

# Prosiect Maen Hir

Solar a Storio Ynni



## Preliminary Environmental Information Report Volume I, Chapter 7: Ecology and Biodiversity

Prosiect Maen Hir - September 2024

EN010156

lightsourcebp





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## 7 Ecology and Biodiversity

### 7.1 Introduction

7.1.1 This chapter provides a preliminary evaluation of the likely effects of the Project on ecology and biodiversity features (including nature conservation designations, Habitats of Principal Importance (HoPI), protected species and invasive non-native species (INNS)) during its construction, operation and maintenance, and decommissioning phases, with each feature assigned a nature conservation value (sensitivity value). This involves identifying the Project's potential direct and indirect impacts and effects on important ecological features and their contribution to local, and if appropriate County, regional and national, biodiversity.

7.1.2 The embedded mitigation is outlined within this report (see Section 7.4). However, as the ecology surveys for the Project are ongoing it is unknown at this stage, in the absence of full survey data, whether any additional mitigation measures over and above the embedded and standard environmental protection measures as set out in Section 7.6. Any additional mitigation, compensation or enhancement measures will be reported in the ES.

### 7.2 Baseline Conditions

7.2.1 This section describes the existing and future baseline conditions for the ecology assessment. Further details of the findings of desk and field-based studies, including evaluation of the relative nature conservation of identified ecological features, will be included within the ES, submitted as part of the DCO Application.

#### **Site Context**

##### ***Maen Hir North***

7.2.2 The area is characterised by a field complex with consistent south-west to north-east orientations and shallow valleys. The land is largely characterised by improved grassland, grazed by cattle and sheep with field boundaries typically formed by fences, hedgerows, dry stone walls and cloddiau (a dry-stone outer wall with a compacted earth, or earth/rubble core). There are occasional rocky outcrops, and semi-natural vegetation including poor semi-improved, marshy, neutral grassland and scrub. Occasional areas of plantation woodland and ancient semi-natural woodland are located in the area. The Former Oil Depot is located

within the northern area, with remnant haul roads, hardstanding, embankments and settling pools surrounded by areas of regenerating scrub, gorse and plantation woodland. The disused Anglesey Central Railway line associated within the copper mine at Parys Mountain extends between Rhosgoch and Amlwch to the south of the Former Oil Depot.

- 7.2.3 The Wen (a main river) runs in parallel with a portion of the north-east edge of Maen Hir North. The Goch (a main river) runs along the eastern edge of the Parcel. Glasgraig Fawr (a main river) runs through the south-eastern part of the Parcel. The Wygyr (a main river) interacts with the Parcel within the central-east portion, flowing initially along the eastern edge before briefly entering the Parcel and then running parallel to the central-northern and north-west portion of the Parcel.

### ***Maen Hir Central***

- 7.2.4 The topography of the area is characterised by extensive drumlin fields surrounding the Llyn Alaw reservoir, which is a Site of Special Scientific Interest (SSSI) designated for overwintering wildfowl. The land is formed of predominantly improved grassland, bounded by fences, hedgerows, dry stone walls and cloddiau. Areas of poor semi-improved and marshy grassland, and lowland fen and reedbed about Llyn Alaw and pockets of plantation woodland and ancient semi-natural woodland are located throughout the area. The disused Anglesey Central Railway continues through the eastern side of the area.
- 7.2.5 Glasgraig Fawr (a main river) runs from Llyn Alaw to the central eastern area of the Parcel before running along the eastern edge of the Parcel. Afon Alaw (a main river) flows from Llyn Alaw into the central eastern area of the Parcel before following the western boundary of the south-eastern side of the Parcel.

### ***Maen Hir South***

- 7.2.6 Maen Hir South comprises two areas, Maen Hir South A and Maen Hir South B. The Parcel is characterised by undulating topography dominated by improved and poor semi-improved grassland bordered by hedgerows, cloddiau and stock-proof fencing. Marshy grassland, regenerating gorse and scrub, are also present. Maen Hir South B is a relatively well-treed landscape with small copse/woodlands both

plantation woodland, ancient semi-natural woodland and linear tree belts typically along water courses.

7.2.7 The River Cefni runs past the south-western boundary of the Parcel. The River Ysgoldy runs from the central western part of the Parcel and joins the aforementioned River Cefni flowing to the south-western boundary of the Parcel. A network of drains and streams, which follow field boundaries, are also present across the Parcel.

### **Study Area**

7.2.8 The Study Area was defined to include ecological features likely to be at risk from direct and indirect impacts that might arise from the Project and is the initial basis for determining the Zone of Influence (Zol). The Chartered Institute of Ecology and Environmental Management (CIEEM) (Ref. 7-1) defines a Zol as: "...the area over which biodiversity features may be affected by biophysical changes as a result of the proposed project and associated activities".

7.2.9 The Zol is based on the:

- nature of the Project, activities, and the potential for effects at the construction, operation and maintenance and decommissioning phases;
- nature of the land use and habitats in the vicinity, the number of watercourses and waterbodies, their connectivity within and outside of the PEIR Boundary and how they may be used by different species or species groups;
- presence of ecological features in the wider area, based on the location of the PEIR Boundary and desk study data; and
- habitats, behaviours and preferences of different species or species groups and whether these could be affected both spatially and temporally.

7.2.10 The Study Area captured all designated sites, sensitive habitats, and protected and notable species that occur, or potentially occur (where surveys are not complete) within the Zol of the Project. The boundaries and zones for the Study Area reflect standard good practice and were informed by published guidance and professional judgement. This then enabled the identification of specific areas which required ecological survey (Survey Areas) (See Table 7-6) which are

specific to a given species, group of species or habitat. The Study and Survey Areas define the maximum distances typically considered as the ZoI. Due to the scale of the Project and following consultation with PINS and NRW (see PEIR Volume III Appendix 3 -1: Scoping Opinion Response), these distances have been extended where appropriate for specific species.

7.2.11 In defining individual Study Areas, consideration was given to the geographic location, nature and scale of the Project. For this Project, the Study Area for which data were searched and collated through a desk study is presented in Figures 7-1, 7-2 and 7-3. The specific parameters are listed below:

- 10 km for European sites, extended to 15 km for sites that are designated for birds, or where birds are listed as a qualifying feature, and 30 km for sites that are designated for bats, or where bats are listed as a qualifying feature;
- 5 km for sites statutory designated for their biodiversity value at a National level (e.g. Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNRs) and Local Nature Reserves (LNRs). Extended to 15 km for SSSIs designated for birds and 30 km for bats;
- 2 km for sites non-statutory designated for their biodiversity value (e.g. Local Wildlife Sites (LWS), Sites of Importance for Nature Conservation (SINC)). This will be extended to 5 km for the ES based on feedback received by PINS in the Scoping Opinion;
- 2 km for Ancient Woodland and HoPI;
- 2 km for records from the preceding ten years (likely to reflect more relevant recent records) of protected and notable species;
- 2 km for records of protected or notable habitats, species and scheduled INNS or the closest hydrologically connected monitoring location in the case of aquatic ecological records;
- 2 km for any applications for European Protected Species Licences and agri-environment Projects, e.g. Countryside Management Projects;
- 2 km for the status of waterbodies subject to the Water Framework Directive (WFD) (Ref. 7-2) which are assessed in Chapter 13: Water



Resources, and informed by the assessment of aquatic ecology receptors presented here. As water pollution may spread downstream or there could be downstream flood risk effects, to identify all the relevant ecological, chemical and physical features of waterbodies that may be impacted and that contribute to the waterbodies' overall importance, any hydrologically linked surface waterbodies or water dependent ecological sites or habitats within the Study Area were considered; and

- Within and adjacent to the PEIR Boundary for ancient, veteran or notable trees not located within areas of ancient woodland.

7.2.12 The Survey Areas, reflect the field surveys undertaken to date. This has focussed on the Solar PV Site, which includes potential areas for PV Arrays and Mitigation and Enhancement Areas due to the further refinement required for other areas of the Project. The Survey Area will be extended where relevant to include areas of the wider PEIR Boundary following refinement of the Project to inform the ES. The specific survey parameters undertaken to date are listed below:

- The Phase 1 Habitat survey was completed for the Solar PV Site only and up to 50 m beyond, where accessible or viewable from within the Solar PV Site. Refer to Figure 7-2-1.
- The Bat surveys were completed for the Solar PV site only and up to 30m beyond for areas where permanent impacts are expected to occur for roosting bats.
- The great crested newt surveys were completed within the Solar PV Site only and up to 250 m from the Solar PV Site. Refer to Figure 7-3-1.
- The Riparian mammals surveys were completed for the Solar PV Site only. Where relevant this may extend up to 250 m up and down stream and beyond the watercourses where suitable habitat is present. Refer to Figure 7-5-1 and Figure 7-5-2.
- The ornithology surveys were completed for the Solar PV Site only and up to a maximum of 50 m buffer where visible. The Survey Area was increased to 200 m to record specially protected species (i.e. WCA

Schedule 1 birds), viewed from inside the Solar PV Site boundary. Refer to Figure 7-4-1.

### Existing Baseline

#### ***Sites Statutorily Designated for their Biodiversity Value***

7.2.13 Statutory designated sites (with mobile qualifying criteria) located greater than 10 km include:

- Traeth Lafan/Lavan Sands, Conway Bay SAC and SPA (ornithological importance within 15 km of the PEIR Boundary)
- Glynllifon SAC (bats within 30 km of the PEIR Boundary)

7.2.14 There are twelve statutory sites designated for their biodiversity value at an international level and within the 10 km Study Area of the PEIR Boundary. These are:

- Corsydd Môn a Llyn/Anglesey and Llyn Fens Ramsar;
- Corsydd Mon/Anglesey Fens SAC;
- Anglesey Terns/Morwenoliaid Ynys Môn SPA;
- North Anglesey Marine/Gogledd Môn Forol SAC;
- Liverpool Bay/Bae Lerpwl (Wales) SPA;
- Llyn Dinam SAC;
- Bae Cemlyn/Cemlyn Bay SAC;
- Y Fenai a Bae Conwy/Menai Strait and Conwy Bay SAC;
- Y Twyni o Abermenai i Aberffraw/Abermenai to Aberffraw Dunes SAC;
- Glannau Mon: Cors heli/Anglesey Coast: Saltmarsh SAC;
- Glannau Ynys Gybi/Holy Island Coast SPA & SAC;
- Glan-traeth SAC;
- Traeth Lafan/Lavan Sands SAC & SPA
- Glynllifon SAC

7.2.15 There are 30 statutory sites designated for their biodiversity value at a National level within the 5 km Study Area.

7.2.16 Details of all statutory designated sites within the relevant Study Areas are summarised in Table 7-1 and are ordered by distance, with those closest to the

PEIR Boundary listed first. The locations of these statutory designated sites, relevant to the Project, are presented in Figures 7-1 and Figure 7-2.

**Table 7-1 Statutory sites within 30 km (international - Bats), 15 km (international - Birds), 10 km (international) and 5 km (national) of the PEIR Boundary**

Statutory Site Name	Statutory Site Description	Approximate Distance (km) and Direction from Closest Point of the PEIR Boundary	Value
Llyn Alaw SSSI	Llyn Alaw is the largest mesotrophic open water in West Gwynedd. It has considerable ornithological interest especially for overwintering wildfowl and the number of teal, shoveler <i>Spatula clypeata</i> and whooper swans <i>Cygnus cygnus</i> at times are around 1% of the British population. In autumn large flocks of waders, in particular curlew, lapwing <i>Vanellus vanellus</i> and golden plover <i>Pluvialis apricaria</i> , visit the exposed mud areas. The uncommon slender spike-rush <i>Eleocharis acicularis</i> occurs in the reservoir margins. The Nationally Scarce caddis fly, <i>Limnephilus nigriceps</i> and eight-stamened waterwort <i>Elatine hydropiper</i> occur in this area.	Immediately adjacent to the PEIR Boundary	National
Y Werthyr SSSI	This wetland site is a relatively intact example of a mesotrophic valley mire and has a high-water table.	0.12 east	National
Llyn Hafodol and Cors Clegyrog SSSI	This site comprises two wetland basins of biological interest; Cors Clegyrog is an acidic basin mire; Llyn Hafodol a mesotrophic mire. Open water provides habitat for the nationally rare waterwort.	0.15 north	National
Corsydd Môn a Llyn/Anglesey and Llyn Fens Ramsar	An internationally important suite of base-rich fens which occupy valley heads and former lake basins which have mostly infilled with marl and peat deposits, with open water persisting at two of the sites. Calcareous springs from limestone and calcareous drift aquifers irrigate the fens and result in a distinctive vegetation. These fens are notable as the best sites in Wales for stoneworts. The site is known to support otter.	0.26 east	International

Statutory Site Name	Statutory Site Description	Approximate Distance (km) and Direction from Closest Point of the PEIR Boundary	Value
Corsydd Mon/Anglesey Fens SAC	<p>Annex I habitats that are a primary reason for the selection of this site:</p> <ul style="list-style-type: none"> <li>• 3140 Hard oligo-mesotrophic waters with benthic vegetation of <i>Chara</i> spp.</li> <li>• 7210 Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i></li> <li>• 7230 Alkaline fens</li> </ul> <p>Annex I habitats present as a qualifying feature but not the primary reason for selection of this site:</p> <ul style="list-style-type: none"> <li>• 4010 Northern Atlantic wet heaths with <i>Erica tetralix</i></li> <li>• 6410 Molinia meadows on calcareous, peaty or clayey-silt-laden soils <i>Molinion caeruleae</i></li> </ul> <p>Annex II species that a primary reason for the selection of this site:</p> <ul style="list-style-type: none"> <li>• 1013 Geyers' whorl snail <i>Vertigo geyeri</i></li> </ul> <p>Annex II species present as a qualifying feature but not a primary reason for site selection:</p> <ul style="list-style-type: none"> <li>• 1044 Southern damselfly</li> </ul> <p>1065 Marsh fritillary butterfly <i>Euphydryas aurinia</i></p>	0.34 east	International
Cors Erddreiniog SSSI, NNR	<p>Cors Erddreiniog is a large calcareous valley mire of national importance. Base-rich springs, provide habitat for narrow-leaved marsh orchid <i>Dactylorhiza traunsteineri</i>, which has been the subject of taxonomic research and fly orchid <i>Ophrys insectifera</i>. This orchid-rich vegetation type, found at a few sites in Anglesey and Lley, is</p>	0.34 east	National

Statutory Site Name	Statutory Site Description	Approximate Distance (km) and Direction from Closest Point of the PEIR Boundary	Value
	<p>not found elsewhere in Great Britain. Two BAP, HDir2 and IUCN Red List species have been recorded here: Geyer’s whorl snail; southern damselfly <i>Coenagrion mercuriale</i>. Several other IUCN Red List species have also been recorded. IUCN EN: clubbed general soldier fly <i>Stratiomys chamaeleon</i>. IUCN VU: water-violet <i>Hottonia palustris</i>; tubular water-dropwort <i>Oenanthe fistulosa</i>, two caddis fly species <i>Limnephilus tauricus</i> &amp; <i>Erotesis baltica</i>; a water beetle <i>Gyrinus suffriani</i>. IUCN NT: lesser tussock-sedge <i>Carex diandra</i>; mare's-tail <i>Hippuris vulgaris</i>; lesser water-plantain subspecies <i>Baldellia ranunculoides subsp. ranunculoides</i>; variable damselfly <i>Coenagrion pulchellum</i>; scarce blue-tailed damselfly <i>Ischnura pumilio</i>. Nationally Scarce plants and invertebrates have been recorded: fen pondweed <i>Potamogeton coloratus</i>; a soldier fly <i>Oxycera pygmaea</i>; a scavenger water beetle <i>Helochaeres punctatus</i>; two caddis fly species <i>Limnephilus elegans</i> &amp; <i>Limnephilus hirsutus</i>; scarce orange legionnaire <i>Beris clavipes</i>.</p>		
Mynydd Parys SSSI	<p>Mynydd Parys is one of a few metal mine workings in Britain which have been relatively undisturbed since mining ceased and lie in areas with relatively low atmospheric pollution. More than 125 lichen species have been recorded from the mineralised substrates alone; a number are very scarce in Wales and at least one species is new to Britain and possibly new to science - a Lecidea species.</p>	0.37 southeast	National
Salbri SSSI	<p>The acidic basin mire at Salbri is exceptionally intact and remains waterlogged throughout the year. Two nationally uncommon bryophytes <i>Sphagnum platyphyllum</i> and <i>Cephalozia pleniceps</i> have been recorded, and there are populations of locally uncommon</p>	0.43 northeast	National

Statutory Site Name	Statutory Site Description	Approximate Distance (km) and Direction from Closest Point of the PEIR Boundary	Value
	flowering plants including the mud sedge <i>Carex limosa</i> . The BAP & IUCN EN macrophyte, three-lobed crowfoot <i>Ranunculus tripartitus</i> has also been recorded.		
Tyddyn y Waen SSSI	This site comprises fen meadow habitat with associated soligenous mire. The locally uncommon fen bedstraw <i>Galium uliginosum</i> is recorded here.	0.86 northeast	National
Cors Bodwrog SSSI	<p>Cors Bodwrog has been selected for its biological interest as an example of mesotrophic mire.</p> <p>Eight species of Odonata have been recorded including the nationally scarce variable damselfly <i>Coenagrion pulchellum</i> and the scarce blue-tailed damselfly <i>Ischnura pumilio</i>. The breeding bird community, which is of local importance includes teal <i>Anas crecca</i>, reed warbler <i>Acrocephalus scirpaceus</i>, grasshopper warbler <i>Locustella naevia</i> and curlew <i>Numenius arquata</i>. Lesser Tussock-sedge <i>Carex diandra</i> is also present.</p>	1.6 northwest	National
Tyddyn Gyrfer SSSI	This site is selected for its biological interest, as an example of fen meadow habitat with associated soligenous mire. There is a range of different vegetation communities within a small area at Tyddyn y Waen SSSI reflecting ecological gradients and a variable management history.	1.22 northeast	National
Anglesey Terns/Morwenoliaid Ynys Môn SPA	During the breeding season the area regularly supports: Roseate tern <i>Sterna dougallii</i> , 3 pairs representing 5% of the GB breeding population; common tern <i>Sterna hirundo</i> , 189 pairs representing 1.5% of the GB breeding population; Arctic tern <i>Sterna paradisaea</i> ,	1.32 northeast	International

Statutory Site Name	Statutory Site Description	Approximate Distance (km) and Direction from Closest Point of the PEIR Boundary	Value
	1,290 pairs representing 2.9% of the GB breeding population; sandwich tern <i>Sterna sandvicencis</i> , 460 pairs representing 3.3% of the GB breeding population.		
North Anglesey Marine/Gogledd Môn Forol SAC	Annex II species that are a primary reason for the selection of this site: <ul style="list-style-type: none"> <li>1351 harbour porpoise <i>Phocoena phocoena</i>.</li> </ul>	1.33 northwest	International
Nant y Pandy (The Dingle) LNR	The Dingle/Nant y Pandy Local Nature reserve is a 10 hectare (25 acre) wooded valley. The site supports amphibians, invertebrates and reptile such as adder <i>Vipera berus</i> and common lizard <i>Zootoca vivipara</i> . It also supports many bird species including grey wagtail <i>Motacilla cinerea</i> , kingfisher <i>Alcedo atthis</i> , tawny owl <i>Strix aluco</i> , buzzard <i>Buteo buteo</i> and grey heron <i>Ardea cinerea</i> . Llyn pwmp is also known to support fish populations including those of brown trout <i>Salmo trutta</i> , roach <i>Rutilus rutilus</i> and perch <i>Perca fluviatilis</i> .	1.6 east	National
Llyn Llygeirian SSSI	Llyn Llygeirian is a moderately base rich lake in West Gwynedd. The flora of the lake includes the regionally rare frogbit <i>Hydrocharis morsusraeanae</i> and the nationally uncommon waterworts <i>Elatine hydropiper</i> and <i>E. hexandra</i> , needle spike-rush <i>Eleocharis acicularis</i> , spring quillwort <i>Isoetes echinospora</i> and pillwort <i>Pilularia globulifera</i> .	2.13 northwest	National
Penrhos Lligwy SSSI	This site is selected as an inland example of lowland heathland habitat associated with an area of Carboniferous Sandstone in north-eastern Anglesey.	2.22 northeast	National
Llyn Llywenan SSSI	The lake is an example of a moderately base-rich lowland lake with a variety of overwintering wildfowl species including mallard <i>Anas</i>	2.69 northwest	National



Statutory Site Name	Statutory Site Description	Approximate Distance (km) and Direction from Closest Point of the PEIR Boundary	Value
	<i>platyrhynchos</i> , teal, wigeon <i>Anas penelope</i> , tufted duck <i>Aythya fuligula</i> and pochard <i>Aythya ferina</i> .		
Caeau Talwrn SSSI	Caeau Talwrn are of special interest for their neutral grassland and mire vegetation. The site comprises a complex of small enclosures to the south and west of the village of Talwrn situated on glacial drift in the upper catchment of the Afon Cefni. The heterogeneous nature of the drift and topography together with the local occurrence of base-rich springs and seepage lines has given rise to a complex mosaic of vegetation types varying with the impedance of the drainage. The vegetation of this site is of particular interest as it includes not only dry neutral grasslands and various types of mire especially rich-fen, fen-meadow and rush pasture, but also shows the transitions between the various types particularly well.	2.82 southeast	National
Malltraeth Marsh/Cors Ddyga SSSI	This site has been selected for its biological interest. It is especially important for its breeding bird community of lowland damp grassland, as a threatened habitat of wet meadows, and for the botanical interest of its ditches and watercourses.	3.24 southeast	National
Cors Goch SSSI, NNR	Cors Goch is a nationally important valley mire developed in a hollow in Carboniferous Limestone. The geology is complex and interstratified with the limestone are beds of a coarse pebbly sandstone. The fen has a rich invertebrate fauna, the Lepidoptera and Odonata being well represented including Geyer's whorl snail and southern damselfly.	3.47 southeast	National

Statutory Site Name	Statutory Site Description	Approximate Distance (km) and Direction from Closest Point of the PEIR Boundary	Value
Craig Wen/Cors Castell SSSI	This site is selected as an example of lowland acidic heathland habitat and base rich fen. Two uncommon heathland plant species, marsh gentian <i>Gentiana pneumonanthe</i> and pale heath violet <i>Viola lactea</i> , both of which have declined over recent years in Britain, are present.	3.58 east	National
Tre'r Gof SSSI	This site has been selected for its biological interest, in particular as a representative example of rich fen habitat in north-west Wales. A wide range of wetland plant species occur in the various communities, and of particular interest is the presence of a population of the marsh fern <i>Thelypteris thelypteroides</i> which is a scarce fen plant in Britain where it appears to be declining over much of its range.	3.64 northwest	National
Cae Gwyn SSSI	The main features of interest at Cae Gwyn are two wetland areas, separated by an area of heathland with outcropping rock. The flora is distinguished by an abundance of royal fern <i>Osmunda regalis</i> which varies from very large old plants to young plants; other notable species are bog sedge <i>Carex limosa</i> and cranberry <i>Vaccinium oxycoccus</i> . The northern wetland differs in having denser areas of willow <i>Salix spp.</i> and common reed <i>Phragmites communis</i> but is similar in having numerous plants of <i>Osmunda</i> .	3.73 northwest	National
Llyn Traffwll SSSI	It is an example of a moderately base-rich lake, and the aquatic flora includes characteristic species such as lesser pondweed <i>Potamogeton pusillus</i> and spiked water-milfoil <i>Myriophyllum spicatum</i> . Among the rare and uncommon species that have been recorded are the eight-stamened waterwort <i>Elatine hydropiper</i> and	3.82 west	National

Statutory Site Name	Statutory Site Description	Approximate Distance (km) and Direction from Closest Point of the PEIR Boundary	Value
	flowering rush <i>Butomus umbellatus</i> . A smaller area of open water with associated reed, swamp and willow carr is also included. This lake is also important for overwintering wildfowl, notably shoveler whose numbers frequently represent more than 1 % of the British total. A variety of other species also occur including wigeon, mallard, gadwall, goldeneye, pochard and tufted duck.		
Cors y Farl SSSI	Cors y Farl is one of the nationally important calcareous fens in Anglesey. It is relatively small but probably the most intact example of this habitat in North Wales.	4.00 southeast	National
Liverpool Bay/Bae Lerpwl (Wales) SPA	The Liverpool Bay SPA site supports non-breeding red-throated diver <i>Gavia stellata</i> , little gull <i>Hydrocoloeus minutus</i> , and common scoter <i>Melanitta nigra</i> , as well as breeding common tern and little tern. The site also supports an internationally important waterbird assemblage.	4.10 east	International
Coed y Gell and Morfa Dulas SSSI	Coed y Gell is a small natural coastal woodland occurring on a steep north facing slope overlying Old Red Sandstone rock on an ancient woodland site. It falls within the <i>Hedera helix Quercus/Fraxinus</i> (ivy oak/ash). There is a varied ground flora including several uncommon bryophyte species of which the liverworts <i>Marchesinia mackaii</i> , <i>Cololejeunea rossettiana</i> and <i>Plagiochila britannica</i> are most noteworthy. Morfa Dulas consists of a spit supporting interesting dune grassland and saltmarsh communities.	4.21 northeast	National

Statutory Site Name	Statutory Site Description	Approximate Distance (km) and Direction from Closest Point of the PEIR Boundary	Value
Y Bonc, Marian-glas Woodlands SSSI	The site is designated for its calcareous grassland, neutral grassland and limestone heathland. The site supports particularly diverse populations of plants, fungi and invertebrates.	4.24 east	National
Llyn Padrig SSSI	The site is selected as an example of a mesotrophic basin mire. Mire development appears to have been relatively undisturbed by artificial drainage and various swamp and poor-fen vegetation communities are well-represented.	4.5 south	National
Trwyn yr Wylfa/Wylfa Head LNR	Mixture of coastal grassland and heath habitats. Although there are no specific ornithological interest features listed for the site itself, the following have been recorded passing offshore: gannets <i>Morus bassanus</i> , shearwaters <i>Puffinus puffinus</i> , terns <i>Sternidae</i> spp. and other seabirds.	4.52 northwest	National
Gwenfro and Rhos y Gad SSSI	This site has been selected primarily as an example of a rich-fen habitat, which supports certain nationally uncommon vegetation types.	4.54 east	National
Cors Bodeilio SSSI, NNR	Cors Bodeilio is a nationally important calcareous mire situated in a shallow valley between Pentraeth and Llangefni. The mire is supplied with base-rich water from the surrounding Carboniferous Limestone which has promoted the development of a range of rich-fen vegetation communities that now overlie a body of fen peat.	4.86 southeast	National
Waun Eurad SSSI	This site is selected as a habitat example of lowland rich fen. This spring-fed wetland has formed in a shallow basin in boulder clay overlying Carboniferous limestone. The rich fen vegetation is dominated by black bog-rush <i>Schoenus nigricans</i> and blunt-flowered	5.04 east	National

Statutory Site Name	Statutory Site Description	Approximate Distance (km) and Direction from Closest Point of the PEIR Boundary	Value
	<p>rush <i>Juncus subnodulosus</i> in association with a range of wetland species including grass-of-Parnassus <i>Parnassia palustris</i>, marsh-arrow grass <i>Triglochin palustre</i> and lesser club-moss <i>Selaginella selaginoides</i>. The nationally scarce species narrow-leaved marsh-orchid <i>Dactylorhiza traunsteineri</i>, fen pondweed <i>Potamogeton coloratus</i> and narrow-leaved marsh dandelion <i>Taraxacum palustre</i> occur within the fen. Mesotrophic vegetation characterised by bogbean <i>Menyanthes trifoliata</i>, marsh cinquefoil <i>Potentilla palustris</i> and bottle sedge <i>Carex rostrata</i>, has developed on the site of a former pool near the centre of the fen. The site supports 7 species of dragonfly including the notable scarce blue-tailed damselfly <i>Ischnura pumilio</i>.</p>		
Llynnau y Fali - Valley Lakes SSSI	<p>Llynnau y Fali consists of a mosaic of open water areas with associated mesotrophic marshland and damp grassland habitats. There are two lakes, Llyn Penrhyn and Llyn Dinam, together with a number of smaller bodies of standing water. For overwintering wildfowl, they are especially important for shoveler; other species include teal, tufted duck, pochard and goldeneye. The vegetation more over also provides breeding habitat for a variety of wetland birds.</p>	5.11 west	National
Llyn Dinam SAC	<p>Llyn Dinam is a coastal eutrophic lake in north Wales. Common reed <i>Phragmites australis</i>, and to a lesser extent common club-rush <i>Scirpus lacustris</i> ssp. <i>lacustris</i>, dominate the shoreline. Rigid hornwort <i>Ceratophyllum demersum</i> is abundant in shallow open water, often in association with autumnal starwort <i>Callitriche hermaphroditica</i> and ivy-leaved duckweed <i>Lemna trisulca</i>. The white</p>	5.41 west	International

Statutory Site Name	Statutory Site Description	Approximate Distance (km) and Direction from Closest Point of the PEIR Boundary	Value
	and yellow water-lilies <i>Nymphaea alba</i> and <i>Nuphar lutea</i> dominate in a sheltered arm on the west side. Fennel-leaved pondweed <i>Potamogeton pectinatus</i> , perfoliate pondweed <i>P. perfoliatus</i> and lesser pondweed <i>P. pusillus</i> have been recorded. Stoneworts <i>Chara spp.</i> are present.		
Llyn Maelog SSSI	A small shallow lake and fringing reedbeds trapped behind the dunes of Tywyn Llyn common land at Rhosneigr. The lake supports good numbers of wintering coot and other wildfowl and some stay to breed in the reedbeds and islands.	5.44 southwest	National
Bae Cemlyn/Cemlyn Bay SAC	<p>Annex I habitats that are a primary reason for selection of this site</p> <ul style="list-style-type: none"> <li>• 1150 Coastal Lagoons</li> </ul> <p>Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site</p> <ul style="list-style-type: none"> <li>• 1220 Perennial vegetation of stony banks</li> </ul> <p>Cemlyn lagoon on the north coast of Anglesey, north Wales, is considered to be the best example of a saline coastal lagoon in Wales.</p>	5.44 northwest	International
Y Fenai a Bae Conwy/Menai Strait and Conwy Bay SAC	<p>Annex I habitats that are a primary reason for the selection of the site:</p> <ul style="list-style-type: none"> <li>• 1110 Sandbanks which are slightly covered by sea water all the time</li> <li>• 1140 Mudflats and sandflats not covered by seawater at low tide</li> </ul>	5.61 northeast	International

Statutory Site Name	Statutory Site Description	Approximate Distance (km) and Direction from Closest Point of the PEIR Boundary	Value
	<ul style="list-style-type: none"> <li>• 1170 Reefs</li> </ul> <p>Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site</p> <ul style="list-style-type: none"> <li>• 1160 Large shallow inlets and bays</li> <li>• 8330 Submerged or partially submerged sea caves</li> </ul>		
Y Twyni o Abermenai i Aberffraw/Abermenai to Aberffraw Dunes SAC	The site is one of two sites selected to present embryonic shifting dunes in North Wales, being one of the most extensive examples in the UK with minimal recreational damage. It contains ones of the largest areas of lyme-grass <i>Leymus arenarius</i> shifting dune community in Wales. Within the dune complex are extensive areas of fixed dunes with herbaceous vegetation including red fescue <i>Festuca rubra</i> and lady's bedstraw <i>Galium verum</i> . It comprises an extensive area of dunes with a complete range of dune vegetation, and represents humid dune slacks, with large areas of open dune vegetation.	6.76 south	International
Glannau Mon: Cors heli/Anglesey Coast: Saltmarsh SAC	The site is selected primarily for a range of sand dune types. The site forms a complex of saltmarsh and dune habitats lying either side of the dune systems at Newborough Warren. The site supports the largest stands of <i>Juncus maritimus</i> saltmarsh in Britain.	8.23 southwest	International
Glannau Ynys Gybi/Holy Island Coast SPA, SAC	The site is of special interest for its heathland and maritime grassland communities, costal cliffs and ledges, and its assemblages of vascular plants, birds and invertebrates. The site supports 7% of the British breeding population of chough. The cliffs support important seabird colonies, forming one of the largest colonies of	8.23 west	International

Statutory Site Name	Statutory Site Description	Approximate Distance (km) and Direction from Closest Point of the PEIR Boundary	Value
	breeding auks in North Wales. Peregrine <i>Falco peregrinus</i> and chough nest on the cliffs, with chough using the heathland and adjacent areas extensively for feeding. Other breeding species present include stonechat <i>Saxicola rubicola</i> , skylark <i>Alauda arvensis</i> , linnet <i>Linaria cannabina</i> and whitethroat <i>Sylvia communis</i> .		
Glan-traeth SAC	This site has had high counts of great crested newt since the mid-1980s. The populations occupy water-filled depressions that have results from sand extraction from the dune system. The area is lightly grazed by livestock, maintaining the open terrestrial habitat required for feeding and sheltering of adults.	9.65 south	International
Traeth Lafan/Lavan Sands, Conway Bay SAC, SPA	The area supports 1.4% of the UK population of wintering oystercatcher <i>Haematopus ostralegus</i> , and further supports populations of curlew, redshank <i>Tringa totanus</i> , red-breasted merganser <i>Mergus serrator</i> and great crested grebe <i>Podiceps cristatus</i> .	14.83 southeast	International
Glynllifon SAC	This single mixed woodland site is both a maternity and hibernation site for a large population of lesser horseshoe bats <i>Rhinolophus hipposideros</i> , comprising about 6% of the UK population.	19.23 south	International



***Non-Statutory Sites Designated for their Biodiversity Value***

- 7.2.17 There are 22 non-statutory sites designated for their biodiversity value identified within 2 km of the PEIR Boundary. This will be extended to 5 km for the ES based on feedback received by PINS in the Scoping Opinion. These sites have been designated as Local Wildlife Sites (LWS) for their biodiversity value at a local level and are known to have supporting value to a wide variety of protected or notable species and/or habitats.
- 7.2.18 Non-statutory designated sites are summarised below in Table 7-2 and are presented in ascending order, with those closest to the PEIR Boundary listed first. The locations of these non-statutory designated sites, relevant to the Project are presented in Figure 7-3.

