11 Ecology

11.1 Introduction

11.1.1 This Chapter considers the potential for significant effects on important ecological receptors[1] associated with the construction, operation and decommissioning of the Proposed Development. Within this Chapter and assessment, the term 'Proposed Development' includes turbines, ancillary infrastructure and the ground mounted solar array area (as detailed in Chapter 5: Project Description).

11.1.2 The Site is defined by the red line Site boundary shown on Figures 11.1 to 11.8.

11.1.3 The assessment presented within this Chapter based on the Guidelines for Ecological Impact Assessment (EcIA) in the United Kingdom (CIEEM, 2018[i]).

11.1.4 The specific objectives of this Chapter are to:

- Describe the assessment methodology and significance criteria used in completing the impact assessment;
- Describe the ecological baseline conditions at the Proposed Development and associated Study Areas, to identify the ecological receptors which will be the focus of this assessment;
- Evaluate the sensitivity of each ecological receptor;
- Describe the potential impacts, including direct, indirect and cumulative impacts;
- Describe the mitigation measures proposed to avoid, reduce and offset potential significant adverse effects;
- Assess the significance of residual effects remaining following the implementation of mitigation; and,
- Describe biodiversity enhancement opportunities to be adopted as part of the Proposed Development.

11.1.5 The assessment is informed by comprehensive baseline data, including targeted ecological field surveys of important and legally protected ecological receptors identified during desk study and consultation feedback. It draws on pre-existing information, where appropriate, from other studies, survey data sources.

11.1.6 This Chapter is supported by the following figures:

- Figure 11.1a - Ecological Statutory Designated Sites;
- Figure 11.1b - Ecological Non-statutory Designated Sites;
- Figure 11.2 (a-c) - Existing Ecological Records (Non-Sensitive);
- Confidential Figure C11.1 - Existing Ecological Records (Sensitive);
- Figure 11.3 - Phase 1 Habitat Survey Plan;

[1] Note that the term 'ecological receptors' used in this chapter is equivalent to the term 'ecological features' used in the CIEEM Guidelines for Ecological Impact Assessment in the UK and Ireland (CIEEM, 2018), and can refer to species and/or ecosystems and their functions or services. Receptors is used herein to be consistent with other technical chapters.

- Figure 11.4 - NVC Survey Plan;
- Figure 11.5 – Protected Species Survey Plan;
- Figure 11.6 – Preliminary (Bat) Roost Potential Survey Plan;
- Figure 11.7 – Bat Activity Survey Plan

11.1.7 This Chapter is supported by the following technical appendices:

- Appendix 11.1: Habitats;
- Appendix 11.2: Protected Species;
- Appendix 11.3: Bats,

11.1.8 Figures and technical appendices, including those of other Chapters, are referenced within the text where relevant. Only common names are used within this Chapter; scientific names are provided in the relevant technical appendices.

11.1.9 This Chapter complements Chapter 12: Ornithology and Chapter 10: Ground Conditions. Note that in the interests of concision, information contained in other Chapters and appendices is not repeated herein unless essential for understanding and is instead cross referred to within this Chapter.

11.2 Legislative, Policy and Guidance

11.2.1 Only legislation and policy with specific relevance to ecological interests are listed in this section; general legislation and planning policy relevant to the Proposed Development are detailed in Chapter 3: Planning Policy.

11.2.2 The following legislation has been considered as part of this ecology assessment:

- The Conservation of Habitats and Species Regulations 2017, as amended by the Conservation (Natural Habitats, &c.) (EU Exit) (Amendment) Regulations 2019 (collectively 'the Habitats Regulations'[ii]);
- The Environment (Wales) Act 2016[iii];
- The Wildlife and Countryside Act 1981 (as amended[iv]); and,
- The Protection of Badgers Act 1992[v].

11.2.3 The following policy has been considered as part of this ecology assessment:

- Caerphilly County Borough Council (CCBC) Adopted Local Development Plan (LDP) Up to 2021 (Adopted November 2010[vi]);
- CCBC Adopted Local Development Plan (LDP) Up to 2021 Review Report (1st June 2021, for 2nd Replacement LDP up to 2035) – SP10 (Conservation of Natural Heritage[vii]);
- CCBC Action Plan 'Overview & Habitat Statements' (Volume 1, 2002[viii]);
- CCBC Action Plan 'Species Action Plans' (Volume 2, Interim Guidance, 2002[ix]);
- Future Wales (2021) Policy 9 Resilient Ecological Networks and Green Infrastructure[x];
- Welsh Government (2022) Biodiversity deep dive: recommendations[xi];
- Planning Policy Wales 11 (2021) Chapter 6 Distinctive and Natural Places[xii];
- Welsh Government (2023) Updated National Policy for Chapter 6 of PPW[xiii]; and,
- Technical Advice Notes 5 (2009) Nature Conservation and Planning[xiv].

11.2.4 The following key pieces of guidance has been considered as part of this ecology assessment:

- Guidelines for Ecological Impact Assessment in the UK and Ireland. Terrestrial, Freshwater, Coastal and Marine (CIEEM, 2018[i]);
- Biodiversity – Code of practice for planning and development (BSI, 2013[xv]);
- Countryside Council for Wales (2010) Assessing the Impact of Windfarm Developments on Peatlands in Wales[xvi];
- Collins, J. (2023) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Edition). The Bat Conservation Trust, London[xvii];
- NatureScot, Natural England, Natural Resources Wales, RenewableUK, Scottish Power Renewables, Ecotricity Ltd, the University of Exeter and the Bat Conservation Trust (BCT) (2019, updated 2021[xviii]) Bats and Onshore Wind Turbines: Survey Assessment and Mitigation. This document is referred to as the 'Joint Agencies guidance (2021).

11.2.5 Guidance relating solely to survey methods used is contained in Appendices 11.1-11.3.

11.3 Assessment methodology

Scope of Assessment

11.3.1 The assessment presented within this Chapter has been undertaken with reference to CIEEM guidelines (2018[i]) and considers the following potential impacts upon ecological receptors associated with construction, operation and decommissioning of the Proposed Development:

- habitat loss, fragmentation or change as a result of the delivery and installation of development infrastructure; and,
- disturbance, inadvertent killing or injuring of protected or otherwise notable species or inadvertent damage to their breeding sites or resting places.

11.3.2 The potential for significant effects of indirect impacts upon ecological features as a result of the potential spillage and/or migration of pollutants and sediments is considered highly unlikely on the basis of embedded good practice and mitigation measures to be implemented during the construction, operation and decommissioning phases. Such measures will be included within a Construction Environmental Management Plan (CEMP) which will be finalised and agreed in consultation with CCBC and Natural Resources Wales (NRW) on the basis of the Outline Construction Environmental Management Plan (OCEMP), document 'BR10167_PEP_CEMP'.

11.3.3 Potential effects upon ecological receptors are considered as a result of the Proposed Development alone and cumulatively, in-combination with other developments which are the subject of a valid planning application. Operational, under construction and consented wind farm developments, and major solar farm developments, with relevant ecological information in the public domain are considered for the cumulative impact assessment. Developments close to the end of their operational life are included as part of the cumulative assessment to present 'worst case scenario'.

11.3.4 CIEEM guidelines (2018[i]) stipulate that it is not necessary to carry out a detailed assessment of impacts upon ecological receptors that are sufficiently widespread, unthreatened and resilient to impacts of the proposed development. As such, the assessment considers effects upon designated sites and ecological receptors which are considered 'important' on the basis of baseline information, relevant guidance, literature, professional judgement of the authors and opinions of statutory advisory bodies provided through consultations in relation to the Proposed Development and, where relevant, other wind farm (and solar) developments.

11.3.5 Where ecological receptors are not considered so important as to warrant a detailed assessment, or where they would not be significantly affected on the basis of baseline information, these are 'scoped out' of the assessment. Mitigation measures for such receptors may, however, still be outlined as appropriate to reduce and/ or avoid any potentially adverse effects or to ensure legislative compliance.

11.3.6 The assessment is based on the Proposed Development described in Chapter 5: Project Description and Chapter 6: Assessment of Alternatives and has been undertaken in recognition of design evolution and embedded mitigation measures, and standard practices and construction environmental management included within the accompanying Outline Construction Environmental Management Plan (OCEMP), document 'BR10167_PEP_CEMP'.

11.3.7 The scope of the assessment has been informed by consultation responses summarised in Table 11.4 and key legislation, policy and guidance.

Predicting effects

11.3.8 The assessment has been undertaken with reference to CIEEM guidelines (2018[i]) and includes the following stages:

- determination and evaluation of important ecological receptors;
- identification and characterisation of impacts;
- outline of mitigating measures to avoid and reduce significant impacts;
- assessment of the significance of any residual effects after such measures;
- identification of appropriate compensation measures to offset significant residual effects; and,
- identification of opportunities for ecological/biodiversity enhancement.

Criteria for Assessing the Sensitivity of Receptors

11.3.9 Relevant European, national and local guidance from governments and specialist organisations has been referred to in order to determine the sensitivity (or importance) of ecological receptors.

11.3.10 In addition, importance or sensitivity has also been determined using professional judgement and taking account of the results of baseline field and desk study findings and the functional role of receptors within the context of the geographical area.

11.3.11 It should be noted that importance does not necessarily relate to the level of legal protection that a receptor receives, and ecological receptors may be important for a variety of reasons, such as their connectivity to a designated site, rarity or the geographical location of species relative to their known range.

11.3.12 For the purposes of this assessment the sensitivity or importance of an ecological receptor is considered in the context of a defined geographical area, ranging from Negligible to Very High, as detailed in Table 11.1.

11.3.13 Effects upon receptors identified as being of Negligible value/sensitivity are not likely to be significant in an EIA context at any geographic scale, and as such are scoped out of detailed assessment within this Chapter.

Table 11.1 Value/sensitivity assessment

Receptor value / sensitivity	Receptor type
Very High - International	An internationally designated site i.e. Special Area of Conservation (SAC) or candidate/potential site (pSAC). Large areas of priority habitat listed under Annex 1 of the Habitats Directive, and smaller areas of such a habitat that are essential to maintain the viability of that ecological resource. A regularly occurring, nationally significant population of any internationally important species, listed under Annex II or Annex IV of the Habitats Directive[2].
High - National	A nationally designated site e.g. Site of Special Scientific Interest (SSSI), or area meeting criteria for national level designations. Significant extents of a priority habitat identified in Section 7 of the Environment (Wales) Act 2016 (S7), or smaller areas which are essential to maintain the viability of that ecological resource. A regularly occurring, regionally significant population of any nationally important species listed as a S7 priority species and species listed under Schedule 1 or Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) or Annex II or Annex IV of the Habitats Directive.
Medium - Regional	Viable areas of key semi-natural habitat identified in the UK Biodiversity Action Plan (UKBAP). A regularly occurring, locally significant population of any nationally important S7 species and species listed under Schedule 5 of the Wildlife and Countryside Act or Annex II or Annex IV of the Habitats Directive. Sites which exceed the local authority-level designations but fall short of SSSI selection guidelines, including extensive areas of semi-natural woodland.
Low - Local	Species and habitats of local conservation importance, specifically those listed by the CCBC Action Plan. Areas of habitat or species considered to appreciably enrich the ecological resource within the local context (e.g., species-rich flushes or hedgerows). All other species and habitats that are widespread and common and which are not present in locally, regionally or nationally important numbers or habitats which are considered to be of poor ecological value.
Negligible	All other species and habitats that are widespread and common and which are not present in regionally, nationally or locally important numbers.

Criteria for Assessing the Magnitude of Change

11.3.14 Once identified, potential effects are described making reference to the following characteristics as appropriate:

- Adverse or beneficial;
- Extent;
- Magnitude;
- Duration;
- Timing;

[2] Council Directive 92/43/EEC of 21st May 1992 on the conservation of natural habitats and of wild fauna and flora.

- Frequency; and,
- Reversibility.

11.3.15 The assessment only makes reference to those characteristics relevant to understanding the nature of an effect and determining its significance. For the purposes of this assessment the temporal nature of potential effects are described where appropriate as follows:

- Negligible: of inconsequential duration;
- Short-term: for 1-5 years;
- Medium-term: for 5-10 years;
- Long-term: >10-30 years; and,
- Permanent: >30 years.

11.3.16 The criteria used to determine the magnitude of effects are set out in Table 11.2.

11.3.17 It is important to note that, where reference is made to population level effects to assess magnitude the most recently published available population estimates used are considered to be guides.

