Appendix F.2

Shadow Habitats Regulations Assessment Report

Bodelwyddan Solar and Energy Storage

Technical Appendix F.2: Shadow Habitats Regulations Assessment Report

Prepared by:
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On behalf of:
Bodelwyddan Solar and Energy Storage Ltd.

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PLANS

Section 1
Introduction

1.1 This Shadow Habitats Regulations Assessment (sHRA) has been prepared by The Environmental Dimension Partnership Ltd (EDP) on behalf of Bodelwyddan Solar and Energy Storage Ltd. (hereafter referred to as 'the Applicant') in relation to the Proposed Development at land to the north-west and south-east of Bodelwyddan. This assessment has been prepared to provide the information necessary to enable the Welsh Ministers (WM), as the competent authority, to undertake a Habitats Regulations Assessment (HRA) of the Proposed Development.

1.2 EDP is an independent environmental planning consultancy with offices in Cirencester, Cardiff, and Cheltenham. The practice provides advice to private and public sector clients throughout the UK in the fields of landscape, ecology, archaeology, cultural heritage, arboriculture, rights of way and masterplanning. Details of the practice can be obtained at our website (www.edp-uk.co.uk).

SITE CONTEXT

1.3 The Site comprises two parcels of land, a Solar Site and a Battery Energy and Storage System (BESS) Site, and a Cable Corridor connecting the sites to the National Grid Bodelwyddan substation. The Solar Site is centred at Ordnance Survey Grid Reference (OSGR) SH 98274 77362 and is located across c.168.95 hectares (ha) of agricultural land (primarily cattle pasture) to the north-west of the town of Bodelwyddan, Denbighshire. The BESS Site comprises a field of c.6.52ha to the south-east of Bodelwyddan, centred at OSGR SJ 01308 73447. The Cable Corridor will be c.8 km in length and 10 m in width and primarily follows existing roads and tracks, with some sections through agricultural fields.

1.4 The principal ecological features within the Site are illustrated on Figure 10.1: Habitat Plan of Environmental Statement (ES) Chapter 10: Biodiversity, which has been submitted as part of the planning application.

PROPOSED DEVELOPMENT

1.5 The description of the Proposed Development is "*The construction, operation and maintenance of a proposed solar photovoltaic electricity generating system and battery energy storage system ('BESS'), associated solar arrays, inverters, transformers, cabling, substations, access tracks, landscaping, ecological enhancement areas and associated ancillary development*".

1.6 A full description of the Proposed Development is provided in ES Chapter 3: Site and Development Description.

PURPOSE OF THIS REPORT

1.7 This sHRA aims to provide relevant and robust technical information to enable competent authorities to discharge their functions under Regulations 7 and 63 (requirement to carry out Appropriate Assessment) of the Conservation of Habitats and Species Regulations 2017 (as amended) in relation to the Proposed Development.

1.8 Regulation 63 (1) of the Conservation of Habitats and Species Regulations 2017 (as amended) states that: "a competent authority, before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project which (a) is likely to have a significant effect on a European site or a European offshore marine site (either alone or in combination with other plans or projects), and (b) is not directly connected with or necessary to the management of that site, must make an appropriate assessment of the implications of the plan or project for that site in view of that site's conservation objectives."

1.9 Regulation 63 (2) further states that "*a person applying for any such consent, permission or other authorisation must provide such information as the competent authority may reasonably require for the purposes of the assessment or to enable it to determine whether an appropriate assessment is required*".

1.10 Regulation 63 (3) states that "*the competent authority must for the purposes of the assessment consult the appropriate nature conservation body and have regards to any representations made by that body within such reasonable time as the authority specifies*".

1.11 Regulation 63 (5) goes on to state that "*in the light of the conclusions of the assessment, and subject to regulation 64, the competent authority may agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the European Site or the European offshore marine site (as the case may be)*".

1.12 Regulation 63 (6) concludes that "*in considering whether a plan or project will adversely affect the integrity of the site, the competent authority must have regard to the manner in which it is proposed to be carried out or to any conditions or restrictions subject to which it proposes that the consent, permission or other authorisation should be given*".

1.13 This sHRA describes the potential for Likely Significant Effects (LSEs) on European sites to arise as a result of the Proposed Development at each stage of the HRA process. European sites include Special Protection Areas (SPAs) classified under the European Commission Directive on the Conservation of Wild Birds and Special Areas of Conservation (SACs) designated under the Conservation of Habitats and Species 2017 (as amended). This report will also consider sites designated under the Ramsar Convention on Wetlands of International Importance (1971, Ramsar Sites) as per Welsh Government Policy (set out in paragraph 6.4.29 of the *Planning Policy Wales Edition 12* (PPW, 2024)). This document also brings candidate SACs (cSACs) and potential SPAs (pSPAs) within the requirement for HRA. For ease of reference, all such designated sites will hereafter be referred to as 'European sites'.

1.14 It is noted that s6(3) of the European Union (EU) (Withdrawal) Act 2018 (as amended) requires retained EU law (such as the Conservation of Habitats and Species Regulations 2017 (as amended)) to be interpreted in line with 'retained case law' which includes retained EU case law.

Section 2
Methodology

2.1 The HRA assessment process follows four sequential stages, with guidance having been published to aid competent authorities to fulfil their responsibilities (e.g. European Commission 2001[1]; DCLG, 2006[2], DTA, 2013[3]):

- Stage 1: Habitat Screening;
- Stage 2: Appropriate Assessment;
- Stage 3: Alternative Solutions; and
- Stage 4: Interests of Overriding Public Interest and Compensatory Measures.

2.2 In this case, owing to the nature of potential LSE identified, and that proposed mitigation is deemed to successfully negate any effects, it was deemed not necessary to take the assessment of the Proposed Development to Stage 3 or Stage 4.

2.3 Further details pertaining to the methodology and approach taken with regards to Stage 1 and Stage 2 are provided below, with details relating to European sites considered within this sHRA, provided in **Section 3**.

STAGE 1: SCREENING

2.4 Each European site will be considered in the context of the Proposed Development and screened for any LSE. This stage of the report presents the findings of the screening assessment undertaken to identify LSEs of the Proposed Development on European sites.

2.5 This stage considers the possibility for LSEs to occur based on high-level analysis of risks, taking into account the spatial relationship between impact sources and designated sites (and functionally linked habitats and species), the magnitude of changes predicted with regard to atmospheric, coastal/estuarine, and freshwater receptor pathways (with reference to the relevant specialist studies), and any physical or other relationships between the Site boundary and each European site. Stage 1 screening for LSEs considers the project alone and in combination with other projects.

2.6 If it can be confidently predicted on the basis of objective information that no LSEs are identified for all the European sites considered, then HRA Stages 2 and beyond are not required and the report would take the form of a No Significant Effects Report.

[1] European Commission (2001). Assessment of plans and projects significantly affecting Natura 2000 sites. Oxford Brookes University.
[2] DCLG (2006). Planning for the Protection of European Sites: Appropriate Assessment. Guidance for Regional Spatial Strategies and Local Development Documents. Department for Communities and Local Government, HMSO, London.
[3] Tyldesley, D., and Chapman C., (2013) The Habitats Regulations Assessment Handbook, DTA Publications Ltd. [Accessed July 2025]

2.7 The judgment of People over Wind and Sweetman v. Coillte Teoranta (12 April 2018) ruled that mitigation measures intended to avoid or reduce the harmful effects of the plan or project on a European site cannot be considered at the Stage 1 Screening Stage. Therefore, in this sHRA report, such measures will not be taken into account at Stage 1. Only measures that constitute part of the project design and are not intended to avoid or reduce effects on European site features, are therefore considered at the Screening Stage.

2.8 Evidence gathering and consultation, including the collation of baseline data on pertinent qualifying features within the Proposed Development's Zone of Influence (ZoI), is an integral part of Stage 1 screening. Desk- and field-based investigations have been undertaken, in addition to consultation, to provide robust baseline information appropriate to inform the HRA. The full results from this work are presented in ES Chapter 10: Biodiversity and ES Appendix F.1: Ecological Baseline Report, which accompany the planning application. Detailed winter bird surveys at the Site have also been undertaken to inform the sHRA, as described in detail later in this report.