**Table 7-2 Non-statutory designated sites within 2 km of the PEIR Boundary**

Non-Statutory Site Name	Non-Statutory Site Description	Approximate Distance (km) and Direction from Closest Point of the PEIR Boundary
Coed Cae Mawr LWS	Broad-leaved woodland with smaller areas of dry and marshy grassland. Bird cherry <i>Prunus padus</i> , a rarity on Anglesey occurs here. This site is considered valuable for birds as woodland is scarce in this part of Anglesey.	Within the PEIR Boundary
Mynydd Parys LWS	A large area of inland heath associated with the former copper mines at Mynydd Parys. The site has breeding stonechat, yellowhammer <i>Emberiza citrinella</i> , whitethroat and wheatear <i>Oenanthe oenanthe</i> .	Immediately adjacent to PEIR Boundary
Llyn Llaethdy LWS	This shallow man-made lake is surrounded by marshy grassland. The lake is devoid of vegetation and the water level fluctuates to expose large areas of bare mud. It is a winter-feeding area for waders and wildfowl. Birds of prey hunt over the marshy grassland. The invertebrate fauna is especially rich in Odonata.	0.04 northeast
Pyllau Pentrefelin - Dyffryn Adda LWS	A series of former lakes bordering the drain from Pentrefelin to Dyffryn Adda with open water, swamp, basin mire, marshy grassland and wet heath. The lakes show various stages in the transition from open water to marshy grassland to wet heath.	0.08 southwest
Rhostir Mynydd Mechell LWS	This site consists of five separate blocks of heathland with an associated area of acid and marshy grassland.	0.77 northwest
Mynydd Bodafon LWS	An extensive area of dry heath/grassland mosaic amongst numerous rock outcrops with some smaller areas of wet heath, basin mire, flushes and wet birch ( <i>Betula spp.</i> ) and willow woodland where the drainage is impeded. There is also a small lake (Gors Fawr) which is notable for the presence of the very rare pillwort <i>Pilularia globulifera</i> in one of only three sites on Anglesey.	0.91 northeast
Llyn Bwch LWS	A lake with a margin of extensive beds of bottle sedge <i>Carex rostrata</i> merging into tall fen vegetation and marshy grassland at the edges. There is heath-grassland mosaic on the surrounding rock outcrops. Dragonflies and damselflies are abundant at this site.	0.95 northwest

Non-Statutory Site Name	Non-Statutory Site Description	Approximate Distance (km) and Direction from Closest Point of the PEIR Boundary
Coed Cefn-Du LWS	A damp birch woodland with abundant alder <i>Alnus glutinosa</i> . The southeast corner consists of marshy grassland and is immediately adjacent to Cors Erddreiniog SSSI.	1.01 east
Arfordir Porth Wen - Porth Llechog LWS	A narrow strip of sea cliff, grassland and heath above areas of bare rock sloping down to sheer cliffs. There are several shaded, steep-sided crevices which have a flora similar to the field layer of woodland. This section of coast has considerable ornithological interest with breeding oystercatcher, fulmar <i>Fulmarus glacialis</i> and herring gull <i>Larus argentatus</i> . It is also used as a feeding area by chough and raven <i>Corvus corax</i> .	1.02 north
Maen Eryr LWS	A floristically rich wet meadow adjacent to an area of species-rich woodland. The wetter parts of the meadow are dominated by rushes with herb species such as common spotted orchid, yellow rattle <i>Rhinanthus minor</i> , marsh arrowgrass <i>Triglochin palustris</i> , bog asphodel <i>Narthecium ossifragum</i> and water mint. Drier areas have red bartsia <i>Odontites vernus</i> , sneezewort and wild carrot <i>Daucus carota</i> . The woodland is dominated by ash and sycamore, with some birch and planted conifers.	1.05 east
Graigfryn LWS	A large area of basic flush and a range of types of marshy grassland with smaller additional patches of dry heath, acid flush and semi-improved neutral grassland. The site borders the Afon Lligwy along the valley bottom. The site is notable for a small population of grass of parnassus which is local on Anglesey.	1.09 east
Arfordir Trwyn y Buarth - Porth Wen LWS	Coastal cliff species rich grassland and heathland with several species-rich flushes where orchids can be found. In gullies on the cliffs many woodland plants find shelter. Whorl-grass <i>Catabrosa aquatica</i> , which is very local on Anglesey, is present at the eastern most end of this site. Choughs and ravens feed here, and fulmars breed on the cliffs. Other breeding birds include yellowhammer, stonechat, wheatear and whitethroat. The potentially invasive Small-Leaved Cotoneaster <i>Cotoneaster microphyllus</i> is also present.	1.35 northwest

Non-Statutory Site Name	Non-Statutory Site Description	Approximate Distance (km) and Direction from Closest Point of the PEIR Boundary
Porth Llechog LWS	A strip of seacliff heath, inland heath and grassland occurring in a mosaic with several flushes and streams, above sheer cliffs. Northern marsh-orchid <i>Dactylorhiza purpurella</i> , common spotted-orchid <i>Dactylorhiza fuchsii</i> and hybrids are abundant in the flushes.	1.41 north
Llyn Cors Goch LWS	A small basin mire surrounded by marshy grassland with a species-rich meadow to the east. The basin mire vegetation includes very local many-stalked spike-rush <i>Eleocharis multicaulis</i> . The species rich marshy grassland includes six species of sedge <i>Carex spp.</i> , eyebrights <i>Euphrasia officinalis</i> and both northern marsh and common spotted orchids.	1.48 northwest
Afon Wygyr LWS	A river valley which provides a varied and undisturbed habitat for birds and other wildlife. The river contains brown trout and eels and is bordered by species rich bank-side vegetation and marshy grassland and elm <i>Ulmus spp.</i> ash <i>Fraxinus excelsior</i> and sycamore <i>Acer pseudoplatanus</i> woodlands.	1.52 northwest
Tir Pori Traian LWS	This site consists of two fields of semi-improved neutral grassland one of which is relatively unmodified.	1.57 west
Rhostir Ponciau LWS	This site consists of an area of wet heathland with two small areas of marshy grassland. There is a large colony of marsh gentians, a nationally rare species which occurs in Wales only on Anglesey.	1.66 east
Tir Lleidiog Ty Du LWS	A basin mire with areas of marshy grassland, raised bog and dense willow carr. Ornithology interest associated with this site includes grasshopper warbler, sedge warbler <i>Acrocephalus schoenobaenus</i> , garden warbler <i>Sylvia borin</i> , reed bunting <i>Emberiza schoeniclus</i> , whitethroat and moorhen <i>Gallinula chloropus</i> .	1.85 northwest
Bodafon-y-Glyn Wood LWS	A small broadleaved wood dominated by hazel and willow on the lower slopes of Mynydd Bodafon. Water avens <i>Geum rivale</i> , a very local species on Anglesey, is recorded on this site.	1.86 north

Non-Statutory Site Name	Non-Statutory Site Description	Approximate Distance (km) and Direction from Closest Point of the PEIR Boundary
Llyn Llwyn-Crwn a Sgarp Caerhos Lligwy LWS	A composite site, consisting of a long strip of woodland (Ogo Dano) a small area of unimproved pasture and an area of wet woodland (Llyn Llwyn-Crwn). More open areas include one area of semi-improved calcareous grassland and many steep rocky faces which support species-rich grassland.	1.97 east
Cors y Bol LWS	A large area of valley mire on deep peat with associated areas of marshy grassland, mixed swamp, scattered and dense willow scrub and some semi-improved acid grassland. The site has considerable ornithological interest with populations of breeding snipe <i>Gallinago gallinago</i> , curlew, lapwing, grasshopper warbler, sedge warbler, reed bunting, whinchat <i>Saxicola rubetra</i> and whitethroat. Barn owls use it for hunting, and it provides a wintering area for greylag <i>Anser anser</i> and Canada geese <i>Branta canadensis</i> , woodcock <i>Scolopax rusticola</i> and harriers <i>Circinae spp.</i>	2.00 south
Cors Frigan LWS	A wet woodland mosaic of natural alder, willow and birch carr with some planted conifers <i>Pinophyta spp.</i> and exotic shrubs. Species found here include early marsh orchid <i>Dactylorhiza incarnata</i> , common twayblade <i>Neottia ovata</i> , dogwood <i>Cornus sanguinea</i> , crow garlic <i>Allium vineale</i> , marsh violet, saw-wort and several sedge species.	2.02 east

**Habitats**

7.2.19 The land within the Solar PV Site is predominantly improved grassland (approx. 720 ha, 56%), with a significant amount of poor semi-improved grassland (approx. 327 ha, 26%) and the fields being intersected by a network of drainage ditches and hedgerows. Other habitats include neutral grassland (approx. 60 ha, 5%), marshy grassland (approx. 34 ha, 3%), mature trees and hedgerows (approx. 87 km) and woodland habitats (24 ha, 2%). The surrounding habitat is mainly pasture, with small pockets of mature broadleaved woodland (plantation and semi-natural). There are individual and clusters of residential properties located adjacent to the Solar PV Site.

7.2.20 The terrestrial habitats present within the Solar PV Site were identified during the Phase 1 Habitat survey, carried out between November 2023 and February 2024. These habitats are the broad habitat types found within the Solar PV Site and are presented in Table 7-3, alongside area calculations that are taken from digitised maps of the Phase 1 Habitats. The locations of these habitats are presented in PEIR Volume II Figure 7-2-1: Phase 1 Habitats.

Surveys within the Solar PV Site are ongoing and whilst habitats within the Cable Route Corridor, Grid Connection Corridor and Highway Works have not yet been confirmed by field surveys (therefore are not presented in Figure 7-2-1: Phase 1 Habitat Map), a review of aerial imagery using Google Maps and MAGIC map indicates that the Cable Route Corridor, Grid Connection Corridor and Highways Works lie predominantly within or adjacent to improved and semi-improved grassland. The Cable Route Corridor also appears to cross hedgerows and a small number of ditches. However, where the desk study has identified any HoPI (listed under Section 7 of the Environment (Wales) Act 2016) in the Grid Connection Corridor, then these are summarised and included in Table 7-3. Further details on habitats will be provided in the ES.

**Table 7-3 Broad habitat types within the Solar PV Site recorded during surveys or anticipated to be present, alongside preliminary assessment of biodiversity importance of ecological features**

Habitat	Summary Description	Area (ha) or length (Km)	% of Site Area	Conservation Status	Preliminary Importance	Supporting Information
A1.1.1 – Broadleaved woodland – semi-natural including Ancient Woodland	<p>Small areas of broadleaved semi-natural woodland were recorded throughout the Solar PV Site, often abutting watercourses. Species recorded included (but was not limited to) alder <i>Alnus glutinosa</i>, crack willow <i>Salix fragilis</i>, rowan <i>Sorbus aucuparia</i>, ash <i>Fraxinus excelsior</i>, sycamore <i>Acer pseudoplatanus</i> and hawthorn <i>Crataegus monogyna</i>.</p> <p>Several areas of ancient semi natural woodland were also recorded within or immediately adjacent to the Solar PV Site. Species recorded included sycamore, alder, ash, sessile oak <i>Quercus petraea</i>, wych elm <i>Ulmus glabra</i>, elder <i>Sambucus nigra</i>, goat willow <i>Salix caprea</i> and crack willow.</p> <p>Fencing largely prevented access to these areas for detailed survey, and, in association with survey timing, meant that vernal flora, potentially including ancient woodland indicators was not recorded.</p> <p>This habitat type is also present within the wider PEIR Boundary.</p>	12 ha	1	Lowland mixed deciduous woodland is a Section 7 HoPI and Broadleaved woodland is an Anglesey BAP habitat	Up to Regional	HoPI
A1.1.2 – Broadleaved	Occasional small blocks of broadleaved plantation woodland were recorded throughout	2 ha	< 1	Plantation woodland is an	Local	Not a HoPI

Habitat	Summary Description	Area (ha) or length (Km)	% of Site Area	Conservation Status	Preliminary Importance	Supporting Information
woodland – plantation	the Solar PV Site, some of which appeared recently planted. Species present included alder, birch <i>Betula sp.</i> , willow, rowan and hazel <i>Corylus avellana</i> .  This habitat type may also be present within the wider PEIR Boundary.			Anglesey BAP Habitat		
A1.2.2 – Coniferous woodland - plantation	Occasional small strips of coniferous plantation were recorded abutting the edge of Llyn Alaw, comprising stands of larch <i>Larix decidua</i> .  This habitat type may also be present within the wider PEIR Boundary.	< 1 ha	< 1	Plantation woodland is an Anglesey BAP Habitat	Local	Not a HoPI
A1.3.1 – Mixed woodland – semi natural including Ancient Woodland	Mixed semi natural woodland was recorded on the Former Oil Depot where planted fir and pine were growing in amongst native ash, willow and self-sown sycamore.  This habitat type may also be present within the wider PEIR Boundary.	5 ha	< 1	Lowland mixed deciduous woodland is a Section 7 HoPI and Woodland is an Anglesey BAP habitat	Up to Regional	HoPI
A1.3.2 – Mixed woodland - plantation	Mixed plantation woodland was recorded on the Former Oil Depot. Species recorded included (but was not limited to) Douglas fir <i>Pseudotsuga menziesii</i> , Scot's pine <i>Pinus sylvestris</i> , ash, alder and hawthorn.  This habitat type may also be present within the wider PEIR Boundary.	5 ha	< 1	Plantation woodland is an Anglesey BAP Habitat	Local	Not a HoPI



Habitat	Summary Description	Area (ha) or length (Km)	% of Site Area	Conservation Status	Preliminary Importance	Supporting Information
A2.1 – Dense/continuous scrub, A2.2 Scattered scrub	Scattered and dense scrub was recorded along field boundaries throughout the Solar PV Site and was also often associated with some of the ponds, ditches and watercourses. Species recorded included (but was not limited to) gorse <i>Ulex europaeus</i> , bramble <i>Rubus fruticosus agg.</i> hawthorn, willow, blackthorn and elder. Dense gorse scrub was also associated with rocky areas and thinner soils on some of the fields in the more northern extents of the Solar PV Site.  This habitat type may also be present within the wider PEIR Boundary.	18 ha	1	Scrub is an Anglesey BAP Habitat.	Local	Not a HoPI
A3.1 – Broadleaved parkland/scattered trees including veteran or ancient trees	Lines of broadleaved trees are present at field margins throughout the Solar PV Site, often in association with ditches or earth banks. Most are dominated by mature hawthorn, with other species present including sycamore, ash, and goat willow.  This habitat type may also be present within the wider PEIR Boundary.	2 km	N/A	Woodland pasture & Parkland is a Section 7 HoPI.	Up to Country	HoPI
A3.2 – Coniferous parkland/scattered trees	Occasional scattered coniferous trees were recorded. These were largely to the southern extents of the Solar PV Site where Scot's pine <i>Pinus sylvestris</i> was noted growing on slightly rocky mounds.	< 1 ha	< 1	None	Site	Not a HoPI

Habitat	Summary Description	Area (ha) or length (Km)	% of Site Area	Conservation Status	Preliminary Importance	Supporting Information
	This habitat type may also be present within the wider PEIR Boundary.					
A3.3 – Mixed parkland/scattered trees including veteran or ancient trees and lines of mixed trees	<p>A small stand of scattered mixed trees was recorded in a field 262 in the southern extent of the Solar PV Site. Scot's pine, interspersed with ash and sycamore was noted growing on a slightly rocky mound.</p> <p>Lines of mixed trees were recorded in km at field margins within the Solar PV Site, consisting of ash sycamore, horse chestnut, and cypress sp.</p> <p>This habitat type may also be present within the wider PEIR Boundary.</p>	< 1 ha; 1 km	< 1	Woodland pasture & Parkland is a Section 7 HoPI	Up to County	HoPI
B1 – Acid grassland	<p>Priority Lowland acid grassland was recorded using the DataMapWales website (Ref. 7-4) immediately adjacent to the Solar PV Site in its more northern extents. No acid grassland has been identified within the Solar PV Site.</p> <p>This habitat type may also be present within the wider PEIR Boundary.</p>	N/A *	N/A *	Section 7 HoPI	Up to County	Lowland dry acid grassland is a HoPI.
B2.2 – Neutral grassland – semi-improved	Semi-improved neutral grassland was recorded in several localities within the Solar PV Site; within the Former Oil Depot, and within several fields in the southern extents of the Solar PV Site. Species recorded included (but was not	60 ha	5	None	Site	Not a HoPI

Habitat	Summary Description	Area (ha) or length (Km)	% of Site Area	Conservation Status	Preliminary Importance	Supporting Information
	<p>limited to false oat grass <i>Arrhenatherum elatius</i>, sweet vernal grass <i>Anthoxanthum odoratum</i>, crested-dog's-tail <i>Cynosaurus cristatus</i>, Yorkshire fog, common bent <i>Agrostis capillaris</i> and perennial rye grass. Herbaceous species included white clover, yarrow <i>Achillea millefolium</i>, ribwort plantain <i>Plantago lanceolata</i>, thistle <i>Cirsium sp.</i>, bush vetch <i>Vicia sepium</i>, yellow rattle <i>Rhinanthus minor</i>, common sorrel <i>Rumex acetosa</i>, red bartsia <i>Odonites verna</i> and birdsfoot trefoil <i>Lotus corniculatus</i>.</p> <p>This habitat type may also be present within the wider PEIR Boundary.</p>					
B4 – Improved	<p>This habitat is found throughout the Solar PV Site, and the wider area, and is often characterised by heavy/frequent grazing by sheep and cattle. The habitat is often dominated by perennial rye-grass, with other species including Yorkshire fog, white clover, and creeping buttercup. These grasslands are typically homogeneous in nature and have limited species diversity.</p> <p>This habitat type is also present within the wider PEIR Boundary.</p>	720 ha	56	None	Site	Not a HoPI

Habitat	Summary Description	Area (ha) or length (Km)	% of Site Area	Conservation Status	Preliminary Importance	Supporting Information
B5 – Marshy grassland	<p>Marshy grasslands, often typified by communities with greater than 25 % cover of rush <i>Juncus</i> species are present scattered throughout the Solar PV Site at the base of shallow gradients and within improved or (poor) semi-improved fields with poor drainage. Species recorded included (but was not limited to) soft rush <i>Juncus effusus</i>, sharp flowered rush <i>Juncus acutiflorus</i>, marsh thistle <i>Cirsium palustre</i>, meadowsweet <i>Filipendula ulmaria</i>, marsh valerian <i>Valerian dioica</i> and ragged robin <i>Silene flos cuculi</i>.</p> <p>Other areas of marshy grassland, dominated by purple moor grass <i>Molinia caerulea</i> were recorded in areas adjacent to Llyn Alaw and in several fields in the southern extents of the Solar PV Site.</p> <p>This habitat type may also be present within the wider PEIR Boundary</p>	34 ha	3	Purple moor-grass and rush pasture Section 7 HoPI and Coastal and floodplain grazing marsh are Anglesey BAP.	Up to County	Purple moor grass and rush pasture is a HoPI.
B6 – Poor semi-improved grassland	<p>Poor semi-improved grassland was also recorded throughout the Solar PV site. The characteristics of this habitat are similar to those found in improved grassland (as described above) although the diversity of herbaceous species is somewhat greater, and often indicative of reduced levels of agricultural</p>	327 ha	26	None	Site	Not a HoPI

Habitat	Summary Description	Area (ha) or length (Km)	% of Site Area	Conservation Status	Preliminary Importance	Supporting Information
	improvement. In addition to those listed above, species such as red clover <i>Trifolium pratense</i> , meadow buttercup <i>Ranunculus acris</i> and cocksfoot <i>Dactylis glomerata</i> were recorded. This habitat type is also present within the wider PEIR Boundary.					
C1.1 – Bracken – continuous	Pockets of bracken <i>Pteridium aquilinum</i> were recorded along roadsides located in the northern extents of the Solar PV Site. This habitat type may also be present within the wider PEIR Boundary.	< 1 ha	< 1	None	Site	Not a HoPI
C3.1 – Other tall herb and fen – ruderal	Tall ruderal habitats were recorded at several locations abutting Llyn Alaw, associated with uncut and ungrazed grassland strips/patches and fencing. Species typically recorded within this habitat type included dock <i>Rumex sp.</i> , creeping thistle <i>Cirsium arvense</i> and great willowherb <i>Chamerion hirsutum</i> . The Non-native Invasive Plant Species (NNIPS) Himalayan balsam <i>Impatiens glandulifera</i> was also recorded here. This habitat type may also be present within the wider PEIR Boundary.	1 ha	< 1	None	Site	Not a HoPI

Habitat	Summary Description	Area (ha) or length (Km)	% of Site Area	Conservation Status	Preliminary Importance	Supporting Information
D – Heathland	<p>Priority lowland heathland was recorded using the DataMapWales website (Ref. 7-4) immediately adjacent to the Solar PV Site in its more northern extents.</p> <p>No lowland heathland has been identified within the Solar PV Site.</p> <p>This habitat type may also be present within the wider PEIR Boundary.</p>	N/A*	N/A*	Annex I European Protected Habitat, Section 7 HoPI and Anglesey BAP habitat.	Up to International importance.	Lowland heathland is a European protected habitat, HoPI and listed as an Anglesey BAP habitat.
E3 – Fen	<p>Priority Lowland fen and reedbed was recorded using the DataMapWales website (Ref. 7-4) outside of but adjacent to the Solar PV Site abutting Llyn Alaw.</p> <p>This habitat type may also be present within the Grid Connection Corridor and Interconnecting Cable Corridors.</p> <p>This habitat type may also be present within the wider PEIR Boundary.</p>	N/A*	N/A*	Section 7 HoPI and LBAP; Further surveys required to determine European significance.	Up to International importance	Further surveys required to confirm if habitat qualifies as a European protected habitat.
F1 – Swamp	<p>Linear strips of swamp habitat were present on the edge of Llyn Alaw comprising stands of reed canary grass <i>Phalaris arundinacea</i>, reedmace <i>Typha latifolia</i>, meadowsweet and marsh thistle.</p> <p>This habitat type may also be present within the wider PEIR Boundary.</p>	N/A *	N/A *	Reedbeds are Section 7 HoPI and Anglesey BAP Habitat.	Up to County	HoPI

Habitat	Summary Description	Area (ha) or length (Km)	% of Site Area	Conservation Status	Preliminary Importance	Supporting Information
G1 – Standing water (ponds and ditches)	<p>Ponds of varying sizes were recorded both within and bordering the Solar PV Site, some of which were confirmed as supporting great crested newt when surveyed in 2023 and 2024. For further detail please see the GCN Report in Appendix 7-3.</p> <p>Llyn Alaw is also present immediately adjacent to the Solar PV Site. Llyn Alaw is a shallow reservoir formed in 1965 by the flooding of an existing bog and is designated as a SSSI (further detail provided in Appendix 7-4).</p> <p>Ditches, recorded in length, with standing water were recorded at field margins within the Solar PV Site. The water in the ditches is generally shallow and variable between 0 and 10 cm.</p> <p>This habitat type may also be present within the wider PEIR Boundary.</p>	3 ha; 1 km	< 1	Section 7 HoPI and Anglesey BAP Habitat.	Up to country	HoPI
G2 Running water	Three rivers (Afon Wygyr, Afon Alaw Afon Cefni) flow within the PEIR Boundary and Afon Cefni flows through the Solar PV Site. There are several tributaries from each of the rivers that are also within the PEIR Boundary.	20 km	N/A	Rivers and streams are Section 7 HoPI and Anglesey BAP habitat.	Up to County	HoPI
I1.1.1 Inland cliff – acid/neutral, I1.1.2 Inland cliff – basic, I1.4 –	Rocky areas were noted within parts of the northern extents of the Solar PV Site, producing thinner soils and potentially areas of greater	1 ha; < 1 km	< 1	Inland rock outcrop and scree habitats is	Up to County	HoPI

Habitat	Summary Description	Area (ha) or length (Km)	% of Site Area	Conservation Status	Preliminary Importance	Supporting Information
Other exposure – basic, H8.1 Hard cliff	botanical diversity within otherwise improved grassland. Inland cliffs and rocky exposure were recorded in ha while hard cliff is recorded in km. This habitat type may also be present within the wider PEIR Boundary.			a Section 7 HoPI.		
J1 – Cultivated/disturbed land – arable	A small number of arable fields cultivated for crop production were recorded within the Solar PV Site, predominantly in proximity to Llyn Alaw. This habitat type is also present within the wider PEIR Boundary.	22 ha	2	None	Site	Not a HoPI
(J2.1.1) Intact hedge – native species-rich, (J2.1.2) intact hedge species-poor, (J2.3.2) intact hedge - with trees - species-poor, J2.8 stone walls /earth banks (cloddiau)	Hedgerows have been recorded throughout the Solar PV Site, and are anticipated throughout the proposed Cable Route Corridor, Highways Works Land, and Grid Connection Corridor. Hedgerow species recorded include, but are not limited to, hawthorn, gorse, elder, and blackthorn. Tree species within hedgerows recorded as hedgerows with trees include oak and ash.  Many hedgerows within the Survey Area are associated with cloddiau. Cloddiau without hedgerows have been recorded as earth banks and considered hedgerows under the Anglesey BAP description of ancient hedgerows.	84 km	N/A	All hedgerows are a Section 7 HoPI and Ancient hedgerows, including cloddiau, are an Anglesey BAP habitat.  Some of the hedgerows may be classified as 'Important' under the Hedgerow Regulations (Ref.	Up to County	HoPI and legally protected under the Hedgerow Regulations (Ref. 7-4).  Ancient hedgerows, and cloddiau, are Anglesey BAP habitat.



Habitat	Summary Description	Area (ha) or length (Km)	% of Site Area	Conservation Status	Preliminary Importance	Supporting Information
	This habitat type is also present within the wider PEIR Boundary.			7-4), to be confirmed by further survey.		
J4 – Bare ground and Hardstanding	<p>Hardstanding and bare ground were recorded in the form of gravel and soil access tracks, which are partially vegetated, within the Solar PV Site.</p> <p>Unvegetated, loose bare substrate was also recorded within the Former Oil Depot, in areas previously occupied by storage tanks, where the vegetation is the most botanically diverse within the Solar PV Site. Early successional communities were identified, including annuals, mosses, lichens and ruderals as well as open and flower rich grassland and heathland species. Plants recorded included birdsfoot trefoil, mouse ear hawkweed <i>Pilosella officinarum</i>, common restharrow <i>Ononis repens</i>, common centaury <i>Centaureum erythraea</i>, common knapweed <i>Centaurea nigra</i>, yellow rattle <i>Rhinanthus minor</i>, common thyme <i>Thymus vulgaris</i>, fairy flax <i>Linum catharticum</i>, red bartsia <i>Odonites vernus</i>, blue fleabane <i>Erigeron acer</i>, hares foot clover <i>Trifolium arvense</i> and eyebrights <i>Euphrasia sp.</i> Large numbers of bee orchid <i>Ophrys apifera</i> and northern marsh orchid <i>Dactylorhiza pulchella</i> were also recorded in addition to several</p>	7 ha	1	Open Mosaic Habitats on Previously Developed Land is a Section 7 HoPI.	Up to County	HoPI

Habitat	Summary Description	Area (ha) or length (Km)	% of Site Area	Conservation Status	Preliminary Importance	Supporting Information
	<p>pyramidal orchid <i>Anacamptis pyramidalis</i> and Heath spotted x northern marsh orchid <i>Dactylorhiza x formosa</i>.</p> <p>This part of the Solar PV Site comprises an open mosaic habitat of more than 0.25 hectares. It has a known history of disturbance, with evidence that soil has been removed and extraneous materials added. Loose bare substrate and pools are present, and the early successional communities recorded above show spatial variation and form a mosaic. Consequently, this part of the Solar PV Site is considered to meet the criteria for the UKBAP HoPI Descriptions 'Open Mosaic Habitats on Previously Developed Land'.</p>					

\*Habitats not recorded during the Phase 1 surveys but identified in the desk study as potentially occurring in the wider PEIR boundary

- 7.2.21 HoPI listed under Section 7 of the Environment (Wales) Act 2016 (Ref. 7-5) which are present or likely to be present (where determination by further survey is required) on land within the Study Area include open mosaic habitats on previously developed land located within the former oil depot, as well as areas of semi-natural broadleaved and mixed woodland, woodland pasture & parkland, lowland dry acid grassland, lowland meadow, purple moor grass and rush pasture, lowland heathland, reedbeds, standing water (ponds and ditches), running water, inland rock outcrop and scree habitats, arable field margins and hedgerows.
- 7.2.22 DataMapWales identified the following areas of HoPI within the wider PEIR Boundary:
- lowland acid grassland;
  - lowland fen and reedbed;
  - lowland heathland;
  - purple moor grass and rush pasture; and
  - traditional orchards.
- 7.2.23 These habitats have the potential to support a range of protected and notable species. For the ES to be submitted with the DCO application, these habitats will be further defined by the detailed surveys, where relevant. Habitat and condition assessment data will be used in the Net Benefit for Biodiversity (NBB) assessment, which will be submitted with the DCO application.
- 7.2.24 Up to 11 Anglesey BAP habitats were also provisionally recorded within the Solar PV Site, including broadleaved woodland, ancient hedgerows, lowland and coastal heath, coast and floodplain grazing marsh, river and stream habitats, ponds, reedbeds, lakes, field edges, scrub and plantations. There is also potential for flower-rich road verges to be present within the proposed Cable Route Corridor, Highways Works Land, and Grid Connection Corridor.
- 7.2.25 Cofnod (North Wales Environmental Information Service) identifies ancient woodland as present within the PEIR Boundary. Ancient semi-natural woodland is mapped in the following locations (see Figure 5-5 for field location reference):

- inside field 64 (Maen Hir North);
- just inside the boundary of field 44 (same area also immediately adjacent to field 47) (Maen Hir North);
- immediately adjacent to the Cable Route Corridor, inside the boundary of Coed Cae Mawr Wildlife Site;
- immediately adjacent to fields 152, 142, 144 and 145;
- inside field 245 (Maen Hir South); and
- just inside the boundaries of field 238 and 242.

7.2.26 Restored ancient woodland is mapped in the following locations:

- just inside the boundaries of fields 152 and 142 (same area also adjacent to fields 143, 159, 160 and 161);
- just inside the boundary of field 260 (Maen Hir South);
- just inside the boundary of field 260 (Maen Hir South); and
- inside fields 254 and 251 (same area also adjacent to field 256) (Maen Hir South).

7.2.27 A review of the Woodland Trust Ancient Tree Inventory (Ref. 7-6) does not indicate any notable/veteran trees within or adjacent to the Solar PV Site. Full data will be presented in the ES when arboricultural surveys are complete.

***Protected and Notable Species and INNS***

7.2.28 The desk study obtained data from Cofnod of protected and notable species within the 2 km Study Area from the preceding 10 years. These protected and notable species, including species of conservation importance, are summarised in this PEIR, with specific information for great crested newt, ornithology and riparian mammals provided within Appendices 7-3 – 7-5 respectively.

7.2.29 Table 7-4 presents a summary of protected, notable and INNS animal and plant species that have been identified (up to July 2024) during the desk study and completed ecological field surveys which were generally restricted to the Solar PV Site (undertaken between November 2022 and July 2024) as present, or potentially present, within the PEIR Boundary and relevant Study Areas (see

Table 7-6) alongside a preliminary assessment of each feature's importance/value (sensitivity).

- 7.2.30 A preliminary assessment of the biodiversity importance of ecological features has been made where surveys have been undertaken as of July 2024. This assessment will be further updated with ongoing surveys throughout the relevant survey windows in 2024/25 (see Table 7-6). Where the biodiversity of a feature is specific to a particular area of the Solar PV Site (e.g. occurring within the Solar PV Site only), then this is specified in Table 7-4.

