

Preliminary Environmental Information Report Volume III

Appendix 7-2: Habitats Report

Prosiect Maen Hir - August 2024 EN010156



Habitats Survey Report

August 2024

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1 Introduction

1.1 Background

- 1.1.1 Habitat surveys were undertaken between November 2022 and February 2024 for the Maen Hir Project (hereafter referred to as the 'Project') to inform the baseline for the project and the scope for any further survey work. The Project will comprise the installation of solar photovoltaic (PV) generating panels, associated infrastructure including, a battery energy storage system (BESS), Project substation, cables routes, and site accesses collectively referred to as the 'Preliminary Ecological Information Report (PEIR) Boundary'.
- 1.1.2 The Solar PV locations and proposed mitigation areas have been divided into three linked areas, 'Maen Hir North, Maen Hir Central, and Maen Hir South. Main Hir South is further split into' Maen Hir South A' and 'Maen Hir South B'. These areas are collectively referred to as the 'Solar PV Site' and are the focus of this report. Beyond the Solar PV Site, associated infrastructure includes the Cable Route Corridor, Grid Connection Corridor and Highways Works Land. The alignment of routes and scope of works for associated infrastructure require refinement and will be updated as the Project evolves.
- 1.1.3 This Appendix reports on the classification and distribution of habitats within the PEIR Boundary and within 50 m of the Site boundary. Baseline data presented in this Appendix has been used to inform Chapter 07 Ecology of the PEIR. This Appendix will be updated following the results of the further surveys in 2024 / 2025 to inform the Environmental Statement (ES).
- 1.1.4 Further information on the Project and PEIR Boundary is provided in Chapters 1
 5 in the Preliminary Environmental Information (PEI) Report Volume I.

1.2 Scope

- 1.2.1 In this report, the following terminology is used to describe the geographic areas in which the survey work has been conducted:
- 1.2.2 Desk Study Area (hereafter referred to as the 'Study Area'): This area was subject to the collection of background information, such as desk study records for

- protected and/or priority habitats, to supplement the survey work findings. The Study Area comprises the PEIR Boundary plus a 10 km radius.
- 1.2.3 Habitat Survey Area (hereafter referred to as the 'Survey Area'): This area has focus on the Solar PV Site (including proposed mitigation areas). The Survey Area currently excludes land beyond the Solar PV Site, where the location and scope of associated infrastructure has yet to be refined.

1.3 Survey Objectives

- 1.3.1 The objectives of the survey work are as follows:
 - Identify and categorise all habitats present within the PEIR Boundary and any areas immediately outside (50 m) of the PEIR Boundary where there may be potential for direct or indirect effects.
 - Identify any potential ecological constraints and opportunities, including (where relevant) requirements for follow-up habitat and species surveys such as hedgerow assessment, Habitats of Principle Importance (HoPI), and National Vegetation Classification (NVC).
 - Provide a Phase 1 habitat map showing the location of the identified ecological receptors of relevance.

2 Legislation and Planning Policy

2.1 Relevant Legislation

2.1.1 Relevant legislation is summarised in Table 7-2-1.

Table 7-2-1. Relevant Legislation

Designation	Brief Description
Conservation of Habitats and Species Regulations, 2017 (Ref. 7-2.1)	The Regulations are designed to transpose Council Directive 92/43/EEC, on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive), into national law. Additionally, they transpose elements of the EU Wild Birds Directive in England and Wales.
	The Conservation of Habitats and Species Regulations 2017 protects habitat sites supporting vulnerable and protected species, as listed within the Directive. The need for an assessment of impacts on Natura 2000 sites (the collective name for European designated sites, including Special Protection Areas (SPAs) and Special Areas for Conservation (SACs)); and provides a framework for the protection, management and control of all species of naturally occurring wild birds in the European territory of EU Member States.
Wildlife and Countryside Act (1981) (as amended) (Ref. 7- 2.2)	The Wildlife and Countryside Act 1981 (as amended) is the principal mechanism for the legislative protection of wildlife in Great Britain. This legislation is the means by which the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and (partially) the Birds Directive and the Habitats Directive are implemented in the UK. The Countryside and Rights of Way Act 2000 has strengthened this legal protection (see below).
	A small number of plant species are listed under Schedule 9 of the Wildlife and Countryside Act 1981, as amended, which includes species such as Japanese knotweed <i>Reynoutria japonica</i> , Himalayan balsam <i>Impatiens glandulifera</i> , montbretia <i>Crocosmia x crocosmiiflora</i> , giant hogweed <i>Heracleum mantegazzianum</i> and some cotoneaster species <i>Cotoneaster sp.</i> It is illegal to plant or to cause these plants to grow in the wild, and legal disposal methods for vegetation and soil subject to disturbance or clearance from a site must be used.
Convention on Biological Diversity and the Countryside and Rights of Way Act 2000 (Ref. 7-2.3)	The Countryside and Rights of Way Act 2000 provides a statutory framework for biodiversity conservation. The Act places a duty on Government Departments and the National Assembly for Wales to have regard for the conservation of biodiversity and maintain lists of

species and habitats for which conservation steps should be taken or promoted, in accordance with the Convention on Biological Diversity. Schedule 9 of the Act amends Site of Special Scientific Importance (SSSI) provisions of the Wildlife and Countryside Act 1981, including provisions to change SSSIs and providing increased powers for their protection and management. The provisions extend powers for entering into management agreements; place a duty on public bodies to further the conservation and enhancement of SSSIs; increases penalties on conviction where the provisions are breached; and introduce a new offence whereby third parties can be convicted for damaging SSSIs. Schedule 12 of the Act amends the species provisions of the Wildlife and Countryside Act 1981, strengthening the legal protection for threatened species. The provisions make certain offences 'arrestable' and create a new offence of reckless disturbance. The UK Biodiversity Action Plan (BAP) was published in 1994 and was the UK Government's response to the Convention on Biological Diversity (CBD), which the UK signed up to in 1992. It provides the framework for fulfilling the UK's responsibilities towards the CBD. Conservation of biodiversity (the variety of life on earth) is an essential element of sustainable development. **Environment (Wales)** The Environment (Wales) Act puts in place the legislation needed to Act 2016 (Ref. 7-2.4) plan and manage Wales' natural resources in a more proactive, sustainable and joined-up way. Part 1 relates to the sustainable management of natural resources. This ensures that the way in which the use of and the impacts on natural resources do not result in long term decline. The aim is to sustainably manage natural resources in a way and rate that meets the needs of present and current generations without compromising the needs of future generations. The Act also contains at Section 7, a duty for the Welsh Ministers prepares and publish a list of the living organisms and types of habitats which in their opinion are of principal importance for the purpose of maintaining and enhancing biodiversity in relation to Wales. This section replaces the duty in Section 42 of the Natural Environment and Rural Communities (NERC) Act 2006. The Hedgerow The Hedgerow Regulations (1997) make provision for the protection Regulations 1997 (Ref. of important hedgerows in England and Wales. The regulations 7-2.5) affect hedgerows which are 20 m or more in length, or connected at both ends to another hedgerow of any length.

They relate to hedgerows which are on, or adjoining land used for the following purposes: agriculture or forestry; the breeding or keeping of horses, ponies or donkeys; common land; village greens; and SSSIs (They do not include hedges that are attached to or marking the boundaries of a private house).

