Ecological Impact Assessment

St Asaph Solar Farm

Anesco Limited

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01	29 April 2025	Emma Clarke	Gary Oliver	Gary Oliver

Basis of Report

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Acronyms and Abbreviations

AWI	Ancient Woodland Inventory
AWS	Ancient Woodland Site
BCT	Bat Conservation Trust
BoCC	Birds of Conservation Concern
CIEEM	Chartered Institute of Ecology and Environmental Management
CITES-B	Convention on International Trade in Endangered Species
COFNOD	North Wales Local Environmental Records Centre
CSZ	Core Sustenance Zone
ECoW	Ecological Clerk of Works
EcIA	Ecological Impact Assessment
eDNA	Environmental DNA
GCN	Great Crested Newt
GLTA	Ground Level Tree Assessment
HDir5	Habitats Directive Annex 5
LBAP	Local Biodiversity Action Plan
LEMP	Landscape and Ecology Management Plan
LWS	Local Wildlife Site
NBW	Night-time Bat Walkover
NERC	Natural Environment Research Council
NGR	National Grid Reference
NRW	Natural Resources Wales
RPA	Root Protection Zone
SPA	Special Protection Area
SSSI	Sites of Special Scientific Interest
UKBAP	UK Biodiversity Action Plan
UKHab	UK Habitat Classification Survey
WCA	Wildlife and Countryside Act 1981

1.0 Introduction

SLR Consulting Limited (SLR) was commissioned by Anesco Limited to undertake an Ecological Impact Assessment (EcIA) for the construction, operation and decommissioning of a ground mounted photovoltaic (PV) solar farm, together with associated equipment, infrastructure and ancillary works on land at Cefn Meiriadog, St Asaph, Denbighshire, broadly centred on National Grid Reference (NGR) SJ 02443 72771, hereafter referred to as the 'Site'.

1.1 Background

SLR Consulting Limited were previously instructed to provide ecological support in relation to the proposed solar farm at St Asaph in December 2021. Since that date, extensive ecological surveys have been undertaken which have fed into the Site design and final layout, which is assessed in this report.

1.2 Site Description

The Site is situated in Denbighshire, approximately 1km to the south-west of St Asaph, and approximately 8km south of Rhyl.

The location of the Site is shown in Drawing C0002452_01 and the Site boundary is shown in Drawing C0002452_02 (both provided as Appendix A). The Site consists of the main Solar Site and the Cable Route, connecting to the St Asaph Substation.

The Solar Site is approximately 35.42ha in extent and is divided into two areas approximately 250m apart. The Western Parcel is a set of four fields approximately centred on NGR SJ 02123 72727 and the Eastern Parcel is a set of three fields approximately centred on NGR SJ 02644 72614. The fields consist of modified grassland, of a short to medium sward length used for cattle and sheep grazing. The boundaries of the fields consist of flailed hedgerows, some containing mature trees, and of semi-natural, lowland mixed deciduous woodland.

The Cable Route is limited to highways that connect the Solar Site to St Asaph Substation. This includes the track to Tyn Y Coed, Glascoed Road, and Cwttir Lane.

The wider landscape is generally farmland used for grazing or arable crops, there are also several woodlands, some of which are ancient.

1.3 Details of the Proposed Development

The proposed development consists of a:

"Ground mounted photovoltaic solar farm, together with associated equipment, infrastructure and ancillary works".

The proposed layout and Site boundary changed significantly in 2024, compared to the original, avoiding impacts on ancient woodland to the north of the Solar Site.

Habitats within the Solar Site would be enhanced significantly compared to the baseline (refer to Appendix B: Landscape Strategy Plan).

Proposed enhancements include a total of 1.19ha of new native tree planting, 0.65ha of native scrub planting, improvement to two existing on-Site ponds and the creation of seven new ponds, 2.8km of existing hedgerow is to be reinforced, 173m of new hedgerow is to be created, 5.73ha of existing short-sward grassland to be maintained as long grassland, 1.98ha of existing short sward grassland to be maintained as tussocky grassland and planted with low density tree planting in a field in the Western Parcel with no solar panels,

and a wildflower meadow will be created in and around panels within the two northern fields of the Eastern Parcel with various cutting regimes, for diversity, totalling 9.61ha.

Access for wildlife would be retained throughout the Solar Site with the outside security fencing maintaining a minimum 150mm gap at the base of the fence for its entire length.

1.4 Purpose of this Report

The purpose of this report is to:

- To describe the baseline data collection and assessment methods used;
- To summarise the baseline ecological conditions;
- To identify and describe all potentially significant ecological effects associated with the proposed development;
- To set out the design, mitigation and compensation measures required to ensure compliance with nature conservation legislation and to address any potentially significant ecological effects;
- To identify how mitigation and compensation measures will/could be delivered;
- To provide an assessment of the significance of any residual effects in relation to the effects on biodiversity and the legal and policy implications, if relevant; and
- To identify appropriate enhancement measures and how these will/could be delivered.

1.5 Evidence of Technical Competence and Experience

This report has been authored by Emma Clarke, BSc, Senior Ecologist at SLR and Qualifying member of the Chartered institute of Ecology and Environmental Management (CIEEEM), holding Natural England (NE) GCN Level 1 Class Licence (2019-43874-CLS-CLS), NE Bat Level 2 Class Licence (2023-10986-CL18-BAT) and holding a NPTC Level 2 Award Tree Climbing and Rescue (units 206, 306) with 6 years' experience as a professional Ecologist.

This report has been subject to review by SLR Consulting Principal Ecologist, Mr Gary Oliver. Gary is a full member of the Chartered Institute of Ecology and Environmental Management (MCIEEM) and is a Chartered Environmentalist (SocEnv), with over 28 years' relevant experience within ecological consultancy. He is a competent ornithologist and botanist, holds a Class 2 survey licence for great crested newt (also a Registered Consultant under the Low Impact GCN Class Licence), as well as a Class 2 survey licence for bats.

Evidence of technical competence and experience of SLR staff undertaking the field surveys and reporting for baseline data collection are provided in the relevant species reports as appended to this report.

1.6 Relevant Legislation and Policy

1.6.1 National Planning Policy

A summary of relevant National Legislation[1] and Policy text is included in Appendix C.

Relevant extracts from local Policy have been provided below:

1.6.2 Denbighshire Local Plan

Denbighshire County Council Adopted Local Development Plan 2006 – 2021[2] is the current local plan for Denbighshire.

Relevant policies from the plan are as follows:

"*Policy VOE 1 – Key Areas of Importance*

The following areas will be protected from development that would adversely affect them. Development proposals should maintain and, wherever possible, enhance these areas for their characteristics, local distinctiveness, and value to local communities in Denbighshire:

- *Statutory designated sites for nature conservation;*
- *Local areas designated or identified because of their natural landscape or biodiversity value;*
- *Sites of built heritage; and*
- *Historic Landscape, Parks and Gardens."*

"Policy VOE 5 – Conservation of Natural Resources.

Development proposals that may have an impact on protected species or designated sites of nature conservation will be required to be supported by a biodiversity statement which must have regard to the County biodiversity aspiration for conservation, enhancement and restoration of habitats and species. Where the overall benefits of a development outweigh the conservation interest of a locally protected nature site, mitigation and enhancement measures in or adjacent to these sites should be an integral part of the scheme.

If necessary, measures required to mitigate likely adverse effects on the qualifying features of statutory designated sites should be put in place prior to the commencement of development. Measures required to offset any likely adverse effects will be secured by planning conditions and/ or planning obligations. Planning permission will not be granted for development proposals that are likely to cause significant harm to the qualifying features of internationally and nationally designated sites of nature conservation, priority habitats, priority species, regionally important geodiversity sites, or to species that are under threat."

[1] SLR is not a legal practice, and the summary is provided as a reference only.

[2] Adopted Local Development Plan 2006-2021 accessed on 18th February 2025, at which stage a replacement development plan had not been made publicly available.

2.0 Methodology

2.1 Scope

The baseline ecological data was collated by a combination of desk-based study and field survey consistent with all current standard methodologies and published good practice guidelines unless stated otherwise. The EcIA follows guidelines set out by the Chartered Institute of Ecology and Environmental Management (CIEEM) and references therein[3].

The baseline ecological field surveys encompassed all of the land within the Solar Site boundary shown in Drawing C0002452_02 (Appendix A).

It should be noted that the substation connection cable route (the Cable Route), which follows existing roads to the north of the main Solar Site, and which shall involve works entirely within the road surface itself is referred to in the habitat survey and badger survey only. The Cable Route is not considered further within this EcIA as there will be no impact to habitats or protected or notable species associated with the Cable Route itself, as it is restricted entirely to road surfaces.

The 'Survey Area' was extended (where possible) for certain ecological features/species, as described in Section 2.2.2.

The baseline desk study was extended to 2km from the Solar Site boundary to gather contextual information for the Site, this will be referred to in this report as the 'Search Area'.

Ecological surveys have been based upon the relevant guidance for each species or habitat feature concerned as described below and in the species reports appended.

2.2 Baseline Data Collection

2.2.1 Desk Study

The local environmental record centre for North Wales (Cofnod) was commissioned to conduct a search of statutory and non-statutory designated sites for nature conservation as well as protected, notable, priority, and non-native species records, priority habitats, phase 1 habitat survey data, ancient woodland and ancient tree records for the Solar Site and land within a 2km radius of its boundary. The search was extended to 10km for Sites of Special Scientific Interest (SSSI) and Special Areas of Conservation (SACs) which list bats as a qualifying feature. The data was obtained on 12th February 2025.

The Natural Resources Wales designated sites website[4] was consulted for information pertaining to Special Protection Areas (SPA) and Ramsar sites, within 20km of the Solar Site boundary, Sites of Special Scientific Interest (SSSI) with cited ornithological features and RSPB reserves, within 2km of the Solar Site boundary.

The results of the data search have been summarised in this report. A copy can be provided to statutory consultees if required.

[3] CIEEM (2024) Guidelines for Ecological Impact Assessment in the UK and Ireland. Version 1.3. Available at: EcIA-Guidelines-v1.3-Sept-2024.pdf

[4] Natural Resources Wales / Find protected areas of land and sea

2.2.2 Field Survey(s)

2.2.2.1 UK Habitat Classification Survey

The Solar Site was surveyed to identify the broad habitat types present in accordance with the UK Habitat Classification methodology (UKHab version 2.0)[5].

The UKHab system comprises a principal hierarchy (the Primary Habitats) which involves the identification of broad habitats and Priority habitats, as well as the use of non-hierarchical Secondary codes.

Habitats were classified up to Level 5 of the Primary Hierarchy where possible, and all mandatory secondary codes were used, along with optional secondary codes where relevant.

A Minimum Mapping Unit (MMU) of 25m^2 or 5m length was used for mapping habitat polygons and lines.

Plant species listed in Schedule 9 of the Wildlife and Countryside Act (WCA) 1981 (as amended), such as Japanese knotweed (*Fallopia japonica)*, Himalayan balsam (*Impatiens glandulifera)* and giant hogweed (*Heracleum mantegazzianum)* were searched for.

The habitat survey was extended to include an assessment of the potential of the Solar Site to support legally protected or notable species, and a search for field signs of such species, including, badger (*Meles meles*), bats, breeding birds, reptiles, water vole (*Arvicola amphibius*), otter (*Lutra lutra*) and hazel dormouse (*Muscardinus avellanarius*). Land adjacent to the Cable Route, and within 30 metres of it, where accessible, was also searched for evidence of badger, primarily as badgers can sometimes excavate setts directly beneath road surfaces.

The main UKHab survey was undertaken on 13th and 14th February 2025. A further survey was undertaken on 23rd April 2025 of the woodland, stream and ditch habitats to add to species lists, and a targeted search for bluebells and other valuable ground flora was carried out at hedgerow sections due for removal. Prior to this, several visits involving habitat recording had been undertaken as described above, encompassing some parts of the current Solar Site, and as well as surrounding habitats present within previous iterations of the Site boundary.

Previous botanical surveys were undertaken on:

- 21st January 2022;
- 15th September 2022 (central cable route joining Eastern and Western Parcel);
- 15th December 2023; and
- 11th April 2024 (northeastern areas of the Eastern Parcel)

Notes and photographs from previous surveys have been used alongside the most recent survey to accurately classify habitats within the Solar Site boundary as per Figure 1 – Baseline Habitats (Appendix G: Appendix C).

2.2.2.2 Amphibians including Great Crested Newt

The Site was assessed to gauge its suitability for amphibians including a search for the presence of waterbodies which could be used for breeding by great crested newt (GCN) (*Triturus cristatus*).

[5] UKHab Ltd (2023) UK Habitat Classification System Version 2.0. Available at: https://www.ukhab.org

A suite of surveys was conducted during 2022 and 2024 to establish the presence or likely absence of GCN in ponds within the Site and up to 500m from the Site boundary.

In 2022 the survey approach and extent were scoped and agreed with Senior Species Advisor for Natural Resources Wales (NRW), prior to commencement of survey work, with continued collaboration occurring throughout the process.

In 2022, the survey area encompassed parts of the current Site boundary and other fields which are no longer included within the current application Site; however, all of the information gathered has been presented, for context, and to show the known distribution of GCN ponds in the wider landscape.

A combination of traditional GCN surveys (torching/ bottle trapping) and environmental DNA (eDNA) surveys of the then on-site ponds and ponds within a 500m buffer of the 2022 site boundary were undertaken in 2022. The eDNA surveys were updated in 2024 in case of change.

Further details on methods for these surveys is provided in Appendix D.

2.2.2.3 Birds

Wintering bird surveys were conducted at the Solar Site in 2024 and 2025, a four-hour long survey carried out per month between October 2024 and March 2025 inclusive. Each survey was timed to take place two hours either side of high tide at Rhyl, with the intention of establishing whether or not there is a functional link with the Liverpool Bay SPA and/ or the Dee Estuary SPA or Ramsar Site, and the Site itself. Further details of methods for these surveys are provided in Appendix E.

2.2.2.4 Bats

Habitat Assessment

A UK Habitat Survey (UKHab) was undertaken on 13th and 14th February 2025, during which broad habitat types were recorded.

Habitats within the Solar Site were categorised in accordance with the habitat survey results and information set out in Table 2-1, following Bat Conservation Trust (BCT) (2023) guidelines [6].

Table 2-1 Habitat Suitability for Bats

Suitability	Potential Flight Paths and Foraging Habitats
None	No habitat features on site are likely to be used by any commuting or foraging bats at any time of year (i.e. no habitats that provide continuous lines of shade/protection for flightlines or generate/shelter insect populations available to foraging bats).
Negligible	No obvious habitat features on site are likely to be used as flightpaths or by foraging bats; however, a small element of uncertainty remains in order to account for non-standard bat behaviour.
Low	Habitat that could be used by small numbers of bats as flightpaths such as gappy hedgerows or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat.

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

Suitability	Potential Flight Paths and Foraging Habitats
Moderate	Continuous habitat connected to the wider landscape that could be used by bats for flightpaths such as lines of trees and scrub or linked back gardens. Habitat is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland and water.
High	Continuous high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by bats for flight paths such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broad-leaved woodland, tree lined watercourses and grazed parkland. Site is close to and connected to known roosts.

Roost Assessment

There are no buildings, or other structures present on Site that may be used by roosting bats.

No impacts on trees are predicted as part of the proposals, therefore Ground Level Tree Assessment (GLTA) or further roost surveys for bats have not been undertaken.

2.2.2.5 Badger

Several surveys have been undertaken since 2021 to check for the presence of badger at the Site. The most recent survey of the main Solar Site was undertaken on 14th January 2025 with a further survey on the 23rd April 2025 along the proposed Cable Route and its margins. The Cable Route is entirely restricted to road surfaces between the main Solar Site and the St Asaph Substation, including the track to Tyn Y Coed, Glascoed Road, and Cwttir Lane.

The survey area, and buffer of 30m where accessible, was systematically searched for signs of badgers including setts, foraging signs, dung pits/ latrines, snuffle holes, scratching posts, hairs, prints, day nests and mammal paths. The survey was undertaken in line with standard badger surveying procedures.

Further details on methods for these surveys is provided in Confidential Appendix F. However, it should be noted that this report contains sensitive information on the location of badger setts and therefore this appendix should not be released into the Public Domain unless this information is fully redacted.

2.2.2.6 Water Vole

Suitability of watercourses were assessed, and field signs of water vole were searched for during the extended UK habitat surveys carried out on the Solar Site. On 23rd April 2025, a targeted search for water vole field signs and burrows was undertaken of two ditches within the Site. These ditches will be intersected by access tracks as part of the Proposed Development.

2.2.3 Limitations

2.2.3.1 Desk Study

Desk study data is intended mainly to set a context for the study. It is therefore possible that important habitats or protected species not identified during the data search do in fact occur within the vicinity of the Site. Interpretation of maps and aerial photography has been conducted in good faith, using recent imagery, but it has not been possible to verify the

accuracy of any statements relating to land use and habitat context outside of the field study area.

2.2.3.2 Field Survey(s)

Overall, the survey effort was extensive, and it is considered that the survey methods carried out are sufficient to meet the aims of the survey

All areas of the Site were accessible for the purposes of the UKHab survey. The timing of the survey in February 2025 was outside the main plant growing season and certain species may not have been evident. This could have resulted in ground flora and invasive plant species being under-recorded at woodlands and hedgerow bases and in ditches and streams. The survey of these habitats was therefore updated on 23rd April to account for this. The main habitat recorded within the Site, modified grassland, is unlikely to support any rare or notable species due to intensive grazing and other management practices, therefore no survey limitations are considered to apply.

Appendix D, details limitations encountered during the GCN surveys, relating to access or conditions impacting the ability to implement certain survey techniques or influencing their effectiveness. Overall, the survey effort was extensive, and it is considered that the survey methods carried out are sufficient to undertaken a robust assessment.

No part of the main Solar Site and 30m buffer (Confidential Appendix F: Appendix C) were inaccessible for the badger survey and a full search for signs of badger could be undertaken. Access, however, was not possible at the time of survey to the field sides of part of the grid connection Cable Route (refer to Drawing C0002452_02) associated with the Glascoed Road. The bases of the hedgerows and immediately adjacent land were inspected from the roadside only, and efforts were made to search for badger paths passing beneath hedgerows here. Dependant on the final positioning of the cable route and method of works, access may need to be sought to the fields in order to compete a thorough check for badger setts up to 30m either side of the road.