11.3.18 In addition, it will often be impossible to equate an impact to an actual population loss. For example, where protected species may be displaced from a wind farm site as a result of construction or operational activities, such a loss may be temporary or may reasonably result in the relocation of species to suitable habitats elsewhere within the site, immediate or wider area. Where uncertainty arises a precautionary approach has been adopted.

11.3.19 As such, professional judgement, on the basis of best available evidence, has been used to inform the assessment presented within this Chapter.

Table 11.2 Magnitude of impact

Magnitude	Description
Very High	The impact (either on its own or in-combination with other proposals) may result in the permanent total or almost complete loss of a site and/ or species status or productivity.
High	The impact (either on its own or in-combination with other proposals) may adversely affect the conservation status of a site and/ or species population, in terms of the coherence of its ecological structure and function (integrity), across its whole area, that enables it to sustain the habitat, complex of habitats and/ or the population levels of species of interest.
Medium	The impact (either on its own or in-combination with other proposals) would not adversely affect the conservation status of a site and/ or species, but some element of the functioning might be affected, and impacts could potentially affect its ability to sustain some part of itself in the long term.
Low	Neither the above or below applies, but some observable adverse effect is evident on a temporary basis or affects extent of habitat/species abundance in the local area.
Negligible	A very slight (indiscernible) reduction in a site and/ or species status or productivity and/ or no observable impact.

Criteria for Assessing Significance

11.3.20 CIEEM guidelines (2018[i]) note that:

> *"A significant effect does not necessarily equate to an effect so severe that consent for the project should be refused planning permission. For example, many projects with significant negative ecological effects have been lawfully permitted following EIA procedures."*

11.3.21 For the purposes of this assessment significant effects are therefore identified as those which encompass impacts on the structure and function of defined sites, habitats or ecosystems and the conservation status of habitats and species (including extent, abundance and distribution).

11.3.22 Such effects are identified by considering the importance of a receptor, the magnitude of the effect and applying professional judgement based on best available evidence, to identify whether the integrity of a receptor would be affected.

11.3.23 The term 'integrity' is used here to refer to the maintenance of the conservation status of a population of a species at a specific location or geographical scale.

11.3.24 For the purposes of this assessment, significant effects are primarily expressed with reference to an appropriate geographical scale and are based on Welsh population estimates where these are available, and where available regional estimates provide sufficient information to allow a meaningful assessment.

11.3.25 In cases of reasonable doubt, where it is not possible to robustly justify a conclusion of no significant effect, a significant effect has been assumed as a precautionary approach. Where uncertainty exists, this is acknowledged.

11.3.26 Where the assessment proposes measures to mitigate potentially significant adverse effects on ecological receptors, a further assessment of residual effects, taking into account such measures, has been undertaken.

11.3.27 CIEEM guidelines (2018[i]) do not recommend the sole use of a matrix table as commonly set out in ES Chapters to determine 'significant' and 'non-significant' effects. For the purposes of the assessment presented herein, Table 11.3 sets out adapted CIEEM terminology and equivalent in the context of the EIA Regulations, which has been used within this Chapter.

11.3.28 Major and moderate effects are considered significant in the context of the EIA Regulations.

Table 11.3 Significance of effect

Significance	Definition	
Significant	Major Adverse/Beneficial	A medium or high, medium or long-term adverse or beneficial effect upon the integrity of an ecological receptor of Very High/High value.
	Moderate Adverse/Beneficial	A high or very high, long-term or permanent adverse or beneficial effect upon the integrity of an ecological receptor of Medium/High value.
Non-significant	Minor Adverse/Beneficial	A low or medium, short-term or long-term adverse or beneficial effect upon the integrity of an ecological receptor of Low/Medium value.
	Negligible/Beneficial	A negligible or low adverse or beneficial effect upon the integrity of an ecological receptor of Low/Negligible value.

Requirements for Avoidance, Mitigation, Compensation and Enhancement

11.3.29 The mitigation hierarchy has been adopted to avoid, mitigate and compensate for potentially adverse effects upon ecological receptors as a result of the Proposed Development:

- Avoidance is used where an impact has been avoided or minimised e.g., through changes in Proposed Development design;
- Mitigation is used to refer to measures to reduce or remedy a specific adverse impact in situ;
- Compensation describes measures taken to offset residual effects, i.e., where mitigation in situ is not possible; and,
- Enhancement is the provision of new benefits for biodiversity that are additional to those provided as part of mitigation or compensation measures, although they can be complementary.

11.3.30 Note, that in this Chapter these are referred to collectively as 'mitigation' for brevity when discussing generalities, though with the form of mitigation specified as appropriate in discussion of any specific requirements.

Criteria for Assessing Cumulative Effects

11.3.31 In the absence of specific guidance for Wales, cumulative impacts have been assessed with reference to NatureScot guidance (SNH, 2012[xix] and NatureScot, 2021[xx]) for important ecological receptors subject to a detailed assessment and Joint Agencies guidance (2021[xviii]) in relation to bats.

11.3.32 For (non-avian) species potentially significant cumulative effects are only likely where other developments are located within the regular range of more mobile species (e.g., bats). Cumulative impacts have therefore been assessed with reference to Joint Agencies guidance (2021[xviii]) for bats only, in-combination with other relevant developments located within 10km of the Proposed Development site (see Figure BR10167 045).

11.3.33 Cumulative effects are only considered for effects of above negligible magnitude, as it is considered that negligible residual impacts would not likely contribute measurably to significant cumulative effects.

11.3.34 The cumulative assessment includes consideration of:

- Existing wind farm developments, either operational or under construction;
- Consented wind farm developments, awaiting implementation; and,
- Wind farm applications awaiting determination within the planning process with design information in the public domain.

11.3.35 Non-wind farm developments identified within 10km of the Proposed Development site, are not considered likely to contribute to potentially significant operational collision mortality risks to bat and as such have been typically scoped out of subsequent assessment. The only exception is the inclusion of Wauntysswg solar farm (3.6km from Site), but no relevant publicly available information was available. General cumulative effects are however considered in the absence of available baseline information.

11.3.36 Those developments which have been withdrawn and/or refused are not considered, unless an appeal is currently in progress and information is available. Furthermore, those developments

at the EIA screening stage are not considered as no information relevant to the cumulative effects is available for these projects.

Consultation

11.3.37 Table 11.4 summarises the consultation responses received regarding ecology and provides information on where and/ or how they have been addressed in this assessment. To avoid repetition, information contained elsewhere in the Chapter is only briefly summarised in Table 11.4, with cross references given to where in the Chapter and/or application documentation further information is provided.

Table 11.4 Consultation Responses

Consultation and Date	Scoping/Other Consultation	Issues Raised	Response/ Action Taken
Caerphilly County Borough Council (CCBC) (10th January 2024)	Scoping	• Noted that a number of ecology surveys (invertebrate, amphibian, fish, passerine bird species, further terrestrial mammal, further bat, targeted nightjar and black grouse and migratory waterfowl surveys are proposed to be scoped out of the EIA. The requirement for these surveys (or not) should be determined through a preliminary ecological assessment. If found to be required, these surveys would be expected to inform the ecology Chapter and included in scope of the EIA.	• The phase 1 habitat survey was extended to record the presence or assess the potential for habitats present to support protected and priority species as detailed in Section 11.4 'Baseline conditions'. It also identified where further targeted surveys would be required.
CCBC (10th January 2024)	Scoping	• The Site encroaches onto the Cefn Gelligaer, (west of Deri) Site of Importance for Nature Conservation (SINC). The SINC and the effect of the Proposed Development on its qualifying features should be considered in the Chapter. Primary qualifying features of the SINC are: extensive area of open countryside where semi-natural upland features predominate, including acid grassland, heath and semi-improved acid grassland, with at least seven indicator species; breeding lapwing (northern part of area) and locally significant dragonfly populations (ponds in north of area).	• Effects on the SINC (and all SINCs and designated sites) were considered in this Chapter, but effects were scoped out of detailed assessment, due to a number of factors, as discussed in Section 11.6.
		• The ponds in the north occasionally attract uncommon birds.	• Considered in Chapter 12.
		• Any biodiversity supported by the tip should be considered in the Chapter.	• Baseline gathering to establish those priority, notable and/or protected species and habitats onsite and surrounding Site were considered in this Chapter. The focus of the field surveys was typically the Site, and 250m buffer around proposed turbines and 100m buffer around infrastructure, as per standard guidance, also applicable in Wales. (NatureScot, 2024 [xxi]).

Consultation and Date	Scoping/Other Consultation	Issues Raised	Response/ Action Taken
			The desk study identified notable/priority ecological records out to 2km from the Site, and this included the tips to the south.
		• The comments from the Council's Ecologist have not yet been received, and should any further comments be received on this matter, they will be forwarded to PEDW separately.	• Noted.
CCBC (2nd January 2024)	Scoping	• There are three tips in the area and environmental considerations should be factored into assessment. This is particularly prudent given (coal) tips often support plants and fungi only found in such tip habitats.	• Baseline gathering has followed standard applicable guidance (NatureScot, 2024[xxi]). This has included using appropriate survey areas. The desk study considered key plants and fungi at the locality extended to 2km.
		• The details of the Proposed Development will be passed to the Council's Ecologist for further comment.	• Noted.
CCBC (11th January 2024)	Scoping	• Would like to see further considerations given to the possible impacts of the solar farm, as the wind farm aspect appears to be suitably addressed.	• Potential effects on key ecological receptors from the solar farm (and wind farm), and consideration of effects from the Proposed Development (solar and wind aspects in-combination), are considered in Section 11.6.
		• Largely agree with scoping report, but have some concerns given the area of the proposed solar, which appears to not have given consideration in assessing effects on wildlife, in particular ground-nesting birds, with respect to protection of nesting habitats.	• See above. Effects of the solar aspect of the Proposed Development are addressed in Section 11.6. Effects on the solar aspect on birds is addressed in Chapter 12.
Blaenau Gwent County Borough Council (BGCBC) (18th December 2023)	Scoping	• The Site is within 2.5km of the Mynydd Bedwellte SINC, as referred to in Policy ENV3.50 of the BGCBG Local Development Plan, so should be considered in the assessment.	• Effects on SINCs within 2km of the Site have been considered in the assessment (with the SINCs and designated sites considered shown in Figures 11.1a and 11.1b, respectively). It is understood that the Mynydd Bedwellte SINC has acid grassland, dry and wet heath, marshy grassland and mire habitats as qualifying features. Given the spatial separation from the Site, built environment (town of Rhymney) and extensive road network between the SINC and the Site, and stationary nature of the SINC's qualifying features, effects on the SINC are discounted.
			• BGCBC were contacted on 4th February 2024 for relevant

Consultation and Date	Scoping/Other Consultation	Issues Raised	Response/ Action Taken
		• Proposals in the Blaenau Gwent that should be considered in the cumulative assessment are: - DNS CAS-02060-F3S0H4 – Wind Turbines North of Rassau Industrial Estate; - DNS/3239181 - Manmoel Wind Farm; - DNS/3270299 - Mynydd Carn-y-Cefn Wind Farm; - DNS/3278009 - Abertillery Wind Farm; - DNS/3273368 - Mynydd Llanhilleth Wind Farm; - DNS CAS-02504-M9J3F4 - Mynydd Bedwellte; &, - C/2023/0212- Installation of one wind turbine and associated infrastructure on land at Penrhiwgwaith Farm, Hollybush. Pending application.	ecological information for these schemes, and BGCBC provided all the relevant they have, which has been considered in the cumulative assessment in Section 11.11.
Blaenau Gwent County Borough Council (BGCBC) (18th December 2023)	Scoping	• Recent amendments to PPW Chapter 6, need to be taken into consideration and detailed in the submission. • Red kite, kestrel and merlin have been recorded flying over Parc Bryn Bach which is located *c*.2.5km from the Site, and it is considered likely that these species will traverse over the wider area. • Marsh harrier has been recorded within 500m of the Site. • Consideration should be given to impacts on Parc Bryn Bach Local Nature Reserve (LNR) *c*.2.5km from the Site, which supports a variety of wildfowl including goldeneye, black-headed gulls and herring gulls, which are all red-listed species. • The A465 corridor has historically been known to support lapwing populations, albeit the lapwing numbers have suffered serious declines in recent years.	• Section 11.10 provides information into biodiversity net benefits through habitat enhancements, in accordance with updated Chapter 6 of PPW[Error! Bookmark not defined.]. • Potential effects on these species are considered in Chapter 12. • Considered in Chapter 12. • Considered in Chapter 12. • Considered in Chapter 12.
Merthyr Tydfil County Borough Council (MTCBC) (18th December 2023)	Scoping	• No objection/concern with the Proposed Development but flagged another DNS application within the area (3253147 – Land at Gelligaer and Merthyr Common, to the north of the Heads of the Valleys) and should be considered in the cumulative assessment.	• In accordance with the Joint Agencies guidance (2021[xviii]) for bats, other wind farms (and any other relevant major schemes) were considered out to 10km from the Site. Those considered are discussed in Section 11.11.
Natural Resources Wales (NRW)	Scoping	• EIA should provide sufficient information to enable the LPA to determine the extent of the environmental impacts arising from the Proposed Development.	• Noted, Chapter has provided such information.

