

Connah's Quay Low Carbon Power

Preliminary Environmental Information Report
Volume II, Chapter 11: Terrestrial and Aquatic Ecology

Uniper

The Planning Act 2008
The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017
PINS Reference: EN010166
September 2024

Prepared for:
Uniper UK Limited

Prepared by:
AECOM Limited

© 2024 AECOM Limited. All Rights Reserved.

This document has been prepared by AECOM Limited ("AECOM") for sole use of our client (the "Client") in accordance with generally accepted consultancy principles, the budget for fees and the terms of reference agreed between AECOM and the Client. Any information provided by third parties and referred to herein has not been checked or verified by AECOM, unless otherwise expressly stated in the document. No third party may rely upon this document without the prior and express written agreement of AECOM.

Table of Contents

11. Terrestrial and Aquatic Ecology.....	11-1
11.1 Introduction.....	11-1
11.2 Consultation and Scope of Assessment	11-3
11.3 Assessment Methodology	11-7
11.4 Baseline Conditions and Study Area	11-19
11.5 Development Design and Embedded Mitigation.....	11-44
11.6 Preliminary Assessment of Likely Impacts and Effects.....	11-49
11.7 Additional Mitigation and Enhancement Measures.....	11-73
11.8 Summary of Likely Significant Residual Effects.....	11-76
References	11-86

Tables

Table 11-1: Legislation, Planning Policy, and Guidance relating to Terrestrial and Aquatic Ecology	11-2
Table 11-2: Desk Study Area and Data Sources	11-8
Table 11-3: Summary of ecological field surveys \ defining the baseline for the Proposed Development.....	11-11
Table 11-4: Ecological Importance for Terrestrial Ecology	11-13
Table 11-5: Relevant international and national nature conservation designations .	11-21
Table 11-6: Summary of semi-natural habitats present within and in close proximity to the Indicative Site Boundary.....	11-35
Table 11-7: Summary of species relevant to the ecological impact assessment .	11-39
Table 11-8: Summary of Likely Significant Residual Effects (Construction).....	11-77
Table 11-9: Summary of Significant Residual Effects (Operation)	11-82

11. Terrestrial and Aquatic Ecology

11.1 Introduction

Overview

11.1.1 This chapter of the Preliminary Environmental Information Report (PEIR) presents a preliminary assessment of the likely significant environmental effects of Connah's Quay Combined Cycle Gas Turbine (CCGT) with Carbon Capture Plant (CCP) (hereafter referred to as the Proposed Development) with respect to Terrestrial and Aquatic Ecology during the construction, operation (including maintenance), and decommissioning phases of the Proposed Development. The assessment considers:

- the present-day and future baseline conditions during construction and at commencement of operation;
- the effects of construction of the Proposed Development on nature conservation designations, habitats and species;
- the effects of the operation of the Proposed Development on nature conservation designations, habitats and species; and
- the potential effects of the eventual decommissioning of the Proposed Development.

11.1.2 This chapter is supported by the following appendices in PEIR Volume IV:

- **Appendix 2-B: Scoping Opinion Responses;**
- **Appendix 7-A: Legislative, Policy and Guidance Framework for Technical Topics;**
- **Appendix 11-A: Ecological Impact Assessment Methodology;**
- **Appendix 11-B: Terrestrial and Aquatic Ecology Baseline Surveys and Study Area;**
- **Appendix 11-C: Preliminary Ecological Appraisal Report;**
- **Appendix 11-D: Ornithology Baseline Survey and Information Report;**
- **Appendix 11-E: Amphibian Baseline Survey and Information Report;**
- **Appendix 11-F: Bat Baseline Survey and Information Report;** and
- **Appendix 11-G: Aquatic Ecology Baseline Survey and Information Report.**

Legislation, Policy and Guidance

11.1.3 Legislation, planning policy, and guidance relating to Terrestrial and Aquatic Ecology and pertinent to the Proposed Development are listed in **Table 11-1**.

Further detail regarding these can be found in **Appendix 7-A: Legislative, Policy and Guidance Framework for Technical Topics (PEIR Volume IV)**.

Table 11-1: Legislation, Planning Policy, and Guidance relating to Terrestrial and Aquatic Ecology

Type	Legislation, Policy and Guidance
Legislation	<ul style="list-style-type: none"> • The Conservation of Habitats and Species Regulations 2017 (as amended) ('the Habitats Regulations') (Ref 11-1); • Wildlife and Countryside Act 1981 (as amended) (the WCA) (Ref 11-2); • The Environment Act 2021 (Ref 11-3); • Environment (Wales) Act 2016 (Ref 11-4); • Countryside and Rights of Way (CRoW) Act 2000 (as amended) (Ref 11-5); • The Hedgerows Regulations 1997 (Ref 11-6); • Wild Mammals (Protection) Act 1996 (Ref 11-7); • Protection of Badgers Act 1992 (as amended) (Ref 11-8); • The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (Ref 11-9); • The Water Framework Directive (Standards and Classifications) Directions (England and Wales) 2015 (Ref 11-10) • Salmon & Freshwater Fisheries Act 1975 (as amended) (Ref 11-11); • The Eels (England and Wales) Regulations 2009 (as amended) (Ref 11-12); and • The Invasive Alien Species (Enforcement and Permitting) Order 2019 (Ref 11-13)
National Planning Policy	<ul style="list-style-type: none"> • Future Wales: the National Plan 2040 (Ref 11-14); • The Overarching National Policy Statement (NPS) for Energy (EN-1) (Ref 11-15); • The NPS for Natural Gas Electricity Generating Infrastructure (EN-2) (Ref 11-16); • The NPS for Natural Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4) (Ref 11-17); • The NPS for Electricity Networks Infrastructure (EN-5) (Ref 11-18); and • Planning Policy Wales (PPW) (Ref 11-19).
Local Planning Policy	<ul style="list-style-type: none"> • Flintshire County Council (FCC) Local Development Plan (LDP) (2015-2030) (Ref 11-20). Relevant policies include: <ul style="list-style-type: none"> – Policy STR13: Natural and Built Environment, Green Networks and Infrastructure – Policy EN2: Green Infrastructure – Policy EN3: Undeveloped Coast and Dee Estuary Corridor – Policy EN6: Site of Biodiversity Importance – Policy EN7: Development Affecting Trees, Woodland and Hedgerows • FCC Biodiversity Plan 'Supporting Nature in Flintshire 2020-2023' (Ref 11-21); and

Type	Legislation, Policy and Guidance
	<ul style="list-style-type: none"> Habitat Regulations Assessment (HRA) to Inform the assessment of the FCC LDP (Ref 11-22).
National Guidance	<ul style="list-style-type: none"> Chartered Institute of Ecology and Environmental Management (CIEEM) good practice guidelines (the CIEEM Guidelines) (Ref 11-23); CIEEM Preliminary Ecological Appraisal (PEA) Guidance (the CIEEM PEA Guidance) (Ref 11-24); CIEEM Ecological Impact Assessment (EclA) Guidance (the CIEEM EclA Guidance) (Ref 11-27); and Statutory Biodiversity Metric Guidance (Ref 11-26).

11.2 Consultation and Scope of Assessment

Consultation

11.2.1 A request for an EIA Scoping Opinion was sought from the Secretary of State (SoS) through the Planning Inspectorate (PINS) in February 2024 as part of the EIA Scoping Process. The EIA Scoping Opinion was adopted on 20 March 2024 (**Appendix 1-B: Scoping Opinion PEIR Volume IV**).

11.2.2 Key issues raised in the Scoping Opinion are summarised and responded to in **Appendix 2-B: Matters Raised in the Scoping Opinion (PEIR Volume IV)**. All issues are being considered during the EIA process, at PEIR stage where possible. Where assessments require completion of baseline survey information, key issues will be addressed at the ES stage. Some of the key points raised in the Scoping Opinion which have been incorporated into the assessment include (but not limited to):

- consideration of barn owl: there will be inclusion of a desk-based assessment for barn owl within the ES (refer to **Appendix 11-B: Terrestrial and Aquatic Ecology Baseline Surveys and Study Area PEIR Volume IV**). Noting that the 2024 nocturnal surveys for wading birds also includes and records the presence of foraging barn owl;
- robust baseline for birds, including survey and other data gathered, and consideration of the importance of curlew *Numenius arquata* as qualifying feature of the Dee Estuary Special Protection Area (SPA) / Ramsar designation: there is inclusion of existing data from Deeside Naturalist Society (DNS) within **Appendix 11-D: Ornithology Baseline and Information Report (PEIR Volume IV)**. Further data from DNS, when shared, will also be incorporated into the ES. **Appendix 11-C: Preliminary Ecological Appraisal (PEIR Volume IV)** has also been updated since scoping to include reference to curlew;
- Conservation Areas Management Plan for the existing Connah's Quay Power Station: This will be reviewed as the ES develops (refer to Section 11.5 Development Design and Embedded Mitigation); and
- constraints and opportunities for Ancient Woodland to the south of the Main Site: areas of ancient woodland have been identified as part of

the baseline information and included in the assessment (refer to **Table 11-8**) Ancient Woodland, in the context of the Proposed Development, is shown on **Figure 3-3** and **Figure 3-4 (PEIR Volume III)**.

11.2.3 A meeting was held with Flintshire County Council (FCC) on 1st May 2024 to discuss the approach for Net Benefit for Biodiversity (NBB). Additionally, a summary on the approach of ecology surveys and methodology outlined in the Scoping Report was briefly discussed. The following key positions were noted:

- there was general agreement from all that the Statutory Biodiversity Metric can be used as a guide only for the NBB assessment. A holistic approach is required for the NBB assessment. Further discussions will be held with FCC to agree the final approach for NBB which will be set out within the ES;
- in relation to ecology surveys, FCC had no major concerns with the scope and methodology of ecology surveys at this stage;
- it was agreed that natterjack toads *Epidalea calamita* would be scoped out of surveys and assessment; and
- bat activity surveys were proposed by the Applicant to be scoped out. However, it was recommended by FCC that the HyNet Carbon Dioxide Pipeline DCO bat data be reviewed to support the scope of bat activity surveys, and check if relevant. FCC noted, lesser horseshoe bats *Rhinolophus hipposideros* are known in the area. Subsequently, bat surveys are being undertaken in 2024 and the findings will be reported in the ES. Further information can be found with **Appendix 11-B: Terrestrial and Aquatic Ecology Baseline Surveys and Study Area (PEIR Volume IV)** and **Appendix 11-F: Bat Baseline Survey and Information Report (PEIR Volume IV)**.

11.2.4 A meeting was also held with DNS on the 29 May 2024 to discuss the Proposed Development, particularly in relation to ornithological interest of the Indicative Site Boundary. DNS expressed willingness to share their bird data, and data that has been shared to date has been incorporated into **Appendix 11-D: Ornithology Baseline and Information Report (PEIR Volume IV)**. Further meetings are planned with DNS prior to submission to discuss ongoing survey results and mitigation options.

11.2.5 A meeting was held with Natural Resources Wales (NRW) on 18th July 2024, to discuss ecology survey scope, and engage on ecological matters related to the Proposed Development. Further meetings are planned with NRW prior to submission to discuss ongoing survey results and mitigation options.

Scope of the Assessment

11.2.6 Following the scoping process that has been undertaken, and receipt of the Scoping Opinion, the scope of the assessment considered in this chapter of the PEIR is as follows:

Construction phase

11.2.7 During the construction phase, the potential impacts to terrestrial ecology, ornithology and aquatic ecology scoped into this PEIR are:

Terrestrial Ecology

- temporary disturbance impacts and permanent loss and degradation of nature conservation designations and other relevant terrestrial and aquatic habitats (including areas considered to be Functionally Linked Land following evaluation of survey data) within the Indicative Site Boundary during construction, and within the wider ZoI (as defined within Section 11.4) where potential pathways for impact extend beyond the Indicative Site Boundary;
- direct and indirect impacts on relevant protected and notable species, e.g., as a result of injury, habitat loss or noise, lighting and visual disturbance, during construction;
- temporary water quality (sediment run-off, other possible emissions to water) and air quality impacts (dust emissions, emissions from construction traffic movements) on relevant habitats and species during construction;
 - An assessment of air quality effects associated with construction traffic emissions is presented in **Appendix 8-C: Air Quality Traffic Assessment (PEIR Volume III)** and concludes that for all receptors changes in Oxides of Nitrogen (NO_x) concentrations as a percentage of the critical load¹ would be <1 and therefore all effects would be not significant. Therefore, there is no further assessment presented within **Chapter 11: Terrestrial and Aquatic Ecology** on air quality effects associated with construction traffic emissions.
- introduction and spread of any invasive non-native species (INNS) from construction works.

Ornithology

- the effects on birds resulting from temporary impacts and degradation of habitats within the Indicative Site Boundary during construction, including impacts from sediment run-off to surface waters;
- temporary disturbance of birds, principally through noise, visual, and dust emissions from construction traffic and other construction related activities; and
- permanent losses or degradation of habitats used by nesting, roosting, and feeding birds during construction of the Proposed Development.

Aquatic Ecology

- habitat loss or gain – direct impacts associated with changes in land use resulting from the Proposed Development, for example temporary works associated with site clearance, and permanent land-take (mainly arable land) associated with the construction of the Proposed Development;
- fragmentation of populations or habitats – indirect impacts due to the Proposed Development dividing a habitat, group of related habitats, site

¹ Air Pollution Information System define 'Critical Load' as "a quantitative estimate of exposure to one or more pollutants below which significant harmful effects on specified sensitive elements of the environment do not occur according to present knowledge".

or ecological network, or the creation of partial or complete barriers (e.g. culverts) to the movement of species, with a consequent impairment of ecological function;

- disturbance – indirect impacts resulting from a change in normal conditions (e.g. light, noise, vibration and human activity) that result in individuals or populations of aquatic species changing behaviour or range;
- habitat degradation – direct or indirect impacts resulting in the reduction in the condition of a habitat and its suitability for some or all of the species it supports, for example changes in chemical water quality, increased sedimentation and dust deposition, or changes in surface flow or groundwater;
- species mortality – direct impacts on species populations associated with mortalities due to construction activities, for example site clearance; and
- introduction and, or, spread of INNS, due to the movement of personnel, equipment and plant machinery, potentially facilitating the introduction of INNS.

Operational phase

11.2.8 During the operational phase, the potential impacts to terrestrial ecology, ornithology and aquatic ecology scoped into this PEIR are:

Terrestrial Ecology

- direct impacts in association with operation of the new power station, on relevant protected and notable species, e.g., as a result of permanent lighting, noise and / or visual disturbance; and
- long-term air and water quality impacts on nature conservation designations and any associated protected and notable species in the vicinity of, or downwind / downstream of, the Indicative Site Boundary during operation.

Ornithology

- disturbance of habitats and protected species (including noise, light and visual impacts) in the vicinity of the Proposed Development during operation; and
- long-term air and water quality impacts on designated habitats of importance for relevant birds in the vicinity of the Proposed Development during operation.

Aquatic Ecology

- direct impacts in association with operation of the new power station, on relevant protected and notable species, e.g., as a result of permanent lighting, noise and / or visual disturbance, during operation; and

- long-term water quality impacts on nature conservation designations and any associated protected and notable species in the vicinity of, or downstream of, the Indicative Site Boundary during operation.

Decommissioning phase

11.2.9 The potential impacts and associated effects of decommissioning are assumed to be similar to construction and will be considered in the ES.

11.2.10 Decommissioning activities will be conducted in accordance with the appropriate guidance and legislation in force at the time of decommissioning. A Decommissioning Plan (including a Decommissioning Environmental Management Plan (DEMP)) will be produced at the time of decommissioning, pursuant to a Requirement of the DCO. The DEMP will include an outline programme of works, will consider all potential environmental risks and contain guidance on how risks can be removed, mitigated or managed, accounting for potential future changes to baseline conditions. It is not anticipated that the decommissioning of the Proposed Development would present any significant environmental effects beyond those that will be assessed for the construction phase and is not discussed or assessed further within the PEIR.

Exclusions from the assessment

11.2.11 The following aspects have not been considered within the scope of the assessment in this chapter of the PEIR:

- Natterjack toads have been scoped out of the assessment, as explained within Section 11.3 Consultation and Scope of Assessment of this Chapter and Appendix 11-C: Preliminary Ecological Appraisal (PEIR Volume IV);
- marine ecology is assessed separately within **Chapter 12: Marine Ecology**; and
- the Temporary Abnormal Indivisible Loads (AIL) Works Areas are excluded from the assessment for Terrestrial and Aquatic Ecology (refer to **Chapter 4: Proposed Development**) as a desk study and field survey of these areas are yet to be completed. Any ecological constraints in relation to the Temporary AIL Works Areas will be considered at the ES Stage.

11.3 Assessment Methodology

11.3.1 The Ecological Impact Assessment (EclA) will be undertaken in accordance with best practice guidance issued by the Chartered Institute of Ecology and Environmental Management (Ref 11-27). Full details of the approach applied are provided in **Appendix 11-A** for terrestrial ecology and **Appendix 11-G** for aquatic ecology (**PEIR Volume IV**).

Information Sources

11.3.2 The terrestrial and aquatic ecology baseline for the Indicative Site Boundary (Excluding the Temporary AIL Work Areas) has been determined through a

combination of desk study and field survey, as described in **Appendices 11-B to 11-G (PEIR Volume IV)** and as summarised below.

Data Sources

11.3.3 A desk study was carried out to identify nature conservation designations, protected and notable habitats and species potentially relevant to the Proposed Development. The desk study was carried out using the data sources detailed in **Table 11-2** and is reported in detail in the PEA report provided as **Appendix 11-C: Preliminary Ecological Appraisal Report (PEIR Volume IV)** and as relevant in the following Appendices:

- **Appendix 11-B: Terrestrial and Aquatic Ecology Baseline Surveys and Study Area (PEIR Volume IV);**
- **Appendix 11-D: Ornithology Baseline Survey and Information Report (PEIR Volume IV);**
- **Appendix 11-E: Amphibian Baseline Survey and Information Report (PEIR Volume IV);**
- **Appendix 11-F: Bat Baseline Survey and Information Report (PEIR Volume IV);** and
- **Appendix 11-G: Aquatic Ecology Baseline Survey and Information Report (PEIR Volume IV).**

11.3.4 The British Trust for Ornithology (BTO) were contacted for ornithological data in August 2024 (when the previous year of data is available). High tide and low tide WeBS (wetland bird) data will be reviewed within selected official count sectors from the last five years, up to 5 km from the Indicative Site Boundary to inform the assessment to be presented within the ES. A 5 km search area was considered sufficient to gain an understanding of the way in which estuary birds utilise the survey area and immediate surrounds and provides contextual information on importance.