All other surveys were conducted at optimal times of year for survey and in appropriate weather conditions; therefore, no further limitations were identified.

2.3 Assessment Approach

The ecological evaluation and impact assessment approach used in this report is based on Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland (“CIEEM guidelines”) (CIEEM, 2018).

2.3.1 Important Ecological Features

Ecological features can be important for a variety of reasons and the rationale used to identify them is explained in the text. Importance may relate, for example, to the quality or extent of the site or habitats therein; habitat and/ or species rarity; the extent to which such habitats and/ or species are threatened throughout their range, or to their rate of decline.

2.3.1.1 Determining Importance

The importance of an ecological feature should be considered within a defined geographical context. The following frame of reference has been used in this case, relying on known/ published accounts of distribution and rarity where available, and professional experience:

- International;
- National (i.e. UK);
- Regional (i.e. North Wales);

- County (i.e. Denbighshire); and
- Local (i.e. within circa 5km).

The above frame of reference is applied to the ecological features identified during the desk study and surveys to inform this report.

The value of habitats has been measured against published selection criteria where available. Examples of relevant criteria include: descriptions of habitats listed on Annex 1 of the Habitats Directive, and descriptions of habitats of principle importance for biodiversity under Section 7 of the Environment (Wales) Act 2016.

It is worth noting here that the Local Biodiversity Action Plan (LBAP) was sought for Denbighshire but appears to no longer be available online, or elsewhere, having been archived in 2017.

In assigning a level of value to a species, it is necessary to consider its distribution and status, including a consideration of trends based on available historical records. Reference has therefore been made to published lists and criteria where available. Examples of relevant lists and criteria include: species of European conservation importance (as listed on Annexes II, IV and V of the Habitats Directive or Annex 1 of the Birds Directive), and species of principal importance for biodiversity under Section 7 of the Environment (Wales) Act 2016 and Birds of Conservation Concern[7].

For the purposes of this report ecological features of local importance or greater and/or subject to legal protection have been subject to detailed assessment. Effects on other ecological features are considered unlikely to be significant in legal or policy terms.

2.3.2 Impact Assessment

The impact assessment process involves the following steps:

- identifying and characterising potential impacts;
- incorporating measures to avoid and mitigate (reduce) these impacts;
- assessing the significance of any residual effects after mitigation;
- identifying appropriate compensation measures to offset significant residual effects (if required); and
- identifying opportunities for ecological enhancement.

When describing impacts, reference has been made to the following characteristics, as appropriate:

- Positive or negative;
- Extent;
- Magnitude;
- Duration;
- Timing;
- Frequency; and
- Reversibility.

[7] Eaton, M.A., Aebischer, N.J., Brown, A., Hearn, R.D., Lock, L., Musgrove, A.J., Noble, D.G., Stroud, D.A., & Gregory, R.D. (2015). Birds of Conservation Concern 4: the population status of birds in the UK, Channel Islands and Isle of Man. British Birds, 108: 708-746.

The impact assessment process considers both direct and indirect impacts: direct ecological impacts are changes that are directly attributable to a defined action, e.g. the physical loss of habitat occupied by a species during the construction process. Indirect ecological impacts are attributable to an action, but which affect ecological resources through effects on an intermediary ecosystem, process or feature, e.g. the creation of roads which cause hydrological changes, which, in the absence of mitigation, could lead to the drying out of wet grassland.

Consideration of conservation status is important for evaluating the effects of impacts on individual habitats and species and assessing their significance:

- Habitats – conservation status is determined by the sum of the influences acting on the habitat that may affect its extent, structure and functions as well as its distribution and its typical species within a given geographical area; and
- Species – conservation status is determined by the sum of influences acting on the species concerned that may affect its abundance and distribution within a given geographical area.

2.3.3 Significant Effects

The concept of ecological significance is addressed in paragraphs 5.24 through to 5.28 of CIEEM guidelines. Significance is a concept related to the weight that should be attached to effects when decisions are made. For the purpose of EcIA, a 'significant effect' is an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features' or for biodiversity in general. Conservation objectives may be specific (e.g. for a designated site) or broad (e.g. national/local nature conservation policy) or more wide-ranging (enhancement of biodiversity). Effects can be considered significant at a wide range of scales from international to local and the scale of significance of an effect may or may not be the same as the geographic context in which the feature is considered important.

2.3.4 Avoidance, Mitigation, Compensation and Enhancement

When seeking mitigation or compensation solutions, efforts should be consistent with the geographical scale at which an effect is significant. For example, mitigation and compensation for effects on a species population that is significant at a county scale should ensure no net loss of the population at a county scale. The relative geographical scale at which the effect is significant will have a bearing on the required outcome which must be achieved.

Where potentially significant effects have been identified, the mitigation hierarchy has been applied, as recommended in the CIEEM Guidelines. The mitigation hierarchy sets out a sequential approach beginning with the avoidance of impacts where possible, the application of mitigation measures to minimise unavoidable impacts and then compensation for any remaining impacts. Once avoidance and mitigation measures have been applied residual effects are then identified along with any necessary compensation measures, and incorporation of opportunities for enhancement.

It is important for the EcIA to clearly differentiate between avoidance mitigation, compensation and enhancement and these terms are defined here as follows:

- Avoidance is used where an impact has been avoided, e.g. through changes in scheme design;
- Mitigation is used to refer to measures to reduce or remedy a specific negative impact *in situ;*
- Compensation describes measures taken to offset residual effects, i.e. where mitigation *in situ* is not possible; and

- Enhancement is the provision of new benefits for biodiversity that are additional to those provided as part of mitigation or compensation measures, although they can be complementary.

3.0 Baseline Ecological Conditions

3.1 Statutory Designated Sites

The Site itself is not designated as a statutory ecological site, however, there are two sites within 2km of the Solar Site boundary whose boundaries are coincident; Coedydd ac Ogofau Elwy a Meirchion Site of Special Scientific Interest (SSSI) and Coedwigoedd Dyffryn Elwy / Elwy Valley Woods Special Area of Conservation (SAC) , which are situated 865m to the south-west of the Site at their nearest points.

The SAC is designated for its Annex 1 habitat 'Tilio-Acerion forests on slopes, screes and ravines'. No Annex II species are listed as a primary reason for site selection, or as a qualifying feature, though lesser horseshoe bat (*Rhinolophus hipposideros*) is reported to occur.

Further details are provided in Table 3-1.

Additionally, there is one Special Protection Area (SPA) within 10km of the Site boundary, namely the Liverpool Bay / Bae Lerpwl (Wales) SPA, and three SSSIs which list bats as a qualifying feature. The Dee Estuary SPA and Ramsar Site is within 15km of the Site boundary. Further details on these statutory designated sites are provided in Table 3-1.

Table 3-1 Statutory Designated Site Descriptions

Distance from Site	Site and Designation	Description	Reason for Scoping In/ Out
*c.*865m southwest of Site	Coedwigoedd Dyffryn Elwy / Elwy Valley Woods (82.7 ha) SAC Coedydd ac Ogofau Elwy a Meirchion (83.01) SSSI (bats)	"*One of three sites selected to represent Tilio-Acerion forest across its geographic range on the Carboniferous limestone of north Wales, and is an example of the habitat with an outstanding lower-plant flora. The canopy is quite varied: ash (Fraxinus excelsior) is the commonest tree, but there is also occasional small-leaved lime and wild service-tree. There is a rich, calcicolous understorey and ground flora, and rare bryophytes include Bryum anariense, Cololejeunea rossettiana, Plagiochila britannica, Platydictya confervoides and Isothecium striatulum. The woods have developed along steep valley-sides and ravines that are also important for their cave systems and Pleistocene fossil mammal assemblages.*"[8] *"The site is of special interest for its semi-natural broadleaved woodland, its rare flowering plant assemblage, its scarce bryophyte assemblage and the geological and palaeontological interest*	The SAC and SSSI are more than 500m from the proposed development and are not hydrologically linked. The SAC is not designated for its bat population. As such, no impact on the SAC, or its qualifying features, is predicted, and it is not taken forward for detailed assessment. The SSSI citation notes the caves to support various species of bat, although the Sites are within the Core Sustenance Zones (CSZ)[10] for all species mentioned, the proposed development retains commuting routes ie. woodlands

[8] Coedwigoedd Dyffryn Elwy/ Elwy Valley Woods - Special Areas of Conservation

[10] Bat-Species-Core-Sustenance-Zones-and-Habitats-for-Biodiversity-Net-Gain.pdf

Distance from Site	Site and Designation	Description	Reason for Scoping In/ Out
		of Galltfaenan, Cefn and Pontnewydd Caves… *The well-wooded and sheltered watercourses afford lying-up sites for otter Lutra lutra…* *Natterer's Myotis nattereri, brown long-eared Plecotus auritus, pipistrelle Pipistrellus pipistrellus and lesser horseshoe bats are recorded in the caves."*[9]	and has an overall gain in hedgerow, scrub, and pond habitats, which will improve the overall foraging and commuting resource for bats. The Coedydd ac Ogofau Elwy a Meirchion SSSI is therefore not predicted to be directly or indirectly impacted by the scheme, and therefore it is not considered further in this report.
c.5.7km east of Site	Ffynnon Beuno and Cae Gwyn Caves SSSI (bats)	"*The site comprises two small caves which shelter a winter roost (hibernaculum) of lesser horseshoe bat. This is the third largest winter roost for this species in Clwyd, with annual counts exceeding 50 bats. Two other species of bat have also used these caves, Natterer's bat and brown long-eared bat.*"[11]	The SSSI is outside of a 5km radius of the proposed development and is not hydrologically linked. No direct impacts are predicted. CSZs for the species of bat cited are less than the distance to the proposed development. No indirect impacts are therefore predicted, and the SSSI is not considered further in this report.
c.7.5km northeast of Site	Graig Fawr SSSI (bats)	"*Graig Fawr is of special interest for its range of limestone (calcicolous) grassland communities as well as its populations of vascular plants and lepidoptera…* *There is a hibernaculum supporting a small number of lesser horseshoe bats."*[12]	The SSSI is outside of a 7km radius of the proposed development and is not hydrologically linked. No direct impacts are predicted. The CSZ for lesser horseshoe bats is 2km (less than the distance to the proposed development). No indirect impacts are therefore predicted, the SSSI is not considered further in this report.

[9] SSSI NOTIFICATION/RENOTIFICATION CITATIONS - FORMAT

[11] NJOFFYNNONETC. [PERM]

[12] CYNGOR CEFN GWLAD CYMRU

Distance from Site	Site and Designation	Description	Reason for Scoping In/ Out
*c.*8.4km north of Site	Liverpool Bay / Bae Lerpwl (Wales) SPA	*Designated for its assemblages of common scoter Melanitta nigra, common tern Sterna hirundo, little gull Hydrocoloeus minutus, little tern, Sterna albifrons, red-throated diver Gavia stellata), red-breasted merganser Mergus serrator and great cormorant Phalacrocorax carbo.*[13]	Wintering bird surveys were undertaken in 2024 and 2025. No functional link was found between the proposed Site and the SPA, and no impacts are therefore predicted. The SPA is not considered further in this report.
c.9km northwest of Site	Coed y Gopa SSSI (bats)	*"This site is notified for its species interest, a winter roost of lesser horseshoe bat.* *The many natural cave and underground mine workings provide ample opportunities for bat roosting areas.* *The site shelters Clwyd's second largest hibernaculum of lesser horseshoe bat. Annual counts are well in excess of 50 bats with a maximum of 130 recorded in December 1993. Two other species of bat are also present in small numbers, Natterer's bat and Daubentons bat.."*[14]	The SSSI is outside of an 8km radius of the proposed development and is not hydrologically linked. No direct impacts are predicted. CSZs for the species of bat cited are less than the distance to the proposed development. No indirect impacts are therefore predicted, and the SSSI is not considered further in this report.
c.14.42km northeast of Site	The Dee Estuary SPA and Ramsar Site	*Designated for its assemblages of wintering bar-tailed godwit Limosa lapponica, shelduck Tadorna tadorna, teal Anas crecca, pintail Anas acuta, oystercatcher Haematopus ostralegus, grey plover Pluvialis squatarola, knot Calidris canutus, dunlin Calidris alpina, black-tailed godwit Limosa limosa, curlew Numenius arquata, redshank Tringa tetanus, and great crested grebe Podiceps cristatus.*[15]	Wintering bird surveys were undertaken in 2024 and 2025. No functional link was found between the proposed Site and the SPA/Ramsar site, and no impacts are therefore predicted. The SPA and Ramsar site are therefore not considered further in this report.

As summarised in Table 3-1, no direct or indirect impacts are predicted on any of the statutory designed sites in relation to the proposed development, there they have therefore not been considered further in this report.

[13] v2 Liv Bay SPA draft RES entry

[14] SSSI NOTIFICATION/RENOTIFICATION CITATIONS - FORMAT

[15] European Site Conservation Objectives for Dee Estuary SPA - UK9013011

3.2 Non-Statutory Designated Sites

There are several non-statutory sites within 2km of the Solar Site boundary, as detailed in Table 3-2, and illustrated in Appendix G: Appendix D.

Table 3-2 Non-Statutory Designated Sites within 2km of Site.

Distance from Solar Site	Site Name	Description
Partly adjacent to the east of the Eastern Area of the Site.	Ty'n-y-Coed Rough (2 areas) Wildlife Sites for Denbighshire	Flat, lowland broadleaved woodland
Partly adjacent to the south of the Eastern Area of the Site	Glascoed (2 areas) Wildlife Sites for Denbighshire	Lowland, ancient broadleaved woodland
123m northwest of the of the Site	Coed Cord / Coed y Saeson Wildlife Sites for Denbighshire	Flat, low lying, ancient woodland including Alder, Ash, Oak and Birch communities. Hazel forms an extensive herb layer with Hawthorn and Ash and Elm saplings. The herb-layer is varied with Dog's Mercury, Sanicle, Giant Fescue, False Brome and Early Dog-violet.
322m northeast of the of the Site	Coed Fron and Eryl Hall Wood Wildlife Sites for Denbighshire	Ancient woodland with Alder, Ash, Oak and Birch communities.
416m northwest of the Site	Gwynt-y-Mor Wild Ground Nature Reserve	Not given
431m west of the Site	Bryn Meiriadog Wildlife Sites for Denbighshire	Ancient woodland including Alder, Ash and Oak communities, Blackthorn and Hazel scrub and calcareous grassland . The latter occurs on rocky outcrops within the wood. Ancient woodland flora includes Black Bryony, Bluebell, Wild Strawberry, Wood Avens, Common Cow-wheat and Wood Melick. The limestone grassland flora in rocky areas includes Sheep's Fescue, Meadow Oat-grass, Musk Thistle, Common Rock-rose, Common Stork's-bill and Wild Thyme. On deeper soils it is quite rank but species rich with Sweet Vernal-grass, False Oat-grass, Meadow Oat-grass, Creeping Thistle, Pignut, Bird's-foot-trefoil, Salad Burnet, Goat's-beard and the uncommon Dropwort.

Distance from Solar Site	Site Name	Description
		This area is part of Cefn Estate, which supports a large population of Fallow Deer.
631m south of the Site	Coed Kendrick Wildlife Sites for Denbighshire	Ancient broadleaved woodland on a gentle, south facing slope.
737m southwest of the Site	Coed yr Accar (2 areas) Wildlife Sites for Denbighshire	Ancient broadleaved woodland.
1,028m southeast of the Site	Chapel Wood/Coed Mawr Wildlife Sites for Denbighshire	South facing ancient broadleaved woodland
1,267m northwest of the Site	Glascoed Wild Ground Nature Reserve	A mosaic of 14 ponds, improved grasslands, ditch and 2 planted woodland compartments, some mature trees in pre-existing hedgerows, especially along the northern boundary.
1,329m southeast of the Site	Rickfield Wood/Coed Ddol Fawr/Coed Llanddol/Maes Elwy Covert (R Elwy Woods) Wildlife Sites for Denbighshire	Ancient broadleaved and replanted woodland along the Elwy Valley
1,556m southwest of the Site	Coed Bont Newydd Wildlife Sites for Conwy	Broadleaved woodland.
1,614m southwest of the Site	Coed Nant-y-graig Wildlife Sites for Conwy	Broadleaved woodland.
1,649m west of the Site	Coed y Ddol/Coed y Fadir Wildlife Sites for Denbighshire	A south facing lowland ancient woodland on the valley side of the River Elwy. Wet, Alder woodland occurs on lower slopes, Ash woodland where it is drier, and Silver Birch woodland where soils are more acid.
1,653m southwest of the Site	Pwllau Graig Wildlife Sites for Conwy	Standing water.
1,774m northeast of the Site	Mount Road Churchyard, St Asaph Wildlife Sites for Denbighshire	This cemetery has neutral grassland, which has been left uncut during the summer. Species include Cock's-foot, Common Knapweed, Pepper Saxifrage and Stinking Iris. Trees around the site include Ash, Oak, Yew and Wild Cherry. Various butterflies occur such as Orange Tip, Meadow Brown, Small Tortoiseshell and Peacock and a large population of Slow worm has been recorded.
1,916m south of the Site	Coed Pont y Trap Wildlife Sites for Conwy	Broadleaved woodland.
1,973m southwest of the Site	Pwllau Coed y Dafarn Wildlife Sites for Conwy	Standing water.

Distance from Solar Site	Site Name	Description
1,976m south of the Site	Nany Meirchion field Wildlife Sites for Denbighshire	Species rich neutral grassland on a valley side. Species include Crested Dog's-tail, Yorkshire-fog, Common Bent, Common Knapweed, Cat's-ear, Primrose, Common Century, Bird's-foot-trefoil and Early-purple Orchid. Wetter parts have Greater Bird's-foot-trefoil, Meadowsweet and Creeping Buttercup.

Two of the Local Wildlife Sites (LWS) in Table 3-2, namely, Ty'n-y-Coed Rough and Glascoed Wildlife Sites for Denbighshire, lie immediately adjacent to Site, and as such they will be considered further in this assessment.

