Chapter 9: Ecology

Glyn Taff Solar Farm

27/02/2025

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Contents

EXECUTIVE SUMMARY

9.1. An Ecological Chapter has been produced for the creation of a solar farm, with an installed capacity of approximately 39.9 megawatts (MW) and associated infrastructure (the "Proposed Development") on lands at Bryntail Farm, Bryn Tail Lane, Pontypridd (the "Application Site"). Baseline information within this Chapter comprises an initial desk-based study, supported by a range of onsite surveying, comprising: Phase 1 habitat; Protected Species Scoping; and Breeding Bird surveys, which have been outlined within the relevant sections of this report or appendices. An impact assessment has been carried out and mitigation suggested to avoid, reduce and minimise any potential residual impacts, with enhancements outlined that will produce a significant overall net benefit to the biodiversity value of the local area as a resulting of the Proposed Development (please also see Appendix 9D: Net Benefit for Biodiversity Report and Landscape and Ecological Management Plan).

9.2. The desk-based assessment identified that within 20km of the Application Site boundary there are six internationally designated sites. Within 5km of the Application Site there are four nationally designated sites. Within 2km of the Application Site there are four non-statutory Sites of Importance for Nature Conservation (SINC). Two of the SINCs (Cyldach Vale and Mynydd Eglwysilane, North of Senghanydd) are located immediately adjacent to the Application Site, and Ecologically and Hydrologically connected to the Proposed Development. With the implementation of appropriate best practice and industry standard measures, identified within this Chapter **no likely significant effects were identified on any designated site**.

9.3. The Phase 1 habitat surveying undertaken in June 2021, August 2023, and June 2024 identified eighteen habitat types within the Application Site boundary and a suitable peripheral boundary buffer, which is described as the Ecological Survey Area ("ESA"). **None of the habitats beneath the development footprint are conservation priority habitats**.

9.4. The presence of, or potential presence for, protected or notable species was assessed and found that precautionary measures for badgers, bats, breeding birds, dormice, invasive flora, and reptiles are recommended to support the Proposed Development. When these measures are considered alongside the considerate site design, best practice construction, and industry standard pollution prevention measures; potential impacts from the Proposed Development **will not be significant** and there will be **no significant negative effects** upon protected or notable species.

9.5. The accompanying **Appendix 9D – Net Benefit for Biodiversity Report**, and **Figures 4.22a-e: Landscape and Ecological Management Plan** proposes habitat creation and enhancement measures centred around the implementation of multiple types of wildflower grasslands, species rich scrub and hedgerow and tree planting across over 80% of the Application Site boundary. With the implementation of this, **the potential of the local area to support local wildlife will increase significantly**.

INTRODUCTION

Background

9.6. Neo Environmental Ltd has been appointed by Renantis UK Limited (the "Applicant") to undertake an Ecology Chapter, as part of an Environmental Impact Assessment for a proposed solar farm (the "Proposed Development") on lands at Bryntail Farm, Bryn Tail Lane, Pontypridd (the "Application Site"). Please see **Figure 1** for the layout of the Proposed Development.

Development Description

9.7. Installation, operation and subsequent decommissioning of a renewable energy scheme comprising ground mounted photovoltaic solar arrays together with substation compound, transformer stations, internal access track, landscaping, biodiversity measures, boundary fencing, security measures, CCTV posts, monitoring house, storage containers access improvement and ancillary infrastructure. The solar arrays will have a combined capacity of up to 39.9MWp.

Site Description

9.8. The area of the Proposed Development (the "Application Site") lies at an elevation of approximately 140m – 330m AOD and covers a total area of c. 70.9 hectares. It is centred around Bryntail Farm at approximate National Grid Reference (NGR) E 309333, N 189800. It is south of Eglwysilan Road. The site extends west of Bryntail Farm and east of the Bryn Tail Lane. The site is within the administrative area of Rhondda Cynon Taf Council.

9.9. The site comprises 38 agricultural fields that are currently in use for livestock farming. It is on the east side of the Taff Valley c. 1.6 km east of Ynysangharad War Memorial Park. Access will be gained from the Bryn Tail Lane.

9.10. The site is adjacent to the Twyn Hywel Energy Park a consented wind farm including 14 turbines (DNS/3272053).

Scope of the Assessment

9.11. The aims of this report are to:

- Examine the potential for connectivity between the Proposed Development and any international or national statutory, and local non-statutory, designated sites;
- Determine the main habitat types within and immediately adjacent to the Application Site;
- Assess the habitats within the Application Site and an appropriately sized peripheral buffer zone for the actual or potential presence of any protected or notable species and for the presence of non-native invasive species;
- Identify any actual or potential habitat or species constraints pertinent to the development of the Application Site, including potential ornithological receptors;
- Assess the potential impacts of the Proposed Development during the construction, operation and decommissioning phases, both singularly and in-combination with other developments;
- Determine how the Proposed Development can, by way of stipulated mitigation measures, avoid, reduce and minimise or, if necessary, compensate for impacts on these actual or potential constraints during the various phases of the Proposed Development; and
- Identify potential ecological opportunities for the Proposed Development to enhance and add to the biodiversity value within the site and for the local area.

ADOPTED DESIGN PRINCIPLES

9.12. Where possible, measures have been implemented as part of the iterative design process to prevent the Proposed Development affecting sensitive ecological features. The evaluation of the ecological baseline has enabled the inclusion of the following integral design measures:

- Hedgerow (5m)
- Trees (1-2m from the crown)
- Buffer from drainage ditches (2m)
- Buffer from watercourse (5m)
- Buffer from stone walls (5m)

- Buffer from Vally Mire (5m)
- Site Of Importance for Nature Conservations Buffer (15m)

Statement of Authority

9.13. The assessment has been conducted by qualified ecologists. All work has been carried out in line with the relevant professional guidance: Chartered Institute of Ecology and Environmental Management's ("CIEEM") Guidelines for Ecological Impact Assessment ("EcIA") in the UK and Ireland[1].

9.14. Steven Pagett BSC (Hons), who co-authored this document, is an Ecologist/Ornithologist with 13 years of consultancy experience conducting ecological baseline and specialist species surveys, together with associated assessment and mitigation strategies, to support Planning Applications and Environmental Impact Assessments (EIA). The sectors Steven has worked in includes Minerals/Quarry Industry Projects, Residential Developments, Renewables, Landfill Projects, Supermarket Developments and Large Infrastructure Projects for Road, Rail and Metro. Specific expert in ornithological species identification and survey techniques, including Breeding Birds, Wintering Birds, Raptor Surveys and Breeding Wader Surveys. Steven also has vast experience conducting bat activity and roost surveys, undertaking Great Crested Newt Surveys, Reptile Surveys, Badger Surveys, Butterfly Surveys, Water Vole and Otter Surveys and Dormouse Surveys. Steven also has over 10 years' experience conducting Phase 1 Habitat / PEA Surveys for all the above sectors. I have now adapted these surveys to incorporate the UK Vegetation Classification Methodology to support Biodiversity Net Gain (BNG) Assessments using the latest Defra Metric. This includes having the required botanical identification skills to conduct onsite Condition Assessments. Steven holds licenses for great Crested Newts, Bats, Dormice, Barn Owls and Schedule 1 birds.

9.15. Thomas Hill MEnv (Hons), who co-authored this document, is a Principal Ecologist at Neo Environmental, has over six years' experience in the industry. The portfolio of projects he has contributed to vary in scale from small residential adjustments, all the way to national level infrastructure projects and large renewable energy schemes. His office experience consists of multi-disciplinary collaboration, data analysis, project management, and reporting writing numerous document types including Species Specific Reports, Preliminary Ecological Appraisal Reports, Ecological Impact Assessments, and Net Gain Assessments. Regarding fieldwork Thomas is skilled in a variety of survey methodologies including Phase 1, UK Habitat Classification, Habitat Condition Assessment, Great Crested Newt ("GCN") Habitat Suitability Index Assessment, Bat Emergence/Re-entry, Bat Transect, Otter and Water Vole, and Badger/Otter Pre-commencement alongside other Ecological Clerk of Works assignments. In addition, Thomas is an accredited agent for GCN work and has successfully inputted his expertise into relevant requests for further information and addressed comments as a part of the planning process.

[1] CIEEM (2022) Guidelines for Ecological Impact Assessment in the UK and Ireland. Terrestrial, Freshwater, Coastal and Marine. Version 1.2.

9.16. The fieldwork for this assessment was undertaken by Avian Ecology Ltd, who were appointed by the Applicant.

LEGISLATION AND PLANNING POLICY CONTEXT

International Agreements

9.17. International agreements relevant to the Proposed Development is outlined within **Table 9-1** below.

Table 9-1: Relevant International Agreements

Directive	Main Provisions
Bern Convention	The Bern Convention[2] came into force in 1982, with the principal aims to ensure conservation and protection of wild plant and animal species and their natural habitats (listed in Appendices I and II of the Convention), to increase cooperation between contracting parties, and to regulate the exploitation of those species (including migratory species) listed in Appendix III.
Bonn Convention	The Bonn Convention[3] came into force in 1985. Contracting Parties work together to conserve migratory species and their habitats by providing strict protection for endangered migratory species (listed in Appendix I of the Convention), concluding multilateral Agreements for the conservation and management of migratory species which require or would benefit from international cooperation (listed in Appendix II), and by undertaking cooperative research activities.
Ramsar Convention	The Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention)[4] came into force in 1975. It is an international treaty for the conservation and wise use of wetlands.
Convention on Biological Diversity	The Habitats Directive was a major contribution by the European Community at the 1992 Rio Earth Summit towards realising the Convention on Biological Diversity, which was agreed at that Summit. The Habitats Directive is the short name for European Union Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora. The Directive led to the establishing of European sites and setting out how they should be protected, it also extends to other topics such as European protected species.

[2] Available at: https://www.coe.int/en/web/bern-convention

[3] Available at: https://www.cms.int/en/convention-text

[4] Available at: https://www.ramsar.org/about-the-convention-on-wetlands-0

National Legislation and Planning Policy

Future Wales: The National Plan 2040

9.18. Future Wales is the Welsh national development framework, setting the direction for development to 2040. It is a development plan with a strategy for addressing key national priorities through the planning system.

9.19. Policy 9 of Future Wales safeguards areas for the purposes of improving the resilience of ecological networks and ecosystems services, to identify areas for the provision of green infrastructure and to secure biodiversity enhancement (net benefit). Further:

9.20. 'In all cases, action towards securing the maintenance and enhancement of biodiversity (to provide a net benefit), the resilience of ecosystems and green infrastructure assets must be demonstrated as part of development proposals through innovative, nature-based approaches to site planning and the design of the built environment.'

9.21. Policy 17 (Renewable and Low Carbon Energy and Associated Infrastructure) states: '[Large-scale wind and solar] proposals should demonstrate that they will not have an unacceptable adverse impact on the environment. Proposals should describe the net benefits the scheme will bring in terms of social, economic, environmental and cultural improvements to local communities.'