**Table 7-4 Summary of baseline details for important ecological features (IEFs), legally protected, notable and invasive non-native species alongside preliminary assessment of biodiversity importance of ecological features.**

Ecological Feature and Technical Appendix	Baseline Detail (Desk Study Area includes 2km buffer from Solar PV Site. Field Study, generally restricted to the Solar PV site unless stated otherwise)	IEFs	Preliminary Assessment of Biodiversity Importance	Supporting Notes
<p>Botanical (see PEIR Volume III Appendix 7-2: Habitat Report)</p>	<p><b>Desk Study</b> The data search returned records of 120 notable plant species within the Study Area., including five species listed on S7 of the Environment (Wales) Act 2006: English sticky eyebright <i>Euphrasia officinalis subsp. anglica</i>, fly orchid <i>Ophrys insectifera</i>, frog orchid <i>Coeloglossum viride</i>, three-lobed crowfoot <i>Ranunculus tripartitus</i>, and entire threadwort <i>Cephaloziella calyculata</i>.</p> <p><b>Field Survey</b> The Phase 1 habitat survey recorded no notable plant species within the Solar PV Site. The National Vegetation Classification (NVC) surveys may record notable species, and the results of the surveys will be detailed upon their completion.</p>	<p>NA</p>	<p>Local (if present)</p>	<p>Phase 1 survey recorded no legally protected plant species within the Solar PV Site.  Proposed further surveys including NVC may identify protected species.</p>
<p>Bats - Roosting Technical Appendix will be provided for the ES.</p>	<p><b>Desk Study</b> No roosts were returned from the desk study.</p> <p><b>Field Survey</b></p>	<p>To be confirmed in ES</p>	<p>Up to County - to be confirmed when surveys complete.</p>	<p>All bat species and their roosts are legally protected in the UK under the WCA 1981 (as amended) (Ref. 7-7) and Habitats and Species Regulations (Ref. 7-9), which</p>

Ecological Feature and Technical Appendix	Baseline Detail (Desk Study Area includes 2km buffer from Solar PV Site. Field Study, generally restricted to the Solar PV site unless stated otherwise)	IEFs	Preliminary Assessment of Biodiversity Importance	Supporting Notes
	<p>No buildings will be directly impacted; however, there are areas where some buildings may be partially enclosed by the Solar PV Site. If roosts occur in these buildings, there is potential risk of disturbance during construction and severance of flight paths during operation. Some of these buildings may be suitable for horseshoe bats.</p> <p>There are scattered trees and areas of woodland within the Solar PV Site with bat roost potential, and suitable buildings within the PEIR Boundary. It is anticipated that these features can be retained through careful design.</p>			<p>implement the EC Directive 92/43/EEC (Ref. 7-8). Eight bat species are also included as Priority Species under Section 7 of the Environment (Wales) Act 2016 (Ref. 7-5).</p> <p>The Solar PV Site is unlikely to support significant roost sites for example maternity or hibernation roosts for rarer species due to the lack of habitats such as buildings and underground sites and geographical location; however, these roosts may be present adjacent to the Solar PV Site. Bat emergence surveys and/or aerial climb and inspect surveys will be completed where trees with moderate or high suitability for roosting bats will be directly affected by the Project, or where potential for disturbance (above existing levels) is identified. These data will inform the ES and mitigation strategy. However, it is anticipated that the majority of mature trees will be retained and</p>

Ecological Feature and Technical Appendix	Baseline Detail (Desk Study Area includes 2km buffer from Solar PV Site. Field Study, generally restricted to the Solar PV site unless stated otherwise)	IEFs	Preliminary Assessment of Biodiversity Importance	Supporting Notes
				protected, and disturbance can be mitigated.
<p>Bats - Activity</p> <p>Technical Appendix will be provided for the ES.</p>	<p><b>Desk Study</b></p> <p>The data search identified five bat species within the Study Area. Including brown long eared <i>Plecotus auritus</i>, common pipistrelle <i>Pipistrellus pipistrellus</i>, noctule <i>Nyctalus noctula</i>, soprano pipistrelle <i>Pipistrellus pygmaeus</i>, and unidentified <i>Myotis</i> species.</p> <p><b>Field Survey</b></p> <p>The Solar PV Site predominantly offers Low habitat suitability for bats, with pockets of Moderate suitability associated with the Former Oil Depot Site and areas of ancient woodland.</p> <p>Bat activity surveys are ongoing; however, to date low levels of activity have been noted on site (although not yet fully analysed), with species present including common pipistrelle, soprano pipistrelle, noctules, Leisler's <i>Nyctalus leisleri</i> and <i>Myotis</i> sp.</p>	<p>To be confirmed in ES</p>	<p>Up to Regional - to be confirmed when surveys complete</p>	<p>All bat species and their roosts are legally protected in the UK under the WCA 1981 (as amended) (Ref. 7-7) and Habitats and Species Regulations (Ref. 7-9), which implement the EC Directive 92/43/EEC (Ref. 7-8). Eight bat species are also included as Priority Species under Section 7 of the Environment (Wales) Act 2016 (Ref. 7-5).</p> <p>The biodiversity importance of commuting and foraging habitat for bats is based on species rarity, habitat types/features, habitat reliance and roost types. The bat activity survey data collated during the ongoing surveys will inform the ES and mitigation strategy</p>
<p>Badger</p> <p>If presence is confirmed a</p>	<p><b>Desk Study</b></p>	<p>NA</p>	<p>Local (if present)</p>	<p>Protected under The Protection of Badgers Act 1992 (Ref. 7-10).</p>



Ecological Feature and Technical Appendix	Baseline Detail (Desk Study Area includes 2km buffer from Solar PV Site. Field Study, generally restricted to the Solar PV site unless stated otherwise)	IEFs	Preliminary Assessment of Biodiversity Importance	Supporting Notes
<p>technical Appendix will be provided for the ES.</p>	<p>The data search did not return any records of badger (<i>Meles meles</i>) within the Study Area within the preceding ten years.</p> <p><b>Field Survey</b></p> <p>Although the PEIR Boundary holds suitable habitat for badgers, no evidence of this species was recorded within the Solar PV Site to date.</p>			<p>If in the interim evidence of badger presence is identified during ongoing survey work, a confidential badger appendix will be provided within the ES.</p>
<p>Riparian Mammals (see PEIR Volume III Appendix 7-5: Riparian Mammal Report)</p>	<p><b>Desk Study</b></p> <p>The data search returned 26 records of water vole and 31 records for otter within the Study Area, but none identified from within the Solar PV Site.</p> <p><b>Field Survey</b></p> <p>Presence of otter has been confirmed within the Solar PV Site, where watercourses are suitable for foraging and commuting. No holts have been noted to date, however there is potential within the Solar PV Site and wider PEIR Boundary for these to be present.</p> <p>Water voles are present within a number of watercourses surveyed to date within Maen Hir North and are anticipated to be present elsewhere. Crossing locations of watercourse are still under review at this stage therefore it</p>	<p>Presence of otter and water vole across the Solar PV Site and PEIR Boundary, within suitable habitat.</p>	<p>County.</p>	<p>Otter is protected under Habitats and Species Regulations (Ref. 7-9) and Schedule 5 of the WCA 1981 (as amended) (Ref. 7-7).</p> <p>Water vole are legally protected in the UK under Section 9 of Schedule 5 of the WCA 1981 (as amended) (Ref. 7-7).</p> <p>Both otter and water vole are Species of Principal Importance under Section 7 of the Environment (Wales) Act 2016 (Ref. 7-5).</p> <p>Otter are Near Threatened and water vole are Least Concern status in under the International Union for the Conservation of Nature (IUCN) (Ref. 7-11).</p>

Ecological Feature and Technical Appendix	Baseline Detail (Desk Study Area includes 2km buffer from Solar PV Site. Field Study, generally restricted to the Solar PV site unless stated otherwise)	IEFs	Preliminary Assessment of Biodiversity Importance	Supporting Notes
	<p>may be possible to avoid known areas of water voles through design.</p> <p>Ongoing surveys are required to determine presence/absence across the remaining areas of the Solar PV Site and targeted areas within the PEIR Boundary.</p>			
<p>Red Squirrel</p> <p>Technical Appendix will be provided for the ES.</p>	<p><b>Desk Study</b></p> <p>The data search returned 30 records of red squirrel <i>Sciurus vulgaris</i> within the Study Area, six of which are located within the PEIR Boundary.</p> <p><b>Field Survey</b></p> <p>An anecdotal sighting of a red squirrel was observed during Phase 1 habitat surveys in semi-natural broadleaf woodland within the Former Oil Depot site, located in Maen Hir North.</p>	<p>Population of red squirrel</p>	<p>County</p>	<p>Red squirrel are protected under Schedule 5 of the WCA (Ref. 7-7) and are listed as a Species of Principal Importance under Section 7 of the Environment (Wales) Act 2016 (Ref. 7-5).</p> <p>Red Squirrel are Least Concern status in Wales under the International Union for the Conservation of Nature (IUCN) (Ref. 7-11).</p>
<p>Other Mammals</p> <p>No Technical Appendix.</p>	<p><b>Desk Study</b></p> <p>The data search returned records of three other protected and notable mammal species; harvest mouse <i>Micromys minutus</i>, hedgehog <i>Erinaceus europaeus</i>, and polecat <i>Mustela putorius</i> within the 2 km Study Area. Brown hare, hedgehog, and polecat have all been</p>	<p>Presence of brown hare confirmed within the Solar PV Site.</p> <p>Assumed presence within the Solar PV Site and PEIR</p>	<p>Local</p>	<p>Brown hare, harvest mouse, hedgehog, and polecat are all Species of Principal Importance under Section 7 of the Environment (Wales) Act 2006 (Ref. 7-5).</p> <p>Brown hare, harvest mouse, hedgehog, and polecat are Least</p>

Ecological Feature and Technical Appendix	Baseline Detail (Desk Study Area includes 2km buffer from Solar PV Site. Field Study, generally restricted to the Solar PV site unless stated otherwise)	IEFs	Preliminary Assessment of Biodiversity Importance	Supporting Notes
	<p>recorded within the Site boundary while harvest mouse records are all beyond the boundary, at Llanfechell and Llyn Fens Ramsar; Corsydd Mon/Anglesey Fens SAC; Cors Erddreiniog SSSI, NNR.</p> <p><b>Field Survey</b></p> <p>During Phase 1 surveys, several brown hare, including a family group were observed in Maen Hir Central area. Due to suitable habitat, this species is assumed to occur throughout the PEIR Boundary.</p>	Boundary of harvest mouse, hedgehog, and polecat.		<p>Concern status in Wales under the International Union for the Conservation of Nature (IUCN) (Ref. 7-11).</p> <p>Harvest mouse, polecat and hedgehog were not recorded during ecological surveys, but based on suitable habitats within the Site, geographical range of this species, alongside presumed abundance within the County, a assumption has been made that this species is likely to be present within the Solar PV Site.</p>
Ornithology (see PEIR Volume III Appendix 7-4: Ornithology Interim Survey Report)	<p><b>Desk Study</b></p> <p>The desk study identified records of 157 species of bird, including specially protected species (such as barn owl and whooper swan) and notable bird species (such as chough and Greenland white-fronted goose) within the Study Area</p> <p>Six species listed on Annex 1 of the EU Birds Directive (2009) have been recorded, including whooper swan, great white egret</p>	<p>Common breeding bird species and an assemblage of notable birds breeding within the Solar PV Site and PEIR Boundary</p> <p>Assemblage of non-breeding birds</p>	<p>Likely importance of Local - to be confirmed when surveys complete.</p> <p>Likely importance of Local - to be</p>	<p>All nesting birds are protected under the WCA (Ref. 7-7). Habitat within the Solar PV Site and PEIR Boundary supports nesting birds.</p> <p>The Study Area supports notable species during the breeding season.</p> <p>Section 7 and Birds of Conservation Concern (BoCC) Red list species recorded, but currently do not</p>

Ecological Feature and Technical Appendix	Baseline Detail (Desk Study Area includes 2km buffer from Solar PV Site. Field Study, generally restricted to the Solar PV site unless stated otherwise)	IEFs	Preliminary Assessment of Biodiversity Importance	Supporting Notes
	<p><i>Ardea alba</i>, marsh harrier, hen harrier, merlin and chough. Additionally, 14 Section 7 (Environment (Wales) Act 2016), 20 Red List, 34 Amber List and three Local Biodiversity Action Plan (chough, skylark and song thrush <i>Turdus philomelos</i>) species have been recorded (Ref. 7-12).</p> <p><b>Field Survey</b></p> <p>Surveys of breeding birds undertaken within the PEIR boundary up to July 2023, recorded a breeding bird assemblage of 71 species, including notable species such as skylark <i>Alauda arvensis</i>, song thrush and linnet.</p> <p>Initial observations resulting from breeding bird surveys reveal that boundary habitats, notably hedgerows and scrub, support the greatest assemblage of breeding bird species. Whereas, field interiors typically support comparatively low numbers of breeding birds, such as meadow pipit <i>Anthus pratensis</i> and skylark;</p> <p>Surveys of non-breeding birds (including targeted surveys for barn owl, chough, Greenland white-fronted goose and whooper</p>		confirmed when surveys complete.	constitute 1% of the national or County population for any species.
		Non-breeding population of Greenland white-fronted goose	Up to County - to be confirmed once surveys complete.	Greenland White-fronted Goose are listed under Section 7 (Ref. 7-5) and fields adjacent to Llyn Alaw SSSI are one of two known areas used by wintering populations of Greenland White-fronted Goose in Anglesey.  No Greenland White-fronted Goose have been recorded on the Solar PV Site as of July 2024.
		Non-breeding population of whooper swan	Up to County - to be confirmed once surveys complete.	Specially protected species, owing to its inclusion on Schedule 1 of the WCA and Annex 1 of the EC Directive for Wild Birds, and a designated feature of Llyn Alaw SSSI which is adjacent to the Solar PV Site.  Low numbers of wintering whooper swan have been recorded across the Solar PV Site, but currently do not constitute 1 % of the national or County population for the species.

Ecological Feature and Technical Appendix	Baseline Detail (Desk Study Area includes 2km buffer from Solar PV Site. Field Study, generally restricted to the Solar PV site unless stated otherwise)	IEFs	Preliminary Assessment of Biodiversity Importance	Supporting Notes
	<p>swan) are on-going, but as of July 2023, the assemblage of non-breeding birds recorded within the Solar PV Site includes Priority Species (such as linnet).</p> <p>However, survey results to date indicate that no species reach numbers considered to be significant within the Solar PV Site as a whole. Locally, fields bordering Llyn Alaw and some of those within land in the Southern area, particularly where marshy grassland and waterbodies are present, support comparatively greater numbers of wildfowl and waders. Woodland, hedgerow and scrub habitats provide shelter and foraging opportunities for a range of species, such as woodcock <i>Scolopax rusticola</i>, winter thrushes and passerines.</p>	<p>Wintering population of chough</p>	<p>Up to County - to be confirmed once surveys complete.</p>	<p>Chough are included in the LBAP, WCA, and a designation feature of SSSIs locally, with populations constituting large proportions of national population. Low numbers of foraging chough have been recorded on the Solar PV Site, but currently do not constitute 1 % of the national or County population for the species.</p>
		<p>Population of breeding or roosting barn owl</p>	<p>Likely importance of Local - to be confirmed once surveys complete.</p>	<p>Specially protected species, owing to its inclusion on Schedule 1 of the WCA, Low numbers of barn owl have been recorded on the Solar PV Site, but currently do not constitute 1 % of the national or County population for the species.</p>
<p>Reptiles Technical Appendix will be provided for the ES.</p>	<p><b>Desk Study</b> The data search returned records of three reptile species within the 2 km Study Area. Common lizard <i>Zootoca vivipara</i> and slow-worm <i>Anguis fragilis</i> have been recorded within the PEIR Boundary.</p>	<p>Presence of common lizard, adder, grass snake or slow-worm.</p>	<p>Local</p>	<p>Reptiles are protected from intentional injuring or killing under the WCA (Ref. 7-7) and are Species of Principal Importance under Section 7 of the Environment (Wales) Act 2016 (Ref. 7-5). Further surveys will be undertaken</p>

Ecological Feature and Technical Appendix	Baseline Detail (Desk Study Area includes 2km buffer from Solar PV Site. Field Study, generally restricted to the Solar PV site unless stated otherwise)	IEFs	Preliminary Assessment of Biodiversity Importance	Supporting Notes
	<p>Adder has been recorded within the Study Area but outside the PEIR Boundary, associated with the adjacent Mynydd Parys SSSI and Corsydd Môn a Llyn/Anglesey and Llyn Fens Ramsar; Corsydd Mon/Anglesey Fens SAC; Cors Erddreiniog SSSI, NNR, and to the north at Bull Bay.</p> <p><b>Field Survey</b></p> <p>The Former Oil Depot site, within Maen Hir North, was identified as potentially suitable for reptiles due to the open mosaic habitat. Two walked transects were undertaken during 09/05/24 and 21/05/24. No reptiles were recorded at the time of survey.</p>			<p>(commencing in August/September 2024) as presented in Table 7-6.</p>
<p>Great Crested Newt (see PEIR Volume III Appendix 7-3: Great Crested Newt Report)</p>	<p><b>Desk Study</b></p> <p>The data search returned 68 records of great crested newt from within the Study Area, 32 of these records are within the Solar PV Site.</p> <p><b>Field Survey</b></p> <p>To date, a total of 16 waterbodies within the Solar PV site (or its 250m survey buffer) have been found to support populations of great crested newt. Positive eDNA results were returned for 14 waterbodies, with great crested newts subsequently found in 12, including,</p>	<p>Population of great crested newt based on desk study and survey records.</p>	<p>Likely importance of County</p>	<p>Great crested newt are legally protected in the UK under the WCA 1981 (as amended) (Ref. 7-7) and Habitats and Species Regulations (Ref. 7-9), which implement the EC Directive 92/43/EEC (Ref. 7-8).</p> <p>The Project has the potential to result in the loss and damage of suitable terrestrial habitat for great crested newt (albeit mostly temporarily). Further surveys will be</p>

Ecological Feature and Technical Appendix	Baseline Detail (Desk Study Area includes 2km buffer from Solar PV Site. Field Study, generally restricted to the Solar PV site unless stated otherwise)	IEFs	Preliminary Assessment of Biodiversity Importance	Supporting Notes
	seven waterbodies with 'Low' population score and five with a 'Good' population score.			undertaken in 2025 as presented in Table 7-6.
Other Amphibians Details included in PEIR Volume III Appendix 7-3: Great Crested Newt Report)	<p><b>Desk Study</b></p> <p>There are 97 recent records of other amphibians within the 2 km Study Area. These include 27 records of common toad <i>Bufo bufo</i>, 39 records of common frog <i>Rana temporaria</i>, 28 records of palmate newt <i>Lissotriton helveticus</i>, and three records of smooth newt <i>Lissotriton vulgaris</i>. There are records of all these species located within the Solar PV Site.</p> <p><b>Field Study</b></p> <p>Positive eDNA results identified palmate newts as the most frequently recorded amphibian species within the Solar PV Site. Smooth newts were less commonly observed, and frogs and common toads were occasionally recorded in low numbers.</p>	Presence of other amphibians based on desk study and survey records.	Local	The common toad is a Species of Principal Importance under Section 7 of the Environment (Wales) Act (Ref. 7-5).
Terrestrial Invertebrates Technical Appendix will be provided for the ES.	<p><b>Desk Study</b></p> <p>The data search returned 237 invertebrate species within the study area. Notable species recorded within the site include small heath <i>Coenonympha pamphilus</i>, dingy skipper</p>	The Phase 1 habitat survey identified habitats of potentially higher value to terrestrial invertebrate species within the Former	Likely importance of Local	The Diggly Skipper butterfly is an Environment (Wales) Act 2016 Section 7 and UK BAP Priority Species.  Based on the potential for assemblages of notable terrestrial invertebrates within higher value

Ecological Feature and Technical Appendix	Baseline Detail (Desk Study Area includes 2km buffer from Solar PV Site. Field Study, generally restricted to the Solar PV site unless stated otherwise)	IEFs	Preliminary Assessment of Biodiversity Importance	Supporting Notes
	<p><i>Erynnis tages</i>, wall <i>Lasiommata megera</i> and mottled rustic <i>Caradrina morpheus</i>.</p> <p><b>Field Survey</b></p> <p>Notably, during habitat walkover surveys the following species were observed within the Former Oil Depot Site, dingy skipper <i>Erynnis tages</i>, small heath <i>Coenonympha pamphilus</i>, large skipper <i>Ochlodes sylvanus</i>, common blue <i>Polyommatus icarus</i> and meadow brown <i>Maniola jurtina</i>.</p>	<p>Oil Depot Site. This will be confirmed following specific invertebrate survey in 2024/2025.</p>		<p>grassland habitats (i.e. HoPI) within the Former Oil Depot Boundary habitats (i.e. hedgerows and trees) of higher value to terrestrial invertebrates are likely to be avoided where practical.</p>
<p>Fish</p> <p>Technical Appendix will be provided for the ES.</p>	<p><b>Desk Study</b></p> <p>The desk study identified two notable fish species (dated within the last 10 years) within the 2km of the PEIR Boundary: European eel <i>Anguilla anguilla</i>, brown trout <i>Salmo trutta subsp. fario</i>.</p> <p><b>Field Survey</b></p> <p>Aquatic ecology walkover surveys will be required to determine the need (if impacted) for fish surveys.</p> <p>The majority of watercourses and ditches will be suitably buffered, except where crossings are required for access and cabling (yet to be determined).</p>	<p>Based on desk study data there are watercourses of potentially high value to fish species, including those of National and International significance within the PEIR Boundary. This will be confirmed by surveys if required.</p>	<p>Likely Local. To be confirmed by surveys, if required.</p>	<p>All fish and their habitats are protected under the Salmon and Freshwater Fisheries Act 1975 (Ref. 7-13). Bullhead, Atlantic salmon, European eel, and lamprey species (River lamprey and Sea lamprey) are listed in the Habitats Directive Annex II, which requires significant populations of these species to be protected through the UK's National Site Network (i.e. SACs).</p> <p>Some species are listed as species of principal importance under Section 7 of the Environment (Wales) Act 2016 (Ref. 7-5).</p>



Ecological Feature and Technical Appendix	Baseline Detail (Desk Study Area includes 2km buffer from Solar PV Site. Field Study, generally restricted to the Solar PV site unless stated otherwise)	IEFs	Preliminary Assessment of Biodiversity Importance	Supporting Notes
				European eel is afforded further protection under the Eel Regulations 2009 (Ref. 7-14) which places a requirement on developers to ensure continued eel passage and to prevent eel entrainment
Aquatic Macroinvertebrates Technical Appendix will be provided for the ES.	<p><b>Desk Study</b></p> <p>The desk study identified 16 notable aquatic macroinvertebrate species (dated within the last 10 years) within the Study Area : southern damselfly <i>Coenagrion mercuriale</i>, Geyer's whorl snail <i>Vertigo geyeri</i>, southern iron blue mayfly <i>Baetis niger</i>, scarce-orange legionnaire <i>Beris clavipes</i>, variable damselfly, scarce blue-tailed damselfly, two notable water beetle species <i>Ochthebius lejolisii</i>, <i>Gyrinus suffriani</i>, five notable caddis fly species <i>Erotesis baltica</i>, <i>Limnephilus elegans</i>; <i>Limnephilus hirsutus</i>; <i>Limnephilus nigriceps</i>, <i>Limnephilus tauricus</i>; a scavenger water beetle <i>Helochaeres punctatus</i>, a soldier fly <i>Oxycera pygmaea</i>; clubbed general soldierfly. Although not present, medicinal leech <i>Hirudo medicinalis</i> is included due to its global and national status.</p>	Based on desk study data there are watercourses of potentially high value to aquatic invertebrate species, including those of National and International significance within the PEIR Boundary. This will be confirmed following specific survey efforts in 2024.	Likely local importance and to be confirmed by aquatic macroinvertebrate surveys.	Medicinal leech is a globally IUCN Red List Near Threatened (Ref. 7-11) species and an Anglesey LBAP species (Ref. 7-12) and is known to be present in Anglesey and Llyn Fens as well as three SSSIs (Cors Goch, Gwenfro and Rhos y Gad & Cors Bodeilio). Two species are included as species of principal importance under Section 7 of the Environment (Wales) act 2016 (Ref. 7-5). The 14 remaining species are included as species of principal importance, notable Nationally Rare, Scarce or Red Data list species (Ref. 7-11).

Ecological Feature and Technical Appendix	Baseline Detail (Desk Study Area includes 2km buffer from Solar PV Site. Field Study, generally restricted to the Solar PV site unless stated otherwise)	IEFs	Preliminary Assessment of Biodiversity Importance	Supporting Notes
	<p><b>Field Survey</b></p> <p>Given the number of notable species records from the desk study, aquatic macroinvertebrate studies will be undertaken to inform the ES.</p> <p>Aquatic walkover surveys of watercourses within the PEIR Boundary to assess aquatic habitats and their potential to support medicinal leech will determine the need for specific medicinal leech surveys as the Project design progresses.</p>			
<p>Aquatic Macrophytes</p> <p>Technical Appendix will be provided for the ES.</p>	<p><b>Desk Study</b></p> <p>The desk study identified eight notable aquatic macrophyte species (dated within the last 10 years) within the study area: three-lobed crowfoot <i>Ranunculus tripartitus</i>, tubular water dropwort <i>Oenanthe fistulosa</i>, fen pondweed <i>Potamogeton coloratus</i>, eight-stamened waterwort, water violet <i>Hottonia palustris</i>, lesser tussock sedge, lesser water-plantain subspecies <i>Baldellia ranunculoides subsp. ranunculoides</i>, mare's tail <i>Hippuris vulgaris</i>.</p>	<p>Based on desk study data there are watercourses of potentially high value to aquatic invertebrate species, including those of National and International significance within the PEIR Boundary. This will be confirmed following specific survey efforts in 2024</p>	<p>Likely Local. To be confirmed by macrophyte surveys.</p>	<p>Two species (three-lobed crowfoot &amp; tubular water-dropwort) are included as species of principal importance under Section 7 of the Environment (Wales) Act 2016 (Ref. 7-5). Three-lobed crowfoot is also an Anglesey LBAP species (Ref. 7-12). The six remaining species are included as species of principal importance, notable, Nationally Rare, Nationally Scarce or Red Data List species (Ref. 7-11).</p>

Ecological Feature and Technical Appendix	Baseline Detail (Desk Study Area includes 2km buffer from Solar PV Site. Field Study, generally restricted to the Solar PV site unless stated otherwise)	IEFs	Preliminary Assessment of Biodiversity Importance	Supporting Notes
	<p><b>Field Survey</b></p> <p>Given the number of notable species records from the desk study, aquatic macrophyte studies will be undertaken to inform the ES.</p>			
INNS	<p><b>Desk Study</b></p> <p>Thirteen Invasive (INNPS), listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) (Ref. 7-7), identified within 2km of the PEIR Boundary. Canadian waterweed <i>Elodea canadensis</i>, hottentot fig <i>Carpobrotus edulis</i>, hollyberry cotoneaster <i>Cotoneaster bullatus</i>, small-leaved cotoneaster <i>Cotoneaster manddail</i>, Himalayan cotoneaster <i>Cotoneaster simons</i>, wall cotoneaster <i>Cotoneaster horizontalis</i>, New Zealand pigmyweed <i>Crassula helmsii</i>, Montbretia <i>Crocsmia pottsii x aurea C. x crocosmiiflora</i>, Japanese knotweed <i>Reynoutria japonica</i>, Himalayan balsam <i>Impatiens glandulifera</i>, parrot's feather <i>Myriophyllum aquaticum</i>, Pontic rhododendron <i>Rhododendron ponticum</i> and Japanese rose <i>Rosa rugosa</i>.</p> <p>Of these, six species were recorded within or adjacent to the PEIR Boundary, including Canadian waterweed, New Zealand pigmyweed, Japanese knotweed, Himalayan</p>	Not applicable	Not applicable	Mitigation including eradication and biosecurity measures (where appropriate) will need to be implemented during construction in areas where these species are present to prevent their spread, which would constitute an offence under Schedule 9 of the Wildlife and Countryside Act 1981.

Ecological Feature and Technical Appendix	Baseline Detail (Desk Study Area includes 2km buffer from Solar PV Site. Field Study, generally restricted to the Solar PV site unless stated otherwise)	IEFs	Preliminary Assessment of Biodiversity Importance	Supporting Notes
	<p>balsam, Pontic rhododendron and Japanese rose.</p> <p>There are no recent records of Invasive Non-Native Animal Species (INNAS) as listed on Schedule 9 of the WCA (Ref. 7-7) within the Study Area.</p> <p>There are two historic records of American mink <i>Neovison vison</i> within the Study Area including a record of scat within the Site from 2009 and a record of two culled mink within 2 km of the PEIR Boundary from 2012.</p> <p>Recent records of the non-native aquatic macroinvertebrates, New Zealand mud snail and <i>Crangonyx pseudogracilis/floridanus</i> were returned in the data search within 2 km of the PEIR Boundary and within the past 10 years.</p> <p><b>Field Survey</b></p> <p>Only two INNS species were recorded within the Survey Area. Himalayan balsam was identified in several isolated stands within Field 48 along a watercourse and the disused Anglesey Central Railway corridor. Montbretia was identified in Field 32 at the entrance to the Former Oil Depot Site, within fly tipped waste.</p>			

**Summary of Important Ecological Features**

- 7.2.31 Table 7-5 summarises the known important ecological features IEFs that are relevant to the Project, based on desk study and survey data collected between November 2022 and July 2024. Based on CIEEM Guidelines (Ref. 7-1) and using professional judgement, features of Site importance i.e. less than Local importance, are not considered further in the assessment process, unless legislation requires their consideration. Therefore, in recognition of the protected status of species occurring at a local level (e.g. badger), the Project will embed appropriate mitigation (see Section 7.4 of this PEIR) to minimise or avoid impacts in line with the relevant legislation (see Appendix 7-1).
- 7.2.32 The identification of further IEFs will be determined by the ongoing field surveys during 2024/25 and updated baseline information will be presented in the ES, submitted as part of the DCO Application.

**Table 7-5 Summary of known important ecological features**

IEF	Geographic Importance	Reason for valuation of IEFs
Corsydd Môn a Llyn/Anglesey and Llyn Fens Ramsar	International	Statutory site of nature conservation value at an international level and therefore qualifies as Very High Importance.
Corsydd Mon/Anglesey Fens SAC		
Anglesey Terns/Morwenoliaid Ynys Môn SPA		
North Anglesey Marine/Gogledd Môn Forol SAC		
Liverpool Bay/Bae Lerpwl (Wales) SPA		
Llyn Dinam SAC		
Bae Cemlyn/Cemlyn Bay SAC		
Y Fenai a Bae Conwy/Menai Strait and Conwy Bay SAC		
Y Twyni o Abermenai i Aberffraw/Abermenai to Aberffraw Dunes SAC		

IEF	Geographic Importance	Reason for valuation of IEFs
Glannau Mon: Cors heli/Anglesey Coast: Saltmarsh SAC		
Glannau Ynys Gybi/Holy Island Coast SPA, SAC		
Glan-traeth SAC		
Traeth Lafan/Lavan Sands, Conway Bay SAC, SPA		
Glynllifon SAC		
Llyn Alaw SSSI	National	Statutory site of nature conservation value and therefore qualifies as High Importance.
Cors Bodwrog SSSI		
Y Werthyr SSSI		
Mynydd Parys SSSI		
Llyn Hafodol and Cors Clegyrrog SSSI		
Cors Erddreiniog SSSI, NNR		
Salbri SSSI		
Tyddyn Gyrfer SSSI		
Tyddyn y Waen SSSI		
Penrhos Lligwy SSSI		
Llyn Llygeirian SSSI		
Llyn Llywenan SSSI		
Caeau Talwrn SSSI		
Malltraeth Marsh/Cors Ddyga SSSI		
Cors Goch SSSI, NNR		
Craig Wen/Cors Castell SSSI		
Llyn Traffwl SSSI		
Cae Gwyn SSSI		

IEF	Geographic Importance	Reason for valuation of IEFs
Tre'r Gof SSSI		
Llyn Padrig SSSI		
Y Bonc, Marianglas SSSI		
Cors y Farl SSSI		
Coed y Gell and Morfa Dulas SSSI		
Gwenfro and Rhos y Gad SSSI		
Llynnau y Fali - Valley Lakes SSSI		
Cors Bodeilio SSSI, NNR		
Waun Eurad SSSI		
Llyn Maelog SSSI		
Nant y Pandy (The Dingle) LNR		
Trwyn yr Wylfa/Wylfa Head LNR		
Twenty-two sites of County importance (LWS - see Table 7-2)	County	Non-statutory sites designated for biodiversity importance, qualifying as Medium Importance.
A.1.1.1 - Broadleaved Woodland - Semi-Natural, including Ancient Woodland and (A1.31) Mixed woodland – semi natural	Up to Regional	Lowland mixed deciduous woodland is a Section 7 HoPI and Anglesey BAP. Therefore, this habitat qualifies as being of up to Medium/High Importance.
(A1.1.2) Broadleaved woodland – plantation and (A1.3.2) Mixed woodland – plantation	Local	Plantation woodland is an Anglesey BAP Habitat. Planted vegetation, is generally less established and even age. Habitat generally supporting lower diversity of fauna and flora. Therefore, this habitat qualifies as being Low Importance.
(A1.2.2) Coniferous woodland - plantation and (A3.2) Coniferous parkland/scattered trees	Local	Plantation woodland is an Anglesey BAP Habitat. Planted, generally exotic conifers of even age. Habitat generally supporting lower diversity of fauna and flora. Therefore, this habitat qualifies as being Low Importance.