Table 11-2: Desk Study Area and Data Sources

Data Source	Desk Study Area	Accessed / Data Received	Data Obtained
Multi Agency Geographic Information for the Countryside (MAGIC) (Ref 11-28)	Up to 15 km	November 2023	15 km for Habitats Sites, Sites of Special Scientific Interest (SSSIs) and National Nature Reserves (NNRs). 2 km for all other features (local statutory designations, ancient woodland, European Protected Species records, priority habitats)
Joint Nature Conservation Committee (JNCC)	Up to 15 km	November 2023	Reasons for designation and other information on

Data <Source	Desk Study Area	Accessed / Data Received	Data Obtained
Website (Ref 11-29)			Habitats and Ramsar Sites
Data Map Wales (Ref 11-30)	Up to 2 km	November 2023	2 km for Local Nature Reserves (LNRs)
Phase 1 Habitat and Faunal Survey Northern and Southern Land Parcel (Aspect Ecology) (Ref 11-31)	Up to 2 km	August 2021 and April 2023	2 km for non-statutory designated sites (Local Wildlife Sites (LWS)) and protected and notable habitats and species recorded from survey information
Breeding, Passage and Wintering Bird Surveys Northern and Southern Land Parcel (Aspect Ecology) (Ref 11-32)	The Indicative Site Boundary (Excluding the Temporary AIL Work Areas)" (i.e., Main Site and Construction and Indicative Enhancement Area (C&IEA)) and adjacent areas	April 2022 to February 2023	Bird survey data for breeding and wintering activity
Reptile Surveys Northern and Southern Land Parcel (Aspect Ecology) (Ref 11-33)	The Indicative Site Boundary (Excluding the Temporary AIL Work Areas)" (i.e., Main Site and C&IEA) and adjacent areas	May 2022	Reptile survey data
National Biodiversity Network (NBN) Atlas (Commercially available data according to licencing criteria) (Ref 11-34)	Up to 2 km	November 2023	European eel (<i>Anguilla anguilla</i>) data
Cofnod – North Wales Environmental Information Service (Ref 11-35)	Up to 2km	March 2024	2 km for non-statutory designated sites (LWS) and protected and notable habitats and species
Deeside Naturalists Society (provided by Uniper Limited) (Ref 11-36)	The Main Site i.e. Connah's Quay Power Station Nature Reserve adjacent to the Main Site (Compartment 1 north-west and Compartment 2 north-east)	December 2023	Monthly wetland bird data January 2013 to December 2023
HyNet Great Crested Newt (GCN) Survey Report (Ref 11-37)	The Indicative Site Boundary (Excluding the Temporary AIL	April/May 2024	Great crested newt (<i>Triturus cristatus</i>)

Data <Source	Desk Study Area	Accessed / Data Received	Data Obtained
	Work Areas) +500m specifically the Proposed and Repurposed CO ₂ Corridors		presence/absence data
HyNet Bat activity survey reports (Ref 11-38)	The Indicative Site Boundary (Excluding the Temporary AIL Work Areas) specifically the Proposed CO ₂ Connection Corridor	April/May 2024	Previous bat survey data
HyNet Bird Survey report (Ref 11-39)	The Indicative Site Boundary (Excluding the Temporary AIL Work Areas)" and surrounds	July 2024	No data considered of relevance to the Proposed Development
North-East Wales Amphibian and Reptile Network	Up to 2km	April 2024	Natterjack toad data
Environment Agency (EA) Ecology and Fish Data Explorer (Ref 11-40)	Up to 2km	April 2024	Fish, macroinvertebrate and aquatic macrophyte species
NRW data request service (Ref 11-41)	Up to 2km	April 2024	Fish, macroinvertebrate and aquatic macrophyte species

Field Surveys

- 11.3.5 The scope of works for habitat and protected species surveys was determined through the PEA as described in **Appendix 11-C: Preliminary Ecological Appraisal Report (PEIR Volume IV)** and engagement with FCC (as described in Section 11.2).
- 11.3.6 The scope of the field surveys completed, or in progress, to inform the EclA for the PEIR and ES, as described in **Appendix 11-C: Preliminary Ecological Appraisal Report (PEIR Volume IV)**, is summarised in **Table 11-3** below. Full details of the scope and methods for each survey area is provided in the technical **Appendices 11-D: Ornithology Baseline Survey and Information Report to 11-G: Aquatic Ecology Baseline Survey and Information Report (PEIR Volume IV)** (as appropriate) and **Appendix 11-B: Terrestrial and Aquatic Ecology Baseline Surveys and Study Area (PEIR Volume IV)**.

Table 11-3: Summary of ecological field surveys \ defining the baseline for the Proposed Development

Ecological Survey	Appendix (PEIR Volume IV)	Survey area / Scope	Status / Date
Habitat survey	Appendix 11-C: Preliminary Ecological Appraisal Report	Terrestrial habitats surveyed within the Site plus up to 50m (included desk-based assessment for areas not accessible i.e. Proposed CO ₂ Connection Corridor and Repurposed CO ₂ Connection Corridor)	Completed in November 2023 Being updated in optimal time of year April to September 2024, and to ground truth Proposed CO ₂ Connection Corridor and Repurposed CO ₂ Connection Corridor
UKHab survey and habitat condition assessment to inform NBB	Not applicable	Terrestrial habitats within the Site and up to 50 m (where accessible)	In progress April 2024 to September 2024
Botanical including National Vegetation Classification (terrestrial) surveys	Not applicable	Terrestrial habitats within the Site specifically the Main Site incl. Water Connection Corridor and C&IEA (Proposed CO ₂ connection Corridor and Repurposed CO ₂ Connection Corridor to be confirmed)	In progress spring/summer 2024.
Wintering and passage bird surveys (wetland bird surveys)	Appendix 11-D: Ornithology Baseline Survey and Information Report	All land within the Site (specifically the Main Site incl. Water Connection Corridor, C&IEA, Proposed CO ₂ Connection Corridor and Repurposed CO ₂ Connection Corridor) and estuary / saltmarsh habitats up to 1.5 km (as visibility allows)	In progress November 2023 to October 2024
Breeding bird surveys	Appendix 11-D: Ornithology Baseline Survey and Information Report	All land within the Site (specifically the Main Site incl. Water Connection Corridor, C&IEA, and Proposed CO ₂ Connection Corridor) and estuary / saltmarsh habitats up to 1.5 km (as visibility allows)	March to July 2024
Barn Owl Desk Study	Not applicable	The Site and immediate surrounds	In progress July to September 2024
Great crested newt surveys (Habitat Suitability Index Assessments and environmental DNA)	Appendix 11-E: Amphibian Baseline Survey and Information Report	Ponds Within the Site plus up to 500 m (where applicable)	Completed 15th April to end of June 2024

Ecological Survey	Appendix (PEIR Volume IV)	Survey area / Scope	Status / Date
Reptile surveys	Appendix 11-C: Preliminary Ecological Appraisal Report	The Main Site and C&IEA	May 2022
Bat Preliminary Assessment (PRA) Roost	Appendix 11-F: Bat Baseline Survey and Information Report	The Site plus up 50 m (where accessible)	In progress February to September 2024
Bat activity surveys	Not applicable	Proposed CO ₂ Connection Corridor and Repurposed CO ₂ Connection Corridor	In progress April to October 2024
Badger surveys	Appendix 11-C: Preliminary Ecological Appraisal Report	The Site plus up to 30 m (where accessible)	In progress February to September 2024
Otter surveys	Not applicable	The Site, focused on the River Dee and adjacent habitat within the Site extending up to 200 m up and downstream	In progress June to September 2024
Water vole surveys	Not applicable	The Site, focused on waterbodies within the Site and adjacent areas	In progress mid-April to June 2024 (survey 1); July to end of September 2024 (survey 2)
Terrestrial invertebrate surveys	Not applicable	The Site, and targeted areas within the Main Site and C&IEA	In progress April to September 2024
Aquatic surveys	Appendix 11-G: Aquatic Ecology Baseline Survey and Information Report	The Site, focused on waterbodies within the Site and adjacent areas	In progress July to October 2024

Impact Assessment Methodology

- 11.3.7 The assessment has determined the worst-case scenario for impact pathways to terrestrial ecology including ornithology, and aquatic ecology features, in line with the Rochdale Envelope approach (described below) and has focused on those features considered to be 'important'. Refer to **Appendix 11-A: Ecological Impact Assessment Methodology, Appendix 11-G: Aquatic Ecology Baseline Survey and Information Report** and **Chapter 2: Assessment Methodology and Consultation** for details.
- 11.3.8 For terrestrial ecology, including ornithology, the approach to EclA has followed the CIEEM Guidelines (Ref 11-27). The evaluation method for this EclA utilises a geographic scale to determine the importance (i.e. sensitivity / value) of ecological features as detailed in **Table 11-4**.

Table 11-4: Ecological Importance for Terrestrial Ecology

Ecological Importance	Ecological Importance Criteria
International	Typically within an international context reflecting the general availability of data to allow cross-comparison
National	Great Britain, but considering the potential for certain features to be more notable (of higher value) in a Welsh context, relative to Great Britain as a whole
Regional	Important at North Wales geographical scale
County	Important at Flintshire geographical scale
District	Important at Deeside geographical scale
Local	Features do not meet criteria for valuation at District or higher level but have sufficient value at the Site level to merit retention or mitigation
Negligible	Common and widespread features that have very low value at the level of the Site, and which do not require retention or mitigation at the relevant location to otherwise maintain a favourable nature conservation status, or to deliver wider relevant biodiversity objective and can be screened out)

- 11.3.9 The assessment of impacts presented in this chapter focuses on features that are of at least 'Local' ecological importance or have the potential to be affected by the Proposed Development either positively or negatively. Ecological features of less than 'Local' importance are considered in the context of national and local planning policies that require NBB. Features protected by legislation are discussed separately for example Invasive Non-Native Plant Species listed under Schedule 9 of the WCA (Ref 11-2), do not have any ecological importance however it is illegal to plant or otherwise cause to grow in the wild.
- 11.3.10 The assessment includes:
- the identification of potential impacts on important ecological features (IEFs); and
 - characterising impacts (extent, magnitude, duration, timing, frequency, reversibility, beneficial (positive), adverse (negative) to determine effects.

- 11.3.11 These effects are then assessed based on their likelihood to be 'significant' in EclA terms. An effect will either be 'not significant' (no ecologically meaningful effect) or 'significant' (an ecologically meaningful effect). To provide consistency in terminology across other chapters, the residual effects of the Proposed Development are also translated to EIA significance level on a scale of neutral, minor, moderate and major. Refer to **Appendix 11-A: Ecological Impact Assessment Methodology (PEIR Volume IV)** for further details.
- 11.3.12 An assessment of cumulative impacts with other committed developments that could interact with impacts and effects of the Proposed Development has not yet been carried out and will be included in the ES (see also **Chapter 24: Cumulative and Combined Effects**).

Rochdale Envelope

- 11.3.13 The setting of design parameters using the 'Rochdale Envelope' approach is described in **Chapter 2: Assessment Methodology and Consultation**. Table 4-1 of **Chapter 4: The Proposed Development** sets out the maximum parameters currently envisaged for the principal components of the Proposed Development. These parameters, together with assumptions regarding the future plans for the existing Connah's Quay Power Station set out in **Chapter 2: Assessment Methodology and Consultation** have been used to inform the representative worst-case scenario that has been assessed in this chapter, in order to provide a robust assessment of the impacts and likely significance of environmental effects of the Proposed Development at its current stage of design.
- 11.3.14 In particular, focused use of the Rochdale Envelope has been adopted for the following aspects:
- **Construction based on the Single-Phase Construction scenario:** it is assumed for terrestrial and aquatic ecology that the Single-Phase Construction, as described in **Chapter 5: Construction Management and Programme**, is the worst-case scenario with Train 1 and Train 2 constructed in a single phase, lasting up to five years. It is assumed that this construction method has the greatest impact on ecology for example, due to the larger areas of land take required and combined effects of noise and visual disturbance from construction to IEFs with Train 1 and 2 being built simultaneously. The Phased Construction scenario would result in some habitat loss for a period of up to nine years however as detailed in **Chapter 5: Construction Management and Programme**, the footprint of loss for construction laydown within the C&IEA and the Main Site is expected to be smaller in comparison to the Single Phase. Therefore, the Single Phase is considered the worst-case scenario for ecology.
 - **Land use for Construction Laydown Areas:** For this assessment the worst-case scenario assumption is that all land to be lost temporarily for construction laydown areas (as indicated on **Figure 5-4: Construction Areas (PEIR Volume III)**), would be lost for up to five years, based on the Single-Phase Construction, with habitat then reinstated. This assumption applies to the Main Site and C&IEA.

- **Routing of the Repurposed CO₂ Connection Corridor:** For this assessment, it is assumed the worst-case scenario is a corridor of approximately 100 m in width (around 50 m either side of the indicative centre line as shown on **Figure 3-2 (PEIR Volume III)** for re-routing, refurbishment or access improvements. As detailed in **Chapter 5: Construction Management and Programme**, works may be required to reroute, modify or apply additional protection to a short section of the Repurposed CO₂ Connection Corridor. The need for and the extent of these works are the subject of ongoing studies. Although unlikely that all land within the Repurposed CO₂ Connection Corridor will be affected, given the uncertainties around the proposed works, a worst-case scenario is that all habitats could be lost within the Repurposed CO₂ Connection Corridor during construction. Land take is primarily assumed to be temporary (up to 9 months; as shown in Table 5-2 in **Chapter 5: Construction Management and Programme**), with habitat reinstated. There may be some discrete small areas of permanent loss for marker posts and composition monitoring testing (to be confirmed). Based on the indicative programme, restoration and reinstatement activities for land that is temporarily disturbed would, based on the worst case, be reinstated / restored at the end of this 9 month construction period.
- **Routing of the Proposed CO₂ Connection Corridor and Flint Above Ground Installation (AGI):** For this assessment, it is assumed that the Proposed CO₂ Connection Corridor would involve the installation of an approximately 610 mm diameter pipeline, 1.2 m below ground level for a length of 350 m. Given the uncertainties around the routing, the worst-case scenario assumption is that all habitats within the 32 m wide working area will be lost within the Indicative Site Boundary for construction works in association with the Proposed CO₂ Connection Corridor. Land take for the pipeline and construction compound is assumed to be temporary (up to 9 months; as shown in Table 5-2 in **Chapter 5: Construction Management and Programme**, with habitat reinstated. Based on the indicative programme, restoration and reinstatement activities for land that is temporarily disturbed would, under a worst case, be reinstated / restored at the end of this nine month construction period. Construction works associated with connecting the Proposed CO₂ Connection to the Flint AGI are subject to ongoing studies.
- **Works to Allt-Goch Brook and Tributary Watercourse:** For this assessment, it is assumed for the worst-case scenario that some works may be required within the Allt-Goch Brook and Tributary watercourse, associated with the Repurposed CO₂ Connection Corridor, to temporarily over-pump the watercourse whilst works are undertaken to the existing pipeline using an open cut method. The need of such works will be confirmed through ongoing studies. If required, this would result in removal of riparian vegetation long a section of the channel (presumed to be around 10 m in length) as the excavation goes through the bed and banks. The channel would be surveyed in advance of any vegetation clearance and open cut works so that it can be retained in a similar way.

- **Construction within the Water Connection Corridor:** For this assessment, it is assumed that replacement cooling water infrastructure (with the existing Connah's Quay Power Station cooling water infrastructure remaining in-situ) would represent the worst-case scenario. In a worst case, all terrestrial habitat within the Water Connection Corridor could be potentially lost during construction, noting that the Indicative Site Boundary as shown on **Figure 3-2 (PEIR Volume III)** shows the maximum extent of land required for the works. It is assumed that some of the terrestrial habitat would be reinstated so impacts may only be temporary, however the extent is currently unknown and subject to ongoing studies. Refer to **Chapter 12: Marine Ecology**.
- **Surface water outfall:** For this assessment, it is assumed that a new permanent outfall structure for surface water drainage discharge would be required in the immediate vicinity of the Existing Surface Water Outfall. A 10 m buffer around the existing artificial structure has been included to allow for access and additional permanent artificial structures (if required). Therefore, the assumed worst-case is that all habitat within the Indicative Site Boundary at that location would be permanently lost.
- **Ecological safeguard zone:** For the assessment, it is assumed that in the worst-case for the Single-Phase Construction, that only the habitats within the proposed ecological safeguard zones can be retained as shown on **Figure 5-4: Construction Phase – Single Phase Construction Scenario (PEIR Volume III)** to the north and north-western boundary of the Main Site and northern boundary of the C&IEA. This minimum 30 m ecological safeguard zone, with acoustic fencing or similar would be used to provide protection for sensitive habitats and IEFs, including within the Dee Estuary. In this zone no construction works will take place and construction plant and machinery will not be able to enter.
- **Numbers and heights/dimensions for the CCP elements including absorber:** For the assessment, in terms of considering potential visual impacts of new infrastructure on IEFs using the Dee Estuary, a maximum indicative height of 120 m for the absorber stacks is assumed as worst-case (noting that the existing stacks are 85 m structures). With the exception of the absorber stacks, the Proposed Development is assumed not to introduce new buildings or structures that are significantly taller than those of the Existing Connah's Quay Power Station.
- **External lighting:** For this assessment, it is assumed that some external lighting will be required during the operational phase to ensure the CCGT and CCP and associated infrastructure can operate safely at all times. However, a Lighting Strategy, pursuant to a requirement in the Draft DCO, will be in place to reduce the visual impact of lighting on the local environment, including IEFs.
- **Air quality:** For the assessment of air quality impacts during construction and operation of the Proposed Development, the worst-case scenario has been described in **Chapter 8: Air Quality**. The

assessment of construction and operational phase impacts to terrestrial and aquatic ecology is therefore also based upon this worst-case.

- **Water quality:** For the assessment of water quality impacts during construction and operation, the worst-case has been described in **Chapter 13: Water Environment and Flood Risks**. The assessment of construction and operational phase impacts to terrestrial and aquatic ecology is therefore also based upon this worst-case.
- **Noise and vibration:** For the assessment of noise and vibration impacts during construction and operation, the worst-case scenario has been described in **Chapter 9: Noise and Vibration**. The assessment of construction and operational phase impacts to terrestrial and aquatic ecology is therefore also based upon this worst-case.