9.22. Policy 18 (Renewable and Low Carbon Energy Developments of National Significance) states that such projects will be permitted subject to: Policy 17, no adverse effects on international sites, no unacceptable adverse impacts on national sites, and proposals for enhancements to secure net biodiversity benefit.

Planning Policy Wales

9.23. Wales (PPW)1 sets out the land use planning policies of the Welsh Government. The primary objective of PPW is to ensure that the planning system contributes towards the delivery of sustainable development and improves the social, economic, environmental and cultural well-being of Wales.

9.24. Section 6.4 of PPW relates to biodiversity and ecological networks. Paragraph 6.4.3 of PPW states that: "The planning system has a key role to play in helping to reverse the decline in biodiversity and increasing the resilience of ecosystems, at various scales, by ensuring appropriate mechanisms are in place to both protect against loss and to secure enhancement."

9.25. It goes on to state that: "Development plan strategies, policies and development proposals must consider the need to:

Support the conservation of biodiversity, in particular the conservation of wildlife and habitats;

Ensure action in Wales contributes to meeting international responsibilities and obligations for biodiversity and habitats;

Ensure statutorily and non-statutorily designated sites are properly protected and managed;

Safeguard protected and priority species and existing biodiversity assets from impacts which directly affect their nature conservation interests and compromise the resilience of ecological networks and the components which underpin them, such as water and soil, including peat; and 1 https://gov.wales/planning-policy-wales

secure enhancement of and improvements to ecosystem resilience by improving diversity, condition, extent and connectivity of ecological networks."

Section 6.4 goes on to set out policy in respect of:

Biodiversity and Resilience of Ecosystems Duty, as set out in Section 6 of the Environment (Wales) Act 2016;

Designated Sites, including:

Sites of Special Scientific Interest;

Special Protection Areas, Special Areas of Conservation and Ramsar Sites;

Proposed Special Areas of Conservation, Special Protection Areas and Ramsar sites; and

Non-statutory Designations. Protected Species; and Trees, Woodlands and Hedgerows.

9.26. PPW is supplemented by a series of Technical Advice Notes (TANs), Welsh Government Circulars, and policy clarification letters, which together with PPW provide the national planning policy framework for Wales. TAN 55 deals with Nature Conservation and Planning and states in paragraph 2.4:

"When considering policies and proposals in local development plans and when deciding planning applications that may affect nature conservation, local planning authorities should:

- Pay particular attention to the principles of sustainable development, including respect for environmental limits, applying the precautionary principle, using scientific knowledge to aid decision making and taking account of the full range of costs and benefits in a long term perspective;
- Contribute to the protection and improvement of the environment, so as to improve the quality of life and protect local and global ecosystems, seeking to avoid irreversible harmful effects on the natural environment;
- Promote the conservation and enhancement of statutorily designated areas and undeveloped coast;

- Ensure that appropriate weight is attached to designated sites of international, national and local importance;
- Protect wildlife and natural features in the wider environment, with appropriate weight attached to priority habitats and species in Biodiversity Action Plans;
- Ensure that all material considerations are taken into account and decisions are informed by adequate information about the potential effects of development on nature conservation;
- Ensure that the range and population of protected species is sustained;
- Adopt a step-wise approach to avoid harm to nature conservation, minimise unavoidable harm by mitigation measures, offset residual harm by compensation measures and look for new opportunities to enhance nature conservation; where there may be significant harmful effects local planning authorities will need to be satisfied that any reasonable alternative sites that would result in less or no harm have been fully considered."

Environment (Wales) Act 2016

9.27. The Environment (Wales) Act puts in place the legislation needed to plan and manage Wales' natural resources in a more proactive, sustainable and joined-up way. Part 1 Section 6 of the Act introduces a new biodiversity duty, which replaces and enhances the biodiversity duties set out in the NERC Act 2006 and requires public authorities to seek to maintain and enhance biodiversity in the exercise of their functions and in so doing promote the resilience of ecosystems. Section 7 of the Act lists living organisms and types of habitat in Wales, considered to be of key significance to sustain and improve biodiversity in relation to Wales.

Legislative context

The relevant legislative context includes the following:

- The Conservation of Habitats & Species Regulations 2019[5];
- The EC Habitats Directive (Directive 92/43/EEC)[6] as translated into UK law by The Conservation of Habitat and Species Regulations 2019;

5 HMSO. The Conservation of Habitats and Species Regulations 2017 – No.1012.

6 EC (1992) Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora (The EC Habitats Directive)

- The EC Birds Directive (Directive 79/409/EEC)[7]; as translated into UK law by The Conservation of Habitat and Species Regulations 2017;
- The Countryside and Rights of Way Act (CRoW) 2000;
- Wildlife and Countryside Act 1981 (as amended) (WCA)[8];
- Natural Environment and Rural Communities Act 2006 (NERC)[9];
- The Hedgerow Regulations 1997[10]; and
- The Protection of Badgers Act 1992[11].

Conservation of Habitats & Species Regulation 2019

9.28. The Conservation of Habitats & Species Regulation 2017 transposes the European Council Directive 92/43/EEC (EC Habitats Directive) into national law. The purpose of this legislation is to provide protection for natural habitats, wild flora and fauna of international importance. A number of species are afforded wide-ranging protection under Schedule 2 of the Regulations.

9.29. Part 2 of the Regulations affords protection to sites of International importance for habitats or species which rely on these habitats, such as: RAMSAR sites; SAC (special areas of conservation), and SPA (special protection areas). Part 3 of the Regulations provides protection for species (plant and animals) as listed on Schedules 2 and 4 that are considered to be of importance. Part 5 of the Regulations provides a mechanism by which a licence can be obtained for operations that would otherwise be unlawful under the Regulations.

The Wildlife and Countryside Act 1981 (as amended)

9.30. The Wildlife and Countryside Act 1981 (as amended) provides special protection of selected species. Under Section 1(1) and 1(2), all British bird species, their nests and eggs (excluding some pest and game species) are protected from intentional killing, injury or damage. Under Sections 1(4) and 1(5), special penalties are applied to bird species included in Schedule 1 of the Act and protection is extended for these species to disturbance whilst building, in or near a nest and disturbance to dependent young. Schedule 5 provides special protection animal species other than birds, which are protected through paragraph 9(4) of the Act, against damage to "*any structure or place which any wild animal (included in the schedule) uses for shelter and protection*" and against disturbance whilst in such places. The Countryside and

7 EC (1979), Council Directive 79/409/EEC on the Conservation of wild birds (EC Birds Directive).

8 HMSO. The Wildlife and Countryside Act 1981 (as amended).

9 HMSO. (2006), Natural Environment and Rural Communities Act.

10 HMSO. The Hedgerows Regulations 1997.

11 HMSO. The Protection of Badgers Act 1992 (as amended).

Rights of Way Act 2000 (CRoW Act) amends Section 1(5) of the Wildlife and Countryside Act 1981 by introducing a new offence of "reckless" disturbance to protected wildlife and making certain offences punishable by imprisonment.

9.31. Invasive species are covered under Schedule 9 of the Act, which makes it illegal to spread any part of a listed plant. Part 2 of the Act provides protection for areas of the countryside recognised for their nature conservation or geological value, including Sites of Special Scientific Interest (SSSIs) and National Parks.

Natural Environment and Rural Communities (NERC) Act 2006

9.32. The NERC Act provides protection for habitats or species that are considered to be of principal importance to biodiversity. The legislation requires public authorities, including local planning authorities, to conserve biodiversity when exercising their functions. A list of habitats/species of principal importance, based on the former UK Biodiversity Action Plan (BAP) lists of priority habitats and species, have been produced by the Secretary of State in consultation with Natural England.

The Protection of Badgers Act 1992

9.33. The Protection of Badgers Act 1992 provides protection to badgers and their setts. This legislation is primarily concerned with animal welfare issues and the need to protect badgers from activities such as baiting and deliberate harm. The Act makes it an offence to:

- Wilfully kill, injure, take, possess or cruelly ill-treat a badger (*Meles meles)*, or attempt to do so; and
- to intentionally or recklessly interfere with a sett (this includes disturbing badgers whilst they are occupying a sett, as well as damaging or destroying a sett or obstructing access to it).

The Hedgerow Regulations 1997

9.34. The Hedgerow Regulations make provision for the protection of important hedgerows in England and Wales. The Regulations apply to hedgerows described in regulation 3 (in particular to hedgerows which are 20 metres or more long or which meet another hedgerow at each end and which, in each case, are on or adjacent to land used for certain specified purposes).

9.35. Before removing any hedgerow, including a stretch of hedgerow, to which these Regulations apply the owner (or in certain cases a relevant utility operator) must notify the local planning authority (regulation 5). The hedgerow may then not be removed if the local planning authority serves a hedgerow retention notice, which may be done only if the hedgerow is important according to the criteria set out in regulation 4 and Schedules 1 to 3. The

requirement for the owner (or utility operator) to notify the local planning authority does not apply to the permitted work described in regulation 6 (including for carrying out development for which planning permission has been granted or is deemed to have been granted).

Other Guidance - Birds of Conservation Concern

9.36. Leading governmental and non-governmental conservation organisations in the UK have reviewed the population status of 244 bird species regularly found in Britain and have produced: Birds of Conservation Concern 4: the population status of birds in the UK, Channel Islands and Isle of Man.

9.37. Birds are placed into one of three lists - red, amber or green and although these listings offer no further legal protection, they are meant to guide conservation action for the individual species. The listings reflect an individual species' global and European conservation status as well as that within the UK and additionally measure the importance of the UK population in international terms.

Guidance Documents

BS 42020:2013 Biodiversity

9.38. The British Standards Institute has published *BS 42020:2013 Biodiversity*[12]*. Code of Practice for Planning and Development* which offers a coherent methodology for biodiversity management. This document seeks to promote transparency and consistency in the quality and appropriateness of ecological information submitted with planning applications and applications for other regulatory approvals. This document cites CIEEM's EcIA Guidelines as the acknowledged reference on EcIA reporting, as such where relevant the two should be used in tandem.

CIEEM Guidelines

9.39. CIEEM have produced guidance on Ecological Impact Assessment (EcIA) and Ecological Report Writing[13].

9.40. EcIA is a process of identifying, quantifying and evaluating potential effects from activities such as those related to development on habitats, species and ecosystems. The impact assessment within this report follows the steps set out in Table 9-2 below.