IEF	Geographic Importance	Reason for valuation of IEFs
(A2.1) Dense/continuous scrub and Scattered Scrub	Local	Scrub is an Anglesey BAP Habitat. Generally dominated by competitive gorse and bramble. Habitat generally supporting lower diversity of fauna and flora. Therefore, this habitat qualifies as being Low Importance.
(A3.1) Broadleaved Parkland /scattered trees and (A3.3) Mixed Parkland/Scattered trees including veteran or ancient trees	Up to County	Woodland pasture & Parkland is a HoPI. Therefore, mature/veteran trees would qualify as being of Medium Importance. Scattered immature trees would be Low.
(B1) Acid Grassland	Up to County	Lowland dry acid grassland is a Section 7 HoPI. At this stage, pending further survey, this habitat qualifies as being of up to Medium Importance.
(B2.2) Neutral grassland – semi-improved	Site	Lowland meadow is a HoPI. At this stage, pending further survey, this habitat qualifies as being of up to Negligible Importance.
(B4) Improved grassland and (B6) Poor semi-improved grassland)	Site	Generally dominated by reseeded pasture grasses and managed for intensive grazing. Therefore, this habitat qualifies as being Negligible Importance.
(B5) Marsh/marshy grassland	Up to County	Purple moor grass and Rush pasture is a HoPI and Coastal and floodplain grazing marsh are Anglesey BAP. At this stage, pending further survey, this habitat qualifies as being of Medium Importance.
(C1.1) Bracken -continuous	Site	Generally dominated by competitive bracken. Habitat generally supporting lower diversity of fauna and flora. Therefore, this habitat qualifies as being Negligible Importance.
(C3.1) Other tall herb and fen – Tall ruderal	Site	Generally dominated by competitive tall rural species. Habitat generally supporting lower diversity of fauna and flora. Therefore, this habitat qualifies as being Negligible Importance.



IEF	Geographic Importance	Reason for valuation of IEFs
(D1) Heathland	Up to International importance.	Lowland Heathland is an Annex I European Protected Habitat, Section 7 HoPI and listed as an Anglesey BAP habitat. Therefore, this habitat qualifies as being of High Importance.
(E3) Fen	Up to International importance.	Lowland Fen is an Annex I European Protected Habitat, Section 7 HoPI and is listed as Anglesey BAP. Possibly European protected habitat, depending on further surveys. Therefore, this habitat qualifies are being of High Importance.
(F1) Swamp	Up to County	Reedbeds are a Section 7 HoPI and an Anglesey BAP habitat. Therefore, this habitat qualifies as being of Medium Importance.
(G1) Open water - Standing water (ponds)	Up to Country	Ponds of a certain criteria are HoPI and are included in the Anglesey BAP. Therefore, this habitat qualifies are being of up to Medium Importance.
(G2) Running water	Up to County	Rivers and streams are HoPI. Therefore, this habitat qualifies as being of Medium Importance.
(I1.4) – Other exposure - basic and (I1.4.2) Rock exposure – basic	Up to County	Inland rock outcrop and scree habitats is a HoPI. Therefore, this habitat qualifies as being of Medium Importance.
(J1.1) Cultivated/disturbed land – Arable and (J1.2) Amenity grassland	Site	At this stage, pending further surveys this habitat has been assessed as being of Negligible Importance.
(J2.1.1) Intact hedge – native species-rich, (J2.1.2) intact hedge species-poor and (J2.3.2) intact hedge - with trees - species-poor including stone walls/earth banks (Cloddiau)	Up to County	Hedgerows are a Section 7 HoPI and some within the Solar PV Site may be 'Important' per the Hedgerow Regulations. All hedgerows with cloddiau are Anglesey BAP habitat. Therefore, this habitat qualifies as being of Medium Importance.
(J4) Bare ground	Up to County	Associated with Scrub and Semi-Improved Neutral grassland, within the

IEF	Geographic Importance	Reason for valuation of IEFs
		Former Oil Depot Site. Open Mosaic Habitats on Previously Developed Land is a HoPI. Therefore, this habitat qualifies as being of Medium Importance.
Botanical species	Local	No notable plant species identified. Further survey required. Assessed as being of Low Importance.
Bats – Roosts	Up to County	Potential for bat roosts within and close to the Site, including those identified in the desk study, and possible other rarer species would qualify as being of Low to Medium Importance (depending on the species).
Bats – Activity	Up to Regional	The biodiversity importance of commuting and foraging habitat for bats is based on species rarity, habitat types/features, habitat reliance and roost types. Pending further surveys, this feature has been assessed as being of Medium to High Importance (depending on the species).
Badger	Local	Badgers occurring within the PEIR Boundary are assessed as being of Low Importance.
Riparian mammals	Likely importance of County	At this stage, pending further surveys, this feature has been assessed as being of Medium Importance.
Red squirrel	Likely importance of County	At this stage, pending further surveys, this feature has been assessed as being of Medium Importance.
Other mammals	Local	Likely presence of brown hare, harvest mouse, hedgehog, and polecat across the Solar PV Site. These species have been assessed as being of Low Importance.
Ornithology - breeding birds (general breeding bird assemblage)	Likely importance of Local	Populations of common and notable breeding bird species, of Local importance

IEF	Geographic Importance	Reason for valuation of IEFs
		and therefore qualifies as being of Low Importance.
Ornithology - non-breeding birds (general assemblage)	Likely importance of Local	Wintering populations of chough, Greenland white-fronted goose and whooper swan would qualify as being of up to Medium Importance, depending on population size.
Ornithology - non-breeding Greenland white-fronted goose	Likely importance of up to County	Limited range for wintering Greenland white-fronted goose in Anglesey. At this stage, pending completion of surveys, this feature has been assessed as being of Medium Importance.
Ornithology - non-breeding whooper swan	Likely importance of County	Low numbers of whooper swan recorded across the PEIR Boundary qualifies as being of Low Importance, pending completion of further surveys.
Ornithology - non-breeding chough	Likely importance up to County	At this stage, pending further surveys, this feature has been assessed as being of Medium Importance.
Ornithology - breeding or roosting barn owl	Likely importance of Local	At this stage, pending further surveys, this feature has been assessed as being of Low Importance.
Reptiles	Likely importance of Local	At this stage, pending further surveys, this feature has been assessed as being of Low Importance.
Great crested newt	County	Populations present within PEIR Boundary qualify this feature as being of Medium Importance.
Other amphibians	Local	These species have been assessed as being of Low Importance.
Terrestrial invertebrates	Not yet assessed. This will be presented in the ES	At this stage, pending further surveys this feature has been assessed as likely to be Low Importance.

IEF	Geographic Importance	Reason for valuation of IEFs
Fish	Not yet assessed. This will be presented in the ES. Likely importance of Local.	At this stage, pending further surveys, this feature has been assessed as being of Low Importance.
Aquatic Macroinvertebrates	Not yet assessed. This will be presented in the ES. Likely importance of Local.	At this stage, pending further surveys this feature has been assessed as being of Low Importance.
Aquatic Macrophytes	Not yet assessed. This will be presented in the ES. Likely importance of Local.	At this stage, pending further surveys this feature has been assessed as being of Low Importance.
INNS	Not Applicable	There are statutory restraints regarding the potential spread of INNS, as presented in PEIR Volume III Appendix 7-1: Ecological Legislative Context and Policy.

**Future Baseline**

***No Development***

7.2.33 In the short to medium term, in the absence of the Project, habitats within the PEIR Boundary have and will continue to provide a number of species with potential habitat for foraging and reproduction, such as agricultural fields for ground-nesting breeding birds. In the long term, in the absence of the Project, habitats within the Solar PV Site will be under agricultural management and therefore the low biodiversity of this landscape and the damaged soil, poor water quality and artificially low water tables will remain, making recovery of these ecosystems harder to achieve. The distribution of some species will change in response to changes in crop type/livestock management, whilst the species assemblages are likely to remain broadly the same. Any changes to the baseline

between now and the future scenario have been taken into account in this preliminary assessment and when determining likely mitigation measures.

***Construction Period (Assumed to be between 2026-2028)***

7.2.34 Based on current trends, in the absence of the Project, species abundance and diversity are likely to remain similar to the existing baseline conditions during the construction period, although the trajectory for the majority of the species is continued decline.

7.2.35 If the Project did not proceed, the majority of existing habitats are likely to continue being present, although some changes in habitat extent, composition and structure will occur as a result of ecological succession e.g. the gradual establishment of tree and shrub seedlings within woodland areas and along hedgerows. These resultant gradual changes in habitat composition are unlikely to materially alter the ecological baseline and therefore the habitats and species present are very unlikely to undergo significant change prior to 2026.

***Operation, Maintenance and Replacement (Assumed to be 2028-2088)***

7.2.36 Based on current projections, the long-term i.e. the next 60 years, will see extreme weather conditions due to climate change (see PEIR Volume I Chapter 14: Climate Change) to which the agricultural landscape has low resilience. For example, more intense rainfall would exacerbate loss of soil and sedimentation of ditches, drains and rivers. There would be a continued decline in biodiversity, including species associated with the baseline conditions present within the Site.

7.2.37 National and local planning policy targeted at halting and reversing these declines is presented in PEIR Volume III Appendix 7-1: Ecological Legislative Context and Policy.

7.2.38 If the Project did not progress, based on available information, whilst there is likely to be an overall decline in biodiversity, there are no reasons to expect that there would be any marked change in the broad habitat types within the PEIR Boundary between the beginning of the operational phase in 2028 and decommissioning in 2088. Habitats such as broadleaved trees and scrub will be more mature but are likely to support a broadly similar species assemblage and pastoral and arable

farmland will also be managed accordingly, maintaining broadly similar species assemblages.

***Decommissioning (Assumed to be from 2088)***

- 7.2.39 The future baseline conditions in 2088 are currently unknown and more difficult to predict given the time period. Habitats such as plantation woodland would have matured, though some may have been felled or partially cropped. Species assemblages are also likely to have changed in accordance with the site conditions, with changes in biodiversity likely to occur if climate change continues at its current pace. Effects could include changes in species habitats and compositions and consequently changes in species assemblages and distribution.

## **7.3 Assessment Methodology**

### **Legislation, Policy and Guidance**

- 7.3.1 A summary of applicable legislation, planning policy and other guidance documents relating to biodiversity and relevant to the Project is provided below.
- 7.3.2 Full details of the legislation, policy and guidance of relevance to the assessment of significant effects of the Project to important ecological features is provided in full in PEIR Volume III Appendix 7-1: Ecology Legislative Context and Policy.

### ***Legislation***

- 7.3.3 The following legislation is applicable to inform the biodiversity assessment:

- The Conservation of Habitats and Species Regulations 2017 (as amended) (Ref. 7-9)
- Convention on Biological Diversity 1992 (Ref. 7-15)
- The Environment Act 2021 (Ref. 7-16)
- The Environment (Wales) Act 2016 (Ref. 7-5)
- The Wildlife and Countryside Act 1981 (as amended) (WCA) (Ref. 7-7)
- The Countryside and Rights of Way Act 2000 (Ref. 7-17)
- The Protection of Badgers Act 1992 (Ref. 7-10)
- The Hedgerows Regulations 1997 (Ref. 7-4)
- The Invasive Alien Species (Enforcement and Permitting) Order 2019 (as amended) (Ref. 7-18)

- Animal Welfare Act 2006 (Ref. 7-19)
- Salmon and Freshwater Fisheries Act 1975 (Ref. 7-13)
- Eels (England and Wales) Regulations 2009 (Ref. 7-14)
- The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (Ref. 7-2)
- Environmental Improvement Plan 2023 (Ref. 7-20)
- The Nature Recovery Action Plan for Wales 2020-2021 (Ref. 7-21)
- Well-being of Future Generations (Wales) Act 2015 (Ref. 7-22).

### ***National Policy***

7.3.4 The following NPSs which were published in November 2023 and were designated on 17 January 2024, have been reviewed and are relevant to the Project and biodiversity:

- Overarching National Policy Statement for Energy (EN-1) (November 2023) (Ref. 7-23);
- NPS for Renewable Energy Infrastructure (EN-3) (November 2023) (Ref. 7-24); and,
- NPS for Electricity Networks Infrastructure (EN-5) (November 2023) (Ref. 7-25).

7.3.5 Planning Policy Wales (PPW) (2024) encourages developments to take a proactive approach to facilitate biodiversity (Ref. 7-26).

### ***National Guidance***

7.3.6 Other guidance documents relevant to the assessment of the impacts of the Project on biodiversity include:

- Future Wales - the National Plan 2040 (Ref. 7-27);
- Cyfoeth Naturiol Cymru/Natural Resources Wales (NRW) Protected Species Licensing (Ref. 7-28);
- Birds of Conservation Concern (BoCC) (Ref. 7-29);
- Birds of Conservation Concern Wales (BoCCW) (Ref. 7-30); and,
- The International Union for Conservation of Nature Red List of Threatened Species (Ref. 7-11).

**Local Policy**

7.3.7 Applicable local planning policies that are relevant to inform the biodiversity assessment for the Project are:

- Anglesey and Gwynedd Joint Local Development Plan 2011 - 2026 (Ref. 7-31); and,
- Emerging Anglesey and Gwynedd Joint Local Development Plan Review Report.

7.3.8 Local planning policies identify the need to consider and, where appropriate, mitigate effects associated with new development. New development should seek to maintain and enhance biodiversity. Any proposal that may have a detrimental impact on protected/notable habitats and/or species must be supported by an Ecological Assessment.

**Other Guidance Documents**

7.3.9 Other guidance documents that have informed the assessment of the impacts of the Project on biodiversity includes:

- Guidelines for Ecological Impact Assessment in the UK and Ireland Terrestrial, Freshwater, Coastal and Marine (Ref. 7-1);
- The Environmental Improvement Plan 2023 (Ref. 7-32);
- Natural England and Department for Environment, Food and Rural Affairs (Defra) Standing Advice (protected species) (Ref. 7-33);
- The United Kingdom (UK) Biodiversity Action Plan (BAP) list of HoPI and Species of Principle Importance (SoPI) (Ref. 7-34), succeeded by the UK Post-2010 Biodiversity Framework (Ref. 7-35);
- Anglesey Local Biodiversity Action Plan 2002 (updated in 2003) (Anglesey BAP) (Ref. 7-12);
- Corporate Biodiversity Plan 2021-2022 - Isle of Anglesey County Council (Ref. 7-36)
- Mitigating biodiversity impacts associated with solar and wind energy development: Guidelines for project developers (Ref. 7-37);
- Natural England's evidence review of the impacts of solar farms on birds, bats and general ecology (Ref. 7-38); and,



- Natural England Technical Information Note TIN101 Solar parks: Maximising Environmental Benefits (Ref. 7-39).

### Sources of Information

- 7.3.10 Cofnod was contacted in October 2023 following design changes, to obtain information on the location of non-statutory designated sites and for records of protected and notable habitats, species and INNS from the preceding ten years. Since receipt of these records, the Project has evolved to include proposed Highways Works Land; this data will therefore be updated for the ES.
- 7.3.11 Protected and notable habitats and species are considered to be those listed under:
- Schedules 1, 5 and 8 of the WCA (Ref. 7-7);
  - Schedules 2, 4 and 5 of the Conservation of Habitats and Species Regulations 2017 (Ref. 7-9); or,
  - Section 7 of the Environment (Wales) Act 2016 (Ref. 7-5), which lists SoPI and HoPI.
- 7.3.12 Other habitats and species, such as those included in national, regional or local Red Data Books and Lists but not protected by legislation (this is consistent with the requirements of relevant planning policy) were also considered and have been assessed on a case-by-case basis.
- 7.3.13 Online data resources that were reviewed include:
- The Ramsar Sites Information Service (RSIS) website (Ref. 7-40) for site information and designation details of any Ramsar sites identified within the relevant Study Area (refer to Paragraph 7.2.11);
  - The NRW website (Ref. 7-41) for information on sites statutory designated for their biodiversity value and to confirm reasons for designation and their condition;
  - Joint Nature Conservation Committee (JNCC) website (Ref. 7-42) for site information and designation details of SAC and SPA identified within the relevant Study Areas;

- The Multi-Agency Geographic Information for the Countryside (MAGIC) website (Ref. 7-43) to identify the location (and details) of statutory designated sites and for any granted European Protected Species Licence applications within 2km of the Solar PV Site;
- DataMapWales website (Ref. 7-3) for information on the location of HoPI;
- The Woodland Trust Ancient Tree Inventory (Ref. 7-6) for records of ancient, veteran or notable trees within the Study Area; and
- Anglesey's Local Biodiversity Action Plan (Ref. 7-12).

7.3.14 Records of INNS, as listed under Schedule 9 of the WCA, 1981 (as amended) (Ref. 7-7) and the Invasive Alien Species (Enforcement and Permitting) Order 2019 (Ref. 7-18), have been considered when assessing the likely significant ecological effects of the Project. The presence of such species is generally detrimental for ecology and there is legislation in place to control the spread of such species. Hence, it is important to consider the potential for the spread of any such INNS and the likely significant effects (LSEs) resulting from the Project, and any mitigation that may be required to prevent it.

7.3.15 The removal of such species may be desirable and beneficial for biodiversity. Likewise, measures should be taken to ensure that such INNS are not inadvertently brought into the PEIR Boundary. Therefore, while the species concerned are not relevant ecological features for the purpose of Ecological Impact Assessment (EclA), there is still a need to consider them in terms of their potential relevance to delivery of legislative compliance (see Section 7.2 and PEIR Volume II Appendix 7-1: Ecology Legislative Context and Policy), for their potential to contribute to the amplification of any adverse effects arising from the Project, or their potential to conflict with biodiversity mitigation and enhancement proposals.

### **Field Surveys**

7.3.16 Field surveys undertaken to date have focussed on the Solar PV Site due to the further refinement required for other areas of the Project. Field surveys commenced in November 2022 and will continue into Spring 2025 to characterise the ecological baseline within the relevant Survey Areas.

- 7.3.17 To date, protected species surveys are limited to great crested newt (GCN) *Triturus cristatus*, ornithology, and riparian mammal to inform the PEIR, with the remaining protected species based on desk study data and incidental observations. Any requirement for further survey work outside of the Solar PV Site will be reviewed to inform the ES.
- 7.3.18 A Phase 1 Habitat survey was completed of the Solar PV Site following the standard JNCC method (Ref. 7-44) which, in summary, comprises a walkover to record the broad habitat types within the Solar PV Site and up to 50 m beyond, where accessible or viewable from within the Solar PV Site. The survey also included a condition assessment within the appropriate seasonal period. This will inform the Net Benefits for Biodiversity Assessment provided with the ES.
- 7.3.19 The Phase 1 Habitat included an assessment of the terrestrial habitats likely to support protected species and, in combination with the desk study, inform field surveys for protected or notable species and notable habitats, as presented in Table 7-6.
- 7.3.20 Aquatic scoping (walkover) surveys were completed to assess the quality of targeted aquatic habitats (watercourses and ditches) within the PEIR Boundary where potential impacts were considered likely. These surveys were used to assess the potential for waterbodies to support protected or notable species and inform further survey work.
- 7.3.21 Table 7-6 presents details of the coverage, methods and survey periods (either carried out where completed or proposed) within the relevant Survey Areas based on the Solar PV Site only. The Survey Area will be extended to include areas of the wider PEIR Boundary following refinement of the Project to inform the ES.
- 7.3.22 Where surveys have been completed and data is available to inform the characterisation of the baseline in this chapter, this is identified in Table 7-6. Table 7-6 also identifies those remaining surveys that are still in progress or are planned for within the appropriate survey windows across the Solar PV Site. The data gathered from these surveys will be used to inform the assessment presented in the ES.

7.3.23 It is important to note that the extent of the Survey Area varies according to the ecological feature in question and with regards to the precautionary principle i.e. if there is doubt as to whether an area should be surveyed, it is included in the Survey Area. Accordingly, the Survey Areas used in this assessment ensured sufficient data were gathered to meet any design iterations which may change the likely Zol used to undertake the impact assessment.

**Table 7-6 Ongoing ecological surveys to characterise the baseline conditions**

Survey	Survey Method	Survey Area	Supporting Notes	Information Available for Inclusion within this PEIR?	Further Information Required for the ES?
Habitats: Phase 1 Habitat survey	Walkover survey recording the habitat types and boundary features present following the standard JNCC method (Ref. 7-44).	Within the Solar PV Site to a maximum of 50 m where viewable or access is permitted.	Using professional judgement, 50 m is an appropriate Survey Area for evaluating adjacent habitats and informing the potential presence, or otherwise, of protected species.	Yes, habitat information is included for the Solar PV Site surveyed between November 2022 and February 2024.	Yes, surveys are ongoing in 2024/2025. Surveys will extend into the wider PEIR Boundary ( <i>Cable Route Corridor &amp; Grid Connection Corridor</i> ) as appropriate.  Habitat Condition Assessment will inform NBB for the ES.
Hedgerows	Hedgerows will be surveyed in accordance with the methodology as outlined in Defra's Hedgerow Survey Handbook (Ref. 7-45) to assess their 'importance' against the Wildlife and Landscape Criteria, detailed in the Hedgerows Regulations (Ref. 7-4).	Within the Solar PV Site, covering those hedgerows that are identified as potentially important during the Phase 1 Habitat survey and will be impacted by the Project.	Dedicated hedgerow surveys are considered to be warranted only where potentially important hedgerows are directly impacted by the Project.  Hedgerows which are species-poor, as determined by the Phase 1 habitat surveys, will not be subject to detailed hedgerow surveys, as temporary effects on	No detailed survey information is available on the importance of hedgerows. However, this PEIR does include a preliminary assessment of the potential impacts on hedgerows, given their known presence within the Solar PV Site from the desk study and Phase 1 survey.	Yes, surveys are ongoing in 2024/2025. Surveys will extend into the wider PEIR Boundary ( <i>Cable Route Corridor &amp; Grid Connection Corridor</i> ) as appropriate.  A habitat condition assessment will also be undertaken to inform NBB for the Project.  Specific reference will be made where cloddiau (stone faced, earth banks, with or without hedgerow)

Survey	Survey Method	Survey Area	Supporting Notes	Information Available for Inclusion within this PEIR?	Further Information Required for the ES?
			low value habitats can be appropriately assessed and mitigated without the requirement for additional baseline data.		occur and their local importance.
National Vegetation Classification (NVC) survey	Habitats that are identified as potentially notable/species rich/ HoPI will be surveyed in accordance with the methodology set out in the NVC User's Handbook (Ref. 7-46) where potential impacts are identified.	Areas to be identified following the Phase 1 Habitat survey and where they will be impacted by the Project.	NVC surveys are considered to only be warranted where potentially important habitats are to be directly impacted by the Project.	No. Several habitats have been identified with potential notable/species rich/ HoPI, including but not limited to Purple Moor Grass and Rush Pasture and Open Mosaic on Previously Developed Land.	Yes, surveys are ongoing in 2024/2025.  Surveys will extend into the wider PEIR Boundary ( <i>Cable Route Corridor &amp; Grid Connection Corridor</i> ) as appropriate.
Bats – Daytime Bat Walkover	Structures and trees to be impacted or subject to disturbance (above existing levels) will be subject to a Daytime Bat Walkover (DBW) in accordance with The Bat Conservation Trust guidance (Ref. 7-47).	Trees and buildings within the Solar PV Site and likely to be impacted by the Project, where accessible.  The Survey Area will be extended up to 30m for areas where	The results will inform design and offset buffers to avoid direct effects upon potential roost sites. The DBW will form the basis of the scope for roost surveys (as detailed below).	No, further survey required to inform reporting.  Potential impacts on trees beyond the Solar PV areas, such as Cable Route corridor and within the wider PEIR Boundary.	Yes, surveys will be carried out in 2024/2025. Surveys will extend into the wider PEIR Boundary ( <i>Cable Route Corridor &amp; Grid Connection Corridor</i> ) as appropriate. .

Survey	Survey Method	Survey Area	Supporting Notes	Information Available for Inclusion within this PEIR?	Further Information Required for the ES?
		<p>permanent impacts are expected to occur due to the potential for longer-term impacts to roosting bats.</p>			
<p>Bats - Roosting</p>	<p>Trees screened in following the DBW will be subject to Ground-Level Tree Assessments (GLTA) and aerial tree inspections.</p> <p>Where Potential Roost Features (PRFs) are identified and cannot be fully inspected, cannot be climbed, and/or evidence of breeding is found, bat emergence surveys will be undertaken at dusk in accordance with survey guidance (Ref. 7-47).</p> <p>A Preliminary Roost Assessment (PRA) will be completed of any structures screened in</p>	<p>Features with bat roost suitability identified during the GLTA and PRA that will be directly impacted.</p>	<p>Wherever possible the Project will be designed to avoid trees and structures with potential PRF that have potential to support a bat roost.</p> <p>To determine appropriate mitigation, and licensing requirements, if necessary, where trees/buildings with confirmed/potential bat roosts cannot be entirely avoided.</p>	<p>No</p>	<p>Yes, surveys will be carried out in 2024/2025 for targeted areas of land. Surveys will extend into the wider PEIR Boundary (<i>Cable Route Corridor &amp; Grid Connection Corridor</i>) as appropriate.</p>

Survey	Survey Method	Survey Area	Supporting Notes	Information Available for Inclusion within this PEIR?	Further Information Required for the ES?
	following the DBW, followed by emergence surveys, as required.				
Bats - Foraging/ Commuting	Activity surveys will be completed where the Project has the potential to affect foraging and commuting bats (i.e. severance of linear features such as hedgerows). The methodology will be based upon published guidance (Ref. 7-47 and Ref. 7-48) to assess impacts of the Project on bat assemblages.	Targeted transect routes within the Solar PV Site to cover the range of habitats present.	Surveys will adopt a proportionate approach in line with Low habitat suitability given the low value habitats that will be affected, that limited changes in lighting are anticipated, and the avoidance of the removal of mature trees or other structures which may support roosting bats.  Avoidance of impacts to linear habitat features e.g. hedgerows/ watercourses can be secured via adoption of construction methods that seek to avoid these features and reduce the temporary effects (secured through	No	Yes, surveys are ongoing in Summer and Autumn of 2024.  Surveys will extend into the wider PEIR Boundary ( <i>Cable Route Corridor &amp; Grid Connection Corridor</i> ) as appropriate.



Survey	Survey Method	Survey Area	Supporting Notes	Information Available for Inclusion within this PEIR?	Further Information Required for the ES?
			CEMP) to a level that would not be significant.		
Badger <i>Meles meles</i>	A walkover survey, searching for signs of badger activity (such as setts and latrines), as described in the Mammal Society publication 'Surveying Badgers' (Ref. 7-49) and with reference to 'Surveying for Badgers: Good Practice Guidelines' (Ref. 7-50) in combination with the Phase 1 Habitat survey.	Within the Solar PV Site and to a maximum of 50 m from its boundary where viewable or access is permitted.	To determine appropriate mitigation either through avoidance of impacts on setts, or NRW licensing for sett closures where direct impacts cannot be avoided.  Pre-construction surveys for badger in areas where records of badger activity are identified will be committed to via the ES and within control documents such as the CEMP.	Yes, desk study and field survey (undertaken to date) records are provided.	Yes, surveys are ongoing in 2024/2025.  Surveys will extend into the wider PEIR Boundary ( <i>Cable Route Corridor &amp; Grid Connection Corridor</i> ) as appropriate.  Results will be reported as a confidential appendix within the ES, if present.
Riparian Mammal Survey	Watercourses and waterbodies will be subject to presence/absence surveys, looking for	Up to 500 m length of affected watercourses (250 m up and down stream of crossing	With reference to published guidance and using professional judgement, surveying riparian habitats up to	Yes, desk study data and survey data available for surveys undertaken on	Yes, surveys are ongoing in 2024/2025.

Survey	Survey Method	Survey Area	Supporting Notes	Information Available for Inclusion within this PEIR?	Further Information Required for the ES?
	<p>evidence of water vole (<i>Arvicola amphibius</i>) and otter (<i>Lutra lutra</i>) activity, following methods as described in 'Water Vole Conservation Handbook' (Ref. 7-51) and 'The Water Vole Mitigation Handbook' (Ref. 7-52), guidance in the 'New Rivers and Wildlife Handbook' (Ref. 7-53); the 'Ecology of European Otter' (Ref. 7-54).</p>	<p>point) where possible/appropriate. Access will be required to both banks and up to 10 m from the bank edge. Survey area may be extended up to 250 m from watercourses to search for otter holts where suitable habitat is present.</p>	<p>10 m is sufficient for the majority of watercourses to determine presence or absence of riparian mammals within, or adjacent to, watercourses as it covers the 10 m of avoidance around water vole burrows. The Survey Area was extended to investigate suitable terrestrial habitat for any potential otter holts, within 200 m of the watercourse</p>	<p>watercourses within the Solar PV Site.</p>	
<p>Red Squirrel <i>Sciurus vulgaris</i> Survey</p>	<p>Walkover survey and drey counts.</p>	<p>Suitable habitat for Red Squirrels within the Site Boundary that is potentially directly impacted by the Project.</p>	<p>With reference to published guidance (Ref. 7-55), the Survey Area provides sufficient information on Red Squirrel presence.</p>	<p>Yes, desk study and anecdotal sightings from Phase 1 habitat survey are included in this report. No dedicated surveys have been undertaken to date.</p>	<p>Yes, surveys to be carried out in 2024/2025. Surveys will extend into the wider PEIR Boundary (<i>Cable Route Corridor &amp; Grid Connection Corridor</i>) as appropriate.</p>

Survey	Survey Method	Survey Area	Supporting Notes	Information Available for Inclusion within this PEIR?	Further Information Required for the ES?
Ornithology - Breeding birds	<p>Surveys for breeding birds are based on a standard method for surveying breeding birds as detailed in 'Bird Monitoring Methods' (Ref. 7-56) and 'Bird Census Techniques' (Ref. 7-57) amended for five visits rather than ten given the wide extent of the of the Solar PV Site and broadly similar habitats present meaning that diversity of species would be lower than in mosaic habitats. Bird territories within the Site will be determined using standard territory mapping techniques to identify and isolate areas within which birds displayed consisted breeding behaviours.</p> <p>Birds observed only flying over the Site will</p>	<p>The Solar PV Site, up to a maximum of 50 m buffer where visible from the Site to record the general breeding bird assemblage. The Survey Area was increased to 200 m to record specially protected species (i.e. WCA Schedule 1 birds), viewed from inside the Solar PV Site boundary.</p>	<p>Standardised survey buffers for assessing the impacts of development on bird populations do not exist, however, the Survey Area provides information on the breeding birds within the area immediately surrounding the Solar PV Site and includes areas contiguous with the Site, where birds may potentially be adversely affected. Depending on the sensitivity of the species, birds occurring outside of the Survey Area may also be adversely affected (for example those listed on Schedule 1 of the WCA) and therefore where any such species are recorded beyond the 50 m</p>	<p>Yes, survey data is included for the areas surveyed up to July 2023.</p>	<p>Yes, surveys are ongoing in 2025.</p> <p>Surveys will extend into the wider PEIR Boundary (<i>Cable Route Corridor &amp; Grid Connection Corridor</i>) as appropriate.</p>

Survey	Survey Method	Survey Area	Supporting Notes	Information Available for Inclusion within this PEIR?	Further Information Required for the ES?
	also be recorded but will be discounted from territory analysis.		survey buffer (up to 200 m from the Site), these have also been recorded. However, the 50 m survey buffer is sufficient to determine the likely impacts of the Project on the majority of breeding bird species occurring or likely to occur in the area.		
Ornithology – wintering birds	Surveys for wintering birds use an adapted walkover survey method including frequent stopping points to view and observe bird behaviour, as detailed in 'Bird Monitoring Methods' (Ref. 7-56) and 'Bird Census Techniques' (Ref. 7-57).	Within the Site and up to a 100 m buffer where audio or visual detection of birds was possible.	Whilst standardised survey zones for assessing the impacts of development on bird populations do not exist, the Survey Area provides information on the wintering bird population within the area immediately surrounding and contiguous with the Solar PV Sites, where birds may potentially be adversely affected,	Yes, survey data is included for the areas that were surveyed up to March 2023.	Yes, a full assessment of non-breeding birds will be presented within the ES, following final surveys in January 2025.  Surveys will extend into the wider PEIR Boundary ( <i>Cable Route Corridor &amp; Grid Connection Corridor</i> ) as appropriate.