Habitats Regulations Assessment (HRA)

- 11.3.15 A HRA will be undertaken to assess whether the Proposed Development is likely to have a significant effect on Habitats Sites (formerly known as European Sites). The need to undertake a HRA is implemented in Welsh law by the Habitats Regulations (as amended) (Ref 11-42). A HRA will be submitted as part of the DCO application.
- 11.3.16 The UK left the European Union (EU) on 31 January 2020 under the terms set out in the European Union (Withdrawal Agreement) Act 2020 (termed the 'Withdrawal Act') (Ref 11-43) However, the most recent amendments to the 'Habitats Regulations' (i.e., Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (Ref 11-44) clarify that the need for HRA continues to apply. The 2019 Regulations make changes to the Habitats regime and terminology, for example, by introducing the term 'national site network' and 'Habitats Sites'. As such, in line with current practice, the HRA document will use the term 'Habitats Sites' to refer to all international sites (i.e. The National Network which forms part of the Bern Convention Emerald Network of international wildlife sites) in line with current standard practice (comprising Special Areas of Conservation (SAC), Special Protection Areas (SPA)) potentially affected by the Proposed Development. Planning Policy Wales Technical Advice Note 5: Nature Conservation and Planning (Ref 11-45) requires proposed SACs and SPAs to be treated as Habitats Sites along with Ramsar (wetlands of international importance) sites.
- 11.3.17 Stage 1 of the HRA process (Test of Likely Significant Effects (ToLSEs)) will consider the potential pathways of effect between the Proposed Development and Habitats Sites within 15 km of the Indicative Site Boundary, as per guidance published by the EA (Ref 11-46) regarding air quality impacts, and whether there is potential to have a significant adverse effect on the integrity of the Habitats Sites, either alone or in combination with other plans or projects. Information used to support the HRA process will include desk study data and the results of relevant species surveys undertaken by the Applicant.
- 11.3.18 Where there is potential for the Proposed Development to have a significant effect upon the qualifying features of Habitats Sites, the pathway will be taken forward to Stage 2 – Appropriate Assessment (AA). At AA, the measures that will be implemented to either avoid the impact in the first place, or to mitigate

the ecological effect to such an extent that it is no longer significant, will be set out.

- 11.3.19 Where an adverse effect on integrity cannot be ruled out after mitigation measures have been taken into account, the Proposed Development can only proceed where the requirements of the derogation process under Regulations 64 and 68 of the Habitats Regulations are satisfied. It must be demonstrated that there are no alternative solutions which achieve the plan or project objectives and would avoid or have a lesser effect on the Habitats Sites. However, where no alternative solution exists and so an adverse effect remains, it must then be demonstrated that the plan or project is necessary for Imperative Reasons of Overriding Public Interest ("IROPI") and to ensure that adequate compensation, usually in the form of replacement habitat, has been secured to protect the overall coherence of the Habitats Sites.
- 11.3.20 The HRA will be prepared with reference to the general European Commission (EC) guidance on HRA (Ref 11-47), general guidance on HRA published by the UK Government in July 2019 (Ref 11-48) and PINS Advice Note 10 (Habitats Regulations Assessment) (Ref 11-49).
- 11.3.21 There will be a ToLSE and Report to Inform Appropriate Assessment (RIAA), if required, to support the Application for development consent. The scope of the report to inform the HRA will be determined through engagement with NRW and other key stakeholders. It is recognised that HRA is a multi-stage process and, therefore, the Applicant will continue to engage with NRW as the HRA progresses.

Assessment Assumptions and Limitations

- 11.3.22 Where uncertainty exists, this will be outlined in the limitations section of the Terrestrial and Aquatic Ecology chapter of the ES (as it is in this section). The limitations presented by any uncertainty will be taken into account in defining the reasonable worst-case scenario for the Terrestrial and Aquatic Ecology assessment.
- 11.3.23 The following assumptions apply to the preliminary assessment presented in Section 11.8:
- the worst-case scenario for this assessment is presented in paragraph 11.3.14;
 - any ecological constraints in relation to the Temporary AIL Works Areas will be considered at the ES stage;
 - where surveys to date are reported in a species specific appendix (**Appendices 11-D: Ornithology Baseline Survey and Information Report to 11-G: Aquatic Ecology Baseline Survey and Information Report (PEIR Volume IV)**) the assumptions and limitations are presented in the relevant appendix; and
 - the data set is not complete with surveys ongoing (as detailed in **Appendix 11:B: Terrestrial and Aquatic Ecology Baseline Surveys and Study Area (PEIR Volume IV)**) and therefore a precautionary approach has been adopted. In some cases, likely significant effects cannot be ruled out until these surveys and assessments are complete.

This information will be updated, and the ecological impact of the Proposed Development reassessed to support the ES at which point it may be possible to rule out some of the likely significant effects reported here. The following surveys are ongoing:

- terrestrial invertebrate surveys;
- bat activity surveys;
- bat potential roost assessments (along the Proposed and Repurposed CO₂ Connection Corridor);
- otter and water vole surveys;
- further botanical surveys including UK Habitat surveys, habitat condition assessments, hedgerow assessments, assessment of the potential Open Mosaic Habitat and National Vegetation Classification (NVC) surveys of the saltmarsh habitats;
- badger surveys;
- aquatic ecology surveys;
- breeding and wintering/passage bird surveys;
- great crested newt surveys; and
- barn owl assessment.

11.4 Baseline Conditions and Study Area

11.4.1 This section describes the baseline environmental characteristics for the Proposed Development areas.

Study Area

11.4.2 The study areas were defined to include Terrestrial and Aquatic Ecology features likely to be at risk from possible direct and indirect impacts that might arise from the Proposed Development, termed the Zone of Influence (Zol). The potential Zol is considered to be 15 km from the Proposed Development.

11.4.3 A 15 km study area around the Main Site has been applied to identify statutory Habitats Sites, SSSIs and NNRs to be considered in terms of the potential for impacts and effects (including for the purposes of HRA), including those supporting mobile species such as birds or marine mammals (refer to **Chapter 12: Marine Ecology**). The assessment will initially consider features within a potential Zol of up to 15 km from the Main Site based upon guidance for air quality impact assessment during operation as outlined in **Chapter 8: Air Quality** of this PEIR.

11.4.4 The study area for the identification of local non-statutory nature conservation sites, and for gathering third party records of habitats and protected and notable species is a more focused area of 2 km around the Indicative Site Boundary. Additional Desk Studies are in progress with wetland birds and barn owl (*Tyto alba*) and will consider an area of 5 km around the Indicative Site Boundary. This distance is informed by standard guidance for air quality impact assessment and other good practice (CIEEM PEA and EclA Guidance (Ref 11-24, Ref 11-27)).

Existing Baseline

11.4.5 The terrestrial and aquatic ecological features relevant to the Proposed Development are summarised in this section. Details of the findings of desk and field-based studies, including evaluation of the relative nature conservation value of identified features is provided in **Appendices 11-C: Preliminary Ecological Appraisal Report to 11-G (PEIR Volume IV)**, where applicable. These appendices should be referred to where more information is required on the grounds for scoping features in and out of the EclA.

International and National Statutory Designated Sites

11.4.6 There are nine Habitats Sites and 30 national designated sites within the study area relevant to the EclA of the Proposed Development (as defined in **Appendix 11-C: Preliminary Ecological Appraisal Report PEIR Volume IV**). Whilst most of these designations are located at a distance from the Proposed Development where air quality effects are unlikely (i.e. greater than 2 km), they have been scoped in at this stage to meet good practice requirements for the assessment of potential operational air quality impacts and effects, as set out in **Chapter 8: Air Quality** and for other impacts such as the potential displacement of birds.

11.4.7 The relevance and importance of the identified international and national nature conservation designations to the Proposed Development is summarised below in **Table 11-5** based on the initial screening and rationale provided in **Appendix 11-C: Preliminary Ecological Appraisal Report (PEIR Volume IV)**.

11.4.8 The following four national statutory designated sites were scoped out following initial identification in the PEA **Appendix 11-C: Preliminary Ecological Appraisal Report (PEIR Volume IV)**. As they are each designated for geological interest only, they have no designated features of ecological importance which could be impacted by the Proposed Development:

- Ddôl Uchaf SSSI - of geological interest only;
- Caerwys Tufa SSSI – of geological interest only;
- The Dungeon SSSI (England)- of geological interest only; and
- Graig, Llanarmon-Yn-Ial SSSI – outside of the 15 km study area from the Main Site for potential operational air quality impacts.

11.4.9 There are no National Nature Reserves within the study area.

Table 11-5: Relevant international and national nature conservation designations

Designation	Potential Impacts During			Relevance to the Proposed Development ²	Ecological Importance
	Construction	Operation	Decommissioning		
The Dee Estuary SPA	✓	✓	✓	Overlaps with part of the Indicative Site Boundary as shown in Figure 11C-1: Designated Habitat Sites within 15 km (PEIR Volume IV)	International
The Dee Estuary Ramsar	✓	✓	✓	Overlaps with part of the Indicative Site Boundary as shown in Figure 11C-1: Designated Habitat Sites within 15 km (PEIR Volume IV)	International
The Dee Estuary / Aber Dyfrdwy SAC	✓	✓	✓	Overlaps with the part of the Indicative Site Boundary as shown in Figure 11C-1: Designated Habitat Sites within 15 km (PEIR Volume IV)	International
The River Dee and Bala Lake/ Afon Dyfrdwy a Llyn Tegid SAC	✓	✓	✓	Located approximately 0.075 km north-east of the Indicative Site Boundary and 0.52 km east of the Main Site	International
Deeside and Buckley Newt sites SAC	x	✓	x	Located approximately 1.5 km south of the Indicative Site Boundary and 2.1 km south of the Main Site	International

² Habitat features are only discussed for national designated sites to identify potential impact pathways.

Designation	Potential Impacts During			Relevance to the Proposed Development ²	Ecological Importance
	Construction	Operation	Decommissioning		
Halkyn Mountain / Mynydd Helygain SAC	x	✓	x	Located approximately 3.6 km west of the Indicative Site Boundary and 5.3 km west of the Main Site	International
Alyn Valley Woods /Coedwigoedd Dyffryn Alun SAC	x	✓	x	Located approximately 6.8 km south-west of the Indicative Site Boundary and 8.5 km south-west of the Main Site	International
Mersey Estuary SPA (England)	x	✓	x	Located approximately 12.7 km north-east of the Indicative Site Boundary and 13.0 km north-east of the Main Site	International
Mersey Estuary Ramsar (England)	x	✓	x	Located approximately 12.7 km north-east of the Indicative Site Boundary and 13.0 km north-east of the Main Site	International
Dee Estuary / Aber Afon Dyfrdwy SSSI	✓	✓	✓	Overlaps with the Indicative Site Boundary, specifically the Water Connection Corridor.	National

Designation	Potential Impacts During			Relevance to the Proposed Development ²	Ecological Importance
	Construction	Operation	Decommissioning		
Afon Dyfrdwy (River Dee) SSSI	✓	✓	✓	Contains habitats potentially susceptible to changes in air quality: tidal saltmarsh Located approximately 0.075 km north-east of the Indicative Site Boundary and 0.52 km east of the Main Site	National
Shotton Lagoons and Reedbeds SSSI	✓	✓	✓	Ornithological interest. Contains habitats potentially susceptible to changes in air quality: reed swamp. Located approximately 0.48 km north-east of the Indicative Site Boundary and 1.3 km east of the Main Site	National
Mynydd Y Fflint / Flint Mountain SSSI	x	✓	x	Contains habitats potentially susceptible to changes in air quality: semi natural broadleaved woodland and unimproved neutral grassland. Located approximately 0.5 km north-west of the Indicative Site Boundary and 1.7 km west of the Main Site	National

Designation	Potential Impacts During			Relevance to the Proposed Development ²	Ecological Importance
	Construction	Operation	Decommissioning		
Connah's Quay Ponds and Woodland SSSI	x	✓	x	Contains habitats potentially susceptible to changes in air quality: semi natural broadleaved woodland and unimproved neutral grassland Located approximately 1.5 km south of the Indicative Site Boundary and 2.1 km south of the Main Site	National
Dee Estuary SSSI (England)	✓	✓	✓	Contains habitats potentially susceptible to changes in air quality: grassland, saltmarsh, dune community. Located approximately. Hydrologically linked to the Dee Estuary / Aber Afon Dyfrdwy SSSI and part of the same ecosystem Located approximately 2.0 km north-east of the Indicative Site Boundary and 2.1 km north-east of the Main Site	National
Inner Marsh Farm SSSI	✓	✓	✓	Ornithological interest Located Approximately 2.8 km north-east of the Indicative Site Boundary and 3.2 km north-east of the Main Site	National

Designation	Potential Impacts During			Relevance to the Proposed Development ²	Ecological Importance
	Construction	Operation	Decommissioning		
Comin Helygain a Glaswelltiroedd Treffynnon / Halkyn Common and Holywell Grasslands SSSI	x	✓	x	Contains habitats potentially susceptible to changes in air quality: Calcareous grassland and fen meadow Located approximately 3.6 km west of the Indicative Site Boundary and 5.3km west of the Main Site	National
Buckley Claypits and Commons SSSI	x	✓	x	Contains habitats potentially susceptible to changes in air quality: including semi natural grassland Located approximately 4.0 km south of the Indicative Site Boundary and 4.4 km south of the Main Site	National
Maes y Grug SSSI	x	✓	x	Contains habitats potentially susceptible to changes in air quality: including marshy grassland, broadleaved plantation, mixed plantation, semi-natural woodland Located approximately 4.0 km south of the Indicative Site Boundary and 4.4 km south of the Main Site	National

Designation	Potential Impacts During			Relevance to the Proposed Development ²	Ecological Importance
	Construction	Operation	Decommissioning		
Hallwood Farm Marl Pit SSSI (England)	x	✓	x	Contains habitat potentially susceptible to changes in air quality: trees (black polar <i>Pupulas nigra</i>) Located approximately 7.5 km north-east of the Indicative Site Boundary and 7.8 km north east of the Main Site	National
Herward Smithy SSSI	x	✓	x	Contains habitats potentially susceptible to changes in air quality: Calmanarian grassland Located approximately 6.3 km north-west of the Indicative Site Boundary and 4.4 km south of the Main Site	National
Parc Linden, Lixwm SSSI	x	✓	x	Contains habitats potentially susceptible to changes in air quality: Calcareous grassland Located approximately 6.8 km west of the Indicative Site Boundary and 8.2 km west of the Main Site	National

Designation	Potential Impacts During			Relevance to the Proposed Development ²	Ecological Importance
	Construction	Operation	Decommissioning		
Tyddyn-y-barcut SSSI	x	✓	x	Contains habitats potentially susceptible to changes in air quality: Neutral grassland and broadleaved woodland Located approximately 6.8 km south-west of the Indicative Site Boundary and 8.5 km south-west of the Main Site	National
Alyn Valley Woods and Alyn Gorge Caves SSSI	x	✓	x	Contains habitats potentially susceptible to changes in air quality: Neutral grassland, calcareous grassland and broadleaved woodland Located approximately 6.8 km south-west of the Indicative Site Boundary and 8.5 km south-west of the Main Site	National
Parc Bodlondeb and Gwenallt-parc, Lixwm SSSI	x	✓	x	Contains habitats potentially susceptible to changes in air quality: Neutral grassland, calcareous grassland and broadleaved woodland Located approximately 7.2 km west of the Indicative Site Boundary and 8.7 km west of the Main Site	National

Designation	Potential Impacts During			Relevance to the Proposed Development ²	Ecological Importance
	Construction	Operation	Decommissioning		
Pen-y-Cefn Pasture SSSI	x	✓	x	Contains habitats potentially susceptible to changes in air quality: Calcareous grassland Located approximately 7.5 km south-west of the Indicative Site Boundary and 9.2 km south-west of the Main Site	National
Cefn Meadow SSSI	x	✓	x	Contains habitats potentially susceptible to changes in air quality: Calcareous grassland Located approximately 7.7 km south-west of the Indicative Site Boundary and 9.4 km south-west of the Main Site	National

Designation	Potential Impacts During			Relevance to the Proposed Development ²	Ecological Importance
	Construction	Operation	Decommissioning		
Chwarel Cambrian / Cambrian Quarry, Gwernymynydd SSSI	x	✓	x	Not considered functionally linked in relation to bats as the qualifying feature, refer to Appendix 11F: Bat Baseline and Information Report (PEIR Volume IV) for details. However, contains habitats potentially susceptible to changes in air quality: woodland Located approximately 9.1 km south-west of the Indicative Site Boundary and 10.5 km south-west of the Main Site	National
Dibbinsdale (England) SSSI	x	✓	x	Contains habitats potentially susceptible to changes in air quality: Woodland Located approximately 10.4 km north-east of the Indicative Site Boundary and 10.6 km north-east of the Main Site	National

Designation	Potential Impacts During			Relevance to the Proposed Development ²	Ecological Importance
	Construction	Operation	Decommissioning		
Heswell Dales SSSI (England)	x	✓	x	Contains habitats potentially susceptible to changes in air quality: Heath, mire and woodland. Located approximately 9.8 km north of the Indicative Site Boundary and 9.9 km north of the Main Site	National
Dee Cliffs SSSI (England)	x	✓	x	Contains habitats potentially susceptible to changes in air quality: Grassland, bluebell community and standing waters. Located approximately 10.3 km north of the Indicative Site Boundary and 10.4 km north of the Main Site	National
River Dee (England) SSSI	✓	✓	✓	Contains habitats potentially susceptible to changes in air quality: Mesotrophic rivers. Hydrologically linked to Afon Dyfrdwy (River Dee) SSSI and part of same ecosystem. Located approximately 10.7 km south-east of the Indicative Site Boundary and 11.9 km south-east of the Main Site	National

Designation	Potential Impacts During			Relevance to the Proposed Development ²	Ecological Importance
	Construction	Operation	Decommissioning		
The Mersey Estuary SSSI (England)	x	✓	x	Contains habitats potentially susceptible to changes in air quality: Saltmarsh, reed-beds, sheltered muddy shores, maritime cliff and slope, and cord-grass <i>Spartina maritima</i> Located approximately 12.7 km north-east of the Indicative Site Boundary and 13.0 km north-east of the Main Site	National
Coed Trefraith SSSI	x	✓	x	Contains habitats potentially susceptible to changes in air quality: Broadleaved woodland Located approximately 11.6 km west of the Indicative Site Boundary and 13.0 km west of the Main Site	National
Coed Talon Marsh SSSI	x	✓	x	Contains habitats potentially susceptible to changes in air quality: Broadleaved woodland and mire habitats Located approximately 11.6 km south of the Indicative Site Boundary and 12.2 km south of the Main Site	National

Designation	Potential Impacts During			Relevance to the Proposed Development ²	Ecological Importance
	Construction	Operation	Decommissioning		
Bryn Alyn SSSI	x	✓	x	Contains habitats potentially susceptible to changes in air quality: Calcareous grassland and acid grassland Located approximately 12.2 km south-west of the Indicative Site Boundary and 13.5 km south-west of the Main Site	National
Thurston Common SSSI (England)	x	✓	x	Contains habitats potentially susceptible to changes in air quality: heath and woodland. Located approximately 12.5 km north of the Indicative Site Boundary and 12.6 km north of the Main Site	National
Glaswelltiroedd Eryrys (Eryrys Grasslands) SSSI	x	✓	x	Contains habitats potentially susceptible to changes in air quality: Calcareous grassland, neutral grassland, calmanarian grassland and acid grassland Located approximately 13.3 km south-west of the Indicative Site Boundary and 14.7 km south-west of the Main Site	National

Designation	Potential Impacts During			Relevance to the Proposed Development ²	Ecological Importance
	Construction	Operation	Decommissioning		
New Ferry SSSI (England)	x	✓	x	Ornithological interest. Contains habitats potentially susceptible to changes in air quality: intertidal mudflats Located approximately 14.5 km north-east of the Indicative Site Boundary and 14.7 km north-east of the Main Site	National

11.4.10 Habitats within the Dee Estuary SPA/SAC/Ramsar site have been identified as Ground Water Dependant Terrestrial Ecosystems (GWDTE) (for further information see **Chapter 13: Water Environment and Flood Risk**). These GWDTE systems will be considered in further detail in the ES when assessing effects on the relevant designated sites.