Consultation and Date	Scoping/Other Consultation	Issues Raised	Response/ Action Taken
(18th December 2023)		• Evaluation of impacts should include: direct and indirect, cumulative, short, medium and long-term, permanent and temporary, positive and negative, construction, operation and decommissioning/post-operational phases, and impacts on the long-term Site security or the nature conservation resource.	• Such impacts have been considered within this Chapter.
		• EIA must include a description of all existing natural resources and wildlife interests within and in the vicinity of the Proposed Development, together with a detailed assessment of likely impacts and significance of those impacts.	• Section 11.4 provides a summary of the baseline conditions (with further detail in the respective accompanying appendices), with respect to existing natural resources and wildlife interests associated with the Site. Section 11.6 includes the assessment of those ecological receptors scoped in (and significance of impacts) and those receptors scoped out and justification as to why.
Natural Resources Wales (NRW) (18th December 2023)	Scoping	• Welcomed that habitat surveys (Phase 1 habitat and NVC) were completed in August 2023.	• Noted.
		• Site and where necessary land adjacent to the Site should be subject to assessment to determine the likelihood of protected species being present and affected by the Proposed Development.	• Noted, and considered in this Chapter. Section 11.4 principally covers what protected/ priority habitats and/or species are present or have potential to be present.
		• Targeted surveys should be undertaken of those species scoped in, which are carried out by suitable qualified, experienced and (where necessary) licensed ecologist(s), and following best practice guidelines, and if surveys deviated from the published guidance, this should be fully justified within the EIA.	• Noted, and this principal has been followed through the survey period and assessment provided in this Chapter.
		• Grassland restoration could be undertaken as a biodiversity enhancement measure to increase the diversity of wildfowlers present.	• Grassland restoration is to be included as one of the Proposed Development's habitat enhancement measures (see Section 11.10).
		• Noted that targeted surveys for invertebrates and amphibians were scoped out. Asked for clarity that the waterbody 100m north of the Site refers to Bute Reservoir, and to describe the Nant Carno Brook in terms of likelihood of it acting as a barrier to amphibian dispersal.	• Confirmed the waterbody north of the Site refers to Bute Reservoir. The Nant Carno Brook would act as an effective barrier to any amphibian dispersal, given it is a substantial flowing watercourse (information on likelihood for amphibians to be present at locality are considered in Sections 11.4 and 11.6).

Consultation and Date	Scoping/Other Consultation	Issues Raised	Response/ Action Taken
		• Noted that a 50m buffer will be applied between works and watercourses. If, there is any change to buffer zone (especially regarding the solar panels), it may be necessary to scope invertebrates into assessment, due to potentially damaging impacts of attraction aquatic insects to panels in countryside near watercourses.	• Noted. See Section 11.4. All ditches are dry onsite.
Natural Resources Wales (NRW) (18th December 2023)	Scoping	• Application should be supported by up-to-date bat surveys, in accordance with Joint agencies guidance (2021[xviii]) and Collins (2023[xxii]) guidance. • Noted that no features where identified that have potential to support roosting bats. Asked for clarification whether this included trees in scrub/hedgerows bordering the Site. If any trees are identified with potential bat roost features advised that these are subject to being climbed and assessed with an endoscope. • Noted terrestrial mammal surveys were scoped out. Advised that thorough consideration is given for the potential use of the Site by otters for resting places and for dispersal between river catchments, with surveys across the year to establish any seasonal pattern of use.	• Noted. Up-to-date bat surveys following the stated guidance have been done, with a summary in Section 11.4. • See Section 11.4 (and Appendix 11.3 for further details). The PRA was done of the Site and out to 290m from proposed turbines, so this did include, at least, some trees bordering the Site (see Figure 11.6 for extent of survey area). • The Site was appraised for its potential to support otter. The ditches onsite were dry (possibly only temporarily holding water from surface run-off from fields onsite). The Site is considered to offer sub-optimal habitat for otter, and surveys have accordingly been scoped out.
Natural Resources Wales (NRW) (18th December 2023)	Scoping	• Should protected species be confirmed, information must be provided identifying the species-specific impacts in the short, medium and long term together with any mitigation and compensation measures proposed to offset the impacts identified. • Advised that comprehensive descriptions of the habitats affected are included to support robust conclusions about their significance for the species. • Advised that EIA should consider significance (alone and in combination) and where applicable conservation status. In respect to conservation status, advised consideration to be given to current conservation status of the relevant species. EIA must demonstrate that there will be no detriment to maintenance of favourable conservation status of the species during any phase of the Proposed Development. • Where the Proposed Development implicate protected species which are also notified features of designated sites (e.g. SAC, SSSI) advised that the EIA	• Noted, and this has been included in this Chapter. • This has been provided in Section 11.6. • Section 11.6 considers significance (alone), Section 11.10 cumulatively and Table 11.10 provides a summary of effects assessed during relevant phases of the Proposed Development. • Noted. No such protected species identified, but effects on

Consultation and Date	Scoping/Other Consultation	Issues Raised	Response/ Action Taken
		considers impacts on those species from both perspectives. • Advised that EIA sets out how the long-term security of any mitigation or compensation will be assured, including management and monitoring information and long term financial and management responsibility. Where the potential for significant impacts on protected species is identified, advocate that a Conservation Plan is prepared for the relevant species and included as an annex to the EIA. • Advised that impacts of the Proposed Development on bats is assessed using the Ecobat tool. • Where a European Protected Species (EPS) is identified and the Proposed Development will contravene the legal protection they are afforded, a licence should be sought from NRW. EIA must include consideration of the requirements for a licence and set out how the works will satisfy the three requirements as set out in the Conservation of Habitats and Species Regulation 2017 (as amended). These requirements are also translated into planning policy through PPW (2021[Error! Bookmark not defined.]) and Technical Advice Note 5, Nature Conservation and Planning (2009[Error! Bookmark not defined.]). The LPA will take these into account when considering the EIA where an EPS is present.	all relevant designated sites are considered in Section 11.6. • Information into how long-term security of any mitigation or compensation will be assured, including management and monitoring, and long term financial and management responsibility will be included in a HMP if the Proposed Deevelopment is consented (to be conditioned, and will be agreed with CCBC, with input from NRW). • Ecobat tool is not functioning at this time and no date for reinstatement is available[3], so an appropriate alternative has been developed and used. Limitations on its use (as was the case also with Ecobat) are provided in Appendix 11.3. • Noted. No EPS identified and the Proposed Development is not considered to contravene the legal protection afforded to such species. Pre-construction surveys will ensure that no EPS have established onsite in the interim period if the Proposed Development is consented. In the event that any have established, appropriate action will be taken, as advised, into requirements for a licence, and in relation to PPW.
Natural Resources Wales (NRW) (18th December 2023)	Scoping	• Recommended that the developer consults with LPA ecologist on scope of the work to ensure that regional and local biodiversity issues are adequately considered, particularly those habitats and species listed in the relevant Local Biodiversity Action Plan (LBAP), and those are considered important for the conservation of biological diversity in Wales.	• Information from the LPA has been provided as summarised in this table, with further remarks from the LPA ecologist potentially to follow. Habitat enhancement measures will be strongly focused on providing biodiversity net benefits in relation to local and/or regional biodiversity priorities.

[3] See https://www.mammal.org.uk/ecobat-troubleshooting/ (Accessed 05/02/2024).

Consultation and Date	Scoping/Other Consultation	Issues Raised	Response/ Action Taken
		• Noted the presence of Cefn Gelligaer (west of Deri) SINC directly to the south of the Site. Advise that the applicant consult with CCBC if they have any concerns or requirements as they manage the SINC.	• Such a request into effects on this SINC has been provided by CCBC (as presented in this table). Effects have been considered in Section 11.6, and enhancement opportunities (see Section 11.10) will benefit the ecological condition of the SINC.
		• Expect developer to contact relevant people/organisations for biological information/records relevant to the Site and surrounds. These include the relevant local records centre and any local ecological interest groups.	• Noted. See Section 11.4. which summaries the desk study information gathered (including from SeWBReC).
		• Advised that the Proposed Development incorporates robust green infrastructure that will remain unlit to allow protected species (particularly bats and otter) to continue to inhabit the Site and move through it. Developments should be designed to incorporate green infrastructure corridors.	• Noted. See Section 11.5 which includes good practice measures, such as sensitive lighting to avoid disturbing bats and other nocturnal wildlife.
		• In accordance with the Environment (Wales) Act 2016 and PPW the application should demonstrate how it can deliver biodiversity enhancements and thus contribute to promoting ecological resilience.	• Noted. Section 11.10 summarises the habitat enhancements to be adopted and demonstrates how these measures are in accordance with updated Chapter 6 of PPW.
		• Advised that provisions in the EIA audit compliance in respect of relevant nature conservation legislation (UK and Wales) together with relevant local and national policies, including BS 42020:2013[xv].	• Noted. Such legislation is considered throughout this Chapter and is the basis of the target species considered for assessment, as well as the recommended good practice measures in Section 11.5.
Natural Resources Wales (NRW) (18th December 2023)	Scoping	• Desk study records within 2km will generally be helpful but consideration should also be given to the presence of records in the wider catchment for species, like otter who have large home ranges.	• The desk study search area for ecology records was 2km (but this was extended to 10km for bat roosts, and statutory designated sites), as summarised in Section 11.4. Information on some of the SINCs within 2km, identified species like otter as being present in the wider area (River Rhymney) so otters have been considered as being present in the wider surrounding area.
		• Advised that applicant liaises with PEDW and LPA into consented/in the planning system wind farms for the cumulative assessment.	• Noted, and these have been gathered, and relevant schemes considered are presented in Section 11.11.
		• Commented that enhancement measures which are proposed should seek to not encourage bats closer to the wind turbines.	• Noted, enhancement measures like tree/hedgerow planting will be sensitively placed to improve habitat connectivity through the

Consultation and Date	Scoping/Other Consultation	Issues Raised	Response/ Action Taken
			Site while not attracting bats to the proposed turbines (also see Section 11.10 where this is stated).
Welsh Government (13th December 2023)	Scoping	• Effects on peatlands will need to be considered, as loss of peatland is contrary to the recent update to Chapter 6 of PPW**Error! Bookmark not defined.Error! Bookmark not defined.**.	• No peatlands were identified onsite, so accordingly effects on peatlands are not considered in this Chapter.

Assumption and Limitations

11.3.38 The potential for limitations to assessment to arise from baseline studies are discussed in full within Appendices 11.1-11.3. It is concluded that there are no substantive limitations to subsequent assessment.

Ecobat Tool

11.3.39 Note, the Ecobat tool is not currently functional due to errors identified in the analysis. No date for reinstatement is available. As such, an adapted comparable tool created by specialist Avian Ecology staff has been used. Further details (including limitations of the adapted tool, in the absence of an approved bat analytic assessment tool) are provided in Appendix 11.3.

11.3.40 The output from the adapted tool is therefore regarded as an indicative assessment and to be considered alongside desk study information and professional judgement. This approach enables an estimation of bat activity across the site to be made and subsequent impact assessment in the absence of the availability of the Ecobat tool.

11.4 Baseline conditions

Current Baseline

11.4.1 This section provides a summary of baseline ecological conditions including an overview of the known distribution of habitats and protected species and designated sites (with ecological interests) in proximity to the Proposed Development.

Desk Study

Designated sites

11.4.2 Designated sites (with ecological interests) identified, within 10km, of the Proposed Development are detailed in Appendices 11.1 to 11.3 and shown in Figure 11.1a.

11.4.3 There are 25 statutory designated sites within 10km of the Site, comprising one SAC (Usk Bat Sites SAC, *c*.8km from the Site), 13 SSSIs and 11 LNRs.

11.4.4 Of these there are five statutory designated sites within 5km of the Site:

- Parc Bryn Bach LNR (1.92km, north-east) – variety of habitats including lake, plantation woodland and grassland, with some habitats listed as priority habitats in UK and LBAPs;

- Cwm Taf Fechan Woodlands SSSI (3.9km, west) – notified for mixed deciduous woodlands with limestone fern, and interesting plant communities in flushes around tufa springs and the splash zone of the river;
- Cwmllwydrew Meadows LNR (4.06km, south) – wet meadow interests;
- Sirhowy Hill Woodlands and Cardiff Pond LNR (4.1km, east) – habitats, including woodland; and,
- Cefn y Brithdir SSSI (4.56km, south-east) - notified for dwarf shrub heath (with crowberry co-dominant) interests.