Table 9-2: EcIA Process

Task	Description

[12] BS 42020:2013 Biodiversity. Code of practice for planning and development

[13] CIEEM (2017) Guidelines for Ecological Report Writing

Scoping	Determining the matters to be addressed in the EcIA, including consultation to ensure the most effective input to defining the scope. Scoping is an ongoing process – the scope of the EcIA may be modified following further ecological survey/research and during impact assessment.
Establishing the baseline	Collecting information and describing the ecological conditions in the absence of the proposed project, to inform the assessment of impacts.
Important ecological features	Identifying important ecological features (habitats, species and ecosystems, including ecosystem function and processes) that may be affected, with reference to a geographical context in which they are considered important.
Impact assessment	An assessment of whether important ecological features will be subject to impacts and characterisation of these impacts and their effects. Assessment of the significance of the residual ecological effects of the project (those remaining after mitigation), including cumulative effects.
Avoidance, mitigation, compensation and enhancement	Incorporating measures to avoid, reduce and compensate negative ecological impacts and their effects, and the provision of ecological enhancements. Monitoring impacts and their effects. Evaluation of the success of proposed mitigation, compensation and enhancement measures.

9.41. The aims of the EcIA guidelines are to:

- promote good practice;
- promote a scientifically rigorous and transparent approach to EcIA;
- provide a common framework to EcIA in order to promote better communication and closer cooperation between ecologists involved in EcIA; and
- provide decision-makers with relevant information about the likely ecological effects of a project.

Natural Resources Wales

9.42. Natural Resources Wales have published standing advice for various protected species and habitats in Scotland. The advice covers accepted and recommended survey, avoidance, mitigation, and compensation standards for development affecting these ecological features. These advice documents have been borne in mind where relevant to the Proposed Development.

Bat Conservation Trust (BCT)

9.43. The Bat Conservation Trust has published '*Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edition)*'[14]. This publication aims to provide good practice guidelines in relation to designing and undertaking bat surveys in the United Kingdom (UK), analysing the data collected during those surveys and writing survey reports. The guidelines relate to professional bat surveys carried out to assess how proposed activities may impact bats. They aim to raise standards and increase the consistency of this type of work and ultimately lead to a greater understanding of bats and improvements in their protection and conservation.

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

METHODOLOGY

Zone of Influence

9.44. The Zone of Influence ("ZoI") is the area encompassing all predicted negative ecological effects from a Proposed Development. This is informed by the habitats present within the Application Site and the nature of the Proposed Development. Due to the scale and nature of the Proposed Development, it is considered that the ZoI outlined in **Table 9-3** below was appropriate for the gathering of information to inform the desk study.

Table 9-3: Zone of Influence for Ecological Features

ECOLOGICAL FEATURE	Zone of Influence (ZoI)
International statutory designations	20km, or extent of ornithological or hydrological connectivity
National statutory designations	5km
Non-statutory designations	2km
Protected and Priority species and habitats	2km
Phase 1 Habitat and Species Scoping Surveys	50m or extent of access

Desk Study

9.45. A desk-based assessment was undertaken by Neo Environmental, which collated available ecological information for the Application Site and the surrounding area using Defra's Magicmap website. This included a search of international statutory designated sites within a radius of 20km of the Proposed Development, including: Special Protection Areas ("SPAs"), Special Areas of Conservation ("SACs"), Ramsar Sites; and nationally designated sites within 5km, including: Sites of Special Scientific Interest ("SSSIs"), National Nature Reserves ("NNRs"), Local Nature Reserves ("LNRs") and non-designated sites within 2km. The desk study also considered any "candidate", "potential", or "proposed" designated sites which may be present within the appropriate radius for their designatory status.

9.46. A request for records of protected/notable species within 5km of the Application Site boundary was requested from the South Wales Biological Records Centre (SEWBReC).

Field Surveys

Phase 1 Habitat Survey

9.47. An extended Phase 1 habitat survey of the Site was undertaken 30th June 2021 by Z. Hinchcliffe MRes BSc (Hons.), a suitably qualified and experienced ecologist. An update survey was carried out on 30th August 2023 by D. Rouse and on 10th June 2024 by Z. Hinchcliffe.

9.48. The survey followed UK industry standard Joint Nature Conservation Committee (JNCC) Phase 1 Habitat Methodology (JNCC, 20105) with reference to the Chartered Institute of Ecology and Environmental Management (CIEEM), Technical Guidance Series Guidelines for Preliminary Ecological Appraisal – Version 2 (CIEEM, 2017).

9.49. The survey area comprised all areas within the Site, with additional notes made on any habitats of interest immediately adjacent to the Site.

9.50. Habitats were mapped and described using a series of 'target notes' (TNs).

Protected Species Survey

9.51. A Protected Species Survey was carried out by Avian Ecology concurrently with the above Phase 1 habitat surveys to identify the presence or potential for presence of protected or notable species. The aim of the survey was to provide an overview of the Application Site and to determine whether any further survey work was required.

9.52. Table 9-4 below outlines the relevant habitat and field signs that indicate the potential presence of protected or notable species within the ESA (Application Site plus notable adjacent habitats available for access).

Table 9-4: Indicative Habitats and Field Signs of Protected Species

Taxon	Indicative Habitat(s)	Field Signs (In Addition to Sightings)
Bats	Roosts – trees, buildings, bridges, caves, etc. Foraging areas – e.g., parkland, water bodies, streams, wetlands, woodland edges and hedgerow. Commuting routes – vertical linear features (e.g. hedgerows, water courses, tree lines).	In or on potential roost sites: droppings stuck to walls, urine spotting in roof spaces, oil from fur staining round roost entrances, feeding remains (e.g., moth wings under a feeding perch).
Badger	Found in most rural and many urban habitats.	Excavations and tracks: sett entrances, latrines, hairs, well-

		worn paths, prints, scratch marks on trees.
Birds	Trees, scrub, hedgerow, field margins, grassland, buildings.	Nests, droppings below nest sites (especially in buildings of trees), tree holes.
Common reptiles	Rough grassland, log and rubble piles.	Sloughed skins.
Otter and Water vole	Watercourses and riparian habitat	Holts, slides, couches, feeding remains, spraints, anal jelly; burrows, droppings, tumuli, latrines and 45° angled cuts to rush or grass stalks
Pine marten	Broadleaved woodland and coniferous plantations	Scats, dens; dreys, squirrel-nibbled cones

Species Specific Survey Methodology

Breeding Bird Survey

9.53. Three breeding bird surveys were undertaken in mornings between May and July 2021. Four further breeding bird surveys were undertaken between May and July 2024. Three of the four surveys were carried out in the morning, with the fourth undertaken in the afternoon / evening. The survey area for the breeding bird survey was the Site, and adjoining habitats to the Site. The survey area was also extended to a 100m buffer for inclusion of breeding Schedule 1 species, where recorded.

9.54. Breeding bird surveys were undertaken by N. Saunders BSc (*Hons*.), who is an experienced ornithologist.

9.55. The methodology deployed was based upon a scaled-down version of the British Trust for Ornithology (BTO) Common Bird Census (CBC) technique, as detailed in Gilbert et al. (1998).

9.56. Further details on the breeding bird surveys and methodology utilised to support the Proposed Development can be found within Appendix 2C – Bird Survey Report.

Great Crested Newt eDNA Survey

9.57. Ponds within the Site and within 250m of its boundaries were identified from aerial imagery and OS mapping; see Figure 2 of Appendix 9B – Habitats and Species Baseline Report. One pond (Pond 1) was located within the Site and no other wet ponds were present within 250m of the Site. Pond 1 was visited and assessed for its suitability to support great crested newt (GCN) following the Habitat Suitability Index (HSI) assessment methodology.

9.58. Pond 1 was visited and sampled on 30th June 2021. The sample was collected by Z. Hinchcliffe MRes BSc (Hons.) (NE Licence No. 2019-44230-CLS-CLS) and S. Viles BSc (Hons.) attending as a safety second. Additionally, Pond 1 was reassessed for HSI on 10th June 2024 by Z. Hinchcliffe.

9.59. Further details on the great crested newt surveying and methodology utilised to support the Proposed Development can be found within Appendix 2B – Habitats and Species Baseline Report.

Weather Conditions

9.60. The majority of surveying was undertaken in acceptable weather, with no significant rainfall, strong wind or visibility restrictions that would materially affect the findings of the surveys.

Limitations of Preliminary Ecological appraisal

9.61. Results of the reporting assessment undertaken by Neo Environmental are representative of the time that surveying was undertaken, and the information supplied by the appointed fieldwork contractor. Neo Environmental cannot be held responsible for data collected and supplied by the client-appointed surveyors.

9.62. The absence of records returned during the data search does not necessarily indicate absence of a species/habitat from an area. It may instead indicate they are under-recorded within the search area. Due to the commercial nature of this project, not all relevant records which may relate to this project may be utilised, as such, a precautionary measure has been implemented regarding presence (and therefore subsequent impact) of potential species.

9.63. An extended Phase 1 habitat survey does not constitute a detailed botanical survey or faunal species list or provide a full protected species survey but, enables competent ecologists to ascertain an understanding of the ecology of the Site in order to:

- Broadly identify the nature conservation value of a site and assess the significance of any potential impacts on habitat/species recorded; and/or,
- Confirm the need and extent of any additional specific ecological surveys that are required to identify the true nature conservation value of a site (if any).

9.64. The Extended Phase 1 habitat survey visit was undertaken in June 2021, August 2023 and June 2024 and therefore within the optimal period for botanical surveys (approximately April to September).

Evaluation Methods

9.65. The evaluation of ecological receptors is based upon CIEEM guidelines, which suggest that the value or potential value of an ecological resource or feature (for example a habitat type, species or ecosystem) should be determined within a spatial/geographical context (e.g., rare at a local level) and temporal context (e.g. seasonal, or multi-generational). For individual ecological receptors, an evidence-based approach to determining the significance of effects is provided in terms of such spatial-temporal effects (Tables 9-5, 9-6). For determining the likely significance of potential residual cumulative effects on the integrity of international designated sites, a value-based approach is provided (Table 9-7).

Impact Assessment

9.66. The impact assessment process involves:

- Identifying and characterising impacts and their effects;
- Incorporating measures to avoid and mitigate negative impacts and effects;
- Assessing the significance of any residual effects after mitigation;
- Identifying appropriate compensation measures to offset significant residual effects; and
- Identifying opportunities for ecological enhancement.

9.67. The terms 'impact' and 'effect' are used commonly throughout ecological reports. Impact is defined as a change experienced by an ecological feature, while effect is defined as the outcome to an ecological feature from an impact. Impacts and effects can be positive, negative or neutral.

9.68. Assessment of potential impacts and effects needs to consider on-site, adjacent and more distant ecological features, including habitats, species, statutory and non-statutory designated sites.

Assessing the Magnitude of Change

9.69. Determining the magnitude of any likely effects requires an understanding of how the ecological features are likely to respond to the Proposed Development. This change can occur during construction, operation or decommissioning/removal/restoration associated with the Proposed Development.

9.70. Effect magnitude refers to changes in the extent and integrity of an ecological receptor. A definition of ecological 'integrity' that is relevant across the UK is found within Scottish Executive circular 6/1995 (as updated, 2000)[15]. This states that:

"The integrity of a site is the coherence of its ecological structure and function, across its whole area, which enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified".