STAGE 2: APPROPRIATE ASSESSMENT

2.9 Those LSEs screened in will then be subject to progression to Stage 2: Appropriate Assessment. Under the Habitats Regulations, the Competent Authority is required to carry out an Appropriate Assessment if there are deemed to be LSEs on European sites when considered alone or in combination with other projects, and where those LSEs arise from a plan or project not directly connected with, or necessary to the management of, that site or sites.

2.10 If Stage 1 identifies an LSE upon a European site, an assessment of the effects of the project upon the European site's conservation objectives/interest features is carried out either in respect of the project alone or in combination with other plans and projects which cannot be discounted. Conservation objectives for European sites are defined and published by Natural Resources Wales (NRW) and Natural England (NE) and the assessment refers to the relevant objectives as necessary. The assessment will include sufficient information to enable an Appropriate Assessment to be undertaken by the competent authority and will detail mitigation designed to reduce or eliminate identified LSE upon those European sites screened into the assessment.

Section 3
Relevant European Sites and Baseline Information

IDENTIFICATION OF RELEVANT EUROPEAN SITES

3.1 There are no European sites within or adjacent to the Site. However, European Sites are known to be present within the wider area. Due to the separation distance from the Site, with no interconnected ecological pathways (e.g. watercourses), it is not considered that any direct impacts will arise through either the construction, operational or decommissioning phases that will have an LSE.

3.2 As the Proposed Development is for a solar farm and BESS, this project will not increase the number of visitors or residents to the area, cause an increase in traffic, introduce any non-native species or pests that would affect the designated sites, nor impact any management activity within these sites.

3.3 With consideration of this and the type, scale and location of the Proposed Development, the following potential impact pathways for any nearby European Sites have been identified:

Construction Impacts

- Loss and/or fragmentation of functionally linked habitat for vagile species; and
- Disturbance of species (within functionally linked land) from construction noise/vibration/lighting.

Operational Impacts

- Disturbance of species (within functionally linked land) from operational noise.

Decommissioning Impacts

- Disturbance of species (within functionally linked land) from decommissioning works noise/vibration/lighting.

Zone of Influence

3.4 In light of the above potential impact pathways, a distance of 15 km from the Site boundary has been used as a starting point to identify European Sites that may be impacted by the Proposed Development. As such, all European Sites within this 15km ZoI of the Site will be considered within this sHRA.

3.5 Furthermore, given that some impacts may have potential to extend beyond this distance (e.g. through hydrological pathways or functionally linked land for certain wide-ranging bird species), consideration has also been given to more distant sites along these pathway routes. In this case, no further European Sites were identified for inclusion within the assessment.

3.6 The following European sites will therefore be screened and assessed within this sHRA:

- Coedwigoedd Dyffryn Elwy/Elwy Valley Woods SAC;
- Liverpool Bay/Bae Lerpwl SPA;
- The Dee Estuary/Aber Dyfrdwy SPA, Ramsar and SAC;
- Llwyn SAC;
- Halkyn Mountain/Mynydd Helygain SAC; and
- Coedwigoedd Penrhyn Creuddyn/Creuddyn Peninsula Woods SAC.

3.7 These sites and their spatial relationship to the Proposed Development is illustrated on **Plan EDP 1**.

QUALIFYING CRITERIA OF RELEVANT EUROPEAN SITES

3.8 The qualifying criteria and relative distance of relevant European sites from the Proposed Development are summarised in **Table EDP 3.1**.

Table EDP 3.1: Summary of European Sites

European Site and Distance	Qualifying Features
Coedwigoedd Dyffryn Elwy/Elwy Valley Woods SAC c.1.4 km south of the Site	This SAC supports the following Annex I habitats that are a primary reason for selection[4]: • Tilio-Acerion forests of slopes, screes and ravines.
Liverpool Bay/Bae Lerpwl SPA c. 2.1 km north of the Site	The features of this SPA are[5]: • Non-breeding red-throated diver (*Gavia stellata*); • Non-breeding common scoter (*Melanitta nigra*); • Non-breeding little gull (*Hydrocoloeus minutus*); • Breeding common tern (*Sterna hirundo*); • Breeding little tern (*Sternula albifrons*); and • Non-breeding waterbird assemblage. The SPA qualifies under Article 4 of the Birds Directive (2009/147/EC) for the following reasons: • Species listed in Annex I of the Birds Directive: the Site regularly supports more than 1% of the Great Britain populations of two breeding species and one non-breeding species;

[4] JNCC SAC Site Information available at https://sac.jncc.gov.uk/site/UK0030146 [accessed May 2025]

[5] JNCC, NRW and NE (2016). Departmental Brief: Liverpool Bay / Bae Lerpwl. Available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/566835/liverpool-bay-bae-lerpwl-spa-departmental-brief.pdf [accessed May 2025]

European Site and Distance	Qualifying Features
	• Regularly occurring migrants not listed in Annex I of the Birds Directive: the site regularly supports more than 1% of the biogeographical populations of one nonbreeding species; • Assemblages: the Site regularly supports an assemblage of more than 20,000 individual waterbirds; and • Species for which stage 1 guidelines cannot be applied: the Site regularly supports one non-breeding species which is on Annex I of the Birds Directive but which cannot be selected at stage 1.1 because there is no national population estimate for comparison. The Site is identified as supporting the second largest aggregation of little gulls in the UK.
The Dee Estuary (Wales) SPA c.9.9 km north-east of the Site	The site qualifies under Article 4.1 of the Directive (79/409/EEC) as it is used regularly by 1% or more of the Great Britain populations of the following species[6]: • Non-breeding bar-tailed godwit (*Limosa lapponica*); • Breeding common tern (*Sterna hirundo*); • Breeding little tern (*Sterna albifrons*); and • Autumn passage sandwich tern (*Sterna sandvicensis*). The site qualifies under Article 4.2 of the Directive as it is used regularly by 1% or more of the biogeographical populations of the following regularly occurring migratory species: • Redshank (Tringa tetanus) – passage; • Shelduck (Tadorna tadorna) – wintering; • Teal (Anas crecca) – wintering; • Pintail (Anas acuta) – wintering; • Oystercatcher (Haematopus ostralegus) – wintering; • Grey plover (Pluvialis squatarola) – wintering; • Knot (Calidris canutus islandica) – wintering; • Dunlin (Calidris alpina) – wintering; • Black-tailed godwit (Limosa limosa islandica) – wintering; • Curlew (Numenius Arquata) – wintering; and • Redshank (Tringa tetanus) – wintering. The Site also qualifies under article 4.2 of the Directive as it regularly supports an assemblage of more than 20,000 individual waterbirds.

[6] Natural England (2014) Dee Estuary SPA Citation. Available at https://publications.naturalengland.org.uk/publication/6557770283220992 [accessed May 2025]

European Site and Distance	Qualifying Features
The Dee Estuary (Wales) Ramsar c. 9.9 km north-east of the Site	The Dee Estuary Ramsar covers an area of approximately 14,303 ha and is designated as wetland of international importance under a number of criteria of the Ramsar Convention on Wetlands[7]: • Criterion 1: Presence of Annex I features (as listed above for the SAC); • Criterion 2: It supports breeding colonies of the vulnerable natterjack toad (*Epidalea calamita*); and • Criterion 5 and 6: Bird assemblages and species of international importance (as listed above for the SPA).
Dee Estuary/Aber Dyfrdwy (Wales) SAC c.9.9 km north-east of the Site	This SAC supports the following Annex I habitats that are a primary reason for selection[8]: • Mudflats and sandflats not covered by seawater at low tide; • Salicornia and other annuals colonizing mud and sand; and • Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*). This SAC also supports the following Annex I habitats that are present as a qualifying feature but are not a primary reason for selection: • Estuaries; • Annual vegetation of drift lines; • Vegetated sea cliffs of the Atlantic and Baltic Coasts • Embryonic shifting dunes; • "*Shifting dunes along the shoreline with Ammophila arenaria (white dunes)";* • "*Fixed coastal dunes with herbaceous vegetation (grey dunes)*"; and • Humid dune slacks. This SAC supports the following Annex II species that are present as a qualifying feature but are not a primary reason for selection: • Sea lamprey (*Petromyzon marinus*); • River lamprey (*Lampetra fluviatilis*); and • Petalwort (*Petalophyllum ralfsii*).
Llwyn SAC c.10.7 km south-east of the Site	This SAC supports the following Annex I habitats that are a primary reason for selection[9]: • Alluvial forests with Alnus glutinosa and Fraxinus excelsior (*Alno-Padion, Alnion incanae, Salicion albae*).