11.4.5 There are six Sites of Importance for Nature Conservation (SINCs) within 2km of the Site (see Figure 11.1b):

- Cefn Gelligaer (west of Deri) – adjoins the southern Site boundary; upland area of acid grassland, semi-improved acid grassland, marshy grassland and wet heath, and associated mosaics, and is used by a number of bat species and dragonflies;
- River Rhymney (160m, east) – full length of watercourse is a significant linear wildlife corridor, providing a variety of riverine habitats and supporting (probable breeding) otters, notable fish species (resident and migratory species) and bats;
- Butetown, Llechryd and Rhymney Grasslands, Rhymney (295m, north) – variety of habitats, including marshy grassland, semi-improved acid (and neutral) grassland, with a number of corresponding indicator species;
- Pan March and Traed y Milwyr, Llechryd (500m, north) – upland area supporting a mix of wet and dry grassland and heath, with potential to support reptiles;
- Tair Carreg Moor, north west of Fochiw (980m, south-west) – upland area supporting a mosaic of wet and dry acid grassland and heath, with a locally significant dragonfly population; and,
- Merthyr Common, North (1.3km, north-west) - upland common land supporting a mosaic of wet and dry moorland, including unimproved acid grassland, wet heath, acid flush and scree.

11.4.6 The below SINC information, including the main threats to each, are taken from the SeWBReC website[xxiii].

11.4.7 Cefn Gelligaer (west of Deri) SINC is grazed by livestock, with much of the grassland showing evidence of some agricultural improvement/ over-grazing. This has led to relatively low vegetation diversity, especially in the southern part of the SINC. Bracken is locally dominant in the south of the SINC which has reduced the area for more valuable habitats and species and increasing fire risk. Evidence of fires was reported in the south of the SINC, especially in areas of gorse and bracken. Disturbance of the SINC comes in the form of off-road vehicles causing rutting in some areas, and fly tipping and litter by the existing roads. Due to typically poor species diversity within habitats, over-grazing and bracken dominating, some areas of the SINC are considered questionable, in terms of whether they meet the SINC qualifying criteria. Furthermore, the baseline data gathering identified four invasive (Schedule 9) botanical species within the SINC, comprising Japanese knotweed, Japanese rose, Himalayan balsam and montbretia (see Figure 11.2c).

11.4.8 River Rhymney SINC is unmanaged, but is subject to flood defence, land drainage and sewerage outflow management by the Environment Agency, Welsh Water and the LPAs. There is little information on current management along the whole length of the SINC. Some riverside habitats are managed for recreational use, including footpaths, cycle ways and parks. Some stretches of the watercourse flow through built up areas with development right up to the riverbank. Japanese knotweed occurs locally along the river. It is noted that further survey work is required to confirm breeding otter along the river, given it is not known whether they do breed.

11.4.9 Butetown, Llechryd and Rhymney Grasslands, Rhymney SINC comprises of grassland habitats (semi-improved acid and neutral, and marshy) some of which is over-grazed, and other areas are under-grazed (and scrub encroachment is an issue). Japanese knotweed is present and is likely to encroach further. At least one area has also been cut for hay, which is considered likely to result in a gradual decline in plant diversity.

11.4.10 Pan March and Traed y Milwyr, Llechryd SINC is grazed by livestock, with some areas showing evidence of agricultural improvement/ over-grazing, and are considered likely the main threat to the SINC. Ditch blocking within the SINC would benefit the habitats, resulting in re-wetting of some areas. There are reports of burning of several areas of heath and gorse, and evidence of (limited amount of) fly-tipping and litter by the road.

11.4.11 Tair Carreg Moor, north west of Fochiw SINC is grazed by livestock, and a few areas show evidence of agricultural improvement/ over-grazing, and a reduction in grazing pressure by sheep would benefit habitats present. There is evidence of fly-tipping and litter beside the road.

11.4.12 Merthyr Common, North SINC supports a mosaic of habitats including a mosaic of wet and dry moorland. The SINC also contains wet modified bog, although some is drier where drainage channels have been cut.

Protected/Notable Species

11.4.13 Existing records of protected and notable species obtained from the South East Wales Biodiversity Records Centre (SeWBReC) are shown on Figures 11.2a-c and Confidential Figure C11.1, and further detailed in Appendices 11.1 to 11.3.

11.4.14 In summary, no existing records were returned from within the Site by the SeWBReC. The nearest records returned were notable botanical species within the Cefn Gelligaer (west of Deri) SINC south of the Site. This comprised dwarf elder, green field-speedwell and yellow-rattle, as well as the invasive (Schedule 9) species Japanese knotweed, Japanese rose, Himalayan balsam and montbretia.

11.4.15 No bat roost records were returned from within 2km of the Site, although there were some in-flight bat records of species such as common pipistrelle, soprano pipistrelle and noctule, principally within Rhymney.

11.4.16 Other protected species recorded in the wider surrounding area, include brown hare with the nearest record within the Cefn Gelligaer (west of Deri) SINC, otter (associated with the River Rhymney), common lizard within the Tair Carreg Moor, north west of Fochiw SINC and multiple dragonfly and damselfly species associated with waterbodies in the wider surrounding area and butterflies mainly associated with the grassland and heath habitats in the wider surrounding area.

Field surveys

11.4.17 Full details of methods and results for baseline surveys are provided within Figures 11.3 to 11.7 and Appendices 11.1 to 11.3.

11.4.18 The scope for field surveys was determined through a review of Key Sources specified in the EIA Scoping Report (see Appendices 9.1-9.3), and via the EIA Scoping exercise, as well as professional judgement and experience of likely ecological receptors needed to be considered.

11.4.19 The following baseline ecological field surveys have therefore been completed within the Site to confirm the presence and distribution of ecological receptors:

- Extended Phase 1 habitat survey (including searches for protected species);
- National Vegetation Classification (NVC) survey; and,
- Bat surveys (including activity and preliminary roost appraisal (PRA)).

Extended Phase 1 Habitat Survey

11.4.20 An extended Phase 1 habitat survey was undertaken within the Site in August 2023, extended to 100m from the infrastructure and 250m from the proposed turbines.

11.4.21 The survey was undertaken in accordance with the UK industry standard Joint Nature Conservation Committee (JNCC) Phase 1 Habitat Methodology (JNCC, 2010[xxiv]), by suitably competent and experienced ecologists.

11.4.22 The Site predominantly comprises semi-improved neutral grassland (B2.2), with some limited acid influence. The ground is typically wet, and in some western areas, the habitat transitions into marshy grassland (B5). There are hedgerows (J2) along some of the field boundaries, and areas of broad-leaved and mixed woodland (A1) in the north-west and east of the Site. There are areas of marginal vegetation (F2.1) in the west of the Site, which comprise of a 'swamp' mosaic associated with the marshy grassland. There is an area identified as a probable disused quarry (which was partially overgrown with vegetation) in the south-west of the Site (Figure 11.3 as TN1).

11.4.23 A stand of Japanese knotweed was recorded in woodland adjacent to the north-eastern Site boundary, as shown on Figure 11.3 as TN4.

11.4.24 The Cefn Gelligaer (west of Deri) SINC adjoins the southern Site boundary. The neutral grassland onsite appears to extend into the SINC.

11.4.25 No other protected or notable plant species were recorded within the survey area.

11.4.26 It is considered that habitats present onsite will not qualify as habitats included in the CCBC LBAP[viii]. This includes the marginal tall ruderal/swamp habitat associated with the marshy grassland in the west of the Site. Although 'swamp' is a listed LBAP habitat it is unlikely to meet the criteria, particularly as it is not located on peat or mineral soil. It is understood that the Site is a revegetated coal spoil heap, and this habitat feature is a listed LBAP habitat ('Post-Industrial Land Habitat Statement'). The criteria for qualifying naturally revegetated colliery spoil is that it contains habitats, like species-rich acid grassland, heath, scrub and/or even established woodland. The heavily grazed semi-improved grassland onsite is neutral grassland (with an acid influence) and is relatively species-poor. The grassland onsite is thus not considered to qualify as a LBAP habitat.

11.4.27 Full details are provided in Appendix 11.1.

Protected species searches

11.4.28 The extended Phase 1 habitat survey carried out at the Site was extended to identify the presence, or assess the potential for habitats present, to support protected and priority species, in accordance with CIEEM guidance (2017a[xxv] and 2017b[xxvi]). Full details are provided in Appendix 11.2, with records presented in Figure 11.5. Appendix 11.1 also provides information into the flooded, over-grown disused shaft within the Site.

11.4.29 Furthermore, during other Site surveys, for example ornithology surveys, any anecdotal records of protected species were taken. Information on anecdotal surveys is provided in Appendix 11.2, and in Figure 11.5.

11.4.30 Brown hare was recorded in, and on land adjacent to, the Site. This included a leveret onsite. Brown hare is a CCBC LBAP species[ix]. No other evidence of terrestrial mammals was recorded, although it is considered that the potential for habitats onsite, such as woodland, hedgerows and grassland to be used by species, like badger and hedgehog cannot be entirely discounted. The ditches onsite were all dry during the Site surveys, and thus are considered unsuitable for species, including water vole, otter and white-clawed crayfish. The River Rhymney (160 from the Site) has potential to support these riparian species. Note, badger, water vole, otter and white-clawed crayfish are all CCBC LBAP species[ix].

11.4.31 No notable invertebrates were observed during the Site surveys. The nearest notable invertebrates record identified was 390m from the Site (based on desk study information, see Figure 11.2a). The habitats onsite are considered unremarkable for such invertebrates, although the potential for the Site (given the presence of marshy grassland, for example) to support small numbers cannot be discounted.

11.4.32 The potential for reptiles to be present onsite, given much of the habitats are heavily grazed, is considered to be low. Furthermore, no desk study records were returned from within the Site, with four common lizard records >1.1km from the Site, and no other reptiles records in the last 12 years (see Appendix 11.2). Both these reptile species are CCBC LBAP species[ix].

11.4.33 There is an over-grown disused shaft with limited open water in the east of the Site (shown in Figure 11.3 as TN3). This shaft is *c*.375m from the nearest proposed turbine. The shaft is considered unlikely to support great crested newts, due to the limited extent of open water, lack of optimal surrounding terrestrial habitat, considerable distance (>500m) from other waterbodies, and lack of great crested newt desk study records in the last ten years (with none of the historic records related to this shaft[4]). Note, great crested newt, palmate newt, smooth newt, common frog and common toad are all CCBC LBAP species[ix].

11.4.34 Given the results of the Site surveys (i.e. extended Phase 1 habitat), no further targeted protected species surveys were considered necessary (with exception of bat activity surveys), with an appraisal having been carried out, and supplemented with anecdotal records during other Site surveys, and desk study records.

National Vegetation Classification (NVC)

11.4.35 An NVC survey was undertaken within the Site in August 2023, extended to 100m from the infrastructure and 250m from proposed turbines.

11.4.36 Surveys were undertaken with reference to Rodwell (2006[xxvii]) and by suitably competent and experienced ecologists.

11.4.37 A summary of the potentially notable habitat communities identified within the Site is provided in Table 11.5. Note, none of these habitats are considered likely to qualifying as CCBC LBAP habitats.

Table 11.5 Summary of Vegetation Communities

[4] The most recent great crested newt record (from 2010-2011) is *c*.1.9km from the Site.

NVC community	Principal corresponding Habitats Directive Annex I type/s	Corresponding Priority habitat on the Section 7 of the Environment (Wales) Act 2016	Potential dependence of community/ habitat on groundwater* 1=High, 2=Moderate, 3=Low
MG6 *Lolium perenne-Cynosurus cristatus* grassland	-	-	Low
MG10a *Holcus lanatus-Juncus effusus* rush pasture	-	-	Moderate*
M23b *Juncus effusus-Galium palustre* rush-pasture	-	-	High*
S19 *Eleocharis palustris* swamp	-	-	Low
-	-	Hedgerows	Low

* As listed in Appendix 4 of SEPA (2014[xxviii]) LUPS Guidance Note 31. The categorisation of GWDTEs is preliminary and is based on vegetation communities present, and therefore confirmed GWDTE categorisation is based on subsequent formal hydrological assessment. The surveyor noted that given the context of the Site, this is likely to be 'Low', but as a precaution, given the documented classification, which is typical for the NVC community, the MG10a NVC community is classified as 'Moderate' in **Table 11.5**.