Local Nature Conservation Designations

11.4.11 There is one local statutory nature conservation designation (i.e. Local Nature Reserve (LNR)) and 13 local non-statutory nature conservation designations (being 11 Local Wildlife Sites (LWSs) and two Wild Ground Reserves) within the study area relevant to the EclA of the Proposed Development (as defined in **Appendix 11-C: Preliminary Ecological Appraisal Report PEIR Volume IV**).

11.4.12 No local nature conservation designations fall within the Indicative Site Boundary . However, there is little data available with regards to habitat types present within these locally designated sites, therefore a precautionary approach has been included at this stage with regard to potential impacts from changes in air quality and / or hydrology. All local nature conservation designations are scoped into the assessment at this stage, which are listed below along with their ecological importance and are shown on **Figure 11C-2: Locally Designated Sites within 2 km (PEIR Volume IV)**:

- Gathering Grounds Woods and Llyyni Pond LNR (overlaps with Deeside and Buckley Newt sites SAC) - District importance;
- Leadbrook Wood LWS – County importance;
- Top-y-fron Dingle and Kelsterton Brook LWS - County importance;
- Llwyn-onn LWS (overlaps with Mynydd Y Fflint / Flint Mountain SSSI) - County importance;
- Cheshire Farm LWS - County importance;
- Caeau Alt-vois LWS (overlaps with Mynydd Y Fflint / Flint Mountain SSSI) - County importance;
- Shotton Steelworks LWS (adjacent to Shotton Lagoons and Reedbeds SSSI) - County importance;
- The River Dee LWS (adjacent to Dee Estuary/ Aber Afon Dyfrdwy SSSI) - County importance;
- Coed Stanley LWS - County importance;
- Coed Bryn-y-Garreg - County importance;
- Wepre Wood LWS (overlaps with Deeside and Buckley Newt sites SAC) - County importance;
- Coed y Cra LWS - County importance;
- Brown Oak Wood Wild Ground Reserve (overlaps with Deeside and Buckley Newt sites SAC) – Local importance; and

- Llwyni Valley Wild Ground Reserve (overlaps with Deeside and Buckley Newt sites SAC) – Local importance.

11.4.13 Further assessment on local nature conservation sites, where applicable, will be carried out and presented in the ES. This will include a detailed scoping exercise to provide justification on the position to scope each site in or out of the assessment.

Protected and Notable Habitats, including Ancient Woodland

11.4.14 Protected and notable habitats located within the boundaries of nature conservation designations, although noted here, are assessed in relation to those designations and are not duplicated with results of this section.

11.4.15 The semi-natural habitats present within the Indicative Site Boundary are summarised in **Table 11-8** and mapped on **Figure 11-C4** in **Appendix 11-C: Preliminary Ecological Appraisal Report (PEIR Volume IV)**, along with identification of whether or not the land they occupy would be required for the construction, operation and/or decommissioning of the Proposed Development. Additionally, the evaluation of ecological importance is provided. These habitats are described in more detail in **Appendix 11-C: Preliminary Ecological Appraisal Report (PEIR Volume IV)**. Relevant aquatic habitats are also covered in detail within **Appendix 11-G (PEIR Volume IV)**.

11.4.16 All habitats of local or higher value within the Indicative Site Boundary as identified in **Table 11-8** are taken forward for impact assessment where there is potential for these to be adversely or beneficially affected by the Proposed Development.

11.4.17 Other habitats within the 2 km study area for this EclA (as defined in **Table 11-2**) are only assessed further where they are of sufficiently high ecological importance (i.e. priority habitats, as defined in **Appendix 11-C: Preliminary Ecological Appraisal Report (PEIR Volume IV)**) that assessment of potential indirect impacts and effects is appropriate, after first considering typical good practice requirements for air and water quality impact assessment as defined in **Chapter 8: Air Quality** and **Chapter 13: Water Environment and Flood Risk**. This includes the saltmarsh along the Dee Estuary as shown on **Figure 11-C3** in the PEA **Appendix 11-C: Preliminary Ecological Appraisal Report (PEIR Volume IV)**, which is assessed separately as part of the designated sites.

11.4.18 There are no Ancient Woodlands within the Indicative Site Boundary, however there are areas of Ancient Woodland within the 2 km study area which may be impacted by changes in air quality. The nearest area of Ancient Woodland to the Indicative Site Boundary is within 50 m of the Proposed CO₂ Connection Corridor (refer to **Figure 11C-3 Appendix 11C: Preliminary Ecological Appraisal Report (PEIR Volume IV)**).

Table 11-6: Summary of semi-natural habitats present within and in close proximity to the Indicative Site Boundary

Habitat	Ecological Importance	Relevant to EclA
---------	-----------------------	------------------

Within the Indicative Site Boundary

Habitat	Ecological Importance	Relevant to EclA
Coastal saltmarsh ³	Up to International (as assessed within the nature conservation designations, refer to 11.4.13)	Yes – within the Water Connection Corridor and adjacent to the Main Site where land is required for construction and laydown. Assessed as part of the Dee Estuary designated site
Rivers (River Dee estuary) ⁴	Up to International	Yes – within the Water Connection Corridor and adjacent to the Main Site where land is required for construction and laydown. Assessed as part of the Dee Estuary designated site
Possible Open Mosaic	Up to District	Yes - within the C&IEA
Other lowland mixed deciduous woodland	Up to County	Yes – within the Main Site where land is required for construction and laydown, and Proposed and Repurposed CO ₂ Connection Corridor
Hedgerows	Up to County	Yes – within the Proposed and Repurposed CO ₂ Connection Corridors
Other standing water - ponds	Up to County	Yes – adjacent to the Main Site where land is required for construction and laydown. Forms part of the mitigation area for the existing Connah's Quay Power Station, including saltmarsh habitat. Assessed as part of the Dee Estuary designated site
Other rivers and stream	Up to County	Yes – within the Proposed and Repurposed CO ₂ Connection Corridors
Other neutral grassland	Local	Yes – within the Main Site where land is required for construction and laydown
Scrub	Local	Yes - within the Main Site where land is required for construction and laydown, and Repurposed CO ₂ Connection Corridor
Cropland	Up to Local	Yes – within the Proposed and Repurposed CO ₂ Connection Corridors
Buildings Industrial	Negligible	No – screened out based on ecological importance
Developed land; sealed surfaces – other developed land - road	Negligible	No – screened out based on ecological importance
Bracken	Negligible	No – screened out based on ecological importance
Other neutral grassland – ruderal ephemeral	Negligible	No – screened out based on ecological importance
Modified grassland	Negligible	No – screened out based on ecological importance.
Urban gardens	Negligible	No – screened out based on ecological importance

³ Also extends beyond the Indicative Site Boundary and considered up to 2 km

⁴ Also extends beyond the Indicative Site Boundary and considered up to 2 km

Habitat	Ecological Importance	Relevant to EclA
Adjacent or other relevant habitats within 2 km		
Ancient woodland	National	Yes – relevant to operational air quality assessment

11.4.19 Coastal floodplain grazing marsh (priority habitat) is recorded within the Indicative Site Boundary from desk study information (as shown on **Figure 11C-3 Appendix 11-C: Preliminary Ecological Appraisal Report (PEIR Appendix IV)**), however this is yet to be confirmed through further botanical survey work being carried out in 2024. Ecological importance yet to be defined (if applicable) for coastal floodplain grazing marsh and therefore excluded from Table 11-6.

Protected and Notable Species

11.4.20 Protected and notable species potentially relevant to this EclA are summarised in **Table 11-7**. The identification of relevant species, and their ecological importance (where applicable) is described in more detail in **Appendices 11-C: Preliminary Ecological Appraisal Report to 11-G: Aquatic Ecology Baseline Survey and Information Report (PEIR Volume IV)**. Generally, only confirmed species of local or higher importance **Table 11-7** are taken forward for impact assessment. Consideration is also given to INNS of plants and animals.

11.4.21 Further information on the ecological features scoped out of this assessment can be found in **Appendix 11-C: Preliminary Ecological Appraisal Report (PEIR Volume IV)**. These include hazel dormouse *Muscardinus avellanarius* and natterjack toad.

11.4.22 It is noted that further desk-based assessments and surveys are ongoing, as outlined in **Table 11-3** and **Appendix 11-B: Terrestrial and Aquatic Ecology Baseline Surveys and Study Area (PEIR Volume IV)**, to support baseline data gathering for the ES. Further details will be provided in the ES once assessments are complete and will help refine the conclusions on effect significance provided in this preliminary assessment.

11.4.23 For purposes of clarity, the following potential protected and notable species have been scoped out and not considered relevant to the ecological impact assessment and are not considered further:

- Hazel dormouse - The lack of suitable habitat within the Indicative Site Boundary and the lack of suitable connections to any potential habitat in the surrounding landscape means dormouse are unlikely to be present within the Indicative Site Boundary and so are unlikely to be impacted by the Proposed Development. Refer to **PEA Appendix 11-C: Preliminary Ecological Appraisal Report (PEIR Volume IV)**. This position has also been agreed with the Planning Inspectorate as detailed in **Appendix 1-B: Connah's Quay Scoping Opinion (PEIR Volume IV)**; and
- Natterjack toad - A desk study was carried out to support with determining whether natterjack toads were within the Zol of the Proposed Development and whether further survey would be needed.

Through review of environmental records received from Cofnod and correspondence with the Northeast Wales Amphibian & Reptile Network, it was determined that the nearest record of natterjack toad is approximately 6.4km from the Proposed Development. There are no records for natterjack toads within the vicinity of Connah's Quay. This species has therefore been scoped out of further assessment and agreed with FCC. Refer to Section 11.2 paragraphs 11.2.3.

Table 11-7: Summary of species relevant to the ecological impact assessment

Species	Ecological Importance	Baseline Information	Summary of existing baseline	Potential relevance to the EclA
Wintering and passage birds (wetland)	Up to International	Appendix 11-D: Ornithology Baseline Survey and Information Report (PEIR Volume IV)	The Dee Estuary SPA and Ramsar is internationally designated for its qualifying wetland bird species and winter waterbird assemblage. Qualifying species (1% SPA population thresholds) will be considered individually in the ES.	Construction, operation and decommissioning of Main Site. May be relevant to the Proposed and Repurposed CO ₂ Connection Corridors.
Breeding birds	Up to Regional	Appendix 11-D: Ornithology Baseline Survey and Information Report (PEIR Volume IV)	Presence of breeding avocet plus a range of less scarce Red and Amber List breeding species. Analysis of breeding bird survey data will be cross referenced with Flintshire and Cheshire / Wirral bird reports to determine species status.	Construction, operation and decommissioning of Main Site. May be relevant to the Proposed and Repurposed CO ₂ Connection Corridors.
Barn owl	Up to County	To be provided as part of the ES.	To be confirmed through further survey and desk study.	Construction, operation and decommissioning of Main Site. May be relevant to the Proposed and Repurposed CO ₂ Connection Corridors.
Great crested newts	Local	Appendix 11-E: Amphibian Baseline Survey and Information Report (PEIR Volume IV)	27 waterbodies were identified within 500 m of the Proposed Development as having potential to support great crested newt. No suitable waterbodies were identified within the Proposed Development. Suitable terrestrial habitat for great crested newt has been identified within the Proposed Development. Two metapopulations of great crested newts assumed. One within 50 m of the Main Site (to the west of the Main Site); and one within 250 m to 500 m of the	Construction and decommissioning of Main Site.

Species	Ecological Importance	Baseline Information	Summary of existing baseline	Potential relevance to the EclA
			Indicative Site Boundary (by the Proposed CO ₂ Connection Corridor).	
Reptiles	Local	Appendix 11-C: Preliminary Ecological Appraisal Report (PEIR Volume IV)	Previous survey work identified a low population of common lizard (<i>Zootoca vivipara</i>) within the C&IEA.	Construction and decommissioning of the Main Site. May be relevant to the Proposed and Repurposed CO ₂ Connection Corridors.
Bats - roosts	Up to County	Appendix 11-F: Bat Baseline Survey and Information Report (PEIR Volume IV)	All buildings within the Indicative Site Boundary were found to have no suitability for roosting bats. Two trees were found to have potential roost features for bats.	Construction, operation and decommissioning of the Main Site and C&IEA; and construction of the Proposed and Repurposed CO ₂ Connection Corridors.
Bats - foraging and commuting	Up to County	Appendix 11-F: Bat Baseline Survey and Information Report (PEIR Volume IV)	The Main Site and C&IEA were assessed as having negligible to low suitability habitat for foraging and commuting bats. The Proposed CO ₂ Connection Corridor and Repurposed CO ₂ Connection Corridor, are assessed as having moderate suitability to support foraging and commuting bats.	Construction, operation and decommissioning of the Main Site; use of the C&IEA for construction; and construction of the Proposed and Repurposed CO ₂ Connection Corridors.
Badgers	Local	Appendix 11-C: Preliminary Ecological Appraisal Report (PEIR Volume IV) (initial assessment only as part of PEA)	Suitable terrestrial habitats for badgers were identified within the Proposed Development.	Construction, operation and decommissioning of the Main Site; use of the C&IEA for construction; and construction of the Proposed and Repurposed CO ₂ Connection Corridors.
Otters	Up to County	Appendix 11-C: Preliminary Ecological Appraisal Report	Four watercourses have been identified within the Proposed Development that have potential to support otters.	Construction, operation and decommissioning of the Main Site. May be relevant to the Proposed and Repurposed CO ₂ Connection Corridors.

Species	Ecological Importance	Baseline Information	Summary of existing baseline	Potential relevance to the EclA
		(PEIR Volume IV) (initial assessment only as part of PEA)		
Water voles	Up to County	Appendix 11-C: Preliminary Ecological Appraisal Report (PEIR Volume IV) (initial assessment only as part of PEA)	Two watercourses and three waterbodies have been identified within the Proposed Development that have potential to support water voles.	Construction, operation and decommissioning of the Main Site. May be relevant to the Proposed and Repurposed CO ₂ Connection Corridors.
Terrestrial invertebrates	Up to County	To be provided as part of the ES.	An initial walkover identified habitats within the Proposed Development that may support protected or notable invertebrate species.	Construction and decommissioning of the Main Site.
Other notable species – potentially hedgehog <i>Erinaceus europaeus</i> and amphibians	Up to Local	Appendix 11-C: Preliminary Ecological Appraisal Report (PEIR Volume IV)	Habitats were identified within the survey area suitable to support hedgehog and notable amphibians (other than great crested newts).	Construction, operation and decommissioning of the Main Site; use of the C&IEA for construction; and construction of the Proposed and Repurposed CO ₂ Connection Corridors.
Aquatic invertebrates	Local	Appendix 11-G: Aquatic Ecology Baseline Survey and Information Report (PEIR Volume IV)	Three watercourses and two sets of waterbodies have been identified within the Proposed Development that have the potential to support notable aquatic invertebrate species.	Construction of the Proposed CO ₂ Connection Corridor; Repurposed CO ₂ Connection Corridor and Water Connection Corridor.
Fish	Up to International	Appendix 11-G: Aquatic Ecology Baseline Survey and Information Report (PEIR Volume IV)	Three watercourses and two sets of waterbodies have been identified within the Proposed Development that have the potential to support notable fish species.	Construction of the Proposed CO ₂ Connection Corridor; Repurposed CO ₂ Connection Corridor and Water Connection Corridor.

Species	Ecological Importance	Baseline Information	Summary of existing baseline	Potential relevance to the EclA
Aquatic Macrophytes	Local	Appendix 11-G: Aquatic Ecology Baseline Survey and Information Report (PEIR Volume IV)	Three watercourses and two sets of waterbodies have been identified within the Proposed Development that have the potential to support notable aquatic macrophyte species.	Within the Proposed Development; specifically, the Proposed CO ₂ Connection Corridor; Repurposed CO ₂ Connection Corridor and Water Connection Corridor.

Future Baseline

11.4.24 The assessment years and assessment scenarios for the Proposed Development scenarios are set out in **Chapter 2: Assessment Methodology and Consultation (PEIR Volume II)**.

11.4.25 The future baseline are the conditions anticipated to prevail at a certain point in the future (assuming the Proposed Development does not progress) and are identified for comparison with the predicted conditions with the Proposed Development. This can include, for example, changes as a result of climate change, natural succession of habitats, the introduction of new receptors into an area, the continued operation of existing developments, or new development schemes that have the potential to change the baseline, where these comprise committed developments. The following future baseline assessment years have been identified:

- Construction (2031 to 36); and
- Operation (2036).

Construction (2031-36)

11.4.26 In the absence of the Proposed Development, it is predicted that the habitat context and management of the Indicative Site Boundary and adjacent land would remain as it is in the current baseline. The Conservation Areas Management Plan for the land within Uniper's control (which is a legal requirement of the Section 36 / planning permission for the existing Connah's Quay Power Station) must be maintained for the life of the plant. It is therefore acceptable to assume for the purposes of this assessment that whilst the current plant remains operational there will be no substantive change in management of the Indicative Site Boundary areas.

11.4.27 As no substantive changes in habitat context and condition are predicted, the species value of the Indicative Site Boundary and adjacent land would also remain consistent with the current baseline. Minor changes (upwards or downwards) in the distribution of some species, e.g. nesting birds, roosting bats or water vole, may occur in line with small-scale changes in habitat structure as a result of ecological succession or other natural processes. Any such changes are likely to be within the range of normal inter-annual variation in the distribution and abundance of species populations. In addition, potentially relevant protected species (e.g. badger) could establish in new locations where they would impose new working constraints, due to a need to ensure compliance with the legislation protecting these species.

