recorded during the year, additional mitigation measures will be employed, such as further curtailment of the turbines during these months or during specific weather conditions.

8.9.64 The details of this mitigation and monitoring strategy will be set out in a CMMS, which can be secured by way of a suitably worded pre-commencement planning condition attached to the planning permission.

8.9.65 Post mitigation, effects are considered to be **not significant**.

### Otter

8.9.66 An otter spraint was recorded upon a large boulder located alongside Cwmsychan Brook immediately downstream of the road bridge to the east of the redundant colliery buildings at the British. This stream is considered to offer suitable foraging and dispersal habitat for otter, with no suitable breeding or resting places otherwise identified.

8.9.67 Likely impacts arising upon this species during the construction phase include habitat loss required to facilitate widening and cut and fill works to the existing highway as part of the access route construction works. Such works could result in the severance of the riparian corridor and associated habitats at this location. Disturbance impacts upon dispersing and foraging otter could therefore arise, particularly should direct impacts to the brook corridor be required.

8.9.68 During construction activities, there will be an increase in construction traffic using the track over the brook, which could result in the killing/injury of otter where a suitable alternative otter dispersal route is not otherwise available.

8.9.69 Prior to mitigation, impacts will be adverse, direct and indirect, permanent and temporary, and **significant** at the **Local level**. There will be no additional effects during the operational phase.

### Mitigation

8.9.70 Construction activities will be restricted to daylight hours as far as possible to mitigate effects of increased visual and noise disturbance, with the use of temporary, artificial lighting avoided during the hours between dusk and dawn, and with directional and low-level lighting used away from sensitive habitat corridors to mitigate effects relating to increased use of artificial lighting.

8.9.71 An update otter survey of Cwmsychan Brook will be undertaken prior to commencement of any construction activities. In the unlikely event that otter holts are recorded, otter will be excluded from the affected area during the works with suitable mitigation measures implemented (under an NRW EPS licence) prior to works.

8.9.72 Details of these provisions will be set out in detail in the ECMS and referred to in the CEMP.

8.9.73 Post mitigation, impacts are considered to be **not significant**.

### Reptiles

8.9.74 The vast majority of habitats occurring onsite considered suitable to support a common reptile population will be retained and buffered from the development footprint. Nevertheless, construction impacts will result in minor losses. The common reptile population present onsite is assessed as being of less than Local ecological importance however, such that permanent habitat losses are not significant in EIA terms.

8.9.75 Nevertheless, the clearance of suitable reptile habitat during construction works, in addition to other impacts arising such as an increase in construction traffic, could result in the killing or injury of common reptiles. Such actions would constitute an offence under the

Wildlife and Countryside Act 1981 (as amended), compliance with which is assumed as being inherent to the Proposed Development.

- 8.9.76 Prior to mitigation, effects during the construction phase are direct, temporary and probable **adverse** and **significant** at a **local level**. There will be no additional effects during the operational phase.

#### *Mitigation*

- 8.9.77 During vegetation clearance, a habitat manipulation exercise will be carried out to ensure any reptiles found are moved to retained habitats away from the construction zone, to avoid injuring or killing of any reptiles. This will involve a sensitive, two-stage clearance of vegetation suitable for common reptiles, under supervision of an ECoW, with individuals allowed to disperse naturally, or captured by hand and relocated outside of the construction footprint.
- 8.9.78 The construction footprint will then be retained as unsuitable reptile habitat (bare ground) during the construction period to deter reptiles from recolonising these habitats until the construction works have been completed. Details of this habitat manipulation exercise will be set out in detail in the ECMS.
- 8.9.79 Post mitigation, effects are considered to be **not significant**.

#### **Invertebrates**

- 8.9.80 46 invertebrate species of conservation importance have been recorded across the Site, the vast majority of which occur within grassland habitats including acid and marshy grassland. Whilst such habitats will be subject to temporary and permanent loss as a result of the Proposed Development, the extent of losses required to facilitate the construction of the turbines and associated infrastructure is considered to be limited relative to the quantum of such habitats to be retained.
- 8.9.81 Prior to mitigation, effects are direct, permanent and temporary, probable **adverse** and **significant** at a **local level**. There will be no additional effects during the operational phase.