9.71. Although this definition is used specifically regarding international-level designated sites (SACs, SPAs and Ramsar sites), it is also considered suitable for wider countryside habitats and species for the purposes of this assessment. Potential residual cumulative impacts to international designated sites are assessed separately, with the likely significance of effect assigned via the matrix in Table 9-7.

9.72. Effects can be adverse, neutral or positive. Effects are judged in terms of magnitude in space and time. There are five levels of spatial effects and five levels of temporal effects as described in Table 9-5 and Table 9-6 respectively.

Table 9-5: Spatial Effect Magnitude

Spatial Magnitude	Description
Very High	Would cause the loss of the majority of a feature (>80%) or would be sufficient to damage a feature sufficient to immediately affect its viability.
High	Would have a major effect on the feature or its viability. For example, more than 20% habitat loss or damage.
Moderate	Would have a moderate effect on the feature or its viability. For example, between 10 - 20% habitat loss or damage.
Low	Would have a minor effect upon the feature or its viability. For example, less than 10% habitat loss or damage.
Negligible	Minimal change on a very small scale; effects not dissimilar to those expected within a 'do nothing' scenario.

[15] Natura Casework Guidance: How to consider plans and projects affecting Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). Available at: https://www.nature.scot/natura-casework-guidance-how-consider-plans-and-projects-affecting-special-areas-conservation-sacs

Table 9-6: Temporal Effect Magnitude

Temporal Magnitude	Description
Permanent	Effects continuing indefinitely beyond the span of one human generation (taken here as 30+ years), except where there is likely to be substantial improvement after this period in which case the category Long-term may be more appropriate.
Long-term	From 15 years up to (and including) 30 years; for short-lived species such as invertebrates, multiple generations.
Medium-term	From 5 years up to (but not including) 15 years; for short-lived species, a single generation.
Short-term	Up to (but not including) 5 years; for short-lived species, a single season or part of a season.
Negligible	No effect.

9.73. For an assessment of the likely significance of potential residual cumulative impact effects, particularly on the integrity of international designated sites, the following matrix will be referred to:

Table 9-7: Matrix used for the Assessment of the Significance of the Effect

Significance of Effect		Magnitude of Residual Cumulative Impact			
Sensitivity of Receptor		Negligible	Low	Medium	High
	Negligible	Negligible	Negligible to Minor	Negligible to Minor	Minor
	Low	Negligible to Minor	Negligible to Minor	Minor	Minor to Moderate
	Medium	Negligible to Minor	Minor	Moderate	Moderate to Najor
	High	Minor	Minor to Moderate	Moderate to Major	Major
	Very High	Minor	Moderate to Major	Major	Major

BASELINE CONDITIONS

Statutory Designated Sites

9.74. A summary of statutory designated sites for nature conservation located within 5km of the Site, and European sites located within 20km of the Site is provided in Table 9-8. Visualisation of this can be found in **Figure 9.1: Environmental Designations Map**.

9.75. A review of MAGIC confirmed that the Site is not located within and statutory designated sites for nature conservation. The search identified four statutory designated sites within 5km and six internationally designated site within 20km. The closest site Craig-Yr-Hesg Local Nature Reserve (LNR) is located 1.46km north west of the Site.

Table 9-8: Statutory Designated Sites

Site Name	Qualifying Features	Distance & Direction	Potential Connectivity
Ramsar			
Severn Estuary (Wales)	• Estuarine Habitat • More than 20,000 wintering birds • Common shelduck (Tadorna tadorna) • Eurasian whimbrel (*Numenius phaeopus)* • Greater white-fronted goose (Anser albifrons albifrons) • Gadwall (Anas strepera) • Dunlin (Calidris alpina) • Redshank (Tringa totanus) • Hyssop loosestrife *(Lythrum hyssopifolia)* • Atlantic salmon *(Salmo salar)*	17.14km South East	None
SPA			
Severn Estuary (Wales)	• Bewicks swan (*Cygnus columbianus*) • Common shelduck (Tadorna tadorna) • Eurasian whimbrel (Numenius phaeopus) • Greater white-fronted goose (Anser albifrons albifrons) • Gadwall (Anas strepera) • Dunlin (Calidris alpina) • Redshank (Tringa totanus) • Wigeon *(Anas penelope*) • Teal (*Anas crecca)* • Pintail (*Anas acuta)* • Pochard (*Aythya farina)* • Tufted duck (*Aythya fuligula)* • Ringed plover (*Charadrius hiaticula)* • Grey plover (*Pluvialis squatarola)* • Curlew (*Numenius arquata)* • Whimbrel (*Numenius phaeopus)* • Spotted redshank (*Tringa erythropus)* • Lesser blacked gull (*Larus fuscus)*	17.14km South East	None

SAC			
Cardiff Beech Woods	• [9130] Asperulo-Fagetum beech forests	6.64km South	None
Aberbargoed Grasslands	• [1065] Marsh fritillary (*Euphydryas aurinia*) • [6410] Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)	10.51km North	None
Blackmill Woodlands	• [H91A0] Old sessile oak woods with Ilex and Blechnum	15.48km West	None
Severn Estuary (Wales)	• [1130] Estuaries • [1110] Sandbanks which are slightly covered by sea water all the time • [1140] Mudflats and sandflats not covered by seawater at low tide • [1330] Atlantic salt meadows • [1170] Reefs • [S1095] Sea Lamprey (*Petromyzon marinus*) • [S1099] River Lamprey (*Lampetra fluviatilis)* • [S1103] Twaite Shad (*Alosa fallax*)	17.14km South East	None
SSSI			
Nant Gelliwion Woodland	• Mixed deciduous woodland dominated by sessile Oak	2.91km West	None
Gwaun Gledyr	• Marshy grassland dominated by purple moor-grass (*Molinia caerulea)* • Species rich Neutral grassland • Lowland heathland	3.97km South East	None
Llanbradach Quarry	• Geology (RIGS)	4.61km East	None
LNR			
Craig-yr-hesg	• Species rich grasslands • Broadleaved woodland	1.62km North West	None

Non-Statutory Designated Sites

9.76. A summary of non-statutory designated sites for nature conservation located within 2km of the Site is provided in Table 9-9. Visualisation of these sites can be found in **Figure 9B.1: Non-statutory Designated Sites within 2km of the Site** which is within **Appendix 9B – Habitats and Species Baseline Report**

9.77. A review of the data provided by SEWBReC identified three Sites of Importance for Nature Conservation (SINC) within a 2km radius of the Site boundaries.

9.78. A section of the Clydach Vale and Munudd Eglwysilan SINCs are present immediately adjacent to the Application Site to the west and northeast respectively. These Sites are designated, in part, for their ancient woodland habitat.

9.79. It should be noted that whilst within **Figure 9B.1** Clydach Vale SINC is shown as within the Application Site's boundary, this has been identified as a minor mistranslation within the respective files which created the figure. The boundary of the SINC instead ends at the road/field boundary where the Application Site begins.

Table 9-9: Non - Statutory Designated Sites

Site Name	Distance from site	Qualifying Features	Potential Connectivity
Chapter 9: Ecology Cyldach Vale (Pontypridd Golf Course) SINC	Immediately Adjacent	• Woodlands • Scrub • Neutral grasslands • Acid grasslands • Marshy grasslands • Ffridd communities • Heathland communities • Bog communities • Watercourses • Mineral spoil tips • Mosaic habitats • Rock exposures • Reptiles • Vascular plants	Ecological, Hydrological
Mynydd Eglwysilan, North of Senghenydd SINC	Immediately adjacent to the north eastern boundary	• Acid grassland- At least 7 indicator species, • Marshy grassland-At least 12 indicator species, • Ancient woodland with an assemblage of semi-natural indicator species, • Presence of Cornish Moneywort	Ecological, Hydrological
Nant Cae'r-Moel Swamp and Woodland, Senghenydd SINC	1.1km to the east	• Wet woodland, • Acid grassland- At least 7 indicator species, • Marshy grassland-At least 12 indicator species,	None
Ty'n-y-Parc, Abertridwr SINC	1.43km to the east	• Acid grassland- At least 7 indicator species, • Neutral grassland-At least 8 indicator species • Semi-natural woodland	None

Priority Habitats

9.80. The MAGIC search identified ten habitats of Principal Importance (also known as priority habitats) under Section 7 of the Environment (Wales) Act 2016 (S7), Section 42 of the NERC Act 2006 (NERC) and/or listed on the UKBAP within 2km the site boundary.

9.81. The Lle Geo-Portal for Wales, Ordnance Survey Maps provided no records of priority habitats within the Site boundaries.

9.82. Information on priority habitats within 5km of the Site is presented in Table 9-10 below. Where numerous records of a particular habitat were recorded, only the closest record to the Site has been provided, in order to provide context for the Site and surrounding area.

Table 9-10: Priority Habitats

Priority Habitat Name	Distance from site	Designation
Upland Heathland	NERC S.42 EW S.7.	Adjacent to the east of the site boundary
Lowland dry acid grassland	NERC S.42 EW S.7.	Adjacent in three locations which extend along the western boundary
Lowland meadows	NERC S.42 EW S.7.	93m to the south
Purple moor grass and rush pastures	NERC S.42, EW S.7, LBAP.	260m to the north
Upland flush fens and swamps	NERC S.42, EW S.7, LBAP.	390m to the north east
Lowland heathland	NERC S.42 EW S.7	570m to the north west
Open mosaic habitats on previously developed land	NERC S.42, EW S.7, LBAP.	850m to the east
Traditional orchard	NERC S.42 EW S.7	850m to the north west

Coastal grazing marsh and floodplain grassland	NERC S.42 EW S.7	1.26km to the north west
Lowland fens and reedbeds	NERC S.42, EW S.7, LBAP.	1.62km to the west

Protected and Notable Species

Desk-based Study

9.83. The potential presence of protected or notable species was assessed through a search for species records from within 5km of the Application Site. These were provided by South East Wales Biological Records Centre (SEWBReC) and all records dating from the past 10 years have been considered.

9.84. Table 9-11 below summarises the most relevant (importance and presence within the ESA) protected and notable species previously recorded within the 5km search area, and their potential to be present within the Application Site. Bird species include those listed either on Annex I of the EC Birds Directive (2009/147/EC), Schedule 1 of the Wildlife and Countryside Act 1981 (as amended), or are species that are listed within the UK BAP.

Table 9-11: Summary of Protected Species Records.