Operational (2036)

11.4.28 It is not expected that there would be any marked change in local land management practice and associated habitats by the time of first commercial operation. It is noted that the Conservation Areas Management Plan for the existing power station will still be in place until the Existing Connah's Quay Power Station ceases to operate.

11.4.29 Water quality is expected to improve due to legislation requirements and interventions, including Water Framework Directive Targets, positively

supporting terrestrial and aquatic ecology. Refer to **Chapter 13: Water Environment and Flood Risk**.

- 11.4.30 Current air quality background concentrations are assumed to apply to the future baseline scenarios with no substantive changes to habitats and species. Refer to **Chapter 8: Air Quality**.

Decommissioning (2036 onwards)

- 11.4.31 The future baseline conditions in the vicinity of the Proposed Development are likely to be similar to the operational baseline.

11.5 Development Design and Embedded Mitigation

- 11.5.1 The Proposed Development has been designed, as far as possible, to avoid or minimise impacts and effects on important Terrestrial and Aquatic Ecology features through the process of design development, and by embedding measures into the design of the Proposed Development.
- 11.5.2 All construction works will be undertaken in accordance with a Construction Environmental Management Plan (CEMP). A Framework CEMP will be produced alongside the ES, and a requirement will then be included in the DCO that a final CEMP will be produced for approval prior to commencement of construction. Refer also to **Chapter 8: Air Quality**, **Chapter 9 Noise and Vibration** and **Chapter 13: Water Environment and Flood Risk**. An outline Landscape and Biodiversity Management and Enhancement Plan (LBMEP) will also be developed to secure habitat management and monitoring of retained and created habitats, and a requirement will then be included in the DCO requiring a final version of the plan to be prepared and approved.
- 11.5.3 It is assumed that the contractor(s) would comply with all relevant protected species legislation, as this is mandatory. Where relevant, licences will be sought from NRW to allow works to proceed where they impact protected species. These may require design mitigation (such as habitat creation for specific species, creation of designated receptor sites for species such as great crested newt, provision of artificial setts for badgers or the provision of bat boxes as replacement roosts for bats), which will be incorporated into the design of the Proposed Development. To assist in transparency in what may be required, potential species-specific measures are addressed in Section 11.7, which may influence the development design further to support with licence requirements.
- 11.5.4 The following embedded mitigation measures have been or will be incorporated into the Proposed Development design, with proposals and locations to be submitted with the Development Consent Order (DCO) application, with these measures secured through the CEMP or LBEMP (where applicable):

Construction

- the Proposed Development and construction laydown areas have been designed to include a minimum 30 m ecological safeguard zones, for the protection of sensitive habitats / species occupying the Dee Estuary, as shown on **Figure 5-4 (PEIR Volume III)**. This includes acoustic fencing to the north of the Main Site and C&IEA; and site

hording fencing to the western side of the Main Site to act as a visual screen to birds utilising the waterbodies within the Connah's Quay Power Station Nature Reserve as indicated on **Figure 5-3 (PEIR Volume III)**;

- it is expected that the Proposed CO₂ Connection Corridor will be constructed in the same way as a natural gas transmission pipeline, involving excavation of an open trench (to provide a depth of cover, typically 1.2 m), lowering of the pipe into the trench and backfilling with the excavated material. Any works required to the Repurposed CO₂ Connection Corridor will be undertaken in a similar way. The ground will be reinstated after construction to its pre-existing habitat condition where practical. Existing vegetation lost / disturbed will be replanted / replaced;
- it is assumed in the Water Connection Corridor that the new intake and outfall structures and pipework will be located as close to the existing outfalls as reasonably practicable. It is assumed that a suitable method of piling will be used where practicable, to reduce the potential noise and vibratory impact to birds, fish and other wildlife. Details will be confirmed in the ES. Currently this Chapter acknowledges a potential worst-case scenario when discussing the Rochdale Envelope in the bullets listed under paragraph 11.3.14;
- the installation and subsequent removal of any temporary cofferdams required to enable construction works within watercourses for cooling water infrastructure will be completed as far as reasonably practicable, and unless otherwise agreed with regulators, outside the main migratory periods of key fish species to minimise potential impacts on diadromous fish migrating up or downstream to spawn. A fish rescue may also be carried out if required when any cofferdams are sealed and dewatered;
- appropriate silt control measures will be used, if appropriate, during the installation and removal of temporary cofferdams in watercourses. Refer to **Chapter 13: Water Environment and Flood Risk**;
- additional sediment control measures will be in place around the Kelsterton Brook / Old Rockcliffe Drain culvert so construction works do not result in untreated water entering the culvert as a pathway to the River Dee. Refer to **Chapter 13: Water Environment and Flood Risk**;
- there will be retention and appropriate stand-offs from all waterbodies / courses (including the Allt-Goch Brook, Allt-Goch Tributary and Lead Brook as shown on **Figure 13-6 Water Resources (PEIR Volume III)** associated with the Proposed and Repurposed CO₂ Connection Corridor) if required. Refer to **Chapter 13: Water Environment and Flood Risk**;
- minor works (if required) within the Electrical Connection Corridor will be undertaken via existing access points or within the existing substation, avoiding any potential impact to terrestrial and aquatic ecology;

- lighting will be restricted to focused point use where reasonably practicable. Refer to **Chapter 5: Construction Management and Programme**. An Indicative Lighting Strategy providing further detail will accompany the ES. The strategy will seek to provide safe working conditions whilst reducing light pollution and the visual impact of light on the local environment, including nocturnal fauna such as bats and badgers;
- precautionary working methods and standard practice mitigation measures will be in place to manage the risk to common species of reptile and notable species such as hedgehog, hare and other notable amphibians. This will involve steps such as the sensitive management of vegetation and / or the capture and relocation of notable species found during the works;
- an Ecological Clerk of Works (ECoW) appointed by the Applicant will supervise, instruct and report on all site clearance and construction works with potential to affect protected species, encompassing both licensed and unlicensed activities;
- all habitats subject to temporary impacts during construction, such as those within the construction laydown areas, Electrical Connection Corridor, Water Connection Corridor, Proposed and Repurposed CO₂ Connection Corridor, would be reinstated where reasonably practicable on a like-for-like basis at the same location following construction where practical. Where appropriate, well-established plant stock would be used to reduce the time taken to restore habitats to their pre-construction condition. Additionally, vegetation would be protected from tracked construction vehicles with ground protection mats where applicable;
- habitat to be retained will be protected from any direct effects of the construction works e.g. demarcation zones and toolbox talks by the ECoW;
- where species specific constraints have been (or will be, during planned further survey work) identified, specific mitigation measures may be included to reduce or offset such impacts. Where these have already been identified they have been stated in the relevant species-specific appendices. Some standard measures prior to and during construction for the purposes of avoiding impacts on named species and to comply with relevant legislation include:
 - nesting birds: All clearance of suitable vegetation to be done outside the breeding season (typically March to August inclusive for most species), where possible. If not possible, the ECoW would check the working area for nests before works commence. If active nests are discovered through this process, then the ECoW will advise on appropriate mitigation to ensure that these are not impacted by construction activities. All relevant works would be completed in accordance with this advice and under the supervision of an ECoW;
 - bats: Minimum buffer zone of approximately 30 m (which may be reduced subject to findings and assessment by an appropriately

qualified bat licenced ecologist) from any retained trees (or structures) with suitability for roosting bats, or further surveys to be carried out where there is potential for direct impacts (where applicable). Refer to **Appendix 11-F (PEIR Volume IV)**;

- fish: A Fish Management Plan will be prepared and agreed with relevant stakeholders to specify the measures and supervision required to deliver legislative compliance during installation and drawdown of any cofferdam(s) for works on the Water Connection Corridor (if applicable), for example fish rescues. It is proposed that submission and approval of the Fish Management Plan will be secured by a Requirement of the DCO / Marine Licence;
- general animal welfare during construction:
 - vegetation clearance and construction excavations have potential to affect wildlife and may result in offences under animal welfare legislation. An ECoW would be employed to supervise all relevant works to provide guidance on the measures required day-to-day to deliver legislative compliance; and
 - all excavations would be covered overnight, or where this is not practicable, a means of escape would be fitted e.g. battered soil slope or scaffold plank, to provide an escape route should any animals (e.g. reptiles, badger, otter, brown hare, hedgehog) stray into the construction site and fall into an excavation.
- invasive Species Management Plan (ISMP): A plant INNS survey will be undertaken prior to construction to determine the current location and extent of plant INNS, and to inform specification of the ISMP. If determined as necessary through this survey and after consideration of other available plant and animal INNS data, an ISMP will be prepared to accompany the final CEMP and would be agreed with relevant stakeholders. The ISMP would specify the measures and supervision necessary during construction to prevent the spread of plant and animal INNS to new locations. It is proposed that submission and approval of the ISMP will be secured by a Requirement of the DCO; and
- preconstruction update surveys would be carried out for protected species where relevant or necessary, for example to inform licencing or to identify potential additional features which may become established in the study area such as mobile species.

Design / Operation

11.5.5 The design of the Proposed Development has evolved in response to findings of ecological surveys and studies undertaken to date. At this stage, the following measures are or will be embedded within the design:

- the Proposed Development will be designed to provide Net Benefit for Biodiversity (NBB). A benefit for biodiversity above the existing baseline situation would be sought through the design process for the project. Following construction, the C&IEA may be used for NBB measures. A proactive, creative and holistic approach towards facilitating the delivery of biodiversity and ecosystem resilience will be taken. This will

be done together with engagement from FCC. An NBB assessment will be submitted with the DCO application;

- the Conservation Areas Management Plan for the existing Connah's Quay Power Station will be reviewed to support with design of mitigation strategy for the Proposed Development.
- it is expected that new eel screens will be placed across abstraction infrastructure. Refer to **Chapter 12: Marine Ecology**. New fish screens would be installed to an agreed standard at construction during upgrade of water supply infrastructure to achieve compliance with the Eels (England and Wales) Regulations 2009 and other relevant legislation and regulatory requirements (where / if applicable) during operation of the Proposed Development;
- cooling water will be discharged at a rate and with a chemical water quality compliant with the discharge limits set by the Environment Agency within the Environmental Permit, taking into account Best Available Techniques (BAT) for those discharges;
- the Indicative Lighting Strategy will be included with the DCO application to detail the operation lighting requirements for the Proposed Development. It will ensure that lighting will be sited or screened in such a way as to reduce illumination on adjoining sensitive habitats to habitats to minimise effects on receptors sensitive to light impacts where practicable. This includes Guidance Note 8/23 Bats and Artificial Lighting at Night published by the Bat Conservation Trust and Institution of Lighting Professionals (Ref 11-50);
- landscaping and ecological management within the Main Site and C&IEA laydown areas will be provided as soon as reasonably practicable as described in **Chapter 4: The Proposed Development**. An Outline Landscape and Biodiversity Management and Enhancement Plan (LBMEP) will accompany the ES and set out the implementation plan for these measures; and
- the final stack height(s) for the Proposed Development will be determined at the detailed design stage and will be optimised to aid dispersion of pollutants, with consideration given to minimisation of ground-level air quality impacts, including on relevant biodiversity and nature conservation features. **Chapter 8: Air Quality** describes the preliminary results of atmospheric dispersion modelling which have informed the maximum and minimum stack heights set out in **Chapter 4: The Proposed Development**. This will be refined further, and the final design parameters including stack heights will be provided with the Application. The proposed heights of the absorber stacks and Heat Recovery Steam Generator stack(s) for the Proposed Development have been assessed as a robust case with consideration given to minimisation of ground-level air quality impacts and the visual impacts of taller stacks, based on current biggest building massings of the main structures of the Proposed Development.

- 11.5.6 The ES will provide further details of all mitigation measures embedded within the design of the Proposed Development following completion of the ecological surveys and through further discussion with relevant stakeholders.

Decommissioning

- 11.5.7 Decommissioning would require submission of a DEMP will be secured by a requirement of the DCO. Appropriate best practice mitigation measures, including measures to deliver compliance with nature conservation legislation applicable at that time, will be applied during any decommissioning works as documented in the DEMP. No additional mitigation for decommissioning of the Proposed Development beyond such best practice is considered necessary at this stage.

11.6 Preliminary Assessment of Likely Impacts and Effects

- 11.6.1 Taking into account the embedded mitigation measures as detailed in Section 11.5 above, the potential impacts and effects of the Proposed Development have been assessed using the methodology as detailed in Section 11.3 of this chapter and **Chapter 2: Assessment Methodology and Consultation**.
- 11.6.2 For the purposes of the assessment, the construction phase includes enabling and demolition works required to facilitate the Proposed Development.
- 11.6.3 In making this assessment, regard has been given to other relevant Chapters, specifically **Chapter 8: Air Quality**, **Chapter 9: Noise and Vibration**, **Chapter 12: Marine Ecology** and **Chapter 13: Water Environment and Flood Risk**. It is not considered necessary in this chapter to replicate the impact assessments provided in these source chapters. Where mitigation has been identified as necessary in other chapters to address and remove potential significant adverse effects, then it can be assumed that there is a commitment to provide this mitigation, and that it will be delivered as outlined in the relevant chapter and/or as specified in the Framework CEMP that will accompany the Application.
- 11.6.4 Relevant terrestrial and aquatic ecological features are those that are considered to be of Local or higher geographical importance, and which have potential to be affected by the Proposed Development as summarised in Section 11.4.

Construction Phase

Designated Sites

- 11.6.5 This section focusses on the plants and habitats of designated sites scoped into the assessment. The assessment on other qualifying features is addressed, as relevant, within the discussion by species group.
- 11.6.6 During construction, the potential impacts experienced by designated sites include:
- habitat loss;
 - changes in air quality (i.e. dust deposition); and

- alteration of local hydrology and water quality

Dee Estuary / Aber Dyfrdwy SAC, SPA, Ramsar, SSSI

Habitat Loss / Changes in Air Quality / Alteration of Local Hydrology and Water Quality

- 11.6.7 The Proposed Development overlaps with, and is directly adjacent to, the Dee Estuary / Aber Dyfrdwy SAC, SPA, Ramsar and SSSI within the Water Connection Corridor and Existing Surface Water Outfall area.
- 11.6.8 The effects of the Proposed Development on the Dee Estuary / Aber Dyfrdwy SAC, SPA and Ramsar, along with other Habitats Sites, will be fully assessed through the HRA process. The HRA is in progress and NRW are engaged. It is likely that an AA may be required. The results of this will in turn support the assessment of the Dee Estuary/ Aber Dyfrdwy SSSI to be presented in the ES.
- 11.6.9 As this assessment is ongoing, likely significant adverse effects on the Dee Estuary / Aber Dyfrdwy SAC, SPA, Ramsar and SSSI and its designated biodiversity features of interest therefore cannot be ruled out at this stage.
- 11.6.10 In terms of plants and habitats only, construction of the Proposed Development has the potential to directly and indirectly impact saltmarsh habitat, which is present within the Indicative Site Boundary, specifically within the Water Connection Corridor and Existing Surface Water Outfall areas. Saltmarsh is evaluated as up to International Importance, as it is a qualifying habitat feature of the Dee Estuary SAC (taking the highest ecological importance evaluation of the applicable site designation).
- 11.6.11 The Indicative Site Boundary demarks the maximum extent required for works within the Water Connection Corridor. However, it is assumed that works within the saltmarsh may only be temporary, and any habitat impacted would be reinstated. Permanent works would comprise a pipeline that will be underground and habitat reinstated on top should an open cut method be used. Any existing or proposed water intake and discharge will be located outside of the saltmarsh within the Dee Estuary.
- 11.6.12 A new surface water outfall may be required adjacent to the Existing Surface Water Outfall. There will be permanent habitat loss under the footprint of the new surface water outfall structure and temporary habitat loss within any wider construction footprint. However, the full extent of the work and reinstatement of habitat is currently unknown.
- 11.6.13 There is also potential for temporary indirect impacts to any retained saltmarsh habitat through changes in air quality (dust deposition) and alterations in hydrology and water quality, outside of the Indicative Site Boundary located along the River Dee, during construction. However, as set out in Section 8.6 of **Chapter 8: Air Quality**, dust control measures in the embedded mitigation would prevent any significant effects from any sensitive features within the designated site. A minimum of 30 m ecological buffer zone would be maintained around the C&IEA and Main Site providing an area of protection to any retained saltmarsh habitat within the Dee Estuary / Aber Dyfrdwy SAC, SPA, Ramsar and SSSI (as shown on **Figure 5-4 (PEIR Volume III)**). However, this requires detailed assessment within the HRA following further design development and ecological survey information.

11.6.14 Until further information is available on the cooling water infrastructure and surface water outfall design, and extent and classification of the saltmarsh habitat (which is to be informed through further detailed NVC surveys in summer 2024), likely significant effects on saltmarsh habitat cannot be ruled out.

11.6.15 Other International and National Nature Conservation Designations

Habitat Loss

11.6.16 There are not anticipated to be any direct impacts of habitat loss on any other International or National important designated sites.

Changes in Air Quality / Alteration of Local Hydrology and Water Quality

11.6.17 The River Dee and Bala Lake / Afon Dyfrdwy a Llyn Tegid SAC and Afon Dyfrdwy (River Dee) SSSI and River Dee SSSI (England) are hydrologically linked to the Dee Estuary SPA / Ramsar / SAC / SSSI.

11.6.18 The River Dee and Bala Lake / Afon Dyfrdwy a Llyn Tegid SAC is located more than 200 m away in terms of potential impacts from construction dust and as set out in Section 8.6 of **Chapter 8: Air Quality**, dust control measures in the embedded mitigation would prevent any significant effects from any sensitive features within the designated site.

11.6.19 However, the effects of construction of the Proposed Development on the River Dee and Bala Lake / Afon Dyfrdwy a Llyn Tegid SAC, will be fully assessed through the HRA process. The HRA is in progress and NRW are engaged. It is likely that an AA will be required. The results of this will in turn support the assessment of the Aber Dyfrdwy (River Dee) SSSI.

11.6.20 As this assessment is ongoing, likely significant effects on the River Dee and Bala Lake / Afon Dyfrdwy a Llyn Tegid SAC therefore cannot be ruled out at this stage.

11.6.21 There are no indirect construction impacts anticipated on any other Habitats Sites due to their distance from the Indicative Site Boundary (>1.5 km) and lack of impact pathways. This will however be confirmed within the HRA.

11.6.22 As well as being hydrologically linked to the Proposed Development, Afon Dyfrdwy (River Dee) SSSI is also located within 200 m of the Indicative Site Boundary and could therefore experience potential impacts from construction dust. It is intended that significant adverse effects from construction dust are avoided through the good practice dust control measures embedded in the Framework CEMP. However, during construction there is an elevated risk of impacts on the hydrology and water quality of the River Dee and associated ecology, even considering good practice measures. Refer to **Chapter 13: Water Environment and Flood Risk** for details. Therefore, there is potential for **significant** adverse effects at the National level (major adverse, **significant**) as a result of changes in local hydrology and water quality from construction activities on the Afon Dyfrdwy (River Dee) SSSI and River Dee SSSI (England).