Considering the nature of the proposed development and distances of the other LWSs from the Site, it is considered highly unlikely that any negative impacts would occur, and therefore all other non-statutory sites have been omitted from further assessment.

3.2.1 Ancient Woodland

Areas of ancient woodland occur within 2km of the Solar Site, including two adjacent to the boundary, namely:

- Pig-y-fran (Plantation on Ancient Woodland Site) – is adjacent to the mid-section of the Eastern Parcel, on its western side; and
- Tyn-y-coed Rough (Restored Ancient Woodland Site) – is adjacent to the Eastern Parcel, for a section on its northeastern side.

The location, and extent, of these woodlands is illustrated in Appendix G: Appendix D.

As previously mentioned, the updated site layout specifically excludes four small fields to the north which were surrounded by ancient woodlands (Coed Esgob, Coed yr Esgob and ancient woodland connected to Tyn-y-ffordd Gorse); these now lie approximately 70-90m to the north of the Eastern Parcel's boundary at their closest point.

The two Ancient Woodland Sites (AWS) adjacent to the Site will be taken forward in this assessment. The other areas of ancient woodland are sufficiently distant not to be impacted, and these have therefore been excluded from further assessment.

3.2.2 Priority Habitats (Section 7 Environment (Wales) Act)

The Section 7 list is used to guide authorities in implementing their duty to have regard to maintaining and enhancing of biodiversity.

The data received by Cofnod found no priority habitats recorded within the Site itself. The closest priority habitats to the Site are two small i.e. less than 0.1ha each, traditional orchards, lying between the Eastern and Western Parcels, approximately 135m distant from Site at their closest point Several other small traditional orchards occur within the 2km search area, further away from Site. Approximately 430m to the south of Solar Site, is a larger area of wood pasture and parkland (420ha), also containing two small areas of lowland calcareous grassland. Further wood pasture and parkland is present at Bodelwyddan Park approximately 1.75km to the northwest of Site. To the southeast limestone pavements occur approximately 641m away from the Site boundary. Areas to the

east and south of Site, associated with the River Elwy /Afon Elwy are recorded as coastal floodplain and grazing marsh.

Due to the nature of the proposed development and distance of these sites from the development, it is thought very unlikely that any negative impacts will occur and these areas will therefore not be taken forward in this assessment.

The UK Habitat Classification survey, however, did record priority habitats within the Solar Site, as listed under Section 7 of the Environment (Wales) Act 2016[16], namely:

- Native Hedgerow;
- Other Lowland Mixed Woodland;
- Other Standing Water – Ponds; and
- Other Rivers and Streams

These priority habitats are considered to be of local importance and have therefore been subject to further assessment.

3.3 Habitats

A plan showing the habitats present within the Solar Site is provided as Figure 1 – Baseline Habitats (Appendix G: Appendix C). Full details of the habitats recorded on Site is provided in Appendix G.

A summary of the habitats within the Solar Site is provided below:

- Other Lowland Mixed Deciduous Woodland (w1f7) - Separating two of the northerly fields in the Western Parcel, over a silty, shallow stream, is a narrow area of lowland mixed deciduous woodland. The Eastern Parcel is also bordered on its west boundary by narrow mixed deciduous woodland over a small brook or stream. 'Lowland Mixed Deciduous Woodland' is a priority habitat as listed on Section 7 of the Environment (Wales) Act, the 'Other Lowland Deciduous Mixed Woodland' habitats recorded on Site are an example of this priority habitat and this habitat has therefore been taken forward in this assessment.
- Other Rivers and Streams (r2b) – There is a brook bordering the Eastern Parcel which was found to be shallow with gradually sloping earth banks with a silty base, the stream is heavily shaded and little vegetation is present. Similarly, the Western Parcel contains a boundary stream, which was sinuous, suggesting flow at times but was found to be standing water at the time of the survey. The stream continues beyond the boundary of the woodland, south, and runs alongside the hedgerow here becoming a ditch. The streams within the Site fit the broad habitat description for 'Rivers and Streams' as listed on Section 7 of the Environment (Wales) Act and are therefore Priority Habitats. They are taken forward in this assessment.
- Other Standing Water (r1g) - Ponds (priority habitat) (secondary code 40) - There are six ponds present within the Solar Site boundary. Generally, the ponds are shallow and utilised by cattle with poached banks. During surveys undertaken by SLR from 2022 onwards, three of the six ponds were found to support GCN, there is a known population in the area, the ponds therefore qualify as Priority Habitat and will be taken forward in this assessment.
- Modified Grassland (g4) – All fields making up the Solar Site comprise modified grassland with low species diversity, used as pasture. This is a common and

[16] masterss7habitatslistmay 2016.pdf

widespread habitat, which is not a priority habitat, and is of less than local importance, it is therefore not taken forward in this assessment.

- Mature Trees (secondary code 203) – Five individual mature oak trees occur within the modified grassland habitats within the Solar Site. Mature oak trees, especially when close to connecting features such as hedgerow, can be an important foraging resource for bats, provide nesting opportunities for breeding birds and support invertebrates. All individual trees are to be retained as part of the proposed development, they are therefore not taken forward in this assessment.
- Other Neutral Grassland (g3c) – The Solar Site boundary includes a narrow area which provides a cable route between the Western and Eastern Parcels, this includes the edges of several horse grazed fields of slightly more species diverse neutral grassland than found over much of the Solar Site. This however is a common and widespread habitat, which is not a priority habitat, and is of less than local importance. Therefore, it has been excluded from further assessment.
- Native Hedgerow (h2a) - The fields in both the Western and Eastern Parcels are bordered by native hedgerows, managed by flailing. Many of the hedgerows contain mature oak standards, and rarely ash. Most were intact along their length, but some contained gaps of up to 12m. Native hedgerows are a priority habitat and have therefore been included for further assessment.
- Ditches (secondary code 50) - Some of the hedgerows were associated with ditches. Ditches on Site were generally in a poor condition, holding small amounts of water. They are a common and widespread habitat, which is not a priority habitat, however species were recorded during habitat survey, including grey sedge (*Carex divulsa*) and watercress (*Rorippa nasturtium-aquaticum*), which are included on local rare plant registers or occurring on the Wales Red List, they are considered of local importance as integral part of the feature concerned (for example, as part of the ditch they occur within). Therefore, ditches have been brought forward in this assessment alongside hedgerows.
- Line of trees (w1, 33) - A line of native mature trees is present to the southern boundary of the Eastern Parcel. Next to it is a dry ditch on the opposing side to the Site boundary. Line of trees whilst not listed as a priority habitat are of value to commuting and foraging bats, to birds and other protected species. The line of trees will be retained as part of the proposed development and is therefore not therefore considered further in this report.
- Urban - Other Developed Land (u1b6) 839 track, or 800 road - A concrete farm track forms the northern boundary of the Western Parcel and the substation Cable Route to the north of the Solar Site follows roads for its entire length. This urban habitat type is not of ecological value and is therefore not taken forward in this assessment.
- Urban - Artificial Unvegetated – Unsealed Surface (u1c) 839 track - A further gravel/hardcore track is found to the north of the Eastern Parcel. This urban habitat type is not of ecological value and is therefore not taken forward in this assessment.
- Built Linear Features (u1e) 612 fence - Boundary fences are found across the Solar Site, associated with hedgerows or lines of trees. To the northern boundary of the most north eastly field of the Eastern Parcel, a wire fence forms the boundary between the field and farm track. This urban habitat type is of insignificant ecological value and is therefore not taken forward in this assessment.

3.4 Species

3.4.1 Plants

Cofnod returned records of numerous notable plant species occurring within 2km of the Solar Site, although, none of these relate to land within the Solar Site boundary (Table 3-3).

In addition to those listed in Table 3-3, further records of plant species of local importance[17] were provided, as detailed within (Appendix G: Appendix E).

Table 3-3 Notable Plant Species Recorded within 2km of the Solar Site.

Scientific Name	English Name	Most Recent Record	Nearest record to Solar Site (m)	Status*
Silene vulgaris	Bladder Campion	2016	300	Wales Red List - Near Threatened
Juniperus communis subsp. communis	Common Juniper	1970	394	UK BAP, Section 7
Pinus sylvestris	Scots Pine	2024	406	Red Data Book - Nationally Scarce, Rare Plant Register Denbighshire - Locally Rare
Carex pseudocyperus	Cyperus Sedge	2016	431	Wales Red List - Near Threatened, Rare Plant Register Denbighshire - Locally Rare
Hypericum montanum	Pale St John's-wort	2017	844	Red List - Near Threatened
Anacamptis morio	Green-winged Orchid	2021	884	Red List - Near Threatened, CITES-B, Rare Plant Register Denbighshire - Locally Rare
Ctenidium molluscum	Chalk Comb-moss	2009	949	Wales Red List - Data Deficient
Verbascum nigrum	Dark Mullein	2023	954	Wales Red List - Near Threatened
Hyacinthoides non-scripta	Bluebell	2021	978	WCA 8
Sagittaria sagittifolia	Arrowhead	1999	996	Wales Red List - Vulnerable
Veronica spicata	Spiked Speedwell	2011	1,030	WCA 8
Euphorbia lathyris	Caper Spurge	2024	1,030	CITES-B, Rare Plant Register Denbighshire - Locally Scarce
Scabiosa columbaria	Small Scabious	2021	1,030	Wales Red List - Vulnerable
Helleborus foetidus	Stinking Hellebore	2011	1,030	Red Data Book - Nationally Scarce

[17] As defined within the Denbighshire (VC50) Country Rare Plants Register

Scientific Name	English Name	Most Recent Record	Nearest record to Solar Site (m)	Status*
Sesleria caerulea	Blue Moor-grass	1982	1,145	Red Data Book - Nationally Scarce, Wales Red List - Regionally Extinct
Buxus sempervirens	Box	1985	1,383	Red Data Book - Nationally Rare, Rare Plant Register Denbighshire - Locally Rare
Ophrys apifera	Bee Orchid	2024	1,384	CITES-B
Veronica spicata subsp. hybrida	Western Spiked Speedwell	1999	1,444	WCA 8, Rare Plant Register Denbighshire - Locally Rare
Butomus umbellatus	Flowering-rush	2012	1,449	Wales Red List - Vulnerable
Physcia tenella		1972	1,556	Wales Red List - Data Deficient
Xanthoria ucrainica		1972	1,556	Red Data Book - Near Threatened, Rare Plant Register Denbighshire - Locally Scarce
Ruscus aculeatus	Butcher's-broom	1926	1,556	HDir 5, Wales Red List - Vulnerable, Rare Plant Register Denbighshire - Locally Rare
Mentha arvensis	Corn Mint	2024	1,556	Wales Red List - Vulnerable, Rare Plant Register Denbighshire - Locally Near Scarce
Centaurea cyanus	Cornflower	1850	1,556	UK BAP, Section 7, Wales Red List - Critically Endangered
Potentilla tabernaemontani	Spring Cinquefoil	1999	1,604	Red Data Book - Nationally Scarce
Entosthodon pulchellus	Pretty Cord-moss	2005	1,637	UK BAP, Red Data Book - Near Threatened, Rare Plant Register Denbighshire - Locally Near Scarce
Euphorbia amygdaloides	Wood Spurge	2000	1,641	CITES-B, Rare Plant Register Denbighshire - Locally Scarce
Hippuris vulgaris	Mare's-tail	1978	1,699	Wales Red List - Near Threatened
Vicia bithynica	Bithynian Vetch	2020	1,835	Red Data Book - Nationally Scarce, IUCN Red List - Vulnerable, Wales Red List - Endangered, Rare Plant Register Denbighshire - Locally Rare
Spergula arvensis	Corn Spurrey	2011	2,296	Red List - Vulnerable, Wales Red List - Near Threatened, Rare Plant Register Denbighshire - Locally Near Scarce

*HDir5 - Habitats Directive, Annex V - Species where population management is decided by individual countries, UK BAP - UK Biodiversity Action Plan Priority Species, CITES-B - Convention on International Trade in Endangered Species, Annex B - Species that may become extinct unless trade is closely controlled, Red Data Book - Red Data Book listing (not based on IUCN guidelines), Red List - IUCN Red List of Threatened Species, WCA 8 - Wildlife & Countryside Act 1981 Schedule 8 - Plants which are protected, Wales Red List - Red Data List for Wales

The majority of the Solar Site supports modified grassland; protected or notable plant species are not usually associated with this habitat type, due to its management regime.

Bluebells were noted to occur occasionally within the understorey of hedgerows, especially where they adjoin ancient woodland. The survey in April 2025 found no bluebells within areas of hedgerow to be affected by the scheme. Bluebells are protected under the Wildlife and Countryside Act 1981, Schedule 8 (Section 2) and are protected from uprooting or picking for the purpose of sale only. Grey sedge (*Carex divulsa)*, watercress (*Rorippa nasturtium-aquaticum*) and bitter vetch (*Lathyrus linifolius*) were also returned by the data search as occurring on local rare plant registers.

All notable species found within the Site are associated with Priority Habitat types, i.e. woodland, hedgerow, streams and in the case of ditches, these are all associated with an adjoining hedgerow. All of these habitat types are taken forward in this assessment and protected or notable species will be considered alongside the wider habitat type.

Invasive Non-Native Species (INNS)

There were 52 records returned of invasive non-native plant species returned by the data search listed as such under Schedule 9 of the WCA 1981:

- 36 records of Himalayan balsam (*Impatiens glandulifera)* also an Invasive Alien Species (IAS), with the nearest being 754m from the Solar Site;
- Three records of montbretia (*Crocosmia pottsii x aurea = C. x crocosmiiflora)* with the nearest being 1278m from the Solar Site;
- Two records of wall cotoneaster (*Cotoneaster horizontalis*) with the nearest being 1030m from the Solar Site;
- Two records of American skunk cabbage (*Lysichiton americanus*) also an IAS with the nearest being 1027m from the Solar Site;
- One record of few flowered garlic (*Allium paradoxum*) with the nearest being 2000m from the Solar Site;
- One record of giant hogweed (*Heracleum mantegazzianum*) also an IAS, with the nearest being 1906m from the Solar Site;
- One record of Himalayan cotoneaster *(Cotoneaster simonsii)* with the nearest being 1676m from the Solar Site;
- One record of Himalayan honeysuckle (*Leycesteria formosa)* with the nearest being 1556m from the Solar Site;
- One record of Japanese knotweed (*Fallopia japonica*) with the nearest being 1152m from the Solar Site;
- One record of Japanese rose (*Rosa rugosa*) with the nearest being 1152m from the Solar Site;
- One record of New Zealand Pygmy weed (*Crassula helmsii)* with the nearest being 1270m from the Site;
- One record of small leaved cotoneaster (*Cotoneaster microphyllus*) with the nearest being 1030m from the Solar Site; and
- One record of Variegated Yellow Archangel (*Lamiastrum galeobdolon subsp. argentatum)* with the nearest being 1944m from the Solar Site.

Given that these records do not relate to the Site itself, and that no non-native invasive species were recorded within the Site during surveys, they have been scoped out of further assessment.

3.4.2 Invertebrates

Cofnod returned 46 records of invertebrates these pertained to:

- 11 records of common darter dragonfly (*Sympetrum striolatum)* from 2005-2023, with the nearest being 893m from the Solar Site;
- Five records of wall butterfly (*Lasiommata megera)* from 1987-2014, with the nearest being 582m from the Solar Site;
- Four records of small heath butterfly (*Coenonympha pamphilus)* BAP species, from 1987-2019 with the nearest being 582m from the Solar Site;
- Three records of white letter hair-streak butterfly *(Satyrium w-album)* BAP species, between 1988-2018 with the nearest being 582m from the Solar Site;
- Three records of dingy skipper butterfly (*Erynnis tages)* BAP species between 2021-2022, with the nearest being 1194m from the Solar Site;
- Two records of alder beetle (*Agelastica alni)* between 2020-2021 with the nearest being 1260m from the Solar Site;
- One record of small pearl broad fritillary (*Boloria selene)* BAP species in 1988, 582m from the Solar Site;
- One record of dusky thorn moth (*Ennomos fuscantaria)* in 2022, with the nearest being 1773 from the Solar Site;
- One record of grayling butterfly (*Hipparchia Semele)* BAP species, in 1987, with the nearest being 582m from the Solar Site;
- One record of shaded broad-bar moth (*Scotopteryx chenopodiata*) in 2022, with the nearest being 1530m from the Solar Site;
- One record of brooklime gall weevil (*Gymnetron veronicae)* in 1899, 1641m away from the Solar Site;
- One record of buff ermine (*Spilosoma lutea*) BAP species in 2022, 1773m away from Solar Site;
- One record of centre-barred sallow moth (*Atethmia centrago)* BAP species, in 2023, 1773m from the Solar Site; and
- One record of cinnabar moth (*Tyria jacobaeae)* BAP species in 2020, 1399m from the Solar Site.

The habitats within the Site are unlikely to support a locally significant population for invertebrate species, due to predominantly comprising habitats that are commonly occurring and species poor, ostensibly the areas of modified grassland.

Given this, and fact that none of the above records relate to the Site itself, invertebrates have not been considered further in this assessment.

3.4.3 Fish

Cofnod returned 11 records of bony fish these pertained to:

- Four records of Atlantic salmon (*Salmo salar*), BAP species, between 1997-2009 with the nearest being 1357m from the Solar Site;
- Four records of brown/sea trout (*Salmo trutta*) BAP species, IUCN Red List of Threatened Species – Critically endangered and Natural Environment and Rural Communities Act 2006 (Section 41) between 1985-2009 with the nearest being 1343m from the Solar Site; and
- Three record of eel (*Anguilla Anguilla*), BAP species, IUCN Red List of Threatened Species – Critically endangered and Natural Environment and Rural Communities Act 2006 (Section 41), between 1997-2003 with the nearest being 1419m from the Solar Site.

Freshwater habitats within the Site are unlikely to support any notable fish species, they have therefore not been taken forward further in this assessment.