#### *Mitigation*

- 8.9.82 The restoration and enhancement of the acid grassland, marshy grassland, heathland, hedgerows, trees belts and broadleaved woodland habitats, as previously set out above in relation to locally designated sites and habitats, will ensure the retention of sufficient habitat types necessary to maintain invertebrate populations including species of conservation importance recorded for the Site.
- 8.9.83 Post mitigation, effects are considered to be **not significant**.

## **8.10 Assessment of cumulative (inter-project) effects**

- 8.10.1 A Cumulative Effects Assessment (CEA) has been undertaken for the Project 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 is set out in **Chapter 2**.

- 8.10.2 The schemes to be considered in the cumulative assessment include the Proposed Development along with other existing and committed developments (i.e., those that have not been commenced but have a valid planning permission as well as those schemes which are in the planning process). The assessment of cumulative effects repeats the assessment process set out above, but considers the potential change caused by all schemes identified for cumulative assessment.
- 8.10.3 In respect of bats, the assessment area for cumulative effects has been calculated based on the Core Sustainance Zone (CSZ) (as set out in Table 3.5 of the BCT Guidelines 2016<sup>42</sup>) of those bat species present within the Site. The CSZs range between 1-4km and as such, bats roosting within 4km of the Proposed Development as well as within 4km of other wind turbine sites could be affected by the Proposed Development. Cumulative effects are therefore assessed for those developments, principally wind farms which are either built, consented or with submitted scoping reports or planning applications, occurring within 8km of the Site's boundary.
- 8.10.4 The schemes listed in Error! Reference source not found. and **Table 8.15** below have been included within the assessment of cumulative effects due to proximity to the Proposed Development.

**Table 8.14 Wind Farm Schemes included within the cumulative effects analysis**

Site name	Local Authority	Number of turbines	Height to blade tip (m)	Approximate distance from boundary of Proposed Development	Consent status
<b>Coed y Gilfach Farm</b>	Blaenau Gwent	2	45	600m N	Operational
<b>Abertillery Wind Farm</b>	Blaenau Gwent	6	200	1.9km N	Scoping
<b>Mynydd Carn-y-Cefn</b>	Blaenau Gwent	8	180	1.9km NW	Consented (March 2024)
<b>Mynydd Maen</b>	Caerphilly County	15	150	2km S	Scoping
<b>Trecelyn Wind Farm</b>	Caerphilly County	4	150	2.7km S	Planning
<b>Oakdale Business Park</b>	Caerphilly County	2	130	3.9km SW	Operational
<b>Pen-Y-Fan Industrial Estate</b>	Caerphilly County	1	124	3.9km SW	Operational
<b>Pen-Y-Fan Ganol Farm</b>	Caerphilly County	1	74	4.4km W	Operational
<b>Silent Valley</b>	Blaenau Gwent	1	102	6.7km NW	Planning

<sup>42</sup>Collins, J. (ed.) (2016) Bat Surveys for Professional Ecologists: Good Practice guidelines (3<sup>rd</sup> edn). The Bat Conservation Trust, London.

Site name	Local Authority	Number of turbines	Height to blade tip (m)	Approximate distance from boundary of Proposed Development	Consent status
<b>Cruglwyn</b>	Caerphilly County	1	86	7.6km NW	Operational
<b>Gelli-wen Farm</b>	Caerphilly County	1	77	7.7km W	Operational
<b>Manmoel Wind Farm</b>	Blaenau Gwent	5	180	8km NW	Planning
<b>Pen-yr-heol Farm</b>	Caerphilly County	1	77	8.3km W	Operational
<b>Penrhiwgwaith Farm</b>	Blaenau Gwent	1	87	8.4km W	Operational
<b>Mynydd Bedwellte</b>	Blaenau Gwent	9	180	8.5km NW	Scoping
<b>Bedlwyn Farm</b>	Caerphilly County	1	86	8.6km W	Operational
<b>Convatec Green Manufacturing Hub</b>	Caerphilly County	3	150	14km NW	Scoping

**Table 8.15 Other Schemes included within the cumulative effects analysis**

Development	Description of Development and Proximity	Proximity to the Proposed Development
<b>Tirpentwys Quarry (22/P/0762/SCOPE)</b>	Proposals concerning the extraction of secondary aggregates from the former Tirpentwys quarry, combined with the upgrade/creation of an access road entering the quarry.	Adjacent and within southern extent of Survey Boundary
<b>The British – TCBC Masterplan</b>	Masterplan for proposals which currently include improvements to the drainage system	Adjacent, in association with the access route