[7] Ramsar Information Sheet (RIS) available at https://rsis.ramsar.org/ris/298 [accessed May 2025]
[8] JNCC SAC Site Information available at https://sac.jncc.gov.uk/site/UK0030131 [accessed May 2025]
[9] JNCC SAC Site Information available at https://sac.jncc.gov.uk/site/UK0030185 [accessed May 2025]

European Site and Distance	Qualifying Features
Halkyn Mountain/Mynydd Helygain SAC c.14.3 km east of the Site	This SAC supports the following Annex I habitats that are a primary reason for selection[10]: • Calaminarian grasslands of the *Violetalia calaminariae*. This SAC also supports the following Annex I habitats that are present as a qualifying feature but are not a primary reason for selection: • European dry heaths; • Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (* important orchid sites); and • Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*). This SAC supports the following Annex II species that are a primary reason for selection: • Great crested newt (*Triturus cristatus*).
Coedwigoedd Penrhyn Creuddyn/Creuddyn Peninsula Woods SAC c. 14.7 km west of the Site	This SAC supports the following Annex I habitats that are a primary reason for selection[11]: • Tilio-Acerion forests of slopes, screes and ravines. This SAC also supports the following Annex I habitats that are present as a qualifying feature but are not a primary reason for selection: • Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (*important orchid sites); and • Taxus baccata woods of the British Isles.

CONSERVATION OBJECTIVES OF THE EUROPEAN SITES

Coedwigoedd Dyffryn Elwy/Elwy Valley Woods SAC

3.9 The Conservation Objective for Coedwigoedd Dyffryn Elwy/Elwy Valley Woods SAC as defined by Countryside Council for Wales (now NRW) is for its Annex I feature (Tilio-Acerion forests of slopes, screes and ravines) to be in a favourable conservation status, where all of the conditions listed within the Core Management Plan[12] are satisfied.

[10] JNCC SAC Site Information available at https://sac.jncc.gov.uk/site/UK0030163 [accessed May 2025]
[11] JNCC SAC Site Information available at https://sac.jncc.gov.uk/site/UK0030124 [accessed May 2025]
[12] Countryside Council for Wales (2008) Core Management Plan for Coedwigoedd Dyffryn Elwy/ Elwy Valley Woods Special Area of Conservation (SAC).

Liverpool Bay/Bae Lerpwl SPA

3.10 The Conservation Objectives for Liverpool Bay/Bae Lerpwl SPA are set out within the Conservation Advice Package (December 2022)[13] and present attributes for each of the classified species within the Site. Attributes are outlined for maintaining/restoring species abundance and species distribution, minimising disturbance caused by human activity, maintaining/restoring supporting habitat (food availability), supporting habitat (extent, distribution and availability) and connectivity with supporting habitats (little gull, common tern and little tern only) and assemblage of species: maintaining diversity (waterbird assemblage only).

The Dee Estuary SPA

3.11 The Conservation Objectives for the Dee Estuary SPA as defined by NE[14] are to:

"*Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;*

- *The extent and distribution of the habitats of the qualifying features;*
- *The structure and function of the habitats of the qualifying features;*
- *The supporting processes on which the habitats of the qualifying features rely;*
- *The population of each of the qualifying features; and*
- *The distribution of the qualifying features within the site."*

The Dee Estuary (Wales) Ramsar

3.12 Ramsar sites do not have official Conservation Objectives set by NE or NRW, however, for Ramsar sites the main aims are to promote the conservation of the wetland to avoid deterioration of the wetland habitats of Ramsar interest or significant effects on associated species.

Dee Estuary/Aber Dyfrdwy (Wales) SAC

3.13 The Conservation Objectives for the Dee Estuary/Aber Dyfrdwy (Wales) SAC as defined by NE[15] are to:

"Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- *The extent and distribution of qualifying natural habitats and habitats of qualifying*

[13] NE, NRW and JNCC (2022) Liverpool Bay / Bae Lerpwl Special Protection Area Conservation Advice Package
[14] NE (2019) European Site Conservation Objectives for The Dee Estuary Special Protection Area Site Code: UK9013011
[15] NE (2018) European Site Conservation Objectives for Dee Estuary/Aber Dyfrdwy Special Area of Conservation Site code: UK0030131

species;

- *The structure and function (including typical species) of qualifying natural habitats;*
- *The structure and function of the habitats of qualifying species;*
- *The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely;*
- *The populations of qualifying species; and*
- *The distribution of qualifying species within the site."*

Llwyn SAC

3.14 The Conservation Objective for Llwyn SAC as defined by Countryside Council for Wales (now NRW) is for its Annex I feature (Alluvial forests with Alnus glutinosa and Fraxinus excelsior (*Alno-Padion, Alnion incanae, Salicion albae*)) to be in a favourable conservation status, where all of the conditions listed within the Core Management Plan[16] are satisfied.

Halkyn Mountain/Mynydd Helygain SAC

3.15 The Conservation Objectives for Halkyn Mountain/Mynydd Helygain SAC as defined by Countryside Council for Wales (now NRW) are for its designated features to be in a favourable conservation status, where all of the conditions listed within the Core Management Plan[17] for each feature are satisfied.

Coedwigoedd Penrhyn Creuddyn/Creuddyn Peninsula Woods SAC

3.16 The Conservation Objectives for Coedwigoedd Penrhyn Creuddyn/Creuddyn Peninsula Woods SAC as defined by Countryside Council for Wales (now NRW) are for its designated features to be in a favourable conservation status, where all of the conditions listed within the Core Management Plan[18] for each feature are satisfied.

BASELINE INFORMATION

3.17 To inform the assessment of ecological impacts of the Proposed Development, a suite of desk and field-based investigations have been completed at the Site. The methodology, results and conclusions of these investigations can be found within ES Chapter 10: Biodiversity and ES Appendix F.1: Ecological Baseline Report, which accompany the planning application.

[16] Countryside Council for Wales (2008) Core Management Plan for Llwyn SAC.
[17] Countryside Council for Wales (2008) Core Management Plan for Halkyn Mountain / Mynydd Helygain SAC.
[18] Countryside Council for Wales (2008) Core Management Plan for Coedwigoedd Penrhyn Creuddyn / Creuddyn Peninsula Woods SAC.

3.18 A summary of the relevant surveys completed is provided below:

- Desk studies undertaken in August 2024 with information obtained from the North Wales Environmental Information Service (Cofnod) and Multi-Agency Geographic Information for the Countryside (MAGIC) website;
- Extended Phase 1 Habitat surveys in July 2024;
- Breeding bird surveys in July 2024 and April to June 2025; and
- Wintering bird surveys in November to December 2024 and January to February 2025.