3.4.4 Amphibians including Great Crested Newt

Cofnod returned 157 records of great crested newt (GCN) (*Triturus cristatus*) with three records being within 100m of the current Solar Site boundary, these included two records associated with Pond 24, located just outside the Eastern Parcel, and one record 65m outside of the Western Parcel (Pond 19). All the records date from between 2003-2020. There were another five GCN records provided for ponds located within 500m of the Solar Site.

Additionally, Cofnod returned the following records of other amphibians within 2km of the Solar Site boundary:

- 95 records of smooth newt (*Lissotriton vulgaris*), between 1993-2024, with the nearest being 313m northwest from the Solar Site;
- 61 records of common toad (*Bufo bufo*), between 1993-2020, with the nearest being 434m northwest from the Solar Site;
- 44 records of palmate newt (*Lissotriton helveticus*), between 2002-2024, with the nearest being 422m north from the Solar Site; and
- 44 records of common frog (*Rana temporaria)*, between 1968-2024, with the nearest being 11m northeast from the Solar Site.

Surveys for GCN were carried out in 2022 and 2024. The results of these surveys are provided in Appendix D.

Of the six ponds within the current Site boundary, three were found to be completely dry in 2024, two have tested positive for GCN eDNA previously, and one was found to have GCN presence using traditional survey. Five further ponds in the 250m buffer zone have tested positive for GCN eDNA and six ponds were found to support GCN during traditional surveys, with peak counts of between 1 and 4 individuals. Within the 250-500m buffer seven further ponds have tested positive for GCN eDNA.

At individual ponds the population of GCN in considered to be 'small' as per the mitigation guidelines[18] i.e. less than 10 individual GCN recorded on one survey. The highest peak count for the whole survey area (all ponds within Site and 250m buffer) was 11 GCN recorded on the 19th- 20th April 2022, indicating a 'medium' population, i.e. between 11-100, albeit at the lower end of this scale.

The surveys undertaken by SLR also confirmed the presence of smooth newt, common frog and common toad within the survey area. Based on the data search results, palmate newt may also be present but was not recorded.

Native amphibians, including GCN are therefore taken forward for further assessment.

3.4.5 Reptiles

Cofnod returned 33 records of reptiles within 2km of the Solar Site, pertaining to:

- 17 records of slow worm *(Anguis fragilis), between* 1999-2022, with the nearest being 582m southwest of the Site;
- Nine records of grass snake (*Natrix Helvetica)*, between 1968-2022, with the nearest being 965m northeast of the Site;
- Six records of common lizard (*Zootoca vivipara)* between 1903-2021 with the nearest being 1556m northeast of Site; and

[18] Great crested newt mitigation guidelines

- One record of adder *(Vipera berus),* in 1907, 1556m northeast of the Site.

The dominant habitat within the core of the Solar Site, namely short sward modified grassland, lacking in well-structured field margins, is generally unsuitable for reptiles, and this group is considered unlikely to occur.

Therefore, this species group has been scoped out of further assessment.

3.4.6 Birds

Cofnod returned 551 records of birds within 2km of the Solar Site boundary, including 47 'notable species' that occur in the UK between the months of September and March inclusive ('notable' here referring to those species that have any of the following conservation status'- Annex 1 of the Birds Directive, WCA 1981 Schedule 1, NERC Section 41, Birds of Conservation Concern (BoCC) Red List or BoCC Amber List).

These are summarised in Table 3-4.

Table 3-4 Bird Species within 2km of the Solar Site

Bird Species	No. of Records	Closest to Site (m)	Lists
Rook (*Corvus frugilegus)*	22	1	BoCC Amber list
Swift (*Apus apus)*	24	26	BoCC Red list
Mallard (*Anas platyrhynchos)*	13	169	BoCC Amber list
Mistle thrush (*Turdus viscivorus)*	17	169	BoCC Red list
Redstart (*Phoenicurus phoenicurus)*	5	169	BoCC Amber list
Song thrush *(Turdus philomelus)*	15	169	Section 41, BoCC Amber list
Tawny owl (*Strix aluco)*	7	169	BoCC Amber list
Black headed gull (*Chroicocephalus ridibundus)*	13	394	BoCC Amber list
Bullfinch (*Pyrrhula pyrrhula)*	16	394	Section 41, BoCC Amber list
Common gull (*Larus canus)*	11	394	BoCC Amber list
Greenfinch (*Chloris chloris)*	16	394	BoCC Red list
Herring gull *(Larus argentatus)*	14	394	Section 41, BoCC Red list
House martin *(Delichon urbicum)*	16	394	BoCC Red list
House sparrow (*Passer domesticus)*	19	394	Section 41, BoCC Red list
Lesser black-backed gull (*Larus fuscus)*	9	394	BoCC Amber list
Red kite (*Milvus milvus)*	7	394	Annex 1, Schedule 1.1
Redwing (*Turdus iliacus)*	15	394	Schedule 1.1, BoCC Amber list
Reed bunting (*Emberiza schoeniclus)*	5	394	Section 41, BoCC Amber list
Shellduck *(Tadorna tadorna)*	4	394	BoCC Amber list
Sparrowhawk (*Accipiter nisus)*	12	394	BoCC Amber list
Starling (*Sturnus vulgaris)*	14	394	Section 41, BoCC Red list
Whitethroat (*Curruca communis)*	6	394	BoCC Amber list
Willow warbler (*Phylloscopus trochilus)*	9	394	BoCC Amber list
Moorhen *(Gallinula chloropus)*	10	422	BoCC Amber list
Grey wagtail (*Motacilla cinerea)*	17	708	BoCC Amber list

Bird Species	No. of Records	Closest to Site (m)	Lists
Marsh tit (*Poecile palustris)*	3	708	Section 41
Brambling (*Fringilla montifringilla)*	1	754	Schedule 1.1
Dipper (*Cinclus cinclus)*	14	754	BoCC Amber list
Fieldfare *(Turdus pilaris)*	12	754	Schedule 1.1, BoCC Red list
Linnet (*Linaria cannabina)*	7	754	Section 41, BoCC Red list
Meadow pipit (*Anthus pratensis)*	9	754	BoCC Amber list
Peregrine falcon (*Falco peregrinus)*	10	754	Annex 1, Schedule 1.1
Skylark (*Alauda arvensis)*	4	754	Section 41, BoCC Red list
Cuckoo (*Cuculus canorus)*	7	799	BoCC Red list, Section 41
Hobby (*Falco Subbuteo)*	4	799	Schedule 1.1
Kestrel (*Falco tinnuculus)*	11	799	BoCC Amber list
Kingfisher (*Alcedo atthis)*	8	799	Annex 1, Schedule 1.1, BoCC Amber list
Lesser redpoll (*Acanthis cabaret)*	3	799	Section 41, BoCC Red list
Snipe (*Gallinago gallinago)*	11	799	BoCC Amber list
Common sandpiper (*Actitis hypoleucos)*	6	1027	BoCC Amber list
Barn owl (*Tyto alba)*	7	1147	Schedule 1.1
Hawfinch (*Coccothraustes coccothraustes*)	1	1169	Section 41, BoCC Red list
Tree sparrow (*Passer montanus)*	2	1297	Section 41, BoCC Red list
Short eared owl (*Asio flammeus)*	1	1309	Annex 1, BoCC Amber list
Goshawak (*Accipter gentilis)*	3	1349	Schedule 1.1
Lapwing *(Vanellus Vanellus)*	3	1372	Section 41, BoCC Red list
Mediterranean gull (*Ichthyaetus melanocephalus)*	2	1372	Annex 1, Schedule 1.1, BoCC Amber list
Spotted flycatcher (*Muscicapa striata)*	2	1372	Section 41, BoCC Red list
Wheatear (*Oenanthe oenanthe)*	2	1372	BoCC Amber list
Grasshopper warbler (*Locustella naevia)*	2	1379	BoCC Red list, Section 41
Little ringed plover (*Charadrius dubius*)	3	1472	Schedule 1.1
Great black-backed gull (*Larus marinus)*	2	1556	BoCC Amber list
Green sandpiper (*Tringa ochropus)*	1	1556	Schedule 1.1, BoCC Amber list
Merlin (*Falco columbarius)*	1	1556	Annex 1, Schedule 1.1, BoCC Red list
Oystercatcher (*Haematopus ostslegus)*	1	1556	BoCC Amber list
Golden plover (P*luvialis apricaria)*	1	1634	Annex 1
Osprey (*Pandion haliaetus)*	1	1634	Annex 1, Schedule 1.1, BoCC Amber list
Pied flycatcher (*Ficedula hypoleuca)*	1	1641	BoCC Red list
Black redstart (*Phoenicurus ochruros)*	2	1676	Schedule 1.1, BoCC Amber list
Curlew *(Numenius trochilus)*	1	1786	BoCC Red list, Section 41
Ring ouzel (*Turdus torquatus)*	1	1944	Section 41, BoCC Red list

3.4.6.1 Wintering Birds

Surveys were undertaken in the 2024/2025 winter bird season, recording target species (Annex I, Schedule 1, NERC Section 41, BoCC Red or Amber) and secondary species (species of regional or local conservation concern) and were timed to take place two hours either side of high tide at Rhyl, with the intention of detecting a potential functional link with the Liverpool Bay SPA and Dee Estuary SPA and Ramsar site.

One qualifying species for the Liverpool Bay SPA (cormorant) was recorded over-flying the Site but not on Site per se during the surveys, and as such there is no linked functionality for this species.

Additionally, two qualifying species for the Dee Estuary SPA (teal and cormorant) were recorded during the surveys, but cormorant was recorded in flight over the Site only, and the numbers of teal recorded (a peak count of five birds) do not meet the threshold stated for a "significant" number of birds, being well below 0.5% of the GB population, or 1% of the estimated SPA population..

Of the 30 target species recorded within the Solar Site, the vast majority were using habitats around the perimeter of the fields such as hedgerows, woodland, scrub, and pools, with very little usage of the field interiors by feeding birds being recorded.

The population of wintering birds within the Site is considered to be of less than local importance and therefore wintering birds are not taken forward for further assessment.

3.4.6.2 Breeding Birds

The majority of habitat with suitability for nesting birds is restricted to hedgerows and trees on field boundaries, the majority of which shall remain unaffected; however, the Site does have some potential to support ground nesting birds such as skylark.

Due to the presence of suitable habitat, and the legal protection afforded to nesting birds while nesting, under the Wildlife and Countryside Act 1981 (as amended), breeding birds have been included for further assessment.

3.4.7 Mammals

3.4.7.1 Bats

Cofnod returned 122 records of bats within 2km of the Solar Site, specifically:

- 32 records of pipistrelle bat species (*pipistrellus sp.)* between 1983-2021 with the nearest being 777m from the Solar Site;
- 20 records of lesser horseshoe bat (*Rhinolophus hipposideros*), between 1996-2024 with the nearest being 348m from the Solar Site;
- 14 records of soprano pipistrelle (*Pipistrellus pygmaeus)* between 1998-2023, with the nearest being 348m from the Solar Site;
- 13 records of common pipistrelle bat (*Pipistrellus pipistrellus)*, between 1995-2023, with the nearest being 348 m from the Solar Site;
- 11 records of natterers bat species (*Myotis nattereri)*, between 1957 and 2011 with the nearest being 420m from the Solar Site;
- Nine records of noctule bat (*Nyctalus noctule), between* 1998-2023, with the nearest being 348m from the Solar Site;
- Nine records of whiskered/brandts bat (*Myotis mystacinus/brandtii*) between 1958-2019 with the nearest being 348m from the Solar Site.

- 10 records of brown-long eared bats (*Plecotus auritus*), between 1968 -2018, with the nearest being 777m from the Solar Site;
- Eight records of Myotis bat species (*Myotis sp.)*, between 1999 and 2018 with the nearest being 1107m from the Solar Site;
- Four records of daubentons bat (*Myotis daubentoniid), between* 1990-2020, with the nearest being 1498m from the Solar Site; and
- Two records of greater horseshoe bat (*Rhinolophus ferrumequinum)*, in 2018, with the nearest being 1736m from the Solar Site.

Boundary hedgerow, lines of trees, woodland and watercourse features within the Solar Site are likely to be of importance to foraging and commuting bats and are considered to have 'high' suitability as per BCT guidance. The core of the Solar Site, comprising species poor and short sward modified grassland is likely to be less important to bats, having 'low' suitability.

There are known hibernation roosts for Natterer's, brown long-eared, common pipistrelle and lesser horseshoe bats at Coedydd ac Ogofau Elwy a Meirchion SSSI, *c.*865m southwest of Solar Site and they may use the Site to commute to and from the caves.

Overall, the Site is considered to have 'moderate' suitability for foraging and commuting bats. Bats have been taken forward in this assessment.

3.4.7.2 Badger

Cofnod returned 99 records of badger (*Meles meles)* within 2km of the Solar Site between 1971-2024. The closest record was 185m from the Solar Site.

Full results of the badger survey are provided in Confidential Appendix F.

The survey found that there is one active Main sett within the Site. Due to the sensitive nature of this data the location is not disclosed within this report but has been communicated to the client. Due to the sensitivity of the information Appendix F has not been released into the Public Domain, but a copy has been provided to the local planning authority.

Due to the presence of a badger sett on Site, this species has been taken forward for further assessment.

3.4.7.3 Otter

Cofnod returned 12 records of otter (*Lutra lutra)* within 2km of the Solar Site between 1991-2023. The closest record of otter was 1065m northeast from the Solar Site.

Due to the low levels of water and narrow channels, the on-Site watercourses are considered unsuitable for foraging otter. There is a possibility they would be used for commuting purposes on occasion, though this is considered unlikely.

No significant direct impacts on the watercourses are proposed and no increased human pressures or adverse impacts on water quality shall arise as a result of the development. Measures detailed in Section 4.0 include provision of a minimum 150mm gap at the base of the perimeter fencing which will enable mammals, including otter, access throughout the Site.

Given the low likelihood of otters being present, this species has been excluded from further assessment.

3.4.7.4 Water Vole

Cofnod returned one record of water vole (*Arvicola amphibius*) within 2km of the Solar Site in 2016, 1604m northwest from the Solar Site.

The drainage ditches within the Site are considered to be poor suitability for water vole, due to the very low water levels, lack of sufficient aquatic vegetation, and sub-optimal bank sides and bank top habitats, consisting of grazed modified grassland.

It is therefore thought very unlikely that water voles occur within the Site. Furthermore, ditches are being retained as part of the proposals, and positive effects on the bank top habitats are predicted, through the creation of rough tussocky grassland.

Two sections of ditch, one in the Eastern Parcel where the proposed northern access joins the main site and another in the Western Parcel where an access track is proposed from the northwestern field to the southwestern field, will be impacted by the scheme. The length of the ditches were inspected alongside a habitat survey on 23rd April 2025, for burrows of an appropriate size for water vole, none were found, and no other field signs of water vole were recorded.

Water vole is taken forward in this assessment on a precautionary basis.

3.4.7.5 Hazel Dormouse

Cofnod returned four records of hazel dormouse (*Muscardinus avellanarius*) within 2km of the Solar Site between 2000-2013, with the closest record being 1404m southwest from the Solar Site.

Modified grassland habitats present in the core of the Solar Site are considered unsuitable for dormice. Boundary hedgerows, although often species poor, do contain species suitable for foraging dormouse, i.e. hazel and oak, some of these hedgerows are also connected to woodland, of which some is ancient.

Hazel dormouse is therefore taken forward in this assessment.

3.4.7.6 Other Mammals

Cofnod retuned 23 records of west European hedgehog (*Erinaceus europaeus)* between 1965-2023 with the nearest pertaining to the Solar Site in 2018. Hedgehogs are species of principle importance under Section 7 of the Environment (Wales) Act.

Grassland habitats and boundary hedgerows are considered highly suitable for hedgehog, they have therefore been brought forward in this assessment.

There were three records of polecat (*Mustela putorius)* between 1991-2021, with the nearest being 1440m north of the Solar Site, two records of stoat *(Mustela erminea*), between 1966-1967, with the nearest being 708m east of the Solar Site, one record of red deer (*Cervus elaphus)* in 1996, 1622m northeast of the Solar Site, one record of brown hare (*Lepus europaeus*) in 2004, 324m northeast of the Solar Site and one record of weasel *(Mustela nivalis*) in 1966, 1030m southwest of the Solar Site.

The Site is not considered to be of value to these species, and/ or impacts upon them are not considered to be significant, and therefore the remaining species have been omitted from further assessment

3.5 Summary of Important Ecological Features

Designated sites and/ or habitats and species which are present on Site, or occur locally, which have been assessed as having local ecological importance or greater, or which are afforded legal protection, and which could potentially be affected by an unmitigated scheme are summarised in Table 3-5. Where features have been omitted from detailed assessment (due to no potential impacts arising or their less than local ecological importance), a rationale has been provided within earlier sections of this report.

Table 3-5: Summary of Important Ecological Features Subject to Detailed Assessment

Ecological Feature	Scale at which Feature is Important	Comments on Legal Status and/or Importance
Ty'n-y-coed Rough Local Wildlife Site for Denbighshire	Local	Woodland habitat, recognized as of value with Denbighshire, designated as LWS and protected through local planning policies. Likely to support other important invertebrate, amphibian, bird, mammal and plant species.
Glascoed Local Wildlife Site for Denbighshire	Local	Woodland habitat, recognized as of value with Denbighshire, designated as LWS and protected through local planning policies. Likely to support other important invertebrate, amphibian, bird, mammal and plant species.
Pig-y-fran Ancient Woodland	Local	As listed in the Ancient Woodland Inventory and retaining some ancient woodland indicator species. Irreplaceable resource, protected under local, national and UK planning policies. Likely to support other important invertebrate, amphibian, bird, mammal and plant species.
Ty'n-y-coed Rough Ancient Woodland	Local	As listed in the Ancient Woodland Inventory and retaining some ancient woodland indicator species. Irreplaceable resource, protected under local, national and UK planning policies. Likely to support other important invertebrate, amphibian, bird, mammal and plant species.
Other Lowland Mixed Deciduous Woodland	Local	These woodlands on site meet the S7 definition: "*Lowland mixed deciduous woodland includes woodland growing on the full range of soil conditions, from very acidic to base-rich, and takes in most semi-natural woodland in southern and eastern England, and in parts of lowland Wales and Scotland. It thus complements the ranges of upland oak and upland ash types. It occurs largely within enclosed landscapes, usually on sites with well-defined boundaries, at relatively low altitudes, although altitude is not a defining feature…* *The woods tend to be small, less than 20ha. Often there is evidence of past coppicing, particularly on moderately acid to base-rich soils; on very acid sands the type may be represented by former wood-pastures of oak and birch*." They are likely to support other important invertebrate, amphibian, bird, mammal and plant species.