- 8.10.5 Pen-yr-heol farm, Penrhiwgwaith Farm, Mynydd Bedwellte, Bedlwyn Farm and Convatec Green Manufacturing hub all lie over 8km from the Proposed Development such that no adverse impacts from these turbines are anticipated. With respect to those seeking planning approval, the initial Preliminary Ecological Appraisals undertaken for Mynydd Bedwellte and Convatec Green Manufacturing hub generally concluded that the sites are likely of low value to bats, with a lack of potential roosting habitat and no features or areas of high habitat connectivity which are likely to be important commuting routes.
- 8.10.6 Wind farms likely to have the greatest cumulative effects include those that lie within 4km of the Proposed Development, these being: Coed y Gilfach Farm (2 turbines); Abertillery (7 turbines); Mynydd Carn-y-Cefn (8 turbines); Mynydd Maen (15 turbines); Trecelyn (4 turbines); Oakdale Business Park (2 turbines); and Pen-y-Fan Industrial Estate (2 turbines). These range in height from 45m (Coed y Gilfach Farm) to 200m (Abertillery).
- 8.10.7 Cumulative effects of these wind farm developments potentially arising relate to the loss of foraging and commuting habitat as a result of direct habitat loss following construction of turbines, in addition to a likely increase in bat fatalities from barotrauma and collision during operation. Given the size and relative proximity of the schemes assessed, there is potential for de minimis adverse effects across the schemes to give rise to significant adverse effects upon IEFs, specifically bats.
- 8.10.8 With respect to assessing bat activity data, direct comparison between data sets for each of these schemes is not possible, with limited access to baseline data alongside differing survey techniques employed and a variation in survey periods and years during which such data has been collated. However, where ecological surveys and reports have been produced, these generally conclude that (1) the levels of bat activity recorded are generally low at the deployed detector locations for these sites, likely due to proposed turbine locations being generally sited away from suitable bat foraging and commuting habitat and across more exposed areas where bats are less likely to traverse; and (2) bat activity data collated was mostly attributable to common pipistrelle, a 'medium vulnerability' species and most commonly recorded species with the greatest activity levels (e.g. accounting for 78%, 81.9%, 73%, 86%, 93%, of the total number of registrations collated during the 2020 and/or 2021 survey period at Abertillery, Mynydd Carn-y-Cefn, Mynydd Maen and Trecelyn respectively). Where greater levels of bat activity was recorded, this was in closer proximity to more suitable habitat features typically favoured by foraging or commuting bats such as along woodland edges, hedgerow boundaries and riparian corridors.
- 8.10.9 Nevertheless, those wind farm schemes assessed propose a number of measures necessary to mitigate for any potentially significant adverse effects arising upon bats to insignificant levels, including: feathering of turbines at Abertillery; feathering of turbines with targeted curtailment and long-term monitoring at Trecelyn and Mynydd Carn-y-Cefn; and curtailment of turbines during the bat active season and long-term monitoring at Mynydd Maen. Micro-siting of turbines and/or other infrastructure is also proposed to avoid or reduce environmental effects, combined with the preparation of a Habitat Management Plan or similar document detailing those additional mitigation, enhancement and monitoring measures required alongside any compensatory measures necessary. In so doing, such measures should further reduce the risk of cumulative effects arising. Overall, no significant cumulative adverse effects upon the local bat population are therefore expected to arise.
- 8.10.10 With regards to other development types, the Tirpentwys proposals concern the extraction of secondary aggregates from the former Tirpentwys quarry, combined with the upgrade/creation of an access road entering the quarry at its eastern edge, overlapping with the boundaries of the Proposed Development. There is potential for mining activities to result in the loss and/or disturbance of bat roosts associated with the quarry faces across its eastern extent, giving rise to the potential for additional cumulative effects on

the local roosting assemblage associated with the Proposed Development. Similar to the above however, there will be a requirement to ensure impacts to roosting bats are sufficiently avoided and/or mitigated for, to ensure potentially significant adverse effects arising upon bats can be reduced to insignificant levels.

