Glöyn Byw | Butterfly Solar Farm

Environmental Statement - Volume 2

Chapter 5.0 – Ecology and Nature Conservation

Prepared for

RWE Renewables UK

September 2025
3456-02-ES-05

Document Control

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5.0 ECOLOGY AND NATURE CONSERVATION

5.1 Introduction

5.1.1 This Chapter of the Environmental Statement presents the findings of an assessment of the likely significant effects on ecological features as a result of the Proposed Development.

5.1.2 The Proposed Development comprises the installation and operation of a solar photovoltaic electricity generating station (or 'solar farm') comprising ground-mounted photovoltaic solar arrays and battery-based electricity storage containers together with a 132 kV substation, grid connection cable route options to the Legacy National Grid Substation, inter-array area cabling, Site accesses, internal access tracks, security measures, access gates, other ancillary infrastructure and landscaping and biodiversity enhancements. The solar farm would have an export capacity of up to 99.9 MW.

5.1.3 For a detailed description of the Proposed Development, refer to ES Chapter 4: Scheme Description.

5.1.4 The Proposed Development would enable the export of up to 99.9 megawatts (MW) of electricity, as well as the storage of electricity in the BESS.

5.1.5 The solar array is divided into three principal areas referred to as the Western, Central and Eastern Array Areas (the WAA, CAA and EAA respectively and together the 'Array Areas'). In addition, cabling is proposed between the EAA and CAA and between the CAA and WAA, and also between the proposed on-Site substation and the Legacy National Grid Substation. Together, proposed cabling locations are termed the Cable Route.

5.1.6 The Site and development areas are shown on ES Figure 1.1 and are described in detail within Chapter 4: Scheme Description.

5.1.7 This Chapter is accompanied by the following appendices:

i) ES Appendix 5.1: Habitat Survey Report
ii) ES Appendix 5.2: Breeding bird Survey Report
iii) ES Appendix 5.3: Non-breeding bird Survey Report
iv) ES Appendix 5.4: Great Crested Newt Survey Report

v) ES Appendix 5.5: Bat Activity Survey Report
vi) ES Appendix 5.6: Confidential Badger Survey Report
vii) ES Appendix 5.7: Information to Inform a Habitats Regulations Assessment

5.1.8 This Chapter is also accompanied by the following figures:

i) ES Figure 5.1: Statutory designated Sites Plan
ii) ES Figure 5.2: Non-statutory designated Sites Plan
iii) ES Figure 5.3: Habitat Survey Plan
iv) ES Figure 5.4: Non-breeding Bird Survey Plan
v) ES Figure 5.5: Great Crested Newt Survey Plan
vi) ES Figure 5.6: Bat Survey Results Plan
vii) ES Figure 5.7: Confidential Badger Plan

5.1.9 The following sections of this Chapter include:

i) a description of relevant legislation, planning policy and guidance which has informed the assessment;
ii) a summary of consultation with stakeholders;
iii) a description of the methodology for the assessment, including details of the study area and the approach to the assessment of effects;
iv) a review of baseline conditions;
v) details of the measures to avoid or reduce environmental effects, including mitigation and design measures that form part of the Proposed Development;
vi) an assessment of the likely significant effects on terrestrial ecology during the construction, operation and decommissioning phases of the Proposed Development, taking into account the measures proposed to avoid or reduce effects;
vii) identification of any additional mitigation measures or monitoring required in relation to likely significant effects;
viii) a summary of the residual effects of the Proposed Development from implementation of any additional mitigation; and
ix) assessment of any cumulative effects with other proposed developments.

Competence

5.1.10 This assessment has been prepared by Avian Ecology Ltd. Lead author: Mr J. Stevens BSc (Hons) Principal Ecologist supported by A. Logan MSc MCIEEM Principal Ecologist. Mr Stevens and Mr Logan have over 8 years and 14 years' experience respectively as ecological consultants. During this time they have written and contributed to numerous ES report chapters for ecological or ornithological interest, including several solar PV array and other renewable energy developments.

5.2 Legislation, Planning Policy and Guidance

5.2.1 The following legislation and guidance documents have been reviewed as part of the assessment process.

Legislation

5.2.2 Statutory legislation with regards to Ecology and Nature Conservation is presented as follows:

<u>International</u>

i) Convention on Wetlands of International Importance especially as Waterfowl Habitat 1971 ('the Ramsar Convention)
ii) Convention on the Conservation of European Wildlife and Natural Habitats 1979 ('the Bern Convention)
iii) UNESCO convention on the protection of the World Cultural and Natural Heritage (1972)

<u>National</u>

i) The Conservation of Habitats and Species Regulations 2017 (as amended)
ii) The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019
iii) The Wildlife and Countryside Act 1981 (as amended)
iv) Environment (Wales) Act 2016
v) The Environment Act 2021
vi) Countryside and Rights of Way Act 2000
vii) Protection of Badgers Act 1992
viii) Hedgerow Regulations 1997
ix) Natural Environment and Rural Communities (NERC) Act 2006

National Planning Policy

Future Wales: The National Plan 2040

5.2.3 Policy 9 of Future Wales is concerned with resilient ecological networks and green infrastructure.

Planning Policy Wales

5.2.4 Section 6 of Planning Policy Wales is concerned with distinctive and natural places, with Section 6.4 focusing on Biodiversity and Ecological Networks. Section 6.4.5 concerns the Biodiversity and Resilience of Ecosystems Duty. This is supplemented by Technical Advice Note 5: Nature Conservation and Planning described in the relevant section below.

Local Planning Policy

Wrexham County Borough Council

5.2.5 The following policies contained within the Wrexham WCBC Unitary Development Plan 1996-2011 are considered of relevance to the assessment:

i) UDP Policy PS2: Strategic Policy (The Broad Location of Development)
ii) UDP Policy PS3: Strategic Policy (The Broad Location of Development)
iii) UDP Policy GDP1: Development Objectives
iv) UDP Policy PS11: Biodiversity;
v) UDP Policy EC4: Hedgerows, Trees and Woodland

Guidance

Technical Advice Notes

5.2.6 Technical Advice Note (TAN) 5: Nature Conservation and Planning provides advice as to how the planning system should contribute to the protection and enhancement of biodiversity.

Local Planning Guidance Notes

5.2.7 Local Planning Guidance Note Number 32: Biodiversity and Development provides additional guidance to the policies contained within the Wrexham UDP. The guidance note specifically deals with the information requirements, avoidance measures and

mitigation, compensation and enhancement measures that should support any planning application.

5.2.8 Local Planning Guidance Note Number 35: Great Crested Newt Mitigation Requirements – Johnstown Newt Site SAC and the Wider Countryside presents typical mitigation and compensation measures required in relation to sites supporting great crested newt in general, and also with specific reference to Johnstown Newt Sites Special Area of Conservation (SAC).

5.3 Assessment Methodology

Study Area

5.3.1 Study areas adopted for the Proposed Development, and from which baseline ecological and ornithological information has been obtained, have been defined on the basis of the Proposed Development (planning) red line boundary as shown in ES Figure 1.1 and are summarised as follows:

i) Desk study – the Site boundary and up to 2km beyond
ii) Habitats – the Site boundary and immediately adjacent habitats
iii) Breeding Birds – the Site boundary and land up to 100m for Species listed on Schedule 1 of the Wildlife and Countryside Act immediately adjacent habitats
iv) Non-breeding birds – the Site boundary and land up to 600m
v) Great Crested Newt - – the Site boundary and land up to 500m
vi) Bats – The Site boundary; and,
vii) Badgers – the Site boundary and immediately adjacent habitats up to 30m.

5.3.2 Study areas for ecological receptors are shown on the relevant ES Figures 5.1 to 5.7

Scope of Assessment

5.3.3 This Chapter includes:

i) An evaluation of identified important ecological features and potential features, faunal species, habitats and vegetation (as appropriate) as identified under relevant legislation and policy;
ii) A description and evaluation of the potential effects of the Proposed Development on designated sites for nature conservation;

iii) A description and evaluation of the potential effects of the Proposed Development on species and habitats;
iv) Mitigation measures to address any identified significant adverse effects; and,
v) Identification of any residual effects after mitigation.

5.3.4 Only common (English) species names are utilised in this chapter.

Assessment Methodology

Baseline Methodology

5.3.5 Baseline ecological and ornithological information to inform the design and assessment of the Proposed Development has been obtained through desk study and field surveys. Methodologies are described briefly below, with detailed methodologies provided in the following appendices:

i) ES Appendix 5.1: Preliminary Ecological Appraisal
ii) ES Appendix 5.2: Breeding Bird Survey Report
iii) ES Appendix 5.3: Non-breeding bird Survey Report
iv) ES Appendix 5.4: Great Crested Newt Survey Report

Desk Study

5.3.6 A review of Magic was undertaken to identify statutory designated sites for nature conservation within 2 km of the Site, extending to 5 km for internationally designated sites.

5.3.7 A data request was submitted to COFNOD, the Local Environmental Records Centre for North Wales, to obtain information relating to the following ecological receptors within 2 km of the Site:

i) Non-statutory designated sites for nature conservation;
ii) Protected and notable species; and,
iii) Notable habitats, including:
    a) Ancient woodland;
    b) Ancient, veteran and notable trees;
    c) Habitats of principal importance; and,
    d) Peatland.

5.3.8 DataMapWales was further reviewed for information relating to protected and notable habitats and species within 2 km of the Site, including the following data sources:

i) Priority Habitats;
ii) Ancient Woodland; and,
iii) Great crested newt habitats.

5.3.9 The Ancient Tree Inventory (ATI) was also consulted for existing records of ancient or veteran trees within 2 km of the Site.

5.3.10 Only records dating from the last ten years (i.e., since 2015) were considered relevant to the assessment.

Extended Habitat Survey

5.3.11 A walkover survey of the proposed Array Areas was undertaken on 17th and 18th May 2022 broadly following the Joint Nature Conservation Committee (JNCC) Phase 1 survey methodology, further extended to record additional information relating to ecological receptors (e.g., field signs indicating presence of a protected species). Methodologies for this survey are described fully in ES Appendix 5.1.

5.3.12 The walkover survey was updated on 3rd October 2023 to ensure conditions remained comparable and to check for additional evidence of protected species.