11.4.38 A summary of habitat types and communities and their approximate areas within the Site is provided in Table 11.6. The total area of the Site is equivalent to 54.79ha.

11.4.39 Full details are provided in Appendix 11.1.

Table 11.6 Summary of Baseline Habitats and Vegetation Communities Within the Site

Phase 1 Habitat Type	Phase 1 code	NVC Community/ Sub-community	Extent (ha)	Relative Coverage (%)*
Semi-natural broadleaved woodland	A1.1.1		0.301	0.55
Mixed woodland plantation	A1.3.2		0.184	0.35
Neutral grassland – semi-improved	B2.2	MG6	41.923	76.52
Marshy grassland	B5	M23b, MG10a, S19	7.144	13.04
Semi-improved grassland	B6	MG6	5.144	9.39
Other tall herb and fern – tall ruderal	C3.1	MG6	0.093	0.17
Hardstanding (Road)	J5		0.001	0.002

Bat Surveys

11.4.40 Bat surveys were undertaken in 2023 of the Site, in addition to a 290m buffer around each proposed turbine location in accordance with Joint Agencies guidance (2021[xviii]), and comprised:

- Bat Habitat Suitability Appraisal;

- Preliminary Roost Assessment; and,
- Ground-level Activity Surveys.

11.4.41 Surveys sought to establish the bat species assemblage using the Site, the spatial and temporal distribution of bat activity, the location and extent of commuting or foraging habitat used by bats and the locations of any roosts and swarming sites that could potentially be affected by the proposed development.

11.4.42 Full details are presented in Appendix 11.3.

Bat Habitat Suitability Appraisal

11.4.43 As an overview, the majority of the bat survey area comprises open grazed grassland (semi-improved neutral grassland and marshy grassland), with a suspected partially overgrown small disused quarry in the south-west. Linear features are limited to small sections of principally defunct hedgerows and dry ditches.

11.4.44 Most habitats onsite are considered to be of low suitability for foraging bat habitat given the limited linear features, although it is appreciated that boundary features (like hedgerows, fence-lines) may be used by foraging/commuting bats to pass through the Site into the wider surrounding area.

11.4.45 Overall, the bat survey area (the Proposed Development) is considered to provide habitat features of relatively low value for bats, with areas of localised foraging opportunities.

11.4.46 The habitats within the Site are therefore considered to be of low to moderate habitat risk for bats, in accordance with criteria presented in Bat Conservation Trust (BCT) guidelines (Collins 2023[xxii]).

Preliminary Roosting Appraisal

11.4.47 Bat Analysis (see Appendix 11.3) identified the possible presence of roosts of common pipistrelle, soprano pipistrelle, *Nyctalus* species and brown long-eared within proximity to the Proposed Development, based on the recording of bat activity within the survey area within typical species-specific emergence times, during at least some of the survey seasons.

11.4.48 Activity within emergence times of common pipistrelle peaked at the monitoring station deployed in the north of the Site, activity within emergence times of *Nyctalus* and brown long-eared peaked at the monitoring station in the west and south (albeit the brown long-eared activity was low and considered to be one bat individual passing both monitoring stations the same night), and activity with emergence times of soprano pipistrelle peaked at all monitoring stations (with monitoring station locations shown in Figure 11.7). Note, the monitoring station in the west and south were positioned along fence lines, with the monitoring station in the north on a fence line, with a defunct hedgerow.

11.4.49 No existing roost records from within the Site were identified through a review of desk study information. Furthermore, no trees or structures (including the partially over-grown disused quarry) were noted during surveys which were likely to have bat roost potential within 200m plus blade length of the proposed turbines (total of 290m buffer).

11.4.50 As a result, the Site is assessed as having a potential roost suitability of ‘None’ in accordance to BCT guidance (Colins, 2023[xxii]); having no habitat features likely to be used by any roosting bats at any time of the year due to a complete absence of suitable features.

Activity Surveys

11.4.51 Bat activity surveys in 2023 recorded calls characteristic of the following species:

- Common, soprano and Nathusius pipistrelle;
- *Nyctalus* species;
- *Myotis* species;
- Brown long-eared;
- Greater horseshoe; and,
- Lesser horseshoe.

11.4.52 Common pipistrelle was by far the most frequently recorded species (78.7% of all recorded passes were this species), with overall activity generally moderate for all species when compared against existing records from the database, which has been used as an alternative, and in the absence of, Ecobat.

11.4.53 The highest levels of bat activity recorded from monitoring stations varied depending on the species, but was relatively consistent for each species, with activities of the southern monitoring station highest for common pipistrelle and *Nyctalus* species (based on the median percentile) and the same monitoring station lowest in terms of soprano pipistrelle activity. Activity of a number of bat species were very low, and these were Nathusius pipistrelle (total of two passes across survey period), brown long-eared (total of nine passes across survey period) and horseshoe species (total of three passes across survey period).

11.4.54 In terms of season, activity (based on the median percentile) for common pipistrelle was highest in Spring, and for soprano pipistrelle and *Nyctalus* species the highest activity was in Autumn.

11.4.55 An assessment of the potential risk to bats, in accordance with Joint Agencies guidance (2021[xviii]) identifies that the Proposed Development has a Low Initial Site Risk ('Stage 1'), with an overall medium risk for common pipistrelle, soprano pipistrelle and *Nyctalus* species ('Stage 2'), and for which assessment is required. All bats recorded are CCBC LBAP species[ix].

11.4.56 Full details are provided in Appendix 11.3.

Future Baseline

11.4.57 In the absence of the Proposed Development, assuming a "do-nothing" scenario or gap between baseline surveys and the commencement of construction of the Proposed Development, changes in the baseline ecological conditions (i.e. distribution and/or populations of species and habitats) of the Site are most likely to be modest and result from habitat modifications within, or surrounding, the Site due to changes to the livestock grazing regime within the open habitats of the Site.

11.4.58 Changes are likely to be small-scale, localised changes to the existing habitats and therefore will not represent a notable change in baseline conditions for habitats and species at the Site. The establishment of protected species currently considered to be absent is unlikely given the overall unsuitability of habitats present and the low likelihood that this will change substantially within the timescales under consideration for the Proposed Development.

11.4.59 The SINCs surrounding the Site (most notably the adjoining Cefn Gelligaer (west of Deri) SINC) is identified to be threatened by a number of factors, comprising over-grazing by livestock (and resulting increased nutrient levels affecting habitats), encroaching bracken and invasive (Schedule 9) species including Japanese knotweed, fires, the use of the SINC by off-road vehicles, and fly-tipping and litter. In the absence of nature conservation management to halt

the decline in the habitats for which the SINC is notified, it is expected that habitat condition will continue to deteriorate, with associated reduction in suitability for the species which are supported by these habitats and the specific conditions found within this site. It is noted that the condition of some of the SINC, particularly in the south, (see paragraph 11.4.7) is unlikely to be of a standard which now qualifies for SINC classification.

11.5 Inherent Design Mitigation

11.5.1 In line with the principles of proportionate EIA, embedded mitigation, including avoidance through the design process and application of industry standard good practice, are considered at the outset of the assessment. Important ecological receptor status will only be assigned where there is still considered to be the potential for significant effects on the identified receptor arising from the Proposed Development after the application of embedded mitigation measures.

Mitigation by Design

11.5.2 The Proposed Development has been subject to a number of design iterations and evolution in response to constraints identified as part of the baseline studies, intended to reduce environmental effects (see Chapter 5: Project Description and Chapter 6: Assessment of Alternatives, for further details).

11.5.3 Design considerations have been incorporated to avoid or minimise adverse effects upon ecological receptors, as set out below.

11.5.4 The proposed onsite track layout has been designed to minimise environmental disturbance and land take by, wherever possible, avoiding completely or minimising loss of areas of identified environmental constraints. This includes using existing onsite routes where practical.

11.5.5 Design of the Proposed Development has been carried out taking consideration of marsh habitats in the west (as much as possible and given other non-ecological constraints/considerations for the Proposed Development, onsite), with the majority of the Proposed Development located on the livestock grazed semi-improved neutral grassland. Furthermore, the ‘swamp’ habitat in the north-west of the Site has been avoided by the Proposed Development.

11.5.6 The Proposed Development's turbines also achieve minimum 50m 'stand-off' distances from potential bat ‘foraging/commuting’ habitat features and turbine blade tips in accordance with Joint Agencies guidance (2021[xviii]), see Table 11.7.

11.5.7 A minimum 50m buffer has also been included around all ditches as a precaution (given all ditches were dry) for the Proposed Development’s turbine hardstanding and associated access tracks.

Table 11.7 Summary of turbine bat habitat stand-off distances.

Turbine	Indicative Hub Height (m)	Indicative Blade Length (m)	Nearest Bat Habitat Feature (height, m)	Required Distance (m)	Distance Achieved (m)
1	81	69.3	Hedgerow (2m)	89.40	231
			Disused quarry (10m)[5]	95.87	166

[5] The partially overgrown suspected disused quarry is included as a precaution.

Turbine	Indicative Hub Height (m)	Indicative Blade Length (m)	Nearest Bat Habitat Feature (height, m)	Required Distance (m)	Distance Achieved (m)
2	81	69.3	Hedgerow (2m)	89.40	155
			Disused quarry (10m)	95.87	381.5
3	81	69.3	Hedgerow (2m)	89.40	249
			Disused quarry (10m)	95.87	574

11.5.8 Two adjoining ditches will be crossed onsite, by the proposed onsite track, but these ditches were dry during the surveys, and are considered to be dry most of the time, perhaps only holding water run-off from adjacent fields after periods of very heavy rain. Therefore, considerations into sensitive design to allow the continued free passage of fish and other aquatic wildlife is not considered necessary.

Good Practice Measures

Construction Environment Management Plan (CEMP)

11.5.9 Details of measures to protect the environment during the construction of the Proposed Development will be set out in a CEMP to be implemented at the commencement of works.

11.5.10 Measures will address all good practice construction measures, pollution prevention controls and monitoring to be implemented over the course of the construction and operation of the Proposed Development in line with current industry and statutory guidance, including: hours of working; noise; vibration; dust; light spill; wheel washing, and control of run-off.

11.5.11 Good practice measures in relation to pollution risk, sediment management, and sensitive techniques with regards to construction near watercourses to be adopted during the construction and operation phases are detailed in the accompanying OCEMP.

11.5.12 Good practice measures to prevent harm to faunal species will include careful design of security lighting for works areas to avoid disturbance to faunal species (for example, ensuring light is not positioned illuminating key bat habitat features, like hedgerows), speed limits for all vehicles on Site and the careful storage of potentially dangerous substances or materials within construction compounds. Excavations will either be temporarily covered at night or designed to include a ramp, to allow wildlife a way of escape. ‘Mammal gaps’ will be adopted within perimeter fencing to allow the continued free passage of wildlife, like brown hare, to avoid creating barriers.

11.5.13 Good practice measures to protect retained habitats during the construction works would be implemented including the sensitive demarcation of working areas, to be overseen by an Ecological Clerk of Works (ECoW).

11.5.14 Good practice habitat reinstatement measures would also be adopted and implemented, on areas subject to disturbance during construction works as soon as it is practical to do so.

11.5.15 The CEMP will be finalised and implemented in consultation with NRW and CCBC on the basis of the Outline Construction Environmental Management Plan (OCEMP) provided within this application, in accordance with a suitably worded planning condition.

Pre-construction Surveys

11.5.16 There is potential for a change in the distribution of protected species within the Site between the completion of baseline surveys presented herein and the commencement of construction activities for the Proposed Development. Prior to the commencement of construction activities, a Protected Species Protection Plan (PSPP) will be prepared and submitted for agreement in consultation with CCBC and NRW, which will form part of the CEMP.

11.5.17 The PSPP will provision for pre-construction checks for protected species including terrestrial mammals, reptiles and amphibians, to be undertaken within a defined period prior to the commencement of construction works. Surveys will cover all areas within 250m of the Proposed Development infrastructure and associated working areas.

11.5.18 The results of the pre-construction surveys will inform the need for further mitigation (if required) in respect of sensitive working practices and the requirement to consult with NRW in relation to protected species licensing.

Reasonable Avoidance Measures (RAMs)

11.5.19 Reasonable Avoidance Measures (RAMs) methods statements will be included in the CEMP to cover protected species, including reptiles, amphibians, great crested newts and terrestrial mammals (such as brown hare and hedgehog). These will detail specific species and habitat protocols to be followed for survey, site clearance activities and construction, including (non-exhaustive):

- exclusion buffers to be implemented for any key habitat features;
- extent and timing of permitted works;
- safe methods for vegetation removal including lag periods to allow species dispersal from working areas;
- creation of appropriate refuge habitat away from working areas (also tied in with measures proposed in the OHMP);
- ECoW oversight; and,
- NRW licensing requirements.