Species	Floral or Faunal Type	Number of Records	Potential for Species within Application Site
European Protected Species			
European Otter (*Lutra lutra*)	Terrestrial Mammal	23	None
Dormouse (*Muscardinus avellanarius*)	Terrestrial Mammal	3	Nesting, foraging
Bats Common pipistrelle Nathusius pipistrelle Soprano pipistrelle Leisler's bat	Terrestrial Mammal	Large number of records. 1 record for greater horseshoe, 3 records for lesser horseshoe	Roosting, foraging

Species	Floral or Faunal Type	Number of Records	Potential for Species within Application Site
Noctule Greater horseshoe bat Lesser horseshoe Myotis bat Natterers bat Whiskered bat Brandt's bat Brown long eared Daubenton's bat			
Protection of Badgers Act			
Eurasian Badger (*Meles meles*)	Terrestrial Mammal	10	Nesting, foraging, commuting
SCHEDULE 1 BIRD SPECIES			
Barn owl	Bird	6	Nesting, foraging
Kingfisher	Bird	75	Unsuitable
Brambling	Bird	4	Wintering
Crossbill	Bird	10	Wintering
Redwing	Bird	76	Wintering.
Goshawk	Bird	38	Unsuitable
Merlin	Bird	23	Wintering
Hen harrier	Bird	50	Unsuitable
Osprey	Bird	3	Unsuitable
Firecrest	Bird	4 records in last 10 years	Wintering
Fieldfare	Bird	41 records in last 10 years	Wintering
Hobby	Bird	9 records in last 10 years	Foraging

Species	Floral or Faunal Type	Number of Records	Potential for Species within Application Site
Marsh Harrier	Bird	1 record in last 10 years	Unsuitable
Peregrine	Bird	25 records in last 10 years	Foraging
Quail	Bird	3 records in last 10 years	Unsuitable
Red Kite	Bird	120 records in last 10 years	Foraging
Whimbrel	Bird	1 record in last 10 years	Unsuitable
UK BAP			
Black-headed gull	Bird	96 records in the last 10 years	Foraging and commuting
Bullfinch	Bird	353 records in the last 10 years	Nesting, foraging and commuting
Buzzard	Bird	416 records in the last 10 years	Foraging and commuting
Cormorant	Bird	196 records in the last 10 years	Unsuitable
Dipper	Bird	138 records in the last 10 years	Unsuitable
Dunnock	Bird	507 records in the last 10 years	Nesting, foraging and commuting
Goldcrest	Bird	188 records in the last 10 years	Nesting, foraging and commuting
Golden plover	Bird	42 records in the last 10 years	Nesting, foraging and commuting
Green woodpecker	Bird	155 records in the last 10 years	Foraging, commuting
Greenfinch	Bird	245 records in the last 10 years	Nesting, foraging and commuting

Species	Floral or Faunal Type	Number of Records	Potential for Species within Application Site
Grey Heron	Bird	118 records in the last 10 years	Foraging, commuting
Grey partridge	Bird	2 records in the last 10 years	Foraging, commuting
Grey Wagtail	Bird	180 records in the last 10 years	Nesting, foraging and commuting
House martin	Bird	114 records in the last 10 years	Nesting, foraging and commuting
House sparrow	Bird	468 records in the last 10 years	Nesting, foraging, commuting
Jack snipe	Bird	2 records in the last 10 years	Foraging, commuting
Kestrel	Bird	78 records in the last 10 years	Foraging, commuting
Lesser black-backed gull	Bird	253 records in the last 10 years	Foraging, commuting
Skylark	Bird	169 records in the last 10 years	Nesting, foraging, commuting
Starling	Bird	411 records in the last 10 years	Nesting, foraging, commuting
Willow warbler	Bird	190 records in the last 10 years	Nesting, foraging, commuting
Wood warbler	Bird	13 records in the last 10 years	Nesting, foraging, commuting
Woodcock	Bird	5 records in the last 10 years	Nesting, foraging, commuting
Swift	Bird	247 records in the last 10 years	Nesting, foraging, commuting
Lapwing	Bird	15 records in the last 10 years	Nesting, foraging, commuting
Yellowhammer	Bird	2 records in the last 10 years	Nesting, foraging, commuting

Species	Floral or Faunal Type	Number of Records	Potential for Species within Application Site
Snipe	Bird	13 records in the last 10 years	Foraging, commuting
Song thrush	Bird	402 records in the last 10 years	Nesting, foraging, commuting
Yellow wagtail	Bird	1 records in the last 10 years	Unsuitable
Yellowhammer	Bird	2 records in the last 10 years	Nesting, foraging commuting
Spotted flycatcher	Bird	5 records in the last 10 years	Nesting, foraging, commuting
Linnet	Bird	293 records in the last 10 years	Nesting, foraging, commuting
Pied flycatcher	Bird	5 records in the last 10 years	Nesting, foraging, commuting
Mallard	Bird	212 records in the last 10 years	Unsuitable
Meadow pipit	Bird	211 records in the last 10 years	Nesting, foraging, commuting
Cuckoo	Bird	76 records in the last 10 years	Nesting, foraging, commuting
Curlew	Bird	30 records in the last 10 years	Nesting, foraging, commuting
Lesser redpoll	Bird	40 records in the last 10 years	Nesting, foraging, commuting
Lesser spotted woodpecker	Bird	2 records in the last 10 years	Foraging, commuting
Willow tit	Bird	7 records in the last 10 years	Nesting, foraging, commuting
Bullfinch	Bird	547 records in the last 10 years	Nesting, foraging, commuting
Tree pipit	Bird	34 records in the last 10 years	Nesting, foraging and commuting

Species	Floral or Faunal Type	Number of Records	Potential for Species within Application Site
Wheatear	Bird	100 records in the last 10 years	Nesting, foraging, commuting
Whinchat	Bird	9 records in the last 10 years	Nesting, foraging, commuting
Whitethroat	Bird	51 records in the last 10 years	Nesting, foraging, commuting
Grasshopper warbler	Bird	9 records in the last 10 years	Unsuitable
Redstart	Bird	43 records in the last 10 years	Nesting, foraging, commuting
Reed bunting	Bird	120 records in last 10 years	Unsuitable
Ring ouzel	Bird	14	Nesting, foraging, commuting
Sand martin	Bird	57	Unsuitable
Short-eared owl	Bird	7	Foraging, commuting
Lesser spotted woodpecker	Bird	419	Unsuitable
Herring gull	Bird	201	Foraging
Hawfinch	Bird	1	Unsuitable
Water vole	Mammal	2	Unsuitable
Western hedgehog	Mammal	108	Commuting, nesting and foraging
Grass snake	Reptile	5	Commuting, foraging and sheltering
Common lizard	Reptile	29	Commuting, foraging and sheltering

Species	Floral or Faunal Type	Number of Records	Potential for Species within Application Site
Slow-worm	Reptile	64	Commuting, foraging and sheltering
Adder	Reptile	4	Commuting, foraging and sheltering
Common frog	Amphibian	57	Commuting, foraging and sheltering
Common toad	Amphibian	18	Commuting, foraging and sheltering
Palmate newt	Amphibian	62	Commuting, foraging and sheltering
Smooth newt	Amphibian	5	Commuting, foraging and sheltering
Invasive Non-Native Plant Species			
Giant Hogweed	Flora	2	None
Himalayan Balsam	Flora	76	-
Japanese Knotweed	Flora	57	None

European Protected Species = Habitat Regulations 1994 Schedule 2 (as amended in Wales).
Protection of Badgers Act (1992).
ANNEX 1, 2.1, 2.2 = EC Birds Directive.
UK BAP = UK BAP list of Priority Species.

Note: A species may be designated under several of these lists but will only be listed under its highest level or most relevant designation within this report.

The ranking order used here is (highest to lowest): European Protected Species, Protection of Badgers Act (1992), ANNEX 1, ANNEX 2.1, UK BAP, ANNEX 2.2,.

Habitat Survey

9.85. The Phase 1 Habitat survey undertaken in June 2024 identified 15 types of habitat within the Application Site. Details have also been provided on the further three habitats identified within the Ecological Study Area (ESA) which fall outside the Application Site. Each of these is listed below with the relevant habitat codes shown in brackets. A map of the habitats is given in **Figure 2 – Phase 1 Habitat Plan located which can be found within Appendix 9B – Habitats and Species Baseline Report**.

9.86. Please find the description of habitats within Appendix 9B – Habitats and Species Baseline Report.

Habitats Within Application Site:

- Woodland and scrub – Woodland – Broad-leaved – Semi-natural (A1.1.2)
- Woodland and scrub – Woodland – Coniferous – Plantation (A1.2.2)
- Woodland and scrub – Scattered scrub – (A2.2)
- Grassland and marsh – Improved grassland (B4)
- Grassland and marsh – Semi improved grassland (B6)
- Grassland and marsh – Marshy grassland (B5)
- Grassland and marsh – Semi improved acid grassland (B1.2)
- Tall herb and fern – Bracken (C1.1)
- Mire – Valley mire – (E3.1)
- Standing water – eutrophic – (G1.1)
- Wet ditch – (G2.1)
- Intact species poor hedgerow – (J2.1.2)
- Wall – dry stone wall – (J2.3.5)
- Dry ditch – (J2.3.6)
- Bare Earth – (J4)

Additional Habitats Outside Application Site but within ESA:

- Woodland and scrub – Dense scrub – (A2.1)

- Tall herb and fern – Tall ruderal – (C3.1)
- Building – (J3.6)

9.87. Overall, the Application Site is considered to be of low intrinsic ecological value at the local level in terms of habitats. However, the area of valley mire and semi-improved acid grassland is considered of county importance.

Protected Species Scoping Survey

9.88. The habitat surveying was extended to include a Species Scoping Survey to assess the potential of the Site to support protected or notable faunal species. Several other dedicated species-specific field surveys were also commissioned, and the results of those surveys are included below.

Bats

9.89. A data search requested from SEWBReC returned 101 records of seven species of bat: common pipistrelle Pipistrellus pipistrellus, soprano pipistrelle P. pygmaeus, brown long-eared bat Plecotus auritus, and noctule Nyctalus noctule, Daubenton's bat Myotis daubentonii, whiskered bat Myotis mystacinus, nathusius pipistrelle Pipistrellus nathusii and an unidentified pipistrelle bat within 2km of the Site. The closest record was located 1028m from the Site.

Roosting Bats

9.90. The Avian Ecology Assessment stated that no buildings were present within the Site. Several mature trees present along field boundaries had bat roost potential.

Foraging and Commuting Bats

9.91. The assessment stated that habitats within the Site were considered to most closely fit the description for land of 'low' interest for foraging bats in accordance with (BCT guidance, 2023), with foraging habitat limited to linear features such as dry stone walls and ditches.

9.92. The site is considered of local importance for foraging bats in the context of the proposed development. However, for roosting bats, as there are a number of trees of roosting potential, the site is assessed of district importance in the context of the proposed development.

Badger

9.93. No signs of badger, including setts, prints, latrines or pathways were found during the extended Phase 1 habitat survey. However, the Site and surrounding habitats including

woodland and hedgerows provide suitable habitat for commuting, foraging badgers and sett creation. Although no evidence of badger activity was noted, it is possible that badgers may still be present and active in the area.