It is an offence to intentionally or recklessly remove or cause or permit another person to remove a hedgerow or intentionally or recklessly remove, or cause or permit another person to remove, a hedgerow which is the subject of a hedgerow retention notice.

2.2 Planning Policy

National Planning Policy Framework 2023

2.2.1 The National Planning Policy Framework (NPPF) (Ref. 7-2.6) sets out the Governments planning policies for Wales and how these are expected to be applied by Local Authorities within their Local Development Frameworks (LDF). Chapter 15 of the NPPF 'Conserving and enhancing the natural environment' sets out the requirements to consider biodiversity in planning decisions.

Local Planning Policy Framework

- 2.2.2 The Anglesey and Gwynedd Joint Local Development Plan 2017 (Ref. 7-2.7) details several policies relating to ecology and nature conservation, these include:
 - Strategic Policy PS 19: conserving and enhancing the natural environment;
 - Policy AMG 4: coastal protection;
 - Policy AMG 5: protection and enhancement of local biodiversity; and
 - Policy AMG 6: protecting sites of regional or local significance.

Local Biodiversity Action Plans (LBAP)

2.2.3 Ynys Mon Local Biodiversity Action Plan (Ref. 7-2.8) contains 20 HoPl accompanied by Habitat Action Plans.

3 Methodology

3.1 Desk Study

- 3.1.1 The desk study was carried out to identify nature conservation designations, notable habitats and protected and notable species potentially relevant to the Project. Based on a review of existing information available in the public domain this included the following:
 - Internationally and nationally designated sites with habitats as their qualifying features up to 2 km from the PEIR Boundary using the Multi Agency Geographic Information for the Countryside (MAGIC) website (www.magic.gov.uk);
 - Locally designated sites, up to 2 km from the PEIR Boundary using data resourced from Cofnod Biodiversity Record Centre (CBReC);
 - Section 7 list of Species and HoPI for Conservation in Wales within the Study Area; and
 - Aerial photographs and Ordnance Survey (OS) maps were reviewed to identify features of ecological interest surrounding the PEIR Boundary including ponds within 500 m, nearby areas of ecological interest, and features connecting these habitats (hedgerows, watercourses, railway lines).

3.2 Field Surveys

Phase 1 Habitat Survey

3.2.1 A Phase 1 Habitat Survey of the PEIR Boundary was undertaken by experienced AECOM Ecologists between November 2022 and February 2024. The Phase 1 Habitat Survey was undertaken in accordance with the standard survey method Phase 1 Habitat Survey methodology as described in the Handbook for Phase 1 Habitat Survey: A technique for Environmental Audit (Ref. 7-2.9). Phase 1 Habitat Survey is a standard method of environmental audit. It involves categorising different habitat types and habitat features within a survey area. The information gained from the survey can be used to determine the likely ecological value of a site, and to direct any more specific survey work which may need to be carried out prior to the submission of the ES. The standard Phase 1 Habitat Survey

- method was "extended", to record target notes on protected, notable and Invasive Non-Native Species (INNS) of plant subject to legal requirements.
- 3.2.2 Habitat outside of, but adjacent (50 m) to, the PEIR Boundary was noted to aid in the determination of the Zone of Influence.

National Vegetation Classification (NVC) Surveys

3.2.3 At this stage of assessment, it was not an objective of the survey to assign the habitats to specific NVC communities. However, where habitats are identified as potentially notable/species rich/ HoPI, and there are likely to be Project impacts, further survey will be carried out, to inform the ES. Therefore, this report will be updated with NVC survey results where potential Project impacts have been identified. The NVC system will be used in accordance with the NVC Users Handbook (Ref. 7-2.10) to define the specific plant community that exists within a certain vegetation type by recording the full suite of vascular plant, bryophyte and macro-lichen species present.

Hedgerow Assessment

3.2.4 At this stage of assessment, it was not an objective of the survey to assign hedgerow importance. However, where habitats are identified as potentially important (intact hedge – native species-rich) during the Phase 1 Habitat Survey, further survey will be carried out, to inform the ES. Therefore, this report will be updated with hedgerow survey results where potential project impacts have been identified. Hedgerows will be surveyed in accordance with the methodology as outlined in Defra's Hedgerow Survey Handbook (Ref. 7-2.11).

3.3 Limitations

3.3.1 Information obtained during the course of a desk study is dependent upon people and organisations having made and submitted records for the area of interest. As such, a lack of records for a particular habitats or species does not necessarily mean that the habitats or species do not occur in the study area. Likewise, the presence of records for particular habitats and species does not automatically mean that these still occur within the area of interest or are relevant in the context of the Project. Where any conclusions and recommendations contained in this report are based upon information provided by others, it has been assumed that

all relevant information provided by those parties is accurate. Any such information obtained by AECOM has not been independently verified by AECOM, unless otherwise stated in the report. AECOM accepts no liability for any inaccurate conclusions, assumptions or actions taken resulting from any inaccurate information supplied to AECOM from others.

- 3.3.2 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 underwent updates, including additional land for potential Highway Works, which have not been included within this reporting. As a result, some records are located >/< 2km from the PEIR Boundary. Refer to Figure 7-3 which highlights the search area for which the data request covered and the 2 km buffer of the PEIR boundary which, due to the subsequent addition of Highways Works, extended beyond the search area, for which data has been received. This missing information only applies to data held by Cofnod, which includes species records and the location of local Wildlife sites. Due to ongoing design development since the desk study records were obtained and the time elapsed since procurement, an updated desk study will be undertaken and provided in the ES.
- 3.3.3 Where habitat boundaries coincide with physical boundaries recorded on OS maps the resolution is as determined by the scale of mapping. Elsewhere, habitat mapping is an estimated in the field and/or recorded by hand-held GPS. Where areas of habitat are provided, they are approximate and should be verified by measurement on site where required for design or construction. While indicative locations of trees are recorded this does not replace requirements for detailed specialist arboricultural survey to British Standard 5837:2012 Trees in Relation to Design, Demolition and Construction.
- 3.3.4 The methodology adopted and the sources of information used by AECOM in providing its services are outlined in this report. The work described in this report was conducted between November 2022 and February 2024 and is based on the conditions encountered and the information available during said period. The scope of this Report and the services are accordingly factually limited by these circumstances. AECOM disclaim any undertaking or obligation to advise any

- person of any change in any matter affecting the Report, which may come or be brought to AECOM's attention after the date of the Report.
- 3.3.5 Since the Environmental Impact Assessment (EIA) Scoping Request (PEIR Volume III Appendix 2-1: EIA Scoping Request) was issued in November 2023, the design of the Project has evolved. This has included the incorporation of Maen Hir South 'A' and several other minor boundary adjustments into the Project; this change was actioned after the majority of appropriate seasonal windows had closed in 2023. Therefore, habitat surveys were undertaken in Maen Hir South 'A' in February and March 2024, outside the preferred survey period for Phase 1 assessment, to meet internal reporting restrictions implemented at the time. Further ecology surveys, both within the Solar PV Site and the wider 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 Development Consent Order (DCO) application.
- 3.3.6 Field surveys to inform this PEIR have been undertaken within the Solar PV Site only, with no formal surveys undertaken to date within the proposed Cable Route Corridor, proposed Grid Connection Corridor, proposed Highway Works Land and proposed Construction Access routes, as their exact locations have not been finalised and are subject to refinement. Surveys to validate and confirm the presence, or otherwise, of protected and notable habitats and species within these areas will be undertaken in 2024/25 once these additional areas have been confirmed. This information will be presented in the final ES and submitted as part of the DCO application.