3.19 The key findings that are applicable to the HRA can be summarised as follows:

- The Site does not contain any designated habitat features;
- The BESS Site comprises two small fields which are enclosed by tall trees/hedgerows, such that this part of the Site is not suitable for wintering birds. Conversely, habitats within the Solar Site are suitable for supporting foraging birds in the winter;
- Analysis of the six winter bird survey visits at the Solar Site suggests that the habitats here, notably the wet ditches and fields with occasional standing water, support a variety of overwintering wetland and farmland bird species, including some qualifying species and various wetland conservation concern species, with significant variation across the survey visits. Those qualifying species recorded comprise curlew, redshank, shelduck and teal, (species associated with The Dee Estuary SPA/Ramsar) with only teal recorded in notable numbers; and
- During the breeding bird surveys, 26 birds of conservation concern were considered to possibly/probably be breeding on-site with an additional 12 non-breeding. The diversity of bird species recorded was relatively high, reflecting the range of grassland, ditch, farmland and adjacent woodland present. However, the populations were relatively small for the size of the Solar Site and overall judged to be of Local level ecological importance. Of those qualifying species for the nearby designations, only teal (2-4 breeding pairs) and curlew (a single bird during one survey recorded, therefore considered non-breeding) were found (both qualifying species for the Dee Estuary SPA/Ramsar in relation to wintering populations).

3.20 Relevant desk study and survey findings are referenced within this sHRA screening and assessment where applicable.

Section 4
Stage 1: Screening of Likely Significant Effects

4.1 This section considers the potential for LSE to occur on the European sites identified in **Section 3** as a result of the implementation of the Proposed Development. In accordance with best practice, this discussion is focused on the potential of the development to impact upon the conservation objectives of these designations.

4.2 To account for all potential impact pathways, all areas of vulnerability listed within the relevant 'Site Improvement Plan' (SIP) were considered, along with consideration of any other potential impact pathways specific to the Proposed Development and its location. All potential effects discussed within this Section are considered in the absence of mitigation, as required in accordance with CJEU judgment C-323/17 in 2018 (People Over Wind and Sweetman v. Coillte Teoranta).

COEDWIGOEDD DYFFRYN ELWY/ELWY VALLEY WOODS SAC

4.3 Although this SAC is the closest of the designations to the Site (at c.1.4 km south), no potential impacts on this SAC that could arise from the construction, operational or decommissioning phases of the Proposed Development have been identified. This is due to the following reasons:

- Reasons for designation of this SAC - the habitat Tilio-Acerion forests of slopes, screes and ravines, and no qualifying vagile species;
- Sufficient spatial segregation from the Site (c.1.4 km) and lack of hydrological connection preventing any direct or indirect habitat loss, damage or degradation; and
- The type of development proposed (solar farm and battery energy storage) resulting in no potential impact pathways in relation to this SAC during construction, operation or decommissioning of the Proposed Development.

4.4 No LSEs upon Coedwigoedd Dyffryn Elwy/Elwy Valley Woods SAC, both alone and in combination with other projects or plans, are therefore predicted.

LIVERPOOL BAY/BAE LERPWL SPA

4.5 Potential impacts on this SPA that may arise from the construction, operational or decommissioning phases of the Proposed Development have been identified as follows:

- Loss and/or fragmentation of functionally linked land for vagile bird species;
- Disturbance of bird species (within functionally linked land) from construction and decommissioning noise/vibration/lighting; and
- Disturbance of bird species (within functionally linked land) from operational noise.

4.6 NE's SIP for Liverpool Bay/Bae Lerpwl SPA[19] also lists the following pressures and threats that might affect the qualifying features of the designation: fisheries: commercial marine and estuarine, transportation and service corridors, fisheries: recreational marine and estuarine, extraction: non-living resources, siltation and water pollution. The Proposed Development will not have any impact on or cause any changes to these potential impact pathways. These are therefore not considered further within this report.

Loss and/or Fragmentation of Functionally Linked Land

4.7 The term 'functional linkage' refers to the role or 'function' that land or sea beyond the boundary of a European Site might fulfil in terms of supporting the populations for which the Site was designated or classified. Such an area of land or sea is therefore 'linked' to the Site in question because it provides an important role in maintaining or restoring a protected population at favourable conservation status within the European Site. Supporting habitat in areas beyond the boundary of the Sites which are connected with or 'functionally linked' to the life and reproduction of a population for which a site has been designated or classified should be taken into account in an HRA. This land is hereafter termed 'functionally linked land'.

4.8 The six wintering bird survey visits undertaken at the Solar Site spread across November 2024 to February 2025 did not record any bird species for which the Liverpool Bay/Bae Lerpwl SPA is designated. Furthermore, none of the qualifying bird species for this designation were recorded during the breeding bird survey visits. The full wintering bird survey results are provided at **Appendix EDP 1**.

4.9 As such, habitats within and immediately adjacent to the Site are not considered functionally linked to Liverpool Bay/Bae Lerpwl SPA and no LSEs in regard to this issue, alone or in combination with other projects or plans, are therefore predicted.

Disturbance of Bird Species (Within Functionally Linked Land) from Construction and Decommissioning Noise/Vibration/Lighting, and Operational Noise

4.10 Given it has been confirmed that the Site and immediately adjacent habitats are not functionally linked to the SPA and the qualifying bird species are not present at the Site (as described in the above section), there is no potential for disturbance of bird species within functionally linked land from noise/vibration/lighting associated with construction and decommissioning of the Proposed Development. There is also no potential for disturbance of bird species within functionally linked land from noise associated with operation of the Proposed Development. No LSEs in regard to these issues, alone or in combination with other projects or plans, are therefore predicted.

THE DEE ESTUARY SPA/RAMSAR

4.11 Potential impacts on this SPA and Ramsar site that may arise from the construction, operational or decommissioning phases of the Proposed Development have been identified as follows:

[19] Natural England (2015) Site Improvement Plan: Liverpool Bay/Bae Lerpwl https://publications.naturalengland.org.uk/publication/5296526586806272

- Loss and/or fragmentation of functionally linked land for vagile bird species during construction;
- Disturbance of bird species (within functionally linked land) from construction and decommissioning noise/vibration/lighting; and
- Disturbance of bird species (within functionally linked land) from operational noise.

4.12 NE's Site Improvement Plan (SIP) for the Dee Estuary SPA[20] also lists the following pressures and threats that might affect the qualifying features of the designation: public access/disturbance, changes in species distributions, invasive species, climate change, coastal squeeze, inappropriate scrub control, water pollution, fisheries: commercial marine and estuarine, inappropriate coastal management, overgrazing, direct impact from third party, marine litter, predation, marine consents and permits, wildfire/arson, air pollution: nitrogen deposition, transportation and service corridors and physical modification. The Proposed Development will not have any impact on or cause any changes to these potential impact pathways. These are therefore not considered further within this report.

Loss and/or Fragmentation of Functionally Linked Land

4.13 During the 2024 – 2025 winter bird surveys undertaken at the Solar Site, four species for which The Dee Estuary SPA/Ramsar is designated were recorded, namely redshank, teal, curlew and shelduck.

4.14 **Table EDP 4.1** below table summarises the results of the winter bird surveys in relation to those species associated with The Dee Estuary SPA/Ramsar.

Table EDP 4.1: Winter Bird Survey Results – SPA Qualifying Species

Bird species	Count during each visit						0.5% of GB Pop/n**	1% Dee Estuary Pop/n***
	1	2	3	4	5*	6		
Curlew			1				600	39
Redshank					9		470	53
Shelduck				6	6	3	235	78
Teal	45	60	244	210	46	146	1000	53

* Ditches recently dredged
** Derived from the population estimates in the 2018/19 WeBS report: Frost, T.M., Calbrade, N.A., Birtles, G.A., Mellan, H.J., Hall, C., Robinson, A.E., Wotton, S.R., Balmer, D.E. and Austin, G.E. 2020. Waterbirds in the UK 2018/19: The Wetland Bird Survey. BTO, RSPB and JNCC, in association with WWT. British Trust for Ornithology, Thetford
*** Derived from population estimates on the Natura 2000 Data Form

[20] Natural England (2015) Site Improvement Plan: The Dee Estuary SPA https://publications.naturalengland.org.uk/publication/6579320399069184

4.15 Two species for which The Dee Estuary SPA/Ramsar is designated were also recorded during the breeding bird surveys at the Solar Site, namely curlew and teal. A single curlew was recorded during one of the survey visits and was therefore considered to be not breeding on-site. However, 2-4 pairs of teal were found to be breeding within the Solar Site. Given this low number of breeding pairs and that the SPA/Ramsar designation's citations for this species are in relation to wintering populations, this is not considered to be of importance in relation to potential impacts on the designated sites, and is therefore not considered further within this sHRA report. It is instead considered more generally under the assessment of the breeding bird assemblage at the Site within ES Chapter 10: Biodiversity.