9.94. As a result, badgers are assessed of not currently present within the context of the proposed development.

Birds

9.95. Breeding bird surveys were undertaken by Avian Ecology in 2021 and 2024. These were conducted in May June and July. Three breeding bird surveys were conducted in 2021, and four breeding bird surveys were conducted in 2024.

9.96. The breeding bird assemblage recorded within the Site in 2024 is representative of typical farmland habitats of predominantly common species. Of the twelve species identified as displaying breeding behaviour; six species are present on the Amber List (willow warbler, song thrush, redstart, dunnock, meadow pipit reed bunting), and five species are present on the Red List (skylark, mistle thrush, tree pipit, bullfinch and linnet).

9.97. Of these, six species are listed as rare and most threatened species under Section 7 of the Environment (Wales) Act, 2016 (skylark, song thrush, dunnock, tree pipit, linnet and reed bunting) as well as the Rhondda Cynon Taf Biodiversity Action Plan. With the exception of linnet, all species were identified as having four breeding territories or less.

9.98. The Notable Species breeding assemblage (which included dunnock, song thrush, linnet and reed bunting) was typically associated with vegetation along field boundaries onsite, principally hedgerows and woodland edge.

9.99. Ground-nesting Notable Species which use open fields onsite consisted of meadow pipit (three territories) and skylark (four territories). Additionally, a single tree pipit territory was associated with open pasture fields close to moorland edge. All territories were located towards the northern half of the Site within open pasture fields. Since the 2021 surveying, the number of territories of both ground nesting species has been noted as reduced, however the location of territories for these species has not altered.

9.100. As a result of the survey assessment onsite, the breeding bird assemblage is assessed of local importance in the context of the proposed development.

Otter and Water Vole

9.101. There are no suitable habitats within the Site for foraging otter or habitats suitable for the creation of otter holts. The watercourses found within the Site were shallow approximately 2cm to 5cm in depth. No signs of otter were found during the extended Phase 1 habitat survey.

9.102. No signs of water voles were observed during the extended Phase 1 habitat survey. A number of wet ditches were present within the Site with the potential to support water vole populations.

9.103. Due to the presence of suitable habitat within the site, the site is assessed of district importance for water voles in the context of the proposed development.

Great Crested Newts

9.104. SEWBReC returned records for two common frog Rana temporaria the closest located 1.56km north of the Site, two record of palmate newt Lissotriton helveticus the closest located 560m south of the Site.

9.105. No records of GCN were returned by SEWBReC within 5km from the Site.

9.106. Results from a search of MAGIC showed no European Protected Species (EPS) licence had been granted within 2km of the Site.

9.107. There is one pond (P1) located within the Site with no wet ponds within 250m of the Site. The habitat suitability index (HSI) for P1 was determined to be poor suitability for GCN with an overall suitability score of 0.48 (a full breakdown of the score can be found within **Appendix 9B – Habitat and Species Baseline Report**).

9.108. The terrestrial habitat within the Site is dominated by heavily grazed grassland which offers highly limited potential for both commuting and foraging areas. Areas of woodland, hedgerows, field margins and ditches provide better value foraging and commuting habitat for amphibians although are isolated from the onsite pond.

9.109. A GCN eDNA survey was conducted on Pond 1 on the 30th June 2021. The sample was collected by Z. Hinchcliffe MRes BSc (Hons.) (NE Licence No. 2019-44230-CLS-CLS). The result of this assessment was negative for GCN.

9.110. As a result, GCN are considered not present within the context of the proposed development.

Reptiles

9.111. The habitat within the Site is dominated by heavily grazed grassland which offers limited potential for reptile commuting foraging and hibernating areas. However, there are areas of optimal habitat for reptiles in the form of valley mire, acid grassland and marshy grassland within the site.

9.112. It should also be noted, the Cyldach vale Pontypridd Golf Course SINC falls immediately adjacent to the site boundary. One of the reasons for designation is the presence of reptiles within this site.

9.113. As a result of optimal habitats present within the site, the habitat suitability for reptiles is assessed of county importance in the context of the proposed development.

Dormice

9.114. Two records of hazel dormouse were returned by SEWBReC within 5km from the Site. Both records are from approximately 3.5km to the North of the Application Site and are dated from 2023.

9.115. The majority of the Application Site is comprised of grazed grassland with high disturbance levels, which does not provide suitable habitat for dormice. Due to the isolated natured of potentially suitable habitat, and limited scope for connectivity via linear habitats with the wider area, dormice are not considered reasonably likely to be present at the Application Site.

Other Taxa

9.116. No signs of other protected or notable species were observed during the survey. Deer, foxes, stoats, wood mice, shrews and hedgehogs could use the treelines and (to a lesser extent) the grassland habitats within and around the Application Site.

9.117. Urban species such as (urbanised) fox, house mouse and brown rat may also use the site due to the relatively close proximity of the farmsteads and nearby cottages. The presence of these species is likely to be of little intrinsic conservation interest in the local area.

Target Notes

9.118. Target Notes are used where a brief descriptive account is given for particular ecological features of interest that are found during the surveying. Detailed account of these can be found in **Table 3.3**, and **Figure 2**; both contained within **Appendix 9B – Habitat and Species Baseline Report**

IMPACT ASSESSMENT

Best Practice Pollution Prevention Measures

9.119. Standard best practice pollution prevention measures (PPM) will be adhered to throughout the construction and operation of the proposed development. This will significantly reduce the potential for impacts on ecological receptors during the phase of the development with the greatest level of activity and landscape changes and thus potential of adverse impacts: the construction stage. As these are standard measures, they are separate to mitigation measures (outlined later in this report). Detailed drainage design measures, if required, can be included as part of the PPM for the Proposed Development.

Pollution Prevention

- Hydrocarbons, greases and hydraulic fluids will be stored in a secure compound area;
- All plant machinery will be properly serviced and maintained, thereby reducing risk of spillage or leakage;
- All waste produced from construction will be collected in skips with the construction site kept tidy at all times;
- Excavated soil will be stored on site or removed by a licensed waste disposal unit;
- All materials and substances used for construction will be stored in a secure compound and all chemicals will be stored in secure containers to avoid potential contamination; and
- Location of spill kits will be known by all construction workers and utilised in the event of spillage or leakage.

Waste Management

- Skips will be used for site waste/debris at all times and collected regularly or when full;
- All hydrocarbons and fluids will be collected in leak-proof containers and removed from the site for disposal or recycling; and
- All waste from construction will be stored within the site confines and removed to a permitted waste facility.

Environmental Monitoring

- Environmental Officer: Contractor will nominate member of staff as an Environmental Officer with the responsibility to ensure best practice pollution prevention measures are implemented and adhered to, with any incidents or non-compliance issues being immediately resolved and then reported to the project team leaders.
- Ecological Clerk of Works (ECoW): The appointment of an independent Ecological Clerk of Works (ECoW) can be provided, who would supervise the Proposed Development, from

pre-commencement to operational completeness, and work with the Environmental Officer to prevent pollution and other ecological or environmental impacts.

- Post-Construction Monitoring: To ensure pollution prevention and the effectiveness of design and mitigation measures over the longer-term operation of the Proposed Development, Post-Construction Monitoring can be conducted.

Potential Impacts on Designated Sites

Statutory Designated Sites

9.120. All Statutory designated sites are located over 1km from the site boundary. No direct ecological, hydrological, or ornithological connectivity exists between the Proposed Development at the Application Site and any of these designated sites due to the lack of mobility of qualifying species or suitable ecological features which would be of interest to avian qualifying species.

9.121. As there is to be minimal impact on hedgerow corridors due to precautionary design measures, it is not anticipated that commuting corridors between onsite habitats and designated sites will be reduced as part of the site proposals.

Non-Statutory Designated Sites

9.122. Cyldach Vale (Pontypridd Golf Course) SINC is located immediately adjacent to the site boundary. The site is designated for the following:

- Woodlands
- Scrub
- Neutral grasslands
- Acid grasslands
- Marshy grasslands
- Ffridd communities
- Heathland communities
- Bog communities
- Watercourses
- Mineral spoil tips
- Mosaic habitats
- Rock exposures
- Reptiles

- Vascular plants

9.123. It is considered that the Proposed Development may reduce habitat connectivity between the site and the SINC through the reduction of Valley mire and acid grassland. This could also impact bird breeding and reptile species commuting between the site and the SINC. It is assessed that the proposals may have a moderate, long-term temporal impact on this designated site in absence of mitigation.

9.124. Additionally, Mynydd Eglwysilan, North of Senghenydd SINC is located immediately adjacent to the north-eastern site boundary. It is considered the Proposed Development may impact this reserve through direct habitat loss. It is assessed that the proposals may have a moderate, long-term temporal impact on this designated site in absence of mitigation.

9.125. It is not anticipated that the Proposed Development will have any impact on any other non-statutory designated sites.

Potential Impacts on Habitats

In the Absence of Mitigation

9.126. The construction of the Proposed Development will occur on land which has been identified primarily as agricultural as improved grassland and poor semi-improved grassland. These habitats are of low ecological value and currently offer limited potential to support wildlife. It is assessed that the impacts on these habitats would not be significant in the context of the proposed development.

9.127. The Proposed Development may also impact valley mire, marshy grassland and acid grassland. These habitats are also considered of county importance within the context of the proposed development.

9.128. The Proposed Development is designed in such a way to avoid significant losses of agricultural land during the operational stage. The total ground disturbance area resulting from the Proposed Development is 15,294m^2 or circa 2.15% of the Application Site area. Agriculture can continue on the remaining land in the form of management sheep grazing at a suitably low stocking density.

9.129. The Application Site contains multiple wet and dry ditches (the latter of which may become wet ditches seasonally and/or events of heavy rainfall) which would have the potential to facilitate the spread of pollutants / contaminants from the construction and operational phases of the Proposed Development if not considered. However, as part of the integral design (and therefore not relied upon as dedicated mitigation) ditches have been buffered from site infrastructure where possible, and when combined with industry best practice pollution prevention measures (further information on measures found within the OCEMP) there are not anticipated to be any impacts as a result of the Proposed Development in the absence of mitigation.

9.130. However, unmitigated removal of higher value habitats would result in the Proposed Development having a significant negative impact upon the ecology of the local area. Impacts relating to dust, noise, or vibration during the construction phase on ancient woodland, marshy grassland, acid grassland, and valley mire habitats within and adjacent to the Application Site or priority habitat within 100m of the Proposed Development would result in moderate, short-term impacts. The removal of marshy grassland acid grassland would have a moderate, long-term temporal impact in the context of the proposed development. The removal of valley mire would represent a major, permanent impact in the context of the proposed development.

Potential Impacts on Protected or Notable Species

In the Absence of Mitigation

9.131. The sections below detail the potential impacts and effects in the absence of mitigation for protected or notable species during the construction phase (short-term) and operational phase (long-term) of the Proposed Development.

9.132. In accordance with CIEEM guidelines[16], the duration of disturbance during construction is considered to be short-term for the species groups below. All groups live for several years in the UK. However, it is noted that short-term impacts can lead to long-term effects if e.g., they cause breeding failure in a given year.