- 8.10.11 Whilst information regarding proposals for The British is limited, it is understood that the proposals involve the installation of drainage features as part of a wider scheme for the restoration of this area. Given the Proposed Development's distance away, and spatial separation from, The British, combined with the limited extent and nature of the works proposed at The British, no significant cumulative adverse effects are anticipated to arise upon IEFs associated with the Proposed Development.
- 8.10.12 In consideration of other IEFs, no significant cumulative adverse effects are anticipated to arise upon statutorily designated sites including Usk Bat Sites SAC, Siambre Ddu SSSI and Mynydd Llangattock SSSI (encompassing Craig Y Cilau NNR), with a lack of potential impact pathways identified given their distance and spatial separation. There is, however, the potential for cumulative impacts to arise upon non-statutory designations, specifically Tirpentwys Cut SINC (T92), valued habitats, and the otter, common reptile and invertebrate populations potentially associated with these features, should proposals for Tirpentwys Quarry progress.
- 8.10.13 Impacts upon Tirpentwys Cut SINC associated with the Site is, however, limited to proposed upgrades to the existing access route through and adjacent to the quarry, connecting turbine 4 in the north to turbine 8 in the south. Although cumulative significant effects are likely given the additional land take necessary to facilitate the Tirpentwys proposals (albeit acknowledging the extent of felling of the existing plantation woodland to date), it is anticipated that the Tirpentwys proposals will necessarily mitigate for any potentially significant adverse effect arising upon the SINC and species IEFs supported therein. Furthermore, there will be a requirement to restore habitats therein following cessation of quarrying activities. With respect to potential impacts upon a common reptile population associated with such habitats, both the Tirpentwys proposals and the Proposed Development propose to utilise the existing access route, albeit with additional improvement works proposed. Associated losses are considered minor however, being largely confined to the existing footprint such that no significant cumulative effects upon a common reptile population are anticipated.
- 8.10.14 Cumulative impacts potentially arising upon other SINCs and habitats associated with the Proposed Development are otherwise considered unlikely given their spatial separation from other schemes and/or the nature of those habitats to be impacted, coupled with the limited extent of habitat loss anticipated to facilitate development.
- 8.10.15 Additionally, when considering other species IEFs beyond bats (as already discussed above), no significant cumulative adverse effects are anticipated to arise in respect of otter, common reptiles and invertebrates supported by the Proposed Development, given their relatively limited range and in consideration of the limited extent of habitat loss and degradation anticipated during construction of the Proposed Development and other schemes identified. As such, significant cumulative adverse effects are not anticipated to arise upon local or county populations of these species IEFs.
- 8.10.16 Subject to the implementation of the proposed ecological avoidance, mitigation and enhancement measures therefore, the residual effects of the Proposed Development alone will be negligible. The likelihood of significant cumulative adverse effects on ecological features arising in combination with the schemes listed above is therefore also judged to be negligible.



## PPW 12 Chapter 6: Step-Wise Approach

8.10.17 PPW 12 sets out a requirement for development to provide a net benefit for biodiversity and improve, or enable the improvement, of the resilience of ecosystems, through the application of the step-wise approach necessary to ensure that any adverse environmental effects are firstly avoided, then minimised, before being mitigated for and/or, as a last resort, compensated for either on or off Site.

8.10.18 The step-wise approach and associated enhancement and long-term management measures proposed for the Site, necessary to ensure a net benefit for biodiversity and ecosystem resilience, is therefore set out within **Table 8.16** below.

**Table 8.16 Application of the Step-Wise Approach at the Site**

Assessing Impacts on Habitats and Species Through the Step-Wise Approach	Measures Proposed for Implementation
<b>Step 1 - Avoid</b>	<ul style="list-style-type: none"> <li>• Sensitive siting of turbines and associated infrastructure (the latter through use of existing access points and roadways), combined with pre-commencement surveys and precautionary working measures during construction to avoid impacts upon:                             <ul style="list-style-type: none"> <li>• International Designated Sites;</li> <li>• Nationally Designated Sites;</li> <li>• Locally Designated Sites;</li> <li>• Irreplaceable habitats;</li> <li>• Peatland;</li> <li>• Confirmed bat roosts;</li> <li>• Habitat features (trees, built structures and quarry faces) with potential to support bat roosts; and</li> <li>• Habitat features with potential to support other European Protected Species.</li> </ul> </li> </ul>
<b>Step 2 - Minimise</b>	<ul style="list-style-type: none"> <li>• The sensitive siting of infrastructure required to facilitate the Proposed Development so as to enable the use of existing access points and roadways as far as possible;</li> <li>• Reduction in the total number of turbines originally proposed, initially reducing the Proposed Development to eight turbines (from 12 turbines originally proposed), taking into account the findings of the ongoing environmental assessments at the Site;</li> <li>• Sensitive siting of the seven remaining turbines and associated infrastructure to minimise impacts to:                             <ul style="list-style-type: none"> <li>• Locally Designated Sites overlapping with the Site;</li> <li>• Priority and notable habitats occurring onsite;</li> <li>• Habitat features within the vicinity of the Proposed Development with potential to support bats during the bat active and bat roost seasons; and</li> </ul> </li> </ul>