4.16 The presence of species of interest at a site is not necessarily an indication of its importance unless assessment criteria are applied. A report by NE identifying functionally linked land supporting SPA waterbirds in the north-west of England[21] defined functionally linked land as "*areas of land occurring within 20 km of an SPA, that are regularly used by significant numbers of qualifying bird species*" where "*a significant number of birds has been defined as 0.5% of the GB population or 1000 individuals*".

4.17 As can be seen in **Table EDP 4.1**, numbers of each species recorded at the Solar Site during each visit are well below the 0.5% of the GB population threshold. However, the NE report noted that this criterion has been used (rather than the 1% of the qualifying population for each separate SPA) due to their study considering all six SPAs across the north-west of England, within which the population of individual species varies.

4.18 Other studies by NE have used a threshold of >1% of the overall SPA population present on >50% of winter/migratory surveys for land to be considered to be 'functionally linked' to the SPA population[22]. Given that this sHRA is looking at one SPA/Ramsar, this definition of functional linkage is more appropriate to use and is the more precautionary of the two methodologies.

4.19 Applying this approach, **Table EDP 4.1** shows that only teal was recorded in numbers greater than 1% of the Dee Estuary population (estimated to be 5,251 birds) on any visit. Numbers of teal greater than 1% (i.e. more than 53 birds) were recorded on four out of six surveys, suggesting that the Solar Site may be potentially functionally linked to The Dee Estuary SPA/Ramsar for this species.

4.20 However, it is considered unlikely that these birds recorded at the Solar Site are part of the same population as the SPA/Ramsar sites owing to the significant spatial separation between these designations and the Solar Site (c.9.9km at its closest boundary) and the widespread nature of this species across North Wales, which is known to congregate at inland water waterbodies over winter. The number of overwintering teal in the UK has remained relatively stable over the past 25 years and has been reported as increasing across Wales[23].

[21] Bowland Ecology 2021. Identification of Functionally Linked Land supporting SPA waterbirds in the North West of England. NERC361. Natural England.
[22] Palmer, E. and Smart, M. (2021) Identification of wintering and passage roosts on Functionally Linked Land of the Severn Estuary - Gloucestershire and Worcestershire (Phase 5). Natural England Commissioned Reports. NECR401.
[23] Calbrade, N.A., Birtles, G.A., Woodward, I.D., Feather, A., Hiza, B.M., Caulfield, E.B., Balmer, D.E., Peck, K., Wotton, S.R., Shaw, J.M. & Frost, T.M. 2025. Waterbirds in the UK 2023/24: The Wetland Bird Survey and Goose & Swan Monitoring Programme. BTO/RSPB/JNCC/NatureScot. Thetford

4.21 Nonetheless, given that this is difficult to confirm with certainty, a precautionary approach is taken within this sHRA, whereby, the population of teal within the Site is considered potentially functionally linked.

4.22 Therefore, in the absence of mitigation and with a precautionary assumption of functional linkage, LSEs on The Dee Estuary SPA/Ramsar due to loss or fragmentation of functionally linked land from the Proposed Development alone cannot be screened out. As such, loss/fragmentation of functionally linked land effects are taken forward to Appropriate Assessment in **Section 5** of this sHRA.

Disturbance of Bird Species (Within Functionally Linked Land) from Construction and Decommissioning Noise/Vibration/Lighting

4.23 The above assessment precautionarily concludes that the Solar Site is potentially functionally linked to The Dee Estuary SPA/Ramsar for the qualifying species teal. There is therefore potential for this species to be temporarily impacted by noise, vibration and lighting associated with the construction and decommissioning phases of the Proposed Development whilst using the Solar Site.

4.24 Therefore, in the absence of mitigation and with a precautionary assumption of functional linkage, LSEs on The Dee Estuary SPA/Ramsar due to disturbance of bird species within functionally linked land from noise/vibration/lighting associated with construction and decommissioning of the Proposed Development alone cannot be screened out. As such, disturbance of bird species within functionally linked land effects are taken forward to Appropriate Assessment in **Section 5** of this sHRA.

Disturbance of Bird Species (Within Functionally Linked Land) from Operational Noise

4.25 It is anticipated that there will be some noise impacts at the Solar Site associated with the operation of the solar farm, predominantly generated by the cooling fans within the solar inverters and also some from the tracker panels. However, as detailed further within the Noise Impact Assessment accompanying the planning application, this noise will be low frequency, relatively low volume and typically constant throughout the day, such that birds will be able to quickly habituate to it.

4.26 As such, there is no potential for disturbance of bird species within functionally linked land from noise associated with operation of the Proposed Development. No LSEs in regard to this issue, alone or in combination with other projects or plans, are therefore predicted.

DEE ESTUARY/ABER DYFRDWY (WALES) SAC

4.27 Although this SAC is within 15 km of the Site, no potential impacts on this SAC that could arise from the construction, operational or decommissioning phases of the Proposed Development have been identified. This is due to the following reasons:

- Reasons for designation of this SAC – being various estuarine habitats, and the qualifying species (sea lamprey, river lamprey and petalwort) not capable of being supported by the Site or immediately surrounding habitats;

- Sufficient spatial segregation from the Site (c.9.9 km) and lack of hydrological connection preventing any direct or indirect habitat loss, damage or degradation and thereby associated effects on qualifying species; and

- The type of development proposed (solar farm and battery energy storage) resulting in no potential impact pathways in relation to this SAC during construction, operation or decommissioning of the Proposed Development.

4.28 No LSEs upon Dee Estuary/Aber Dyfrdwy (Wales) SAC, both alone and in combination with other projects or plans, are therefore predicted.

LLWYN SAC

4.29 Although this SAC is within 15 km of the Site, no potential impacts on this SAC that could arise from the construction, operational or decommissioning phases of the Proposed Development have been identified. This is due to the following reasons:

- Reasons for designation of this SAC - the habitat Alluvial forests with Alnus glutinosa and Fraxinus excelsior (*Alno-Padion, Alnion incanae, Salicion albae*), and no qualifying vagile species;

- Sufficient spatial segregation from the Site (c.10.7 km) and lack of hydrological connection preventing any direct or indirect habitat loss, damage or degradation; and

- The type of development proposed (solar farm and battery energy storage) resulting in no potential impact pathways in relation to this SAC during construction, operation or decommissioning of the Proposed Development.

4.30 No LSEs upon Llwyn SAC, both alone and in combination with other projects or plans, are therefore predicted.

HALKYN MOUNTAIN/MYNYDD HELYGAIN SAC

4.31 Although this SAC is within 15 km of the Site, no potential impacts on this SAC that could arise from the construction, operational or decommissioning phases of the Proposed Development have been identified. This is due to the following reasons:

- Reasons for designation of this SAC – being several qualifying habitats, and the one qualifying species (great crested newt) not able to travel far such that any populations of this species within the Site will not be part of the population associated with the SAC;

- Sufficient spatial segregation from the Site (c.14.3 km) and lack of hydrological connection preventing any direct or indirect habitat loss, damage or degradation and thereby associated effects on the qualifying species; and

- The type of development proposed (solar farm and battery energy storage) resulting in no potential impact pathways in relation to this SAC during construction, operation or decommissioning of the Proposed Development.

4.32 No LSEs upon Halkyn Mountain/Mynydd Helygain SAC, both alone and in combination with other projects or plans, are therefore predicted.