Badger

9.133. No clear evidence of badgers was recorded during surveys. However, badger is a highly mobile species and is known to be present in the local area. The species may therefore forage or commute through the Application Site.

9.134. If any badger setts have been excavated since the surveys, the construction phase of the Proposed Development has the potential to impact upon badger by causing disturbance or destruction to a badger sett. During the construction phase, the Proposed Development can also cause undue stress to badgers if these animals are accidently trapped within any exposed excavations left overnight.

9.135. Security fencing used at the Proposed Solar Farm contains a 10cm gap at the base of the fencing, to allow continued potential for badger movement (see Figure 9 of the Planning Application Drawings) via scrapes. This will prevent the Proposed Development affecting access to foraging areas within the Application Site that are part of a clan's territory. This measure has been designed into the development and therefore is not relied upon as a mitigation measure.

[16] CIEEM (2022) Guidelines for Ecological Impact Assessment in the UK and Ireland. Terrestrial, Freshwater, Costal and Marine. Version 1.2.

9.136. In the absence of mitigation, badger may be significantly affected by the Proposed Development. The loss of any newly-created sett would be classed as a moderate to high spatial and long-term temporal impact

Bats

9.137. The habitats that would be directly disturbed from the construction activities for the proposed solar panel installations and routes for cabling and access are predominantly agriculturally improved grassland and poor semi-improved grassland. It is not anticipated that any trees with roosting bat potential will be impacted by the proposals. The proposals will also include a minor removal of hedgerows and drystone walls to facilitate the development, however given the nature of these features not connecting high value foraging or roosting habitat, their value as commuting features is limited.

9.138. Furthermore, the site design for the Proposed Development allows for a buffer distance to trees to protect tree root zones, which will also sufficiently buffer any potential bat roosts, and conifer plantation habitat is sub-optimal for bat roosting.

9.139. There will be low levels of insect activity above the grassland and arable fields and along woodland edges, which will provide limited resources for foraging bats, however within the context of the wider local area, the loss of this habitat on site would not constitute a significant loss of foraging resources.

9.140. The construction and operational phases of the development may lead to a significant difference in lighting compared to the current baseline. Light spillage on bat habitats adjacent to the Application Site may result in a reduction in the suitability of these areas for bats.

9.141. In the absence of mitigation, bats may be negatively significantly affected by the Proposed Development due to a loss of suitable habitat and commuting corridors associated with impacts from lighting.

Birds

9.142. Impacts on bird species from solar energy developments include: Direct loss or deterioration of habitats; Indirect habitat loss as a result of displacement by disturbance.

9.143. Breeding birds are highly susceptible to disturbance, and the assemblage recorded within the Site in 2024 is representative of typical farmland habitats of predominantly common species. A total of 12 species were recorded as showing breeding behaviour within the Site, including 11 Notable Species. These consisted of six Amber List species (willow warbler, song thrush, redstart, dunnock, meadow pipit reed bunting), and five Red List species (skylark, mistle thrush, tree pipit, bullfinch and linnet). Of these, six species are listed as rare and most threatened species under Section 7 of the Environment (Wales) Act, 2016 (skylark, song thrush, dunnock, tree pipit, linnet and reed bunting) as well as the Rhondda Cynon Taf Biodiversity Action Plan.

9.144. It is considered that of the species identified, the majority will not be significantly impacted by the development as the habitats to be impacted will be areas of improved grassland and poor semi-improved grassland with limited suitability for the majority of breeding bird species. In addition, the overall breeding bird assemblage for the site was generally low. Within the context of the wider local area, the loss of nesting habitat for meadow pipit and skylark (ground nesting species) is not considered a significant impact in absence of mitigation, given the low number of territories identified.

9.145. Due to the sensitivity of breeding birds to disruption and disturbance, if construction works are undertaken within the breeding bird season (March to August inclusive) this could lead to destruction or abandonment of nests and/or young. As a result, it is considered that impacts upon breeding birds will be of a moderate spatial and long-term temporal scale in absence of mitigation.

Hazel Dormouse

9.146. No evidence of dormouse was recorded during the surveys, furthermore, the habitat found within the Application Site is of limited suitability for the species. The Proposed Development has been designed in a way to minimise hedgerow breaks, which is limited to three areas of trimming, and one further area of minimal loss. The hedgerows on site, whilst containing species including hazel (a preferential foraging resource for dormouse), are species poor, and lack the complex ground level structure to provide significant interest to dormouse.

9.147. Whilst it is acknowledged that records of dormouse dating from 2023 were returned by SEWBReC, these records are located approximately 3.5km to the north of the Proposed Development, which places the Application Site outside the anticipated core foraging range of this species. Furthermore, the adjacent (consented) application submitted by Tywn Hywel Energy Park Limited (Ref: DNS/3272053) is positioned between the location of the records and the Application Site, as part of the ecological surveying effort, a suite of dormouse surveys was undertaken over seven months which concluded likely absence[17].

9.148. Overall, it is not anticipated reasonably likely that hazel dormouse is present at the Application Site. However, due to the importance of this species on a regional and national level, following the precautionary principal; the possibility of adverse effects on hazel dormouse cannot be definitively ruled out in absence of mitigation.

Invasive Flora

9.149. Whilst no invasive flora were identified within the Application Site, numerous records of invasive flora were returned from SEWBReC, and Himalayan balsam was identified within the ESA (**Target Note 11**, **Appendix 2B – Habitat and Species Baseline Report**).

[17] Developments of National Significance Reference: DNS/3272053 - Twyn Hywel Wind Farm. Available at: https://planningcasework.service.gov.wales/case

9.150. As invasive flora is characterised by the ease and speed at which it can spread, precautionary measures are recommended to ensure no adverse effects result from the Proposed Development, in the event of a change in baseline resulting from the time between the most recent survey, and the commencement of construction.

Reptiles

9.151. No clear evidence of reptiles was recorded during surveys. However, reptiles are highly mobile species and is known to be present in the immediate local area. Reptiles may therefore forage or commute through the Application Site.

9.152. It may be the case that species may be present within areas of acid grassland, marshy grassland and valley mire. Therefore, following the precautionary principle, reptiles may be displaced or injured during the construction phase of the proposed solar farm.

9.153. No development will occur in the majority of these habitats. However, the removal of hedgerow sections at any time of year could lead to disturbance, injury or mortality of sheltering herptiles. Any herptiles using ditches crossed by the proposed access track and/or security fencing may also be disturbed by construction activities. In the absence of mitigation, adverse effects of low spatial and medium-term temporal magnitude could occur on common herptile species.

Water vole

9.154. No clear evidence of water voles was recorded during surveys. However, water voles are highly mobile species and is known to be present in the local area. The species may therefore forage or commute through the Application Site.

9.155. Precautionary design measures (buffers) and industry standard best practice measures in regard to pollution prevention (as identified above and in the Outline Construction Environmental Management Plan) will be implemented to prevent contamination of the aquatic environment during the construction phase of the Proposed Development. As these are integral design and industry standard measures, these are not relied upon as dedicated mitigation measures.

9.156. Therefore, In the absence of mitigation, no adverse impacts are anticipated upon water vole.

Other Taxa

9.157. Other than badgers, bats, reptiles and birds, no other field signs for protected species were found.

9.158. This grouping also incorporates animals that have no specific legal protection, such as foxes and rodent species, including mice and rats. No significant impacts are expected, and no further consideration is required.

Summary of Potential Impacts

9.159. In the absence of mitigation, there is potential for impacts to:

- Cyldach Vale (Pontypridd Golf Course) SINC – hydrological, direct habitat removal and connectivity between the site and the SINC. Impacts on protected species such as birds and reptiles.
- Mynydd Eglwysilan, North of Senghenydd SINC – hydrological, direct habitat removal and reduction of connectivity between the site and SINC.
- High value ecological habitat – loss or degradation due to proximity of works.
- Badgers – potential long-term sett creation onsite, Impacts during the construction phase that may cause killing and injury.
- Bats – Addition of lighting during construction and operation phase resulting in disturbance / disruption to bats.
- Birds – Direct habitat loss for farmland birds. Reduced connectivity between the site and adjacent SINC's.
- Dormouse – Impacts during the construction phase that may cause killing and injury to sheltering individuals.
- Reptiles – Impacts during the construction phase that may cause killing and injury to sheltering species. Reduction of suitable habitat onsite.

9.160. All other potential ecological receptors require no further consideration.

9.161. Whilst it is acknowledged that the Application Site will require a grid route connection to enable operation, this aspect of the development is not considered within this document as the grid route will be covered by a separate future planning application. However, based on the anticipated route, and temporary nature of disturbance and habitat loss associated with below ground cabling solutions, this will not result in any additional impacts upon ecological features if the mitigations and practices set forth within this planning application are equally applied to the grid connection works.

MITIGATION, ENHANCEMENT MEASURES AND FURTHER SURVEY

Recommended Mitigation and Enhancement Measures

9.162. Habitat loss beneath the development footprint has been considered, and whilst the Application Site is predominantly of low ecological value, compensatory planting in excess of loss is proposed within **Figures 4.22a-e: Landscape and Ecological Management Plan** and discussed further within **Appendix 9D – Net Benefit for Biodiversity Assessment Report**. The recommended wildlife enhancements designed into the Proposed Development identifies habitat creation and enhancement opportunities comprised of:

- Creation of 46.09ha of shade tolerant wildflower grassland
- Creation of 1.16ha of native species rich scrub
- Creation of 8.70ha of acid favouring wildflower grassland
- Creation of 2.65ha of Welsh species diverse wildflower grassland
- Enhancement of 1.41km of existing hedgerow habitat with native species rich planting
- Creation of 3.85km of native species rich hedgerow
- Creation of 0.53km of native species rich hedgerow and tree screening habitat
- Eight Bird Boxes
- Eight Bat Boxes
- Three Hedgehog Houses
- Six Bee Banks
- Three Insect Hotels
- Four Herptile Hibernacula

9.163. This will ensure the Proposed Development's compliance with Section 6.4 of the Planning Policy for Wales, by securing a significantly proportionate net benefit for biodiversity in the local area.

9.164. With the exception of the aforementioned habitats of higher ecological value (Due to the considerate site design and best practice pollution prevention measures following Ciria guidelines, there will be no requirements to mitigate impacts to habitats, further information on appropriates measure can be found within **Volume 3 – Annex 2 – Outline Construction Environment Management Plan**.

9.165. Areas of habitat of high ecological value should be demarcated with robust brightly coloured waist high fencing under supervision by a suitably experienced Ecological Clerk of Works (ECoW) prior to construction. This will prevent accidental impacts relating to resting materials or movement of large vehicles which may have a 'crush effect' upon the habitat. Additional measures to mitigate potential impacts relating to dust, noise, and vibration are included within the OCEMP.