5.3.13 An updated extended habitat survey was subsequently undertaken between the 21st and 23rd May 2025 using the UKHabitat Survey Methodology further extended to record additional information relating to ecological receptors (e.g., field signs indicating presence of a protected species). This information was then analysed to assign JNCC Phase 1 habitat types. Methodologies for this survey are described fully in ES Appendix 5.1.

Breeding Bird Survey

5.3.14 A total of three walk over survey visits were completed between the 18th May 2022 and 22nd June 2022, with a further six survey visits undertaken between 7th April 2023 and 24th June 2023. A transect route was walked around the Array Areas, stopping at intervals to scan for target species with binoculars, within the Array Areas and on surrounding land. All breeding bird activity was recorded and mapped. Surveys were

undertaken during favourable weather conditions, avoiding periods of prolonged heavy rain and strong winds.

5.3.15 The survey methodology was based on the standard Common Bird Census (CBC) methodology (Bibby *et al.* 2000)[1]. All bird registrations were recorded on suitably scaled field maps using standard British Trust for Ornithology (BTO) species codes and behaviour notations. The approximate locations of bird territories were determined using standard territory mapping techniques to identify and isolate areas within which birds consistently displayed breeding behaviours.

5.3.16 Only the breeding territories of notable species are mapped given these are the most relevant species to this assessment. Notable species are defined as any species listed on any of the following:

i) Scheule 1 of the Wildlife and Countryside Act;
ii) Birds of Conservation Concern 4 (BOCC4) Wales[2]; and
iii) Section 7 of Environment (Wales) Act 2016.

5.3.17 Methodologies for this survey are described fully in ES Appendix 5.2.

5.3.18 Breeding bird surveys have been undertaken in 2025 following the guidance by the Bird Survey & Assessment Steering Group (2023)[3]. The survey comprised a series of six staggered survey visits.

5.3.19 Five survey visits were carried out from dawn with one of the visits conducted in the evening to pick up nocturnal species. Full results of 2025 surveys are not available for this submission and will be reported on in the submission version of this ES.

Non-breeding Bird Survey

5.3.20 A non-breeding bird survey was undertaken between October 2023 and March 2024 encompassing the Array Areas and land up to 600m, where accessible. Surveys comprised a total of six visits, with one visit undertaken monthly.

[1] Bibby, C.J., Burgess, N.D., Hill, D.A., and Mustoe, S.H. (2000). *Bird Census Techniques, 2nd ed. Academic Press, London.*
[2] Johnstone, I.G., Hughes, J., Balmer, D.E., Brenchley, A., Facey, R.J., Lindley, P.J., Noble, D.G. & Taylor, R.C. (2022) *Birds of Conservation Concern Wales 4: the population status of birds in Wales*
[3] *Bird Survey & Assessment Steering Group. (2023). Bird Survey Guidelines for assessing ecological impacts, v.1.1.1. https://birdsurveyguidelines.org*

5.3.21 Each survey comprised a 'walk-over' survey adopting the 'look-see' methodology (Gilbert *et al*. 1998), observing each field using public rights of way (PRoWs) and roads and where possible, walking the boundaries and stopping at intervals and scanning the fields for Target Species, with binoculars. All Target Species heard or seen were recorded onto base maps. The number of Secondary Species was tallied during the survey, although no attempt to map these species was made.

5.3.22 Target species are defined as wetland bird species (waders, waterfowl and gulls (excluding feral species e.g. Canada goose)), Annex 1/Schedule 1 raptors and notable flocks (>10 birds) of BoCC Amber and Red List species.

5.3.23 Methodologies for this survey are described fully in ES Appendix 5.3.

Great Crested Newt eDNA Survey

5.3.24 Ponds within the Array Areas and up to 250m beyond these were subject to survey between and 2022 and 2024, where accessible.

5.3.25 Ponds subject to survey were assessed for suitability to support great crested newt using the Habitat Suitability Index (HSI) Assessment methodology as developed by Oldham *et al.* (2000)[4] and as detailed within ARG UK guidance (ARG UK, 2010)[5]. Where suitable for great crested newt (i.e., holding water), ponds were also subject to eDNA survey sampling to determine the presence or likely absence of great crested newt.

5.3.26 The protocol for sampling followed that outlined within the technical advice note for field and laboratory sampling of great crested newts (Biggs *et al*., 2014)[6], which required the collection of 20 x 30ml subsamples from each pond, spaced as evenly as possible around the pond margin. Samples were then sent to SureScreen Scientifics for laboratory analysis.

5.3.27 Methodologies for this survey are described fully in ES Appendix 5.4.

[4] Oldham, R. S., Keeble, J., Swan, M. J. S. & Jeffcote, M. (2000) *Evaluating the suitability of habitat for the great crested newt.* The Herpetological Journal Vol 10 No. 4.
[5] *https://www.arguk.org/info-advice/advice-notes/9-great-crested-newt-habitat-suitability-index-arg-advice-note-5/file*
[6] Biggs, J., Ewald, N., Valentini, A., Gaboriaud, C., Griffiths, R. A., Foster, J., Wiilkinson, J., Arnett, A., Williams, P., & Dunn, F. *(2014). Analytical And Methodological Development for Improved Surveillance of the Great Crested Newt. Defra Project WC1067 Appendix 5. Oxford: Freshwater Habitats Trust*

Bat Activity Survey

5.3.28 Night-time Bat Walkover surveys (walked transect surveys) have been undertaken in accordance with Bat Conservation Trust guidance (Collins *et al*. 2023[7]). The transect surveys were undertaken in October 2023, May 2024 and August 2024, within the Autumn, Spring and Summer survey periods. Walked transect surveys have covered field boundary habitats within the Array Areas.

5.3.29 The walked transect surveys have been supplemented by data collected using automated static detectors, deployed in suitable weather conditions for a minimum of five nights a month in October 2023 and monthly between April 2024 and September 2024.

5.3.30 Methodologies for this survey are described fully in ES Appendix 5.5.

Badger

5.3.31 Methodologies for this survey are described fully in ES Appendix 5.6.

Assessment of Significance / Assessment Criteria

Determining Importance

5.3.32 Relevant legislation, policy and guidance has been referenced to determine the importance of ecological and ornithological receptors.

5.3.33 In addition, importance 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 features within the context of the geographical area.

5.3.34 It should be noted that importance does not necessarily relate to the level of legal protection that a receptor receives, and 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.

[7] *Collins, J. (ed.) (2023) Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edn). The Bat Conservation Trust, London.*

5.3.35 For the purposes of this assessment, the importance (or sensitivity) of an ecological or ornithological receptor is considered within the context of a defined geographical area, ranging from International to Site, as detailed in Table 5-1.

Table 5-1 – Ecological and Ornithological Importance

Importance	Definition
International	An internationally designated site (Special Protection Areas (SPA), Special Areas of Conservation (SAC) and/ or Ramsar sites) or proposed / candidate site (pSPA or cSAC). Large area of a habitat listed in Annex I of the Habitats Directive or smaller areas of such habitat which are essential to maintain the viability of the larger whole. A regularly occurring, nationally significant population of an internationally important species or site supporting such a species (or supplying a critical element of their habitat requirement) or species listed in Annex IV of the Habitats Directive
National (UK)	A nationally designated site (e.g. Site of Special Scientific Interest) or a discrete area which meets the selection criteria for national designation. An area of a priority habitat listed under Section 7of the Environment (Wales) 2016 or which constitutes a significant proportion of the UK resource of that habitat. A regularly occurring, regionally significant population of any nationally important species listed as a UK BAP / Biodiversity List and priority species listed under Section 7 of the Environment (Wales) Act 2016, and Species listed under Schedule 1 or Schedule 5 of the Wildlife and Countryside Act or Annex II or Annex IV of the Habitats Directive.
County (Flintshire and Wrexham)	Locally designated sites (Local Nature Reserves, County or Local Wildlife Sites). Areas of priority habitat which constitutes a significant proportion of the County's resource of that habitat. A regularly occurring, locally significant population of any nationally important species listed as a UK BAP / priority species and priority species listed under Section 7 of the Environment (Wales) Act 2016, and Species listed under Schedule 5 of the Wildlife and Countryside Act or Annex II or Annex IV of the Habitats Directive.
Local	Local area around the Proposed Development. For example, areas of priority habitat which are not large enough to meet the criteria for County value, or small but sustainable populations of a protected or notable species
Site	Considered within the context of the Proposed Development Site only.

Characterising Impacts

5.3.36 Once identified, potential effects are described making reference to the following characteristics as appropriate: positive or negative, extent, magnitude, duration,

timing, frequency, and reversibility. The assessment also identifies areas where no change is anticipated and the resulting effect is described as 'not discernible' or 'none'.

5.3.37 The assessment only makes references to those characteristics relevant to understanding the nature of an effect and determining its significance.

5.3.38 For the purpose of this assessment, the temporal nature of potential effects are described as follows:

- Short-term effects are defined as 0-3 years;
- Medium terms effects are defined as 3-15 years; and
- Long term effects are defined as > 15 years.

5.3.39 The magnitude of change on ecological receptors is described as set out in Table 5-2. The likelihood or probability that an effect will occur is addressed as far as possible based on available information. Whilst it is reasonably straightforward to identify effects that are certain to occur, or conversely will not occur, it is generally more difficult to assign a quantified level to occurrences defined as likely, unlikely or highly unlikely. In these circumstances, professional judgement has been used, with reasoning supported by available evidence.

Table 5-2 – Magnitude of Change

Magnitude	Definition
High	The change may negatively or positively affect the conservation status of a site or species population, in terms of the coherence of its ecological structure and function, that sustains the habitat, complex of habitats and/or the population levels of species of interest.
Moderate	Conservation status of a site or species population will not be negatively or positively affected, but some element of the functioning of the site or population might be affected and the change to the site / population is likely to be significant in terms of its ability to sustain some part of itself in the long term.
Low	Neither of the above applies, but some minor negative or positive change is evident on a temporary basis, or the change affects extent of habitat or individuals of a species abundant in the local area.
Negligible	No observable effect in either direction.

Determining Significance

5.3.40 The EIA Regulations require the description of the 'likely significant environmental effects of the Proposed Development on the environment' (Regulation 18(3)(b)).

5.3.41 To determine the overall significance of each effect, judgements on the importance of the receptor(s) and the magnitude of impact from the Proposed Development are considered together to determine whether or not an effect is likely to be significant. This involves a combination of quantitative and qualitative assessment and the application of professional judgement.