4 Results

4.1 Desk Study

Statutory and Non-Statutory Designated Sites

4.1.1 The desk study identified eight statutory designated sites (international/national) within 2 km of the PEIR Boundary, with habitats as their qualifying feature. The desk study identified 22 non-statutory designated sites, within 2 km of the PEIR Boundary with habitats and plants as designating features. Table 7-2-2 details the results of both the statutory and non-statutory designated sites identified by the desk study and their relationship to the PEIR Boundary (distance (km) and direction from the PEIR Boundary) ordered from statutory designated sites to non-statutory designated sites, with sites listed in descending order of proximity to the PEIR Boundary.

Table 7-2-2. Statutory and Non-Statutory Designated Sites for Nature Conservation

Designation / Feature	Distance (km)	Description	
Designated Sites		1	
Llyn Alaw SSSI	Immediately adjacent	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 <i>Anas crecca</i> , 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 <i>Numenius arquata</i> , 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.	
Y Werthyr SSSI	0.12 east	This wetland site is a relatively intact example of a mesotrophic valley mire and has a highwater table.	
Llyn Hafodol and Cors Clegyrog SSSI	0.15 north	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 <i>Elatine hydropiper</i> .	
Corsydd Môn a Llyn / Anglesey and Llyn Fens Ramsar	0.26 east	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.	
Corsydd Mon / Anglesey Fens SAC	0.34 southeast	Annex I habitats that are a primary reason for the selection of this site: 3140 Hard oligo-mesotrophic waters with benthic vegetation of <i>Chara spp</i> . 7210 Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i> 7230 Alkaline fens	

Designation / Feature	Distance (km)	Description	
		Annex I habitats present as a qualifying feature but not the primary reason for selection of this site:	
		4010 Northern Atlantic wet heaths with Erica tetralix	
		6410 Molinia meadows on calcareous, peaty or clayey-silt-laden soils Molinion caeruleae	
		Annex II species that a primary reason for the selection of this site:	
		1013 Geyers' whorl snail Vertigo geyeri	
		Annex II species present as a qualifying feature but not a primary reason for site selection:	
		1044 Southern damselfly Coenagrion mercuriale	
		1065 Marsh fritillary butterfly Euphydryas aurinia	
Cors Erddreiniog SSSI, NNR	0.34 southeast	Cors Erddreiniog is a large calcareous valley mire of national importance. Base-rich springs, provide habitat for narrow-leaved marsh orchid <i>Dactylorchis 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 Lleyn, is not found elsewhere in Great Britain.	
Mynydd Parys SSSI	0.37 southeast	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.	
Salbri SSSI	0.43 northeast	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 flowering plants including the mud sedge <i>Carex limosa</i> .	

Designation / Feature	Distance (km)	Description	
Tyddyn y Waen SSSI	0.86 northeast	This site comprises fen meadow habitat with associated soligenous mire. The locally uncommon fen bedstraw <i>Galium uliginosum</i> is recorded here.	
Cors Bodwrog SSSI	1.6 northwest	Cors Bodwrog has been selected for its biological interest as an example of mesotrophic mire. Eight species of Odonata have been recorded including the nationally scarce variable damselfly Coenagrion pulchellum and the scarce blue-tailed damselfly Ischnura pumilio. The breeding bird community, which is of local importance includes teal Anas crecca, reed warbler Acrocephalus scirpaceus, grasshopper warbler Locustella naevia and curlew Numenius arquata. Lesser Tussock-sedge Carex diandra is also present.	
Tyddyn Gyrfer SSSI	1.22 northeast	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.	
Nant y Pandy (The Dingle) LNR	1.6 east	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 commulizard <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 here <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> .	
Non-statutory Local Wildlife Si	tes (LWS)		
Coed Cae Mawr LWS	Within the PEIR Boundary	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.	

Designation / Feature	Distance (km)	Description	
Mynydd Parys LWS	Immediately adjacent to PEIR Boundary	Aa large area of inland heath associated with the former copper mines at Mynydd Parys. The site has breeding stonechat <i>Saxicola rubicola</i> , yellowhammer <i>Emberiza citrinella</i> , whitethroat <i>Sylvia communis</i> and wheatear <i>Oenanthe</i> oenanthe.	
Llyn Llaethdy LWS	0.04 northeast	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.	
Pyllau Pentrefelin - Dyffryn Adda LWS	0.08 southwest	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.	
Rhostir Mynydd Mechell LWS	0.77 northwest	This site consists of five separate blocks of heathland with an associated area of acid and marshy grassland.	
Mynydd Bodafon LWS	0.91 northeast	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 <i>Salix spp.</i> woodland where the drainage is impeded. There is also a small lake Gors Faw which is notable for the presence of the very rare pillwort <i>Pilularia globulifera</i> in one of on three sites on Anglesey.	
Llyn Bwch LWS	0.95 northwest	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.	
Coed Cefn-Du LWS	1.01 east	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.	

Designation / Feature	Distance (km)	Description	
Arfordir Porth Wen - Porth Llechog LWS	1.02 north	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> .	
Maen Eryr LWS	1.05 east	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 <i>Fraxinus excelsior</i> and sycamore <i>Acer pseudoplatanus</i> , with some birch and planted conifers.	
Graigfryn LWS	1.09 east	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.	
Arfordir Trwyn y Buarth - Porth Wen LWS	1.35 northwest	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-grace Catabrosa aquatica, which is very local on Anglesey, is present at the eastern most end of this site. Choughs Pyrrhocorax pyrrhocorax and ravens Corvus corax feed here, and fulm Fulmarus glacialis breed on the cliffs. Other breeding birds include yellowhammer, stoned wheatear and whitethroat. The potentially invasive small-leaved cotoneaster Cotoneaster microphyllus is also present.	
Porth Llechog LWS	1.41 north	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.	

Designation / Feature	Distance (km)	Description	
Llyn Cors Goch LWS	1.48 northwest	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</i> multicaulis. The species rich marshy grassland includes six species of sedge, eyebrights <i>Euphrasia officinalis</i> and both northern marsh and common spotted orchids.	
Afon Wygyr LWS	1.52 northwest	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 and sycamore woodlands.	
Tir Pori Traian LWS	1.57 southwest	This site consists of two fields of semi-improved neutral grassland one of which is relatively unmodified.	
Rhostir Ponciau LWS	1.66 east	This site consists of an area of wet heathland with two small areas of marshy grassland. There is a large colony of marsh gentians <i>Gentiana pneumonanthe</i> , a nationally rare species which occurs in Wales only on Anglesey.	
Tir Lleidiog Ty Du LWS	1.85 northwest	A basin mire with areas of marshy grassland, raised bog and dense willow carr. Ornithology interest associated with this site includes grasshopper warbler <i>Locustella naevia</i> , 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> .	
Bodafon-y-Glyn Wood LWS	1.86 north	A small broadleaved wood dominated by hazel <i>Corylus avellana</i> 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.	
Llyn Llwyn-Crwn a Sgarp Caerhos Lligwy LWS	1.97 east	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.	