## Assessing Impacts on Habitats and Species Through the Step-Wise Approach

## Measures Proposed for Implementation

- Habitat features within the vicinity of the Proposed Development with potential to support other legally protected and/or Priority Species;
- Removal of one further turbine from the development proposals, turbine 5, resulting in the Proposed Development comprising seven turbines in total. Given the sensitive location of turbine 5, supporting significant tree cover including trees of high arboricultural quality and with multiple trees supporting potential roost features for bats, this has significantly reduced adverse impacts upon bats to below significant levels;
- Undertake update assessments to determine the current status of IEFs occurring within the vicinity of the construction footprint prior to commencement where potentially impacted.

### Step 3 – Mitigate/Restore

- Implementation of a CEMP during the construction stage to ensure appropriate management and operational systems are in place to avoid/minimise adverse pollution effects;
- Implementation of an ECMS detailing measures to be implemented to protect important ecological features during the construction phase of the Proposed Development, overseen by the appointed ECoW;
- Minor habitat losses required to facilitate development likely arising within locally designated sites or across the Site more generally will be mitigated for through reinstatement and/or enhancements to habitats otherwise retained, as detailed within a LEMP;
- Feathering of blades of all turbines to reduce rotation speeds below 2rpm while idling so as to minimise collision risk to species;
- Curtailment of all turbines when wind speeds drop below 6.5m/s so as to raise the cut-in speed at which the turbine blades move/generate electricity to further minimise collision risk to species; and
- Where necessary and informed through subsequent monitoring, curtailment to apply to specific turbines during times when bat species with a high vulnerability to collision risk (i.e. serotine, noctule and Nathusius' pipistrelle) are present and active, i.e. between sunset and sunrise during August, September and October when temperatures rise above 7°C and windspeeds drop below 6.5m/s.

### Step 4 - Compensate onsite

- Replacement planting onsite will be at a ratio equivalent to the quality, environmental and ecological importance of the tree(s) lost. This will be at a minimum ratio of at least 3 trees of a similar type and compensatory size planted for every 1 tree lost, or in

Assessing Impacts on Habitats and Species Through the Step-Wise Approach	Measures Proposed for Implementation
	<p>respect of tree groups/woodland edges/shelterbelt areas, planting will be at a minimum of 1600 trees per hectare for broadleaves, and 2500 trees per hectare for conifers; and</p> <ul style="list-style-type: none"> <li>• Compensatory planting locations (<b>Appendix 8E</b>) will focus on existing tree'd boundaries (woodland edges, tree lines and hedgerows) and areas fit to support establishment and health, ensuring unconstrained long-term growth of new planting necessary to further strengthen the existing resource onsite.</li> </ul>
<p><b>Step 4 - Compensate offsite</b></p>	<ul style="list-style-type: none"> <li>• Not applicable</li> </ul>
<p><b>Step 5 – Long Term Management Plan</b></p>	<ul style="list-style-type: none"> <li>• Implementation of a LEMP (excluding Common Land) to ensure the appropriate management and maintenance of all retained and newly created habitats/features proposed over the lifetime of the development. The LEMP will include the need for monitoring of biophysical changes to sensitive habitats including: terrestrial succession and scrub encroachment within retained, enhanced and newly created habitats; botanical monitoring of sensitive habitats retained, translocated and restored; the monitoring of new habitats/features installed/created across the Site; and any additional monitoring and remedial action required; and</li> <li>• Delivery of a Collision Mitigation Monitoring Strategy (CMMS) to reduce the impacts on bats, with details to include the feathering of blades, the implementation of a sensitive curtailment regime; the level and duration of monitoring required, and how the mitigation strategy can be adapted and tailored to the findings of the monitoring surveys.</li> </ul>