11.6.23 Shotton Lagoons and Reedbed SSSI and Inner Marsh Farm SSSI are Nationally important sites of ornithological interest. Shotton Lagoons and Reedbed SSSI is located approximately 0.48 km north-east from the C&IEA and 1.4 km east of the Main Site. Inner Marsh Farm SSSI overlaps with the

Dee Estuary SPA, and located approximately 2.8 km north-east from the Indicative Site Boundary. Potential impacts from construction on ornithology are assessed separately within the ornithological section of this Chapter. Both SSSIs are considered to be located a sufficient distance away from the Proposed Development to not be significantly affected by dust deposition or alterations in hydrology and water quality i.e. located greater than 200 m from the Indicative Site Boundary and separated from the Proposed Development by the River Dee. With embedded good practice measures in place in association with dust control and protection of the water environment within the Framework CEMP, there are anticipated to be **no significant effects** (neutral, **not significant**) on Shotton Lagoons and Reedbed SSSI and Inner Marsh Farm SSSI as a result of construction activities.

- 11.6.24 There are no indirect construction impacts anticipated on any other National designated sites due to their distance from the Indicative Site Boundary (>200 m) and lack of impact pathways.

Local Conservation Designations

Habitat Loss

- 11.6.25 There will be no direct impacts of habitat loss on any local conservation designated sites.

Changes in Air Quality / Alteration of Local Hydrology and Water Quality

- 11.6.26 Gathering and Grounds Woods LNR is located approximately 1.47 km south-east of the Indicative Site Boundary and approximately 2.24 km south-east of the Main Site. It is designated for its broadleaved woodland habitat and its pond that supports a population of great crested newt. The LNR is evaluated as District level importance. However, there are no direct or indirect construction impacts anticipated on this LNR due to its distance from the Indicative Site Boundary and lack of impact pathways.
- 11.6.27 The River Dee LWS is located approximately 1.09 km east of the Indicative Site boundary and approximately 2.27 km east of the Main Site. The LWS is designated for its coastal and floodplain grazing marsh, coastal saltmarsh and mudflats habitat and is also of ornithological interest. The River Dee LWS is unlikely to experience any potential impacts from construction dust given its distance located greater than 200 m from the Indicative Site Boundary. However, given the hydrological connectivity to this LWS via the River Dee and the water dependent habitats in association with the River Dee LWS, significant effects cannot be ruled out at this stage. Therefore, there is potential for **significant** effects at the County level (moderate adverse, **significant**), as a result of changes in local hydrology and water quality from construction activities, on the River Dee LWS.
- 11.6.28 Leadbrook Wood LWS is located approximately 0.1 km from the Indicative Site Boundary and approximately 0.35 km from the Main Site. The LWS is designated for its broad-leaved woodland and scrub, pasture/meadow and scrub habitats and is evaluated to be County importance. It has hydrological connectivity to the Proposed Development via Lead Brook. There are potential impacts on hydrology and water quality on the Lead Brook as a result of construction activities. However, Lead Brook is culverted where the Repurposed CO₂ Corridor crosses the watercourse, therefore there are unlikely to be any works in this area. Additionally, the habitats for which the

LWS is designated are not in association with the Lead Brook watercourse. Refer to **Chapter 13: Water Environment and Flood Risk** and assessment of the Lead Brook separately in the Habitats section of this Chapter. With embedded good practice measures in place in association with dust control and protection of the water environment within the Framework CEMP, there are anticipated to be **no significant effects** (neutral, **not significant**) on the Leadbrook Wood LWS from construction activities.

- 11.6.29 Top-y-fron Dingle and Kelsterton Brook LWS is located approximately 0.35 km south-east of the Indicative Site Boundary and Main Site. Top-y-fron Dingle and Kelsterton Brook LWS is designated for its broad-leaved woodland and scrub habitats and is evaluated to be of County importance. The Top-y-fron Dingle and Kelsterton Brook LWS is located > 200 m from the Indicative Site Boundary and unlikely to experience any potential impacts from construction dust. However, it has hydrological connectivity to the Proposed Development via Kelsterton Brook, which is culverted under the existing Connah's Quay Power Station. The habitats for which the LWS is designated is not in association with the Kelsterton Brook. There are potential impacts on hydrology and water quality on Kelsterton Brook as a result of construction activities. However, with embedded good practice measures in place in association with protection of the water environment within the Framework CEMP, there are anticipated to be **no significant effects** (neutral, **not significant**) on Top-y-fron Dingle and Kelsterton Brook LWS from construction activities.
- 11.6.30 Cheshire Farm Wood LWS is located approximately 0.85 km south-east of the Indicative Site Boundary and Main Site. Cheshire Farm Wood LWS is designated for its broad-leaved woodland and scrub habitats and evaluated to be of County importance. The Cheshire Farm LWS is located > 200 m from the Indicative Site Boundary and therefore unlikely to experience any potential impacts from construction dust. However, it has hydrological connectivity to the Proposed Development via Old Rockcliffe Brook, which converges with Kelsterton Brook, and is culverted under the existing Connah's Quay Power Station. The habitats for which the LWS is designated are not in association with the Old Rockcliffe Brook. There are potential impacts on hydrology and water quality on the Old Rockcliffe Brook as a result of construction activities. However, with embedded good practice measures in place in association with protection of the water environment within the Framework CEMP, there are anticipated to be **no significant effects** (neutral, **not significant**) on Cheshire Farm LWS from construction activities.
- 11.6.31 Shotton Steelworks LWS is located adjacent to Shotton Lagoon and Reedbeds a SSSI, and is designated for its pasture/ meadow, scrub, reedbed, standing open water habitats and ornithological interest. The site is evaluated as County importance. Potential impacts from construction on ornithology (i.e. through disturbance) are assessed separately within the ornithological section of this Chapter. The LWS is considered to be located a sufficient distance from the Main Site and C&IEA to not be significantly affected by dust deposition or alterations in hydrology and water quality i.e. located >200 m from the Main Site and separated from the Proposed Development by the River. With embedded good practice measures in place in association with dust control and protection of the water environment within the Framework CEMP, there

are anticipated to be **no significant effects** (neutral, **not significant**) on Shotton Steelworks LWS from construction.

11.6.32 There are no indirect construction impacts anticipated on any other Local designated sites (i.e. LWS and Wild Ground Reserves) due to their distance from the Indicative Site Boundary (>200m) and lack of impact pathways.

Habitats

11.6.33 The following habitats have been scoped into the assessment of likely significant effects during the construction of the Proposed Development:

- Ancient Woodland;
- Saltmarsh;
- Rivers (River Dee Estuary);
- Open mosaic habitats;
- Other neutral grassland;
- Other lowland mixed deciduous woodland Plantation;
- Bramble Scrub;
- Cropland;
- Hedgerows;
- Other standing water – ponds; and
- Other rivers and stream.

11.6.34 Assessments of Saltmarsh and Rivers (River Dee Estuary) are presented in the Designated Sites section and are not duplicated here.

11.6.35 During construction, the potential impacts experienced by habitats include:

- Habitat loss;
- Changes in air quality (i.e. dust deposition); and / or
- Alterations of local hydrology and water quality.

Ancient Woodland

Habitat Loss

11.6.36 There are no Ancient Woodlands located within the Indicative Site Boundary. The nearest Ancient Woodland is located approximately 50 m south-west of the Indicative Site Boundary by the Proposed CO₂ Connection Corridor, which is a sufficient distance away to not be damaged or disturbed. There will be no direct impacts on Ancient Woodland.

Changes in Air Quality / Alterations of local hydrology and water quality

11.6.37 With embedded good practice measures in place in association with dust control and protection of the water environment within the Framework CEMP,

there are anticipated to be **no significant effects** (neutral, **not significant**) on Ancient Woodland from construction activities.

Open Mosaic Habitats

Habitat Loss

11.6.38 The establishment of the C&IEA would result in the direct loss and damage to possible open mosaic habitats. The full extent and classification of open mosaic habitat is still to be confirmed following completion of further botany work in summer 2024. The loss of habitat will be temporary, for up to five years, during construction of the Proposed Development based on the worst-case scenario for ecology being the Single Phase. The Phased Construction scenario would result in some habitat loss experienced which may be experienced for up to nine years however as detailed in **Chapter 5: Construction Management and Programme**, the footprint of loss for construction laydown within the C&IEA and the Main Site is expected to be smaller in comparison to the Single Phase. Therefore, the Single Phase is considered the worst-case scenario for ecology.

11.6.39 Therefore, a precautionary assessment based on the worst-case scenario is a **significant** effect at up to District level (moderate adverse, **significant**) in the short term (i.e. during construction). However, it is anticipated that the C&IEA will be reinstated following construction of the Proposed Development, in accordance with a LBMEP, resulting in **no significant adverse effect** (neutral, **not significant**) in the medium to long term (i.e. 1 to 2 years post construction) as the area will be left to recolonise and re-establish.

Other neutral grassland

Habitat Loss

11.6.40 Within the Main Site, the western most fields of grassland habitat will be temporarily lost to construction activities in association with the laydown areas and then reinstated and returned to preexisting conditions following the Proposed Development in accordance with a LBMEP. The loss of habitat will be temporary, for up to five years, during construction of the Proposed Development based on the worst-case scenario for ecology being the Single Phase. The Phased Construction scenario would result in some habitat loss experienced which may be experienced for up to nine years however as detailed in **Chapter 5: Construction Management and Programme**, the footprint of loss for construction laydown within the C&IEA and the Main Site is expected to be smaller in comparison to the Single Phase. Therefore, the Single Phase is considered the worst-case scenario for ecology. The eastern most fields of grassland habitat will be permanently lost in association with constructed CCGT with CCP y. Further botanical surveys are being carried out during the optimal survey window in spring/summer 2024 to fully assess the habitats present. A precautionary assessment based on the worst-case scenario is a **significant** adverse effect at the Local level (minor adverse, **not significant**) on other neutral grassland habitat from construction activities. Note: the effects associated with ornithological interest in association with these fields is assessed separately.

Other lowland mixed deciduous woodland

Habitat Loss

- 11.6.41 There is no woodland priority habitat within the Indicative Site Boundary.
- 11.6.42 At the Main Site, two areas of young plantation (other lowland mixed deciduous) woodland (i.e. less than 30 years) are located to the southern side of the Main Site either side of the access road to the existing Connah's Quay Power Station. Studies are ongoing to determine if this habitat will be impacted by the Proposed Development.
- 11.6.43 There is an area of woodland (to be surveyed in 2024) to the north of the Main Site alongside the existing Connah's Quay Power Station and access road. This habitat is to be retained; however an acoustic noise barrier fence is proposed to be installed along the Indicative Site Boundary at this location, which may encroach within root protection zones of trees. A potential adverse effect can therefore not be ruled out at this stage in the assessment.
- 11.6.44 There is an area of other lowland mixed deciduous woodland, located between the Repurposed CO₂ Connection corridor and the Proposed CO₂ Connection Corridor along the Allt-Goch Brook watercourse. The need for and the extent for works in this area are the subject of ongoing studies. Until this is confirmed, a worst-case assumption that this may be lost to, or damaged by, construction activities is made. A precautionary evaluation has also been made on the importance of woodland present until further survey information is obtained.
- 11.6.45 Further botanical surveys carried out during the optimal survey window in spring/summer 2024 will fully assess the woodland habitat present within the Indicative Site Boundary.
- 11.6.46 Therefore, taking into consideration all impacts on woodland as described above, a precautionary assessment based on the worst-case scenario is a **significant** adverse effect up to the County level (moderate adverse, **significant**) in the short to long term, on other lowland mixed deciduous woodland habitat from habitat loss during construction. Although woodland habitat will be reinstated to mitigate loss its acknowledged it takes >30 years for some of this woodland habitat to fully establish.

Scrub

Habitat Loss

- 11.6.47 There are discrete areas of mixed scrub within the Main Site of local importance, some of which may be permanently and temporarily lost due to construction of the CCGT with CCP and construction laydown areas. Some of this habitat which is temporarily impacted will be reinstated however the extent is currently unknown. Those areas to be temporarily and permanently lost, are relatively small in extent in comparison to other habitats present across the Indicative Site Boundary to be impacted and beyond the Indicative Site Boundary, reflecting a small loss of an abundant resource.
- 11.6.48 Within the Repurposed CO₂ Connection Corridor is an area of mixed scrub located adjacent to the North Wales Main Line railway. It is assumed in a worst-case scenario that this scrub would be lost to construction activities temporarily (for up to approximately nine months) and then reinstated post construction.
- 11.6.49 In addition to the areas directly impacted, there are two areas of scrub located adjacent to the woodland belt within the Main Site to the south which is to be

retained and protected; and an area of scrub on the western boundary of the Main Site which would be retained and protected within the 30 m ecological safeguard zone.

11.6.50 Further botanical surveys are being carried out during the optimal survey window in spring/summer 2024 to fully assess the scrub habitat present.

11.6.51 Therefore, taking into consideration all impacts on scrub as described above, it is considered that there would be **no adverse significant effect** (minor adverse⁵, **not significant**) on the structure and function of scrub habitat from construction activities.

Cropland⁶

Habitat Loss

11.6.52 There are two fields of cropland habitat within the Repurposed CO₂ Connection Corridor and the Proposed CO₂ Connection Corridor that may be temporarily lost to construction activities (for up to 9 months for both connection corridors). It is assumed that habitat would then be reinstated post construction and returned back to its previous land use.

11.6.53 There may be some discrete areas of minor permanent loss for marker posts and composition monitoring testing within the Repurposed CO₂ Connection Corridor.

11.6.54 Further botanical surveys are being carried out during the optimal survey window in spring/summer 2024 to fully assess the cropland habitat present.

11.6.55 Therefore, taking into consideration all impacts on cropland as described above, it is considered that there would be **no significant adverse effect** (minor adverse⁷, **not significant**), on cropland habitat from construction activities.

11.6.56 Effects on soil and agricultural land as an agricultural resource rather than an ecological resource are discussed within **Chapter 14: Geology and Ground Conditions**.

Hedgerow

Habitat Loss

11.6.57 There is one hedgerow within the Main Site, which separates the two open fields, where the CCGT with CCP is planned to be constructed. This is anticipated to be permanently lost as a result of construction activities. There may be opportunity to retain some parts of the hedgerow as part of the design development, however its structure and function as a hedgerow feature would be permanently lost.

11.6.58 There are approximately 15 hedgerows within the Repurposed CO₂ Connection Corridor and the Proposed CO₂ Connection Corridor which may be impacted by temporary habitat loss and damage during construction (for up to 9 months for both connection corridors). This is a worst-case as the need

⁵ Professional judgement applied where deviates from Methodology criteria in Appendix 11-A (PEIR Volume IV) Table 1

⁶ Classification of cropland habitat is based on UKHab Guidance as detailed in Appendix 11-B (PEIR Volume IV). This may differ from that presented in Chapter 14: Geology and Ground Conditions.

⁷ Professional judgement applied where deviates from Methodology criteria in Appendix 11-A (PEIR Volume IV) Table

for and the extent for works in these areas are the subject of ongoing studies. Any hedgerows lost would then be reinstated post construction.

11.6.59 Further botanical surveys carried out during the optimal survey window in spring/summer 2024 will fully assess the hedgerow habitats present.

11.6.60 Therefore, taking into consideration all impacts on hedgerow as described above, a precautionary assessment based on the worst-case scenario is a **significant** adverse effect at up to County level (moderate adverse, **significant**), on hedgerow habitat from construction activities **in the short to medium term** (i.e. during construction and up to two years post construction whilst habitat establishes). It is anticipated that any hedgerow habitat lost within the Repurposed CO₂ Connection Corridor and the Proposed CO₂ Connection Corridor would be reinstated following construction of the Proposed Development, resulting in **no significant adverse effect** (neutral, **not significant**) in the long term (i.e. two years+ post construction). However, this would not be the case for the hedgerow to be permanently lost within the Main Site which is considered to be relatively small loss to that which remains in the Indicative Site Boundary (upon reinstatement) and wider landscape. Taking into consideration all impacts on hedgerow **no significant adverse effect** (minor adverse⁸, **not significant**) in the long term (i.e. two years+ post construction).

Ponds (other standing water)

11.6.61 During construction, the potential impacts experienced on ponds (other standing water)⁹ habitat include:

- habitat loss; and
- alterations of local hydrology and water quality.

Habitat Loss

11.6.62 There is one pond located on the Indicative Site Boundary (P13 as shown on **Figure 11E-1 (PEIR Volume III)**). However, this pond is to be retained. There is no direct habitat loss on any ponds as a result of the Proposed Development.

Alterations of local hydrology and water quality

11.6.63 There is one pond located on the Indicative Site Boundary (P13 as shown on **Figure 11E-1 (PEIR Volume III)**) and six ponds located within 50 m of the Indicative Site Boundary (P10, P12, P11, P13, P14, P19 and P20, as shown on **Figure 11E-1 (PEIR Volume III)**).

11.6.64 With embedded good practice measures in place in association with dust control and protection of the water environment within the Framework CEMP, there are anticipated to be **no significant adverse effects** (neutral, **not significant**) on ponds from construction activities.

Watercourse habitats (other rivers and stream habitats)

⁸ Professional judgement applied where deviates from Methodology criteria in Appendix 11-A (PEIR Volume IV) Table 1.

⁹ It is noted that there are two high sided water tanks within the Mian Site (P30 and P31, Figure 11E-1 (PEIR Volume III)), however these are not classified as ponds and have been scoped out of survey and assessment. Refer to Appendix 11-E (PEIR Volume IV) for details.

11.6.65 During construction, the potential impacts experienced on watercourses include:

- habitat loss; and
- alterations of local hydrology and water quality.

11.6.66 Watercourse habitats present within the Indicative Site Boundary which have been considered in this assessment include:

- Lead Brook;
- Allt-Goch Brook and Tributary; and
- Old Rockcliffe Brook and Kelsterton Brook.

Habitat Loss

11.6.67 Allt-Goch Brook borders the Proposed CO₂ Connection Corridor and Allt-Goch Brook and Tributary is crossed by the Repurposed CO₂ Connection Corridor. The need for and the extent for works in this area are the subject of ongoing studies. Applying a precautionary approach, it has been assumed at this stage that construction would result in some temporary impacts to a small stretch of each of these watercourses (assumed up to 10 m), however, the exact location of the potential impact is not known. It is assumed riparian habitat would be reinstated post construction in a similar way.