5.3.42 For the purposes of this assessment, effects are categorised as significant or not significant in line with the EIA Regulations. The assessment considers effects at different geographic scales i.e. where effects may be discernible at a local scale but are not considered significant in the context of the EIA Regulations. For the purpose of the assessment, moderate and major effects are deemed to be 'significant' in EIA terms unless stated otherwise.

5.3.43 A 'significant effect' is considered to be an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features' or for biodiversity in general.

5.3.44 CIEEM guidelines on ecological impact assessment 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 can be lawfully permitted following EIA procedures.'

5.3.45 For ease of reference Table 5-3 below sets out adapted CIEEM terminology which also shows the equivalent EIA terms as used within this chapter.

Table 5-3 – EIA Regulations and CIEEM Terminology

Effect	Significance	CIEEM Definition
Major or Moderate beneficial	Significant	Positive effect on ecological integrity or conservation status at a County, National or International geographic scale
Minor Beneficial	Not significant	Positive effect on ecological integrity or conservation status, discernible/significant in ecological terms at a Local geographic scale only
Negligible or Neutral	Not significant or neutral	No discernible or significant on ecological integrity or conservation status (e.g. species or habitat).
Minor Adverse	Not significant	Adverse effect on ecological integrity or conservation status, discernible / significant in ecological

		terms at a Local geographic scale only.
Moderate or Major Adverse	Significant	Adverse effect on ecological integrity or conservation status at a County, National or International geographic scale.

Assumptions and Limitations

5.3.46 Specific limitations associated with the gathering of baseline data are discussed in Appendices 5.1 to 5.4.

5.3.47 No other limitations to the overall objectives of the assessment were encountered.

5.4 Consultation and Engagement

5.4.1 A scoping exercise was undertaken to establish the content, approach and methods to be followed within this ES.

5.4.2 A Scoping Report (ES Appendix 2.1) was submitted to Planning and Environment Decisions Wales (PEDW) on the 03 February 2025. The report sets out the findings of the scoping exercise and details the technical guidance, standards, best practice and criteria to be applied in the assessment to identify and evaluate the likely significant effects of the Proposed Development on ecology.

5.4.3 A Scoping Direction was received on 03 April 2025 (ES Appendix 2.2). The feedback received from PEDW, WCBC and stakeholders within the Scoping Direction, and the Applicant's responses are presented in ES Appendix 2.3. The points relating to this Chapter are summarised in Table 5-4 below.

5.4.4 Other engagement and consultation undertaken in relation to this chapter is summarised in Table 5-5 below.

Table 5-4 – Scoping Responses

Consultee	Comment	Response
PEDW	**Key Habitats** PEDW highlights that although the 1990 guidelines are quoted in NRW's response, NRW have previously confirmed they endorse the Handbook for Phase 1 habitat survey – a technique for environmental audit (2010, JNCC Resource Hub) as an appropriate standard: https://hub.jncc.gov.uk/assets/9578d07b-e018-4c66-9c1b-47110f14df2a	Habitat surveys were undertaken using the JNCC Guidelines for Phase 1 Habitat Survey (2010). Additional surveys have been undertaken in May 2025 using the

		UKHabitat Survey methodology (2023) with habtiats then assigned a JNCC Phase 1 habtiat type. Survey methodologies and limitations are provided in full as ES Appendix 5.1
PEDW	**Protected Sites** In their response NRW notes that the application site is: • bordering / partially within Johnstown Newt Sites Special Area of Conservation (SAC) • and Stryt Las a'r Hafod Site of Special Scientific Interest (SSSI) • 860 m from River Dee and Bala Lake SAC / River Dee SSSI • 2.6 km from Berwyn Mountains and South Clwyd Mountains SAC / Llantysilio • Mountains and Minera SSSI • 6.2 km from Shell Brook Pastures SSSI • 7.8 km from Llandegla Moor SSSI NRW highlight that the proposed western solar array is approximately 215 m from the Johnstown Newt Sites SAC and within the SAC buffer identified in Wrexham CBC's Local Planning Guidance. However, the 'Electrical Connections' section (2.1.30) of the Scoping Report (SR) and plans indicate that the westernmost red line boundary beyond the western solar array borders and overlaps the SAC and SSSI boundaries. NRW identify potential impacts to the Johnstown Newt Sites SAC and Stryt Las a'r Hafod SSSI in relation to disturbance to Great Crested Newt; potential habitat loss associated and grid route options; air quality; and pollution. NRW add that Chapter 6 of Planning Policy Wales (PPW) Edition 12 (2024) states that there is a presumption against all forms of development in a SSSI. In wholly exceptional circumstances and only where development is considered to be appropriate and is not likely to damage a SSSI and there is broad and clear agreement for mitigation and enhancement as part of a development plan should development be proposed (paragraph 6.4.27). As the site is within the catchment of the River Dee and Bala Lake SAC, NRW highlight that under the Habitats Regulations, Planning Authorities must consider the impact of proposed developments on water quality within SAC river catchments. It is therefore advised that as part of any future planning application submission, sufficient details of the proposed method of foul drainage are provided to inform the Habitats Regulations Assessments (HRA) or to confirm whether or not any additional wastewater would be discharged from the site. For further information on HRA, see section 8.3.	This document will assess impacts to statutory designated sites, including Johnstown Newt Sites SAC,Stryt Las a'r Hafod SSSI and River Dee and Bala Lake SAC This chapter is accompanied by a Information to Inform a Habitat Regulations Assessment Report with regards to Johnstown Newt Sites SAC and River Dee and Bala Lake SAC.
PEDW	**Protected Species** NRW advise that the site should be assessed to determine the presence of protected species and that targeted species surveys are undertaken for all species scoped in. These should comply with current best practice guidelines.	Baseline ecological surveys have included extended habitat survey, breeding bird survey, non-breeding bird

	NRW add that if protected species are found during the surveys, 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. NRW advise that the ES should set out how the long-term site security of any mitigation or compensation will be assured, including management and monitoring information and long term financial, tenure, and management responsibility. Where the potential for significant impacts on protected species is identified, NRW advise that a Conservation Plan is prepared and included as an Annex to the ES. In respect of European Protected Species, NRW advise consideration of Section 3.3.2 of Guidance on the strict protection of animal species of Community interest under the Habitats Directive, found online at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=PI_COM:C(2021)7301 NRW also advise that the ES considers biosecurity and invasive non-native species (INNS) impacts. The amphibian fungus Chytrid has been recorded in Johnstown. NRW add that the ES should include consideration of the requirements for a European Protected Species Licence and explain how the works will satisfy each of the three requirements as set out in the Conservation of Habitats and Species Regulations 2017 (as amended).	survey, bat survey and great crested newt eDNA survey The extended habitat survey is considered sufficient to identify additional features such as badger.
PEDW	**Great Crested Newt (GCN)** The Applicant's attention is drawn to NRW's comments in Appendix 1 where they include a list of resources which the Applicant is advised to consider when assessing the impact on GCN in the ES. NRW note that the results of the eDNA surveys did not identify any ponds supporting GCN, however, they note the abundance of GCN records particularly to the north of the proposed eastern solar array. NRW highlight that whilst some water bodies may not function as breeding ponds, they may still be used by GCN as foraging habitats or for resting or sheltering purposes and advise that the ES should also consider pond functionality. NRW state that two eDNA surveys were carried out at the end of the advised survey period (i.e. end of June). They explain that negative results are more likely to occur at the end of June owing to the majority of adults having already dispersed from ponds. It is therefore advised that this should be considered for the ES. NRW note that Section 7.4.8 of Appendix 7.4: Great Crested Newt Presence or Absence (eDNA) Survey Report states that the Johnstown Newt Sites SAC and underlying Stryt Las a'r Haffod SSSI is located immediately adjacent to the cable route and therefore will be scoped into the assessment. The SR states that appropriate mitigation for any work within the SAC buffer would be proposed. NRW advise that clarification should also be provided in respect of any works proposed within or bordering the SAC/SSSI associated with the grid route options. NRW also advise that with regard to GCN / amphibian assessments, consideration is given to the SAC buffer zones referenced above; and dispersal ranges as per Section 6.2.3 of the reptile and amphibian SSSI selection guidelines (found online at: https://data.jncc.gov.uk/data/765b2344-f86b-4500-	Additional resources noted. Limitations to great crested newt eDNA surveys are provided in ES Appendix 5.4. All surveys were undertaken within the appropriate season, however a precautionary approach has been taken throughout the assessment. Impacts to Johnstown Newt SAC and Stryt Las a'r Haffod SSSI are identified within this Chapter and as ES Appendix 5.7: Information to Inform a Habitats Regulations Assessment Report. This considers all works, including those associated with cable route works.

	8718-dc9ecf9375b6/sssi-guidelines-18-reptiles-amphibians-2022.pdf).	
PEDW	**Bats** NRW welcome the approach set out in the SR.	No action required
PEDW	**Otter** NRW highlight that Otter is a feature of the River Dee and Bala Lake SAC. Section 7.4.33 of the SR states that no suitable watercourses for otter are located within the site. However, NRW note that no consideration appears to have been given to the use of ponds as otter foraging habitats. Studies undertaken for NRW's legacy body, Countryside Council for Wales, in respect of this species highlighted the importance of ponds as foraging habitats for otters preying on amphibians, it is therefore advised by NRW that the scope of the ES should include impacts on otters. PEDW therefore direct that otter are scoped into the ES.	Otter to be scoped in to the assessment
PEDW	**Dormouse and Water Vole** NRW agree with the rationale set out in the SR to scope out Dormouse and Water Vole from the ES.	No action required
PEDW	**Ornithology** NRW raise the following concerns in relation to the Breeding Bird Survey (Appendix 5.2). The habitat on site is suitable to support Barn Owl. Barn Owl was also identified within the desktop survey, however, the species was not considered in the SR. NRW therefore advises that impacts on Barn Owl should be fully considered in the ES. This should include a species-specific survey during the breeding season and a robust mitigation/enhancement package. For further details, see NRW's comments in Appendix 1. Barn owl are therefore scoped into the ES. NRW highlight that Table 1 showing the 2022 breeding bird survey results (Appendix 1 of Appendix 5.2) features the column "status" which appears to relate to breeding status, however, no definitions/criteria have been provided within the report as to how the breeding status for each species was derived. NRW advise that this should be provided within the ES to enable the impacts of the scheme on breeding birds to be fully assessed.	Barn owl are specifically assessed within this Chapter
PEDW	**Conservation Status** NRW advise that the ES should consider significance (both alone and in-combination) and, where applicable, conservation status. In respect of conservation status, NRW advise that consideration is given to current conservation status (CCS), and demonstration of no likely detriment to maintenance of favourable conservation status (FCS) during construction, operation and decommissioning phases of the scheme.	This comment is noted by the Applicant
PEDW	**Other Matters** On 11 October 2023 the Welsh Government introduced changes to Chapter 6 of PPW relating to: • Green Infrastructure, • Net Benefit for Biodiversity and the Step-wise Approach, • Protection for Sites of Special Scientific Interest, and • Trees and Woodlands. Details are available in the relevant 'Dear Chief Planning Officer' letter: https://www.gov.wales/addressing-nature-emergency-through-planning-system-update-chapter-6-planning-policy-wales	No action required