## 8.11 Significance conclusions

8.11.1 A summary of the results of the biodiversity assessment is provided in **Table 8.17**.

**Table 8.17 Summary of significance of effects**

Receptor and summary of predicted effects	Sensitivity/ importance/ value of receptor <sup>43</sup>	Magnitude of change <sup>44</sup>	Significance	Summary rationale
<b>Usk Bat Sites SAC</b> <b>Potential impacts on bat populations within this SAC</b>	International	Negligible	Not significant	Site lies beyond the CSZ for lesser horseshoes and turbine locations are sited beyond the distance an HRA would be required. No significant adverse impacts are anticipated.
<b>Siambre Ddu SSSI</b> <b>Potential impacts on bat populations within this SSSI</b>	National	Negligible	Not significant	Site lies beyond the CSZ for lesser horseshoes and turbine locations lie beyond the distance an HRA would be required. No significant adverse impacts are anticipated.
<b>Mynydd Llangattock SSSI (encompassing Craig Y Cilau NNR)</b> <b>Potential impacts on bat populations within this SSSI</b>	National	Negligible	Not significant	Site lies beyond the CSZ for lesser horseshoes and turbine locations lie beyond the distance an HRA would be required. No significant adverse impacts are anticipated.
<b>Blaen-y-cwm Upland Pasture SINC (T6)</b> <b>Potential impacts from land-take causing temporary and permanent damage/loss to habitats within the SINC from construction of the access route and turbines</b>	Local	Low	Not significant	Minor temporary and permanent land take from turbine footings. Enhancements to retained habitats would offset this loss.

<sup>43</sup>The importance of the receptor is defined on a geographic scale with reference to CIEEM Guidelines 2018 as set out in Section 8.8.

<sup>44</sup>Impacts have been characterised with reference to CIEEM Guidelines (2018) with due consideration to whether they are beneficial or adverse; extent; magnitude; duration; timing; frequency; and reversibility.

Receptor and summary of predicted effects	Sensitivity/importance/value of receptor <sup>43</sup>	Magnitude of change <sup>44</sup>	Significance	Summary rationale
<b>Cwm Ddu Woods, Blaenserchan SINC (T27)</b> Potential impacts from land-take causing temporary and permanent damage/loss to habitats within the SINC from construction of the access route	Local	Very low	Not significant	Minor temporary and permanent land take from the access route and grid connection corridor. Enhancements to retained habitats would offset this loss.
<b>Cefn y Crib SINC (T11)</b> Potential impacts from land-take causing temporary and permanent damage/loss to habitats within the SINC from construction of the access route	Local	Very low	Not significant	Minor temporary and permanent land take from the access route and grid connection corridor. Enhancements to retained habitats would offset this loss.
<b>Graig Ddu/Gelli-Deg Wood SINC (T42)</b> Potential impacts from land-take causing temporary and permanent damage/loss to habitats within the SINC from construction of the turbines	Local	Low	Not significant	Minor temporary and permanent land take from turbine footings. Enhancements to retained habitats would offset this loss.
<b>Mynydd Llanhilleth Common SINC (T55)</b> Potential impacts from land-take causing temporary and permanent damage/loss to habitats within the SINC from construction of the access route and turbines	Local	Low	Not significant	Minor temporary and permanent land take from turbine footings. Enhancements to retained habitats would offset this loss.

Receptor and summary of predicted effects	Sensitivity/ importance/ value of receptor <sup>43</sup>	Magnitude of change <sup>44</sup>	Significance	Summary rationale
<b>Tirpentwys Cut SINC (B39/T92)</b> Potential impacts from land-take causing temporary and permanent damage/loss to habitats within the SINC from construction of the access route	Local	Very low	Not significant	Minor temporary and permanent land take from the access route and grid connection corridor. Enhancements to retained habitats would offset this loss.
<b>Waun Wen &amp; Cwmybyrgwm SINC (T108)</b> Potential impacts from land-take causing temporary and permanent damage/loss to habitats within the SINC from construction of the access route, turbines and grid connector	Local	Low	Not significant	Minor temporary and permanent land take from turbine footings. Enhancements to retained habitats would offset this loss.
<b>Mulfran, Mynydd Coity, Mynydd James &amp; Gwastad SINC (B25)</b> Potential impacts from land-take causing temporary and permanent damage/loss to habitats within the SINC from construction of the access route	Local	Very low	Not significant	Minor temporary and permanent land take from the access route and grid connection corridor. Enhancements to retained habitats would offset this loss.
<b>Disused Quarry colonised by acidic grassland and dry acidic heath SINC (T35)</b> Potential impacts from land-take causing temporary and permanent damage/loss to habitats within the SINC from construction of the access route	Local	Very low	Not significant	Minor temporary and permanent land take from the access route and grid connection corridor. Enhancements to retained habitats would offset this loss.