11.6.68 Lead Brook is culverted where the Repurposed CO₂ Corridor crosses the watercourse, therefore there are unlikely to be any works in this area. There are anticipated to be no direct impacts on any other watercourses (including Lead Brook).

11.6.69 Refer to **Chapter 13: Water Environment and Flood Risk** for further details of direct impacts on surface water features, including these watercourses.

11.6.70 Therefore, taking into consideration all impacts on watercourse habitats as described above, a precautionary assessment based on the worst-case scenario is a **significant** adverse effect at up to the County level (moderate adverse, **significant**) in the short term (i.e. the 9 months during construction). However, it is anticipated that the associated riparian habitat would be reinstated in a similar way post construction, resulting in **no significant adverse effect** (neutral, **not significant**) in the medium to long term (i.e. immediately post construction).

Alterations of local hydrology and water quality

11.6.71 With embedded good practice measures in place in association with dust control and protection of the water environment within the Framework CEMP, there are anticipated to be **no significant effects** (neutral, **not significant**) on watercourse habitat from construction activities.

Ornithology

11.6.72 The ES will present an assessment for those species that are qualifying features of Habitats Sites that are considered relevant in an EIA context. The HRA for the Proposed Development will present detailed assessments of the bird species associated with Habitat Sites (as relevant) relevant to the

assessment of effects on Habitats Sites. The HRA is in progress and NRW are engaged. It is likely that an AA may be required.

11.6.73 During construction, the potential impacts experienced by ornithological IEFs could include:

- effects on water quality;
- direct habitat loss and fragmentation;
- disturbance effects from noise, lighting and human activity; and
- physical interaction with Proposed Development infrastructure.

11.6.74 As described in **Appendix 11-D: Ornithology Baseline and Information (PEIR Volume IV)**, the ways in which birds utilise the various parts of the Indicative Site Boundary are not yet fully understood as surveys are ongoing, but the various parts of the Indicative Site Boundary and immediate surrounds all have value to different species with the pattern of use impacted by tide, prey availability, seasonality and other factors which are more difficult to quantify such as anthropogenic disturbance and predation notably from peregrine.

11.6.75 Once the bird surveys are complete in October 2024, the data will then be assessed and the level of effects predicted for each qualifying species within the HRA. As surveys and assessments are ongoing, likely significant effects on ornithology cannot be ruled out at this stage

Badger

11.6.76 During construction, the potential impacts experienced by badger include:

- destruction/disturbance of setts;
- foraging habitat loss and fragmentation; and
- incidental mortality.

Destruction/disturbance of setts and loss/fragmentation of foraging habitat

11.6.77 Habitats were identified within and adjacent to the Indicative Site Boundary, that are suitable for foraging badger and sett building, including grassland, woodland, scrub, and ruderal habitats some of which would be lost to the Proposed Development. A badger survey within the Indicative Site Boundary and up to a 30 m buffer is to be carried out in autumn 2024 to identify any potential badger setts or signs of badgers, and the requirement for further survey (where applicable). In the absence of the results of these surveys it is not possible to determine the potential effects of the Proposed Development on badger. However, given that badgers are widespread across Wales and suitable habitats in the vicinity of the Indicative Site Boundary would be retained with large areas of lost habitat to be reinstated post construction (i.e. the Proposed and Repurposed CO₂ Connection Corridors, C&IEA and construction laydown area in the Main Site), any impacts on badgers are likely to not alter the conservation status of the species.

11.6.78 Where any active badgers or their setts are identified to have the potential to be impacted by the Proposed Development, then a licence may be required

from NRW. Where high-status badgers' setts are impacted then it may be necessary to provide a replacement sett.

11.6.79 Overall, the potential impacts associated with the destruction of setts and loss of foraging habitat will have on badgers has been assessed as **no significant adverse effects** (minor adverse¹⁰, **not significant**).

Incidental mortality

11.6.80 Precautionary working methods for construction that will be outlined within the Framework CEMP, as described in Section 11.5, will aim to eliminate the risk of incidental mortality to badger during construction, therefore it is anticipated there will be **no significant adverse effects** (neutral, **not significant**).

Great crested newt

11.6.81 During construction, the potential impacts on great crested newt include:

- habitat loss and fragmentation; and
- incidental mortality.

Habitat Loss and Fragmentation

11.6.82 No waterbodies suitable for supporting breeding great crested newt will be lost as a result of the construction of the Proposed Development.

11.6.83 At the Main Site the Proposed Development will result in temporary terrestrial habitat loss within 250m and permanent terrestrial habitat loss within 500 m of ponds where great crested newts are assumed to be present (i.e. P19, P20 and P21 as shown on **Figure 11E-1 (PEIR, Volume III)**).

11.6.84 Within the Proposed CO₂ Connection Corridor, the Proposed Development will cause temporary terrestrial habitat loss within 250 m of a pond where great crested newts are known to be present (P2, as shown on **Figure Figure 11E-1 (PEIR, Volume III)**).

11.6.85 Further surveys are needed at this stage to determine the size of great crested newt populations present throughout the Study Area and to confirm the assumptions made to date. Refer to **Appendix 11-E: Amphibian Baseline and Information (PEIR Volume IV)**. However, great crested newts are abundant in the region with designated sites present locally that are cited in their designation for their large great crested newt populations (e.g. Deeside and Buckley Newt sites SAC). Therefore, a precautionary assessment based on existing desk study and baseline information can be made at this stage.

11.6.86 Areas of grazed pasture will be temporarily lost within 250 m and permanently lost within 500 m of ponds where a great crested newt metapopulation is assumed to be present i.e. in P19, P20 and P21 (assumed to be a medium sized great crested newt population). All permanent habitat loss is located over 250 m from these ponds. All habitat lost closer to the ponds is temporary, in association with the construction laydown areas, and will be reinstated post construction. The habitats lost permanently are considered to be of lower value to great crested newt than the retained habitats in closer proximity to the ponds (greater than 50 m including woodland, scrub and grassland).

¹⁰ Professional judgement applied where deviates from Methodology criteria in Appendix 11-A (PEIR Volume IV) Table 1

Therefore, it is considered unlikely that the great crested newts present in these ponds would transverse away from more optimal habitat closer to P19, P20 and P21 and migrate into the sub optimal habitats to be lost to the Proposed Development.

11.6.87 Arable, modified grassland and hedgerow habitats will be temporarily lost to the great crested newt metapopulation present in P1 and P2 (assumed to be medium sized great crested newt population). The arable and modified grassland habitats (close grazed pasture) are considered of lower value to great crested newt than the habitats in closer proximity to these ponds (a network of woodland, hedgerows and grazed pasture). The hedgerow habitat to be lost, although suitable for great crested newt, is a relatively small proportion in comparison to the available hedgerows within 250 m of the ponds which are to be retained. Additionally, P1 and P2 is separated by Allt-Goch Lane acting as a potential partial barrier to great crested newt movement. Therefore, it is considered unlikely that the great crested newts present in these ponds would transverse away from more optimal habitat closer to P1 and P2 and migrate into the less suitable habitats lost to the Proposed Development.

11.6.88 Considering the abundance of great crested newt in the wider region, that there will be no loss of waterbodies as a result of the Proposed Development and only a relatively small proportion of optimal terrestrial habitat suitable for great crested newts is to be lost in comparison to that retained (as detailed above), it is considered these impacts are not likely to impact the conservation status of great crested newt.

11.6.89 Where the Proposed Development will cause permanent or temporary habitat loss to a great crested newt population a licence will be required from NRW. This licence application will require the creation/reinstatement of terrestrial habitat within the existing Indicative Site Boundary.

11.6.90 Overall, the potential impacts associated with the loss of terrestrial habitat will have on great crested newt has been assessed as **no significant adverse effects** (minor adverse¹¹, **not significant**).

Incidental Mortality

11.6.91 Precautionary working methods for construction that will be outlined within the Framework CEMP, as described in Section 11.5, will aim to eliminate the risk of incidental mortality to great crested newts during construction, therefore it is anticipated there will be **no significant adverse effects** (neutral, **not significant**).

Bats

11.6.92 During construction, the potential impacts on bats include:

- loss of roosts and habitat fragmentation;
- incidental mortality; and
- disturbance through noise and light.

¹¹ Professional judgement applied where deviates from Methodology criteria in Appendix 11-A (PEIR Volume IV) Table 1

Habitat loss and fragmentation / Incidental Mortality / Disturbance

Bat Roosts:

- 11.6.93 All structures within the Main Site (Buildings 1a – 22, as shown on **Figure 11F-1 (PEIR, Volume IV)**) were categorised as being negligible suitability for roosting bats.
- 11.6.94 Two trees within the Main Site (Tree A and B, as shown on **Figure 11F-1 (PEIR, Volume IV)**) were identified as potentially suitable for roosting bats, however given the current design it is not expected that these trees will be directly impacted. If works are anticipated to impact these trees then further surveys will be carried out to determine presence / likely absence of roosting bats and a licence sought from NRW where applicable.
- 11.6.95 Trees may be lost or damaged within the Repurposed CO₂ Connection Corridor and the Proposed CO₂ Connection Corridor that have the potential to support bat roosts. The need for and the extent for works in these areas are the subject of ongoing studies. Surveys are ongoing in summer/autumn 2024 to determine if there are any potential bat roosts present and the requirement for further surveys. Once complete, the data will be assessed and the level of effects predicted for roosting bats. As surveys and assessments are ongoing, likely significant effects on roosting bats cannot be ruled out at this stage.
- 11.6.96 Where the Proposed Development will impact a bat roost(s) a licence will be required from NRW. This licence application will require, for example, specific timing of works and appropriate mitigation measures in place for bats.

Bats: Foraging and Commuting:

- 11.6.97 The Main Site and C&IEA has few features that would offer good opportunities for feeding and commuting bats and was assessed as having negligible to low suitability habitat for foraging and commuting bats. Precautions as part of the embedded mitigation (to be detailed in the Framework CEMP) would be taken to ensure bats are not disturbed during the construction work (e.g. minimal and directional lighting) and boundary trees for use by commuting/foraging bats are retained where possible.
- 11.6.98 The Proposed and Repurposed CO₂ Connection Corridors are assessed as having moderate suitability to support foraging and commuting bats given hedgerow and tree line connectivity to the wider landscape and surrounding farm buildings which may have potential to support roosting bats. The impact of the loss of foraging and commuting habitat on bat species at this location, would result in adverse effects which may potentially be significant during construction. The need for and the extent for works in this area are the subject of ongoing studies. However, it is acknowledged that habitats (including hedgerows) would be reinstated following construction.
- 11.6.99 Bat surveys are continuing in autumn 2024 to determine what and how different species use the Proposed Development and adjoining land. Once bat surveys are complete in October 2024 the data will then be assessed and the level of effects predicted for bats. As surveys and assessments are ongoing, likely significant effects on foraging and commuting bats cannot be ruled out at this stage.

Riparian Mammals

11.6.100 The construction of the Proposed Development has the potential to impact otter and water vole through:

- habitat loss and fragmentation;
- incidental mortality; and
- disturbance from noise and lighting.

Otter

Habitat Loss and Fragmentation / Incidental Mortality / Disturbance

11.6.101 The River Dee provides suitable foraging and commuting habitat for otter, although the tidal character limits opportunities for shelter or breeding. Some potential opportunities for shelter may be provided by pipes that lead from the existing Connah's Quay Power Station into the River. If present, foraging, commuting and resting otter may be impacted in association with the Water Connection Corridor works.

11.6.102 Allt-Goch Brook, Allt-Goch Tributary and Lead Brook transverse the Repurposed CO₂ Connection Corridor and could offer suitable habitat to otter along with the woodland which is also present in this corridor (particularly at Allt-Goch Brook).

11.6.103 The need for and the extent for works in this area are the subject of ongoing studies. However, at this stage, applying a precautionary approach, it has been assumed at this stage that construction of the Repurposed CO₂ Connection Corridor would result in some temporary impacts to a small stretch of both Allt-Goch Brook and Tributary (assumed up to 10 m), however, the exact location is not known. Additionally in these areas there could be a small amount of terrestrial habitat loss and damage, including to woodland habitat (potentially suitable for otter holts), during installation of the pipeline. Installation of the pipeline is assumed to be open cut method. It is assumed any riparian habitat impacted would be reinstated post construction in a similar way.

11.6.104 In all other areas of works there will be retention of habitat and appropriate stand-offs from all watercourse / waterbodies (including Lead Brook). On this basis it is assumed that any other potential otter habitat (including foraging and commuting habitats and potential holts / resting places) would be retained and not impacted.

11.6.105 The construction of the Proposed Development would result in increases in noise and light through increased vehicle movements, the presence of construction machinery and increased human presence, which could result in disturbance. Any disturbance that would arise would likely be temporary (up to 9 months in association with the Repurposed CO₂ Connection Corridor; and up to approx. 2 years for the Water Connection Corridor). It is assumed that task lighting (where required) would be restricted to focused point use where reasonably practicable, to reduce potential impacts on the environment (including otter). Refer to **Chapter 5: Construction Management and Programme**. An Indicative Lighting Strategy providing further detail will accompany the ES.

- 11.6.106 Precautionary working methods for construction that will be outlined within the Framework CEMP, as described in Section 11.5, will aim to protect retained otter habitats and eliminate the risk of incidental mortality and disturbance to otter during construction.
- 11.6.107 Surveys are ongoing for otter in 2024 to determine the presence / likely absence of foraging, commuting and resting otter, which may be potentially impacted by works in the Water Connection Corridor or Repurposed CO₂ Connection Corridor. Once otter surveys are complete in September 2024 the data will be assessed and the level of effects predicted for otter and set out in the ES. As surveys and assessments are ongoing, likely significant effects on otter cannot be ruled out at this stage.
- 11.6.108 Should it be determined that loss or disturbance of any otter holts is required for the Proposed Development, a licence would be sought from NRW. This licence application will require, for example, specific timing of works and appropriate mitigation measures in place for otter.

Water Vole

Habitat Loss and Fragmentation / Incidental Mortality / Disturbance

- 11.6.109 Allt-Goch Brook, Allt-Goch Tributary and Lead Brook transverse the Repurposed CO₂ Connection Corridor and could offer potential suitable habitat to water vole.
- 11.6.110 The need for and the extent for works in this area are the subject of ongoing studies. However, applying a precautionary approach, it has been assumed at this stage that construction of the Repurposed CO₂ Connection Corridor would result in some temporary impacts to a small stretch of both Allt-Goch Brook and Tributary (assumed up to 10 m), however, the exact location is not known. Additionally in these areas there could be a small amount of terrestrial riparian habitat loss and damage during installation of the pipeline. Installation of the pipeline is assumed to be via open cut method. It is assumed any riparian habitat impacted would be reinstated post construction in a similar way.
- 11.6.111 In all other areas of the works, there will be retention of habitat and appropriate stand-offs from all watercourses / waterbodies (including Lead Brook) On this basis, it assumed that any other potential water vole habitat would be retained and not impacted.
- 11.6.112 The construction of the Proposed Development would result in increases in noise and light through increased vehicle movements, the presence of construction machinery and increased human presence, which could result in disturbance. Any disturbance that would arise would likely be temporary (up to 9 months in association with the Repurposed CO₂ Connection Corridor). It is assumed that task lighting (where required) would be restricted to focused point use where reasonably practicable, to reduce potential impacts on the environment (including water vole). Refer to **Chapter 5: Construction Management and Programme**. An Indicative Lighting Strategy providing further detail will accompany the ES.
- 11.6.113 Precautionary working methods for construction that will be outlined within the Framework CEMP, as described in Section 11.5, will aim to protect

retained water vole habitat and eliminate the risk of incidental mortality and disturbance to water vole during construction

- 11.6.114 Surveys are ongoing for water vole in 2024 to determine the presence / likely absence of water vole which may be potentially impacted by the Proposed Development. Once water vole surveys are completed in September 2024 the data will be assessed and the level of effects predicted for water vole. As surveys and assessments are ongoing, likely significant effects on water vole cannot be ruled out at this stage.
- 11.6.115 If the Proposed Development is found to impact water vole a licence will be required from NRW. This licence application will require, for example, specific timing of works and appropriate mitigation measures in place for water vole.

Reptiles

- 11.6.116 The construction of the Proposed Development has the potential to impact reptiles through:
- habitat loss and fragmentation; and
 - incidental mortality.

Habitat loss and fragmentation

- 11.6.117 Previous survey work conducted by Aspect Ecology (**Annex E, Appendix 11-C: Preliminary Ecological Appraisal Report (PEIR Volume IV),**) identified a low population of common lizard present within the C&IEA which is assumed to still be present. The Proposed Development will result in the temporary loss of these habitats 11.6.39 which will be restored on completion of construction. The loss of habitat will be temporary, for up to five years, during construction of the Proposed Development based on the worst-case scenario for ecology being the Single Phase. The Phased Construction scenario would result in some habitat loss experienced which may be experienced for up to nine years however as detailed in **Chapter 5: Construction Management and Programme**, the footprint of loss for construction laydown within the C&IEA and the Main Site is expected to be smaller in comparison to the Single Phase. Therefore, the Single Phase is considered the worst-case scenario for ecology. An ecological safeguard zone will also be in place minimising areas of habitat impacted during construction. This area also has good connectivity to other suitable habitat in the wider landscape through the North Wales Mainline railway corridor that can be utilised by this population during construction of the Proposed Development.
- 11.6.118 Common species of reptile may be present throughout the Repurposed CO₂ Connection Corridor and the Proposed CO₂ Connection Corridor. However, the loss of habitat in these areas will be small scale and temporary (for approximately 9 months) being returned to its original use after construction.
- 11.6.119 The loss of suitable habitat for common species of reptile as a result of the Proposed Development is therefore assessed to be small scale in the context of the wider landscape and temporary in nature being reinstated post

construction. therefore, it is anticipated there will be **no significant adverse effects** (minor adverse¹², **not significant**).

Incidental mortality

11.6.120 Precautionary working methods for construction that will be outlined within the Framework CEMP, as described in Section 11.5, will aim to eliminate the risk of incidental mortality to common species of reptile during construction, therefore it is anticipated there will be **no significant adverse effects** (neutral, **not significant**).

Terrestrial Invertebrates

11.6.121 The construction of the Proposed Development has the potential to impact terrestrial invertebrates through habitat loss.

Habitat loss

11.6.122 The presence of two Nationally Scarce spiders (*Silometopus ambiguus* and *Walckenaeria kochi*) identified within the surveys undertaken during the scoping survey is suggestive that there are higher value habitats within the Indicative Site Boundary. One of these, *S. ambiguus*, was highlighted as a potential taxon by Cofnod. Further surveys are being carried out in 2024 for terrestrial invertebrates focused on the grassland and scrub, including hedgerow habitat, within the Main Site, and within and adjacent to the C&IEA.