	These changes have now been consolidated into a new edition of PPW (ed. 12), published on 07 February 2024: https://www.gov.wales/planning-policy-wales	
PEDW	**Habitats Regulation Assessment** The Conservation of Habitats and Species Regulations 2017 require competent authorities, before granting consent for a plan or project, to carry out an appropriate assessment (AA) in circumstances where the plan or project is likely to have a significant effect on a European site (either alone or in combination with other plans or projects). The competent authority in respect of a DNS application is the relevant Welsh Minister who makes the final decision. It is the Applicant's responsibility to provide sufficient information to the competent authority to enable them to carry out an AA or determine whether an AA is required. When considering whether or not significant effects are likely, applicants should ensure that their rationale is consistent with the CJEU finding (https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A62017CN0323) that mitigation measures (referred to in the judgment as measures which are intended to avoid or reduce effects) should be assessed within the framework of an AA and that it is not permissible to take account of measures intended to avoid or reduce the harmful effects of the plan or project on a European site when determining whether an AA is required ('screening'). The screening stage must be undertaken on a precautionary basis without regard to any proposed integrated or additional avoidance or reduction measures. Where the likelihood of significant effects cannot be excluded, on the basis of objective information the competent authority must proceed to carry out an AA to establish whether the plan or project will affect the integrity of the European site, which can include at that stage consideration of the effectiveness of the proposed avoidance or reduction measures. Where it is effective to cross refer to sections of the ES in the HRA, a clear and consistent approach should be adopted. The Planning Inspectorate's guidance for Nationally Significant Infrastructure Projects – Advice on Habitats Regulations Assessments may prove useful when considering what information to provide to allow the Welsh Ministers to undertake AA: https://www.gov.uk/guidance/nationally-significant-infrastructure-projects-advice-on-habitats-regulations-assessments	This chapter is accompanied by a Information to Inform a Habitat Regulations Assessment Report with regards to Johnstown Newt Sites SAC and River Dee and Bala Lake SAC.

Table 5-5 – Other Engagement Activities

Consultee	Comment	Response
Wrexham County Borough Council Ecology	N/A	The applicant attempted to contact Wrexham County Borough Council via email on 19/02/2025 however no response was received

5.5 Baseline

5.5.1 Baseline conditions are outlined in the text below, and are fully described (including methodologies followed) in the following appendices and their associated figures:

- Desk study (September 2022 and updated in February 2025) (see ES Appendix 5.1);
- Extended Phase 1 habitat survey (May 2022) (see ES Appendix 5.1);
- Extended UKHabitat Survey (May 2025) (See ES Appendix 5.1)
- Breeding bird surveys (May to June 2022 and April to June 2023) (See ES Appendix 5.2);
- Non-breeding bird surveys (October 2023 to March 2024) (see ES Appendix 5.3).
- Great crested newt eDNA surveys (June 2023) (see ES Appendix 5.4);
- Great crested newt eDNA (update 2024) (see ES Appendix 5.4);
- Bat activity surveys (October 2023 to Summer 2024) (see ES Appendix 5.5); and,
- Badger surveys (alongside habitat surveys) (See confident Appendix 5.6).

5.5.2 In addition to surveys outlined above, update breeding surveys have been undertaken in 2025 and will be reported upon in submission versions of this ES.

5.5.3 Methodologies of surveys, including study areas, are briefly described in the relevant sections below.

Desk Study

5.5.4 Desk study results are presented for each ecological receptor in the relevant sections. Note that only records with a specific grid reference (minimum eight figure/ 100m grid square) are discussed in detail, however all records are included in overall totals.

Designated Sites for Nature Conservation

Statutory Designated Sites

5.5.5 The Site is not located within any statutory designated site for nature conservation, however two SAC and three Sites of Special Scientific Interest (SSSI) are located within 2 km of the Site.

5.5.6 The Johnstown Newt Sites SAC and underlying Stryt Las a'r Hafod SSSI is located approximately 215 m west of the WAA, and immediately adjacent to the proposed Cable Route.

5.5.7 The River Dee and Bala Lake / Afon Dyfrdwy a Llyn Tegid SAC and the Afon Dyfrdwy (River Dee) SSSI is located approximately 635 m south of the EAA and the Sontley Marsh SSSI is located approximately 1.35 km north of the CAA.

5.5.8 A summary of all statutory designated sites for nature conservation located within the Study Area is provided as Table 5-6 below.

Table 5-6 –Statutory Designated Sites for Nature Conservation

Site Name	Distance and Direction from Site	Reason for Designation
Johnstown Newt Sites SAC	Immediately adjacent to Cable Route	Designated for the presence of Annex II species great crested newt.
Stryt Las a'r Hafod SSSI	Immediately adjacent to Cable Route	Of special interest for amphibians, particularly great crested newt but also supports significant populations of commoner amphibian species including smooth newt, palmate newt, common frog, and common toad.
River Dee and Bala Lake / Afon Dyfrdwy a Llyn Tegid SAC	635m south of EAA	Designated for the presence of Annex I habitat water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation. Designated for the presence of Annex II species Atlantic salmon, floating water plantain, sea lamprey, brook lamprey, river lamprey, bullhead and otter.
Afon Dyfrdwy (River Dee) SSSI	635m south of EAA	Afon Dyfrdwy (River Dee) is of special interest for its fluvial geomorphology, Carboniferous geology, range of river habitat types, saltmarsh transition habitats, populations of floating water plantain, slender hare's-ear, sea barley, hard-grass, otter, salmon, bullhead, brook lamprey, river lamprey, sea lamprey, club-tailed dragonfly and other aquatic invertebrates.
Sontley Marsh SSSI	1.35km north of the CAA.	One of the best wetland examples in Clwyd of the "southern mesotrophic mire" and also designated for botanical interest.

Non-statutory designated Sites

5.5.9 The desk study identified 19 Wildlife Sites for Wrexham (WSW), four Wild Ground Reserves (WGR) and three Country Parks within the 2km Study Area. Of these,

Yorke's Dingles and Well Wood WSW and Oak Wood WSW are located partially within the CAA, whilst Hopyard Wood WSW is located adjacent to the EAA. Crematorium WSW, Legacy substation WSW, Gefeiliau Brook WSW, Aberderfryn WGR and Bonc yr Hafod Country Park are all located immediately adjacent to the Cable Route.

5.5.10 All other WSW sites are located over 100m from the Site. A summary of all non-statutory designated sites for nature conservation located within the Study Area is provided as Table 5-7 below

Table 5-7 – Non-Statutory Designated Sites for Nature Conservation

Site Name	Distance and Direction from Site	Reason for Designation
York Dingles and Well Wood WSW	Within the Site (CAA)	Ancient woodland along two narrow valley strips. Much of the woodland is regenerating due to felling within the last 20 years. The tree species present include ash, sycamore, hazel, guelder rose and wild cherry with oak dominating the mature canopy.
Oak Wood WSW	Within the Site(CAA)	A small unfenced woodland dominated by mature oaks. The understorey consists of holly, hawthorn and field maple. The woodland is grazed and this has lead to a grassy and impoverished ground flora. However several woodland herbs remain.
Hopyard Wood WSW	Adjacent EAA	Two woods which have been planted up with hybrid poplars and conifers. Other canopy trees are sycamore and ash. The understorey has elder, hawthorn and snowberry. The field layer is poor, mostly nettle, ivy, bramble and dog's mercury.
Aberderfryn WGR	Immediately adjacent Cable Route	No data provided
Bonc yr Hafod Country Park	Immediately adjacent Cable Route	No data provided
Legacy substation WSW	Immediately adjacent Cable Route	Dense/continuous scrub, Semi-improved neutral grassland, Semi-natural broad-leaved woodland.
Crematorium WSW	Immediately adjacent Cable Route	Mixed parkland/scattered trees, Semi-improved neutral grassland, Semi-natural broad-leaved woodland
Gefeiliau Brook	Immediately adjacent Cable Route	A series of woods, marshes and neutral grasslands along the Gefeiliau Brook. The northern woods are wet with alder dominant canopies with occasional ash, sycamore and white willow.
Stryt Las WGR	115m west of Cable Route	No data provided
Stryt Las Country Park	115m west of Cable Route	No data provided
Morgan Ceramics WGR	280m south of Cable Route	No data provided

Brandie Brook WGR	350m south of Cable Route	No data provided
Erddig Estate	300m north of WAA	National Trust estate with woodlands, semi-improved neutral grasslands and marshes. The woodlands have a lot of planted beech but there is also much oak, sycamore and ash. Hafod and Lewis Wood have areas of wet alder woodland
Bronwylfa Wood WSW	570m west of Cable Route	Semi-natural broad-leaved woodland along Pentre Bychan Brook. Sycamore is the most dominant tree in the canopy with some ash and oak. Holly, hazel and elm form the understorey. Ramsons, male fern and soft grass are frequent in the ground flora.
Sall's Wood WSW	840m south of CAA	An estate woodland which has a mixed canopy composition. The wood is ancient with a good broad-leaved content. Several ancient woodland species remain in the ground flora including false oxslip.
Gardden Fort Wood WSW	930m south of Cable Route	This woodland is on the steep sides of an ancient fort. It is dominated by beech with an understorey of holly. The ground flora is sparse but bluebell and ferns occur throughout.
Caldecott's Wood	1.13 km south of CAA	This site is an area of semi-natural, broad-leaved woodland. The dominant tree species is ash with locally dominant oak, wych elm and sycamore. Also present in the canopy are birch, English elm, alder and wild cherry.
Nant Mill - Grasslands	1.17 km north of Cable Route	No data provided
Big Wood	1.24 km north of Cable Route	The wood along the River Clywedog is a mixture of conifer plantation, beech plantation and patches of semi-natural broad-leaved woodland. The broad-leaved canopy is dominated by sycamore and beech and there is a variable ground flora
Bangor On Dee Meadows	1.01km west of EAA	No data provided
Long Wood and Grassland, Erbistock	1.36km south of CAA	An ancient broad-leaved woodland. It is of one of only two ash/wych elm woods in North Wales. Other canopy species are sessile oak, beech, sycamore and conifers. The understorey includes hazel, hawthorn, holly, field maple and wild privet.
Eyton Hall Wood	1.37km south of Cable Route	An L-shaped woodland along a brook leading to the River Dee and then southwards along the river. The canopy is mainly ash with some oak, sycamore and wild cherry. The understorey has much wych elm and some hazel, elder and wild privet.
Marchwiel Marsh	1.38km north of EAA	Marshy field between school and disused railway line. Past improvement has lead to it being dominated by rushes; hard rush, soft rush and jointed rush are all abundant. Grasses are also prevalent with timothy and Yorkshire fog the most common.
Gardden Wood/Rocky Wood	1.48km south of Cable Route	Semi-natural broad-leaved woodland with large boulders and cliffs due to parts being disused quarries. The canopy is dominated by sessile oak, but there are a few beech trees and saplings are frequent in the understorey with rowan and elm.