Ecological Feature	Scale at which Feature is Important	Comments on Legal Status and/or Importance
Native Hedgerows (with ditches)	Local	All hedgerows on Site meet the S7 definition: "*A hedgerow is defined as any boundary line of trees or shrubs over 20m long and less than 5m wide, and where any gaps between the trees or shrub species are less that 20m wide (Bickmore, 2002). Any bank, wall, ditch or tree within 2m of the centre of the hedgerow is considered to be part of the hedgerow habitat, as is the herbaceous vegetation within 2m of the centre of the hedgerow. All hedgerows consisting predominantly (i.e. 80% or more cover) of at least one woody UK native species are covered by this priority habitat, where each UK country can define the list of woody species native to their respective country*." They are likely to support other important invertebrate, amphibian, bird, mammal. They support protected plant species such as bluebell, notable plants such as watercress and grey sedge occur in the ditches associated with the hedgerows.
Ponds	County	Most ponds in the area are likely to meet the S7 definition by supporting GCN and/or other S7 or Red Data Book species. The number of ponds within the survey area is relatively large and together they are therefore considered to be of County value. The value of relevant species populations (e.g. GCN) within these ponds is assessed separately below.
Rivers and Streams	Local	The streams on Site meet the broad S7 definition: "*Description This habitat type includes a very wide range of types, encompassing all natural and near-natural running waters in the UK (i.e. with features and processes that resemble those in 'natural' systems).*" They are likely to support other important invertebrate and plant species.
GCN	County	GCN is protected through its inclusion in Schedule 5 of the Wildlife and Countryside Act and in Schedule 2 of the Conservation of Habitats and Species Regulations 2017, it is also a S7 species. Surveying in 2022 found a small population of GCN at individual ponds and medium population of GCN overall within c.250m of the Site.
Breeding birds	Local	All birds and their nests are protected while nesting under Wildlife and Countryside Act 1981 (as amended).

Ecological Feature	Scale at which Feature is Important	Comments on Legal Status and/or Importance
		The boundary habitats (woodlands and hedgerows) are likely to be of importance to foraging and nesting birds, and the Site has potential to support low numbers of ground nesting species.
Bats	Up to County	All UK bat species are protected under the Wildlife and Countryside Act 1981 (as amended) and The Conservation of Habitats and Species Regulations 2017. Barbastelle bat, Bechstein's bat, noctule, common pipistrelle, soprano pipistrelle, brown long-eared bat, greater horseshoe bat and lesser horseshoe bat are also S7 species. The boundary habitats and ponds within he Site are likely to be of importance to bats for foraging, commuting and roosting.
Badger	Local	Badgers are protected under Protection of Badger Act 1992 for welfare reasons. One main sett was found to be present within the Site boundary.
Water Vole	Less than local	Water vole is protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), it is also a S7 species. A population of water vole is considered unlikely to be present within the survey area at the current time. However, it is possible that this species may recolonise the most suitable watercourses within the survey area in the future.
Hazel Dormouse	Less than local	Dormice are protected under the Wildlife and Countryside Act 1981 (as amended) and The Conservation of Habitats and Species Regulations 2017. They are also S7 species of principle importance. A population of dormice is considered unlikely to be present within the survey area at the current time. However, it is possible that this species may recolonise within the survey area in the future.
Hedgehog	Local	Section 7 species of principle importance.

4.0 Assessment of Effects and Mitigation Measures

4.1 Embedded Mitigation, including Mitigation and Enhancement Measures

The following design principles and "designed-in" mitigation have informed the assessment of impacts.

- Within the design of the proposal good practice environmental and pollution control measures are employed with regard to current best practice guidance such as, but not limited to, the following:
    - CIRIA C532, 'Control of water pollution from construction sites: guidance for consultants and contractors' (2001).
    - CIRIA C741, 'Environmental good practice on site guide' (2015 4th Ed.).
- Precautionary measures to be employed during construction, include:
    - Any excavations to be in-filled within the same day, or if not possible, excavations should be covered or provided with a sloping side (>45%) or ramp to allow wildlife to escape; and
    - Exclusion zones to be maintained around Root Protection Areas (RPA) of retained trees and hedgerows.
- Landscaping measures are proposed within the design of the development to minimise loss of biodiversity on-site.
    - Hedgerows will be retained wherever possible, new hedgerow is proposed (173m) and reinforcement of existing hedgerow (2.8km), repairing any gaps larger than 0.5m wide. Planting will include native species such as, field maple (*Acer campestre*), hazel, hawthorn, holly, blackthorn and bird cherry (*Prunus padus*).
    - Buffer planting of native scrub (0.65ha) around the Site boundary is proposed, the species mix will be agreed with Denbighshire Borough Council and ideally sourced from those grown at the council's tree nursery at St Asaph.
    - Areas of native tree planting (1.19ha) will extend existing woodlands adjacent to the Site boundary, the species mix will be agreed with Denbighshire Borough Council and ideally sourced from those grown at the council's tree nursery at St Asaph.
    - Ponds on Site will be retained and two will undergo re-instatement/ improvement, a further seven will be created, having a minimum surface area of 100m^2 and be of a sufficient depth to hold water in at least one in three summers. Spoil generated from the reinstatement or forming of ponds shall be used to create a series of hibernacula, each measuring at least 2 metres in length, 1 metre in width and 1m in height.
    - The proposals include the creation of wildflower meadow and tussocky grassland suitable for great crested newt and supporting invertebrates and pollinators.
    - Landscaping during operation will include aftercare as detailed in a Landscape and Ecology Management Plan (LEMP).

Taking the above into account, the principal potential impacts of the proposed development are outlined in the following sections.

4.2 Cable Connection Route Temporary Impacts

The two parcels within the Site would be connected through an underground cable. A further underground cable is proposed utilising existing highway routes from the Solar Site to the St Asaph substation to the northwest.

Cable route to connect the parcels

Habitats within this cable route corridor include horse grazed neutral grassland and a road, it will also cross under three hedgerows (two of which are bordering a road) and the 'other lowland mixed deciduous woodland', with stream, to the southwestern boundary of the Eastern Parcel.

Following burying of the cable all grassland habitats (g3c, other neutral grassland) will be re-instated within two years, therefore the impacts on this habitat type are considered temporary. The footprint of the cable is small, and the habitat type is not considered important, as it is common and widespread. The sward is short in this area and is considered of moderate suitability for commuting or foraging GCN, mitigation measures regarding GCN are discussed in Section 4.5.1.

Where the cable passes through hedgerow or woodland, directional drilling will be used at a minimum depth of 1m underground, to avoid impacting the roots of trees and hedgerows. Directional drilling will also avoid any direct impacts to sensitive ground flora. The impact on these habitats is therefore predicted to be negligible.

Substation cable route

The substation Cable Route follows existing roads to the north of the Solar Site and will be restricted to the road surface itself. The route is not predicted to have an ecological impact, nevertheless for completeness a badger survey was undertaken on 23rd April, finding no setts within 30m of the Cable Route corridor. An updated survey should be undertaken within three months of the start of works to identify if any new setts have become established, in accordance with standard practice.

4.3 Designated Sites

4.3.1 Ty'n y Coed Rough LWS, Glascoed LWS, Pig-y-fran Ancient Woodland, Ty'n y Coed Rough Ancient Woodland

4.3.1.1 Potential Impacts

The local wildlife sites and areas of ancient woodland all lie outside of the Site, although two lie immediately adjacent. No direct impacts are predicted, however indirect impacts could occur if good practice environmental and pollution control measures are not followed during the construction phase. Negative impacts could also arise if any non-sensitive lighting is proposed. Nocturnal species such as bats may be disturbed.

4.3.1.2 Proposed mitigation and enhancement measures

A minimum 15m buffer has been included within the Site design, between any of the Site infrastructure and the designated sites or areas of ancient woodland, accounting for Root Protection Areas. Where Ty'n y Coed Rough adjoins the Site, a semi-natural transitional habitat is proposed comprising a rough tussocky grassland with native trees in the transitional area between the woodland and grassland, which will provide an improved and more natural 'edge habitat', resulting in a minor positive impact on the woodland as a result of the proposals. Rough tussocky grassland is also proposed at the eastern edge of Pig-y-fran ancient woodland. Native buffer planting of trees and scrub is also proposed to widen

the woodland habitat along the western boundary of the Eastern Parcel, improving habitat connectivity between Glascoed LWS and Pig-y-fran ancient woodland.

There shall be no lighting of the designated sites arising from the proposed project. Work during the construction phase will be undertaken in the daytime to avoid the need for lighting at night. During the operation phase, there shall be no light directed at the designated woodlands.

4.3.1.3 Significance of residual effects

No significant residual direct or indirect effects of the development on designated sites is predicted.

4.4 Habitats

4.4.1 Other Lowland Mixed Deciduous Woodland and Other Rivers and Streams

4.4.1.1 Potential Impacts

Both habitat types are to be retained as part of the proposals. No direct impacts are therefore proposed, however indirect impacts could occur if good practice environmental and pollution control measures are not followed through the construction phase. Negative impacts could also arise if any non-sensitive lighting is proposed. Nocturnal species such as bats may be disturbed.

4.4.1.2 Proposed mitigation and enhancement measures

Good practice environmental and pollution control measures will be followed throughout the construction and operational phases.

There shall be no lighting of the designated sites arising from the proposed project. Work during the construction phase will be undertaken in the daytime to avoid the need for lighting at night. During the operation phase, there will be no light directed at the designated woodlands.

4.4.1.3 Significance of residual effects

No significant residual direct or indirect effects of the proposed development on deciduous woodland and/ or streams is predicted.

4.4.2 Native hedgerows (with ditches)

4.4.2.1 Potential Impacts

The majority of existing hedgerows within the Site are to be retained, with the exception of small sections where access points are required. Loss of hedgerow habitat would cause a reduction of this priority habitat type and could break commuting routes for protected or notable species.

Two short sections of ditch (one in the Eastern Parcel where the proposed northern access joins the main site and another in the Western Parcel, where an access track is proposed from the northwestern field to the southwestern field) will be impacted by the scheme.

4.4.2.2 Proposed mitigation and enhancement measures

Where possible existing gaps (gateways) have been used for the positioning of the access tracks. Removal of hedgerow habitat, where necessary, shall involve only short sections,

and this will be undertaken outside of the nesting bird season (March – August), further details on mitigation measures if this cannot be achieved is provided in Section 4.5.2.

Hedgerow is considered of high suitability for foraging and commuting GCN, mitigation measures regarding GCN are discussed in Section 4.5.1.

Hedgerow has the potential to support dormouse, mitigation measures regarding this species are discussed in Section 4.5.6.

A new native hedgerow totalling 173m will be planted along the northern boundary of the Eastern Parcel. All gaps over 0.5m in hedgerow will be planted with native hedgerow species to repair and enhance existing hedgerow.

Ditches associated with hedgerow on the Site would be protected by the implementation of good practice pollution prevention measures and the implementation of a 5m buffer from the ditches. Small lengths of this habitat type are due to be impacted by the scheme, however, it is a widespread habitat and not a priority habitat; furthermore, bank top habitats are due to be improved as part of the proposals with creation of improved rough tussocky and wildflower grasslands.

Ditches have the potential to support water vole, mitigation measures regarding this species are discussed in Section 4.5.5.

4.4.2.3 Significance of residual effects

Planting of a new species rich hedgerow would increase the overall abundance of this priority habitat within the Site and improve the connectivity across the Site and provide additional nesting and foraging resource for a range of species. Retention of the majority of existing hedgerows would maintain existing habitat. Overall, the impact on hedgerow habitat within the development is expected to be positive at Local level.

4.4.3 Ponds

4.4.3.1 Potential Impacts

None of ponds on Site will be removed as part of the proposals. Ponds on Site are generally in poor condition, with few aquatic plants and not holding optimal amounts of water for anything above small populations of breeding GCN. Current management means that they are regularly visited by cattle, and the resulting compaction of the pond base and disturbance to the banks, is most likely slowing the process of plant succession, which eventually infills ponds. The potential reduction in visits to the ponds by cattle, post-development, and in the absence of the mitigation and enhancement described below, would likely mean that natural succession of the ponds would occur at a faster rate, and ponds may be lost over a shorter time period.

4.4.3.2 Proposed Mitigation and Enhancement Measures

Two of the Site's ponds will undergo re-instatement/ improvement, deepening and widening them as appropriate, a further seven will be created, having a minimum surface area of 100m^2 and with sufficient depth to hold water in at least one in three summers. Spoil generated from the reinstatement or forming of ponds shall be used to create a series of hibernacula, each measuring at least 2 metres in length, 1 metre in width and 1m in height.

Sensitive Maintenance of the ponds shall be included in the LEMP associated with the development; monitoring should be carried out to ensure that ponds remain in a favourable condition.

4.4.3.3 Significance of Residual Effects

No significant residual effects are predicted for pond habitats, if re-instatement and enhancement measures are carried out. Improvements to existing ponds and creation of new ponds will increase the overall abundance of this priority habitat within the Site, increasing invertebrate diversity and improving foraging resources for protected species such as bats and providing increased opportunities for breeding GCN.

The net effect is therefore predicted to be positive at County level.

4.5 Species

4.5.1 Great Crested Newt

4.5.1.1 Potential Impacts

GCN could be impacted by the scheme during their terrestrial phase. During construction, newts may be harmed or killed if appropriate precautionary methods are not followed.

GCN could be impacted when in their aquatic phase, if pond improvement measures are not undertaken at the correct time of year.

4.5.1.2 Proposed Mitigation and Enhancement Measures

The majority of works are proposed within sub-optimal habitat for GCN i.e. grazed modified grassland, however some work is proposed which impacts hedgerows, which are considered highly suitable for foraging and commuting great crested newt. Moreover, the 2022 survey found that there is a population of GCN, which uses the Site ponds to breed, GCN would use the modified grassland habitats to move to and from their breeding ponds.

Dependant on the final construction programme and site design, it may be possible to avoid impacts on GCN through the careful timing of the works and precautionary methods of working. If this is not possible a European Protected Species Licence (EPSL) would need to be sought from NRW ahead of the proposed works. The conditions of the EPSL would be specified to ensure that construction and continued presence of the solar farm does not result in significant adverse impacts to the local population of GCN. The EPSL Method Statement will include the measures that will be implemented and will be submitted to NRW once surveys for GCN are completed.

The proposals include the creation of wildflower meadow and tussocky grassland suitable for GCN, re-instatement of two on-site ponds and creation of seven new ponds.

4.5.1.3 Significance of Residual Effects

Tussocky grassland and pond creation and enhancements would improve and expand the availability of suitable habitat for great crested newt. Additionally, increases in invertebrate abundance would provide greater food availability for terrestrial newts/ amphibians. Therefore, the overall impact of the development on great crested newt, and other amphibians, in their terrestrial and aquatic life stage is predicted to be positive at County level.

4.5.2 Breeding Birds

4.5.2.1 Potential Impacts

Potential damage/ destruction of active nests during Site clearance works. Reduction in habitat for ground nesting birds. Loss of suitable habitat, such as hedgerow and trees, could reduce the nesting and foraging provision available to birds.

4.5.2.2 Proposed Mitigation and Enhancement Measures

All trees within the Site are to be retained. Although small sections of hedgerow will need to be removed for access tracks, overall, there is a net gain in hedgerow habitat proposed for the Site.

Vegetation clearance during bird nesting season (March - August) would be avoided, or if clearance is required during nesting season, this would commence following a check for nesting birds by a suitably qualified ecologist. If nests are found, these would be protected by an exclusion buffer zone until young have fledged.

The planting of an additional species rich hedgerow, as well as new trees and scrub, would improve the availability of nesting sites for breeding birds, as well as providing enhanced foraging opportunities.

Sowing of tall, species rich grasslands, would provide ideal foraging habitat for a range of bird species, as well as nesting opportunities for some ground nesting bird species. Additionally, these grasslands could increase numbers of small mammals which provide feeding opportunities for birds of prey such as owls and kestrel.

4.5.2.3 Significance of Residual Effects

Overall, the effect of the proposals on tree and scrub nesting species is predicted to be positive, although a minor negative impact on habitat availability for ground nesting bird species could occur, albeit the Site currently only has potential to support low numbers of ground nesting species. The provision of longer grassland within the Site has scope to support these species, including skylark, either by offering foraging habitat for birds nesting off-Site, or potentially nesting habitat.

Overall, the impact upon breeding and foraging birds in general, is likely to be positive and no contravention of wildlife legislation is predicted to occur.

4.5.3 Bats

4.5.3.1 Potential Impacts

Lighting can interrupt the natural behaviour of bats and prevent them from using the affected area for foraging, commuting or roosting.

Potential loss of foraging resource through replacement of suitable habitat with Site infrastructure.

4.5.3.2 Proposed Mitigation and Enhancement Measures

Habitats assessed as being important for bats i.e. hedgerow, woodland and ponds, shall not be subject to any artificial lighting during the construction or operational phase.

Although small losses of the current foraging resource for bats are proposed (i.e. short sections of hedgerow removal), overall, the scheme will increase the connectivity between hedgerows, result in the creation of 173m of new hedgerow, and is proposing buffer planting to extend habitats suitable for foraging bats. Wildflowers in the rough grassland to be created and the additional ponds will increase foraging opportunities.

4.5.3.3 Significance of Residual Effects

The creation of, and extension of habitat suitable for bats including suitable invertebrate overwintering tussocky grassland habitat, additional hedgerow, ponds and improved woodland edge habitat, is predicted to improve the Site for commuting and foraging bats.

Overall, the effect on bats as a result of the proposed scheme is predicted to be positive at up to County level.

4.5.4 Badger

4.5.4.1 Potential Impacts

Installation of fencing could restrict ability of badgers to cross the Site and prevent access to habitats used for commuting, foraging and sett building such as hedgerows and grassland.