Receptor and summary of predicted effects	Sensitivity/ importance/ value of receptor <sup>43</sup>	Magnitude of change <sup>44</sup>	Significance	Summary rationale
<b>Mount View, Blaen-y-Cwm SINC (T51)</b> Potential impacts from land-take causing temporary and permanent damage/loss to habitats within the SINC from construction of the access route	Local	Very low	Not significant	Minor temporary and permanent land take from the access route and grid connection corridor. Enhancements to retained habitats would offset this loss.
<b>Rhiw Frank Meadows SINC (T82)</b> Potential impacts from land-take causing temporary and permanent damage/loss to habitats within the SINC from construction of the grid connection	Local	Low	Not significant	Minor temporary and permanent land take from the access route and grid connection corridor. Enhancements to retained habitats would offset this loss. However, impacts will cover a relatively large part of this SINC.
<b>The British SINC (T91)</b> Potential impacts from land-take causing temporary and permanent damage/loss to habitats within the SINC from construction of the access route	Local	Very low	Not significant	Minor temporary and permanent land take from the access route and grid connection corridor. Enhancements to retained habitats would offset this loss.
<b>Heathland (including heathland/bracken mosaic)</b> Potential impacts from land-take causing temporary and permanent damage/loss to this habitat from construction of the access route and grid connection	Regional	Low	Not significant	Minor temporary and permanent land take from the access route and grid connection corridor. Enhancements to retained habitats would offset this loss.
<b>Acid grassland (unimproved and semi-improved)</b> Potential impacts from land-take causing temporary and permanent	Local	Low	Not significant	Minor temporary and permanent land take from turbine footings. Enhancements to retained habitats would offset this loss.

Receptor and summary of predicted effects	Sensitivity/ importance/ value of receptor <sup>43</sup>	Magnitude of change <sup>44</sup>	Significance	Summary rationale
<b>damage/loss to this habitat from construction of the access route, grid connection and turbines</b>				
<b>Broadleaved semi-natural woodland</b> Potential impacts from land-take causing temporary and permanent damage/loss to this habitat from construction of the access route and grid connection	Local	Low	Not significant	Minor temporary and permanent land take from the access route and grid connection corridor. Creation of new habitat and enhancements to retained habitat would offset this loss.
<b>Marshy grassland</b> Potential impacts from land-take causing temporary and permanent damage/loss to this habitat from construction of the access route, grid connection and turbines	Local	Low	Not significant	Minor temporary and permanent land take from turbine footings. Enhancements to retained habitats would offset this loss.
<b>Hedgerows and tree lines</b> Potential impacts from land-take causing temporary and permanent damage/loss to this habitat from construction of the turbines	Local	Low	Not significant	Minor temporary and permanent land take from the access route and grid connection corridor. Creation of new habitat and enhancements to retained habitat would offset this loss.
<b>Aquatic features</b> Potential impacts from land-take causing temporary and permanent damage/loss to this habitat from construction of the access route	Local	Low	Not significant	Minor temporary and permanent land take from the access route and grid connection corridor. Creation of new habitat and enhancements to retained habitat would offset this loss.