Nant Mill Bat Sites	1.89km north of Cable Route	No data provided

Habitats

Priority and Notable Habitats

5.5.11 Areas of Ancient Woodland are shown on ES Figure 5.3: Non-statutory Designated Sites. No areas of Ancient Woodland are located within the Site, but areas of Ancient Woodland are located immediately adjacent to the CAA, EAA and proposed Cable Route. No ancient or veteran trees as identified by the ATI are located within the Site.

5.5.12 No existing records of ancient or veteran trees are located within or immediately adjacent to the Site, however an Arboricultural assessment has been undertaken, and this has identified 17 veteran trees within the Site or on the Site boundary, comprising seven in the EAA, three in the CAA and seven in the WAA. A further 11 ancient trees and 74 veteran trees are located within the Study Area as identified through the desk study.

5.5.13 Part of the EAA is identified as coastal and floodplain grazing marsh Habitats of Principal Importance (also known as Priority Habitats) as listed under Section 7 of the Environment Wales Act (2016); however this land is in use as an arable field and as such not considered to meet the definition of this Priority Habitat. No other existing records of Priority Habitats are located within the Site, however areas of traditional orchard are located adjacent to the CAA and EAA, while wood pasture and parkland, open mosaic habitats on previously developed land and traditional orchard habitats are located adjacent to the Cable Route.

5.5.14 Additional existing records of Priority Habitats located within the Study Area comprised: lowland fens, reedbeds, lowland meadows and purple moor-grass and rush pasture.

5.5.15 Habitat surveys found field boundaries to comprise hedgerow priority habitat, and woodland areas located immediately adjacent to the Site boundaries are considered to meet the definition lowland mixed deciduous woodland priority habitat.

5.5.16 A detailed assessment as to the priority status of ponds has not been undertaken, however following a precautionary approach it is assumed that all ponds present within the Site may achieve priority status.

Extended Habitat Survey

5.5.17 The Site consists of agricultural land which mostly comprised arable fields in the EAA, mixed arable and pastoral fields in the CAA and pasture in the WAA. The field compartments are enclosed by a mixture of managed hedgerows, woodland edge, lines of trees, fencing or occasional ditches. Other habitats that are contained within the Site include mixed scrub, semi-natural broadleaved woodland, and small pockets of semi-improved grassland and ruderal communities which are mostly associated with field margins. Minor watercourses are present within/adjacent to all three Array Areas.

5.5.18 Two ponds are located within the Site, a further three are directly adjacent to the Site boundary. Access roads of bare ground, hard standing and tarmac are present in the CAA and EAA.

5.5.19 The Cable Route is located entirely within existing roadway, comprising hardstanding.

Birds

Desk Study

5.5.20 The desk study returned 841 records of 104 bird species within 2km of the Site. Species were generally typical of the area. Records included 25 species listed on the Birds of Conservation concern (BOCC) Wales red list and 50 species listed on the BOCC Wales amber list. The only record returned within or immediately adjacent to the Array Areas was a single record of swift.

5.5.21 Species were considered representative of the area, comprising a range of farmland, woodland, suburban and wetland species although occasional rarities were present.

Breeding Birds

5.5.22 The breeding bird assemblage recorded within the Site during the surveys is characteristic of rural habitats in this region, with a total of 51 species recorded during 2022 surveys and 67 species recorded during 2023 surveys.

5.5.23 Notable species activity was mostly associated with field boundaries such as hedgerows and woodland. During 2023 surveys a single skylark territory was recorded beyond the Site boundary, in adjacent fields. A grey partridge territory was recorded, and it is likely that this is within the Site boundary. Survey results are provided at ES Appendix 5.2.

5.5.24 Further breeding bird surveys were undertaken in 2025. While full results are not yet available for inclusion within this Chapter, ground nesting species most susceptible to impacts from solar development were noted as being present in low numbers only. Both skylark and lapwing were recorded within the Site.

5.5.25 Full results will be presented in the submission version of this ES.

Non-Breeding Birds

5.5.26 The Site was found to support a non-breeding bird species assemblage typical of the land use and geographic area. Numbers of birds recorded were typically low, with occasional larger flocks of winter thrush species and starling.

5.5.27 A total of 17 species were recorded during the 2023/2024 surveys within the Site, consisting of: black headed gull, fieldfare, greylag goose, lesser black-backed gull, redpoll, mallard, meadow pipit, redwing, reed bunting, rook, snipe, sparrowhawk, starling, teal and woodpigeon

5.5.28 Habitats in the Wider Survey Area were similarly found to support low to moderate numbers of a narrow range of species.

Bats

Desk Study

5.5.29 The desk study returned 252 records of bats comprising the following species / species groups; Brandts bat, Daubentons bat, whiskered bat, Natterer's bat, noctule, common pipistrelle, soprano pipistrelle, brown long-eared bat, lesser horseshoe bat, *Myotis* bat, whiskered/ Brandts, pipistrelle sp. long eared bat and unidentified bat species. No existing records were located within or immediately adjacent to the Array Areas.

5.5.30 The species assemblage identified through the desk study is representative of species known to be present within this region.

Roosting

5.5.31 Several trees within the Site offer features suitable for roosting bats, however detailed bat roost assessments have not been undertaken.

5.5.32 No structures with the potential to support roosting bats are located within or immediately adjacent to the Site.

Foraging and Commuting

5.5.33 Habitats within the Site are suitable for a range of foraging and commuting bat species and are considered to align with the definition of moderate value in line with Collins (2023), however it should be noted that this is variable across habitats present with agricultural habitats being of limited value and boundary woodland and linear features being of higher value.

5.5.34 Static monitoring surveys recorded at least six species on Site comprising common pipistrelle, soprano pipistrelle, noctule, brown long-eared bat, lesser horseshoe bat and *Myotis* bats. Social calls of pipistrelle spp were also recorded but were not identified to species level, these are likely attributable to common and soprano pipistrelle.

5.5.35 Overall, bat activity peaked in June and July, and was broadly comparable across the remaining months (April to May and August to October). Activity was markedly higher at Monitoring Station (MS) 1 located at an intersection of hedgerows in the WAA and at MS4 located adjacent to woodland within the CAA.

5.5.36 Common pipistrelle and soprano pipistrelle were typically the most frequently recorded species both spatially (i.e., at each MS), and temporally (i.e., in each month), followed by *Myotis* and noctule. Brown long eared bat was recorded at relatively low numbers across all locations while lesser horseshoe bat was recorded only infrequently within the CAA.

5.5.37 Walked transects indicated activity was associated primarily with established woodland blocks and mature hedgerows.

5.5.38 Overall, the bat assemblage was considered typical of the area and reflected both known local abundance and habitat quality within the Site.

5.5.39 Full results are presented in ES Appendix 5.5.

Amphibians

Desk Study

5.5.40 The desk study returned 81 records of great crested newts, 53 records of smooth newt, 37 records of palmate newt, 41 records of unidentified *Lissotriton* species (smooth/ palmate newt), 40 records of common toad and 54 records of common frog. Records were sited principally within areas that comprise the Johnstown Newt Sites SAC, including immediately adjacent to the Cable Route.

5.5.41 No existing records were located within or immediately adjacent to the Array Areas.

eDNA Survey and Habitat Suitability

5.5.42 A total of 37 ponds were visited during the course of surveys between 2022 and 2024, of which 26 were subject to eDNA survey. The remainder were found to be dry or no longer existed.

5.5.43 Results of eDNA surveys indicated that none of the ponds subject to survey supported great crested newt, however great crested newt is known to be present within the wider area, including at the Johnstown Newt Sites SAC located adjacent to the proposed Cable Route.

5.5.44 While great crested newt was not recorded, ponds are considered suitable to support a range of common species of amphibian, including common frog, common toad, and commoner species of newt. Survey results are provided in ES Appendix 5.4.

5.5.45 Agricultural land that dominates the Array Areas provides suboptimal habitat for amphibians; however, boundary habitats offer more suitable habitat. Hardstanding associated with the Cable Route offers negligible habitat suitability.

Reptiles

Desk Study

5.5.46 The desk study returned ten records of reptiles, all of which were of grass snake. No records were located within or immediately adjacent to the Site.

Habitat Suitability

5.5.47 Agricultural land that dominates the Array Areas provides suboptimal habitat for reptiles; however, boundary habitats offer more suitable habitat. Hardstanding associated with the Cable Route offers negligible habitat suitability.

Badger

5.5.48 Records of badger are discussed in **Confidential** ES Appendix 5.6.

Otter

Desk Study

5.5.49 The desk study returned ten records of otter located along the Afon Clywedog, Petre-bychan Brook and Afon Dyfrdwy. No existing records were located within or immediately adjacent to the Array Areas.

Habitat Suitability

5.5.50 No watercourses of a sufficient size or connectivity to support foraging and commuting otter are located within the Array Areas. The Cable Route crosses the Pentre-bychan Brook known to support otter (see above).