Survey	Survey Method	Survey Area	Supporting Notes	Information Available for Inclusion within this PEIR?	Further Information Required for the ES?
			<p>either directly or indirectly. Therefore, the Survey Area is sufficient to determine the likely impacts of the Project on wintering bird species occurring or likely to occur in the area.</p>		
<p>Ornithology - Greenland White-Fronted Goose <i>Anser albifrons flavirostris</i> Survey</p>	<p>Surveys comprise a combination of Vantage Point surveys, undertaken at dawn and dusk from two pre-selected vantage points allowing visibility across Llyn Alaw, and Driven Transect surveys, driven at a steady speed with regular stopping points to provide suitable visual coverage of the Survey Area. This approach was discussed with NRW and agreed in principle on a call in July 2024.</p>	<p>Targeted areas of the Site, where Greenland white-fronted goose has previously been recorded (identified through the desk study), and areas which offer the most suitable roosting and undisturbed foraging areas.</p>	<p>Whilst standardised survey zones for assessing the impacts of development on bird populations do not exist, the Survey Area provides information on any Greenland white fronted goose population that may be within the area immediately surrounding and contiguous with the Site, where Greenland white-fronted goose may potentially be adversely affected,</p>	<p>No</p>	<p>Yes, a full assessment of Greenland white-fronted goose will be presented within the ES, following final surveys in January 2025.</p>

Survey	Survey Method	Survey Area	Supporting Notes	Information Available for Inclusion within this PEIR?	Further Information Required for the ES?
			<p>either directly or indirectly. Therefore, the Survey Area is sufficient to determine the likely impacts of the Project on Greenland white-fronted goose occurring in the area.</p>		
<p>Ornithology - Whooper Swan <i>Cygnus cygnus</i> Survey</p>	<p>Surveys comprise a combination of Vantage Point surveys, undertaken at dawn and dusk from two pre-selected vantage points allowing visibility across Llyn Alaw, and Driven Transect surveys, driven at a steady speed with regular stopping points to provide suitable visual coverage of the Survey Area. This approach was discussed with NRW and agreed in principle on a call in July 2024.</p>	<p>Targeted areas of the Site which offer the most suitable roosting and undisturbed foraging areas. In combination with the Greenland white-fronted goose surveys.</p>	<p>Whilst standardised survey zones for assessing the impacts of development on bird populations do not exist, the Survey Area provides information on the whooper swan population within the area immediately surrounding and contiguous with the Site, where whooper swan may potentially be adversely affected, either directly or indirectly. Therefore, the Survey Area is sufficient to determine</p>	<p>No</p>	<p>Yes, a full assessment of whooper swan will be presented within the ES following completion of the surveys in January 2025.</p>

Survey	Survey Method	Survey Area	Supporting Notes	Information Available for Inclusion within this PEIR?	Further Information Required for the ES?
			the likely impacts of the Project on whooper swan occurring in the area.		
Ornithology - Chough <i>Pyrrhocorax pyrrhocorax</i> Survey	Surveys for wintering birds use an adapted walkover survey method including frequent stopping points to view and record the presence, location and behaviour of any chough, including any flyover records, as detailed in 'Bird Monitoring Methods' (Ref. 7-56) and 'Bird Census Techniques' (Ref. 7-57).	Targeted areas of the Site, where chough was recorded during the surveys for non-breeding birds and areas which were identified as providing suitable foraging habitat, and a 100 m buffer.	Whilst standardised survey zones for assessing the impacts of development on bird populations do not exist, the Survey Area provides information on the chough population within the area immediately surrounding and contiguous with the Site, where chough may potentially be adversely affected, either directly or indirectly. Therefore, the Survey Area is sufficient to determine the likely impacts of the Project on chough occurring in the area.	No	Yes, a full assessment of chough will be presented within the ES following completion of the surveys in January 2025.

Survey	Survey Method	Survey Area	Supporting Notes	Information Available for Inclusion within this PEIR?	Further Information Required for the ES?
Ornithology - Barn Owl <i>Tyto alba</i> Survey	A presence/absence survey will be conducted on all trees and buildings.	Within the Solar PV Site and up to a 100 m buffer as barn owls are highly mobile species and be present outside an area for breeding but still forage regularly within such area (where access can be obtained).	To determine appropriate mitigation, and licensing requirements, if necessary, where trees/buildings with confirmed/potential breeding or roosting barn owl cannot be entirely avoided.	No	Yes, surveys will be ongoing in 2024/2025.  Surveys will extend into the wider PEIR Boundary ( <i>Cable Route Corridor &amp; Grid Connection Corridor</i> ) as appropriate.
Reptiles - Presence/Absence Survey	Surveys of terrestrial habitats for reptiles to record species presence (or absence) using artificial refugia and observations of species in accordance with Froglife's Advice Sheet 10 (Ref. 7-58).  Two spring adder transects were completed within the Former Oil Depot on 09/05/24 and 21/05/24	Suitable habitat for reptiles (such as grassland, scattered scrub and field margins) within and adjacent to the Former Oil Depot that has potential to be directly impacted by the Project.	With reference to published guidance, the Survey Area provides sufficient information on reptile and amphibian presence within the Site, acknowledging that habitats that have the potential to be permanently impacted (i.e. lost) by the Project and potentially supporting reptiles are within this area.	Yes, desk study and transect data results are included in this report.  Artificial cover object surveys are planned for late summer 2024.	Yes, surveys are ongoing in 2024/2025.  Surveys will extend into the wider PEIR Boundary ( <i>Cable Route Corridor &amp; Grid Connection Corridor</i> ) as appropriate.



Survey	Survey Method	Survey Area	Supporting Notes	Information Available for Inclusion within this PEIR?	Further Information Required for the ES?
Great Crested Newt <i>Triturus cristatus</i> - Suitability Index (HSI)	An HSI of ponds in accordance with Oldham <i>et al.</i> , 2000 (Ref. 7-59) to evaluate the suitability of waterbodies and their potential to support GCN.	Within and up to 250 m from the Solar PV Site.	GCN typically utilise terrestrial habitat up to 500 m from their breeding ponds (Ref. 7-60).  For this Project, 250 m is considered an appropriate Survey Area, acknowledging the notable decrease in abundance of GCN beyond a distance of 250 m from a breeding pond (Ref. 7-61).	A total of 84 HSIs were completed within Survey Area in 2023/2024.	Yes, surveys will be ongoing in 2024/2025.  Surveys will extend into the wider PEIR Boundary ( <i>Cable Route Corridor &amp; Grid Connection Corridor</i> ) as appropriate.
GCN - eDNA Survey	eDNA surveys (using approved great crested newt eDNA kit suppliers), will be undertaken in accordance with the protocols as set out by Biggs <i>et al.</i> (Ref. 7-62) on suitable waterbodies.	Waterbodies located within and up to 250 m from the Site with HSI scores >0.43.	See above.	Yes, desk study data and survey data available for surveys undertaken on waterbodies within the Survey Area.	Yes, additional eDNA surveys will be carried out in 2025 to inform the ES.
GCN – Presence/Absence and Population	Up to 4 presence/absence surveys will be	Targeted waterbodies located within and up to 250 m from the	See above.	Yes, desk study data and survey data available for surveys	Yes, additional eDNA surveys will be carried out in 2025 to inform the ES.

Survey	Survey Method	Survey Area	Supporting Notes	Information Available for Inclusion within this PEIR?	Further Information Required for the ES?
Size Class Assessment	<p>undertaken on waterbodies positive for GCN eDNA, using bottle trapping, torch surveys, refugia searches and egg searches.</p> <p>An additional two surveys will be completed to inform a population size class assessment.</p> <p>Waterbodies included within waterbody clusters containing a positive eDNA result will be subject to two survey visits.</p>	<p>Solar PV Site, including waterbodies with positive eDNA results and waterbodies in pond clusters with positive eDNA results (refer to PEIR Volume II Appendix 7-3).</p>		<p>undertaken on waterbodies within the Survey Area.</p>	
Terrestrial invertebrates	<p>Sample-surveying by a specialist entomologist to appraise the broad level of terrestrial invertebrate interest within areas identified as being of high value to invertebrates to inform any required avoidance,</p>	<p>Suitable higher value habitat for invertebrates (such as grassland or margins) within the Solar PV Site that cannot be avoided by the Project.</p>	<p>Survey Area encompasses habitats that have the potential to be permanently impacted (i.e. recovery is either not possible or cannot be achieved within a reasonable timescale) by the Project and may</p>	<p>Yes, desk study data is presented in this report.</p> <p>Invertebrate survey results are not available for this report.</p>	<p>Yes, surveys are ongoing in 2024/2025.</p>

Survey	Survey Method	Survey Area	Supporting Notes	Information Available for Inclusion within this PEIR?	Further Information Required for the ES?
	mitigation or enhancement.		support notable terrestrial invertebrates or assemblages.		
Aquatic Ecology	A habitat condition assessment (Modular River Physical) survey (Ref. 7-63, Ref. 7-64) of watercourses and drain/ditches crossed by the Project will be undertaken, where non-open cut techniques are not possible.	Within the PEIR Boundary, focussed on points where the Project crosses watercourses.  Ponds will be scoped out of aquatic ecology as there will be no impacts to aquatic habitats/species in ponds.	Open-cut crossings have potential to directly affect the riverine habitat. The surveys will identify sensitive habitats and determine mitigation where required.	No, surveys have not yet been undertaken.	Yes, surveys are ongoing in 2024.
Fish	Aquatic ecology walkover surveys will be undertaken on watercourse crossings, where open-cut techniques are proposed (where this is known at the time of surveys, otherwise representative locations will be surveyed).	Watercourses and ditches that will be directly impacted by the Project.	Open-cut crossings have potential to damage and directly harm or mortality of fish species present in the channel, as well as their prey species. The walkover survey will identify the potential for any notable fish species to be present and will feed into the	Yes, desk study data are provided.	Yes, surveys are ongoing in 2024.

Survey	Survey Method	Survey Area	Supporting Notes	Information Available for Inclusion within this PEIR?	Further Information Required for the ES?
	Walkover surveys will be undertaken to assess the quality of aquatic habitats, including identifying any potential fish habitat. If required, fish habitat surveys will be undertaken.		design and mitigation required. Fish rescue may be required during construction if fish are found to be present.		
Aquatic Macroinvertebrates	Aquatic macroinvertebrate surveys are proposed on watercourse crossings, where open-cut techniques are proposed (where this is known at the time of surveys, otherwise representative locations will be surveyed). Surveys will be undertaken in accordance with standard guidance (Ref. 7-65).	Watercourses/ditches that will be directly impacted by the Project.	Open-cut crossings have potential to disturb the habitat of and directly harm or mortality of macroinvertebrate species present. The surveys will identify the potential for any notable macroinvertebrate species to be present and determine mitigation that will be required.	Yes, desk study data are provided. Surveys have been undertaken; however, analysis is incomplete.	Yes, surveys are ongoing in autumn 2024.
Aquatic Macrophytes	Aquatic macrophyte surveys are proposed on watercourse	Watercourses and ditches that will be	Open-cut crossings have potential to damage and directly	Yes, desk study data are provided.	Yes, surveys are ongoing in 2024.

Survey	Survey Method	Survey Area	Supporting Notes	Information Available for Inclusion within this PEIR?	Further Information Required for the ES?
	crossings, where open-cut techniques are proposed (where this is known at the time of surveys, otherwise representative locations will be surveyed). Surveys will be undertaken in accordance with standard guidance (Ref. 7-66).	directly impacted by the Project.	harm or mortality of macrophyte species present within the channel, as the channel will require draining during construction. The surveys will identify the potential for any notable macrophyte species to be present and determine mitigation that will be required.		
INNS	INNS species observations will be recorded when noted during other field surveys. Plants will include notes on location and extent.	N/A – incidental recording during field surveys to inform ES.	A walkover survey will be required pre-construction to inform appropriate biosecurity measures.	Yes, desk study and field survey (undertaken to date) records are provided.	Yes, field surveys are ongoing, and any incidental observations will be submitted with the ES.

## Impact Assessment Method

### *Approach*

- 7.3.24 The preliminary impact assessment, detailed in this chapter, has been carried out in accordance with good practice guidance for EclA, issued by CIEEM (the CIEEM Guidelines) entitled 'Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine' (Ref. 7-1) as summarised below:
- 7.3.25 The aims of the assessment are to:
- identify important ecological features (IEFs), such as designated sites protected habitats and species which may be impacted by the Project;
  - provide a scientifically rigorous and transparent assessment of the likely ecological impacts and resultant LSEs of the Project. Impacts and effects may be positive or negative;
  - facilitate scientifically rigorous and transparent determination of the LSEs of the Project in terms of national, regional and local policies relevant to nature conservation and biodiversity, where the level of detail provided is proportionate to the scale of the development and the complexity of its potential impacts; and,
  - set out what steps will be taken to adhere to legal requirements relating to the relevant ecological features concerned.
- 7.3.26 The principal steps involved in the CIEEM approach can be summarised as determining:
- ecological features that are both present and might be affected by the Project are identified (both those likely to be present at the time works begin and those predicted to be present at a set time in the future) through a combination of targeted desk-based study and field survey work to determine the relevant baseline conditions;
  - the importance of the identified ecological features, placing their relative nature conservation importance into geographic context, which is then used to define the relevant biodiversity features that need to be considered further;

- the changes or perturbations predicted to result as a consequence of the Project (i.e. the potential impacts) that could potentially affect relevant ecological features are identified and their nature described. Established best-practice, legislative requirements or other embedded design measures to minimise or avoid impacts are also described and taken into account;
- the likely effects (positive or negative) on relevant ecological features are then assessed and, where possible, quantified; and,
- measures to avoid or reduce any predicted significant effects, if possible are then developed in conjunction with other elements of the design (including mitigation for other environmental disciplines) and if necessary, measures to compensate for effects on features of nature conservation importance are also included.

7.3.27 Any residual effects of the Project are then presented. It is not necessary in the assessment to address all habitats and species with potential to occur in the relevant Study Areas and instead the focus is on those that are 'relevant' i.e. ecological features that are considered to be important and potentially affected by the Project. Efforts to safeguard wider biodiversity and requirements have been considered where appropriate. National and local policy documents emphasise the need to achieve net gains for nature and that a core principle for planning is that it should contribute to conserving and enhancing the natural environment and reducing pollution.

***Determining Importance***

7.3.28 To support a focussed assessment, there is a need to determine the scale at which the relevant ecological features identified through the desk studies and field surveys undertaken for the Project are of value. The value of each relevant ecological feature has been defined with reference to the geographical level at which it matters. This has been informed through relevant planning policy and legislation (see PEIR Volume III Appendix 7-1: Ecological Legislative Context and Policy) to demonstrate how the Project will comply with statutory requirements and policy objectives for biodiversity, in accordance with Section 4.3 of the CIEEM Guidelines (Ref. 7-1).

- 7.3.29 Species populations are valued on the basis of their size, recognised status (such as through published lists of species of conservation concern and designation of BAP status) and legal protection. For example, bird populations exceeding 1 % of published information on biogeographic populations are considered to be of International importance, those exceeding 1 % of published information of national populations are considered to be of National importance, and so on.
- 7.3.30 In assigning values to species populations, it is important to take into account the status of the species in terms of any legal protection. However, it is also important to consider other factors such as its distribution, rarity, population trends and the size of the population which would be affected. For example, whilst the GCN is protected as a European protected species under the relevant legislation and therefore conservation of the species is of significance at an International level, this does not mean that every population of GCN is internationally important. It is important to consider the particular population in its context. Therefore, in assigning values to species, the geographic scale at which they are important has been considered. The assessments of value rely on the professional opinion and judgement of experienced ecologists.
- 7.3.31 Plant communities are assessed in terms of their intrinsic value as well as the habitat they provide for protected species, which may be subject to additional protection. Due regard will also be paid to the legal protection afforded to species during the development of mitigation and compensation measures to be implemented for the Project. For European protected species, the Project is required to ensure the favourable conservation status of the species within their natural range.
- 7.3.32 For the purposes of the assessment within this chapter, only ecological features of at least Local importance are considered as IEFS that require assessment for potential significant effects. Whilst consideration of impacts at all geographic scales is important, features of less than Local importance (i.e. of Site importance) are common and widespread (therefore of no local value) and are not legally protected or included within local planning policy. The CIEEM guidelines (Ref. 7-1) make it clear that there is no need to “carry out detailed assessment of



ecological features that are sufficiently widespread, unthreatened and resilient to project impacts and will remain viable and sustainable”.

7.3.33 Assessing the value of features requires consideration of both existing and future predicted baseline conditions. Therefore, the description and valuation of ecological features takes account any likely changes, such as trends in the population size or distribution of species, likely changes to the extent of habitats and the effects of other Projects or land use changes, as explained in the ‘Future Baseline’ (no development) section of this PEIR.

7.3.34 A summary of the value (importance) of ecological features and the geographical frames of reference used for this assessment, based on Section 4.7 in the CIEEM Guidelines (Ref. 7-1), is presented in Table 7-7.

**Table 7-7 Summary of sensitivity of ecological feature, according to geographic context**

<b>Sensitivity (Value)</b>	<b>Geographic Frame of Reference</b>	<b>Examples</b>
Very High	International	Statutorily designated sites, such as Ramsar Sites, SAC, SPA, normally within the geographic area of Europe.
High	UK or National, but considering the potential for certain ecological features to be more notable (of higher value) in Wales, with context to Great Britain as a whole	Statutorily designated sites, such as an SSSI or NNR.  HoPI, considering factors such as size, distribution and the extent of the habitat which would be affected.  Priority Species occurring in numbers approaching that of national importance.
Medium/High	Regional (Anglesey)	Species, including Priority Species, occurring in numbers of greater geographical importance than within the County of Anglesey but does not reach the threshold to be of National Importance.
Medium	County and/or District	Non-statutory designated sites, such as LWS.  HoPI not representing a nationally important habitat, but recognised as a

Sensitivity (Value)	Geographic Frame of Reference	Examples
		Local BAP habitat which would or may fulfil the criteria for selection as a LWS. Species occurring in numbers approaching that of County or district importance.
Low	Local	Species of conservation interest e.g. Priority Species/Anglesey BAP species that contribute to the local biodiversity e.g. species that are of conservation value but are still common and widespread. Areas of habitat that do not meet criteria for selection as LWS in Anglesey but are considered to enrich the local area.
Negligible	Site	Species that are common and widespread and are not legally protected or included within local planning policy. Areas of habitat that are widespread and of no local value.

**Characterising Ecological Feature**

7.3.35 In accordance with Section 1.21 in the CIEEM guidelines (Ref. 7-1), the terminology used within the assessment draws a clear distinction between the terms ‘impact’ and ‘effect’. For the purposes of this chapter, these terms are defined as follows:

- Impact - actions resulting in changes to an ecological feature. For example, construction activities of a development removing a hedgerow.
- Effect - outcome resulting from an impact acting upon the conservation status or structure and function of an ecological feature e.g. the effects on a population of bats as a result of the loss of a bat roost.

7.3.36 When describing potential impacts (and, where relevant, the resultant effects) consideration will be given to the following characteristics likely to influence this (Sections 5.11 to 5.18 in the CIEEM guidelines):

- Positive/Negative – i.e. is the change likely to be in accordance with nature conservation objectives and policy:
  - Positive – a change that improves the quality of the environment, or halts or slows an existing decline in quality e.g. increasing the extent of a habitat of conservation value; or,
  - Negative – a change that reduces the quality of the environment, e.g. destruction of habitat.
- Spatial extent – the spatial or geographical area or distance over which the impact/effect may occur under a representative range of conditions.
- Magnitude – the ‘size’, ‘amount’ or ‘intensity’ and ‘volume’ of an impact - this is described on a quantitative basis where possible.
- Duration – the time over which an impact is expected to last prior to recovery or replacement of the resource or feature. Consideration will be given to how this duration relates to relevant ecological characteristics such as a species’ lifecycle. However, it is not always appropriate to report the duration of impacts in these terms. The duration of an effect may be longer than the duration of an activity or impact.
- Frequency and Timing – i.e. consideration of the point at which the impact occurs in relation to critical life-stages or seasons.
- Reversibility – i.e. is the impact temporary or permanent. A temporary impact is one from which recovery is possible or for which effective mitigation is both possible and enforceable. A permanent effect is one from which recovery is either not possible or cannot be achieved within a reasonable timescale (in the context of the feature being assessed).

7.3.37 Combined, these characteristics form the magnitude criteria for effects of the Project on IEFs as summarised in Table 7-8.

**Table 7-8 Magnitude criteria for effects**

Magnitude	Examples
High	Changes to the ecological feature pre-development (baseline) condition that almost always have an effect (positively or negatively) on its integrity or conservation status). Such changes may be long-term, permanent and/or irreversible.

Magnitude	Examples
Medium	Changes to the ecological feature baseline condition that in some circumstance may affect (positively or negatively) its integrity or conservation status. Although such changes may be long-term, they are potentially reversible.
Low	Changes on an ecological feature that do not usually affect the baseline condition and are often short-term and/or reversible.
Very Low	There is no noticeable change to the ecological feature baseline condition.

**Significance Criteria**

7.3.38 For each ecological feature, only those characteristics relevant to understanding the ecological effect and determining the significance will be described. The determination of the significance of effects has been made based on the predicted effect on the structure and function, or conservation status, of relevant ecological features, as follows:

- Not significant – no effect on structure and function, or conservation status.
- Significant – structure and function, or conservation status is affected.

7.3.39 The CIEEM guidelines state that effects should be determined as being significant when “an effect 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. A significant effect is an effect that is sufficiently important to require assessment and reporting so that the decision maker is adequately informed of the environmental consequences of permitting a project” ... “In broad terms, significant effects encompass impacts on structure and function of defined sites, habitats or ecosystems and the conservation status of habitats and species (including extent, abundance and distribution)”.

7.3.40 Based on this approach and using professional judgement, it is determined whether the effects will be significant or not on the structure and integrity of site,

ecosystems or conservation status of habitats and/or species of each ecological feature and the impact significance is determined at the appropriate geographical scale, as presented in Table 7-7.

7.3.41 There are a number of approaches for determining the significance of effects on ecological features. Whilst the CIEEM guidelines (Ref. 7-1) recommend the avoidance of the use of the matrix approach for categorisation (major, moderate and minor), in order to provide consistency of terminology within this PEIR, the terminology used in the CIEEM guidelines for impact assessment have been translated into the classification of effects scale, as outlined in Table 7-9, but still remain consistent with the CIEEM Guidelines. As a rule, major and moderate effects are considered to be significant, whilst minor and neutral/negligible effects are considered to be not significant. However, professional judgement will be applied, including taking account of whether the effect is permanent or temporary, its duration and frequency, whether it is reversible, and/or likelihood of occurrence. Within this chapter, ecological effects are only described as being either significant or not significant. The level of effect, as set out in Table 7-9, is not given this stage as the full ecological surveys and data analysis are not yet complete.

**Table 7-9 Significance criteria for effects**

<b>Effect Classification Terminology</b>	<b>Equivalent CIEEM Terminology</b>
Major beneficial (positive)	1) Beneficial effect on structure/function or conservation status at a regional, national or international level; and 2) The extent, magnitude, frequency, and/or timing of an impact positively affects the integrity or key characteristics of the resource.
Moderate beneficial (positive)	1) Beneficial effect on structure/function or conservation status at a County level; and 2) The extent, magnitude, frequency, and/or timing of an impact positively affects the integrity or key characteristics of the resource.
Minor beneficial (positive)	1) Beneficial effect on structure/function or conservation status at a local level; and

Effect Classification Terminology	Equivalent CIEEM Terminology
	2) The extent, magnitude, frequency, and/or timing of an impact does not affect the integrity or key characteristics of the resource.
Negligible	No effect on structure/function or conservation status.
Minor adverse (negative)	1) Adverse effect on structure/function or conservation status at a local level; and 2) The extent, magnitude, frequency, and/or timing of an impact does not affect the integrity or key characteristics of the resource.
Moderate adverse (negative)	1) Adverse effect on structure/function or conservation status at a County level; and 2) The extent, magnitude, frequency, and/or timing of an impact negatively affects the integrity or key characteristics of the resource.
Major adverse (negative)	1) Adverse effect on structure/function or conservation status at a regional, national or international level; and 2) The extent, magnitude, frequency, and/or timing of an impact negatively affects the integrity or key characteristics of the resource.

**Habitats Regulations Assessment**

7.3.42 It is necessary to consider whether the Project is likely to have a significant effect on areas that have been internationally designated for nature conservation purposes. This would include the European sites within 10km of the PEIR Boundary listed in Table 7-1 and Figure 7-1).

7.3.43 European sites are protected under the Conservation of Habitats and Species Regulations 2017 (as amended; relevant to England and Wales) (Ref. 7-9). The UK left the EU on 31 January 2020 under the terms set out in the European Union (Withdrawal Agreement) Act 2020 (“the Withdrawal Act”). However, the most recent amendments to the Habitats Regulations (the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (Ref. 7-9) make it clear that the need for Habitats Regulations Assessment (HRA) continues to apply. Including through the creation of a national site network within the UK comprising

the protected sites already designated under the EUs Natura 2000 ecological network, establishing management objectives of the national site network, imposing a duty for appropriate authorities to manage and adopt the network objectives, and arranging for reporting on the implementation of the Regulations given the UK no longer reports these to the EU.

- 7.3.44 Although the UK has departed the EU, any HRA for the Project will take account of relevant EU case law (for instance, the Holohan (Ref. 7-67) and People over Wind (Ref. 7-68) cases).
- 7.3.45 Whilst the HRA decisions must be taken by the competent authority (the SoS, informed by the recommendations of the appointed Examining Authority), the information needed to undertake the necessary assessments must be provided by the Applicant. The information needed for the competent authority to establish whether there are any LSEs from the Project and to assist in carrying out its Appropriate Assessment, will be provided in the HRA Report.
- 7.3.46 Stage 1 of the HRA process (Test of LSEs) will consider the potential pathways of effect between the Project and the European designated sites within 10 km of the PEIR Boundary (on the basis that it is unlikely that a Project such as this will affect sites further afield), and whether there is potential to have a significant adverse effect on the integrity of the European designated sites, either alone or in combination with other plans or projects. Potential pathways of effect currently include noise, light and visual disturbance during construction, pollution (via hydrological links to the designated sites) and dust emissions and loss/disturbance of functionally linked land used by qualifying bird species. Information used to support the HRA process will include desk study data and appropriate field surveys. Stage 1 will result in the preparation of a HRA Screening Report.
- 7.3.47 Where there is potential for the Project to have a LSE upon the qualifying features of the European designated sites, the Applicant will undertake a Stage 2 – Appropriate Assessment. At Appropriate Assessment, measures that will be implemented to either avoid the impact altogether, or mitigate the ecological effect to such an extent that it is no longer significant, will be set out.

7.3.48 The HRA will be prepared in line with Planning Inspectorate Advice Note 10 (Habitats Regulations Assessment) (Ref. 7-69) including completion of the necessary matrices. There would be a "Test of Likely Significant Effects Report" at the ES stage, and this will be updated as necessary for the DCO application including a report to inform Appropriate Assessment, if required.

***Net Benefit for Biodiversity***

7.3.49 Compliance with Planning Policy Wales (Ref. 7-26) requires that the Project should ensure net benefit for biodiversity and ecosystem resilience.

7.3.50 The Welsh Government and Natural Resources Wales (NRW) have yet to release guidance on how to undertake NBB assessments. With this in mind, it is proposed that the assessment for the Project will be carried out based on information released to date. This will include guidance such as the Environment Act (Ref. 7-16), NPS EN-1 (2023) (Ref. 7-23), the NPPF (Ref. 7-70), CIEEM's good practice guidance (Ref. 7-1), local planning policy and Welsh Government's Approach to Net Benefits for Biodiversity and the DECCA (Diversity, Extent, Condition, Connectivity and Aspects of ecosystem resilience) Framework (Ref. 7-71).

7.3.51 The policy requirement in Wales is the achievement of a net benefit, which will be evidenced through use of the Statutory Biodiversity Metric. Proposed mitigation will target like-for-like mitigation where suitable (i.e. any impacts to HoPI) but will also target wider conservation objectives. Enhancement measures will target qualitative holistic improvement noting the DECCA framework, focusing primarily on features within the Solar PV Site or wider PEIR Boundary.

7.3.52 A review of the ecological survey data relating to protected and notable species will be undertaken to inform the NBB assessment. With areas that support protected and notable species being mapped and used to highlight areas where species specific mitigation measures should be targeted and to highlight areas where populations of protected and notable species may be isolated due to poor connectivity across the landscape. Where connectivity across the landscape is limited, habitat enhancement and/or creation measures will be proposed to inform the design of the Project. An Ecological Mitigation and Enhancement Plan



(EMEP), specifying mitigation and enhancement measures in line with the NBB assessment, will be submitted with the DCO if required.

### **Assumptions and Limitations**

- 7.3.53 The preliminary assessment presented in this chapter reflects the information obtained and evaluated for the PEIR, and has referenced published data, records and web-based information obtained to date for the wider PEIR boundary. The majority of field surveys have been restricted to the Solar PV Site due to ongoing project updates. Therefore, areas within the Cable Route Corridor, Grid Connection Corridor and Highways Works Land have not yet been confirmed by field surveys (and are not presented in Figure 7-2-1: Phase 1 Habitat Map). Additional surveys will be undertaken to inform the ES.
- 7.3.54 The Project could be delivered in up to two phases. Under a single-phase construction programme, enabling works could start in Q4 2026, with anticipated construction phase expected to last for approximately 24 months. Under a two-phase construction programme the second phase would be constructed at a later date not later than 2037. It is anticipated that each of the construction phases under this scenario would be expected to last for approximately 24 months. Should the Project be constructed in up to two phases, this will not significantly change the results of the EIA with respect to flora, as the impact is not affected by the duration of activity but rather the change or loss of any habitats. The impact on fauna is likely to be similar if the construction period is phased, with respect to any habitat loss. However, a longer construction period could potentially result in the increased magnitude of certain impacts (e.g. prolonged noise disturbance). For the purposes of the assessment in the PEIR, the two-phase has been considered the worst-case scenarios due to the extended construction period. The duration of impacts will be considered in the assessment presented in the ES.
- 7.3.55 Habitat and species information referenced in the assessment has been collected from field surveys undertaken on land within and around the Solar PV Site between November 2022 to July 2024 where permission to access the land was obtained from landowners (see Table 7-6). Where any survey data is currently incomplete or limited (i.e. for the Highway works and Cable Route corridors), and

further work is required to inform the assessment, this is presented within Table 7-6. The preliminary assessment undertaken for this PEIR is therefore based upon a review of desk study data, aerial photography, and the field survey data collected in between November 2022 and July 2024. It is noted that although some field survey data has been collected, these are not complete datasets. As such, only preliminary data for habitats, great crested newt, ornithology and riparian mammals have been included for consideration in this PEIR. Complete datasets will be presented within the ES.

- 7.3.56 Since the Scoping Request (PEIR Volume III Appendix 2-1: EIA Scoping Request) was issued in November 2023, the design of the Project has evolved. Changes to the PEIR Boundary including incorporation of Maen Hir South 'A' and other minor boundary adjustments following the majority of appropriate seasonal windows had closed in 2023. Overwintering bird and habitat surveys were undertaken in Maen Hir South 'A' in February and March 2024. Further ecology surveys within the PEIR boundary will be undertaken within the appropriate survey windows, where required, in 2024 and 2025. Data from these surveys will inform the Ecology chapter for the ES that will accompany the DCO application.
- 7.3.57 The uncertainty associated with the alignment and route of the Grid Connection Corridor requires that ecological effects associated with its construction cannot be assessed in the PEIR but will be fully assessed in the ES.
- 7.3.58 The desk study search area was based on the PEIR Boundary included as part of the Project at the time of request. Due to ongoing design development the PEIR Boundary has undergone updates, including additional land for potential Highway Works, which have not been included within this reporting. As a result, some non-statutory designated sites and species records are located  $>/<$  2km from the PEIR Boundary. Figure 7-3 highlights current gaps between the requested 2 km desk study search area and the 2 km buffer of the updated PEIR boundary. These gaps only apply to data held by Cofnod, and an updated desk study will be undertaken and provided in the ES.

**Consultation**

7.3.59 Consultation with PINS and NRW is presented in PEIR Volume III Appendix 2-3: Scoping Opinion Response. In addition to the statutory consultation process, consultation has been undertaken to date to inform the development of the Project and ensure matters raised are addressed by the Applicant, details of which are presented in Table 7-10 below.

7.3.60 Engagement with consultees is ongoing and this section will be updated based on further consultation on the Project and matters raised by stakeholders, within the ES, submitted as part of the DCO application.