11.5.20 RAMs method statement, will be subject to approval by CCBC and NRW, and implemented by way of a suitable worded planning condition.

Ecological Clerk of Works

11.5.21 A suitably qualified ECoW will be employed for the duration of the construction and works (including habitat reinstatement period), to oversee environmental protection measures and working practices specified in the CEMP and prevent breaches of legislation pertaining to protected species and habitats.

11.5.22 The role of the ECoW will be defined in the CEMP, and will include at least the following tasks:

- provide toolbox talks and information to all staff on-site, so staff are aware of the ecological sensitivities within the Site and the legal implications of not complying with agreed working practices;
- agree and monitor measures designed to minimise damage to retained habitats;
- undertake pre-construction surveys and advise on ecological issues and working restrictions where required;

- complete site-supervision works as required, in relation to sensitive habitats and protected species; and,
- oversee restoration of working areas following construction.

11.6 Potential Effects

Receptors Scoped Out

11.6.1 CIEEM guidelines (2018[i]) stipulate that it is not necessary to carry out a detailed assessment of impacts upon ecological receptors that are sufficiently widespread, unthreatened and/ or resilient to impacts of a development proposal.

11.6.2 As such, the assessment presented within this Chapter considers the potential for significant effects upon designated sites for nature conservation and ecological receptors which are considered 'important' on the basis of relevant guidance and professional judgement.

11.6.3 Where ecological receptors are not considered so important as to warrant a detailed assessment or where they would not be significantly affected on the basis of baseline information, these are 'scoped out' of the assessment, and are not considered further within this Chapter.

11.6.4 Mitigation measures for such features may however, still be outlined as appropriate, to reduce and/ or avoid any non-significant potentially adverse effects, to provide enhancements, or to ensure legislative compliance.

Designated Sites

11.6.5 There is no direct hydrological connectivity between the Site and those SACs/SSSIs/LNRs summarised in paragraph 11.4.2-11.4.4. There are also topographical, woodland, hydrological and anthropogenic built habitat barriers between the Site and these designated sites. Furthermore, the Usk Bat Sites SAC and Mynydd Llangatwg SSSI are both *c*.8km from the Site and have roosting lesser horseshoe bat as a qualifying feature. Lesser horseshoe bat has a core foraging range from roosts of 1.2km to 2km[xxix], so the potential for SPA lesser horseshoe bats to use the Site is discounted. Subsequently it is considered there is no potential for Likely Significant Effects (LSE) on the Usk Bat Sites SAC.

11.6.6 On account of spatial separation, absence of hydrological connectivity, characteristics of qualifying features and existing barriers, no potential pathways for effects upon the qualifying ecological interests of the designated sites are identified. The potential for effects upon all SACs/SSSIs/LNRs identified in paragraph 11.4.2-11.4.4 are therefore also scoped out of assessment.

11.6.7 There is no direct hydrological connectivity between the Site and those SINCs summarised in paragraph 11.4.5-11.4.12. Note, the ditches onsite were dry, and therefore the potential for run-off to enter watercourses and pass into any of the SINCs (most notably the River Rhymney SINC) is discounted. Furthermore, there are also topographical, woodland, hydrological (including Nant Carno) and anthropogenic built habitat (including the A465 and/or the town of Rhymney) barriers between the Site and the majority of these SINCs. The exception to this is the Cefn Gelligaer (west of Deri) SINC which adjoins the southern Site boundary (see paragraphs 11.4.5-11.4.7). On account of spatial separation, absence of hydrological connectivity and existing barriers, no potential pathways for effects upon the notified features of the other five SINCs are identified. The potential for effects upon the above listed SINCs is therefore scoped out of assessment.

11.6.8 The Cefn Gelligaer (west of Deri) SINC adjoins the Site but is *c*.75m from the nearest proposed onsite access route and *c*.105m from the nearest turbine (T3). The SINC along the outer of the southern Site boundary is dominated by old disused (coal) tip workings. The Proposed Development layout within 200m of the SINC is at an altitude of 350-375m, and the SINC is 380m+ as it extends south away from the Site boundary (and the old coal tip workings). The potential for any run-off from works associated with the Proposed Development is thus considered to be very unlikely (particularly with the adoption of standard good practice measures).

11.6.9 The Cefn Gelligaer (west of Deri) SINC has the following as listed qualifying features:

- Extensive area of open countryside where semi-natural upland features predominate;
- Acid grassland, heath and semi-improved acid grassland with at least seven indicator higher plan species, and at least eight species of waxcap fungi;
- Breeding lapwing (northern part of area) – note, considered in Chapter 12; and,
- Locally significant populations of dragonflies (ponds in north of area).

11.6.10 Potential effects on the qualifying habitat features are discounted owning to the spatial separation, adoption of a CEMP and absence of hydrological connectivity. Dragonflies from the SINC are not considered to be at risk from the Proposed Development, particularly given the lack of suitable waterbodies/courses within the Site for these invertebrates, and lack of any evidence that dragonflies are affected by wind and solar farms (particularly where considerably distanced from waterbodies/courses). No dragonflies were recorded onsite during any of the surveys, nor where any such records returned from the desk study of dragonflies onsite. The potential for effects upon the Cefn Gelligaer (west of Deri) SINC) is also therefore scoped out of assessment.

Habitats

11.6.11 Table 11.8 provides a summary of habitat losses calculated for the Proposed Development including the solar array, wind turbines and all associated above ground infrastructure:

- Direct loss - the loss of habitats and vegetation under the footprint of the Proposed Development; and,
- Indirect loss - calculated as within 2m of direct habitat loss areas, to include for additional habitat disturbance during construction works, and within 10m of direct habitat loss areas to account for potential changes in habitat vegetation structure as a result of construction works.

11.6.12 Adopting a precautionary approach, it is assumed that an area equivalent to the surface area of the solar array would be lost as a result of the Proposed Development. Due to the mounted nature of panels installed, actual direct habitat losses would be considerably less, but the approach considers habitat loss as a result of habitat deterioration due to shading.

11.6.13 As detailed in Table 11.8 overall habitat losses will be small, with the majority of the habitats on the Site noted to be semi-improved (neutral) grassland (NVC community: MG6) subject to heavy livestock grazing, and which are of modest ecological value. The M23b NVC community is limited in extent (only accounting for 13% of the onsite habitats), and only 0.03ha will be lost in total (direct and indirect losses combined), because of the Proposed Development.

11.6.14 It is considered that none of the habitats to be impacted (directly or indirectly) listed in Table 11.8, qualify as Principal Habitats Directive Annex I habitats or S7 of the Environment (Wales)

Act 2016 habitats. Nor are they considered likely to qualify as CCBC LBP habitats[viii]. MG10a and M23b do respectively have 'moderate' and 'high' potential to be GWDTEs, based on NVC community, but effects on GWDTEs are addressed in Chapter 20: Water Resources and not in this Chapter.

11.6.15 No hedgerows will be directly or indirectly affected by the Proposed Development. This includes hedgerows that could potentially be classified as a S7 of the Environment (Wales) Act 2016 habitat (although they may not qualify due to being species-poor, hawthorn dominant).

11.6.16 Notwithstanding good practice measures to prevent indirect impacts to habitats, particularly any more ecologically valuable habitats during the construction and operational phases, and the requirement to protect hydrological conditions which may, where applicable, underpin some of the potential GWDTE habitats (see Chapter 20: Water Resources), it is considered that no priority, protected or notable habitats will be affected by the Proposed Development and so direct and indirect impacts to habitats are scoped out of detailed impact assessment in accordance with CIEEM guidance.

Table 11.8 Direct and indirect (temporary) loss of habitat (ha) from the Proposed Development

Habitat	Phase 1 habitat Code	NVC	Direct loss	Indirect loss (2m)	Indirect loss (10m)
Semi-natural broadleaved woodland	A1.1.1	-	0.000	0.000	0.000
Mixed woodland plantation	A1.3.2	-	0.000	0.000	0.000
Neutral grassland – semi-improved	B2.2	MG6	10.965	0.460	2.213
Marshy grassland	B5	M23b	0.001	0.003	0.027
Marshy grassland	B5	MG10a	0.287	0.134	0.647
Semi-improved grassland	B6	MG6	0.221	0.168	0.811
Other tall herb and fern – tall ruderal	C3.1	MG6	0.020	0.016	0.072
Hardstanding (Road)	J5	-	0.000	0.001	0.011

Protected Species

11.6.17 Brown hare was recorded within the Site, including a leveret in a form. The baseline data gathering (field surveys and desk study) did not identify any other protected ecological species within the Site. This included priority and notable invertebrate species, although invertebrate records were returned from the desk study, principally associated with the waterbodies and/or open heath/moorland habitats in the wider surrounding area (see Appendix 11.2, and Figure 11.2a). Brown hare records were also returned from the desk study principally south within the Cefn Gelligaer (west of Deri) SINC.

11.6.18 Brown hare is a CCBC LBAP species[ix], and is understood to typically benefit from solar farms, through the habitat enhancements that are typically delivered as part of the development[xxx]. However, brown hare may be adversely affected by the presence of wind turbines, with evidence of avoidance of the interior of wind farms and reduced hare activity closer to turbines (Lopucki *et al*., 2017[xxxi]). The Proposed Development is a three-turbine development, and thus has a modest turbine footprint. Therefore, any displacement of hares from the turbines (which although cannot be discounted) is likely to be limited in extent. This is particularly when habitat enhancement measures to be adopted, such as hedgerow planting and grassland enhancement is considered. Furthermore, scheme design will ensure 'mammal gaps' are retained in perimeter fencing to allow the free passage for species like brown hare through the Site and into the wider area (including Cefn Gelligaer (west of Deri) SINC).

11.6.19 The potential for significant effects upon brown hare is therefore scoped out of detailed assessment, but the species is considered in terms of the measures to be included within the CEMP to provide any hares (especially leverets that may be present) (see below).

11.6.20 Given the low likelihood of population-level effects from developments of this kind (with a limited footprint of the wind turbine aspect of the Proposed Development), it was not considered a proportionate requirement to carry out baseline invertebrate surveys. In the absence of Wales-specific guidance Natural England's Higher-Level Stewardship (HLS) Farm Environment Plan (FEP) guidance (Natural England, 2010[xxxii]) recognises that it is not always practical to monitor for invertebrates, and so provides an alternative method to identify habitats which are likely to have high invertebrate biodiversity value.

11.6.21 The predominant habitats within the Site, including under the footprint of the solar array, is semi-improved neutral grassland. Semi natural grasslands can be an important resource for invertebrates, with higher invertebrate species richness generally correlated to higher plant species-richness. Much of the open grassland habitat within the Site, including in the locale of the solar element of the Proposed Development, is subject to heavy livestock grazing with an associated reduction in vegetative cover.

11.6.22 Heavily grazed grassland limits wildflower growth, reducing nectar (food resources), egg laying habitats and offers minimal shade and predator protection. Research carried out by the Game and Wildlife Conservation Trust (GWCT) found that grazed habitats reduce opportunities for butterflies, moths, beetles and spiders due to lack of egg laying opportunities and food resource but offer more opportunities for flies[xxxiii].

11.6.23 Baseline Phase 1 habitat surveys identified most areas are semi-improved (neutral) grassland containing a variety of species including crested dog's-tail, perennial ryegrass and Yorkshire fog as constant grasses and white clover, common mouse-ear and lesser spearwort as constant forbs. While the marshy grassland areas contained a similar species composition to the semi-improved (neutral) grassland, but also with dominant tall rushes (mainly compact rush), marsh bedstraw (which is constant and abundant) and occasional soft rush. Several of these species may be indicative of species-poor grasslands, especially the areas of semi-improved (neutral) grassland (Natural England 2010[xxxii]).

11.6.24 Measures which will be provided within the HMP will improve habitat for invertebrates within the Site including via provision of hedgerows, pond creation and grassland enhancement. It is also proposed to address bracken and non-native Schedule 9 species encroachment within the Cefn Gelligaer (west of Deri) SINC, and provision for monitoring invertebrates within the SINC will also be a commitment. In view of this it is considered that there is no route to significant adverse impacts for invertebrates, but that the Proposed Development will provide habitat enhancements that will be beneficial to invertebrate species both within the Site and in the wider area.

11.6.25 The potential for significant effects upon invertebrate populations are therefore scoped out of detailed assessment.