Designation / Feature	Distance (km)	Description
swamp, scattered and dense willow scrub and some semi-im has considerable ornithological interest with populations of branching gallinago, curlew, lapwing, grasshopper warbler, sedge warb Saxicola rubetra and whitethroat. Barn owls Tyto alba use it for		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 <i>Tyto alba</i> use it for hunting and it provides a wintering area for greylag <i>Anser anser</i> , canada geese <i>Branta canadensis</i> , woodcock <i>Scolopax rusticola</i> , and harriers <i>Circinae spp</i> .
Pinophyta spp. and exotic sinclude		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.

Habitats of Principle Importance

- 4.1.2 HoPI listed under Section 7 of the Environment (Wales) Act 2016 (Ref. 7-2.1) which are potentially present or likely to be present were identified using DataMap Wales. The Cofnod data set also identifies ancient semi-natural woodland as present within the PEIR Boundary. Table 7-2-3 lists those habitats potentially present and describes their relationship to (approximate locations within or adjacent to) the PEIR Boundary. Habitats identified through the desk study are shown in Figure 7-3 Non-Statutory Designated Sites.
- 4.1.3 A review of the Woodland Trust Ancient Tree Inventory (Ref. 7-2.11) does not indicate any notable/veteran trees within or adjacent to the PEIR Boundary. Full data will be presented in the ES when arboricultural surveys are complete.
- 4.1.4 Several other habitats not identified on DataMap Wales are likely to occur within the PEIR boundary, this includes hedgerows, ponds, streams, wood-pasture, lowland meadows, Inland rock outcrop and scree habitats and parkland (including veteran or ancient trees).

Table 7-2-3. Habitats of Principle Importance

Habitat	Relationship to PEIR Boundary	Description
Lowland mixed deciduous woodland, including ancient woodland (AW)	 Maen Hir North: Within Field 63. Directly adjacent to Field 44 and 47. Cable Route Corridor: Five AWs. Maen Hir South B: Partially within or directly adjacent to Fields 251, 252, 254, 256 and 257. Directly adjacent to Field 260. 	Lowland mixed deciduous woodland includes most semi-natural woodland, of which many are AW. This habitat generally occurs at low altitude within the enclosed lowlands (normally below c. 300 m). These woods tend to be small (less than 20 ha) and often show evidence of past modifications such as coppicing. <i>Quercus spp.</i> are generally present and may occur with any combinations of locally prevalent tree species (Ref. 7-2.12).

PEIR Boundary	Description
Directly adjacent to Field 238.	
Within Field 245.	
Maen Hir North: Within or directly adjacent to Field 51, 52, 56, 64 and 65.	Lowland acid grassland occurs on nutrient-poor, free-draining soils with pH between 4 and 5.5, overlying acid rocks or sands and gravels. This habitat is generally managed as pasture and occurs in enclosed and unenclosed lowlands (normally below c. 300 m). Acid grassland often forms a mosaic with dwarf shrub heath and can be variable in terms of species richness. Acid grassland is characterised by species such as heath bedstraw <i>Galium saxatile</i> , sheep`s-fescue <i>Festuca ovina</i> , common bent <i>Agrostis capillaris</i> , sheep`s sorrel <i>Rumex acetosella</i> , wavy hairgrass <i>Deschampsia flexuosa</i> , bristle bent <i>Agrostis curtisii</i> and tormentil <i>Potentilla erecta</i> (Ref. 7-2.12).
Maen Hir Central: Directly adjacent to Field 121, 125 and 128. Maen Hir South A: Directly adjacent to Field 157 and 158. Within field 171. Maen Hir South B: Within field 198, 199, 202, 213 and 238. Cable Route Corridor: One area directly adjacent to Maen Hir Central. Several areas	Purple moor grass and rush pastures occur on poorly drained, usually acidic soils in lowland areas of high rainfall. This habitat occurs mostly on gently sloping land, where there is lateral movement of water through the soil. They may be small and isolated, or form large tracts of rough grazing, and often occur in combination with wet heath, swamp and/or scrub. Purple moor grass and rush pastures is characterised by species such as purple moor grass <i>Molinia caerulea</i> , and rushes, such as sharpflowered rush <i>Juncus acutiflorus</i> , meadow thistle <i>Cirsium dissectum</i> , marsh hawk's-beard <i>Crepis paludosa</i> , meadowsweet <i>Filipendula ulmaria</i> and tormentil (Ref. 7-2.12).
	Maen Hir North: Within or directly adjacent to Field 51, 52, 56, 64 and 65. Maen Hir Central: Directly adjacent to Field 121, 125 and 128. Maen Hir South A: Directly adjacent to Field 157 and 158. Within field 171. Maen Hir South B: Within field 198, 199, 202, 213 and 238. Cable Route Corridor: One area directly adjacent to Maen Hir Central.

Habitat	Relationship to PEIR Boundary	Description
	Hir Central and South A.	
Lowland heathland	Highways Works Land: • Directly adjacent to Mynydd Parys LWS.	Lowland heathland occurs on nutrient poor acid soils, which can be mineral or shallow peat. This habitat is characterised by the presence of over 25% dwarf shrub cover including heathers and dwarf gorses. This habitat is generally found in lowlands (normally below c. 300 m). This habitat is dynamic with variable height and
		structure across different successional stages, such as bare ground, grassy stages and mature dense heath.
		Lowland heathland is characterised by species such as common heather <i>Calluna vulgaris</i> , bilberry <i>Vaccinium myrtillus</i> , bell heather <i>Erica cinerea</i> and, western gorse <i>Ulex gallii</i> in the south and west of the UK (Ref. 7-2.12).
Reedbeds	Extensive stands directly adjacent, along the shores of Llyn Alaw.	Reedbeds are wetlands dominated by stands of common reed <i>Phragmites australis</i> , where the water table is at or above ground level for most of the year. They occur around water bodies or within permanently wet ditches (Ref. 7-2.12).
	Maen Hir South A:	
	One area within field 160.	
Traditional orchards	Cable Route Corridor:	Traditional orchards dominated by planted domestic fruit and nut trees, including apple <i>malus sp.</i> , plum
	One small stand adjacent to Maen Hir Central.	prunus sp., pear pryus sp., damson prunus sp., cherry prunus sp., and cobnut Corylus avellanais. Traditional orchards are managed with low intensity techniques and often grazed or cut for hay. This
	Two small stands adjacent to Maen Hir South A.	habitat occurs on a wide range of soil types and topography, but generally have good drainage. This habitat is generally found in lowlands (normally
	Two small stands adjacent to Maen Hir South B.	below c. 300 m). Traditional orchards are structurally and ecologically similar to wood-pasture and parkland, and often include a mosaic of associated habitats such as

Habitat	Relationship to PEIR Boundary	Description
		scrub, hedgerows, fallen dead wood, ponds and streams (Ref. 7-2.12).

Protected Species

4.1.5 The data search returned records of 120 notable plant species within the 2 km Study Area, including five species listed on S7 of the Environment (Wales) Act 2006: English sticky eyebright *Euphrasia officinalis subsp. anglica*, fly orchid *Ophrys insectifera*, frog orchid *Coeloglossum viride*, three-lobed crowfoot *Ranunculus tripartitus*, and entire threadwort *Cephaloziella calyculata*.