**Table 7-10 Additional consultation responses related to ecology**

Consultee	Summary of Consultation	How and Where Addressed in this PEIR
Natural Resources Wales (NRW)	<p>Call with NRW on Tuesday 23 April 2024 to agree great crested newt approach for desk study assessment and field survey.</p> <p>The importance of non-breeding ponds for GCN was highlighted. The rationale being that eDNA may not pick up non-breeding ponds for GCN, which still have value within the landscape.</p>	<p>Refer to Appendix 7-3 Great Crested Newt Report</p> <p>It was agreed that in addition to good practice survey guidelines, two traditional (i.e. presence/absence) surveys would be completed for ponds with negative eDNA results if they are located within a pond cluster with confirmed GCN.</p>
	<p>Call with NRW on Tuesday 23 April 2024 regarding otter and water vole for desk study assessment and field survey.</p> <p>Discussed recent In Practice article (Ref. 7-72) published by the Chartered Institute of Ecology and Environmental Management (CIEEM) reported that a European Protected Species Licence may be required to facilitate accurate otter holt monitoring.</p> <p>NRW did not include any guidance for water voles in relation to the Project during the consultation with AECOM.</p>	<p>Refer to Appendix 7-5 Riparian Mammal Report.</p> <p>No otter holts have been identified to date within the Solar PV site. Therefore, no actions are required at the time of writing. However, should an otter holt be identified following further investigation, AECOM will reevaluate this requirement.</p>

Consultee	Summary of Consultation	How and Where Addressed in this PEIR
	<p>Call with NRW on Friday 26 April 2023 to agree ornithology approach for desk study assessment and field survey.</p> <p>Further call with NRW on 26 June 2024 to discuss the latest findings regarding the additional survey effort undertaken and confirmed methods.</p>	<p>Refer to Appendix 7-4 Ornithology Report.</p> <p>Further surveys were scheduled to ensure that additional effort had been targeted for the potential presence of chough <i>Pyrrhocorax pyrrhocorax</i>, Greenland white fronted goose <i>Anser albifrons flavirostris</i>, whooper swan <i>Cygnus cygnus</i> and barn owl <i>Tyto alba</i>.</p> <p>Additional sources of desktop data were discussed, which will be available to inform the ES.</p>

## 7.4 Embedded Mitigation

### Overview

- 7.4.1 A summary of the embedded mitigation measures for the Project to minimise effects on ecology and biodiversity is presented below. These measures are provided based on the baseline conditions known at the time of reporting and are not intended to be definitive.
- 7.4.2 The ongoing baseline surveys may record further IEFs which will need further consideration in the Project design and, if required, mitigation will be further refined, as appropriate, should forthcoming baseline data suggest it is required. The nature of any further appropriate mitigation will be informed by the baseline surveys and incorporated into the Project design submitted with the DCO application.
- 7.4.3 The Project has integrated appropriate habitat areas for such species into the Project design at an early stage, including areas of land without Solar PV Arrays where management can be targeted at such species. However, the specifics and quantity of any such mitigation will be informed by the ongoing baseline surveys and appropriate mitigation incorporated into the Project design submitted with the DCO Application.

## Design

### **Habitat Avoidance**

7.4.4 The Project has been designed so that impacts upon important habitats (comprising woodland, grassland, hedgerows, watercourses/ditches and ponds) are avoided or reduced, where reasonably practicable. Accordingly, the following offsets from key habitat features which are set out in Appendix 5-1 will be implemented:

- All woodland - at least 15 m (increased to at least 20 m for ancient woodland);
- Veteran trees - 15x stem diameter, protected by clearly defined root protection areas, concordant with the requirements for each individual tree, in line with British Standard BS 5837: Trees in relation to design, demolition and construction - Recommendations (Ref. 7-73);
- Hedgerows and cloddiau - at least 10 m;
- Watercourses (standing and running) (where practicable and open trenching is not required during construction) - at least 10 m from the bank-top of the watercourse;
- Dry ditches - at least 6 m from boundary fence or from infrastructure if within the Solar PV Site;
- Ponds – 10 m + professional judgement for connectivity or features of conservation value for GCN, i.e. hibernacula;
- Llyn Alaw Reservoir - at least 50 m from the edge of the Reservoir (exact distance to be determined upon completion of surveys); and
- Statutory and Local Wildlife Sites - at least 20 m.
- Rocky outcrops - bespoke minimum 5m elevation buffer from the highpoint of each rock exposure.

7.4.5 The buffers/offsets will be a minimum and could be increased to deliver further mitigation or enhancements and/or respond to root protection areas where required.

***Habitat Re-instatement and Creation***

- 7.4.6 The design of the Project will seek to retain existing habitat where practicable, replace/reinstate habitat upon completion of construction works, and create new areas of habitat within the Mitigation and Enhancement Areas, including grassland and woodland. Gaps in defunct hedges (both in the Solar PV Site and where crossed by cabling) will be planted with suitable native species to improve the connectivity of habitats (e.g. woodland) within and adjacent to the PEIR Boundary.
- 7.4.7 New areas of tree planting around infrastructure are proposed to provide both screening from Project infrastructure and to improve habitat connectivity as well to increase the area of hedge/tree planting within the PEIR Boundary. Hedgerows and trees will be allowed to grow tall and wide where appropriate to provide maximum benefits for biodiversity. The operational phase of the Project, including possible shading implications, will be taken into consideration when specifying habitat creation/management. Figures 5-1 – 5-4: Parameter Plans sets out the proposed mitigation areas for habitat enhancement.
- 7.4.8 Habitat creation and enhancements have been included within the proposed design to increase the biodiversity of the Project. These will provide landscape-scale benefits for biodiversity through the increase in habitat availability and connectivity for a wide range of fauna.
- 7.4.9 Vegetation would be established through natural regeneration or in the case of grasslands from seed collection from the grasslands identified within the PEIR Boundary and through a suitable long-term habitat management regime. Consideration will be paid to microclimatic conditions when identifying appropriate species. Management will be undertaken in a variety of ways to ensure maximum biodiversity gains in line with NBB, with grassland managed by either low intensity grazing or infrequent hay cutting to allow plant species to flower and seed.
- 7.4.10 Post-construction, any temporary habitat loss within the PEIR Boundary (i.e. where there are temporary construction compounds) will be restored, where appropriate.

**Protected and notable species**

7.4.11 The following measures will be incorporated into the design of the Project to mitigate impacts and effects on protected and, or notable species, some of which have a direct relationship to the embedded mitigation measures for protected species that will be implemented prior to and/or during construction. These will include:

- Barn owl boxes will be erected as alternative roosting and nest sites within the Site where necessary. Alternative habitat (boxes) will be provided to compensate for the permanent loss of any confirmed breeding site where necessary;
- Rocky outcrop and surrounding short grassland areas will be kept free of solar panels where practicable to retain suitable foraging areas for chough during the winter.
- Bird boxes suitable for a wide range of species, including species of conservation concern, such as house sparrow *Passer domesticus* will be provided across the Solar PV Site where necessary;
- A range of suitable bat boxes will be provided across the Solar PV Site where necessary;
- Reptile and amphibian hibernacula/refuges will be provided on the Solar PV Site in shaded locations within 200 m of ponds where necessary; and,
- Where watercourses or ditches are to be culverted, the culvert will be designed to ensure continued fish passage by having a natural bed and no drop inlet or outlet. Culverts or culvert extensions will be as short as possible as described in PEIR Volume I Chapter 13: Water Resources.

**Watercourse Works and Works Adjacent to Watercourses**

7.4.12 The above mentioned 10 m watercourse offset is considered sufficient to avoid potential direct impacts to the river and species using them. This offset will protect riparian habitats and mitigate for potential hazards such as chemical and sediment spills into watercourses and avoid potential direct impacts to watercourses and any protected species that may use them. The CEMP will specify requirements for the safe storage of chemicals/other hazardous materials (e.g. fuel) to prevent

them reaching watercourses during flood events during construction. However, some crossing points are unavoidable and will be managed in the following ways.

- 7.4.13 Temporary construction access tracks will be designed to use existing crossing points over watercourses/ditches where practicable and the width of any new crossing will be reduced as far as practicable. Where small watercourses/ditches (not Main Rivers) are crossed for access (either temporarily during construction or permanently during operation and maintenance), new crossings will be clear-span and wide enough to avoid the loss of in-channel and riparian habitats.
- 7.4.14 Cabling will typically be buried underground in trenches at a maximum depth of 1.5m and up to 1.5m horizontal directional drilling (HDD). Where watercourses/ditches need to be crossed by non-trenched cabling works or open cut techniques are required, habitats that are temporarily lost will be reinstated after installation.
- 7.4.15 Permitted works on watercourses/rivers will be carried out in advance and at an appropriate time of year, where applicable, to avoid the closed period for fish spawning (i.e. 17 October to 15 May) and incidental harm to or mortality of fish. Where watercourses or ditches are to be culverted, the culvert will be designed to ensure continued fish passage by having a natural bed and no drop inlet or outlet. Culverts or culvert extensions will be as short as possible as described in PEIR Volume 1 Chapter 13: Water Resources. These measures will be clearly set out in the ES and outline Construction Environmental Management Plan (oCEMP).
- 7.4.16 An outline Surface Water Drainage Strategy (oSWDS) will be developed to manage surface water runoff during operation and maintenance and will reduce the likelihood and severity of potential pollution incidents and flooding affecting watercourses and the local ditch network to reduce or eliminate adverse effects for aquatic and riparian species and habitats. The oSWDS will be provided with the ES, with a detailed Surface Water Drainage Strategy to be prepared post-consent (as secured by DCO Requirement).
- 7.4.17 The temporary construction access tracks will likely be constructed of compacted stone or tarmac with excavation reduced as far as practicable. Where drainage is



required a ditch, or a swale, may be located downhill of the internal access track to control surface water run-off.

## **Construction**

### ***Protected Species***

- 7.4.18 Pre-construction checks for nesting birds listed under Schedule 1 of the WCA, especially barn owl, will be carried out where the Project intersects or passes close to suitable breeding habitats or known breeding locations for these species, and where the final package of mitigation cannot eliminate potential disturbance. Requirements for such surveys would be established at the DCO Application stage. If nesting Schedule 1 birds are found close to the works area, works within a stand-off around the nest may need to be suspended for the duration of the breeding period. The timing of this measure and size of the standoff would be species and site-specific.
- 7.4.19 Fish rescues will be required during the installation of culverts or other intrusive works to watercourse or ditches such as open-cut cables crossings, for example, where draw-down and over-pumping is required.
- 7.4.20 European Protected Species Mitigation Licences will be organised where applicable and effects are unavoidable.
- 7.4.21 A permanent perimeter fence will be implemented during the construction phase to secure the Solar PV Site and prevent construction activity in proximity to peripheral habitats and where necessary to secure retained habitats within the Solar PV Site. Clearances above ground or mammal gates will be included to permit the passage of wildlife where required.

### ***Wildlife Legislation Compliance***

- 7.4.22 To comply with relevant wildlife legislation, pre-construction surveys, such as for breeding birds, badger and/or bats (if roost features are impacted) will be carried out to support the baseline survey findings. The purpose of these pre-construction surveys is to ensure mitigation during the construction phase is based on the latest protected species and invasive non-native species information.
- 7.4.23 Where protected species are present within the Solar PV Site, Reasonable Avoidance Measures (RAMs) will be applied throughout the Project, including

appropriate buffers around any identified badger setts, or trees with bat roost potential. The implementation of measures to avoid animals being injured or killed within construction working areas, through exclusion, will prevent them falling into and becoming trapped in excavations.

- 7.4.24 Vegetation clearance will aim to be carried out in advance of construction and at an appropriate time of year (dependent on habitat) to avoid the nesting bird period (i.e. March to August inclusive) and incidental harm to or mortality of animals. Where vegetation clearance is required within the nesting bird period, the vegetation will be checked for the presence of nests by a suitably experienced ecologist, prior to removal. If active nests are found, appropriate buffer zones would be put in place and the area monitored until the young birds have fledged.
- 7.4.25 Checks for nesting birds listed under Schedule 1 of the WCA (Ref. 7-7), especially barn owl and whooper swan, will be carried out where the Project intersects or passes close to suitable breeding habitat or known breeding locations for these species, and where the proposed mitigation may not entirely eliminate the potential disturbance. If nesting Schedule 1 birds are found close to the works area, works within a stand-off around the nest may need to be suspended for the duration of the breeding period. The timing of this measure and size of the standoff would be species and site-specific.
- 7.4.26 Where required, mitigation strategies will be prepared for protected species. Where required, applications for species licences from NRW will be submitted in advance of works for the avoidance of killing/injury and relocation of animals away from construction areas sufficiently in advance of the works to meet with the optimum time for mitigation and to minimise any changes to the construction programme.

### **INNS**

- 7.4.27 Himalayan balsam and montbretia have been recorded within the Solar PV Site during the ongoing habitat surveys. The Desk study also identified six species of INNS within or adjacent to the wider PEIR Boundary, including, Canadian Waterweed, New Zealand pigmyweed, Japanese knotweed, Himalayan balsam, Pontic rhododendron and Japanese rose.

7.4.28 Pre-construction and decommissioning surveys will be carried out to provide an update on the presence and location of any INNS, the findings of which will inform the implementation of measures to prevent their further spread. This will include inclusion of biosecurity measures in the CEMP, LEMP and DEMP (secured through DCO Requirement) which will set out procedures to ensure that no invasive non-native species are brought onto the Site (e.g. WCA, 1981 (as amended) Schedule 9 species) (Ref. 7-7).

7.4.29 In the event that any future infestations of invasive non-native species are identified prior to and or during the development process, exclusion zones will be established around them, and a suitably experienced ecologist contacted for advice as required.

***Outline Construction Environmental Management Plan***

7.4.30 The oCEMP includes the standard embedded good practice measures that will be implemented during construction of the Project to mitigate construction-related effects on biodiversity associated with dust deposition, air pollution, pollution incidents, water quality, light, noise and vibration. The oCEMP will be refined for the ES and used as the basis for the Applicant to prepare a detailed (construction issue) oCEMP prior to construction once the Project design is further developed.

***Outline Soil Management Plan***

7.4.31 Measures to ensure the sustainable management of disturbed soil resources (and their associated seedbanks) will be based upon industry standard good practice measures such as those in Defra's Code of Practice (Ref. 7-74), ensuring that stored soils retain their quality and function. Additionally soils of different types or supporting different habitats will be stored separately and replaced in the area they were taken from so that the incorporated seedbank is not lost. These measures will be set out in the outline Soil Management Plan (oSMP) to be submitted with the DCO application. A detailed Soil Management Plan, secured through a Requirement of the DCO, will be prepared post-consent once the Project design is further developed.

***Security Perimeter Fencing***

- 7.4.32 Temporary Heras-style fencing (which does not impede the movement of small mammals) will be used to demarcate the working width of the Grid Connection Corridor. This fencing will also prevent construction activity in proximity to retained habitats (e.g. HoPI) and designated sites (e.g. LWS) within and adjacent to the Solar PV Site. Where required specific tree protection measures will be implemented, including fencing and construction exclusion zones.

***Construction Lighting***

- 7.4.33 During construction, works will be restricted to daylight hours wherever practicable to remove the need for artificial lighting. Where this is not possible, temporary/mobile construction lighting towers will be used where lighting is required. Task specific lighting may be required, in areas where natural lighting is unable to reach (sheltered/confined areas), and during core working hours within winter months.

- 7.4.34 Artificial lighting will be provided to maintain sufficient security and for health and safety reasons. Where lighting is required, it will conform to good practice guidelines (Ref. 7-75) with respect to minimising light spill into adjacent habitats and prevent disturbance to bats and other species, in so far as it is reasonably practicable. Measures could include:

- Lights installed will be of the minimum brightness and/or power rating capable of performing the desired function;
- Light fittings will be used that reduce the amount of light emitted above the horizontal (i.e. reduce upward lighting);
- Light fittings will be positioned correctly, inward facing and directed downwards;
- Direction of lights will seek to avoid spillage onto neighbouring properties, habitats, highways, or waterways;
- Passive Infra-Red (PIR) controlled lights (motion sensors) will be used except where temporary focussed task specific lighting is required; and
- Where horseshoe bats are present, additional lighting measures will be implemented to comply with best practice for horseshoe bats (Ref. 7-75).

**Operation, Maintenance and Replacement**

7.4.35 The Operational Phase of the Project is proposed to be 60 years. During the Operational Phase of the Project, onsite activities would include routine servicing, maintenance activities, management of vegetation and the replacement of equipment as and when required.

***Routine maintenance and servicing***

7.4.36 It is anticipated that there would be permanent staff based onsite for routine inspection and maintenance activities. Maintenance activity would vary due to any necessary repair or replacement of equipment. Indicative operational traffic flows are provided and assessed in Chapter 9: Transport. The ES will confirm the final likely operational traffic flows.

***Habitat Management***

7.4.37 Management will be carried out in a variety of ways to deliver biodiversity gains. A programme of monitoring will be established prior to operation and maintenance to ensure that biodiversity measures are implemented according to the oLEMP. The oLEMP will include targeted landscape and biodiversity mitigation that will be incorporated into the Project design. This will be an ongoing iterative process, using the mitigation hierarchy to avoid impacts, incorporating mitigation for those that cannot be avoided and incorporating opportunities for enhancement at the earliest possible stage.

7.4.38 Details of the habitat enhancement areas will be developed as the Project design evolves with further information to be provided in the ES. Vegetation enhancement could be established through natural regeneration or from suitable seed mixes and through a long-term habitat management regime. Consideration will be paid to microclimatic conditions when considering appropriate species.

7.4.39 The land underneath and around the PV Arrays would be managed through sheep grazing and/or mechanical cutting in order to maintain the field vegetation during the operational phase of the Project. The management of grassland habitats will be conducted in a manner that increases biodiversity value, with sensitive management regimes taking into account flora and fauna sensitivities, e.g. nesting birds and the presence of reptiles and amphibians. This will require the

implementation of a grazing management plan within the oLEMP, to ensure grassland habitats can be suitably managed.

- 7.4.40 Any required management of trees and hedgerows within the Project will be undertaken in accordance with legislative requirements associated with breeding birds e.g. carried out outside of the bird nesting season (typically March to August inclusive).

***Operational Lighting and Security***

- 7.4.41 During operation and maintenance of the Project there is no requirement for artificial lighting in areas of the PV Arrays other than during temporary periods of maintenance/repair. All routine maintenance activities, except PV Module cleaning (expected to be conducted annually), will be scheduled for daylight hours as far as is practicable and therefore it is anticipated that focussed task specific lighting should only be required in the event of emergency works/equipment failure requiring night-time working or early morning/late afternoon PV Module cleaning in winter. PV Module cleaning would be lit by tractor headlights, which is similar to arable harvesting currently undertaken within the Solar PV Site. Where lighting is required during operation and maintenance, it will conform to good practice guidelines with respect to minimising light spill into adjacent habitats and prevent disturbance to bats and other species.

- 7.4.42 CCTV cameras would use night-vision technology with a minimum 45m range, which would be monitored remotely and avoid the need for operational night-time lighting. For security, operational lighting would include Passive Infra-red Detector (PID) systems installed around the perimeter of the Project.

- 7.4.43 The lighting of the Project Substation would be in accordance with health and safety requirements. All lighting would seek to limit any impact on sensitive receptors.

***Security Perimeter Fencing***

- 7.4.44 A permanent perimeter fence will enclose the operational areas of the Solar PV Site. The fence is likely to be a 'deer fence' (wooden or metal posts with a wire mesh). The fence design will include gaps or suitable gates to allow mammals, such as hedgehog and badgers, to pass underneath at strategic locations whilst

remaining intact for livestock. The fences will be maintained during operation and maintenance of the Project.

**Replacement**

7.4.45 During operation of the Project, various infrastructure may require replacement based on their design life. It is not anticipated that wholesale replacement of the Project in one stage would be required; it would be programmed in stages. It is not possible to develop a fixed schedule of replacement at this stage in the process as it is not known which elements will need to be replaced at what time, but it is assumed that all components of the infrastructure will need to be replaced at some stage.

7.4.46 The ES will include further details of the replacement activities and appropriate management controls will be developed as part of the DCO Application. The outline Operational Environmental Management Plan (oOEMP) and outline Construction Traffic Management Plan (oCTMP) will include measures to control the potential adverse effects generated by replacement activities such as HGV traffic and noise.

7.4.47 Proposed offset to hedgerows, streams and other ecological parameters would remain intact during replacement and would therefore minimise any potential impacts to adjacent habitats or species.

**Decommissioning**

7.4.48 The future baseline conditions in 2088 are currently unknown and more difficult to predict given the time period. However, pre-decommissioning surveys will be undertaken to validate and, where necessary, update the baseline survey findings. The purpose of these surveys is to ensure mitigation during the decommissioning phase is based on the latest protected species information. This will also be required for any protected species licensing. The general principles to be followed in the decommissioning of the Project will include measures to mitigate likely significant decommissioning related effects on biodiversity. These will be formalised through the outline Decommissioning Environmental Management Plan (oDEMP) which will be submitted with the DCO application. Whilst the majority of mitigation measures will be similar to those during

construction (as outlined previously), monitoring conducted during the operation phase and decommissioning surveys will inform any mitigation and protected species licensing, as required at the time of decommissioning.

- 7.4.49 Decommissioning is anticipated to take approximately 6 to 12 months. During the Decommissioning Phase, all the solar infrastructure including PV Arrays, above ground cabling, inverters, Transformers, Switchgear, fencing, Ancillary Infrastructure, BESS and the Project Substation would be removed and recycled or disposed of in accordance with the legislation at the time of decommissioning. Underground cabling is anticipated to be decommissioned in situ. Any requirement to remove the Access Tracks would be discussed and agreed with the landowners at the time of decommissioning. If necessary, removal of Access Tracks would be consented separately.
- 7.4.50 Proposed offset to hedgerows, streams and other ecological parameters would remain intact during decommissioning and would therefore minimise any potential impacts to adjacent habitats or species.
- 7.4.51 On the completion of decommissioning, the Solar PV Site would subsequently be returned to the landowners' control. A detailed DEMP will be prepared and approved by the relevant authorities at the time of decommissioning, in advance of the commencement of decommissioning works.

## 7.5 Preliminary Assessment of Likely Significant Effects

### Potential Effects Prior to Implementation of Additional Mitigation

- 7.5.1 Prior to the implementation of additional mitigation, the Project has the potential to affect biodiversity (positively or negatively) during construction, operation and maintenance, and decommissioning.

#### **Construction**

- 7.5.2 Potential impacts on biodiversity features during construction of the Project in the absence of additional mitigation beyond the embedded mitigation measures are likely to include:

- Habitat loss or gain - direct impacts associated with changes in land use resulting from the Project, for example temporary works associated with



site clearance, and permanent operational land-take (mainly improved and semi-improved grassland) associated with the installation of the Project;

- Fragmentation of populations or habitats - indirect impacts due to the Project dividing a habitat, group of related habitats, site or ecological network, or the creation of partial or complete barriers (e.g. culverts) to the movement of species, with a consequent impairment of ecological function;
- Disturbance - indirect impacts resulting from a change in normal conditions (e.g. light, noise, vibration and human activity) that result in individuals or populations of species changing behaviour or range;
- Habitat degradation - direct or indirect impacts resulting in the reduction in the condition of a habitat and its suitability for some or all of the species it supports, for example changes in chemical water quality, increased sedimentation and dust deposition, or changes in surface flow or groundwater; and
- Introduction and/or spread of invasive non-native species, due to the movement of personnel, equipment and plant machinery, potentially facilitating the introduction of invasive non-native species.

### ***Operation, Maintenance and Replacement***

7.5.3 The potential effects of the operational phase are anticipated to be broadly similar to effects associate with construction phase, however aspects such as habitat loss will be minimal, as existing infrastructure can be utilised. Proposed offset to hedgerows, streams and other ecological parameters would remain intact during operation and would therefore minimise any potential disturbance impacts to adjacent habitats or species. For example, construction vehicles will use existing access tracks where practicable and activities such as piling would not be required.

7.5.4 Potential impacts on biodiversity features during operation and maintenance of the Solar PV Site in the absence of additional mitigation beyond the embedded mitigation measures are likely to include:

Negative impacts

- Potential avoidance of species using the Solar PV Site, such as bats and birds, due to the presence of the PV Array and indirect impacts through operational lighting of the Project Substation and BESS;
- Disturbance of sensitive species during operation, maintenance and replacement activities;
- Fragmentation of habitats causing a barrier effect, e.g. due to fencing;
- Disturbance and displacement of aquatic fauna, especially fish, from Electromagnetic Fields (EMF); and
- Potential displacement of bats or birds due to the presence of PV Arrays.

Beneficial Impacts

- Increase in permanent habitat of greater floristic diversity than improved/semi-improved (agricultural) grassland, increasing invertebrate assemblages and abundance;
- Increased connectivity through planting of trees and hedgerows;
- Potential enhanced nesting and foraging habitats for farmland birds, small mammals, amphibians and reptiles, within undeveloped fields margins;
- Potential attraction and increases in species foraging around the Solar PV Site, such as bats and birds, from increases in prey items (i.e. flying insects);
- Potential increases in abundance and distribution of species, due to lack of human disturbance and changes in habitat (such as agricultural practices) within the Site; and,
- Potential indirect beneficial impacts through a possible reduction of agricultural chemical inputs to watercourses/reduction in pesticide use on crops within the local area resulting in an increase in invertebrate abundance and diversity.

***Decommissioning***

7.5.5 The potential effects of the decommissioning phase are anticipated to be broadly similar to effects associate with construction phase, however aspects such as habitat loss will be minimal, as existing infrastructure can be utilised. Proposed

offset to hedgerows, streams and other ecological parameters would remain intact during decommissioning and would therefore minimise any potential disturbance impacts to adjacent habitats or species. For example, construction vehicles will use existing access tracks where practicable and activities such as piling would not be required. Effects during the decommissioning phase would need to be informed by updated surveys. These surveys will be carried out within appropriate survey seasons, approximately one year prior to decommissioning and the legislation and policy background at that point in time will be used to inform the necessary mitigation to be set out in an appropriate document. These measures will be set out in oDEMP.

### **Screening for Potential Impacts and Effects**

- 7.5.6 An initial screening of the potential effects to arise from the construction, operation, and decommissioning phases of the Project on the IEFs identified in Table 7-5 is provided in Table 7-11 and Table 7-12, to identify the potential impacts pathways likely to require further detailed assessment.
- 7.5.7 This initial screening is based on the characterisation of the baseline conditions known to date, in the absence of any additional mitigation beyond the embedded mitigation measures already incorporated into the Project. As such, the 'worst case assessment' is reflective of the current baseline information held and associated professional judgement applied to the assessment of effects.
- 7.5.8 The further surveys identified in Table 7-6 may identify additional IEFs to those presented in Table 7-5. In addition, once the baseline conditions and detail of the oLEMP and oOEMP are fully defined, it is likely that there will be a number of additional beneficial effects on IEFs to that presented in this PEIR, including benefits from a change in land management away from intensive agriculture (including the use of pesticides and fertilisers) to permanent low input grasslands and sympathetically managed boundary features e.g. hedgerows.
- 7.5.9 Accordingly, where the current characterisation of the baseline and assessment have identified that potential or reasonable likely presence of an IEF, but this is either non confirmed or the extent of any presence fully established yet, Table 7-11 and Table 7-12 set out how the Project has either already embedded

mitigation to avoid a potential effect occurring or identifies whether further additional mitigation may be required (subject to outcomes of detailed surveys confirmed there is in fact an IEF which may be affected).

***Statutory and Non-Statutory Designated Sites for their Biodiversity Value***

- 7.5.10 The statutory and non-statutory designated sites that have been assessed, based on the baseline data identified during the desk study, are presented in Table 7-11. Where there is the potential for effects to occur on designated sites this is stated, and the relevant receptors assessed further on in this PEIR (as presented in Table 7-13) to determine the significance of that effect.
- 7.5.11 Any impacts associated with an increase of traffic through construction vehicles, such as through water quality, air quality, lighting or visual will be considered in the Effect Interactions section of the ES and will be assessed as part of the HRA submitted with the ES as part of the DCO application.
- 7.5.12 Unless stated otherwise, during operation of the Project, any potential pathways that could affect retained habitats (e.g. habitat loss or disturbance to habitats (such as through water quality, dust or spread of INNS)), will be addressed through embedded mitigation. The potential effects of the decommissioning phase are anticipated to broadly align with that with effects associated with construction phase, however some aspects will have a less impact, as offsets will minimise disturbance and existing infrastructure can be utilised. Any impacts at the time of decommissioning would be mitigated fully in line with relevant legislative and policy requirements.

**Table 7-11 Preliminary assessment of potential impacts and effects on relevant ecological features - designated sites**

IEF	Importance (see Section 7.3 and Table 7-7)	Potential Impacts (see Section Table 7-8)	Potential for an effect to occur?
Corsydd Môn a Llyn/Anglesey and Llyn Fens Ramsar	Very High	<p>This Ramsar site is 0.26 km east of the PEIR Boundary. There are no ecological/hydrological connections to the site and an existing road which severs the areas between the PEIR Boundary and the Ramsar site.</p> <p>Given the distance between the PEIR Boundary and the SAC, there will be no habitat loss within the Ramsar; no fragmentation of habitats, or of populations of species using habitats and no mortality of any species associated with the site.</p> <p>Therefore, there are no impact pathways, either directly or indirectly, that would impact upon the integrity or functioning of the Ramsar site.</p>	No
Corsydd Mon/Anglesey Fens SAC	Very High	<p>Corsydd Mon/Anglesey Fens SAC is primarily designated for its fens and oligo-mesotrophic waters and supporting Geyers' whorl snail.</p> <p>The SAC is 0.34 km east of the proposed Highways Works Land. As the road is preexisting and buffered to the site by 0.34 km, there are no likely direct impacts or indirect ecological/hydrological connections to the site. There will be no predicted, habitat loss; fragmentation of habitats, or impact on the populations or individual species associated with the site.</p> <p>Therefore, there are no impact pathways, either directly or indirectly, that would impact upon the integrity or functioning of the SAC.</p>	No
Anglesey Terns/Morwenoliaid Ynys Môn SPA	Very High	<p>Anglesey Terns/Morwenoliaid Ynys Môn SPA is designated for supporting large populations of breeding terns.</p> <p>The SPA is located 1.32 km northeast of the proposed Highways Works Land and Maen Hir North. As the road is preexisting and buffered to the site by 1.32</p>	No

IEF	Importance (see Section 7.3 and Table 7-7)	Potential Impacts (see Section Table 7-8)	Potential for an effect to occur?
		<p>km, there are no likely direct impacts or indirect ecological/hydrological connections to the site. There will be no predicted, habitat loss; fragmentation of habitats, or impact on the populations or individual species associated with the site.</p> <p>Therefore, there are no impact pathways, either directly or indirectly, that would impact upon the integrity or functioning of the SPA.</p>	
North Anglesey Marine/Gogledd Môn Forol SAC	Very High	<p>North Anglesey Marine/Gogledd Môn Forol SAC is designated for supporting the harbour porpoise.</p> <p>The SAC is located 1.33 km north of proposed Highways Works Land. As the road is preexisting and buffered to the site by 1.33 km, there are no likely direct impacts or indirect ecological/hydrological connections to the site. There will be no predicted, habitat loss; fragmentation of habitats, or impact on the populations or individual species associated with the site.</p> <p>Therefore, there are no impact pathways, either directly or indirectly, that would impact upon the integrity or functioning of the SAC.</p>	No
Liverpool Bay/Bae Lerpwl (Wales) SPA	Very High	<p>Liverpool Bay/Bae Lerpwl (Wales) SPA is designated for supporting non-breeding red-throated diver, little gull and common scoter, and breeding common tern and little tern.</p> <p>The SPA is 4.10 km east of the proposed Highways Works Land. As the road is preexisting and buffered to the site by 4.10 km, there are no likely direct impacts or indirect ecological/hydrological connections to the site. There will be no predicted, habitat loss; fragmentation of habitats, or impact on the populations or individual species associated with the site.</p>	No

IEF	Importance (see Section 7.3 and Table 7-7)	Potential Impacts (see Section Table 7-8)	Potential for an effect to occur?
		Therefore, there are no impact pathways, either directly or indirectly, that would impact upon the integrity or functioning of the SPA.	
Glannau Ynys Gybi/Holy Island Coast SPA, SAC	Very High	<p><b>Construction and Decommissioning:</b></p> <p>Glannau Ynys Gybi/Holy Island Coast SPA, SAC is designated for supporting large breeding populations of chough (7% of the British population), peregrine, stonechat, skylark, linnnet and whitethroat.</p> <p>The SAC, SPA is located 8.23 km west of the proposed Highways Works Land. The species listed above are highly mobile species that may utilise foraging habitat beyond the boundary of the site. Notably chough forage within short grassland, associated with rocky outcrops. This habitat may be affected (both direct habitat loss and disturbance due to construction) by the installation of Solar PV, and potentially also within the Cable Route Corridor and Grid Connection Corridor. Displacement from foraging areas may impact on the birds survival rates particularly during periods of harsh weather.</p> <p>Any impact associated with increased traffic via construction vehicles, such as through water quality, air quality, lighting or visual will be assessed as part of the HRA submitted with the ES as part of the DCO application.</p>	Yes, Disturbance and impact on foraging and roosting habitat for mobile bird species such as chough during the non-breeding season.
		<p><b>Operation, Maintenance and Replacement:</b></p> <p>During operation and maintenance of the Project, there are no direct impacts (e.g. habitat loss) or indirect such as ecological/hydrological connections to designated site features which could affect the SAC / SPA. Due to the distance between the site and the Project there are no pathways (such as through noise, water quality, air quality, lighting or visual) which could affect the site.</p> <p>However, the operation and decommissioning of the Project has the potential to impact foraging habitat for associated mobile bird species, whose habitat</p>	Yes, Disturbance and impact on foraging habitat for mobile bird species such as chough.