COEDWIGOEDD PENRHYN CREUDDYN/CREUDDYN PENINSULA WOODS SAC

4.33 Although this SAC is within 15 km of the Site, no potential impacts on this SAC that could arise from the construction, operational or decommissioning phases of the Proposed Development have been identified. This is due to the following reasons:

- Reasons for designation of this SAC – woodland and grassland habitats, and no qualifying vagile species;
- Sufficient spatial segregation from the Site (c.14.7 km) and lack of hydrological connection preventing any direct or indirect habitat loss, damage or degradation; and
- The type of development proposed (solar farm and battery energy storage) resulting in no potential impact pathways in relation to this SAC during construction, operation or decommissioning of the Proposed Development.

4.34 No LSEs upon Coedwigoedd Penrhyn Creuddyn/Creuddyn Peninsula Woods SAC, both alone and in combination with other projects or plans, are therefore predicted.

SUMMARY

4.35 **Table EDP 4.2** provides a summary of the Stage 1: Screening Assessment of the Proposed Development alone and/or in combination with other projects and plans.

Table EDP 4.2: Summary of Stage 1: Screening Assessment

European Site	Potential Impact Pathway	Potential for LSE?	Relevant Qualifying Feature(s)
Coedwigoedd Dyffryn Elwy/ Elwy Valley Woods SAC	None	No	n/a
Liverpool Bay/Bae Lerpwl SPA	Loss and/or fragmentation of functionally linked land	No	n/a
	Disturbance of bird species within functionally linked land during construction, operation and decommissioning	No	n/a
The Dee Estuary SPA/ Ramsar	Loss and/or fragmentation of functionally linked land	**Yes**	Teal
	Disturbance of bird species within functionally linked land during construction and decommissioning	**Yes**	Teal
	Disturbance of bird species within functionally linked land during operation	No	n/a
Dee Estuary/Aber Dyfrdwy (Wales) SAC	None	No	n/a

European Site	Potential Impact Pathway	Potential for LSE?	Relevant Qualifying Feature(s)
Llwyn SAC	None	No	n/a
Halkyn Mountain/Mynydd Helygain SAC	None	No	n/a
Coedwigoedd Penrhyn Creuddyn/Creuddyn Peninsula Woods SAC	None	No	n/a

Section 5
Stage 2: Appropriate Assessment

5.1 The HRA Screening Assessment undertaken in **Section 4** concluded that, as a precaution in the context of case law, LSE on the conservation objectives of the following European sites cannot be completely discounted as a result of the Proposed Development with respect to the following impact pathways:

The Dee Estuary SPA/Ramsar:

- Loss and/or fragmentation of functionally linked land for qualifying bird species teal; and
- Disturbance of qualifying bird species teal within functionally linked land from construction and decommissioning noise/vibration/lighting.

5.2 Accordingly, an assessment of these potential effects resulting from the Proposed Development alone and in combination with other plans or projects is undertaken in this section.

LOSS AND/OR FRAGMENTATION OF FUNCTIONALLY LINKED LAND FOR QUALIFYING BIRD SPECIES TEAL

5.3 In Stage 1 of this sHRA, it was precautionarily concluded that the Solar Site is potentially functionally linked to The Dee Estuary SPA/Ramsar for teal due to numbers of this species greater than 1% of the SPA population being recorded on four out of six winter bird surveys at the Solar Site.

5.4 During the winter bird surveys at the Solar Site, teal were typically not found to be using the open field habitat that will be lost to the installation of solar panels as part of the Proposed Development. Instead, this species was predominantly using the wet ditches of the Solar Site, particularly the largest ditch that forms the northern boundary of the Solar Site, known as the Bodoryn Cut, with this ditch itself being just off-Site. All of the wet ditch habitat across the Solar Site is being retained within the proposals, along with a 5m buffer from the bank tops on both sides across the vast majority of the Site's internal ditch lengths, and a 10m buffer along the largest northern boundary ditch (Bodoryn Cut). These buffers are only infringed by infrequently used access tracks in a small number of pinch points. The wet and dry ditches across the Solar Site are also proposed to be enhanced where feasible and sensitively managed, with potential for some wetting of currently dry ditches (subject to consultation with NRW and any necessary consents).

5.5 Nonetheless, to mitigate for potential impacts on the wider wintering bird assemblage using the Solar Site, mitigation is being provided in the form of an Ecological Mitigation and Enhancement Area, which is adjacent to the southern boundary of the Solar Site and has been specifically identified as part of the Proposed Development. This area comprises approximately 10 ha of currently arable crop land where ponds and shallow scrapes surrounded by meadow grassland (totalling c. 6.5 ha) and a rotation of bird crop/fallow land (totalling c.3.5 ha) will be created. The ditch running through the centre of the area will also be enhanced. Further details of this area are provided in ES Chapter 10: Biodiversity, and illustrated on the Illustrative Landscape

and Ecology Strategy (contained within ES Appendix G.1) accompanying the planning application.

5.6 Long-term management prescriptions for the area (and wider Solar Site) will be set out within a Landscape and Ecology Management Plan (LEMP), which can be secured by planning condition. An outline LEMP (oLEMP) has been prepared to inform the detailed LEMP, and is submitted as part of the planning application at ES AppendixF.4.

5.7 With the retention of all wet and dry ditch habitat across the Solar Site, including 5m buffers along the vast majority of this habitat and a 10m buffer from the northern boundary ditch (Bodoryn Cut) which the majority of the teal within the Site were using, in addition to the enhancement of ditch habitats (which could include some wetting of currently dry ditches across the Solar Site, subject to consultation with NRW), no adverse effect on the teal population using the Solar Site from loss or fragmentation of suitable habitat is anticipated.

5.8 Furthermore, it is anticipated that provision of the Ecological Mitigation and Enhancement Area, specifically designed to optimise opportunities for wintering birds, which will be of benefit to teal, has potential to deliver positive effects for this species along with the wider wintering bird assemblage at the Solar Site.

5.9 It can therefore be concluded that significant adverse effects upon the integrity of The Dee Estuary SPA/Ramsar in respect of loss and/or fragmentation of functionally linked land for qualifying bird species teal can be avoided.

DISTURBANCE OF QUALIFYING BIRD SPECIES TEAL WITHIN FUNCTIONALLY LINKED LAND FROM CONSTRUCTION AND DECOMMISSIONING NOISE/VIBRATION/LIGHTING

5.10 During the construction and decommissioning phases of the Proposed Development, there is potential for temporary disturbance effects from noise, vibration, vehicle/personnel movement and lighting associated with the works upon the teal population using the wet ditches across the Solar Site.

5.11 The construction and decommissioning of solar farms are relatively quick processes and minimally disruptive due to their simple, lightweight and modular design with limited requirement for earthworks/foundations and no major or permanent structures. As such, potential disturbance effects upon the local teal population are anticipated to be relatively limited and will cover a timeframe of approximately 12-24 months for construction and a similar timeframe for decommissioning (noting that this timeframe also includes the construction at the BESS Site and the Cable Corridor, so potential impacts on teal at the Solar Site are likely to be shorter duration than this).

5.12 Mitigation, in the form of sensitive timing of works located within the teal disturbance zone around the main wet ditch used by this species, located along the northern boundary of the Solar Site (known as Bodoryn Cut), would avoid significant disturbance impacts on the teal population. The teal disturbance zone around this wet ditch is considered to be up to c.200 m, as informed by the TIDE Waterbird Disturbance and Mitigation Toolkit[24] using mallard as a

[24] Available at https://tide-toolbox.eu/ [accessed July 2025]

comparator species given that teal is not specifically described, and also recommended disturbance buffers set out by NatureScot[25] using mallard, gadwall and shoveler as comparator species given that teal is again not specifically listed. The works timing restriction within this zone would involve the avoidance of works during the main migratory and winter months of October to February inclusive.

5.13 This mitigation can be set out in detail within an Ecological Construction Method Statement (ECMS) which can be secured by planning condition. An outline ECMS (oECMS) has been prepared to inform the detailed ECMS, and is submitted as part of the planning application at ES Appendix F.3. It is anticipated that a similar ECMS document would be prepared at the decommissioning stage (e.g. a Decommissioning Environmental Management Plan (DEMP)), which would be informed by update surveys at that time.