Invasive and Non-native Plant Species (INNS)

- 4.1.6 Thirteen INNS, listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) (Ref. 7-2.2), were identified with 2 km of the PEIR Boundary. Canadian Waterweed *Elodea canadensis*, hottentot fig *Carpobrotus edulis*, hollyberry cotoneaster *Cotoneaster bullatus*, small-leaved cotoneaster *Cotoneaster Manddail*, Himalayan cotoneaster *Cotoneaster simons*, wall cotoneaster *Cotoneaster horizontalis*, New Zealand pigmyweed *Crassula helmsii*, montbretia *Crocosmia pottsii x aurea C. x crocosmiiflora*, Japanese knotweed *Reynoutria japonica*, Himalayan balsam *Impatiens glandulifera*, parrot's feather *Myriophyllum aquaticum*, rhododendron *Rhododendron ponticum* and Japanese rose *Rosa rugosa*.
- 4.1.7 Six species were recorded within or adjacent to the PEIR Boundary; Canadian waterweed, New Zealand pigmyweed, Japanese knotweed, Himalayan balsam, rhododendron and Japanese rose.

4.2 Field Surveys

Phase 1 Habitat Survey Results

4.2.1 The habitats present within the PEIR Boundary and their descriptions are shown in Table 7-2-4. A plan of the PEIR Boundary showing the location and distribution of these habitats is shown in Figure 7-2-1 Preliminary Phase 1 Habitat Survey Results. Refer to Annex II Species List for a full species list.

Table 7-2-4. Phase 1 Habitat Survey Results

Habitat	Area (Ha) / Length (Km)	% of Site Area	Description	Conservation Status		
Area-Based Habitats	Area-Based Habitats					
A1.1.1 – Broadleaved woodland – semi-natural including AW (Photograph 1)	12 ha	1	Small areas of broadleaved seminatural woodland were recorded throughout the Solar PV Site, often abutting watercourses. Species recorded included (but was not limited to) alder, crack willow Salix fragilis, rowan Sorbus aucuparia, ash, sycamore and hawthorn Crataegus monogyna. 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 Quercus petraea, wych elm Ulmus glabra, elder Sambucus nigra, goat willow Salix caprea and crack willow. Fencing largely prevented access to these areas for detailed survey, and, in association with survey timing, meant	Lowland mixed deciduous woodland is a Section 7 HoPI and broadleaved woodland is an Anglesey BAP habitat		

Habitat	Area (Ha) / Length (Km)	% of Site Area	Description	Conservation Status
			that vernal flora, potentially including ancient woodland indicators was not recorded. This habitat type is also present within the wider PEIR Boundary.	
A1.1.2 – Broadleaved woodland – plantation (Photograph 2)	2 ha	< 1	Occasional small blocks of broadleaved plantation woodland were recorded throughout the Solar PV Site, some of which appeared recently planted. Species present included alder, birch, willow, rowan and hazel. This habitat type may also be present within the wider PEIR Boundary.	Not HoPI. Plantation woodland is an Anglesey BAP Habitat
A1.2.2 – Coniferous woodland – plantation (Photograph 3)	< 1 ha	< 1	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.	Not HoPI. Plantation woodland is an Anglesey Biodiversity Action Plan (BAP) Habitat
A1.3.1 – Mixed woodland – semi natural including AW (Photograph 4)	5 ha	< 1	Mixed semi natural woodland was recorded on the Former Oil Depot where planted fir <i>abies sp.</i> and pine <i>pinus sp.</i> were growing in amongst	Lowland mixed deciduous woodland is a Section 7 HoPl and broadleaved woodland

Habitat	Area (Ha) / Length (Km)	% of Site Area	Description	Conservation Status
			native ash, willow and self-sown sycamore. This habitat type may also be present within the wider PEIR Boundary.	is an Anglesey BAP habitat
A1.3.2 – Mixed woodland – plantation (Photograph 5)	5 ha	< 1	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.	Not HoPI. Plantation woodland is an Anglesey BAP Habitat
A2.1 – Dense/continuous scrub, A2.2 Scattered scrub (Photograph 6)	18 ha	1	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	Not HoPI. Scrub is an Anglesey BAP Habitat

Habitat	Area (Ha) / Length (Km)	% of Site Area	Description	Conservation Status
			the more northern extents of the Solar PV Site.	
			This habitat type may also be present within the wider PEIR Boundary.	
A3.1 – Broadleaved parkland/scattered trees including veteran or ancient trees	2 km	N/A	Lines of broadleaved trees were present at field margins throughout the Solar PV Site, often in association with ditches or earth banks. Most were dominated by mature hawthorn, with other species also present including sycamore, ash, and goat willow. This habitat type may also be present within the wider PEIR Boundary.	Woodland pasture & Parkland is a Section 7 HoPI
A3.2 – Coniferous parkland/ scattered trees (Photograph 7)	< 1 ha	< 1	Occasional scattered coniferous trees were recorded. These were largely to the southern extents of the Solar PV Site where Scot's pine was noted growing on slightly rocky mounds. This habitat type may also be present within the wider PEIR Boundary.	Not HoPI
A3.3 – Mixed parkland/ scattered trees including veteran or ancient trees and	< 1 ha; 1 km	< 1	A small stand of scattered mixed trees was recorded in field 262 in the southern extent of the Solar PV Site.	Woodland pasture & Parkland is a Section 7 HoPl

Habitat	Area (Ha) / Length (Km)	% of Site Area	Description	Conservation Status
lines of mixed trees (Photograph 8)			Scot's pine, interspersed with ash and sycamore was noted growing on a slightly rocky mound.	
			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. This habitat type may also be present	
			within the wider PEIR Boundary.	
B1 – Acid grassland	N/A *	N/A *	Lowland acid grassland was recorded using the DataMapWales website (Ref. 7-2.14) immediately adjacent to the Solar PV Site in its more northern extents. No acid grassland has been identified within the Solar PV Site. This habitat type may also be present within the wider PEIR Boundary.	Lowland dry acid grassland is a HoPI
B2.2 – Neutral grassland – semi-improved (Photograph 9)	60 ha	5	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 were not limited to) false oat grass Arrhenatherum elatius, sweet vernal	Lowland meadow is a HoPI

Habitat	Area (Ha) / Length (Km)	% of Site Area	Description	Conservation Status
			grass Anthoxanthum odoratum, crested-dog's-tail Cynosaurus cristatus, Yorkshire fog Holcus lanatus, common bent and perennial rye grass Lolium perenne. Herbaceous species included white clover Trifolium repens, yarrow Achillea millefolium, ribwort plantain Plantago lanceolata, thistle Cirsium sp., bush vetch Vicia sepium, yellow rattle Rhinanthus minor, common sorrel Rumex acetosa, red bartsia Odonites verna and birdsfoot trefoil Lotus conriculatus. This habitat type may also be present within the wider PEIR Boundary.	
B4 – Improved grassland (Photograph 10)	720 ha	56	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	Not HoPI

Habitat	Area (Ha) / Length (Km)	% of Site Area	Description	Conservation Status
			in nature and have limited species diversity. This habitat type is also present within the wider PEIR Boundary.	
B5 – Marshy grassland (Photograph 11)	34 ha	3	Marshy grasslands, often typified by communities with greater than 25 % cover of rush Juncus spp. are present scattered throughout the Solar PV Site at the base of shallow gradients and within improved or (poor) semi-improved grassland fields with poor drainage. Species recorded included (but was not limited to) soft rush Juncus effusus, sharp flowered rush, marsh thistle Cirsium palustre, meadowsweet, marsh valerian Valerian dioica and ragged robin Silene floscuculi. Other areas of marshy grassland, dominated by purple moor grass were recorded in areas adjacent to Llyn Alaw and in several fields in the southern extents of the Solar PV Site.	Purple Moor Grass and Rush Pasture is a HoPI while Coastal and Floodplain Grazing Marsh is a HoPI and Anglesey BAP habitat