Water Vole

Desk Study

5.5.51 The desk study returned no records of water vole.

Habitat Suitability

5.5.52 Stream and ditch habitats associated with the Site mostly hold very limited water and are isolated from other suitable habitat; as such, the Site offers limited suitability to water vole and the species is likely absent from the Site. Watercourses crossed by the Cable Route may be suitable, however the Cable Route consists the existing roadway only.

Dormouse

Desk Study

5.5.53 The desk study returned no records of hazel dormouse; however, the species is known to be present in north-east Wales.

Habitat Suitability

5.5.54 Areas of woodland located immediately adjacent to the Site boundary offer suitable habitat for dormouse with a variety of food plants present. Dormouse may also utilise linked hedgerows within the Site.

Other Notable Species

5.5.55 The desk study returned records of notable mammals including brown hare, hedgehog and polecat.

5.5.56 The desk study returned records of notable invertebrate species including cinnabar moth, mottled rustic moth, dusky thorn moth, small emerald moth, ghost moth, wall butterfly, brown-banded carder bee, yellow mayfly and the stonefly scarce yellow Sally.

5.5.57 The desk study returned 433 records of plant species, including native bluebell and tubular water-dropwort. Records were also returned of the fungi white spindles and meadow coral.

5.5.58 The desk study returned one record each of the notable fish species eel and sea lamprey.

Future Baseline

5.5.59 In the absence of the Proposed Development, it is assumed for the purposes of assessment that current agricultural practices would likely continue for the foreseeable future, resulting in no significant change to the habitats present within the Site, their condition, or the species they support.

5.5.60 A degree of natural variation in the distribution and size of species populations is likely to occur as a result of natural processes (e.g. succession and habitat maturity) and is to be expected regardless of the Proposed Development; however, these habitats are likely to support a broadly similar assemblage.

5.5.61 It is possible that anthropogenic climate change may result in the recording of species previously unrecorded as species from continental Europe migrate northwards. Further, the spread of invasive non-native species (e.g., Asian hornet) could result in changes to native species distributions within the Site. Furthermore, anthropogenic climate change may influence the resilience of some habitats and species. Such variations over time would occur independently of the Proposed Development.

5.5.62 Whilst short-term and small-scale variability in populations and distributions may occur, and revisions to conservation statuses and designations are also possible, such changes would be unlikely to qualitatively alter the conclusion of the assessment presented within this Chapter and have been accounted for through application of a precautionary approach and appropriate mitigation.

5.5.63 As such, the ecological baseline as outlined above is considered to represent a realistic ecological baseline for the 40 year lifetime of the Proposed Development.

5.6 Initial Development Design and Impact Avoidance/Reduction Measures

5.6.1 General design measures to avoid or minimise the potential for significant effects are described in ES Chapter 4.0 (Scheme Description).

5.6.2 Mitigation measures can be broken down into three types as follows:

i) Primary Mitigation: measures which form an inherent part of the project design.
ii) Secondary Mitigation: measures that require further activity to achieve the anticipated outcome (e.g. details provided via planning condition).
iii) Tertiary Mitigation: measures required by legislation or typical best practice.

5.6.3 Initial (i.e., primary and tertiary) ecology mitigation measures are described in turn below.

Construction and Decommissioning

Outline Construction Environmental Management Plan

5.6.4 An ecologically sensitive approach to construction will be implemented through the adoption of a Construction Environmental Management Plan (CEMP) which will detail measures and approaches to be adopted which will limit the likelihood of impacts upon retained habitats through damage, pollution and disturbance.

5.6.5 An outline Construction Environmental Management Plan (oCEMP) is provided with this DNS application and presents the outline approach to and the application of environmental management and mitigation for the construction of the Proposed Development. The oCEMP forms a Primary Mitigation measure.

5.6.6 The CEMP will include the following measures:

i) Best practice and regulatory pollution prevention measures, including in relation to:
   a) Noise;
   b) Lighting;
   c) Dust; and
   d) Contamination
ii) Buffering and protection of retained habitat features;
iii) Pre-construction surveys;
iv) Appointment of an Ecological Clerk of Works (ECoW); and,
v) Implementation of Reasonable Avoidance Measures (RAMs) for protected species.

5.6.7 The Decommissioning phase will be supported by a Decommissioning Environmental Management Plan (DEMP) which will include measures similar to those proposed as part of the oCEMP.

Operation

5.6.8 A series of measures have been identified as an inherent part of the design (Primary Mitigation) of the Proposed Development to reduce or eliminate potentially adverse ecological effects.

5.6.9 These measures are described in more detail at **ES Chapter 4.0 (Scheme Description)** and include:

i) The protection and retention of identified higher value boundary habitats (such as watercourses, hedgerows, tree lines and woodland) and any associated non-statutory designated site designations, focusing the built development within lower ecological value agricultural land.
ii) The provision of buffers between development areas and potentially sensitive features have been included to avoid and minimise effects on ancient woodland,

watercourses and boundary trees and hedgerows as shown **ES Figures 1.2a-c.**

iii) Habitat creation (grassland / meadow creation, hedgerow and tree planting and creation of woodland copse), which will diversify and strengthen the biodiversity interest of Site and neighbouring area, whilst achieving net biodiversity benefit.

Further Mitigation, Monitoring and Enhancement

5.6.10 Any further mitigation (where necessary), monitoring and enhancement measures identified to address the initial environmental effects of the Proposed Development are described at **Section 5.9** and **Section 5.11** of this chapter.

5.7 Assessment of Effects

Determining Features to be Scoped-In for Detailed Assessment

5.7.1 The assessment presented within this Chapter has been undertaken with reference to the Chartered Institute of Ecology and Environmental Management (CIEEM) (2018) guidance[8] and the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended) (The EIA Regulations) considers the potential for significant effects upon important ecological and ornithological receptors as a result of the construction and operation of the Proposed Development.

5.7.2 CIEEM guidance stipulates that it is not necessary to carry out a detailed assessment of impacts upon ecological or ornithological receptors that are sufficiently widespread, unthreatened and resilient to impacts of a proposed development. As such, the assessment presented considers potential effects upon designated sites for nature conservation and ecological or ornithological receptors which are considered important on the basis of relevant guidance, results of baseline studies and professional judgement.

5.7.3 Where ecological or ornithological receptors are not considered sufficiently 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

[8] CIEEM (2018) *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.3. Chartered Institute of Ecology and Environmental Management, Winchester*

as appropriate to reduce and / or avoid any potentially adverse effects or to ensure legislative compliance.

5.7.4 Initial mitigation measures as detailed above have informed the scoping of receptors.

5.7.5 A summary of the ecological and ornithological receptors considered for this assessment, and the rationale for scoping each receptor in or out of detailed assessment is provided in Table 5-8 below.

Table 5-8 – Ecological and Ornithological receptors

Ecological / Ornithological Receptor	Scale of Importance	Potential Effect Pathways and Rationale for Selection of Receptors for Detailed Assessment
Johnstown Newt Sites SAC	International	Johnstown Newt Sites is located immediately adjacent to the Cable Route, and as such there is potential for impacts on mobile qualifying features (great crested newt) for which the site is designated. Following initial mitigation measures, including best practice measures within the OCEMP, no direct or indirect impacts are anticipated on habitats within the SAC. Once constructed, there are no pathways by which Johnstown Newt Sites SAC could be affected during operation. **Scoped in** for detailed assessment (construction only).
Stryt Las a'r Hafod SSSI	National	Stryt Las a'r Hafod SSSI is located immediately adjacent to the Cable Route, and as such there is potential for impacts on mobile qualifying features (great crested newt) for which the site is designated. Following initial mitigation measures, including best practice measures within the OCEMP, no direct or indirect impacts are anticipated on habitats within the SSSI. Once constructed, there are no pathways by which Stryt Las a'r Hafod SSSI could be affected during operation. **Scoped in** for detailed assessment (construction only).
All other statutory designated sites	Up to international	Notwithstanding the above, statutory designated sites do not possess mobile ecological features that could utilise the Site and are considered sufficiently distanced that there is no pathway for indirect effects (e.g., pollution) considering initial mitigation measures, including the implementation of measures within the OCEMP. **Scoped out** of detailed assessment.
Yorke's Dingles and Well Wood WSW, Oak Wood WSW, Hopyard Wood WSW	County	These sites are located within or immediately adjacent to the Array Areas and as such there is potential for direct and indirect impacts on habitat and species features. **Scoped in** for detailed assessment.

All other non-statutory designated Sites for Nature Conservation	County	Crematorium WSW, Legacy substation WSW, Gefeiliau Brook WSW, Aberderfryn WGR and Bonc yr Hafod Country Park are all located immediately adjacent to the Cable Route , however given the small scale and localised nature of works within existing hardstanding, and with implementation of initial mitigation measures, including best practice measures within the OCEMP, no impact pathways have been identified. All other non-statutory sites are considered sufficiently distanced that no direct or indirect impacts could occur given initial mitigation measures. **Scoped out** of detailed assessment.
Priority and notable habitats	County	Ancient woodland is located immediately adjacent to the CAA and EAA. In addition, 12 veteran trees have been identified within the Site. **Scoped in** for detailed assessment following a precautionary approach.
Other on-site habitats	Site	While habitats within the Site are typically of low intrinsic value, they may support other protected and / or notable flora or fauna and would be impacted directly during construction of the Proposed Development. Following a precautionary approach habitats are **Scoped in** for detailed assessment.
Barn Owl	Local	While habitats are typically of low value to foraging barn owl, the species may nest within the Site. Following a precautionary approach barn owl are **Scoped in** for detailed assessment.
Breeding birds	Local	Given the scarcity of ground nesting species within the Site (i.e., those species most likely to be affected by solar development) and taking into account the initial mitigation measures, including retention of most hedgerows and boundary features within the Site, no adverse impacts are anticipated to the breeding bird assemblage beyond the Site level. **Scoped out** of detailed assessment. Measures are proposed to ensure legislative compliance.
non-breeding birds	Local	The non-breeding bird assemblage within the Site and immediate surrounds comprises low numbers of common and widespread non-breeding bird species only. **Scoped out** of detailed assessment
Roosting bats	Up to county Valued in line with Reason and Wray (2023)[9,10].	No buildings with bat roost potential are present. Trees offering bat roosting potential are located within the Site, however these will be retained and protected in line with initial mitigation measures ; as such there are