Construction work within 30m of setts could disturb badgers and be in breach of the Protection of Badgers Act 1992.

Excavations on Site could lead to badgers becoming entrapped.

4.5.4.2 Proposed Mitigation and Enhancement Measures

Badgers are a mobile species and can dig new setts at any time, including via the enlargement of rabbit burrows or fox earths. A pre-commencement badger check would be undertaken by an Ecological Clerk of Works (ECoW) prior to the start of each phase of construction, to check for any new badger setts and signs. If new setts are identified during the pre-commencement checks, appropriate protection zones would be established to ensure no damage or disturbance to the sett would occur, or appropriate licences would be secured for closure/ disturbance if deemed necessary by the attending ECoW. As such no contravention of wildlife legislation is predicted.

A 30m protection zone should be established around the main sett identified within the Site boundary, this should be in place for the construction phase so that no heavy machinery or works likely to cause disturbance are carried out within the protection area. No solar farm infrastructure is currently proposed whose construction or maintenance could conflict with the sett's retention and protection from disturbance. An update badger survey will be caried out prior to the commencement of Site works, and if additional entrances are present within 30 metres of the proposed line of the security fence, the precise alignment of the fence will be altered to maintain a sufficient buffer.

All perimeter fencing surrounding the solar farm would have a minimum 150mm gap at the base, to allow badgers to dig a scrape and to permit unrestricted access throughout the solar farm for badger.

Any excavations created during construction to be in-filled within the same day, or if not possible, excavations should be covered or provided with a sloping side (>45%) or ramp to allow wildlife to escape

The improved diversity of vegetation and resulting predicted increase in invertebrate abundance would provide an improved foraging habitat for badger.

4.5.4.3 Significance of residual effects

Overall, the effect of the proposals on badger, is predicted to be positive at the Local level.

4.5.5 Water Vole

4.5.5.1 Potential Impacts

Retained ditches if supporting water vole, could be negatively impacted by pollution created during the construction phase.

Two short sections of ditch one in the Eastern Parcel where the proposed northern access joins the main site and another in the Western Parcel, where an access track is proposed from the northwestern field to the southwestern field will be impacted by the scheme.

The ditches were assessed as being of poor suitability for water vole, due to the very low water levels, lack of sufficient aquatic vegetation and sub-optimal bank top habitats of grazed modified grassland, and no burrows suitable for water vole were found.

In the unlikely case that water vole are present in the impacted area, water vole could be disturbed or their resting places damaged, this would be in breach of wildlife legislation.

4.5.5.2 Proposed Mitigation and Enhancement Measures

Water vole, should they occur within the ditches on-Site, would be protected by the implementation of good practice pollution prevention measures and the implementation of a 5m buffer from the ditches.

A pre-commencement water vole survey shall be carried out by an ECoW, as a precaution. If evidence of water vole is found, a sensitive method of working will be devised to ensure that no significant impacts arise. In the unlikely event that impacts cannot be avoided, appropriate mitigation and a licence would be obtained from NRW.

Bank top habitats are due to be improved as part of the proposals with creation of improved rough tussocky and wildflower grasslands.

4.5.5.3 Significance of Residual Effects

No contravention of wildlife legislation is predicted if the appropriate further standard pre-commencement checks are carried out. Overall, there is no significant residual effect predicted for water vole.

4.5.6 Hazel Dormouse

4.5.6.1 Potential Impacts

Permanent loss of suitable habitat and habitat connections for dormouse (if present), via the removal of short sections of hedgerow.

4.5.6.2 Proposed Mitigation and Enhancement Measures

A Precautionary Working Method Statement shall be implemented for the removal of the sections of hedgerow, including details on appropriate timing of the works, requirement for pre-commencement checks or ECoW supervision.

Overall, the scheme is to increase connections between hedgerow and woodland suitable for dormice, with 173m of new hedgerow to be created, and all gaps in existing hedgerow, over 0.5m in length to be filled with native planting. The species mix will be suitable for dormice.

4.5.6.3 Significance of Residual Effects

No contravention of wildlife legislation is predicted, if an appropriate Precautionary Working Method Statement is followed. The effect of the proposals on hazel dormouse is predicted to be no net change, or positive, overall, at the Local level, as appreciably more habitat is due to be created than is being lost.

4.5.7 Hedgehog

4.5.7.1 Potential Impacts

Installation of fencing could restrict ability of hedgehogs to cross the Site and prevent access to habitats used for commuting, foraging and sheltering such as hedgerows and grassland.

4.5.7.2 Proposed Mitigation and Enhancement Measures

All perimeter fencing surrounding the solar farm would have a minimum 150mm gap at the base, to permit unrestricted access throughout the solar farm for hedgehog.

The improved diversity of vegetation and resulting predicted increase in invertebrate abundance would provide an improved foraging habitat for hedgehog.

4.5.7.3 Significance of residual effects

Overall, the effect of the proposals on hedgehog, is predicted to be positive at Local level.

4.6 Summary of Effects

A summary of potential impacts, proposed mitigation and compensation measures and residual effects is provided in Table 4-1.

Table 4-1: Summary of Potential Impacts, Proposed Mitigation and Compensation Measures and Residual Effects.

Ecological Feature	Potential Impacts	Proposed Mitigation and Compensation	Means of Delivering Mitigation and Compensation	Residual Effects
Designated Sites: Ty'n y Coed Rough LWS, Glascoed LWS, Pig-y-fran AW, Ty'n y Coed Rough AW	- Indirect impact if good practice environmental and pollution control measures are not followed through construction phase - negative impact of additional artificial light spillage -improvement of edge habitat and connectivity between woodland habitats, by creating rough grassland, scrub habitats, and planting native trees.	- A minimum 15m buffer, accounting for Root Protection Areas between sites and development infrastructure. - Avoid lighting in sensitive areas	- CEMP -Root Protection Plan - No lighting of woodland habitat during construction or operation	Not Significant
Other Lowland Mixed Deciduous Woodland and Other Rivers and Streams	-Indirect impact if good practice environmental and pollution control measures are not followed through construction phase - negative impact of additional artificial light spillage	- Retention of habitats - Avoid lighting in sensitive areas	- CEMP -No lighting of woodland habitat during construction or operation	Not Significant
Native hedgerow	-Reduction in hedgerow habitat	-Retention of the majority of hedgerow by using existing gaps where possible -Planting of new hedgerow (173m) -improvement of existing hedgerow through planting any gaps over 0.5m wide	-Landscape Plan -LEMP	Positive Effect at Local Level
Ponds	-Natural succession occurring at a faster rate due to absence of cattle, loss of pond habitats over time.	- Two on-Site ponds will be widened/deepened - Seven ponds to be created	-Landscape Plan -LEMP	Positive Effect at County Level

Ecological Feature	Potential Impacts	Proposed Mitigation and Compensation	Means of Delivering Mitigation and Compensation	Residual Effects
GCN	-Potential harm or killing of GCN during their terrestrial or aquatic phase	-Precautionary methods of work during construction - Creation of wildflower meadow and tussocky grassland suitable for GCN - Two on-Site ponds will be widened/deepened - Seven ponds to be created	- Precautionary Working Method Statement (PWMS) - NRW EPSL GCN Licence -Landscape Plan -LEMP	Positive Effect at County Level
Breeding Birds	- Potential damage/ destruction of active nests during Site clearance works - Reduction in habitat for ground nesting birds. - Loss of suitable habitat, such as hedgerow and trees, could reduce the nesting and foraging provision available to birds.	- Vegetation clearance during bird nesting season (March - August) to be avoided -Sowing of tall, species rich grassland -Planting of an additional species rich hedgerow, as well as new trees and scrub.	-CEMP -Landscape Plan -LEMP	Positive Effect at Local Level
Bats	- Negative impact of additional artificial light spillage into commuting and foraging areas - Potential loss for foraging resource in place of Site infrastructure	- No lighting of sensitive areas - Net increase in connectivity between hedgerows, proposed buffer planting, creation of rough grassland and pond creation will improve foraging and committing routes for bats	- No lighting of woodland or other high quality bat foraging habitats - Landscape Plan	Positive Effect at up to County Level
Badger	-Restricted access to suitable habitat within the Site -Disturbance of setts, breach of laws protecting badgers and their setts - Badgers becoming entrapped in open excavations during construction phase.	- Perimeter fencing to have a 150mm gap beneath it to permit unrestricted access throughout the solar farm for badger - 30m protection zone established around setts - Pre-commencement badger check by ECoW	- CEMP - Employment of an ECoW	Positive Effect at Local Level

Ecological Feature	Potential Impacts	Proposed Mitigation and Compensation	Means of Delivering Mitigation and Compensation	Residual Effects
		- Excavations created during construction to be in-filled within the same day, or excavations should be covered or provided with a sloping side (>45%).		
Water Vole	- Retained ditches if supporting water vole, could be negatively impacted by pollution created during the construction phase. - Small areas of sub-optimal water vole habitat lost by two proposed ditch crossings - If present water vole could be disturbed or their resting places damaged, this would be in breach of wildlife legislation	- 5m buffer zone from ditches where crossing not required - Good practice pollution prevention measures followed - Retention of the majority of ditches - Pre-commencement check for Water Vole by ECoW - Improvement to bank top habitats will occur through creation of long grassland and rough tussocky grassland.	-CEMP -Landscape Plan -Employment of an ECoW to oversee works if necessary	Not Significant
Hazel Dormouse	- Minor reduction in habitat suitable for dormice during construction	-Precautionary Working Method Statement should be implemented for the removal of the section of hedge, including details on appropriate timing of the works, requirement for pre-commencement checks or ECoW supervision - 173m new hedgerow created all gaps in hedgerows >0.5m to be filled with native species suitable for dormice.	- PWMS - CEMP -Landscape Plan -Employment of an ECoW	Positive Effect at Local Level
Hedgehog	-Restricted access to suitable habitat within the site -Improvement to habitat diversity and invertebrate densities over time	-Perimeter fencing to have a 150mm gap beneath it to permit unrestricted access throughout the solar farm	-Landscape Plan -LEMP	Not Significant

5.0 Conclusion

Overall, the St Asaph Solar Farm scheme is predicted to have no significant residual effects in relation to any important ecological receptors.

The mitigation and enhancement measures, as discussed in this report are predicted to have a positive effect at Local level on abundance of hedgerow habitat and positive effect of up-to County level on pond habitats. Protected species, including GCN, breeding birds, bats, badgers and hazel dormouse are also predicted to benefit from the biodiversity enhancements incorporated into the Site design.

Appendix A Drawing C0002452_01 Site Location and Drawing C0002452_02 Site Layout

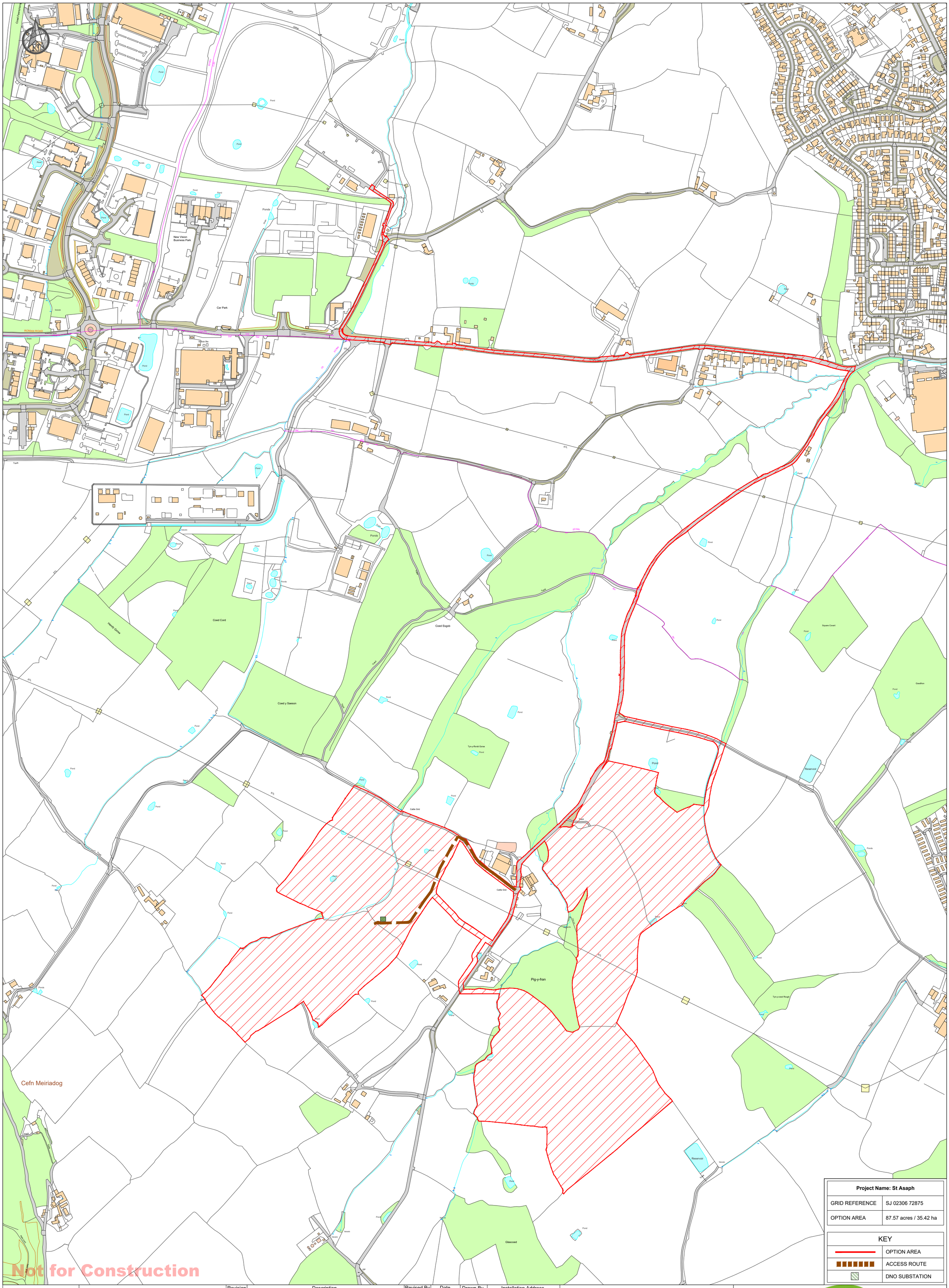
Ecological Impact Assessment

St Asaph Solar Farm

Anesco Limited

SLR Project No.: 406.065274.00001

29 April 2025



Project Name: St Asaph	
GRID REFERENCE	SJ 02306 72875
OPTION AREA	87.57 acres / 35.42 ha

KEY	
	OPTION AREA
	ACCESS ROUTE
	DNO SUBSTATION

Installer Details

Anesco Ltd.
The Green,
Easter Park,
Benyon Road,
Reading,
RG7 2PQ
Tel: 0845 894 4444

Comments

0 50 100 150 200

Revision	Description	Revised By	Date	Drawn By
A	Issued for comment	MS	20/10/2020	RD
B	Land reduced from the North and extended to the South	MS	05/03/2021	
C	Area of Land has been altered and the DNO substation moved	MS	04/05/2021	
D	Area of Land has been altered and the DNO substation moved	MS	12/05/2021	
E	Site area amended	JH	22/11/2023	Scale
F	Red Line Boundary amended & access track added in the North	JH	12/12/2023	1:5000@ A2
G	Red Line Boundary amended	MS	10/06/2024	
H	Red Line Boundary amended	MS	13/11/2024	
J	Red Line Boundary amended	RD	26/03/2025	Sheet Size A2

Installation Address

Cefnmeiriadog,
St Asaph,
Denbighshire,
Wales,

LL17 0HF

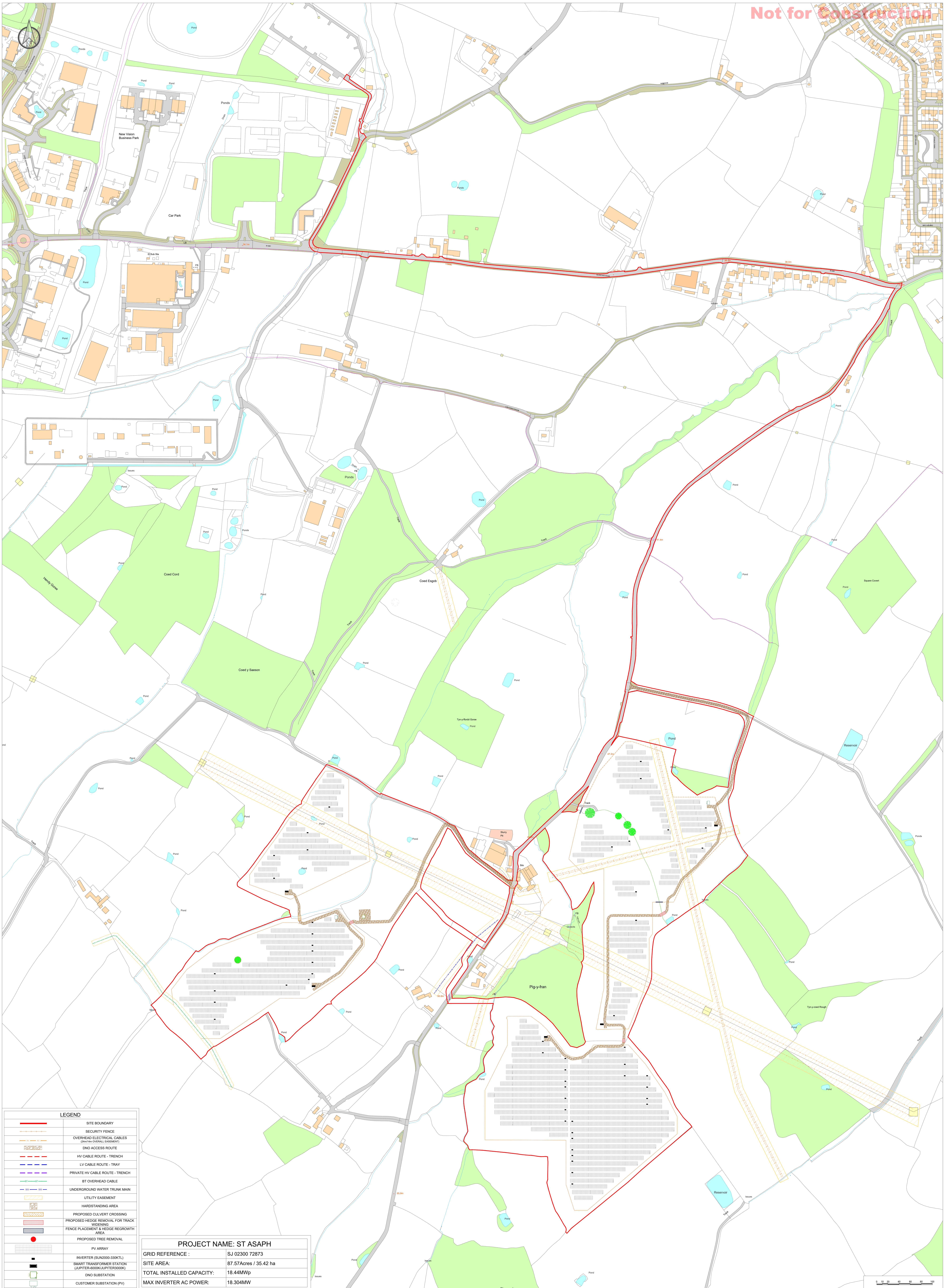
Project: St Asaph

Title: Location Plan

Drawing No.: C0002452_01

Rev.: J

Anesco™ AMAZING ENERGY



PROJECT NAME: ST ASAPH

GRID REFERENCE :	SJ 02300 72873
SITE AREA:	87.57Acres / 35.42 ha
TOTAL INSTALLED CAPACITY:	18.44MWp
MAX INVERTER AC POWER:	18.304MW