IEF	Importance (see Section 7.3 and Table 7-7)	Potential Impacts (see Section Table 7-8)	Potential for an effect to occur?
		<p>extends beyond the boundary of the site. The potential loss of foraging habitat (Solar PV areas) will be similar to the extent impacted by construction. Indirect effects, such as disturbance and noise would generally be less frequent than construction but may peak during periods of replacement works.</p>	
<p>Traeth Lafan/Lavan Sands, Conway Bay SAC / SPA</p>	<p>Very High</p>	<p>Traeth Lafan/Lavan Sands, Conway Bay SAC, SPA supports 1.4% of the British population of wintering oystercatcher, and other wildfowl species.</p> <p>The SAC, SPA is located 14.83 km southeast of the proposed Highways Works Land. Oystercatchers display high wintering site fidelity (Ref. 7-77), and the Project is at a sufficient distance that populations associated with the SAC, SPA are unlikely to utilise any foraging habitat present.</p> <p>There will be no predicted habitat loss; fragmentation of habitats or impacts on the populations or individual species associated with the site.</p> <p>Therefore, there are no impact pathways, either directly or indirectly, that would impact upon the integrity or functioning of the SAC / SPA.</p>	<p>No</p>
<p>Glynllifon SAC</p>	<p>Very High</p>	<p>Glynllifon SAC is a woodland designated for supporting 6% of the British population of lesser horseshoe bats, as both a maternity and hibernation site.</p> <p>The SAC is 19.23 km south of the proposed Highways Works Land and 24.83 km south of the Solar PV Site. Lesser horseshoe have a typical core sustenance zone of 2 km (Ref. 7-76). As the road is preexisting and buffered to the site by 19.23 km, and further separated by the A55, there are no likely direct impacts or indirect ecological/hydrological connections to the site. There will be no predicted, habitat loss; fragmentation of habitats, or impact on the populations or individual species associated with the site. Therefore, there are no impact pathways, either directly or indirectly, that would impact upon the integrity or functioning of the SAC.</p>	<p>No</p>



IEF	Importance (see Section 7.3 and Table 7-7)	Potential Impacts (see Section Table 7-8)	Potential for an effect to occur?
Cors Bodwrog SSSI	High	<p><b>Construction and Decommissioning:</b></p> <p>Cors Bodwrog SSSI is predominantly designated for its mesotrophic mire habitat and its associated invertebrate and ornithological assemblage.</p> <p>The Cors Bodwrog SSSI is 1.6 km from the proposed Highways Works Land. There will be no predicted, habitat loss; fragmentation of habitats, or impact on the populations or individual species associated with the site. Therefore, there are no impact pathways, either directly or indirectly, that would impact upon the integrity or functioning of the SSSI.</p>	No
		<p><b>Operation, Maintenance and Replacement:</b></p> <p>During operation and maintenance of the Project, there are no direct impacts (e.g. habitat loss) or indirect such as ecological/hydrological connections which could affect features within Cors Bodwrog SSSI.</p>	No
Llyn Alaw SSSI	High	<p><b>Construction:</b></p> <p>Llyn Alaw SSSI is predominantly designated for ornithological interest and its associated wetland habitat.</p> <p>This SSSI is immediately adjacent to the PEIR Boundary along its western boundary to the reservoir shoreline. As a 50m offset buffer has been applied for any works adjacent to the SSSI boundary, the bird species and habitats associated with the lake will be suitably buffered from direct impacts associated with the Project construction.</p> <p>Whooper swans have been recorded using Llyn Alaw and surrounding areas for roosting and foraging in numbers approaching 1% of the British population (although not on a regular basis) and in autumn flocks of waders, in particular curlew <i>Numenius arquata</i>, lapwing <i>Vanellus vanellus</i> and golden plover</p>	<p>Yes, Hydrological impact on catchment effecting runoff characteristic and water quality entering the SSSI.</p> <p>Disturbance and impact on foraging and roosting habitat for mobile bird species such as whooper swans, curlew and golden plover – subject to PEIR Boundary refinement.</p>

IEF	Importance (see Section 7.3 and Table 7-7)	Potential Impacts (see Section Table 7-8)	Potential for an effect to occur?
		<p><i>Pluvialis apricaria</i> have been recorded. All of these are highly mobile species that may use foraging habitat beyond the boundary of the SSSI. Notably lapwing and golden plover will use improved and marshy grassland habitat, which could be impacted by both direct habitat loss and disturbance due to construction. Displacement from roosting and foraging areas may impact on the birds' survival rates particularly during periods of harsh weather.</p> <p><i>Potential Areas for BESS and Project Substation:</i></p> <p>One of two potential options for the BESS and Project Substation development is located 330 m from the SSSI boundary and has a hydrological connection via the drain/stream within the Maen Hir Central area. Although the stream would be retained, there is potential for a watercourse crossing point over the stream and approximately 3 ha of associated Marsh/marshy grassland habitat would be lost due to development in this location. The oCEMP will sufficiently address any pollution and erosion sediment control issues associated with construction in this location. However, the loss of this wetland habitat could impact the water quality entering the stream, by eliminating the filtering and attenuation capacity currently provided by the marshy grassland.</p>	
		<p><b>Operation, Maintenance and Replacement:</b></p> <p>During operation and maintenance of the Project, no direct habitat loss or indirect impacts, such as ecological/hydrological connections to designated site features which could affect Llyn Alaw SSSI, are anticipated. Due to the maintained 50m buffer to the SSSI boundary there are no pathways (such as through noise, water quality, air quality, lighting or visual) which could affect habitats within the SSSI site.</p>	<p>Yes</p> <p>Disturbance and impact on foraging habitat for mobile bird species such as whooper swans, curlew and golden plover.</p>

IEF	Importance (see Section 7.3 and Table 7-7)	Potential Impacts (see Section Table 7-8)	Potential for an effect to occur?
		<p>However, the operation of the Project has the potential to impact foraging habitat for associated mobile bird species, whose habitat extends beyond the boundary of the SSSI. The potential degradation of foraging and roosting habitat will be similar to the extent associated with construction effects. Indirect effects, such as disturbance and noise would generally be less frequent than construction but may peak during periods of replacement and decommissioning works.</p> <p><b>Decommissioning:</b> It should be possible to avoid any direct/indirect impact on the SSSI which will be outside of the developed areas through appropriate setbacks and embedded mitigation (e.g. pollution control). Measures to remove impacts to the Llyn Alaw SSSI during decommissioning will be included within the oDEMP, submitted with the ES as part of the DCO application.</p>	No
Y Werthyr SSSI	High	<p>Y Werthyr SSSI is predominantly designated for its mesotrophic valley mire habitat.</p> <p>The Y Werthyr SSSI is 0.12km east of the of the proposed Highways Works Land. As the road is preexisting and buffered to the site by 0.12km, there are no likely direct impacts or indirect ecological/hydrological connections to the site. There will be no predicted, habitat loss; fragmentation of habitats, or impact on the populations or individual species associated with the site.</p> <p>Therefore, there are no impact pathways, either directly or indirectly, that would impact upon the integrity or functioning of the SSSI.</p>	No
Mynydd Parys SSSI	High	Mynydd Parys SSSI is predominantly designated for its populations of rare lichen species and low atmospheric pollution.	No

IEF	Importance (see Section 7.3 and Table 7-7)	Potential Impacts (see Section Table 7-8)	Potential for an effect to occur?
		<p>The Mynydd Parys SSSI is 0.37 km northwest of the proposed Highways Works Land. As the road is preexisting and buffered to the site by 0.37 km, there are no likely direct impacts or indirect ecological/hydrological connections to the site. There will be no predicted habitat loss; fragmentation of habitats or impacts on the populations or individual species associated with the site.</p> <p>Therefore, there are no impact pathways, either directly or indirectly, that would impact upon the integrity or functioning of the SSSI.</p>	
Llyn Hafodol and Cors Clegyrog SSSI	High	<p>Llyn Hafodol and Cors Clegyrog SSSI is designated for its wetland basin habitat.</p> <p>The SSSI is 0.15 km north of Maen Hir Central. As the SSSI is buffered to the Site by 0.15 km, there are no likely direct impacts or indirect ecological/hydrological connections to the site. There will be no predicted habitat loss; fragmentation of habitats or impacts on the populations or individual species associated with the site.</p> <p>Therefore, there are no impact pathways, either directly or indirectly, that would impact upon the integrity or functioning of the SSSI.</p>	No
Cors Erddreiniog SSSI, NNR	High	<p>Cors Erddreiniog SSSI, NNR is predominantly designated for its calcareous valley mire and for supporting a number of notable invertebrates.</p> <p>The SSSI is 0.34km east of the proposed Highways Works Land. As the road is preexisting and buffered to the site by 0.34km, there are no likely direct impacts or indirect ecological/hydrological connections to the site. There will be no predicted, habitat loss; fragmentation of habitats, or impact on the populations or individual species associated with the site.</p>	No

IEF	Importance (see Section 7.3 and Table 7-7)	Potential Impacts (see Section Table 7-8)	Potential for an effect to occur?
		Therefore, there are no impact pathways, either directly or indirectly, that would impact upon the integrity or functioning of the SSSI.	
Salbri SSSI	High	<p>Salbri SSSI is predominantly designated for its acidic basin mire and supporting nationally uncommon bryophytes.</p> <p>The SSSI is 0.43 km north of Maen Hir Central. As the SSSI is buffered to the Site by 0.43 km, there are no likely direct impacts or indirect ecological/hydrological connections to the site. There will be no predicted habitat loss; fragmentation of habitats or impacts on the populations or individual species associated with the site.</p> <p>Therefore, there are no impact pathways, either directly or indirectly, that would impact upon the integrity or functioning of the SSSI.</p>	No
Tyddyn Gyrfer SSSI	High	<p>Tyddyn Gyrfer SSSI is designated for its fen meadow habitat associated with soligenous mire.</p> <p>The SSSI is 1.22 km north of the proposed Highways Works Land. As the road is preexisting and buffered to the site by 1.22 km, there are no likely direct impacts or indirect ecological/hydrological connections to the site. There will be no predicted habitat loss, fragmentation of habitats, or impact on the populations or individual species associated with the designated site.</p> <p>Therefore, there are no impact pathways, either directly or indirectly, that would impact upon the integrity or functioning of the SSSI.</p>	No
Tyddyn y Waen SSSI	High	<p>Tyddyn y Waen SSSI is designated for its fen meadow habitat ad associated soligenous mire.</p> <p>The SSSI is 0.86 km northeast of the proposed Highways Works Land. As the road is preexisting and buffered to the site by 0.86 km, there are no likely</p>	No

IEF	Importance (see Section 7.3 and Table 7-7)	Potential Impacts (see Section Table 7-8)	Potential for an effect to occur?
		<p>direct impacts or indirect ecological/hydrological connections to the site. There will be no predicted, habitat loss; fragmentation of habitats, or impact on the populations or individual species associated with the site.</p> <p>Therefore, there are no impact pathways, either directly or indirectly, that would impact upon the integrity or functioning of the SSSI.</p>	
Llyn Llywenan SSSI	High	<p>Llyn Llywenan SSSI supports a variety of overwintering wildfowl.</p> <p>The SSSI is located 2.69 km northwest of proposed Highways Works Land. As the road is preexisting and buffered to the site by 2.69 km, there are no likely direct impacts or indirect ecological/hydrological connections to the site. There will be no predicted, habitat loss; fragmentation of habitats, or impact on the populations or individual species associated with the site.</p> <p>Therefore, there are no impact pathways, either directly or indirectly, that would impact upon the integrity or functioning of the SSSI.</p>	No
Llyn Traffwll SSSI	High	<p>Llyn Traffwll SSSI supports overwintering wildfowl, notably shoveler whose numbers frequently represent more than 1% of the British total.</p> <p>The SSSI is located 3.82 km west of proposed Highways Works Land. As the road is preexisting and buffered to the site by 3.82 km, and further separated by the A55, there are no likely direct impacts or indirect ecological/hydrological connections to the site. There will be no predicted, habitat loss; fragmentation of habitats, or impact on the populations or individual species associated with the site.</p> <p>Therefore, there are no impact pathways, either directly or indirectly, that would impact upon the integrity or functioning of the SSSI.</p>	No

IEF	Importance (see Section 7.3 and Table 7-7)	Potential Impacts (see Section Table 7-8)	Potential for an effect to occur?
Llynnau y Fali - Valley Lakes SSSI	High	<p>Llynnau y Fali – Valley Lakes SSSI supports overwintering populations of shoveler, teal, tufted duck, pochard and goldeneye, and provides breeding habitat for a variety of wetland birds.</p> <p>The SSSI is located 5.11 km west of proposed Highways Works Land. As the road is preexisting and buffered to the site by 5.11 km, and further separated by the A55, there are no likely direct impacts or indirect ecological/hydrological connections to the site. There will be no predicted, habitat loss; fragmentation of habitats, or impact on the populations or individual species associated with the site.</p> <p>Therefore, there are no impact pathways, either directly or indirectly, that would impact upon the integrity or functioning of the SSSI.</p>	No
Llyn Maelog SSSI	High	<p>Llyn Maelog SSSI supports overwintering and breeding populations of wildfowl, particularly coot.</p> <p>The SSSI is located 5.44 km southwest of proposed Highways Works Land. As the road is preexisting and buffered to the site by 5.44 km, and further separated by the A55, there are no likely direct impacts or indirect ecological/hydrological connections to the site. There will be no predicted, habitat loss; fragmentation of habitats, or impact on the populations or individual species associated with the site.</p> <p>Therefore, there are no impact pathways, either directly or indirectly, that would impact upon the integrity or functioning of the SSSI.</p>	No
Nant y Pandy (The Dingle) LNR	High	<p>Nant y Pandy (The Dingle) LNR supports many bird species.</p> <p>The LNR is located 1.6 km east of proposed Highways Works Land. As the road is preexisting and buffered to the site by 1.6 km, there are no likely direct</p>	No

IEF	Importance (see Section 7.3 and Table 7-7)	Potential Impacts (see Section Table 7-8)	Potential for an effect to occur?
		<p>impacts or indirect ecological/hydrological connections to the site. There will be no predicted, habitat loss; fragmentation of habitats, or impact on the populations or individual species associated with the site.</p> <p>Therefore, there are no impact pathways, either directly or indirectly, that would impact upon the integrity or functioning of the LNR.</p>	
22 statutory designated sites (without mobile qualifying criteria) located greater than 2 km from the Site	High	<p>There are 22 statutory designated sites within the Study Area but further than 2 km from the Site that are not designated for mobile features.</p> <p>These sites are a sufficient distance from the Project that there are no potential impacts, due to the lack of mobile features associated with the sites.</p> <p>Therefore, there are no impact pathways, either directly or indirectly, that would impact upon the integrity or functioning of these sites.</p>	No
Coed Cae Mawr LWS	Medium	<p>Coed Cae Mawr LWS is designated for providing woodland habitat in an area where it is scarce.</p> <p>The LWS falls within the Cable Route Corridor land. As ancient woodland is being buffered by at least 20 m, habitats associated with the LWS will be suitably buffered from direct impacts associated with the Project construction. Embedded mitigation will ensure there is no impact on the integrity or functioning of the LWS. These standard environmental protection measures will be adopted during construction and formalised in the oCEMP, secured as part of the DCO Requirements.</p> <p>Therefore, there are no impact pathways, either directly or indirectly that would impact upon the integrity or functioning of this LWS.</p>	No



IEF	Importance (see Section 7.3 and Table 7-7)	Potential Impacts (see Section Table 7-8)	Potential for an effect to occur?
Mynydd Parys LWS	Medium	<p>Mynydd Parys LWS supports breeding stonechat, yellowhammer, whitethroat and wheatear.</p> <p>The LWS is directly adjacent (habitat within the roadside verge) (east) to the proposed Highways Works Land. The section of existing road may be subject to works, such as, road widening and hedgerow removal.</p>	Yes
Llyn Llaethdy LWS	Medium	<p>Llyn Llaethdy LWS provides foraging and feeding habitat for waders, wildfowl and birds of prey. Habitat largely lowland heathland and acid grassland</p> <p>The LWS is 0.04 km (northeast) to the proposed Highways Works Land. As the site is buffered by 0.04 km and as the road is preexisting, there are no likely direct impacts or indirect ecological/hydrological connections to the site. There will be no predicted, habitat loss; fragmentation of habitats, or impact on the populations or individual species associated with the site.</p>	No
Pyllau Pentrefelin - Dyffryn Adda LWS	Medium	<p>Pyllau Pentrefelin - Dyffryn Adda LWS is a series of lakes in various stages of the transition from open water to wet heathland.</p> <p>The LWS is 0.08 km from the proposed Highways Works Land. As the site is buffered by 0.08 km and as the road is preexisting, there are no likely direct impacts or indirect ecological/hydrological connections to the site. There will be no predicted, habitat loss; fragmentation of habitats, or impact on the populations or individual species associated with the site.</p>	No
18 non-statutory designated sites located greater than 100 m but	Medium	<p>There are 18 statutory designated sites within the Study Area, between 100 m and 2 km from the Site. All are predominantly designated for their habitat. There are no ecological connections or hydrological connections between these LWS and the Site.</p>	No

IEF	Importance (see Section 7.3 and Table 7-7)	Potential Impacts (see Section Table 7-8)	Potential for an effect to occur?
within 2 km of the Site		<p>These sites are a sufficient distance from the Project that there are no potential impacts on these sites. There will be no fragmentation of habitats, or of populations of species using habitats within any of these non-statutory sites during construction.</p> <p>Therefore, there are no impact pathways, either directly or indirectly, that would impact upon the integrity or functioning of these sites.</p>	

***Habitats and Species***

- 7.5.13 The relevant ecological features that have been identified to date (based on the desk study and field surveys) and therefore considered in this PEIR, are presented in Table 7-5. Where there is the potential for an effect to occur on known IEFs, then this is stated, and the relevant receptor assessed further on in this PEIR (as presented in Table 7-13) to determine the significance of that effect.
- 7.5.14 Where the current characterisation of the baseline and assessment have identified that potential or reasonable likely presence of an IEF, but this is either not confirmed or the extent of any presence fully established yet, Table 7-12 sets out how the Project has either embedded mitigation to avoid an effect occurring or whether further additional mitigation may be required, subject to outcomes of detailed surveys, to avoid and reduce an effect.
- 7.5.15 Unless otherwise stated, no surveys have been undertaken for the Cable Route Corridor or Grid Connection Corridor due to evolving design. These corridors may result in temporary/permanent habitat loss within the working width but will aim to avoid any effects on habitats and species. If surveys of the Cable Route Corridor identify habitat that could be impacted, measures will be taken to avoid and apply appropriate buffers to the habitat where possible.
- 7.5.16 Unless otherwise stated, during construction relating to the Highway Works, no surveys have been undertaken for the Highway Works due to evolving design. The Highway Works may result in habitat loss within the working width but will aim to avoid more valuable habitat.
- 7.5.17 Unless otherwise stated in Table 7-12, during operation, maintenance and replacement of the Project are anticipated to be broadly similar to those for construction. However, direct effects such as habitat loss are likely to be avoidable and impacts such as disturbance will be minimised through imbedded mitigation, e.g. proposed offsets. Any potential pathways that could affect retained habitats (e.g. habitat loss or disturbance to habitats (such as through noise, water quality, dust or spread of INNS)), will be addressed through embedded mitigation and any required maintenance/management of ecological features will be undertaken in accordance with the oLEMP that will be prepared in support of the ES and DCO

Application. Therefore, there are no impact pathways, either directly or indirectly, that would impact upon habitats or species during operation, maintenance and replacement of the Project.

- 7.5.18 Unless otherwise stated in Table 7-12, the potential effects of decommissioning of the Project are anticipated to be broadly similar to those for construction. However, direct effects such as habitat loss are likely to be minimal and impacts such as disturbance will be reduced through imbedded mitigation, e.g. proposed offsets. Any potential pathways that could affect retained habitats (e.g. habitat loss or disturbance to habitats (such as through noise, water quality, dust or spread of INNS)), will be addressed through embedded mitigation and any required maintenance/management of ecological features will be undertaken in accordance with the oDEMP that will be prepared in support of the ES and DCO Application. Therefore, there are no impact pathways, either directly or indirectly, that would impact upon habitats or species during decommissioning of the Project.

**Table 7-12 Preliminary assessment of potential impacts and effects on relevant ecological features - habitats and species**

IEF	Importance (see Section 7.3 and Table 7-7)	Potential Impacts (see Section Table 7-8)	Potential for an effect to occur?
<b>Habitats</b>			
(A.1.1.1) Broadleaved Woodland - Semi-Natural, including Ancient Woodland, (A1.1.2) – Broadleaved woodland – plantation, (A1.2.2) – Coniferous woodland – plantation, (A1.3.1) Mixed woodland – semi natural, and (A1.3.2) – Mixed woodland - plantation	Medium/High	<p><i>Solar PV Site:</i></p> <p>There are currently no proposed direct impacts on woodland habitat and no fragmentation of habitats.</p> <p>Embedded mitigation measures (see Section 7.4), include proposed 15 m buffers around all woodland, extended to 20 m for ancient woodland. The protection of retained habitats and pollution prevention will ensure no impact on the integrity or the functioning of woodland habitats.</p> <p><i>Cable Route Corridor &amp; Grid Connection Corridor:</i></p> <p>Ancient woodland is noted within the wider cabling route; however, this is likely to be avoidable.</p>	No
(A2.1) Dense/continuous scrub and Scattered Scrub	Low	<p><i>Solar PV Site:</i></p> <p>Scrub habitat was identified throughout the PEIR Boundary often associated with overgrown field boundaries and also prevalent along the disused railway line and throughout the Former Oil Depot (Fields 33, 34, 35, 36 and 37) in Maen Hir North. This location has been selected as the one of the potential locations for the BESS and Project Substation. If this location is developed, then significant areas of scrub habitat would be impacted by the Project, including direct habitat loss and disturbance.</p> <p>Embedded mitigation measures (see Embedded mitigation measures Section 7.4) include proposed buffers on woodland (15 m), hedgerows (10 m), ponds (10 m) and streams (10 m) and Mitigation and Enhancement areas where</p>	Yes

IEF	Importance (see Section 7.3 and Table 7-7)	Potential Impacts (see Section Table 7-8)	Potential for an effect to occur?
		<p>scrub habitat is prevalent. These buffers and mitigation areas will almost entirely protect scrub habitat where they coincide.</p> <p>However, potential construction within the Former Oil Depot Site and the disused Anglesey Central Railway would directly impact large areas of scrub habitat. The protection of retained habitats and pollution prevention will ensure no impact on the integrity or the functioning of scrub habitats through use of standard embedded mitigation measures (see Section 7.4).</p> <p><i>Cable Route Corridor &amp; Grid Connection Corridor:</i></p> <p>Scrub habitat is also likely to be affected with the wider cabling route.</p>	
(A3.1) Broadleaved Parkland /scattered trees and (A3.3) Mixed Parkland/Scattered trees including veteran or ancient trees	Low - Medium	<p><i>Solar PV site:</i></p> <p>Any veteran or ancient trees that are identified within the PEIR Boundary during ongoing ecological surveys in 2024/2025 will be retained and avoided. Embedded mitigation measures (see Section 7.4), include proposed 15 m buffers around veteran trees, extended to appropriately defined root protection areas where necessary. Embedded mitigation will include protection of retained habitats and pollution prevention to ensure the integrity of retained habitats is not adversely affected. Therefore, there are no impact pathways, either directly or indirectly, that would impact upon the integrity or functioning of woodland habitats.</p> <p>The vast majority of scattered trees are associated with hedgerows or areas of woodland and would therefore be included within proposed buffers for these features. In locations where hedgerows are unavoidable (temporary construction access tracks, Cable Route Corridor or Highways Works Land) there is potential that some trees will also be directly impacted.</p>	Yes
(B1.1) Acid Grassland	Medium	<i>Solar PV Site:</i>	No

IEF	Importance (see Section 7.3 and Table 7-7)	Potential Impacts (see Section Table 7-8)	Potential for an effect to occur?
		Acid grassland was recorded immediately adjacent to the Solar PV Site, to the west of Maen Hir North. No lowland acid grassland has been identified within the PEIR Boundary.	
(B2.2) Neutral grassland – semi-improved	Negligible	<p><i>Solar PV Site:</i></p> <p>Neutral grassland – semi-improved was identified in two distinct areas of the Project, in Maen Hir North, within the Former Oil Depot (fields 33, 34, 35, 36 and 37) and Maen Hir South ‘B’, where several small fields/portions of fields (fields 203, 224 and 238) would meet the criteria.</p> <p>Detailed surveys will be undertaken in spring/summer 2024/2025 to determine the value of grassland habitats, some of which have been identified during the initial Phase 1 assessment as semi-improved, which could be considered as lowland meadow, HoPI. These surveys will be used to inform whether specific mitigation is required and inform the evolution of the Project design.</p> <p>Embedded mitigation measures (see Section 7.4) will be formalised in the oCEMP and secured as part of the DCO requirements. This will include avoidance (where practicable) of HoPI, protection of retained habitats and pollution prevention to ensure the integrity of retained habitats is not adversely affected.</p> <p><i>Former Oil Depot Site:</i></p> <p>As noted above Neutral grassland – semi-improved was identified in the Former Oil Depot Site. This is a potential location for the BESS and Project Substation. If this area is developed then significant areas of Neutral grassland – semi-improved would be impacted by the Project, including direct habitat loss and disturbance.</p>	Yes

IEF	Importance (see Section 7.3 and Table 7-7)	Potential Impacts (see Section Table 7-8)	Potential for an effect to occur?
(B5) Marsh/marshy grassland	Medium	<p><i>Solar PV Site:</i></p> <p>Marsh/marshy grassland was identified across the Solar PV Site particularly in association with the Llyn Alaw catchment in Maen Hir Central and scattered throughout Maen Hir South 'A' and 'B'.</p> <p>Detailed surveys will be undertaken in spring/summer 2024 to determine the value of grassland habitats, most of which would qualify as purple moor grass and rush pasture HoPI. These surveys will be used to inform whether specific mitigation is required and inform the evolution of the Project design.</p> <p>Embedded mitigation measures (see Section 7.4) currently aim to avoid flood zones, where possible, which largely coincide with marsh/marshy grassland habitat. Embedded mitigation will be formalised in the oCEMP and secured as part of the DCO requirements. This will include avoidance (where practicable) of flood zones and HoPI, protection of retained habitats and pollution prevention to ensure the integrity of retained habitats is not adversely affected.</p> <p><i>Project Substation:</i></p> <p>As noted above, the marsh/marshy grassland was identified in Maen Hir Central, generally associated with the Llyn Alaw catchment. Fields 112, 113 and 114 are a potential location for the Project Substation. If this location is selected, significant areas of marsh/marshy grassland would be impacted by the Project, including direct habitat loss and disturbance.</p>	Yes
(D1) Heathland	High	<p><i>Solar PV Site:</i></p> <p>Heathland was recorded immediately adjacent to the Solar PV Site, to the west and east of Maen Hir North and Central. No heathland has been identified within the Solar PV Site.</p>	Possible where Highway Works pass through part of Mynydd Parys



IEF	Importance (see Section 7.3 and Table 7-7)	Potential Impacts (see Section Table 7-8)	Potential for an effect to occur?
		<p>Detailed surveys will be undertaken in spring/summer 2024/2025 to determine the extent and value of heathland, some of which is likely to be HoPI and Annex I European Protected Habitat. These surveys will be used to inform whether additional mitigation is required and inform the evolution of the Project design.</p> <p>Embedded mitigation measures (see Section 7.4) will be formalised in the oCEMP and secured as part of the DCO requirements. This will include avoidance (where practicable) of HoPI, protection of retained habitats and pollution prevention to ensure the integrity of retained habitats is not adversely affected.</p> <p>Measures will be taken to avoid and apply appropriate buffers to the habitat where possible.</p> <p><i>Highway Works:</i></p> <p>Notably the Highway Works passes through Mynydd Parys LWS, which contains heathland habitat, directly adjacent to the existing road.</p>	and Llyn Llaethdy LWS)
(E3) Fen and (F1) Swamp	Medium - High	<p><i>Solar PV Site:</i></p> <p>Fen and swamp were recorded immediately adjacent to the Solar PV Site, in association with Llyn Alaw shoreline along the western boundary of Maen Hir Central. No fen or swamp habitat have been identified within the Solar PV Site to date. Embedded mitigation includes a 50m buffer to Llyn Alaw which will protect this habitat from any adverse effects.</p> <p>Detailed surveys will be undertaken in spring/summer 2024/2025 to determine the extent and value of fen and swamp, which is likely to be HoPI. These surveys will be used to inform whether specific mitigation is required and inform the evolution of the Project design.</p>	No. Likely to be avoidable.

IEF	Importance (see Section 7.3 and Table 7-7)	Potential Impacts (see Section Table 7-8)	Potential for an effect to occur?
		<p>Embedded mitigation measures (see Section 7.4) will be formalised in the oCEMP and secured as part of the DCO requirements. This will include avoidance (where practicable) of HoPI, protection of retained habitats and pollution prevention to ensure the integrity of retained habitats is not adversely affected.</p> <p><i>Cable Route Corridor &amp; Grid Connection Corridor:</i></p> <p>One small area of fen habitat has been identified within the Cable Route Corridor. Due to the size of the fen habitat, and the width of the Cable Route Corridor in that location, it is highly likely that the habitat can be avoided.</p>	
(G1) Open water - Standing water (Ponds)	Medium	<p><i>Solar PV Site:</i></p> <p>Ponds were identified throughout the Solar PV Site. Embedded mitigation measures (see Section 7.4) include a proposed 10 m buffer around ponds and implementation of pollution prevention measures. This will avoid direct impacts to the ponds and afford protection to adjacent retained habitats, thus ensuring no impact on the integrity or the functioning of ponds.</p> <p><i>Highway Works:</i></p> <p>The Highways Works passes through Mynydd Parys and Llyn Llaethdy LWS, which contain ponds directly adjacent to the existing road. Embedded mitigation measures (see Section 7.4) include a proposed 10 m buffer around ponds and implementation of pollution prevention measures. This will avoid direct impacts to the ponds and afford protection to adjacent retained habitats, thus ensuring no impact on the integrity or the functioning of ponds.</p>	No. Likely to be avoidable.
(G2) Running water	Medium	<p><b>Construction and Decommissioning:</b></p> <p>This habitat is found throughout the PEIR Boundary including three main rivers: Afon Wygyr, Afon Alaw and Afon Cefni.</p>	Yes

IEF	Importance (see Section 7.3 and Table 7-7)	Potential Impacts (see Section Table 7-8)	Potential for an effect to occur?
		<p>There is the potential of temporary and permanent habitat loss/degradation, for example through the installation of culverts or other intrusive works to watercourse or ditches such as open-cut cables crossings, for example, where draw-down and over-pumping is required.</p> <p>There is potential for pollutant spills and surface runoff into the watercourses and these spills have the potential to adversely affect habitats and species associated with running water habitats. Standard environmental protection (see Embedded Mitigation Section 7.4) measures will be implemented and adopted during construction and formalised through the oCEMP. The final Project design has not been determined; however embedded Project buffers are likely to avoid significant effects.</p>	
		<p><b>Operation, Maintenance and Replacement:</b></p> <p>Surface runoff, panel cleaning, pollution incidents and flooding impacting habitats.</p> <p>The oSWDS will be developed to manage surface water runoff and will reduce the likelihood and severity of potential pollution incidents and flooding affecting watercourses and the local ditch network. This will reduce or eliminate adverse effects for aquatic and riparian species and habitats, including hydrologically connected designated sites. In addition, routine cleaning operations required for PV Modules will be undertaken using a tractor-mounted systems with a rotating 'car-wash' type brush. The cleaning water will not contain chemical cleaning products due to the risk of damage to PV Modules and therefore would not affect water quality or habitats within the Project.</p>	Yes

IEF	Importance (see Section 7.3 and Table 7-7)	Potential Impacts (see Section Table 7-8)	Potential for an effect to occur?
(I.1.2) Inland cliff – basic and (I1.4.2) Rock exposure – basic	Medium	<p><i>Solar PV Site:</i></p> <p>Rock exposure and cliffs were identified within the Maen Hir North area of the Solar PV Site. Embedded mitigation measures (see Section 7.4), includes a proposed bespoke minimum 5m elevation buffer from the highpoint of each rock exposure. The protection of retained habitats and pollution prevention will ensure no impact on the integrity or the functioning of rock exposure and cliffs through use of standard, Embedded mitigation measures (see Section 7.4).</p>	No
(J2.1.1) Intact hedge – native species-rich, (J2.1.2) intact hedge species-poor and (J2.3.2) intact hedge - with trees - species-poor, including Cloddiau and dry - stone walls	Medium	<p><i>Solar PV Site:</i></p> <p>Hedgerows are present across the Solar PV Site. Embedded mitigation measures (see Section 7.4), includes a proposed 10m buffer from existing hedgerows. The protection of retained habitats and pollution prevention will ensure no impact on the integrity or the functioning of hedgerows through use of standard embedded mitigation measures (see Section 7.4).</p> <p>However, crossing points are required for access, both upgrades to existing crossing points and new accesses. This will lead to some hedgerow loss due to visibility splay requirements.</p> <p><i>Cable Route Corridor &amp; Grid Connection Corridor:</i></p> <p>Cabling within the Cable Route Corridor will typically be underground in 1.5m depth and 1.5m width trenches. Cabling within the Grid Connection Corridor will be 2.5m in depth with a total working construction width of up to 20m. Horizontal directional drilling (HDD) will be used where possible to avoid hedgerows. The cabling routes will cross hedgerows and therefore some impacts are likely where construction access is required or where avoidance techniques such as HDD are not possible.</p>	Yes