5.14 With the implementation of the sensitive timing of works within teal disturbance zones during the construction and decommissioning phases of the Proposed Development, no adverse effect on the wintering teal population using the Solar Site from disturbance during these phases is anticipated.

5.15 It can therefore be concluded that significant adverse effects upon the integrity of The Dee Estuary SPA/Ramsar in respect of disturbance of qualifying bird species teal within functionally linked land from construction and decommissioning can be avoided.

IN-COMBINATION ASSESSMENT

5.16 As there are not likely to be any negative (including *de minimus*) residual impacts after mitigation on functionally linked land in relation to both its loss/fragmentation and disturbance during construction/decommissioning phases, then this project will not add to any in-combination impacts that may occur as a result of other plans or projects potentially affecting The Dee Estuary SPA/Ramsar.

[25] Available at https://www.nature.scot/doc/disturbance-distances-selected-scottish-bird-species-naturescot-guidance [accessed July 2025]

Section 6
Conclusions

6.1 As outlined in this shadow HRA produced by EDP, a screening assessment of the implications of the Proposed Development on relevant International/European designated sites has been undertaken. Potential LSE, resulting from the Proposed Development alone or in combination with other projects, have been ruled out at the screening stage for all relevant European Sites with the exception of The Dee Estuary SPA/Ramsar.

6.2 Taking a precautionary assumption of potential functional linkage, potential LSE on The Dee Estuary SPA/Ramsar have been identified relating to impacts upon qualifying bird species teal due to the loss/fragmentation of functionally linked land and disturbance within functionally linked land from construction and decommissioning noise/vibration/lighting. An Appropriate Assessment, in view of the designations Conservation Objectives, has therefore been undertaken taking into consideration the application of additional mitigation measures.

6.3 The findings of this work are set out within this document such that the competent authority, in exercising their duties under the Habitats Regulations, has all the necessary information before them in considering the development proposals.

6.4 This shadow HRA has demonstrated that adverse effects upon the integrity of this SPA/Ramsar can be avoided, subject to delivery, on a precautionary basis, of the following mitigation measures:

- Adherence to the wet ditch habitat retention and buffering set out within the Proposed Solar Layout (ref 02 incorporated into the ES) and ditch enhancements illustrated in the Illustrative Landscape and Ecology Strategy (ES Appendix G.1) accompanying the planning application;

- The delivery of the proposed c.10 ha Ecological Mitigation and Enhancement Area with bespoke habitats targeting benefits for wintering birds, including teal;

- The production of an ECMS, and similar document at the decommissioning stage (e.g. a DEMP), for the Solar Site, to avoid disturbance of teal during the construction and decommissioning phases; and

- The production of a LEMP for the Site, to include a detailed scheme for the Ecological Mitigation and Enhancement Area, in addition to detailing the long-term management of these habitats plus those across the wider Solar Site for wintering birds, including teal, over the lifetime of the development.

6.5 Provided that the above measures are secured through planning conditions, it is considered that adverse effects upon the integrity of the conservation objectives of all relevant international/European designated sites from the Proposed Development alone, or in-combination with any other projects or plans, can be avoided.

Appendix EDP 1
Winter Bird Survey Results

A1.1 A discussion of the full winter bird survey results is provided within ES Appendix F.1: Ecological Baseline Report. The tables below provide the full list of bird species recorded during the surveys.

Table EDP A1.1: Winter Bird Survey Results 2024-2025, Notable Species Only

Common Name	Scientific Name	UK Status	Regional Status[26]	Distribution On-site	Abundance On-site	
					Mean Count	Max. Count
Black-headed gull	*Chroicocephalus ridibundus*	Red List Priority Species	Uncommon breeding resident and abundant winter visitor.	Recorded within both arable and grazed fields. Numbers recorded range from single individuals to large flocks of up to 180.	93.33333333	260
Bullfinch	*Pyrrhula pyrrhula*	Amber List Priority species	Common breeding resident and winter visitor.	Three individuals recorded during survey four, in the southern BESS section.	0.5	3
Cetti's warbler	*Cettia cetti*	Schedule 1 species	Increasing breeding resident.	Recorded twice on separate surveys within woodland adjacent to the Site.	0.333333333	1
Chaffinch	*Fringilla coelebs*	Amber List	Very common breeding summer visitor and scarce winter visitor.	Recorded on all surveys within hedgerows.	5.166666667	13
Coal tit	*Periparus ater*	Amber List	Very common breeding resident.	Recorded within hedgerows.	0.666666667	2
Common gull	*Larus canus*	Amber list	Abundant winter visitor and passage migrant.	Eight individuals recorded on the fourth survey within arable fields.	1.333333333	8
Curlew	*Numenius arquata*	Red List Priority species	Uncommon breeding resident and common winter visitor to wetlands.	A single individual recorded on the third survey on the northern boundary next to a stream.	0.166666667	1
Dunnock	*Prunella modularis*	Amber List Priority Species	Very common breeding resident.	Recorded on all surveys within hedgerows.	6.833333333	18
Goldcrest	*Regulus regulus*	Red list	Very common breeding resident.	Only recorded on survey six, the majority within woodland habitat.	0.833333333	5
Greenfinch	*Chloris chloris*	Red list	Very common breeding resident and winter visitor.	Recorded within hedgerows.	0.166666667	1
Fieldfare	*Turdus pilaris*	Schedule 1 species Amber list	Fairly common winter visitor.	Recorded on the majority of surveys, interacting with woodland and trees within hedgerows. Some flocks recorded of up to 22 individuals.	12.5	61
Herring gull	*Larus argentatus*	Red List Priority Species	Common breeding resident and abundant winter visitor.	Flocks recorded within arable and grazed fields of up to 90 individuals.	50.16666667	176
House sparrow	*Passer domesticus*	Amber List Priority Species	Very common breeding resident.	Majority recorded adjacent to the Site within hedgerows or gardens of offsite buildings.	6.833333333	22
Jack snipe	*Lymnocryptes minimus*	Amber list	A scarce winter visitor.	Recorded throughout the site btu with the majority nearby to watercourse or ditch habitats.	9	28
Kestrel	*Falco tinnunculus*	Red list Priority species	A familiar, but still uncommon, breeding resident	Two individuals recorded on the sixth survey interacting with arable fields.	0.333333333	2
Kingfisher	*Alcedo atthis*	*Wildlife and Countryside Act* 1981: Schedule 1 species	Scarce breeding resident and winter visitor	Two individuals recorded on the third survey interacting with watercourse habitat.	0.333333333	2
Lapwing	*Vanellus vanellus*	Red List Priority Species	A declining breeding resident and abundant winter visitor.	Large majorities were recorded on the first survey only, these were recorded within arable fields with flocks numbering up to 100 individuals.	31.66666667	182
Lesser black-backed gull	*Larus fuscus*	Red list	Common breeding resident and very common winter visitor.	A single individual was recorded on the sixth survey within an arable field.	0.166666667	1
Magpie	*Pica pica*	Amber List	Very common breeding resident.	Individuals recorded throughout Site, mostly within hedgerows and woodland.	9.666666667	17
Meadow pipit	*Anthus pratensis*	Red List	Common breeding upland resident, passage migrant and winter visitor.	Recorded throughout the Site, interacting with the arable and grazed fields.	46.83333333	112

[26] Clwyd Bird Recording Group, Wright, C., Smith, D., Brenchley, A. (eds.), (2024), Northeast Wales Bird Report 2023, Number 45, Mold: Clwyd Bird Recording Group