Installer Details

Anesco Ltd.
The Green,
Easter Park,
Benyon Road,
Reading,
RG7 2PQ
Tel: 0845 894 4444

Comments

Revision	Description	Revised By	Date
A	Issued for comment	MS	19/11/2020
B	Land reduced from the North and extended to the South	MS	05/03/2021
C	Boundary Line Extended	MS	05/05/2021
D	Boundary Line Extended and site maximised	MS	12/05/2021
E	Planning Site Layout	JH	10/11/2021
F	Module Wattage Changed	MS	07/12/2021
G	Site resign to 215KTL & Bifacial Modules	JH	02/03/2022
H	Site redesigned due to tree shading implications	MS	16/06/2022
J	Red Line Boundary amended to include Private HV	JH	03/08/2022
K	Site redesign	JH	15/05/2023
L	Site redesign using new modules and new private HV cable	JH	06/07/2023
M	Site area amended and module redesign	JH	22/11/2023

Revision	Description	Revised By	Date
N	DNO Track Added	LD	28/11/2023
P	Red Line Boundary amended & access track added in the North	JH	12/12/2023
Q	Redesign due to array relocation	JS	19/03/2024
R	Redesign	MS	01/08/2024
S	Access Altered	MS	20/09/2024
T	Hedgerow added and panel locations amended	MS	11/11/2024
U	Inverters added	RD	20/01/2024
V4	Topo and service searches added	RD	31/03/2025

Drawn By	JH
Scale	1:3000@ A1
Sheet Size	A1

Installation Address

Cefnmeiriadog,
St Asaph,
Denbighshire,
Wales,
LL17 0HF

Project	St Asaph
Title	Site layout planning
Drawing No.	C0002452_02
Rev.	V4

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Appendix B Landscape Strategy Plan

Ecological Impact Assessment

St Asaph Solar Farm

Anesco Limited

SLR Project No.: 406.065274.00001

29 April 2025

The scaling of this drawing cannot be assured

Revision	Date	Drn	Ckd
-	-	-	-

LEGEND

- Site Boundary
- Existing Woodlands, Copses and Tree Belts ^
- Existing Water Courses and Features ^
  Wildflower meadow wetland seeding across 10m buffers to the ponds, streams and ditches within and adjacent to the Site
- Contours/Spot Heights (Metres AOD) ^
- Existing Surveyed Trees and Vegetation to be Retained
- Existing Surveyed Trees Removed Since Survey and Photographs Captured
- Proposed Trees
  To be managed to a maximum height 4.5-5m to prevent overshading
- Proposed Trees
  To be allowed to grow to their natural height
- Existing Hedgerow to be Maintained and Reinforced
  Assume approximately 25% infill for overall length (to a minimum height of 2.5 - 3m)
- Proposed Hedgerow to be Maintained
  (to a minimum height of 2.5 - 3m)
- Native Shrub Planting
  (Maintained to 10m maximum height) where it is 35m-60m from panels
- Native Tree Planting
  (No woody species 0-15m from panels)
  (Maintained to 15m maximum height) where it is 60m+ from panels
  Translocate small amounts of soil/seed bank from areas of tree removal to the native woodland planting area. Translocate smaller saplings from areas of tree removal to the native woodland planting area. Grow saplings using berries and nuts gathered from mature trees to be removed, and plant these saplings within the native woodland planting area.
- Native Shrub Planting
  (Maintained to 4m maximum height) where it is 15-35m from panels
- Proposed new pond; the pond shall have a wet surface area of at least 100m^2 and be of sufficient depth to hold water in at least one in three summers; spoil generated from the excavation of the pond will be used to create a series of 2m x 1m x 1m high hibernacula; the pond will be planted with a range of aquatic and marginal plants, and the banks seeded with Emorsgate Seeds EP1 'Pond Edge Mix' or similar.
- Currently dry pond or pond not supporting GCN to be reinstated; the pond shall have a wet surface area of at least 100m^2 and be of sufficient depth to hold water in at least one in three summers; spoil generated from the excavation of the pond will be used to create a series of 2m x 1m x 1m high hibernacula; the pond will be planted with a range of aquatic and marginal plants, and the banks seeded with Emorsgate Seeds EP1 'Pond Edge Mix' or similar.
- Existing grassland to be maintained as long grassland for great crested newt habitat/migration.
- Existing grassland to be maintained as tussocky grassland with Low Density Native Mix trees, no trees to be planted under OHL easement and to be maintained to 15m maximum height where planted at 60m+ from panels.
- Proposed Wildflower Meadow Tussock Mixture Emorsgate EM10 and maintained as long grassland for great crested newt habitat/migration.
- Existing grassland within perimeter fence to be retained as grazing pasture or mown no more than once a year, within autumn, to a height of no less than 10cm.
- Proposed Wildflower Meadow Tussock Mixture Emorsgate EM10 (cut every 3 years).
- Proposed Wildflower Meadow Hedgerow Mixture Emorsgate EH1 (cut annually or more frequently to prevent shading as required).
- Proposed Security Fence
- Proposed Access Route
- Proposed Solar Panels
- Solar Panel 15m Buffer
- Solar Panel 35m Buffer
- Solar Panel 60m Buffer

J:\33000\33010 - St Asaph Solar Farm\A4 - Drawings & Registers\Landscape\33010 LN-LP Landscape Strategy Plan.dwg - LN-LP-12-A1

FIGURE 7

Project
St Asaph Solar Farm

Drawing Title
Landscape Strategy Plan
Sheet 1 of 2

Date	Scale	Drawn by	Check by
20.12.2024	1:2,500 @A1 1:5,000 @A3	OF/ML	DP
Project No	**Drawing No**		**Revision**
33010	LN-LP-12		G

0 200 400 600 800 100mm

Stantec
Stantec UK Limited
7 Soho Square
London
W1D 3QB
T: 020 7446 6888
stantec.com\uk

Proposed and Reinforcement Hedgerow Mix (plant at 0.5m centres in single species groups of 3-7 plants)						
Abbrev	Species Name	Common Name	Height	General Specification	Percentage	Quantity
Ac ca	Acer campestre	Field Maple	80-100cm	1+1: Transplant - seed raised: B	5%	156
Co av	Corylus avellana	Common Hazel	80-100cm	1+2: Transplant - seed raised: Branched: 4 brks: B	20%	624
Cr mo	Crataegus monogyna	Common Hawthorn	80-100cm	1+2: Transplant - seed raised: 4 brks: B	35%	1094
Il aq	Ilex aquifolium	Common Holly	40-60cm	Leader with Laterals: 2L	10%	314
Pr sp	Prunus spinosa	Blackthorn	80-100cm	1+2: Transplant - seed raised: Branched: 3 brks: B	25%	780
Pr pa	Prunus padus	Bird Cherry	80-100cm	1+1: Transplant - seed raised: B	5%	156
Native Shrub Planting Mix - Maintained to 4m maximum height (plant at 0.5 plants/m^2 in single species groups of 3-5 plants)						
Abbrev	Species Name	Common Name	Height	General Specification	Percentage	Quantity
Po ni	Populus nigra	Black Poplar	60-80cm	1+1: Transplant - seed raised: B	5%	162
Co av	Corylus avellana	Common Hazel	60-80cm	1+2: Transplant - seed raised: Branched: 3 brks: B	20%	648
Cr mo	Crataegus monogyna	Common Hawthorn	60-80cm	1+1: Transplant - seed raised: B	35%	1135
Il aq	Ilex aquifolium	Common Holly	40-60cm	Leader with Laterals: 2L	10%	324
Sa ca	Salix caprea	Goat Willow	60-80cm	1+1: Transplant - seed raised: Branched: 2 brks: B	25%	810
Pr pa	Prunus padus	Bird Cherry	60-80cm	1+1: Transplant - seed raised: B	5%	162
Native Shrub Planting Mix - Maintained to 10m maximum height (plant at 0.5 plants/m^2 in single species groups of 3-5 plants)						
Abbrev	Species Name	Common Name	Height	General Specification	Percentage	Quantity
Ul gl	Ulmus glabra	Wych Elm	80-100cm	1+1: Transplant - seed raised: B	10%	435
Be pu	Betula pubescens	Downy Birch	80-100cm	1+1: Transplant - seed raised: B	10%	435
Ti eu	Tilia x europea	Common Lime	80-100cm	1+1: Transplant - seed raised: B	10%	435
So to	Sorbus torminalis	Service Tree	80-100cm	1+1: Transplant - seed raised: B	10%	435
Qu pe	Quercus petraea	Sessile Oak	80-100cm	1+2: Transplant - seed raised: B	10%	435
Understorey planting						
Co sa	Cornus sanguinea	Common Dogwood	60-80cm	1+1: Transplant - seed raised: Branched: 3 brks: B	10%	435
Co av	Corylus avellana	Common Hazel	60-80cm	1+2: Transplant - seed raised: Branched: 3 brks: B	10%	435
Co mo	Crataegus monogyna	Common Hawthorn	80-100cm	1+2: Transplant - seed raised: B	10%	435
Ma sy	Malus sylvestris	Crab Apple	60-80cm	0/2; Cutting; branched; 3 breaks	10%	435
Sa ni	Sambucus nigra	Elder	60-80cm	1+2: Transplant - seed raised: Branched: 4 brks: B	10%	435
Native Tree Planting Mix - Maintained to 15m maximum height (plant at 0.25 plants/m^2 in single species groups of 3-5 plants)						
Abbrev	Species Name	Common Name	Height	General Specification	Percentage	Quantity
Ac ca	Acer campestre	Field Maple	80-100cm	1+1: Transplant - seed raised: B	5%	41
Be pu	Betula pubescens	Downy Birch	80-100cm	1+1: Transplant - seed raised: B	5%	41
Il aq	Ilex aquifolium	Common Holly	60-80cm	Leader with Laterals: 5L	5%	41
So au	Sorbus aucuparia	Rowan	80-100cm	1+1: Transplant - seed raised: B	5%	41
Qu pe	Quercus petraea	Sessile Oak	80-100cm	1+2: Transplant - seed raised: B	5%	41
Understorey planting						
Co sa	Cornus sanguinea	Common Dogwood	60-80cm	1+1: Transplant - seed raised: Branched: 3 brks: B	15%	123
Co av	Corylus avellana	Common Hazel	60-80cm	1+2: Transplant - seed raised: Branched: 3 brks: B	15%	123
Co mo	Crataegus monogyna	Common Hawthorn	80-100cm	1+2: Transplant - seed raised: B	15%	123
Li vu	Ligustrum vulgare	Common Privet	60-80cm	0/2; Cutting; branched; 3 breaks	15%	123
Vi op	Viburnum opulus	Guelder Rose	60-80cm	1+2: Transplant - seed raised: Branched: 4 brks: B	15%	123
Low Density Native Tree Planting Mix - Maintained to 15m maximum height (plant at 10 m centres in single species groups of 3-5 plants)						
Abbrev	Species Name	Common Name	Height	General Specification	Percentage	Quantity
Ac ca	Acer campestre	Field Maple	80-100cm	1+1: Transplant - seed raised: B	5%	8
Be pu	Betula pubescens	Downy Birch	80-100cm	1+1: Transplant - seed raised: B	5%	8
Il aq	Ilex aquifolium	Common Holly	60-80cm	Leader with Laterals: 5L	5%	8
So au	Sorbus aucuparia	Rowan	80-100cm	1+1: Transplant - seed raised: B	5%	8
Qu pe	Quercus petraea	Sessile Oak	80-100cm	1+2: Transplant - seed raised: B	5%	8
Understorey planting						
Co sa	Cornus sanguinea	Common Dogwood	60-80cm	1+1: Transplant - seed raised: Branched: 3 brks: B	15%	23
Co av	Corylus avellana	Common Hazel	60-80cm	1+2: Transplant - seed raised: Branched: 3 brks: B	15%	23
Co mo	Crataegus monogyna	Common Hawthorn	80-100cm	1+2: Transplant - seed raised: B	15%	23
Li vu	Ligustrum vulgare	Common Privet	60-80cm	0/2; Cutting; branched; 3 breaks	15%	23
Vi op	Viburnum opulus	Guelder Rose	60-80cm	1+2: Transplant - seed raised: Branched: 4 brks: B	15%	23
Trees						
Abbrev	Species Name	Common Name	Height	Girth	General Specification	Quantity
Ac ca	Acer campestre	Field Maple	350-425cm	12-14cm	Heavy Standard: 5 brks: 3x: Clear Stem minimum 200cm: B	16
Qu pe	Quercus petraea	Sessile Oak	350-425cm	12-14cm	Heavy Standard: 5 brks: 3x: Clear Stem 175-200cm: RB	14
Ta ba	Taxus baccata	Yew	350-425cm	12-14cm	Heavy Standard: 5 brks: 3x: Clear Stem 175-200cm: RB	15

Long Term Management Plan

Pruning generally

1. All dead, damaged or diseased tree branches shall be removed and arisings removed from site. Shrubs shall be pruned in the appropriate season (see hedgerows, below) to maintain health and vigour and encroachment on access route/storage areas, etc. Avoid cutting operations from March to August (inclusive) to prevent disturbance of breeding birds.

Hedgerows

2. Hedgerows shall be pruned on one side per year, alternating on a 2 or 3 year rotation in February, and maintained a minimum height of 2.5 - 3m (otherwise stated on the plan) to promote bushy growth while providing continued habitat and foraging opportunities for wildlife. Hedgerow trees shall be encouraged to develop to full maturity.

Retained Grazing Pasture

3. Retained grassland to be sheep-grazed or mown as required to prevent shading of the panels or security features. Areas outside perimeter fence to be mown no more than once annually.

Wildflower Meadow Grassland

4. Meadow grassland within the inner section of the fields (under and around the solar arrays) to be cut as frequently; areas away from the solar panels to be cut annually, in September; and the boundaries of the field to be cut on a rotational three-year cycle.

Scrub

5. Areas to be thinned and trimmed to a height of between 1 and 3 meters on a 3 year rotational basis.

Woodland

6. Carry out selective thinning and coppicing of approximately 30% of plants in Year 5. Leave deadwood and brush piles in situr.

General

7. All soft and hard landscaping shall be inspected annually by the Landscape Contractor and an approved arboriculturist and tree works carried out as necessary to ensure the continued health and safety of the trees. Regular weed control and litter picking operations will be required.

PLANTING NOTES

General

1. Plant material to conform to the National Plant Specification. Plant handling and planting operations to be in accordance with HTA 'Handling and Establishing Landscape Plants', Parts I-III.
2. Imported topsoil (if required) to BS 3882 Low Fertility Grade and from an approved source. Existing topsoil shall have a maximum 35% clay content and minimum 5% organic content, pH 5.5-8.5 and be free of perennial weeds, weed seeds and contamination. Maximum stone content 20% (>20mm particle size), maximum size of stones 50mm in any direction. Existing topsoil to be ameliorated and/or screened if necessary to achieve this specification.
3. Soil conditioner: Sanitized and stabilised compost to BSI PAS 100. Apply 75mm depth even coverage and incorporate into topsoil during cultivation operations, to a minimum depth of 150mm. Compost to be Compost Association certified, or conforming to the specification from an approved supplier.
4. Mulch planting beds with matured coniferous bark, with an even particle size between 5-35mm, to 75mm minimum depth over weed-free soil after completion of planting and watering operations.

Existing Grazing Pasture

5. Retained grassland - any bare patches arising from installation works to be seeded with an agricultural grassland seed mix.

Wildflower Meadow Grassland

6. Existing arable land to be harrowed in areas indicated for meadow grassland. Do not cultivate within tree root protection areas or within the existing hedgerow but cut manually to 30-50mm during autumn preceding and following seeding. Sow meadow grassland seed mixes into newly harrowed soil in areas indicated, in accordance with supplier's recommendations, in autumn to reduce competition.
7. Extra attention is required in terms of seed bed preparation to encourage good establishment and to cultivate when soil moisture allows breakdown of the soil aggregates into a medium tilth.