Habitat	Area (Ha) / Length (Km)	% of Site Area	Description	Conservation Status
			This habitat type may also be present within the wider PEIR Boundary	
B6 – Poor semi-improved grassland	327 ha	26	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 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.	Not HoPI
C1.1 – Bracken – continuous (Photograph 12)	< 1 ha	< 1	Pockets of bracken <i>Pteridium</i> aquilinum were recorded along roadsides located in the northern extents of the Solar PV Site.	Not HoPI

Habitat	Area (Ha) / Length (Km)	% of Site Area	Description	Conservation Status
			This habitat type may also be present within the wider PEIR Boundary.	
C3.1 – Other tall herb and fen – ruderal (Photograph 13)	1 ha	< 1	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</i> sp., creeping thistle <i>Cirsium arvense</i> and great willowherb <i>Chamerion hirsutum</i> . The INNS plant, Himalayan balsam, was also recorded here. This habitat type may also be present within the wider PEIR Boundary.	Not HoPI
D – Heathland	N/A*	N/A*	Priority lowland heathland was recorded using the DataMapWales website (Ref. 7-2.14) immediately adjacent to the Solar PV Site in its more northern extents. No lowland heathland has been identified within the Solar PV Site. This habitat type may also be present within the wider PEIR Boundary.	Lowland heathland is a European protected habitat, HoPI and listed as an Anglesey BAP habitat

Habitat	Area (Ha) / Length (Km)	% of Site Area	Description	Conservation Status
F1 – Swamp (Photograph 14)	N/A*	N/A*	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. This habitat type may also be present	Reedbeds are Section 7 HoPI and Anglesey BAP Habitat
G1 – Standing water (ponds and ditches) (Photograph 15)	3 ha; 1 km	< 1	within the wider PEIR Boundary. Ponds of varying sizes were recorded both within and bordering the Solar PV Site, some of which were confirmed as supporting great crested newt <i>Triturus cristatus</i> when surveyed in 2023 & 2024. For further detail please see the great crested Newt report in Appendix 7-3.	Section 7 HoPI and Anglesey BAP Habitat
			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.	
			Ditches, recorded in length, with standing water were recorded at field margins within the Solar PV Site. The	

Habitat	Area (Ha) / Length (Km)	% of Site Area	Description	Conservation Status
			water in the ditches was generally shallow and variable between 0 and 10 cm. This habitat type may also be present within the wider PEIR Boundary.	
G2 Running water	20 km	N/A	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.	Rivers and streams are Section 7 HoPI and Anglesey BAP habitat
I1.1.1 Inland cliff – acid/neutral, I1.1.2 Inland cliff – basic, I1.4 – Other exposure – basic (Photograph 16), H8.1 Hard cliff	1 ha; < 1 km	< 1	Rocky areas were noted within parts of the northern extents of the Solar PV Site, producing thinner soils and potentially areas of greater botanical diversity within otherwise improved grassland. Inland cliffs and rocky exposure were recorded in hectares while hard cliff is recorded in km. This habitat type may also be present within the wider PEIR Boundary.	Inland rock outcrop and scree habitats is a Section 7 HoPI

Habitat	Area (Ha) / Length (Km)	% of Site Area	Description	Conservation Status
J1 – Cultivated/ disturbed land – arable (Photograph 17)	22 ha	2	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.	Arable field margins is a Section 7 HoPI and Field Edges is an Anglesey BAP Habitat.
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) (Photograph 18)	84 km	N/A	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, as noted in, and cloddiau without hedgerows have been recorded as earth banks and considered	All hedgerows are a Section 7 HoPl and Ancient hedgerows, including cloddiau, are an Anglesey BAP habitat. Some of the hedgerows may be classified as 'Important' under the Hedgerow Regulations (Ref. 7- 2.5), to be confirmed by further survey

Habitat	Area (Ha) / Length (Km)	% of Site Area	Description	Conservation Status
			hedgerows under the Anglesey BAP	
			description of Ancient Hedgerows. This habitat type is also present within the wider PEIR Boundary.	
J4 – Bare ground and hardstanding	7 ha	1	Hardstanding and bare ground were recorded in the form of gravel and soil access tracks, which are partially vegetated, within the Solar PV Site.	Open Mosaic Habitats on Previously Developed Land is a Section 7 HoPI
			Unvegetated, loose bare substrate was also recorded within the Former Oil Depot, in areas previously occupied by storage tanks, where the vegetation was 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>Centaurium erythraea</i> , common knapweed <i>Centaurea nigra</i> , yellow	

Habitat	Area (Ha) / Length (Km)	% of Site Area	Description	Conservation Status
			rattle, common thyme <i>Thymus vulgaris</i> ,	
			fairy flax Linum catharticum, red bartsia	
			Odonites vernus, blue fleabane	
			Erigeron acer, hares foot clover	
			Trifolium arvense and eyebrights	
			Euphrasia sp Large numbers of bee	
			orchid Ophrys apifera and northern	
			marsh orchid Dactylorhiza pulchella	
			were also recorded in addition to	
			several pyramidal orchid Anacamptis	
			pyramidalis and heath spotted x	
			northern marsh orchid <i>Dactylorhiza x</i>	
			formosa.	
			This part of the Solar PV Site	
			comprises an open mosaic habitat of	
			more than 0.25 ha. 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	

Habitat	Area (Ha) / Length (Km)	% of Site Area	Description	Conservation Status
			for the UKBAP Priority Habitat Descriptions 'Open Mosaic Habitats on Previously Developed Land'.	

NVC Survey Results

4.2.2 The results of any forthcoming NVC Surveys will be detailed within this section upon completion and will be included as part DOC and associated ES.

5 Summary

- 5.1.1 Improved and poor semi-improved grassland are the dominant land use (collectively 82%) across all areas of the Solar PV Site. Neutral grassland semi-improved was generally restricted to the Former Oil Depot located in Maen Hir North, with scattered fields also present in Maen Hir South B.
- 5.1.2 Marsh/marshy grassland was scattered throughout the Solar PV Site, generally associated Llyn Alaw in Maen Hir Central and occurring frequently within Maen Hir South A and B.
- 5.1.3 Small, scattered woodland of various types occurs throughout the Solar PV Site.

 Notably ancient woodland occurs largely within Maen Hir South A and B, with one stand in Maen Hir North. An additional area of AW occurs within the Cable Route Corridor, associated with Coed Cae Mawr LWS, (located between Maen Hir Central and South).
- 5.1.4 A network of drains and streams, which follow field boundaries occur across the Solar PV Site. These are all tributaries of the Wen, Goch, Glasgraig Fawr, Afon Alaw, Wygyr, Cefni and Ysgoldy Rivers.
- 5.1.5 There are approximately 84 km of hedgerow across the Solar PV Site, many of which are associated with cloddiau. Additional hedgerows are anticipated throughout the proposed Cable Route Corridor, Highways Works Land, and Grid Connection Corridor. The vast majority of hedgerows are species poor and hedgerows with trees are more prevalent in the more sheltered Maen Hir South A and B. Species rich hedgerows are less common but occur largely in association with poor semi-improved grassland where farming practices are less intensive. These species rich hedgerows occur within Maen Hir Central and South B.
- 5.1.6 Potential HoPI recorded to date include Open Mosaic Habitats on Previously Developed Land located within the Former Oil Depot, as well as areas of seminatural 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.