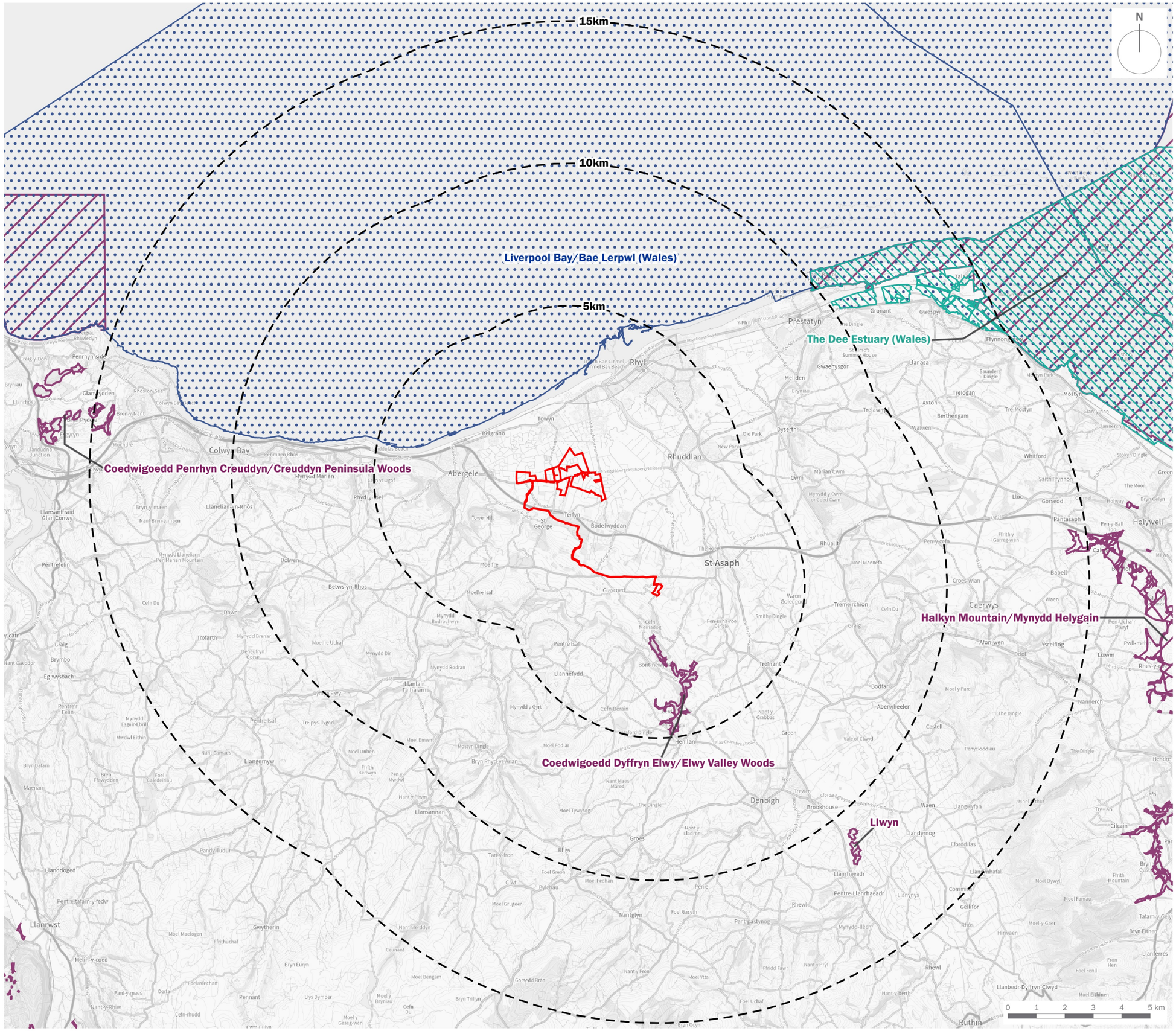
Common Name	Scientific Name	UK Status	Regional Status[26]	Distribution On-site	Abundance On-site	
					Mean Count	Max. Count
Mistle thrush	*Turdus viscivorus*	Amber list	Common breeding resident.	A single individual was recorded adjacent to watercourse habitat on the fourth survey.	0.166666667	1
Redshank	*Tringa totanus*	Red List	Very local breeding visitor, abundant passage migrant and fairly common winter visitor.	Nine individuals were recorded on the fifth survey within an arable field.	1.5	9
Redwing	*Anthus pratensis*	*Wildlife and Countryside Act* 1981: Schedule 1 species Amber list	Common winter visitor.	Flocks recorded throughout the Site within hedgerow and woodland habitats.	123.3333333	269
Reed bunting	*Emberiza schoeniclus*	Priority Species Amber list	Fairly common, but local, breeding resident.	Recorded nearby to watercourse habitat.	1.333333333	5
Rook	*Corvus frugilegus*	Red List	Common breeding resident.	Recorded within arable and grazed fields with flocks up to 120 individuals.	42.33333333	153
Shelduck	*Tadorna tadorna*	Red List	A fairly common breeding resident locally and very common year-round visitor, with peak numbers during the summer moult on the Dee estuary.	Small numbers recorded within the arable and grazed fields.	2.5	6
Skylark	*Alauda arvensis*	Amber List Priority species	Common breeding resident and winter visitor.	Flocks were recorded within the arable fields.	28.16666667	81
Snipe	*Gallinago gallinago*	Amber List	Scarce breeding resident locally and common winter visitor.	Recorded within the arable fields in small flocks.	7.333333333	23
Song thrush	*Turdus philomelos*	Priority Species Amber list	Common breeding resident and winter visitor.	Recorded within hedgerow and woodland habitat.	1.666666667	5
Starling	*Sturnus vulgaris*	Red List Priority Species	Very common breeding resident and winter visitor.	Small to medium sized flocks recorded interacting with the arable and grazed fields.	42.66666667	97
Teal	*Anas crecca*	Amber List	A rare breeding resident and an abundant winter visitor to estuaries and wetlands.	A large majority of the individuals were recorded adjacent to the watercourse on the northern Site boundary. However, some recordings found them within the arable and grazed fields.	125.1666667	244
Wigeon	*Mareca penelope*	Amber List	An abundant winter visitor to estuaries and wetlands.	A single individual recorded on the second survey nearby to watercourse habitat.	0.166666667	1
Yellowhammer	*Emberiza citrinella*	Red list Priority species	Uncommon and declining breeding resident.	Two recorded on the final survey with hedgerow.	0.333333333	2

Table EDP A1.2: Winter Bird Survey Results 2024-2025, Unlisted Species

Common Name	**Scientific Name**
Blackbird	*Turdus merula*
Blackcap	*Sylvia atricapilla*
Blue tit	*Cyanistes caeruleus*
Buzzard	*Buteo buteo*
Carrion crow	*Corvus corone*
Collared dove	*Streptopelia decaocto*
Gadwall	*Mareca strepera*
Goldfinch	*Carduelis carduelis*
Great-spotted woodpecker	*Dendrocopos major*
Great tit	*Parus major*
Green woodpecker	*Picus viridis*
Greylag goose	*Anser anser*
Jackdaw	*Coloeus monedula*
Little egret	*Egretta garzetta*
Long-tailed tit	*Aegithalos caudatus*
Mallard	*Anas platyrhynchos*
Moorhen	*Gallinula chloropus*
Pheasant	*Phasianus colchicus*
Pied wagtail	*Motacilla alba*
Raven	*Corvus corax*
Robin	*Erithacus rubecula*
Sparrowhawk	*Accipiter nisus*
Stock dove	*Columba oenas*
Stonechat	*Saxicola rubicola*
Treecreeper	*Certhia familiaris*
Tufted duck	*Aythya fuligula*
Woodpigeon	*Columba palumbus*
Wren	*Troglodytes troglodytes*

Plans

Plan EDP 1: International Statutory Designated Sites
(edp8841_d010a 28 July 2025 PDr/TWi)



Site Boundary

Range Rings (at 5km intervals)

Ramsar Site

Special Area of Conservation (SAC)

Special Protection Area (SPA)

client

Bodelwyddan Solar and Energy Storage Ltd.

project title

Bodelwyddan Solar and Energy Storage

drawing title

International Statutory Designated Sites

date	**28 JULY 2025**	drawn by	**PDr**
drawing number	**edp8841_d010a**	checked	**TWi**
scale	**1:130,000 @ A3**	QA	**GYo**

the environmental dimension partnership

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