11.6.26 The over-grown flooded disused shaft in the east of the Site is considered unlikely to support great crested newts. There is only limited open water (which vegetation heavily encroaching into it). Furthermore, the terrestrial habitat is sub-optimal, the nearest pond is >500m and no records for great crested newts have been identified within the last 12 years, and the record in 2010-11 was 1.9km from the Site.

11.6.27 The potential for habitats onsite, particularly the marshy grassland in the west, to support protected species, like reptiles and invertebrates cannot be entirely discounted, even though no records were returned from baseline data gathering.

11.6.28 There is also no evidence that solar arrays pose a risk of direct adverse impacts to populations of these species groups (particularly given the solar arrays are 700m+ from the nearest waterbody identified, by the desk study, as supporting notable invertebrates, like dragonflies and damselflies), and so, with embedded good practice mitigation in place to protect them from direct mortality during the construction phase, the only route to impact for protected species like reptiles, amphibians and invertebrates is indirectly via loss of habitats that have potential to support them.

11.6.29 It is acknowledged that such species may establish within the Site prior to the commencement of construction works. Measures to enable the protection of such species during construction activities, including the requirement for pre-construction surveys will be included within a CEMP, on the basis of those measures provided within the accompanying OCEMP.

11.6.30 RAMs method statements will also be included within the CEMP and which will serve to protect species (like terrestrial mammals, including brown hare (especially in relation to sheltering leverets), reptiles and amphibians[6]) from death, injury or harm over the course of construction works. Method statements will be agreed in consultation with NRW and CCBC on the basis of measures presented within the accompanying OCEMP.

11.6.31 It is considered that the potential for significant effects upon protected species, including as a result of habitat loss and the potential for disturbance/displacement, is therefore scoped out of detailed assessment, on the basis of typical absence and low suitability of breeding and foraging habitats within the Site and the implementation of standard good practice mitigation measures.

Roosting Bats

11.6.32 No evidence of features with potential to support roosting bats was identified within 290m of the proposed turbines. Furthermore, the desk study did not identity any known bat roosts within 2km of the Site. As such, the potential for significant effects upon roosting bats is scoped out of detailed assessment.

Receptors Scoped in

11.6.33 The assessment presented within this Chapter considers in detail the potential for significant effects upon commuting/foraging bat species in relation to the construction, operation and decommissioning of the Proposed Development.

11.6.34 On the basis of justification provided above, the potential for significant effects upon all other identified ecological receptors as a result of the construction, operation and decommissioning of the Proposed Development, both alone and cumulatively with other developments is considered highly unlikely and therefore scoped out of detailed assessment.

[6] Which are all CCBC LBAP species.

Construction Phase

Commuting/Foraging Bats

11.6.35 Baseline bat activity surveys have established that the Site is subject to medium levels of bat activity. The open and semi-improved nature of grassland habitats to be lost from within the Site provide medium foraging and commuting interests to bats, with habitats in the wider surrounding area including woodland, rivers and large waterbodies considered to be providing higher value habitats for foraging and commuting bat species.

11.6.36 Overall habitat losses for bats as a result of the Proposed Development will be very small, relative to the availability of comparable habitats remaining within the Site and the extent of preferable habitats within the surrounding wider area.

11.6.37 As the lighting system to be used in works areas during the construction phase will be designed to avoid disturbing foraging/commuting bats (see Section 11.5), including by directing lighting away from key bat habitat features (like hedgerows and fence-lines) effects on bats from lighting during the construction phase are not anticipated.

11.6.38 Potential habitat loss effects upon bats are therefore of Negligible magnitude, of no more than a Short-term effect, of Minor adverse significance, and which is Non-significant.

Operational Phase

Commuting/Foraging Bats

11.6.39 The solar array component of the Proposed Development is not predicted to have any significant effect upon bats during the operational phase of the Proposed Development. There is little substantiating evidence for potential collision risks for bats associated with solar developments. Modern solar panel designs which will be installed as part of the Proposed Development, typically support black frames and grid lines, which breaks up the flat, smooth panel surface.

11.6.40 The assessment of operational phase impacts upon bats therefore focusses on potentially significant effects results from the operation of proposed wind turbines.

11.6.41 Operational wind turbines can affect bats in a number of ways, although the main concerns to species populations relates to collision mortality, to a lesser extent barotrauma (i.e. injury caused by a change in air pressure) and other injuries resulting from collision with, or flying in very close proximity to moving turbines (Joint Agencies guidance, 2021[xviii]).

11.6.42 The assessment of potential effects upon bats resulting from the operation of the proposed wind turbines has been based on the two-stage methodology set out in Joint Agencies guidance (2021) using an appropriate alternative tool to the Ecobat tool (given this is not functioning). Full details are presented in Appendix 11.3.

11.6.43 In accordance with Joint Agencies guidance (2021[xviii]) a Stage 1 'Initial Site Risk Assessment' of the potential risk level of the Proposed Development site has been undertaken based on a consideration of the Sites habitats and development-related features. This concludes that the Site is assessed as having an overall 'Site Risk' of 2, which represents a Low Site Risk.

11.6.44 Stage 2 ‘Overall Risk Assessment’ of the two-stage process detailed within Joint Agencies guidance (2021[xviii]) has then subsequently been completed to provide an overall assessment of risk to bat species, by considering the conclusions of Stage 1 in relation to relative levels of

bat activity obtained through using the alternative tool to Ecobat tool and considering the vulnerability of species recorded, at the population level.

11.6.45 In accordance with Joint Agencies guidance (2021[xviii]), Stage 2 has been carried out separately for high collision risk species recorded during baseline bat activity surveys (and which were recorded in numbers above what could be considered as negligible/non-substantive), and which comprises the following species:

- Soprano pipistrelle;
- Common pipistrelle; and,
- *Nyctalus* species.

11.6.46 The calculated Stage 2 'Overall Risk Assessment' per species, both temporally and spatially is presented in Appendix 11.3.

11.6.47 It is highlighted in Appendix 11.3, that like the Ecobat tool, the alternative tool has a number of limitations, including the availability of reference data on the database for many developments, definitive bat activity for regions are not generated and bat activity representations for regions are instead considered to be indicative. On this basis, the conclusions of the Stage 2 'Overall Risk Assessment' concludes that there is a 'Medium' likelihood of the Proposed Development resulting in significant impact on bat species populations. This is considered to be precautionary.

11.6.48 In summary, the Overall Risk Assessment for common pipistrelle, soprano pipistrelle and *Nyctalus* species is " Medium Site Risk" but given the current limitations of the alternative tool to the Ecobat tool, these conclusions are likely precautionary and should be treated with caution.

11.6.49 The risk of operational mortality to bats is generally acknowledged to be lowest at locations with low bat activity. Activity of all bat species recorded was typically moderate across all monitoring stations. This may be reflective of commuting/foraging bats using field boundaries (including hedgerows and/or fence-lines) as all monitoring stations were located along such features. The reality is that of the three proposed turbines, two are located in the interior of the fields (with only the northern monitoring station located on a fence-line) and therefore the bat activity recorded is likely to be higher than that at the actual proposed turbine locations, at least for the field interior turbines. The bat activity rates presented should therefore be considered as worst-case scenarios.

11.6.50 Joint Agencies guidance (2021[xviii]) advises that to reduce potential impacts upon bats, resulting from operational wind turbine development, a 50m 'stand-off' distance should be maintained around bat habitat features, into which no part of the turbine intrudes. The guidance provides a formula for calculating this 'stand-off' distance.

11.6.51 The layout of the Proposed Development has adopted a minimum 50m buffer from the nearest bat habitat features, and which is exceeded for all proposed turbine locations (see Table 11.7).

11.6.52 However, the typically moderate flight activity recorded of the three assessed bat species is considered potentially reflective of the fence-lines being used for commuting and/or foraging bats (perhaps in the absence of appropriate natural or semi-natural habitat features). Accordingly, and using the Joint Agencies guidance (2021[xviii]) guidance, it is prudent that a 50m stand-off distance should be maintained also between the fence-lines and proposed turbines, into which no part of the turbine intrudes. Based on the formula which the guidance provides, those would require an 88.5m buffer to be adopted between the turbine and nearest fence-line.

The distance between turbine 3 (3) and the nearest fence-line exceeds 88.5m, but the other turbines (T1 and T2) have fence-lines within 88.5m of them, particularly T2 which is located on a fence-line. Fence-lines will be realigned at these localities to ensure the 88.5m 'stand-off' distance is created between proposed turbines and fence-lines.

11.6.53 Based on activity levels recorded and subsequent analysis as outlined, likely death or injury levels for bat species are considered to be low. The Proposed Development is not considered to represent a site of concern to bat collision risks following the approach to assessment set out in Joint Agency guidance (2021[xviii]).

11.6.54 It is however, acknowledged that low/medium risk sites can still result in bat casualties, but for which embedded 'stand-off' distances from habitat features in accordance with Joint Agencies guidance (2021[xviii]), and also 'stand-off' from fence-lines, is considered adequate mitigation to avoid potentially significant operational mortality risks to bats at most low/medium-risk locations.

11.6.55 Impacts of bat collision risk mortality are subsequently considered to be of no more than a Long-term effect, of Low magnitude and of Minor adverse significance and which is Non-significant.

Decommissioning Phase

11.6.56 Potential decommissioning effects are considered to be similar to those identified for the construction phase (i.e. disturbance/displacement). Decommissioning effects are therefore not considered separately for each ecological receptor.

11.6.57 In the absence of mitigation, decommissioning effects may result in the loss of key habitats and the disturbance and/or injury or killing of key species.

11.6.58 Providing the implementation of good practice measures such as those summarised in section 11.5 and included in the OCEMP, be included, it is unlikely that significant effects upon commuting/foraging bats) would occur during the decommissioning phase.

11.7 Additional Mitigation

11.7.1 Providing the implementation of embedded mitigation outlined in Section 11.5, and the realignment of some section of fence-lines where required (see paragraph 11.6.51) no significant effects upon commuting/foraging bats (or any other ecological receptor) is predicted to occur as a result of the Proposed Development.

11.7.2 Additional mitigation measures are therefore not required.

11.7.3 Consideration has however been provided in relation to the potential for significant cumulative operational effects upon bats, and which adopting a precautionary approach may be uncertain. Further discussion and the outline of precautionary mitigation is therefore provided in Section 11.11.

11.8 Residual effects

11.8.1 Residual effects upon ecological receptors will not be significant.

11.9 Implications of Climate Change

11.9.1 The UKCP18 climate change projections, most notably predict increased summer and winter temperatures and higher average precipitation rates in summer and winter. These factors are

likely to result in an extended growing/breeding season with earlier in the year vegetation growth and breeding activity of key species. Increased rainfall is likely to result in greater vegetation growth, although for some botanical species it may have adverse effects (through water-logging). Higher rates of juvenile mortality for key species may be expected as a result of higher rates of rainfall. The bat activity season is likely to be extended by the higher seasonal temperatures, but conversely higher rates of rainfall are likely to adversely affect foraging activity.

11.9.2 Habitat enhancement measures to be adopted and presented in a HMP, if the Proposed Development is consented are unlikely to be substantively affected by climate change. However, establishment of bracken and non-native Schedule 9 species in areas such as the Cefn Gelligaer (west of Deri) SINC is expected to increase with warmer and wetter climates. This makes adopting the habitat enhancement measures (such as bracken/Schedule 9 plant clearance) within a HMP even more prudent.

11.9.3 The opposing potential effects of climatic change on ecology receptors makes predicting future likely outcomes difficult. However, potential effects on ecology receptors detailed in this Chapter are not predicted to substantively change in relation to climate change over the lifespan of the Proposed Development.

11.10 Habitat Management Measures and Biodiversity Net Benefits

11.10.1 Measures for habitat enhancement, if the Proposed Development is consented, are summarised here and would comprise:

- Pond creation (and looking at opportunities to make the overgrown flooded disused mine shaft more suitable for amphibians);
- Enhancement of grassland habitats;
- Targeted clearance of bracken and Schedule 9 plants in the Cefn Gelligaer (west of Deri) SINC;
- Monitoring the Cefn Gelligaer (west of Deri) SINC in relation to assessing the condition particularly of qualifying features;
- Enhancement of connectivity through the Site and into the wider area, through hedgerow planting, improving the condition and species-diversity of existing hedgerows and tree planting; and,
- Identify whether re-wetting the dry ditches onsite, potentially through ditch blocking, is possible (with hydrologist expert input), which would benefit wildlife like dragonflies and damselflies, and amphibians.

11.10.2 The specifics into each measure would be agreed through consultation with NRW, CCBC (and additional relevant stakeholders).