9.166. It is recommended that the presence of an is provided to supervise the initial groundbreaking and commencement of construction activities and any vegetation removal activities. The ECoW presence would provide a suitable qualified and experienced resource to monitor the ongoing work and provide advice to the contractor onsite in a timely manner, if required.

9.167. A 'Toolbox Talk' would be conducted with the contractors onsite to raise awareness of the potential presence of badgers, nesting birds, reptiles, and dormouse and highlight the dangers the work may present and any additional mitigation measures that may need implementing, should their presence be confirmed or suspected.

9.168. Such additional mitigation measures may include minor alterations to the methods, equipment used, or timing of ground clearance works, which would be determined in-situ by the ECoW.

9.169. Due to the scope and scale of the Proposed Development it is also recommended that a Non-Licence Protected and Notable Species Method Statement is created. This document should be suitably robust to cover protocol relating to precautionary measures for; badgers, bats (including an appropriate lighting plan in line with the Institute of Lighting Professionals guidelines), breeding birds, dormouse, noteworthy habitats, invasive species, and reptiles. This document should be submitted and agreed in writing by the relevant stakeholders, and secured by a suitably worded planning condition.

Residual Impact or Beneficial Effects

9.170. With the measures outlined within the **Annex 2: Outline Construction Environment Management Plan**, **Figures 4.22a-e: Landscape and Ecological Management Plan**, and **Appendix 2D – Net Benefit for Biodiversity Assessment Report** implemented during the construction phase, and application of the Proposed Development's design measures, best practice pollution prevention measures, and the proposed biodiversity enhancement, there will be lasting beneficial effects to habitats and biodiversity on a local scale.

Further Surveys

9.171. Pre-commencement checking surveys by a suitably qualified and experience ecologist are recommended to be carried out prior to construction activities to assess for any changes to the current status of badger setts, herptile, and dormouse presence (currently nil) for any activities involving potentially suitable habitat.

9.172. To avoid potential delays in the event any newly created badger setts are a significant constraint and require a Species Protection Plan and mitigation licence application, it is recommended that weekly badger sett monitoring is conducted in the six weeks prior to the commencement of any ground clearance or similar preparatory work.

9.173. If construction activities are scheduled during the main bird breeding season (March to August, inclusive) then a pre-commencement check should be conducted by a suitably qualified and experience ecologist to survey for ground or tree-nesting birds.

Summary of Mitigation, Enhancement and Further Surveys

9.174. With the implementation of site design, best practice pollution prevention, the outlined mitigation measures and the proposed habitat enhancements, **the potential of the Application Site to support local wildlife will increase**. The Proposed Development will lead to a **positive effect** on biodiversity on a local scale.

9.175. Stemming from the Proposed Development, there will be:

- A long-term positive benefit to habitats within the Application Site.
- Additional foraging resources for a range of passerine bird and bat species.
- Lasting benefit to butterflies and pollinator species such as bees.

CUMULATIVE IMPACT EFFECTS

9.176. As well as unique impact effects potentially possible from this Proposed Development, cumulative (sometimes referred to as 'in-combination') impact effects also need to be considered. The Conservation of Habitats and Species Regulations 2017 states that any plan or project that may, either alone or in combination with other plans or projects, significantly affect an international designated site should be the subject of an Appropriate Assessment. Cumulative impacts can be an issue when the Proposed Development has a small impact on designated sites or other sensitive ecological receptors. If other proposals also have a small impact, the combined result can have a significant impact on these features.

9.177. A search was conducted in February 2025 of relevant planning applications within a 5km Study Zone of the Application Site, using the planning portal online search tools of Caerphilly and Rhonda Cynon Taf County Borough Councils. This sought to identify any projects or developments that could impact any designated sites, sensitive habitats or protected/notable species, in combination with the Proposed Development. Whilst in-combination cumulative impacts are not limited to currently consented or constructed projects; weight to any potential impacts has been considered proportional to the likelihood of consent. These are listed in Table 9-12 below.

Table 9-12: Cumulative Developments

Planning Reference	Development Description	Proximity	Planning Status
DNS/3272053 23/0427/DNS/ 22/1272/DNS	Construct and operate up to 14 wind turbines and associated infrastructure	0.01km east	Permission Granted
22/0072/FULL	Erect residential development of 153 No. units with new access, landscaping, drainage arrangements and associated works	1.87km east	Permission Granted
22/1128/DNS	Solar park, access and associated development (Development of National Significance)	2.71km south	No Objection Raised
23/0116/DNS	Construct and operate a Solar Photovoltaic (PV) Farm - Development of National Significance	2.75km east	Permission Granted
15/0777/FUL	Solar photovoltaic park, ancillary development and ecological enhancements	2.8km southwest	Permission Granted

20/0934/SSO	Screening Opinion for proposed to develop the site for a new, residential community comprising up to 110 dwellings in a mix of housing types and tenures.	4.36km northwest	Resolved
23/0508/FULL	Erect residential development of 169 residential units and associated works	4.53km northeast	Permission Granted
DNS 3280378	To construct and operate a wind farm consisting of up to 7 wind turbines and associated infrastructure (Development of National Significance)	4.6km west	Permission Granted

9.178. There are 8 relevant developments within the Study Area of this development proposal. The majority of these relate to renewable energy infrastructure developments, which will each have environmental benefits due to the nature of green energy production and lowering carbon emissions. The remainder of these relate to residential developments which have the potential, if unmitigated, to result in large scale changes in available habitat.

9.179. None of these developments are within any statutory designated site boundaries. Due to the lack of pathways for connectivity to any statutory designated site (as previously discussed), there is no scope for any cumulative impacts as a result of the Proposed Development. it is therefore considered that the developments listed would **not result in significant cumulative effects on any statutory designated sites**.

9.180. With the exception of the consented Tywm Hywel Energy Park (Application DNS/3272053), none of the developments have connectivity, with any of the non-statutory designated sites to which the Application Site has connectivity to (Mynydd Eglwysilan and Cyldach Vale SINCs). Tywm Hywel Energy is noted to overlap with Mynydd Eglwysilan SINC and will impact on 64ha of Mynydd Eglwysilan which will be offset by the enhancement of a minimum of 390.82ha[18]. With the implementation of the proposed best practice measures the Proposed Development will not negatively affect the SINC, nor will it infringe upon the enhancement proposed by the improved management resulting from Tywm Hywel Energy Park. As paragraph 8.44 of the Ecology Chapter associated with Twym Hywel Energy Park states that the features of Clydach Vale SINC "will not be affected by the Proposed Development", there are no negligible or residual impacts which may result in significant adverse effects in-combination with the Proposed Development. it is therefore considered that the developments listed would **not result in significant cumulative effects on any non-statutory designated sites**.

9.181. With regard to the scale of this Application Site, the low value habitats beneath the vast majority of the development footprint, and no loss or degradation of priority habitats as a result of the Proposed Development, it has been determined that **there will be no significant cumulative effects on priority or notable habitats**.

[18] Twym Hywel Energy Park Planning Inspectorate Report, Developments of National Significance, 20/05/2024

9.182. When considering the proposed mitigations and necessary net benefit for biodiversity which must be adhered to for all consented developments, it is not anticipated that the Proposed Development will lead to any direct cumulative negative effects on any protected or notable species. However, due to the level of habitat affected within the study area and the time taken to establish mitigatory habitats, negative impacts upon farmland birds have the potential to occur in the event of the construction of multiple consented sites within the local area are undertaken within short succession.

9.183. With reference to Table 9-7, the magnitude of residual cumulative impact is considered to be 'low'. The sensitivity of receptor (populations of birds) is considered to be 'low'. Therefore, the overall significance of effect is considered to be 'negligible to minor'.

CONCLUSION

9.184. An examination of the Zone of Influence for the Proposed Development at the Application Site assessed the potential for the proposal to affect designated sites and found that within 20km of the Application Site boundary there are six internationally designated sites. Within 5km of the Application Site boundary there are three nationally designated sites. Within 2km of the Application Site there are four non-statutory locally designated sites.

9.185. The impact assessment process examined the potential for these impacts and found:

- No direct ecological, hydrological, or ornithological connectivity exists between the Proposed Development at the Application Site and any statutory designated sites.
- Two of the four non-statutory designated sites (Cyldach Vale SINC and Mynydd Eglwysilane, North of Senghanydd SINC) are located immediately adjacent to the Application Site, and Ecologically and Hydrologically connected to the Proposed Development.

9.186. Details of the designated sites have been provided and assessed within this report, as appropriate. With the implementation of appropriate best practice and industry standard measures, **no likely significant effects were identified**.

9.187. The Phase 1 Habitat surveying undertaken in 2021, 2023, and 2024 identified eighteen habitat types (not including land not accessed) within the Application Site and a suitable peripheral buffer (the Ecological Study Area, "ESA"). **None of the habitats beneath the development footprint are conservation priority habitats**.

9.188. The presence of, or potential presence for, protected or notable species was assessed and found that precautionary measures for badgers, bats, breeding birds, dormice, invasive species, and reptiles are recommended to support the Proposed Development.

9.189. The main ecological impact during the construction phase will be the direct loss of habitats under the Proposed Development's footprint, and indirect temporary loss of habitat due to potential noise and vibration disturbance, dust, and water pollution. The loss of these low condition and primarily agricultural areas, which predominantly comprise existing grazing livestock fields is considered to be of **negligible significance to the nature conservation interest within the local area.**

9.190. There will be risks of potential indirect habitat impacts due to vehicular movements, temporary construction compounds and welfare facilities, lights, noise and vibration disturbance, and from the risk escaping dust and water pollution. However, considerate siting and design, together with best practice construction and pollution prevention measures will each **avoid, reduce and minimise any potential for adverse impacts**.

9.191. Recommendations for additional survey work have been provided within this report as part of the relevant mitigation measures.

9.192. It is considered that the short-term disturbance from the Proposed Development **will not be significant** if the recommended mitigation is undertaken. With the implementation of pre-commencement surveys, supervision and the proposed mitigation measures, it is considered that there will be **no significant negative effects** upon protected or notable species during the construction phase.

9.193. The accompanying **Figures 4.22a-e: Landscape and Ecological Management Plan** proposes habitat creation and enhancement measures centred around the implementation of 57.44ha of wildflower grassland habitats, 1.16ha of species rich scrub, and creation and enhancement of 5.78km of hedgerow. With the implementation of this, **the potential of the local area to support local wildlife will increase**.

9.194. The ecological investment from the Proposed Development will conserve and enhance biodiversity, minimise impacts, provide net benefits for biodiversity, and strengthen local green infrastructure. This investment will also aid in achieving national planning environmental enhancement targets in the respective framework and policies.

APPENDICES

Appendix 9A – Figures

- Figure 9.1 – Environmental Designations

Appendix 9B – Habitats and Species Baseline Report

Appendix 9C – Breeding Bird Survey Report

Appendix 9D – Net Benefit for Biodiversity Assessment Report