Receptor and summary of predicted effects	Sensitivity/ importance/ value of receptor <sup>43</sup>	Magnitude of change <sup>44</sup>	Significance	Summary rationale
<b>Neutral grassland (unimproved and semi-improved)</b> <b>Potential impacts from land-take causing temporary and permanent damage/loss to this habitat from construction of the access route, grid connection and turbines</b>	Local	Low	Not significant	Minor temporary and permanent land take from turbine footings. Enhancements to retained habitats would offset this loss.
<b>Invasive plant species</b> <b>Potential for spread of invasive non-native species including Japanese knotweed, wall cotoneaster, Japanese rose, New Zealand willowherb and giant hogweed during proposed improvement works to the access route</b>	Local	Low	Not significant	Specialist control measures and removal of invasive, non-native species from the Site.
<b>Commuting and foraging bats</b> <b>Potential for killing/injury of bats commuting and foraging within and through the Site</b>	Local	Low	Not significant	CMMS to include feathering of blades and curtailment of turbines at wind speeds below 6.5 metres per second. Monitoring of effectiveness will also be undertaken to further prevent fatalities and prevent significant adverse impacts on local bat populations.
<b>Roosting bats</b> <b>No trees confirmed to have roosting bats, but a number of trees with potential to support bats are present. Potential loss of bat roosts and killing/injury of bats if bats colonise these trees, as well as indirect effects on bats in other nearby roosts. No impacts anticipated to built structures confirmed to support bat</b>	Local	Low	Not significant	No bat tree roosts confirmed; though one tree (T215) with potential to support individual bats to be lost to facilitate improvement works to the access route. All trees to be impacted to be subject to an update inspection prior to any felling. No impacts are anticipated to arise in respect of the common pipistrelle roost supported by building B10 or in respect of built structures associated with the access route and grid connection corridor with potential to support roosting bats. Feathering of blades and curtailment of turbines along with monitoring of effectiveness, will prevent fatalities and prevent

Receptor and summary of predicted effects	Sensitivity/importance/value of receptor <sup>43</sup>	Magnitude of change <sup>44</sup>	Significance	Summary rationale
<b>roosts/with potential to support roosting bats</b>				significant adverse impacts on local bat populations, including the confirmed common pipistrelle roost supported by B10.
<b>Otter</b> <b>Potential for loss of foraging/dispersal habitat and fragmentation of habitat during construction of the access route</b> <b>Potential for killing/injury of otters during construction, from an increase in vehicles on the access route</b>	Local	Low	Not significant	Pre-commencement survey for otter to ensure no holts are affected. Protection of brook to ensure continued foraging and dispersal opportunities for otter.
<b>Common reptiles</b> <b>Loss of suitable habitat. Potential killing/injury during habitat clearance and construction works</b>	Local	Low	Not significant	Habitat manipulation during vegetation clearance to prevent killing/injury of reptiles.
<b>Invertebrates</b> <b>Loss of habitat supporting species of conservation importance</b>	County	Low	Not significant	Enhancements to retained habitats to offset losses.

## 8.12 Additional measures

8.12.1 The CMMS will allow for the mitigation measures (e.g. curtailment) to be adapted as monitoring surveys are undertaken. If the original mitigation measures are found to not be as effective as anticipated, the CMMS allows for additional mitigation measures to be employed (e.g. additional curtailment at different times of year or during a wider range of weather conditions). Similarly, where monitoring has identified a reduction in bat activity at the Site following construction of the turbines, the level of curtailment could potentially be reduced. As such, no additional measures are deemed required.

## 8.13 Residual effects assessment

8.13.1 Following compliance with the CMMS and adaptation to include additional curtailment of the turbines, the risk of killing bats will be reduced.

## 8.14 Further work to be undertaken

8.14.1 This section describes the further work to be undertaken to support the biodiversity assessment presented in the ES.

### Baseline

8.14.2 Update bat tree inspections will be undertaken prior to any works required to trees previously confirmed to have bat roost potential. Update inspections will seek to reconfirm the current status of potential roost features for bats whilst determining the presence/likely absence of any bat roosts which may have established during the interim period, to determine the need for an EPS licence from NRW prior to commencement of any works.

8.14.3 Update great crested newt presence/absence surveys will be undertaken of all waterbodies located within 250m of the proposed construction footprint during the optimal seasonal window (mid-March to end June) prior to commencement of works so as to reconfirm their status (presumed absence) onsite.

8.14.4 Pre-commencement surveys for otter will be necessary in respect of the Cwmsychan Brook which traverses the main access route. Surveys will search for the presence of any otter holts, to determine the need for an EPS licence from NRW prior to commencement of works in respect of the main access route.

### Assessment

8.14.5 As part of the CMMS, the impacts of the turbines on bats and the effectiveness of the feathering and curtailment measures will be continually assessed, with additional mitigation measures included if deemed appropriate. This will serve to prevent killing of bats due to barotrauma from the turbines.

### Environmental measures

8.14.6 As set out above, continual monitoring as part of the CMMS will inform any further mitigation that may be required during the operational phase.