11.10.3 The biodiversity net benefits of these measures are considered in the context of the updated National Planning Policy for Chapter 6 of Planning Policy Wales (PPW[Error! Bookmark not defined.]). Where ‘policy’ is stated below, this is in reference to those stated in this updated Chapter 6.

11.10.4 The policy states that developments should be shaped by the principle of retaining and enhancing existing habitats and species. The measures which would be adopted if the Proposed Development is consented would be enhancement of onsite habitats for priority/notable species, including brown hare. This will include hedgerow planting along field some boundaries (to be retained also post-decommissioning) and the enhancement of grassland onsite. The overgrown flooded disused mine shaft (currently appraised as unlikely to support amphibians, will be a focus for enhancement works to aim to improve the feature for the benefit of amphibians and invertebrates. Other measures like the creation of hibernacula

and the adoption of sensitive livestock grazing regimes, to avoid over-grazing, will also benefit a variety of species. Given the enhancement measures to be adopted in the Cefn Gelligaer (west of Deri) SINC (particularly the targeted clearance of invasive species) this is in accordance with policy that non-statutory designated sites and habitats need to be properly protected and managed and their role in resilient ecological networks safeguarded.

11.10.5 As per the policy, monitoring, along with rectification strategies, are fundamental for ensuring notable biodiversity, sites and habitats are maintained (or improved where enhancement measures are adopted). Accordingly, monitoring would be undertaken for all enhancement measures summarised in Section 11.10.1 and to be set out in a HMP if the Proposed Development is consented. This includes monitoring of qualifying features of Cefn Gelligaer (west of Deri) SINC. This would include surveys prior to enhancement and then repeated surveys over the course of the Proposed Development's lifespan. This would ensure that biodiversity benefits would be identified, and any rectification measures (if required) adopted. Furthermore, monitoring would be undertaken in relation to the onsite conditions, and this would include monitoring habitats onsite (especially those created as part of the HMP) and bat monitoring, including identifying any evidence of bat collisions, and any rectification measures that may be required. The regularity of these monitoring surveys would be agreed with NRW and CCBC.

11.10.6 The policy states that development must minimise the impact on biodiversity and maintain the largest possible area of existing habitat supporting biodiversity and functioning ecosystems, particularly Section 7 habitats and species. Within management of these areas and the Section 7 habitats and species key. The measures listed above would benefit Section 7 and CCBC LBAP habitats (like hedgerows and ponds) and Section 7 and CCBC LBAP species (like reptiles, bats and brown hare).

11.10.7 Trees and hedgerows are of great importance for biodiversity, as stated in the policy, and all efforts should be made to maintain these habitat features given their multi-faceted role, including in connecting habitats for resilient ecological networks. No tree or hedgerow clearance would be undertaken as a result of the Proposed Development. The creation of the hedgerow, will contribute towards improving habitat connectivity through that part of the Site (and will be sensitive to the turbine locations so commuting/foraging bats are not encouraged to the turbines). Hedgerow creation will also benefit wildlife like other mammals and invertebrates.

11.11 Cumulative effects

11.11.1 Only the potential for significant cumulative operational effects upon commuting/foraging bat species are considered within this assessment. The potential for the Proposed Development to contribute to significant cumulative effects upon all other ecological receptors is not considered likely, due to short term nature of construction works and infrequency of operational maintenance works, the very small area of habitats within the Site to be directly or indirectly affected and habitat enhancement measures proposed and/or the absence of importance of the Site for individual species or assemblages.

11.11.2 In accordance with Joint Agencies guidance (2021[xviii]) a review of available EIA documentation for other wind farm developments located within 10km of the Proposed Development site (see Table 11.9 and Figure BR10167 045) has collated information regarding predicted impacts upon bats.

11.11.3 It is assumed that for at least some of the other developments, particularly those smaller developments (single turbines and/ or <80m high turbines, for example) detailed ecology (bat) surveys may not have been undertaken, and as such effects of these developments on bat

populations are considered likely to be inconsequential, and cumulative effects with the Proposed Development would also be inconsequential. This lack of cumulative effect of those developments with no publicly available information and the Proposed Development is considered particularly likely given the spatial separation between those developments and the Proposed Development (>1.5km, and typically >3.5km).

Table 11.9 Relevant developments (typically wind farm) within 10km of the Site.

Development	Status	Distance	Summary of predicted effects upon bats
Pen Bryn Oer Wind Farm (3-turbine development at 110m tip height)	Operational	1.6km	No information available.
Pengarnddu Industrial Estate (1-turbine development at 77m tip height)	Operational	2.1km	No information available.
Pengarnddu Industrial Estate, Dowlais Top (1-turbine development at 77m tip height)	Pre-construction	2.2km	Identified the scrubby habitats along the northern and southern boundaries of the development site as potential being used by foraging bats. Potential impact on small numbers of bats is considered to be low.
Unit 29 Tafaranaubach Industrial Estate, Tredegar (1-turbine development at 74m tip height)	Operational	2.5km	Bat activity was assessed using transect surveys. Low bat activity of species common pipistrelle, soprano pipistrelle, whiskered/Brandt's bat and noctule. Unlikely to be any significant effects on bats.
Pen March (6-turbine development at 180m)	In planning	2.7km	Bat activity was assessed using monitoring stations. The Site identified relatively low levels of bat activity and no significant effects on bats were concluded within the assessment. Post-construction bat monitoring is proposed which would provide the opportunity for mitigation if required based on monitoring results.
Wauntysswg solar farm	Pre-construction	3.6km	No information available.
Eurocaps Ltd, Crown Business Park, Dukestown (2-turbine development at 45m tip height)	Operational	4.9km	Bat activity was assessed using monitoring stations and transect surveys. Level of bat activity is considered to be sufficiently low to not present significant adverse impacts to bats.
Rassau Industrial Estate (1-turbine development at 72m tip height)	Operational	5.7km	No information available.
Penrhiwgwaith Single Turbine (1-turbine development at 86.5m tip height)	In planning	6km	No bat activity surveys undertaken, just PRA and habitat appraisal for bats. Precautionary mitigation to be adopted ('feathering' of blades) and local bat populations are considered unlikely to be adversely impacted by the development.
Rassau Industrial Estate (1-turbine development at 80m tip height)	Pre-construction	6.3km	No activity survey undertaken, only PRA and desk study. Very unlikely that there would be significant effects on bats from the development (but recommended further bat surveys given appropriately sized bat buffer from key bat habitat features could not be applied).
Rassau Industrial Estate (1-turbine development at 80m tip height)	In planning	6.3km	Bat activity was assessed using monitoring stations and transect surveys. Bat activity was low-moderate for common pipistrelle, and low/very low for other species including soprano pipistrelle, noctule and lesser horseshoe. Lack of appropriate 'stand-off' buffer between turbine and woodland. Overall risk for noctule and common pipistrelle is moderate. Requirement for

Development	Status	Distance	Summary of predicted effects upon bats
			operational monitoring identified to record bat collision checks, due to uncertainties with regards bat fatalities.
Penrhiwgwaith Farm (1-turbine development at 87m tip height)	Operational	6.7km	No information available.
Bedlwyn Farm (1-turbine development at 86m tip height)	Operational	6.8km	No information on bats considered.
Pen-yr-heol Farm (1-turbine development at 77m tip height)	Operational	6.8km	Bat activity was assessed using monitoring stations and transect surveys. Bat activity was determined as low, and with >80m 'stand-off' distances from the turbine and the nearest key bat feature a significant effect on bats is not anticipated.
Rassau Industrial Estate (1-turbine development at 77m tip height)	Operational	7km	Bat activity was assessed using existing transect survey data from a location 3.5km from the development site and existing desk study information. Low numbers of bats including common pipistrelle and soprano pipistrelle. Unlikely to be any significant effects on bats.
Cruglwyn, Mynydd Mamoel (2-turbine development at 86m tip height)	Operational	7km	No formal bat activity surveys undertaken, but potential based on desk study results and an appraisal of onsite conditions (including habitat appraisal). The development site was considered of very low value for foraging/roosting bats, and no significant effects were anticipated, and was considered overall minor negative impact (non-significant).
Cefn Bach Farm (1-turbine development at 78m tip height)	Operational	7km	Bat activity was assessed using monitoring stations and transect surveys. Low levels of bat activity recorded, with appropriate 'stand-off' buffers applied, meaning there is not expected to be any significant impacts on local bat populations.
Gelli-wen Farm (1-turbine development at 77m tip height)	Operational	7.6km	No information available.
Silent Valley Waste Services, Cwm, Ebbw Vale (1-turbine development at 102m tip height)	In planning	8.5km	Bat activity was assessed using a monitoring station and transect survey. Very low-low numbers of common pipistrelle, soprano pipistrelle, Daubenton's and *Myotis* species. Development site very low risk of impact to bats, particularly with adoption of 'stand-off' buffers from key bat features.

11.11.4 The assessments upon bat species presented within the EIA documentation of those windfarm developments (where available) considered for cumulative effects in-combination with the Proposed Development, were undertaken in accordance with the Joint Agency guidance (2021[xviii]). Whilst it is not possible to undertake a precise cumulative assessment with these developments using available information, due to the differences in baseline survey and assessment methodologies used, a high-level cumulative appraisal is undertaken to predict any combined significant effects.

11.11.5 Baseline bat activity levels for all other wind farm developments within 10km of the Proposed Development site as summarised in Table 11.9, were (where information was available and effects on commuting/foraging bats were fully assessed) found to be 'low' (or 'very low') and which indicates a 'low risk', with developments incorporating recommended stand-off buffers between turbine blade tips and bat habitat features. This is in accordance with current Joint

Agencies guidance (2021[xviii]) and is considered to be adequate mitigation to preclude the potential for significant operational mortality effects upon bat populations for low risk sites.

11.11.6 On the basis of overall low levels of baseline bat activity reported for all developments from information publicly available, their low risk nature and implementation of acceptable mitigation, summarised in Table 11.9, significant cumulative operational effects upon bat species should therefore be considered very unlikely, but cannot be precluded with absolute certainty due to the limitations of available information.

11.12 Precautionary Mitigation

11.12.1 No significant effects upon ecological receptors are predicted to occur and therefore mitigation for the Proposed Development in isolation is not required. However, where there is uncertainty over the risk posed to bats, mitigation is advised. Given Ecobat is no longer functioning, an alternative tool has been developed and used. There are several limitations with the tool as detailed in Appendix 11.3 (and as there was with Ecobat). It is considered that due to these and placement of monitoring systems along potential bat movement features (whereas in reality two out of three turbines) are located in the interior of the fields, the results of all three assessed bat species being at Medium risk is considered to be a worst-case scenario. As a precaution (along with the re-alignment of some sections of fence-line, see paragraph 11.6.51 to maintain an appropriately sized buffer from proposed turbines), in accordance with Section 7.1.3 of the Joint Agencies (2021[xviii]) guidance, it is proposed there will be a reduced idling speed for the proposed turbines ('feathering').

11.12.2 Joint Agencies guidance states that a reduction in speed resulting from feathering, compared with normal idling, may reduce fatality rates by up to 50%. This approach is recommended where there remains uncertainty over the risk posed to bats.

11.12.3 With the implementation of reduced idling speeds at all proposed turbines, no significant alone or cumulative effects upon bats are predicted to occur as a result of the Proposed Development.

11.13 Monitoring

11.13.1 Post-construction monitoring is proposed to assess bat activity from the outset of the operational phase of the Proposed Development, over a period to be agreed with CCBC, in consultation with NRW. This will assess bat activity (and any collisions) and identify whether any further mitigation/remedial measures are required.

11.14 Summary

11.14.1 A summary of the assessment presented within this Chapter is set out in Table 11.10.

Table 11.10 Summary of effects

Receptor	Description of potential impact	Significance prior to mitigation	Proposed mitigation	Residual effect	Significant / non- significant
Construction Phase					
Bats	Habitat Loss / Disturbance	Minor adverse, Non- significant	Not required	Minor adverse	Non-significant
Operation Phase					
Bats	Collision risk mortality	Minor adverse, Non-significant	Not required, although some	Minor adverse	Non-significant

Receptor	Description of potential impact	Significance prior to mitigation	Proposed mitigation	Residual effect	Significant / non- significant
			sections of fence-line near T1 and T2 will be re-aligned to provide an appropriate 'stand-off' buffer. Furthermore, precautionary mitigation is proposed given uncertainty in the risk to bats (and medium risk to the 3 assessed bat species). This will comprise of feathering turbines (reduce speed while idling)		
Decommissioning Phase					
Bats	Habitat Loss / Disturbance	Minor adverse, Non- significant	Not required	Minor adverse	Non-significant

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