[9] Reason, P.F. and Wray, S. (2023). *UK Bat Mitigation Guidelines: a guide to impact assessment, mitigation and compensation for developments affecting bats. Version 1.1. Chartered Institute of Ecology and Environmental Management, Ampfield.*

[10] Following precautionary approach assumes maternity roosts of species 'widespread in many geographies, but not as abundant in all' as recorded though survey data. While lesser horseshoe bat (a 'rarer' species) was recorded utilising the Site they typically roost within buildings which are not present on-Site and so are discounted in assessment of roost value.

		no impact pathways by which roosting bats could be affected. **Scoped out** of detailed assessment.
Foraging and commuting bats	Up to county Valued in line with Reason and Wray (2023)	Important bat foraging and commuting features such as field boundary habitats will be retained and protected through initial mitigation measures, including buffers and protection measures around field boundary habitats, however minor and localised removal of hedgerows may be required. Additionally emerging evidence suggests possible bat aversion to solar arrays. **Scoped in** for detailed assessment following a precautionary approach.
Great crested newt	Up to county	While no evidence of great crested newt presence has been gathered to date, given the known presence of the species within the local landscape, the suitable habitats on Site, and proximity of the Cable Route to the Johnstown Newt Sites SAC there is potential for impacts on individual great crested newt and habitat changes. **Scoped in** for detailed assessment following a precautionary approach.
Reptiles	Site	Agricultural land that dominates the Site provides suboptimal habitat for reptiles. More suitable reptile habitat, such as field boundaries and watercourse corridors, will largely be retained and protected throughout construction of the Proposed Development with suitable buffers and protection measures implemented in line with initial mitigation measures, including measures within the OCEMP. **Scoped out** of detailed assessment. Measures are proposed to ensure legislative compliance.
Badger	Site	Badgers are a common and widespread species at both a local and national level, and while protected by law this is primarily due to welfare concerns. **Scoped out** of detailed assessment as any impacts would not be significant. Measures are proposed to ensure legislative compliance.
Otter	Up to county	No suitable watercourses for otter are located within the Site, however the species is known utilise ponds distant from watercourses. Ponds are located within the Site and may therefore be utilised by otter. Through operation initial mitigation measures including maintaining boundary features and inclusion of mammal gaps within fence lines will ensure no impacts to otter. **Scoped in** to of detailed assessment (construction only) .
Water vole	Up to county	No suitable watercourses to support water vole are located within the Site. Considering initial mitigation measures, including avoidance and buffering in place to protect watercourses and ditches within and adjacent to the Site, no impacts are anticipated on this species. **Scoped out** of detailed assessment.

Dormouse	Up to county	Dormouse may be present within the wider landscape and field boundary habitats within the Site offer suitable habitat to support this species. Field boundaries will largely be retained and protected throughout construction of the Proposed Development with suitable buffers and protection measures implemented in line with initial mitigation measures, including measures within the OCEMP. **Scoped out** of detailed assessment. Measures are proposed to ensure legislative compliance.
Other notable species (Priority mammals, fish, Invertebrates and plant/ fungi species)	Site	Agricultural land that dominates the Site is widespread and provides suboptimal habitat for most priority flora and fauna; however. may support more common species including hedgehog, brown hare and common invertebrate and plant assemblages. More suitable habitat, such as field boundaries and watercourse corridors, will largely be retained and protected throughout construction of the Proposed Development with suitable buffers and protection measures implemented in line with initial mitigation measures, including measures within the OCEMP. **Scoped out** of detailed assessment.

Construction Phase

5.7.6 Potential construction phase ecological effects associated with the Proposed Development are considered to relate to:

i) Direct land take (habitat loss) to accommodate the Proposed Development;
ii) Temporary disturbance and land take for construction, laydown areas and construction compounds (land restored thereafter);
iii) Disturbance to, fragmentation or severance of connecting habitat or potential bat commuting routes within and adjacent to the Site; and,
iv) Disturbance and pollution (indirect effects such as noise and vibration, lighting, dust, pollution from surface water run-off) resulting from Site clearance and construction, plant and vehicles movements and Site workers' activities.

Statutory Designated Sites for Nature Conservation

5.7.7 Johnstown Newt Sites SAC and the underlying Stryt Las a'r Hafod SSSI are located immediately adjacent to the Cable Route and are designated for presence of great crested newt. As the SSSI designation underpins the SAC, both receptors are considered together and collectively termed the 'Designated Newt Sites'.

5.7.8 The Designated Newt Sites are located approximately 200m west of the nearest Array Area, but are separated by the A483 dual carriageway, a busy road which is considered to present a barrier to great crested newt dispersal. This is supported by nearby ponds within or adjacent to the Array Areas (e.g., pond P31, P37) being absent of great crested newt, despite P31 being located in relative proximity (c. 290m) from the Designated Newt Sites. As such, no impacts to the Johnstown Newt Sites SAC or Stryt Las a'r Hafod SSSI are anticipated from works within the Array Areas, and potential impacts relate to the Cable Route only.

5.7.9 Two Cable Route options connecting to the Legacy National Grid Substation are proposed, both of which route immediately adjacent to the Designated Newt Sites. Works will be confined to the existing roadways only and will not directly affect habitats within the Designated Newt Sites. Measures within the oCEMP (appended to the ES) (Primary Mitigation measure), including fencing, signage and employment of an ECoW, will ensure no encroachment beyond the Site boundary. As such, no suitable habitat that could support great crested newt will be affected by the Proposed Development.

5.7.10 Cabling will involve the excavation of a trench approximately 0.7m width to between 1.1 and 1.6m depth, within which the cabling will be located. It is anticipated that works would be broken into short sections, each of which would be completed within a number of days after which the trench would be closed and made good. Nonetheless, trenches while open present a risk of entrapment to individual great crested newt associated with the Designated Newt Sites.

5.7.11 As a matter of good practice, the following reasonable measures are included in the oCEMP:

i) Where left open overnight, trenches will be required to be backfilled or covered overnight. This will serve to ensure great crested newt (or other fauna) do not become trapped within trenches.
ii) Prior to commencement of works each morning, trenches will be checked for presence of great crested newt (and other fauna).
iii) An ECoW holding a Natural Resources Wales licence (or an accredited agent) to disturb great crested newt will be retained for the duration of the Proposed Development, with details made available to all site staff; in the event a great

crested newt is found the ECoW would be contacted to advise on any further measures to be implemented.

5.7.12 Following the above initial mitigation measures, no impacts on mobile qualifying features of Johnstown Newt Sites SAC or Stryt Las a'r Hafod SSSI are anticipated and the Proposed Development would result in **negligible** impacts on receptors of international and national importance, respectively.

Non-Statutory Designated Sites for Nature Conservation

5.7.13 Both Yorke's Dingles and Well Wood WSW and Oak Wood WSW are located partially within and immediately adjacent to the CAA, while Hopyard Wood WSW is located immediately adjacent to the EAA.

5.7.14 Off-Site habitats will be protected from both physical encroachment and indirect impacts (e.g., pollution) through measures within the oCEMP, including fencing, signage, sensitive lighting design and the following of best practice and regulatory guidance in relation to pollution prevention. The first phase of works would be the erection of boundary fencing, with all subsequent works contained within these. This would ensure no accidental encroachment beyond the Site boundary to adjacent habitats, including Hopyard Woods and off-Site areas of Yorke's Dingles and Well Wood WSW and Oak Wood WSW.

5.7.15 It should also be noted that regular felling of trees (not associated with Proposed Development) was observed within part of Yorke's Dingles and Well Wood WSW, and as such this site is unlikely to be in good condition.

5.7.16 Following the above initial mitigation measures, no impacts to Non-statutory Designated Sites for Nature Conservation are anticipated and construction of the Proposed Development would result in **negligible** impacts on receptors of county importance.

Priority and Notable Habitats

5.7.17 All ancient woodland and ancient or veteran trees will be retained and protected in line recommendations within BS:5837, including buffer zones of up to 15m for ancient woodland and either 15 times the tree diameter or 5m from the canopy edge (whichever is larger) for ancient or veteran trees. These initial mitigation measures are outlined in the oCEMP.

5.7.18 A detailed assessment as to the priority status of ponds has not been undertaken, however following a precautionary approach, it is assumed that all ponds present within the Site may achieve priority status. All ponds within the Site will be retained and protected throughout construction of the Proposed Development, with best practice pollution prevention measures outlined within the oCEMP.

5.7.19 With the exception of small scale removal / widening required to permit Site access, hedgerow and field boundary habitats within the Site will be retained and protected with suitable buffer zones implemented through the oCEMP.

5.7.20 Given the retention of priority habitats, with the exception of small scale, largely temporary, hedgerow removal consistent with existing accesses, the Proposed Development is anticipated to result in **negligible** impacts to priority habitats of up to county importance.

Other on-Site Habitats

5.7.21 Habitats within the Site generally comprise agricultural habitats comprising arable and pasture. Arable habitats are common and widespread both locally and nationally and provide negligible value for biodiversity, however field boundary and margin habitats offer value for a range of species and can form important networks of habitat to enable a wide range of species to traverse the landscape. Additionally, the Site also encompasses areas of scrub, non-priority ponds and woodland of higher value to biodiversity.

5.7.22 Higher value habitats such as boundary woodland, hedgerows and associated ditches will be retained and protected throughout construction with the implementation of buffer zones in the oCEMP.

5.7.23 Outside of these buffer zones, the majority of agricultural habitats will be subject to permanent loss and / or subject to temporary disturbance during construction.

5.7.24 Given the retention of high value habitats, with the Proposed Development mostly located within low value arable land, the construction is anticipated to result in a **minor adverse** effect to on-site habitats of Site importance that is **not significant**.

5.7.25 Implementation of the landscape design is discussed in relation to operational impacts.

Barn Owl

5.7.26 Habitats within the site are generally sub-optimal for barn owl, comprising arable and grazing land, lacking tussocky grassland margins that offer preferred hunting grounds for barn owl. Localised habitat of greater suitability may present some foraging opportunities.

5.7.27 No barn owl nests have been identified within the Site, however a single barn owl boxes showing no signs of occupation was identified approximately 35m outside of the CAA and trees with potentially suitable cavities are present. Mature trees will largely be retained and protected throughout works as identified within the agricultural impact assessment, however works are required to one tree group and 22 hedge sections across the Site. Surveys have not identified suitable barn owl nesting habitat at these locations.