- 5.1.7 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
- 5.1.8 Further survey work will be completed in 2024 and 2025 to inform the ES.

6 References

- Ref. 7-2.1. HMSO (2019). Conservation of Habitats and Species Regulations 2017. Available at: http://www.legislation.gov.uk/uksi/2017/1012/contents/made. [Accessed 09 July 2024].
- Ref. 7-2.2. HMSO (1981) The Wildlife & Countryside Act 1981. Available at: https://www.legislation.gov.uk/ukpga/1981/69/contents [Accessed 09 July 2024].
- Ref. 7-2.3. HMSO (2000). Countryside and Rights of Way Act 2000. Available at: https://www.legislation.gov.uk/ukpga/2000/37/contents [Accessed 30 July 2024]
- Ref. 7-2.4. HMSO (2016) The Environment (Wales) Act 2016. Available at: https://www.legislation.gov.uk/anaw/2016/3/contents/enacted [Accessed 09 July 2024].
- Ref. 7-2.5. HMSO (1997). Hedgerows Regulations 1997. Available at: http://www.legislation.gov.uk/uksi/1997/1160/contents/made. [Accessed 09 July 2024].
- Ref. 7-2.6. Ministry of Housing, Communities and Local Government (2023) National Planning Policy Framework. Published on the UK Government website: National Planning Policy Framework (publishing service gov.uk).
- Ref. 7-2.7. Joint Planning Policy Unit for Anglesey and Gwynedd (2017). Anglesey and Gwynedd Joint Local Development Plan 2017.
- Ref. 7-2.8. Ynys Mon (2021) Corporate Biodiversity Plan 2021-2022. Available from Corporate Diversity Plan 2021 2022.
- Ref. 7-2.9. JNCC (2010). Handbook for Phase 1 habitat survey a technique for environmental audit. JNCC, Peterborough, ISBN 0 86139 636 7.
- Ref. 7-2.10. Rodwell, J.S. (2006) NVC Users' Handbook. JNCC, Peterborough, ISBN 978 1 86107 574 1.
- Ref. 7-2.11. DEFRA (2007). Hedgerow Survey Handbook: A standard procedure for local surveys in the UK (2nd edition). Available at: https://www.hedgelink.org.uk/cms/cms_content/files/89_hedgerow-survey-handbook.pdf. [Accessed 09 July 2024].
- Ref. 7-2.12. BRIG (2008). UK Biodiversity Action Plan: Priority Habitat Descriptions. Available at: https://data.jncc.gov.uk/data/2728792c-c8c6-4b8c-9ccd-a908cb0f1432/UKBAP-PriorityHabitatDescriptions-Rev-2011.pdf [Accessed 09 July 2024].

Ref. 7-2.13. The Woodland Trust. Ancient Tree Inventory. Available at: Tree Search - Ancient Tree Inventory (woodlandtrust.org.uk) [Accessed 09 July 2024].

Ref. 7-2.14. Welsh Government. (2024) DataMapWales. Available at: https://datamap.gov.wales/maps/new#/ [Accessed 09 July 2024].

Annex I Photographs

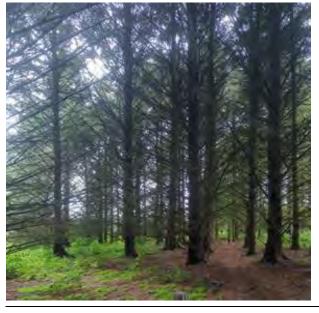
Annex Table: Target Notes and Photographs





Photograph 1: Broadleaved woodland - semi-natural

Photograph 2: Broadleaved woodland - plantation





Photograph 3: Coniferous woodland - plantation

Photograph 4: Mixed woodland - semi natural





Photograph 5: Mixed woodland - plantation

Photograph 6: Dense/continuous scrub





Photograph 7: Coniferous parkland/ scattered trees

Photograph 8: Mixed parkland/ scattered trees





Photograph 9: Neutral grassland - semi-improved

Photograph 10: Improved grassland





Photograph 11: Marshy grassland

Photograph 12: Bracken - continuous





Photograph 13: Other tall herb and fen – ruderal

Photograph 14: Swamp





Photograph 15: Standing water

Photograph 16: Other exposure - basic





Photograph 17: Cultivated/ disturbed land – arable

Photograph 18: Species-poor hedgerow with cloddiau. Earth bank and stone wall

Annex II Species List

DAFOR = Dominant - Abundant - Frequent - Occasional - Rare

Annex Table 1: Species List

English	Latin	Location	DAFOR
Angelica	Angelica sylvestris	Grassy/damp areas	0
Annual meadow grass	Poa annua	Grassy/ephemeral areas	0
Bee orchid	Ophrys apifera	Grassy/ephemeral areas	0
Beaked hawksbeard	Crepis vesicaria	Grassy/ephemeral areas	F
Birdsfoot trefoil	Lotus conriculatus	Grassy/ephemeral areas	F
Black spleenwort	Asplenium adiantum-nigrum	Stoney/ephemeral areas	R
Blue fleabane	Erigeron acer	Stoney/ephemeral areas	R
Bracken	Pteridium aquilinum	Woodland edge	R
Bramble	Rubuis fruticosus agg.	Grassy/ephemeral areas	F
Broad buckler fern	Dryopteris dilatata	Woodland edge	R
Broadleaved dock	Rumex obtusifolius	Grassy areas	R
Broadleaved willowherb	Epilobium montanum	Grassy/ephemeral areas	0
Cleavers	Galium aparine	Grassy/ephemeral areas	R
Clustered dock	Rumex conglomeratus	Grassy areas	R
Coltsfoot	Tussilago farfara	Stoney/ephemeral areas	R
Cocksfoot grass	Dactylis glomerata	Grassy areas	0
Common catsear	Hypochaeris radicata		0
Common centuary	Centaurium erythraea	Stoney/ephemeral areas	F
Common cudweed	Filago germanica	Stoney/ephemeral areas	R
Common knapweed	Centaurea nigra	Grassy areas	R
Common mouse-ear	Cerastium fontanum	Grassy areas	0

English	Latin	Location	DAFOR
Common polypody	Polypodium vulgare	Stoney/ephemeral areas	0
Common ragwort	Jacobaea vulgaris	Grassy areas	0
Common restharrow	Ononis repens	Stoney/ephemeral areas	R
Common sorrel	Rumex acetosa	Grassy areas	F
Common spikerush	Eleocharis palustris	Pools	R
Common storksbill	Erodium cicutarium	Stoney/ephemeral areas	R
Common thyme	Thymus vulgaris	Stoney/ephemeral areas	R
Common vetch	Vicia sativa	Grassy areas	0
Common water-crowfoot	Ranunculus aquatilis	Pools	R
Compact rush	Juncus conglomeratus	Grassy/damp areas	R
Cotoneaster	Cotoneaster sp.	Grassy/ephemeral areas	0
Creeping buttercup	Ranunculus repens	Grassy areas	0
Creeping cinquefoil	Potentilla repens	Grassy/ephemeral areas	F
Creeping thistle	Cirsium arvense	Grassy/ephemeral areas	R
Crested dogs tail grass	Cynosurus cristatus	Grassy areas	F
Cut leaved cranesbill	Geranium dissectum	Grassy areas	0
Cuckooflower	Cardamine pratensis	Grassy/damp areas	0
Curled dock	Rumex crispus	Grassy areas	R
Daisy	Bellis perennis	Stoney/ephemeral areas	0
Dandelion	Taraxacum officinale	Stoney/ephemeral areas	R
Dovesfoot Cranesbill	Geranium molle	Grassy/ephemeral areas	0
English stonecrop	Sedum anglicum	Stoney/ephemeral areas	А
European gorse	Ulex europaeus	Scrubby areas/pool	F
Eyebright	Euphrasia spp.	Stoney/ephemeral areas	R