Hedgerows

12. Prepare a 0.5m wide x 0.3m deep weed-free trench (or larger if necessary, in order to take the full spread of the roots); the sides and bottom of the trench will be forked over and 'ripped' to facilitate proper drainage, prior to back-filling. The trench to be excavated on the same day as planting and to be back-filled with an appropriate excavated topsoil/ compost mix. Compost will only be used if necessary; should compost be deemed necessary, it to be Compost Association certified, or obtained from a supplier conforming to this specification. Hedgerow to be cultivated by hand only in proximity to existing trees/hedgerow. No herbicide.
13. For existing hedgerows, plant bare root transplants and container-grown shrubs at 0.5m centres on the back of the existing hedgerows and fill any gaps larger than 0.5m. Hand dig with care in proximity to existing hedgerows and do not sever any roots larger than 2.5cm in diameter.
14. For new hedgerows, plant shrubs at 0.5m centres.
15. Transplants to be notch planted and container-grown shrubs to be pit planted (in pits 150mm wider than root spread) ensuring the original root collar is at ground level after backfilling and firming in.
16. Hedgerow plants to be installed with rabbit protection, as follows:

- Transplants, cuttings and seedlings: PP photodegradable tube guards 0.6m high x 50mm diameter or greater to suit girth of shrub/tree, supported by 900mm bamboo cane inserted 300mm below ground level.
- Container-grown shrubs: recycled HDPE photodegradable mesh guards 0.6m high x 150-180mm diameter or greater to suit diameter of shrub, supported by 900mm timber stake inserted 300mm below ground level.
  Ensure protection methods do not restrict natural movement or growth.

Tree and Shrub Planting

17. Plants to be installed with rabbit protection, in the same method as hedgerow plants.
18. Notch plant bare root transplants in rows on a 2.0m grid. Hand dig with care in proximity to existing trees and do not sever any roots larger than 2.5cm in diameter.
19. Tree and shrub species should be agreed with Denbighshire Borough Council and sourced from those grown at the council's tree nursery at St Asaph. With regard to both the proposed native buffer planting and the proposed native scrub planting, species mixes suitable for dormice should be used, which may include species such as hazel (Corylus avellana), oak (Quercus petraea), black poplar (Populus nigra), service tree (Sorbus torminalis), wych elm (Ulmus glabra) (for white letter hairstreak butterfly which may be locally present), lime (Tilia sp.), honeysuckle (Lonicera periclymenum), elder (Sambucus nigra), goat willow (Salix caprea), birch (Betula pendula and/or Betula pubescens), blackthorn (Prunus spinosa), hawthorn (Crataegus monogyna), crab apple (Malus sylvestris) and holly (Ilex aquifolium).
20. No woody species to be planted within 15m from panels.

Planting seasons

21. Planting seasons:

- Deciduous trees and shrubs: Late October to late March
- Conifers and evergreens: September/October or April/May
- Container grown plants: At any time if ground and weather conditions are favourable
- Grass seeding: August/September

LANDSCAPE & BIODIVERSITY MANAGEMENT PLAN
Establishment and Maintenance Period (Years 1-5)

Pruning generally

1. All dead, damaged or diseased tree branches shall be removed and arisings removed from site. Trees and shrubs shall be pruned in the appropriate season to maintain health and vigour and to prevent encroachment on access route/storage areas, etc. The removal of vegetation will be timed for outside of the bird nesting season (March to August inclusive) to prevent disturbance of breeding birds. If this is not possible, a check for active nests will first be undertaken by an ecologist. If a nest is found, an appropriate buffer will be left undisturbed until any chicks have fledged, as confirmed by an ecologist.

Existing & Proposed Hedgerows

2. Hedgerows shall be pruned on one side per year alternating on a 2 or 3 year rotation in February, aiming to maintain a minimum height of 2.5 - 3m to promote bushy growth while providing continued habitat and foraging opportunities for wildlife. Hedgerow trees shall be retained and encouraged to develop to full maturity where not likely to cause overshading of panels.

Shrub

3. Areas to be thinned and trimmed to a height of between 1 and 3 meters on a 3 year rotational basis.
4. Shrub planting to be maintained to 4m maximum height where it is 15-35m from panels.
5. Shrub planting to be maintained to 10m maximum height where it is 35m-60m from panels.
6. Shrub planting areas to be planted with glades/rides for maintenance.

Trees

7. Tree panting to be maintained to 15m maximum height where it is 60m+ from panels.
8. Tree planting areas to be planted with glades/rides for maintenance.

Woodland

9. Re-mulch planting area during years 1-3 to minimise competition from weeds and grasses.

Retained Grazing Pasture

10. Retained grassland inside perimeter fence to be sheep-grazed or mown on a regular basis as required to prevent shading of the panels or security features.
11. Retained grassland outside perimeter fence to be mown no more than once annually to encourage the establishment of a tall sward.

Wildflower Meadow Grassland

12. Meadow grassland within the inner section of the fields (under and around the solar arrays) to be cut as frequently as is required to prevent shading and to provide access; areas away from the solar panels to be cut annually, in September, once established; and the boundaries of the field to be cut on a rotational three-year cycle, once established.
13. Areas outside proposed fencing to be cut on a 3 year rotation.
14. Mowing or strimming of grassland to a height of no less then 15cm shall occur on land located within 250 metres of ponds known to support GCN, as well as the seven reinstated/new ponds proposed.
15. Herbicides or other chemicals shall not be used to control vegetation beneath panels, or elsewhere on site.

Ponds

16. Reinstated or new ponds to have a minimum surface area of 100m2 and be of sufficient depth to hold water in at least one in three summers; they will contain substantial submerged and marginal vegetation to provide cover and egg-laying opportunities, but also have open areas required for courtship and display.
17. Spoil generated from the reinstatement or forming of ponds shall be used to create a series of hibernacula, each measuring at least 2 metres in length, 1 metre in width and 1m in height.

General

18. All areas of planting and grass shall be maintained, to include:
    - Ample irrigation
    - Weed control (herbicide application or hand weeding)
    - Litter picking
    - Topping up of mulch
    - Checking condition of tree stakes and ties

14. All stakes and ties shall be inspected during the growing season and adjusted as necessary to ensure that they are secure and firm and that the ties are not chaffing the stem of the trees. Stakes and ties shall be removed and disposed of when plants become self supporting or at the end of the 5 year establishment period.

15. Planting which fails to thrive or dies during the 5-year establishment period shall be replaced within the next suitable planting season.

The scaling of this drawing cannot be assured

Revision	Date	Drn	Ckd
-	-	-	-

Areas of Landscape Elements	
Landscape Elements	Area (ha) / Length km)
Proposed Native Tree Planting	1.19ha
Proposed Native Shrub Planting	0.65ha
Reinforced Habitat Ponds	0.02ha
Proposed Habitat Ponds	0.07ha
Proposed Aquatic Planting and Emorsgate EP1 or similar	0.09ha
Existing Hedgerow to be Reinforced	2.8km
Proposed Hedgerow	173m
Existing grassland to be maintained as long grassland	5.73ha
Existing grassland within perimeter fence to be retained as grazing pasture or mown	9.43ha
Existing grassland outside perimeter fence to be maintained as tussocky grass with low density tree planting	1.98ha
Proposed Wildflower Meadow EM10 maintained as long grassland	3.58ha
Proposed Wildflower Meadow EM10 (cut every 3 years)	3.76ha
Proposed Wildflower Meadow EH1 (cut annually or more regularly)	2.27ha

Project
St Asaph Solar Farm

Drawing Title
Landscape Strategy Plan: Planting Schedule and Notes Sheet 2 of 2

Date	Scale	Drawn by	Check by
20.12.2024	N/A	OF/ML	DP

Project No	Drawing No	Revision
33010	LN-LP-13	D

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Appendix C National Legislation and Policy

Ecological Impact Assessment

St Asaph Solar Farm

Anesco Limited

SLR Project No.: 406.065274.00001

29 April 2025

Relevant Legislation and Planning Policy

Legislation

A summary of legislation relevant to (onshore) biodiversity in England and Wales is provided below. Note that the summary provided here is intended for general guidance only and the original legislation should be consulted for definitive information.

Environment Act (2021)

The Environment Act has wide ranging provisions including those around:

- Environmental governance;
- Environmental regulation;
- Waste and resource efficiency;
- Air quality and environmental recall;
- Water;
- Nature and biodiversity;
- Conservation covenants.

Of particular relevance is Part 6 of the Act which introduces "biodiversity gain in planning" and will apply in England to planning applications under the Town & Countryside Act and the Planning Act. Schedule 14 now requires that biodiversity gain be a condition of planning permission in England. These changes will be enacted through subsequent secondary legislation or regulations. This part of the Act also changes the responsibilities that Government or public bodies have by strengthening the existing NERC Act biodiversity duty. Public authorities are now required to seek to conserve and enhance biodiversity in the exercise of their functions.

Conservation of Habitats and Species Regulations 2017 (as amended)

The Conservation of Habitats and Species Regulations 2017 (as amended) (the Habitats Regulations) consolidate the Conservation of Habitats and Species Regulations 2010 with subsequent amendments. The Regulations transpose Council Directive 92/43/EEC, on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive), into national law. Under the Habitats Regulations it is an offence to deliberately capture, kill or disturb[1] wild animals listed under Schedule 2 of the Regulations as well as damage or destroy a breeding site or resting place of such an animal (even if the animal is not present at the time). European Sites, including Special Areas of Conservation (SACs) and Special Protection Areas (SPAs), are also protected under the Habitat Regulations, and any proposal that could affect them will require a Habitats Regulations Assessment (HRA).

[1] Disturbance, as defined by the Conservation of Habitats and Species Regulations 2010, includes in particular any action which impairs the ability of animals to survive, breed, rear their young, hibernate or migrate (where relevant); or which affects significantly the local distribution or abundance of the species.

The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017

Part 3 of the regulations provide for the protection of areas of habitats or species where maintenance of the status of water is an important factor. Under the regulations additional consideration may need to be given to sites in the form of a Water Framework Directive (WFD) assessment where a project lies in proximity to a water body or to linked water bodies which could be affected. This includes consideration of whether water bodies are WFD receptors in particular those of high status or have high status morphology.

Environment (Wales) Act 2016

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.

Natural Environment & Rural Communities (NERC) Act 2006

Section 40 of the NERC Act 2006 places a duty on public authorities to have regard to the purpose of conserving biodiversity in the exercise of their functions. Public authorities include government departments, local authorities and statutory undertakers.

Section 41 of the Act (Section 42 in Wales) requires the publication of a list of habitats and species publish which are of principal importance for the purpose of conserving biodiversity. The Section 41 list is used to guide authorities in implementing their duty to have regard to the conservation of biodiversity.

Note that Sections 40 and 42 were superseded in Wales by the Environment (Wales) Act 2016 (see below).

Protection of Badgers Act 1992

The Protection of Badgers Act 1992 makes it illegal to kill, injure or take a badger or to intentionally or recklessly interfere with a badger sett. Sett interference includes disturbing badgers whilst they are occupying a sett or obstructing access to it.

Wildlife & Countryside Act 1981

The Wildlife and Countryside Act 1981, as amended by the Countryside and Rights of Way (CRoW) Act 2000 and the Natural Environment and Rural Communities (NERC) Act 2006, consolidates and amends existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and Council Directive 79/409/EEC on the Conservation of Wild Birds (Birds Directive), making it an offence to:

- Intentionally kill, injure or take any wild bird or their eggs or nests (with certain exceptions) and disturb any bird species listed under Schedule 1 to the Act, or its dependent young while it is nesting;
- Intentionally kill, injure or take any wild animal listed under Schedule 5 to the Act;

- intentionally or recklessly damage, destroy or obstruct any place used for shelter or protection by any wild animal listed under Schedule 5 to the Act;
- intentionally or recklessly disturb certain Schedule 5 animal species while they occupy a place used for shelter or protection;
- Pick or uproot any wild plant listed under Schedule 8 of the Act; or
- Plant or cause to grow in the wild any plant species listed under Schedule 9 of the Act.

Planning Policy

A summary of national planning policy relevant to (onshore) biodiversity in England and Wales is provided below. Note that the summary provided here is intended for general guidance only and the original policy documents should be consulted for definitive information. For local planning policy relevant to biodiversity the relevant local plans should be consulted.

National Planning Policy Framework December 2024(England)

The National Planning Policy Framework (NPPF)[2] sets out guidance for local planning authorities and decision-makers in how to apply planning policies when drawing up plans and making decisions about planning applications. Along with Government Circular 06/052, the broad policy objectives in relation to the protection of biodiversity and geological conservation in England through the planning system are set out. Specific policies relating to habitats and biodiversity are set out in paragraphs 187 to 195 of the NPPF.

Paragraph 187 states that:
"Planning policies and decisions should contribute to and enhance the natural and local environment by:

a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);
b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;
c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate;
d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;
e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development f) should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and
f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate".

[2] Ministry of Housing, Communities & Local Government (December 2024). https://assets.publishing.service.gov.uk/media/675abd214cbda57cacd3476e/NPPF-December-2024.pdf

Paragraph 192 states that:
"To protect and enhance biodiversity and geodiversity, plans should:

a) *Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and*
b) *promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity."*

Paragraph 193 of the NPPF states that:
"When determining planning applications, local planning authorities should apply the following principles:

a) *if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;*
b) *development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;*
c) *development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and*
d) *development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this* is appropriate."

Paragraphs 194 - 195 relate to European sites (referred to as habitats sites) and state:
"The following should be given the same protection as habitats sites:

a) *potential Special Protection Areas and possible Special Areas of Conservation;*
b) *listed or proposed Ramsar sites; and*
c) *sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.*

The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site."

National Planning Policy (Wales)

Planning Policy Wales (PPW)[3] 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,

[3] Welsh Government. 2018. Planning Policy Wales. Edition 10, December 2018.

environmental and cultural well-being of Wales. 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."

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*
- *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:

- The 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.

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 5[4] 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*

[4] Welsh Assembly Government. 2009. Planning Policy Wales Technical Advice Note 5: Nature Conservation and Planning. September 2009.

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."*

Appendix D GCN Report

Ecological Impact Assessment

St Asaph Solar Farm

Anesco Limited

SLR Project No.: 406.065274.00001

29 April 2025

Appendix E Winter Bird Survey Report

Ecological Impact Assessment

St Asaph Solar Farm

Anesco Limited

SLR Project No.: 406.065274.00001

29 April 2025

Appendix F Badger Report

Ecological Impact Assessment

St Asaph Solar Farm

Anesco Limited

SLR Project No.: 406.065274.00001

29 April 2025

This report is confidential and has not been released into the Public Domain for animal welfare reasons.

Appendix G Habitat Report

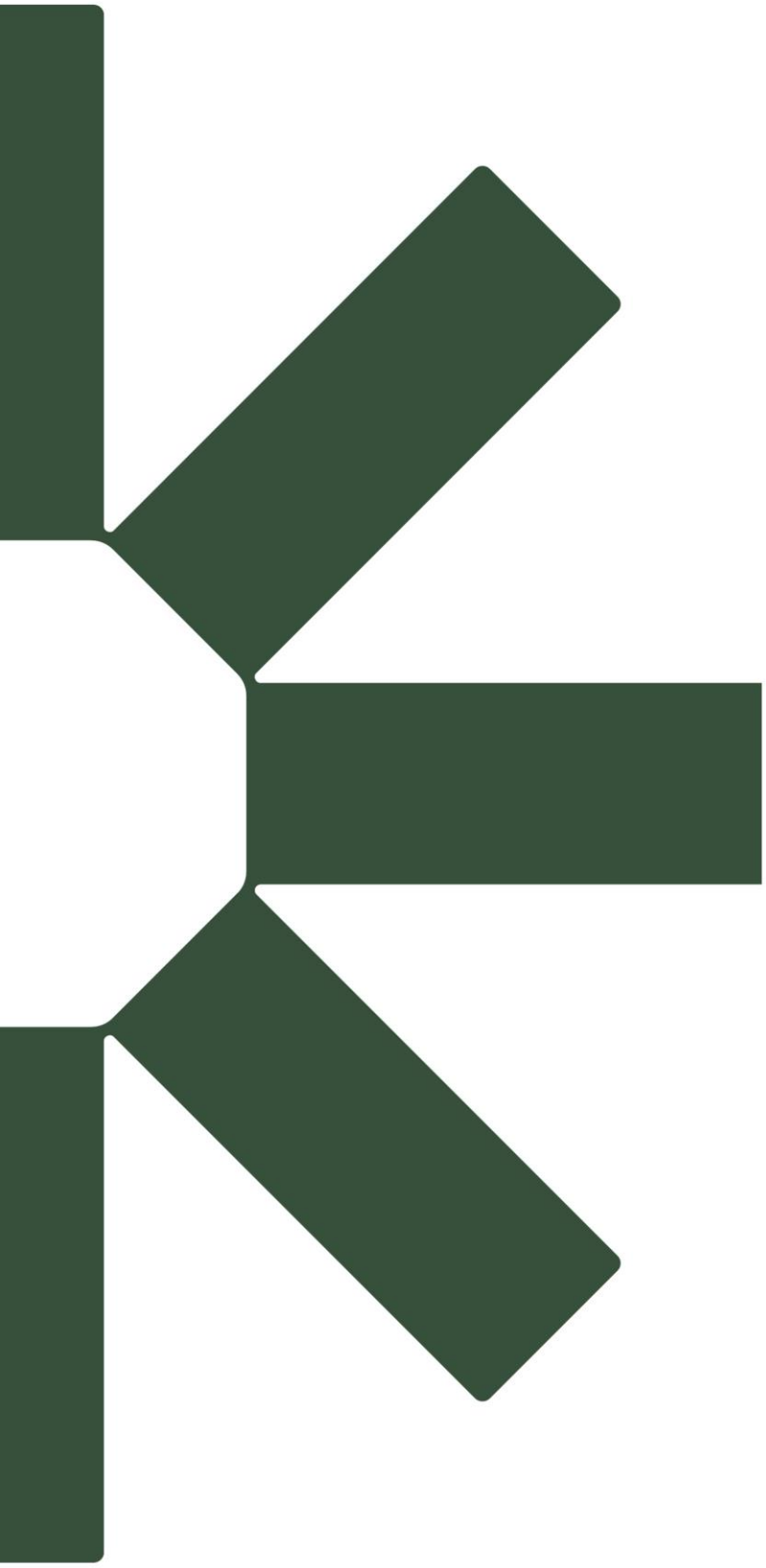
Ecological Impact Assessment

St Asaph Solar Farm

Anesco Limited

SLR Project No.: 406.065274.00001

29 April 2025



Making Sustainability Happen