5.7.28 Works may present an increase in noise and anthropogenic activity within the site, which could result in disturbance to nesting barn owl. As such pre-construction surveys will be undertaken through the oCEMP to identify any nests that are active at the point of construction. Should an active nest be identified, suitable mitigation measures would be implemented to ensure legal compliance, which may include buffer zones, delaying timing of works until the nest is no longer active (i.e., chicks have fledged) or if no suitable alternatives are possible obtaining a licence from NRW.

5.7.29 As such, considering the implementation of initial mitigation measures impacts to barn owl foraging or nesting within the Site are considered to be **negligible**.

Foraging and Commuting Bats

5.7.30 The most important habitats within the Site for foraging and commuting bats, including hedgerow and watercourses will be retained and protected with appropriate buffer zones, other than minor removal required to permit Site access, which would not be of a sufficient scale to disrupt or fragment bat flight patterns.

5.7.31 The oCEMP includes for sensitive lighting, which will ensure that features of value for foraging and commuting bats are not subject to excessive additional lighting during construction of the Proposed Development.

5.7.32 Given the implementation of initial mitigation measures (Primary Mitigation) and best practice avoidance and mitigation measures (Tertiary Mitigation), construction of the

Proposed Development is anticipated to result in **negligible** impacts to foraging and commuting bats of up to county importance.

Great Crested Newt

5.7.33 No ponds within the Site or immediate surrounds were identified with presence of great crested newt, however given access limitations and known presence within the wider landscape, the species could be present within the Site following a precautionary approach.

5.7.34 Great crested newts associated with the Johnstown Newt Sites SAC and underlying Stryt Las a'r Hafod SSSI will be protected in line with measures previously outlined in relation to statutory designated sites for nature conservation above.

5.7.35 All ponds within the Site will be retained and protected throughout construction of the Proposed Development, with best practice pollution prevention measures outlined within the oCEMP (a Primary Mitigation measure).

5.7.36 With the exception of small scale removal / widening required to permit Site access, hedgerow and field boundary habitats within the Site, which offer most suitable habitat for great crested newt, will be retained and protected with suitable buffer zones implemented through the oCEMP.

5.7.37 As a precaution to protect individual great crested newt (and other amphibians), vegetation clearance works of suitable habitat will be undertaken following Reasonable Avoidance Measures (RAMs) as detailed within the oCEMP.

5.7.38 Given the implementation of best practice avoidance and mitigation measures (Primary and Tertiary Mitigation measures), construction of the Proposed Development is anticipated to result in **negligible** impacts to great crested newts of up to county importance.

Otter

5.7.39 No watercourses considered suitable to support otter are located within the Array Areas, with best practice pollution measures (tertiary mitigation) to be implemented to protect off-Site watercourses.

5.7.40 The only watercourse in proximity to the Array Areas considered to potentially to support otter is the Foss, located approximately 10m east of the EAA. The Foss was

subject to a detailed inspection for otter field signs as part of the Extended UKHab surveys in May 2025 with no otter field signs identified. Additionally, no ponds that could be used for foraging otter and that could also be affected by works located within 400m of the Foss. It is acknowledged that otter on occasion utilise ponds in excess of this distance, but given the lack of field signs at the Foss as well as the distance to ponds this is considered unlikely to regularly occur at this location.

5.7.41 The Cable Route crosses the Pentre-bychan Brook which is known to support otter. The cable route is wholly located within existing roadway and is expected to be short term in nature, lasting a number of days in any given location. As such due to regular road traffic noise any otter present along the Pentre-bychan Brook are considered likely to be habituated to baseline levels of disturbance comparable to cabling works and so unlikely to be impacted.

5.7.42 Given the absence of suitable habitat within the Site with connectivity to watercourses and implementation of best practice avoidance and mitigation measures (Primary and Tertiary Mitigation measures) to avoid impacts to watercourses, construction of the Proposed Development is anticipated to result in **negligible** impacts to otter of up to county importance.

Operational Phase

Non-Statutory Designated Sites for Nature Conservation

5.7.43 During operation of the Proposed development there would be no requirement for vegetation clearance associated with Yorke's Dingles and Well Wood WSW, Oak Wood WSW or Hopyard Wood WSW which would be retained and protected through the lifetime of the Proposed Development. Routine management of the solar arrays would not require any substance that may cause pollution or result in production of contaminants such as dust.

5.7.44 As such, no impacts to Non-statutory Designated Sites for Nature Conservation are anticipated and the operation of the Proposed Development would result in **negligible** impacts on receptors of county importance.

Priority and Notable Habitats

5.7.45 The landscape design includes the planting of circa. 3.5km of native species hedgerow which will be managed for biodiversity interest for the lifetime of the Proposed Development.

5.7.46 Overall it is considered through the implementation of the landscape proposals that the extent and quality of priority habitats within the Site will be enhanced, resulting in a **minor beneficial** effect.

Other on-Site Habitats

5.7.47 The landscape proposals include the seeding of species-diverse grassland outside of the fence lines, grazing pasture within the fence lines, and the planting of woodland and individual trees.

5.7.48 Such habitats will increase the intrinsic biodiversity value of the Site. Further, habitats will be relatively undisturbed beyond routine maintenance and necessary habitat management.

5.7.49 Additionally, during operation of the Proposed Development there will be a cessation of spraying of herbicides, pesticides and nutrient enrichment associated with agricultural practices.

5.7.50 Operation of the Proposed Development will have a **minor beneficial** effect on on-site habitats of Site value that is **not significant**.

Barn Owl

It is not anticipated that there would be any adverse impacts to barn owl through operation of the Proposed Development. Maintenance would require only infrequent visits likely comparable with existing agricultural use and therefore it is considered that the landscape proposals, including species diverse grassland are likely to increase abundance of small mammal prey and so offer suitable foraging habitat for barn owl in line with Barn Owl Trust guidance[11].

Foraging and Commuting Bats

[11] https://www.barnowltrust.org.uk/barn-owls-ground-mounted-solar-panels/

5.7.51 Emerging evidence (Tinsley *et al*, 2023[12]) has suggested that foraging and commuting bats may be affected by the presence of solar arrays. Measures outlined in Tinsley *et al*, including maintaining boundary habitats and including planting to improve foraging resources have been incorporated into the landscape proposals of the Proposed Development.

5.7.52 It is considered that the landscape proposals, including species diverse grassland, hedgerow planting and woodland planting will enhance the landscape for both foraging and commuting bats. This will be achieved by providing greater connectivity at a landscape scale through linear features, and increasing the invertebrate prey resource through increased habitat quality and diversity of a previously homogenous landscape.

5.7.53 Given the initial mitigation in the landscape proposals, the Proposed Development will have a **minor beneficial** impact on the foraging and commuting bat assemblage of up to County value that is **not significant**.

Decommissioning Phase

5.7.54 Site baseline conditions are likely to change over the operational lifetime of the Proposed Development and prediction of future conditions at this point is considered unreliable in terms of assessing likely effects on biodiversity associated with the decommissioning phase.. However, potential impacts from decommissioning are considered to be similar to those already described in relation to the construction phase, namely direct and indirect disturbance, temporary / permanent habitat loss and vegetation removal. Following decommissioning, it is considered likely that the land would revert to its baseline conditions, although some habitats created through the landscape design would likely be retained.

5.7.55 Any impacts arising from decommissioning are however likely to be considered capable of being reversed within a very short period of time. Updated ecological desk study and species-specific surveys will likely be necessary prior to decommissioning in order to record the presence of protected and notable species and habitats,

[12] *Tinsley, E., Froidevaux, J. S. P., Zsebők, S., Szabadi, K. L., & Jones, G. (2023). Renewable energies and biodiversity: Impact of ground-mounted solar photovoltaic sites on bat activity. Journal of Applied Ecology, 60, 1752–1762. https://doi.org/10.1111/1365-2664.14474*

identify potential effects and any necessary protection and mitigation measures in order to comply with planning policy and wildlife legislation applicable at the time.

5.8 Cumulative Effects

5.8.1 Cumulative effects are assessed only for ecological features for which the potential for an adverse effect (either significant or non-significant) has been identified as a result of either construction or operation of the Proposed Development. Potentially adverse effects were identified in relation to on-Site habitats during construction.

5.8.2 It is assumed that if granted consent, any cumulative scheme would include standard best practice and regulatory pollution prevention measures.

5.8.3 In the event construction of the Proposed Development and any of the identified cumulative schemes is concurrent no cumulative impacts to on-Site habitats are anticipated by virtue of separation distances involved (c. 480m at the closest point) and mitigation measures contained within the oCEMP.

5.9 Further Mitigation

5.9.1 No further mitigation is required to avoid or otherwise reduce potentially significant adverse effects from the Proposed Development.

5.10 Residual Effects

5.10.1 The construction and operation of the Proposed Development will not result in any significant residual adverse effects upon ecological receptors, including statutory or non-statutory sites designated for nature conservation.

5.10.2 During construction, the Proposed Development may result in non-significant short term and temporary minor adverse effects to on-site habitats as a result of disturbance and small scale removal associated with construction.

5.10.3 Through operation, the Proposed Development will result in a minor beneficial effect to priority habitats (hedgerows), on-site habitats and foraging and commuting bats through the implementation of the landscape design.

5.10.4 There will be no additional residual adverse effects upon ecological receptors.

5.11 Enhancement

5.11.1 It is considered that the landscape design provides an overall enhancement to wildlife within the Site.

5.11.2 To further enhance the Site for wildlife the Proposed Development will include the following specific enhancement measures:

iv) Minimum 30 bird boxes to be installed on suitable trees within the Site;
i) Minimum two owl boxes to be installed on suitable trees within the Site;
ii) Minimum 30 bat roost boxes to be installed on suitable trees within the Site; and,
iii) Minimum five hibernacula/ log piles to be created in proximity to ponds.

Specific details of enhancement measures including locations, specifications and monitoring/ maintenance requirements would be included within the LEMP.

5.12 Conclusions

5.12.1 Accounting for enhancement measures outlined above the Proposed Development would result in no adverse effects to any ecological receptor.

5.12.2 The proposed development would result in minor beneficial effects to priority habitats, on-Site habitats, foraging and commuting bats, roosting bats and barn owl.

5.12.3 It is anticipated that the LEMP would be secured by condition, to secure the enhancement proposals shown on ES Figures 1.4a-c.