IEF	Importance (see Section 7.3 and Table 7-7)	Potential Impacts (see Section Table 7-8)	Potential for an effect to occur?
		<p><i>Highway Works:</i></p> <p>Highway works are likely to require new access points, road widening and junction works to facilitate the safe movement of HGVs and AILs. Works are anticipated to only be required in specific locations; however, this may require some hedgerow removal.</p>	
(J4) Bare ground (Open Mosaic Habitats on Previously Developed Land)	Medium	<p><i>Solar PV Site:</i></p> <p>Open mosaic habitat was identified, in Maen Hir North, within the Former Oil Depot (fields 33, 34, 35, 36 and 37)</p> <p>Detailed surveys will be undertaken in spring/summer 2024/2025 to determine the value of grassland habitats, some of which have been identified during the initial Phase 1 assessment as open mosaic habitat, which could be considered a HoPI. These surveys will be used to inform whether specific mitigation is required and inform the evolution of the Project design.</p> <p>Embedded mitigation measures (see Section 7.4) will be formalised in the oCEMP and secured as part of the DCO requirements. This will include avoidance (where practicable) of HoPI, protection of retained habitats and pollution prevention to ensure the integrity of retained habitats is not adversely affected.</p> <p><i>Former Oil Depot:</i></p> <p>Open mosaic habitat was identified in the <i>Former Oil Depot Site</i>. This is a potential location for the BESS and Project Substation. If this location is selected, then areas of open mosaic habitat would be impacted by the Project, including direct habitat loss and disturbance.</p>	Yes
<b>Species</b>			

IEF	Importance (see Section 7.3 and Table 7-7)	Potential Impacts (see Section Table 7-8)	Potential for an effect to occur?
Bats – roosting	Up to Medium (depending on species)	<p><i>Solar PV Site:</i></p> <p>The Project will avoid the loss of features with bat roost suitability in so far as possible by retaining woodland, trees and hedgerows with trees, affording them a buffer zone to protect from disturbance. Embedded mitigation measures (see Section 7.4), include proposed 10 m buffer along hedgerows, 15 m buffers around all woodland, extended to 20 m for Ancient Woodland. These measures will minimise potential roost disturbance.</p> <p>Where construction works are undertaken within these buffer zones, there may be indirect impacts to roosts/potential roosts. However, these impacts would be avoided through use of a precautionary working method statement and the embedded mitigation measures presented in Section 7.4, to include protection of retained habitats, avoidance of important habitats to roosting bats, pre-construction checks and pollution prevention (including for lighting). These measures will ensure the integrity of retained habitats for roosting bats is not adversely affected and that there is no fragmentation of habitats or species assemblages. Consequently, indirect effects to habitats supporting bats during construction will be avoided.</p> <p>If the loss of a bat roost is unavoidable, a European Protected Species Mitigation Licence (EPSML) will be obtained from NRW, and suitable mitigation will be employed to ensure there is no mortality of bats caused by removing the roost. Alternative suitable roosting locations (e.g. bat boxes) will be provided to maintain the favourable conservation status of local bat populations.</p>	No

IEF	Importance (see Section 7.3 and Table 7-7)	Potential Impacts (see Section Table 7-8)	Potential for an effect to occur?
Bats – activity	Up to Medium (depending on species)	<p><b>Construction and Decommissioning:</b></p> <p><i>Solar PV Site:</i></p> <p>The construction of the Project will largely avoid impacts upon hedgerows, waterbodies and other boundary features, which will retain connectivity across the Site for commuting and foraging bats.</p> <p>Construction of the Project Substation may result in a long-term loss of high-quality bat foraging habitat, relative to the surrounding landscape. Impacts are anticipated to be higher within the open mosaic habitats of the Former Oil Depot.</p> <p>The Project introduces extensive areas for habitat enhancement in addition to the enhancement of improved grassland fields around the Solar PV arrays, and the creation of new open areas of species rich grassland and tree planting will enhance the PEIR Boundary for foraging bats.</p> <p>Embedded mitigation measures (see Section 7.4) which will be formalised in the oCEMP (secured as part of the DCO requirements) will include protection of retained habitats, avoidance and minimisation of impacts to important habitats for commuting and foraging bats (e.g. hedgerows) and pollution prevention (including for lighting). These measures will ensure the integrity of retained habitats for commuting and foraging bats is not adversely affected and that there is no fragmentation of habitats or species assemblages.</p> <p><i>Cable Route Corridor:</i></p> <p>No surveys have been undertaken for the Cable Route Corridor. The Cable Route Corridor may result in temporary habitat loss and severance of commuting corridors during construction. The embedded mitigation measures (see Section 7.4), including keeping the Cable Route Corridor to a width of</p>	Yes

IEF	Importance (see Section 7.3 and Table 7-7)	Potential Impacts (see Section Table 7-8)	Potential for an effect to occur?
		<p>5.5 m and affording a 10 m offset from hedgerows, significantly reducing the risk of severance.</p> <p>As such, there are no impact pathways, either directly or indirectly, that would negatively impact upon roosting bats as a result of the Cable Route Corridor.</p> <p><i>Grid Connection Corridor:</i></p> <p>No surveys have been undertaken for the Grid Connection Corridor. The grid connection corridor may result in temporary habitat loss and severance of commuting during construction. The embedded mitigation measures (see Section 7.4) for the Grid Connection Corridor include a maximum working footprint of 20m, which is large enough to pose a constraint to commuting bats, particularly if horseshoe bats are present, which would be significant at up to the County level.</p>	
		<p><b>Operation, Maintenance and Replacement:</b></p> <p>During operation of the Project, it is unlikely that there will be any additional habitat loss or disturbance to habitats (such as through noise, water quality, lighting or visual) that could affect commuting or foraging bats. Any maintenance of retained habitats potentially supporting commuting or foraging bats (such as hedgerows) is not expected.</p>	Yes
Badger	Low	<p>Pre-construction surveys will be undertaken to confirm the continued absence of badger setts within the footprint of the works. If any changes to badger distribution are identified, and setts have potential to be impacted by construction activities required to facilitate the Project, a licence for sett closure may be required from NRW. Mitigation measures will be updated accordingly to ensure no impact to badger or their setts.</p>	No



IEF	Importance (see Section 7.3 and Table 7-7)	Potential Impacts (see Section Table 7-8)	Potential for an effect to occur?
		Habitat loss will be minimised as far as possible, and embedded mitigation measures will be in place to ensure the continued integrity of retained habitats.	
Riparian mammals	Medium	<p><i>Solar PV Site:</i></p> <p>Embedded mitigation measures (see Section 7.4) include pollution prevention and control, trenchless crossings (where appropriate) and, where required, application for species licences from NRW for relocation of animals away from construction areas sufficiently in advance of the works to meet with the optimum time for mitigation and to minimise any changes to the construction programme.</p> <p>However, throughout the Solar PV Site, there may be temporary loss and fragmentation to habitat as well as disturbance as a result of construction activities where non-intrusive methods cannot be adopted.</p> <p>The Applicant will engage with NRW to determine the appropriate means of mitigating impacts to riparian mammals through the obtainment of a European Protected Species Mitigation Licenses which would include appropriate mitigation.</p>	Yes
Red squirrel	Medium	<p><i>Solar PV Site:</i></p> <p>There are currently no proposed direct impacts on red squirrel habitat (woodland) and no fragmentation of such habitats.</p> <p>Embedded mitigation measures (see Section 7.4), include proposed 15 m buffers around all woodland, extended to 20 m for Ancient Woodland, will minimise any disturbance. The protection of retained habitats and pollution prevention will ensure no impact on the integrity or the functioning of red squirrel habitats through use of standard environmental protection measures.</p>	No

IEF	Importance (see Section 7.3 and Table 7-7)	Potential Impacts (see Section Table 7-8)	Potential for an effect to occur?
		<p><i>Cable Route Corridor &amp; Grid Connection Corridor:</i></p> <p>Ancient Woodland is noted within the wider cabling route; however, this is avoidable.</p>	
Breeding Birds (general bird assemblage)		<p>During construction there is potential for direct habitat loss for field margins, scrub and hedgerows. There will be temporary disturbance to breeding birds during construction through visual and noise related impacts on retained habitats. There will be a loss of foraging habitat in grassland where the panels are to be constructed. Any vegetation to be removed will be scheduled for removal outside of the breeding season (March – September) to avoid destruction of active nests. Where this cannot be achieved and for small areas only which need to be removed during the breeding season an ornithologist will carry out a check for the presence of breeding birds prior to removal. Details regarding protection of the retained habitats, including pollution prevention controls and fencing measures, will be outlined in the oCEMP.</p>	Yes
Chough		<p><b>Construction and Decommissioning:</b></p> <p>During construction there is potential temporary disturbance to winter foraging habitat, notably rock exposure and associated short grassland.</p> <p>Rock exposure and cliffs were identified within the Maen Hir North area of the Solar PV site. Embedded mitigation measures (see Embedded mitigation measures Section 7.4), includes a proposed bespoke minimum 5m elevation buffer from the highpoint of each rock exposure.</p> <p>The buffering of these areas of retained winter foraging habitat will minimise disturbance. However, bespoke measures including grassland management</p>	Yes

IEF	Importance (see Section 7.3 and Table 7-7)	Potential Impacts (see Section Table 7-8)	Potential for an effect to occur?
		will be required to ensure integrity and continued utilisation of this habitat by foraging chough.	
		<p><b>Operation, Maintenance and Replacement:</b></p> <p>As above, additional mitigation measures will be required to ensure integrity and continued utilisation of this habitat by foraging chough.</p>	Yes
Greenland white-fronted goose		<p><b>Construction and Decommissioning:</b></p> <p><i>Solar PV Site</i></p> <p>Greenland white-fronted goose have not been recorded using the Solar PV Site to date during the field surveys. However, if they are identified there is potential for permanent loss of foraging and roosting habitat and construction disturbance (noise and visual) to foraging and roosting areas.</p> <p>Embedded mitigation measures (see Section 7.4), includes a 50 m offset buffer applied for any works adjacent to the Llyn Alaw SSSI boundary. Therefore, if the species is roosting on the reservoir they will be suitably buffered from direct impacts associated with the Project construction.</p> <p>Greenland white-fronted goose is a highly mobile species that may utilise foraging habitat throughout the Solar PV Site. Notably improved and marshy grassland habitat within the Solar PV Site.</p> <p>Displacement from roosting and foraging areas may impact on the birds' survival rates particularly during periods of harsh weather.</p>	Yes
		<p><b>Operation, Maintenance and Replacement:</b></p> <p>As above potential for permanent loss of foraging and roosting habitat.</p>	Yes

IEF	Importance (see Section 7.3 and Table 7-7)	Potential Impacts (see Section Table 7-8)	Potential for an effect to occur?
Whooper swan		<p><b>Construction and Decommissioning:</b></p> <p><i>Solar PV Site</i></p> <p>Whooper swans have been recorded foraging within the Solar PV Site (in Maen Hir Central and South). Therefore, there is potential for permanent loss of foraging and roosting habitat and temporary displacement due to construction disturbance (noise and visual) to foraging and roosting areas.</p> <p>Embedded mitigation measures (see Embedded mitigation measures Section 7.4), includes a 50m offset buffer applied for any works adjacent to the SSSI boundary. Therefore, the birds associated with roosting at Llyn Alaw will be suitably buffered from direct impacts associated with the Project construction.</p> <p>However, whooper swans are a highly mobile species that may utilise foraging habitat beyond the boundary of the SSSI. Notably improved and marshy grassland habitat within the Solar PV Site.</p> <p>Displacement from roosting and foraging areas may impact on the birds' survival rates particularly during periods of harsh weather.</p>	Yes
		<p><b>Operation, Maintenance and Replacement:</b></p> <p>As above potential for permanent loss of foraging and roosting habitat.</p>	Yes
Barn owl		<p><b>Construction and Decommissioning:</b></p> <p>During construction there is potential for direct habitat loss for field margins, scrub and hedgerows. There will be temporary disturbance to breeding birds during construction through visual and noise related impacts on retained habitats. There will be a loss of foraging habitat in grassland where the panels are to be constructed.</p>	Yes

IEF	Importance (see Section 7.3 and Table 7-7)	Potential Impacts (see Section Table 7-8)	Potential for an effect to occur?
		<p>Embedded mitigation measures (see Section 7.4), include proposed 10 m buffer along hedgerows, 15 m buffers around all woodland, extended to 20 m for Ancient Woodland. These measures will minimise loss and disturbance of key habitat features.</p>	
Wintering Birds		<p><b>Operation, Maintenance and Replacement:</b> Loss of foraging habitat used by birds if present.</p>	Yes
		<p><b>Construction and Decommissioning:</b> During construction there will be direct habitat loss of foraging areas in improved and semi-improved grassland, scrub and hedgerows. There will be temporary disturbance to wintering birds during construction through visual and noise related impacts on retained habitats. Details regarding protection of the retained habitats, including pollution prevention controls and fencing measures, will be outlined in the oCEMP.</p>	Yes
Reptiles	Low	<p><i>Solar PV Site:</i> Although no reptiles have been identified to date, suitable habitat has been identified and surveys are ongoing.  Habitats supportive of reptiles will be identified following completion of the surveys. Habitats with potential to support reptiles will be cleared, where</p>	Yes – pending further assessment
		<p><b>Operation, Maintenance and Replacement:</b> No habitat loss or degradation is anticipated during operation of the Project. Maintenance of retained habitats supporting wintering birds foraging will be undertaken at appropriate times of the year and this will be outlined in the oCEMP Therefore, no impacts on wintering birds are anticipated during operation and maintenance of the Project.</p>	No

IEF	Importance (see Section 7.3 and Table 7-7)	Potential Impacts (see Section Table 7-8)	Potential for an effect to occur?
		<p>necessary, in a sensitive manner to ensure that reptiles are displaced in adjacent retained, suitable habitat, and no mortality occurs as a result of construction activities.</p> <p>However, there is potential for construction of the Project to cause permanent and temporary damage and disturbance to reptile habitats.</p> <p>Details regarding protection of the retained habitats, including pollution prevention controls, will be outlined in the oCEMP.</p>	
Great crested newt	Medium	<p><i>Solar PV Site:</i></p> <p>During construction all breeding habitat will be retained and protected by buffers.</p> <p>Embedded mitigation measures (see Section 7.4) include the preparation of mitigation strategies for protected species and, where required, application for species licences from NRW for relocation of animals away from construction areas sufficiently in advance of the works to meet with the optimum time for mitigation and to minimise any changes to the construction programme.</p> <p>However, throughout the Solar PV Site, there may be a temporary loss of terrestrial habitat as well as potential disturbance to GCN as a result of construction activities.</p> <p>Where required, the Applicant will engage with NRW to determine the appropriate means of mitigating impacts to great crested newt through the obtainment of a EPSML, which would include appropriate mitigation.</p>	Yes
Terrestrial Invertebrates	Low (pending further surveys)	There is the potential for permanent and temporary habitat loss during construction, resulting in species mortality.	Not possible to reliably determine likely significance of

IEF	Importance (see Section 7.3 and Table 7-7)	Potential Impacts (see Section Table 7-8)	Potential for an effect to occur?
			effect at this stage as surveys are ongoing. This will be determined in the ES.
Fish	Low (pending further surveys)	<p>There is the potential for permanent and temporary habitat loss during construction, resulting in species mortality.</p> <p>Embedded mitigation measures (see Section 7.4) include the preparation of mitigation strategies for protected species and their habitat and where required, provisions will be made to prevent and/or minimise any adverse effects of construction works on both the aquatic and riparian habitat and species, including fish.</p> <p>Main rivers (Afon Wygyr, Afon Alaw, Afon Cefni) will be avoided. Where small watercourses/ ditches (not main rivers) are crossed for access (either temporarily during construction or during operation), new crossings will be clear span and wide enough to avoid the loss of in-channel and riparian habitats. Further measures above (see Section 7.4) will ensure any fish present in watercourses undergoing construction activity will be safely rescued. Environmental protection measures will be implemented and adopted during construction, and these measures will include dust suppression and pollution prevention.</p>	Not possible to reliably determine likely significance effect at this stage. This will be determined in the ES, once the Project design has been developed and surveys to inform the EclA have been undertaken, should they be required
Aquatic Macroinvertebrates	Low (pending further surveys)	<p><b>Construction and Decommissioning:</b></p> <p>There is potential for permanent and temporary habitat loss during site preparation/construction, resulting in species mortality.</p>	It is not possible to reliably determine likely

IEF	Importance (see Section 7.3 and Table 7-7)	Potential Impacts (see Section Table 7-8)	Potential for an effect to occur?
		<p>Main rivers (Afon Wygyr, Afon Alaw, Afon Cefni) will be avoided. Where small watercourses/ditches (not main rivers) are crossed for access (either temporarily during construction or permanently during operation), new crossings will be clear span and wide enough to avoid the loss of in-channel and riparian habitats.</p> <p><b>Operation, Maintenance and Replacement:</b></p> <p>Reflection of light from PV Modules can attract macroinvertebrates in their aerial phase from their usual dispersal routes, although this is an unusual event dependent on the coincidence of a number of suitable conditions to trigger such behaviour. The likelihood of aquatic insects from the local aquatic habitat being attracted to large open areas of shiny surfaces is medium to low given that such species will preferentially use smaller shiny surfaces. This is more likely to impact Odonata of which there are a number of notable species within the PEIR Boundary.</p>	<p>significance of effect at this stage. This will be determined in the ES, once the Project design has been developed and surveys to inform the EclA have been undertaken, should they be required</p>
Aquatic Macrophytes	Low (pending further surveys)	<p>There is potential for permanent and temporary habitat loss during site preparation/construction, resulting in species mortality.</p> <p>Main rivers (Afon Wygyr, Afon Alaw, Afon Cefni) will be avoided. Where small watercourses/ditches (not main rivers) are crossed for access (either temporarily during construction or permanently during operation), new crossings will be clear span and wide enough to avoid the loss of in-channel and riparian habitats.</p>	<p>It is not possible to reliably determine likely significance of effect at this stage. This will be determined in the ES, once the Project design has been developed and surveys to inform</p>



IEF	Importance (see Section 7.3 and Table 7-7)	Potential Impacts (see Section Table 7-8)	Potential for an effect to occur?
			the EclA have been undertaken, should they be required.

### **Significance of Effects**

- 7.5.19 The significance of effects on known and predicted IEFs have been assessed following consideration of the potential impacts described above and with consideration of the embedded mitigation measures outlined in Section 7.4 using the method as detailed in Section 7.3. The aim of the preliminary assessment is to identify potential likely significant effects and determine the need, or potential need, for additional mitigation measures to those detailed in Section 7.4.

### ***Construction***

- 7.5.20 Table 7-13 outlines the preliminary sensitivity (value) of IEFs, impacts and effects resulting from construction of the Project that are predicted at this stage. These will be further defined by ongoing ecological surveys which will be used to remove or reduce the magnitude of impacts and potential for significant effects.

### ***Potential impact on mobile species associated with statutory and non-statutory designated sites.***

- 7.5.21 It is noted that baseline surveys are ongoing and that these surveys may determine the presence of further IEFs. Although measures have been embedded within the Project design to avoid or minimise potential effects on predicted IEFs, where practicable, the ongoing surveys may identify additional effects that require additional mitigation.
- 7.5.22 Following completion of surveys, all IEFs will be subject to detailed assessment in line with the 7.3 methodology, and an updated assessment will be presented in the ES. Therefore, whilst the Applicant has taken a precautionary and reasonable worst case approach for the purposes of the PEIR, there is the potential for further significant effects to be identified as further ecological data becomes available and allows the full characterisation of the ecological baseline and identification of any additional IEFs.

**Table 7-13 Summary of magnitude of construction impact and significance of effect**

IEF	Sensitivity (Value)	Description of Impact	Magnitude of Impact	Effect Category	Potential for a Significant Effect?
Glannau Ynys Gybi/Holy Island Coast SPA, SAC	Very High	Direct impact upon foraging and roosting habitat for chough associated with the SPA, SAC, although the exact habitats affected (as a result of limited survey information at the time of writing this PEIR) are yet to be defined.	Medium	Major adverse	Yes – pending further surveys on Chough
Llyn Alaw SSSI	High	Due to loss of wetland habitat, outside the SSSI boundary there will be changes to the runoff characteristic and water quality entering the SSSI.  Direct impact upon foraging and roosting habitats for whooper swan associated with the SSSI.	High	Major adverse	Yes
Mynydd Parys LWS	Medium	Potential (likely minor) direct habitat loss due to road widening in Highways Works Land.	Low	Minor adverse	No
(A3.1) Broadleaved Parkland /scattered trees and (A3.3) Mixed Parkland/Scattered trees including veteran or ancient trees	Low	Permanent loss of individual trees. It has been assumed that any Medium importance trees (mature/veteran/ancient trees) can be avoided.	Low	Minor adverse	No
(A2.1) Dense/continuous	Low	Permanent loss of a large area of habitat.	Low	Minor adverse	No

IEF	Sensitivity (Value)	Description of Impact	Magnitude of Impact	Effect Category	Potential for a Significant Effect?
scrub and Scattered Scrub					
(B5) Marsh/marshy grassland	Medium	Permanent loss of a large area of habitat.	Medium	Moderate adverse	Yes
(D1) Heathland	High	Possible permanent loss of habitat.	Likely low	Minor adverse	No
(G2) Running water	Medium	Permanent loss of small sections of habitat.	Low	Minor adverse	No
(J2.1.1) Intact hedge – native species-rich, (J2.1.2) intact hedge species-poor and (J2.3.2) intact hedge - with trees - species-poor	Medium	Permanent loss of sections of habitat.	Medium	Moderate adverse	Yes
(J4) Bare ground (Open Mosaic Habitats on Previously Developed Land)	Medium	Permanent loss of large area of habitat.	Medium	Moderate adverse	Yes
Bats - roosting	Likely importance of Medium	Severance and disturbance to bat roosts.	Low	Minor adverse	No
Bats - activity	Likely importance	Loss of foraging habitat used by bats.	Medium	Moderate adverse	Yes

IEF	Sensitivity (Value)	Description of Impact	Magnitude of Impact	Effect Category	Potential for a Significant Effect?
	of Medium/High				
Riparian mammals	Medium	The Project design has embedded mitigation measures to avoid accidental killing/injury of reptiles. However, there is potential for permanent and temporary loss and fragmentation of habitat.	Low	Minor Adverse	Yes
Ornithology – breeding (excluding chough and barn owl)	Medium	Loss of breeding habitat and foraging areas used by birds during the breeding season. Chough do not use the area during the breeding season.	Low	Minor Adverse	No
Ornithology – wintering birds (excluding Greenland white-fronted goose and whooper swan)	Low	Loss of foraging and roosting areas under panels during construction and operation.	Low	Minor adverse	No
Ornithology – chough – non-breeding	High	Loss of foraging habitat used by birds associated with the SPA during the non-breeding season	Medium	Moderate Adverse	Yes – Survey work is ongoing, and the final Project design has not been determined; however embedded Project buffers around foraging areas are likely to avoid significant effects.
Ornithology – Greenland white fronted goose	High	Temporary and permanent loss of foraging areas and potential for disturbance of roosting areas on Llyn Alaw during construction.	Medium	Minor adverse	No however it is noted that survey work is ongoing. As the species has not yet been

IEF	Sensitivity (Value)	Description of Impact	Magnitude of Impact	Effect Category	Potential for a Significant Effect?
					recorded during the surveys, the Applicant considers that impacts are unlikely.
Ornithology – whooper swan	High	Temporary and permanent loss of foraging areas and potential for disturbance of roosting areas on Llyn Alaw during construction.	Medium	Moderate adverse	Yes
Ornithology – barn owl	Medium	Loss of foraging habitat used by birds if present.	Low	Minor Adverse	Yes – However it is noted that survey work for barn owl is ongoing and if breeding pairs are found to be present then mitigation will be designed accordingly but pending results
Reptiles	Low	The Project design has embedded mitigation measures to avoid accidental killing/injury of reptiles. However, there is potential for permanent and temporary destruction, damage and disturbance to their habitats.	Low	Minor adverse	No
Great crested newt	Medium	The Project design has embedded mitigation measures to avoid and buffer the majority of ditches and watercourses potentially supporting GCN; however, there is potential for permanent and temporary terrestrial habitat loss.	Low	Minor adverse	No
Terrestrial invertebrates	Likely importance of Low	Permanent and temporary habitat loss during site preparation/construction, resulting in species mortality.	Low	Minor Adverse	No. However, it is noted that survey work for terrestrial work is ongoing and so it may not be

IEF	Sensitivity (Value)	Description of Impact	Magnitude of Impact	Effect Category	Potential for a Significant Effect?
					possible to exactly predict impact at this stage.
Fish	Likely importance of Low	<p>Permanent and temporary habitat loss during site preparation/construction, resulting in species mortality.</p> <p>There is potential for pollutant spills and surface runoff into the watercourses and these spills have the potential to adversely affect habitats and species associated with running water habitats.</p>	Medium	Minor adverse	Yes, however, it is noted that survey work for aquatic habitats in ongoing. Not possible to reliably determine likely significance of effect at this stage. This will be determined in the ES, when the final Project design has been determined and surveys to inform the EclA have been undertaken, should they be required.
Aquatic macroinvertebrates	Likely importance of Low	Permanent and temporary habitat loss during site preparation/construction, resulting in species mortality.	Medium	Minor adverse	Yes, however, it is noted that survey work for aquatic habitats in ongoing.
Aquatic macrophytes	Likely importance of Low	Permanent and temporary habitat loss during site preparation/construction, resulting in species mortality.	Medium	Minor adverse	Yes, however, it is noted that survey work for aquatic habitats in ongoing.

7.5.23 Table 7-14 summarises the preliminary sensitivity (value) of IEFs, impacts and effects resulting from the operation of the Project that are predicted at this stage. These will be further defined by ongoing ecological surveys which will be used to reduce or remove the magnitude of impacts and potential for significant effects.



**Table 7-14 Summary of magnitude of operation impact and significance of effect**

IEF	Sensitivity (Value)	Description of Impact	Magnitude of Impact	Effect Category	Potential for a Significant Effect?
Glannau Ynys Gybi/Holy Island Coast SPA, SAC	Very High	There is potential to impact foraging habitat for foraging chough associated with the SPA, SAC, although the exact habitats affected (as a result of limited survey information at the time of writing this PEIR) are yet to be defined.	Medium	Major adverse	Yes
Llyn Alaw SSSI	High	There is potential to impact foraging and roosting habitat for whooper swan associated with the SSSI.	Medium	Major adverse	Yes
Bats - activity	Likely importance of Medium	Loss and displacement of foraging and commuting habitat for bats, including Annex II species, by the presence of PV Modules.	Medium	Moderate adverse	Yes
Birds – breeding (excluding chough and barn owl)	Likely importance of Low	Loss and displacement of breeding bird assemblage during construction offset by habitat creation to a degree	Low	Minor adverse	No
Chough (non-breeding)	Likely importance of High	Loss of foraging areas outside of the breeding season	Low	Moderate adverse	Yes, pending further survey
Barn owl	Likely importance of Low	Loss of foraging habitat used by birds if present.	Low	Minor Adverse	No

IEF	Sensitivity (Value)	Description of Impact	Magnitude of Impact	Effect Category	Potential for a Significant Effect?
Winter Bird (excluding Greenland white-fronted goose and whooper swan)	Low	Loss of foraging habitat.	Low	Minor adverse	No
Greenland white-fronted goose	Likely Importance of High	Temporary and permanent loss of foraging areas and potential for disturbance of roosting areas on Llyn Alaw during construction.	Medium	Moderate adverse	Yes
Whooper swan	High	Temporary and permanent loss of foraging areas and potential for disturbance of roosting areas on Llyn Alaw during construction.	Medium	Moderate adverse	Yes
Aquatic habitats and associated species and hydrologically connected designated sites	Likely importance of Low	Surface runoff, panel cleaning, pollution incidents and flooding impacting habitats	Low	Minor adverse	No
Fish	Likely importance of Low	Disturbance to fish behaviour due to EMF from cables under watercourse.	Medium	Minor adverse	Yes
Aquatic macroinvertebrates	Likely importance of Low	Reflection of light from PV Modules attracting macroinvertebrates in their aerial phase from their usual dispersal routes.  Some aquatic insects are attracted to PV Modules although this is an unusual event dependent on the coincidence of a number of suitable conditions to trigger such behaviour. The likelihood of aquatic	NA	Not yet assessed. This will be presented in the ES	Yes

IEF	Sensitivity (Value)	Description of Impact	Magnitude of Impact	Effect Category	Potential for a Significant Effect?
		insects from the local aquatic habitat being attracted to large open areas of shiny surfaces is medium to low given that such species will preferentially use smaller shiny surfaces. This is more likely to impact Odonata of which there are a number of notable species within the Project			
Aquatic macrophytes	Likely importance of Low	There are currently no impact pathways during operation which could affect aquatic macrophytes.	NA	Not significant	No

### ***Decommissioning***

- 7.5.24 The effects of decommissioning of the Project are anticipated to be less than the construction phase as construction vehicles will use existing access tracks where practicable and activities such as piling would not be required, and many of the potential impacts associated with the construction of the Project, such as building of infrastructure, e.g. substation and laying of cables, will not be relevant during decommissioning. Therefore, the effects summarised in Table 7-13 also apply to decommissioning.
- 7.5.25 Habitats and protected or notable species are likely to be subject to temporary damage of habitats and disturbance to species during decommissioning activities. Therefore, appropriate measures will need to be put in place to minimise degradation of habitats and disturbance of species, appropriate to the legislative and policy requirements at the time of decommissioning. It is reasonable to assume that measures included within the final DEMP will control this.
- 7.5.26 Taking into account that relevant legislation and policy will need to be adhered to when decommissioning takes place, appropriate measures will be put in place to monitor and manage the impact of decommissioning activities on IEFs. A final DEMP, as secured by a Requirement of the DCO, will be produced prior to decommissioning.

## **7.6 Additional Mitigation, Compensation and Enhancement Measures**

- 7.6.1 Surveys for ecology are ongoing and at this stage. In the absence of full survey data, the extent of any additional mitigation required (including whether any additional mitigation measures are needed at all), over and above the embedded mitigation measures as set out in Section 7.4, is not yet confirmed.
- 7.6.2 However, the potential for significant effects on IEFs has been identified in Table 7-13 and the Project will seek measures to reduce the potential significance of these effects where practicable. Any additional mitigation measures will be clearly set out in the ES.

## 7.7 Residual Effects

7.7.1 The preliminary assessment presented in this chapter has been undertaken based on the ecological data available at the time of writing, consisting of the sources set out in Table 7-1, Table 7-2, Table 7-3 and Table 7-4 and where necessary, professional judgement and using a precautionary basis. It is expected that the implementation of appropriate mitigation measures will reduce the magnitude of impact identified and the significance of effects should not exceed that presented in Table 7-11 and Table 7-12.

7.7.2 With the implementation of the enhancements the Project has the potential to generate beneficial effects for a number of the IEFs identified in Table 7-5. Further details on beneficial effects will be presented in the ES, once the baseline conditions are fully defined and enhancement measures established. However, it is anticipated that wide scale benefits will be delivered to IEFs occurring in both aquatic and terrestrial habitats from the extensive creation of grassland habitats and positive management of existing boundary features. These beneficial effects will be explored further in the ES, submitted with the DCO application.

## 7.8 Effect Interactions

7.8.1 Effect interactions can occur through pollution of air and water and via changes in lighting, noise or hydrology. This chapter has drawn from the preliminary assessments set out in the following chapters and as such inherently considers effect interactions.

### **Chapter 6: Landscape**

7.8.2 This assessment will inform both the Green Infrastructure Strategy and Landscape and Visual Assessment (Chapter 6 of the PEIR). This will inform combined mitigation options that benefit both landscape screening for sensitive visual receptors as well as ecological enhancement. A more detailed summary of landscape/ecology interactions will be presented in the ES, when the results of both reports have been finalised. Where appropriate mitigation measures will be combined and addressed within both reports.

**Chapter 10: Noise**

- 7.8.3 The noise report (Chapter 10) only assesses the impact of noise on human receptors. However, the noise assessment will inform the ecological assessment presented by highlighting any significant noise or vibration with the potential to impact sensitive ecological receptors. This will include the potential for noise or vibration to impact protected and notable species and statutory and non-statutory designated sites with associated mobile species. The noise assessment will model the potential impacts on noise receptors over the PEIR boundary and up to 500m beyond the PEIR Boundary. This assessment will be provided in the ES, informed by detailed modelling.

**Chapter 13: Water Resources**

- 7.8.4 Chapter 13: Water Resources considers any potential for significant changes to hydrochemistry (water quality) or hydrological conditions (such as water table increase / decrease), sufficient to negatively impact ecological receptors both directly and indirectly through hydrological connection. A detailed assessment will be provided in the ES. Where appropriate mitigation measures will be combined and addressed within both reports.

**Chapter 14: Climate Change**

- 7.8.5 Chapter 14: Climate highlights any potential for climate change to exacerbate impacts to protected and notable species and statutory and non-statutory designated sites over the construction, operation and decommissioning phase. The ecology ES chapter will be informed by the climate change assessment in this regard.

**Chapter 15: Other Matters (including Air Quality)**

- 7.8.6 Chapter 15: Other Matters will assess any potentially significant impacts from air quality on statutory and non-statutory designated sites and will inform the ES and Appropriate Assessment stage of the Habitats Regulations Assessment, which will be submitted with the ES if required.

## 7.9 References

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