English	Latin	Location	DAFOR
Fairyflax	Linum catharticum	Stoney/ephemeral areas	R
False oat grass	Arrhenatherum elatius	Grassy areas	0
Fern grass	Catapodium rigidum	Stoney/ephemeral areas	R
Field horsetail	Equisetum arvense	Grassy/damp areas	0
Field pennycress	Thlaspi arvense	Stoney/ephemeral areas	R
Field woodrush	Luzula campestris	Grassy areas	R
Fools watercress	Apium nodiflorum	Pools	R
Foxglove	Digitalis purpurea	Grassy/ephemeral areas	0
Germander speedwell	Veronica chamaedrys	Stoney/ephemeral areas	R
Glaucous sedge	Carex flacca	Grassy areas	0
Glittering wood-moss	Hylocomium splendens	Stoney/ephemeral areas	0
Greater plantain	Plantago major	Grassy/ephemeral areas	R
Greater willowherb	Epilobium hirsutum	Grassy areas	0
Green mountain fringe- moss	Racomitrium fasciculare	Stoney/ephemeral areas	0
Hairy tare	Vicia hirsuta	Grassy areas	R
Haresfoot clover	Trifolium arvense	Stoney/ephemeral areas	0
Hartstongue fern	Asplenium scolopendrium	Stoney/ephemeral areas	0
Heath speedwell	Veronica officinalis	Stoney/ephemeral areas	R
Heath spotted-orchid x northern marsh-orchid	Dactylorhiza x formosa	Grassy/ephemeral areas	R
Heath woodrush	Luzula multiflora	Grassy/damp areas	R
Herb robert	Geranium robertianum	Stoney/ephemeral areas	0
Hogweed	Heracleum sphondylium	Grassy areas	R
Ivy	Hedera helix	Stoney/ephemeral areas	0

English	Latin	Location	DAFOR
Ivy-leaved toadflax	Cymbalaria muralis	Stoney/ephemeral areas	R
Juniper haircap moss	Polytrichum juniperinum	Grassy/ephemeral areas	R
Knotted pearlwort	Sagina nodosa	Stoney/ephemeral areas	R
Lady fern	Athyrium filix-femina	Grassy/ephemeral areas	R
Lavender	Lavandula sp.	Stoney/ephemeral areas	R
Lesser spearwort	Ranunculus flammula	Pools	R
Lesser stichwort	Stellaria graminea	Grassy areas	R
Lesser trefoil	Trifolium dubium	Stoney/ephemeral areas	F
Maidenhair spleenwort	Asplenium trichomanes	Stoney/ephemeral areas	R
Male fern	Dryopteris filix-mas	Grassy/ephemeral areas	F
Marsh bedstraw	Galium palustre	Grassy/damp areas	0
Marsh foxtail	Alopecurus geniculatus	Damper areas (ruts)	R
Marsh willowherb	Epilobium palustre	Grassy/damp areas	R
Meadow vetchling	Lathyrus pratensis	Grassy areas	0
Mouse-eared hawkweed	Pilosella officinarum	Grassy/ephemeral areas	A
Meadow buttercup	Ranunculus acris	Grassy areas	F
Mullein	Verbascum sp.	Stoney/ephemeral areas	R
Neat feather-moss	Pseudoscleropodium purum	Grassy/ephemeral areas	R
Nettle	Urtica dioica	Grassy/ephemeral areas	R
New Zealand pygmyweed	Crassula helmsii	Pools	R
Northern marsh-orchid	Dactylorhiza pulchella	Grassy/ephemeral areas	O (LF)
Oval sedge	Carex leporina	Grassy areas	R
Oxeye daisy	Leucanthemum vulgare	Grassy areas	R

English	Latin	Location	DAFOR
Perennial rye grass	Lolium perenne	Grassy areas	R
Pondweed	Potamogetan sp.	Pools	R
Prickly sow-thistle	Sonchus asper	Stoney/ephemeral areas	R
Pyramidal orchid	Anacamptis pyramidalis	Grassy/ephemeral areas	R
Red bartsia	Odontites vernus	Grassy/ephemeral areas	R
Red campion	Silene dioica	Grassy areas	R
Red clover	Trifolium pratense	Grassy areas	0
Red fescue	Festuca rubra	Grassy areas	F
Reedmace	Typha latifolia	Pools	R
'Reindeer moss' lichen	Cladonia portentosa	Scrubby areas/pool	0
Ribwort plantain	Plantago lanceolata	Grassy areas	F
Rosebay willowherb	Chamerion angustifolium	Grassy areas	0
Rough hawksbeard	Crepis biennis	Grassy/ephemeral areas	A
Rough meadow grass	Poa trivialis	Grassy areas	0
Sand sedge	Carex arenaria	Grassy/ephemeral areas	0
Scarlet pimpernell	Angalis arvensis	Stoney/ephemeral areas	R
Sheep's sorrel	Rumex acetosella	Stoney/ephemeral areas	0
Silky forklet-moss	Dicranella heteromalla	Grassy/ephemeral areas	R
Silverweed	Potentialla anserina	Grassy areas	0
Slender St. John's-wort	Hypericum pulchrum	Grassy/ephemeral areas	0
Smooth sow-thistle	Sonchus oleraceus	Grassy areas	R
Soft brome	Bromus hordaceous	Grassy/ephemeral areas	0
Soft rush	Juncus effusus	Grassy/damp areas	0
Spear thistle	Cirsium vulgare	Grassy/ephemeral areas	R

English	Latin	Location	DAFOR
Tufted forget me not	Myosotis laxa	Grassy areas	R
Springy turf-moss	Rhytidiadelphus sqaurrosus	Grassy/ephemeral areas	R
Squinancywort	Asperula cynanchica	Stoney/ephemeral areas	R
Sweetbriar	Rosa rubiginosa	Scrubby areas/pool	0
Sweet vernal grass	Anthoxanthum odoratum	Grassy areas	A
Talls hawksbeard	Pilosella praealta	Grassy/ephemeral areas	R
Tufted hair grass	Deschampsia cespitosa	Grassy areas	R
Thyme-leaved speedwell	Veronica serpyllifolia	Grassy/ephemeral areas	R
Timothy grass	Phleum pratense	Grassy areas	R
Tufted vetch	Vicia cracca	Grassy areas	R
Violet	Viola sp.	Grassy/ephemeral areas	R
Wall lettuce	Mycelis muralis	Stoney/ephemeral areas	R
Wall rue fern	Asplenium ruta-muraria	Stoney/ephemeral areas	R
Water horsetail	Equisetum fluviatile	Ditches	R
Water parsnip	Berula erecta	Ditches	R
Wavy hair grass	Deschampsia flexuosa	Grassy/ephemeral areas	F
White clover	Trifolium repens	Grassy areas	0
Yarrow	Achillea millefolium	Grassy areas	0
Yorkshire fog	Holcus lanatus	Grassy areas	A