11.6.123 The important habitat features noted for terrestrial invertebrates within the Indicative Site Boundary are currently the hedgerows and grassland edge habitat within the grazed fields of the Main Site, where they form an ecotone between more established scrub and probable Open Mosaic Habitats (OMH) within the C&IEA.

11.6.124 There may be temporary impacts associated with habitat loss within the C&IEA, and part of the Main Site used for the construction laydown, noting that habitat would be reinstated post construction. 11.6.39The loss of habitat will be temporary, for up to five years, during construction of the Proposed Development based on the worst-case scenario for ecology being the Single Phase. The Phased Construction scenario would result in some habitat loss experienced which may be experienced for up to nine years however as detailed in **Chapter 5: Construction Management and Programme**, the footprint of loss for construction laydown within the C&IEA and the Main Site is expected to be smaller in comparison to the Single Phase. Therefore, the Single Phase is considered the worst-case scenario for ecology. There may be a change in habitat mosaics where temporary habitat loss is restored which may impact terrestrial invertebrates. There may be some discrete areas of permanent habitat loss suitable for terrestrial invertebrates in association with the Proposed Development.

11.6.125 Further surveys are being carried out in 2024 for terrestrial invertebrates focused on the grassland and scrub, including hedgerow habitat, within the Main Site, and within and adjacent to the C&IEA. The invertebrate survey findings will be used to determine how different species use the Proposed Development and adjoining land. Once surveys and analysis are completed in Autumn 2024 the data will be assessed and the effects predicted for

¹² Professional judgement applied where deviates from Methodology criteria in Appendix 11-A (PEIR Volume IV) Table 1

terrestrial invertebrates. As surveys and assessments are ongoing, likely significant effects on terrestrial invertebrates cannot be ruled out at this stage.

Aquatic Ecology (Invertebrates, Fish and Aquatic Macrophytes)

11.6.126 The impact of damage to aquatic habitat which is of local importance is considered to be dependent on the amount of runoff and subsequent water quality which is still to be assessed and will be confirmed in the ES. The following impact pathways will be considered:

- habitat loss;
- incidental mortality; and
- changes in water quality.

11.6.127 Allt-Goch Brook, Allt-Goch Tributary and Lead Brook transverse the Repurposed CO₂ Connection Corridor and could offer suitable habitat to aquatic invertebrates, fish and aquatic macrophytes. Ongoing surveys will confirm the species present using these watercourses along with the saline ponds present to the northwest of the Indicative Site Boundary. If any protected species are found post construction surveys may be required.

11.6.128 During construction of the Repurposed CO₂ Connection Corridor, applying a precautionary approach, it has been assumed at this stage that construction would result in some temporary impacts to a small stretch of both Allt-Goch Brook and Tributary (assumed up to 10 m), however the exact location is not known. The need for and the extent for works in this area are the subject of ongoing studies.

11.6.129 In all other areas, including Lead Brook, there will be retention and appropriate stand-offs from all waterbodies secured through the CEMP. Assessment of the River Dee in relation to changes and construction of the water connection corridor is covered in the **Chapter 12: Marine Ecology**.

11.6.130 Precautionary working methods for construction that will be outlined within the Framework CEMP, as described in Section 11.5, will aim to eliminate the risk of incidental mortality to fish during construction.

11.6.131 Surveys are ongoing for aquatic ecology in 2024 to determine the presence/likely absence of aquatic ecological features which may be potentially impacted by the Proposed Development. Once aquatic surveys are completed in September 2024 the data and samples will be assessed and the level of effects predicted for aquatics. As surveys and assessments are ongoing, likely significant effects on aquatic ecology cannot be ruled out at this stage.

Operation Phase

11.6.132 The earliest year of operation for the Proposed Development is anticipated to be 2030 under a phased construction scenario. If construction was to be undertaken in a single phased approach, the earliest year of operation is anticipated to be 2035. If a single phased construction approach was undertaken at the latest possible time, five years after DCO consent has been granted, operation would be anticipated to occur in late 2036.

11.6.133 Impacts on Terrestrial and Aquatic Ecology features during operation of the Proposed Development are likely to arise as a result of:

- changes in water quality, which could result in damage to habitats within designated sites;
- changes in air quality, which could result in damage to protected habitats; and
- the presence of the operation CCGT with CCP, which could result in noise and visual disturbance of birds.

11.6.134 At this stage of the EIA process, no other impacts are anticipated on the following Terrestrial and Aquatic Ecology features during operation of the Proposed Development:

- Badger;
- Great crested newt;
- Bats;
- Riparian Mammals;
- Reptiles;
- Terrestrial invertebrates; and
- Aquatic Ecology.

Designated Sites

11.6.135 This section focusses on the plants and habitats of designated sites scoped into the assessment. The assessment on other qualifying features is addressed, as relevant, within the discussion by species group.

11.6.136 During operation, the potential impacts experienced by designated sites include:

- changes in air quality; and
- alteration of local hydrology and water quality

Dee Estuary / Aber Dyfrdwy SAC, SPA, Ramsar, SSSI; and River Dee and Bala Lake / Afon Dyfrdwy a Llyn Tegid SAC, SSSI

11.6.137 Potential impacts, from changes in air quality and alteration of local hydrology and water quality, on the Dee Estuary / Aber Dyfrdwy SAC, SPA and Ramsar will be fully assessed through the HRA process. The HRA is in progress and NRW are engaged. It is likely that an AA may be required. Results of this will in turn support the assessment of the Dee Estuary/ Aber Dyfrdwy SSSI and Afon Dyfrdwy (River Dee) SSSI.

11.6.138 As this assessment is ongoing, likely significant effects on the Dee Estuary / Aber Dyfrdwy SAC, SPA, Ramsar and SSSI and River Dee and Bala Lake / Afon Dyfrdwy a Llyn Tegid SAC, SSSI cannot be ruled out at this stage.

Other International and National Nature Conservation Designations

11.6.139 Potential impacts from changes in air quality on the qualifying features of any of the other Habitats Sites up to 15 km study area will be fully assessed through the HRA process. The HRA is in progress and NRW are engaged. It is likely that an AA may be required. Results of this will in turn support the assessment of these SSSIs which overlap with the Habitats Sites designations. As this assessment is ongoing, likely significant effects for the following Habitats Sites and SSSIs cannot be ruled out at this stage:

- **Deeside and Buckley Newt Sites SAC** (overlaps with Connah's Quay Ponds and Woodland SSSI, Buckley Claypits and Commons SSSI and Maes y Grug SSSI);
- **Halkyn Mountain / Mynydd Helygain SAC** (overlaps with Comin Helygain a Glaswelltiroedd Treffynnon / Halkyn Common and Holywell Grasslands SSSI and Herward Smithy SSSI);
- **Alyn Valley Woods /Coedwigoedd Dyffryn Alun SAC** (overlaps with Alyn Valley Woods and Alyn Gorge Caves SSSI); and
- Mersey Estuary SPA / Ramsar / SSSI (England).

11.6.140 **Appendix 8-D: Air Quality Operational Assessment (PEIR Volume IV)** has identified that for all of the national designated sites the predicted annual average NO_x concentrations arising from the Proposed Development are less than 1% of the Air Quality Assessment Level (AQAL) or less than 70% in combination with background concentrations and therefore are considered not significant. All effects associated with annual average NO_x concentration changes are considered not significant.

11.6.141 The predicted annual average ammonia concentrations are below 1% of the Environment Assessment Levels (EALs) for all national designated sites except the following sites which cannot be screened out as effects could potentially be significant:

- Dee Estuary SSSI;
- River Dee and Bala Lake SSSI;
- Connah's Quay Ponds and Woodland SSSI; and
- Shotton Lagoons and Reedbeds SSSI.

11.6.142 Deposition impacts of nutrient nitrogen and acid deposition show that the impacts are less than the 1% threshold to demonstrate insignificance for all national designated sites except the following which cannot be screened out as effects would potentially be significant (*note – the sites denoted within an asterisk (*) have acid deposition above 1% threshold when the contribution of the Existing Connah's Quay Power Station is removed from the assessment*):

- Afon Dyfrdwy (River Dee) SSSI;
- Connah's Quay Ponds and Woodland SSSI;
- Dee Estuary SSSI;
- Deeside and Buckley Newt Sites SSSI*;

- Heswall Dales SSSI*;
- Inner Marsh Farm SSSI¹³;
- River Dee and Bala Lake SSSI;
- Shotton Lagoons and Reedbeds SSSI*; and
- Thurston Common SSSI.

11.6.143 **Appendix 8-D: Air Quality Operational Assessment (PEIR Volume IV)** identifies that the following SSSIs are predicted to experience annual average ammonia concentrations above 1% of the EAL and therefore not possible to demonstrate insignificance:

- Afon Dyfrdwy (River Dee) SSSI;
- Connah's Quay Ponds and Woodland SSSI;
- Dee Estuary SSSI;
- River Dee and Bala Lake SSSI; and
- Shotton Lagoons and Reedbeds SSSI*.

11.6.144 Taking into account all of the above, a precautionary assessment based on the worst-case scenario is **significant** adverse effects at the National level (major adverse, **significant**) from changes in air quality as a result of operational activities on the following national designated sites:

- Dee Estuary SSSI;
- Afon Dyfrdwy (River Dee) SSSI;
- Inner Marsh Farm SSSI;
- Connah's Quay Ponds and Woodland SSSI;
- Deeside and Buckley Newt Sites SSSI;
- Heswall Dales SSSI; and
- Shotton Lagoons and Reedbeds SSSI.

11.6.145 Further assessment will be carried out on these designated sites for the ES.

11.6.146 Engineering design and air quality modelling and technical assessment will continue, and any further results will be confirmed in the ES.

11.6.147 It is noted that Shotton Lagoons and Reedbed SSSI and Inner Marsh Farm SSSI are also Nationally important sites of ornithological interest. Inner Marsh Farm SSSI overlaps with the Dee Estuary SPA. Potential impacts from operation on ornithology (i.e. disturbance) are assessed separately within the ornithological section of this Chapter.

¹³ Inner Marsh Farm is only screened in for nitrogen deposition.

Local Conservation Designations

- 11.6.148 LNRs and LWSs are yet to be assessed for potential effects as a result of changes in air quality and are screened in at this stage and will be assessed within the ES. As these assessments have not yet been completed, likely significant effects on LNRs and LWSs cannot be ruled out at this stage.
- 11.6.149 Engineering design and air quality modelling and technical assessment are currently in progress, and any further results will be confirmed in the ES which will accompany the Application.

Habitats

- 11.6.150 All effects associated with habitat loss remain as described in the construction assessment.
- 11.6.151 Consideration has been given to potential effects on habitats through changes in air quality during operation of the Proposed Development where they overlap with designated sites (i.e. saltmarsh) and separately for other sensitive habitats i.e. Ancient Woodlands and OMH.

Ancient Woodland

- 11.6.152 **Appendix 8-D** identifies Ancient Woodland is predicted to experience annual average ammonia concentrations above 1% of the EAL (2.4%) and nutrient nitrogen and acid deposition over the 1% threshold used to screen likely significant effects (6% and 1.8% respectively). This will be analysed in an ecological context for the ES. As these assessments have not yet been completed, likely significant effects on Ancient Woodland cannot be ruled out at this stage.
- 11.6.153 Engineering design and air quality modelling and technical assessment will continue, and any further results will be confirmed in the ES.

Open Mosaic Habitat

- 11.6.154 Probable OMH within the C&IEA has been evaluated as up to District importance and considered sensitive to potential effects of emissions to air from operation of the Main Site. In particular, ammonia and deposition of nutrient nitrogen could result in changes to the species composition and structure of the habitat types present.
- 11.6.155 To ensure a robust approach to assessment, the potential impacts and resultant effects relating to air emissions on OMH will be further assessed as part of the ES. As these assessments have not yet been completed, likely significant effects cannot be ruled out at this stage.
- 11.6.156 Engineering design and air quality modelling and technical assessment will continue, and any further results will be confirmed in the ES to accompany the DCO Application.

Ornithology

- 11.6.157 The ES will present an assessment for those species that are qualifying features of Habitats Sites that are considered relevant in an EIA context. The HRA for the Proposed Development will present detailed assessments of the bird species associated with Habitat Sites (as relevant) relevant to the

assessment of effects on Habitats Sites. The HRA is in progress and NRW are engaged. It is likely that an AA may be required.

11.6.158 During operation, the potential impacts experienced by ornithological important ecological features could include:

- disturbance effects from noise, lighting and human activity; and
- physical interaction with Proposed Development infrastructure.

11.6.159 Bird survey findings will be used to determine how different species use the Proposed Development and adjoining land. After the bird surveys are completed in October 2024 the data will be assessed and the level of significant effects predicted for each qualifying species within the HRA. As surveys and assessments are ongoing, likely significant effects on ornithology cannot be ruled out at this stage.

11.7 Additional Mitigation and Enhancement Measures

Construction Mitigation

11.7.1 At this stage, the assessment as presented in this chapter indicates that the Proposed Development is anticipated to potentially generate significant adverse effects (based on CIEEM terms/methodology) during construction.

11.7.2 Additional mitigation measures in relation to the designated sites and habitats, will be considered to reduce likely significant effects during construction. This will include the following:

- further refining the design and avoiding or minimising the footprint / land take of the Proposed Development where possible i.e. within the Main Site, Water Connection Corridor including surface water outfall, C&IEA and Proposed and Repurposed CO₂ Connection Corridors. Results of Botanical surveys being carried out in 2024 (as detailed in **Appendix 11-B: Terrestrial and Aquatic Ecology Baseline Surveys and Study Area (PEIR Volume IV)**) will feed into the design process and to aim to avoid the most sensitive habitats present;
- permanent habitat loss to be mitigated for with replacement planting within the Indicative Site Boundary in advance of construction activities where possible and/or seek compensation off-Site (if all mitigation options on-Site have been exhausted);
- potential translocation of any species-rich (to be confirmed through further botany surveys in 2024) hedgerow habitat to be lost within the Indicative Site Boundary or off-Site.
- additional mitigation measures in relation to alterations in hydrology and water quality. Refer to Section 13.7 of **Chapter 13: Water Environment and Flood Risk**;
- further engagement with NRW and FCC to agree mitigation and compensation strategy e.g. replacement habitat types, quantity / ratios (where applicable); and

- monitoring of habitats, such as the saltmarsh within the Water Connection Corridor, post-construction to feedback into the management of those areas within the Indicative Site Boundary will be managed by the LBMEP.

11.7.3 With embedded mitigation, adverse effects (which are not significant in CIEEM or EIA terms i.e. minor), have been reported during construction on the loss of the following habitat types; scrub and cropland (evaluated of up to local importance). As part of the design development and landscape design for the Proposed Development, opportunities to minimise that habitat loss and/or incorporate mitigation for these habitat types lost (where possible) will be considered. Mitigation to be considered may include replacement planting and/or enhancement of similar existing habitats present within the Indicative Site Boundary, ideally in advance of construction activities. This would further support with mitigating potential adverse effects from construction activities.

11.7.4 Additional mitigation measures in relation to effects on the species scoped into the assessment will be considered to reduce likely significant effects during construction. This will include the following:

- further species surveys in 2024 for birds, bats, otter, water vole, terrestrial invertebrates and Aquatic Ecology to feedback into the design process avoiding and /or minimising impacts (where possible);
- further refining the design and avoiding or minimising the footprint / land take of the Proposed Development where possible i.e. within the Main Site, Water Connection Corridor including surface water outfall, C&IEA and Proposed and Repurposed CO₂ Connection Corridors on habitats which may support birds, bats, otter, water vole and /or Aquatic Ecology;
- additional species-specific mitigation incorporated into the design (as appropriate) following analysis of results of further surveys to support with obtaining Letters of No Impediment from NRW for protected species (where applicable); and
- monitoring of species present during and post construction.

11.7.5 With embedded mitigation, adverse effects (which are not significant in CIEEM or EIA terms i.e. minor), have been reported during construction on the following species (which are also legally protected): badgers, great crested newts, and reptiles. The following measures will be considered to reduce these effects where possible:

- further refining the design to avoid / minimise potential impact on species where possible (e.g. further surveys for badgers in 2024 to be incorporated into the design and the ES. Further surveys are being carried out for great crested newts in 2025, however a precautionary assessment has been made for great crested newts based on existing eDNA survey results which will also support the ES);
- incorporating species-specific mitigation as appropriate to support obtaining Letters of No Impediment from NRW where applicable for protected species for example:

- construction of artificial badger setts if any main setts need to be closed;
- identifying receptor site for great crested;
- terrestrial habitat creation for great crested newts; and
- monitoring of species during and post construction.

Operational Mitigation

- 11.7.6 At this stage the assessment presented in this chapter indicates that the Proposed Development is anticipated to potentially generate significant adverse effects (based on CIEEM terms / methodology) during operation.:
- 11.7.7 Additional mitigation measures in relation to designated sites and habitats during operation will be considered to reduce likely significant effects during operation. These will include the following:
- reducing at source the air quality emissions (where possible);
 - further analysis of operational air quality data and designated site habitat information; and
 - management and monitoring of habitats through the operational phase.
- 11.7.8 Additional mitigation measures in relation to species (ornithology) will be considered to reduce likely significant effects during operation including, for example, the following:
- establishment of engineered vegetated bunds (similar to those in place around the existing plant) or of acoustic close-board fencing at ground level to reduce noise levels (below significance thresholds) and visual disturbance.

Enhancements

- 11.7.9 An outline Landscape and Biodiversity Management and Enhancement Plan (LBMEP) will be embedded mitigation and developed further through engagement with stakeholders and provided alongside the ES. This would set out biodiversity enhancement proposals and the habitat management and monitoring considered necessary to deliver and manage the created habitats. It is proposed that submission and approval of the final LBMEP will be secured by a Requirement of the DCO.
- 11.7.10 It is proposed that the approach to be taken for demonstrating and agreeing NBB will be discussed further and agreed during pre-application consultations with relevant stakeholders (e.g. FCC) to ensure that this is appropriate to the specifics of the Proposed Development and is otherwise responsive to the management needs and priorities for existing habitats present within the Applicant's control.

Monitoring

- 11.7.11 The measures proposed to avoid and reduce, where possible, significant adverse effects on terrestrial and aquatic biodiversity and nature conservation features are set out above. Monitoring requirements to track compliance with

these commitments during construction will be set out in the Framework CEMP that will accompany the Application. In particular, an ECoW would be employed to oversee the delivery of all necessary mitigation, including any mitigation to be completed under protected species mitigation licences.

- 11.7.12 Requirements for post-construction monitoring of the establishment of landscape and biodiversity enhancement measures will be set out in the LBMEP to accompany the ES and subsequently approved and secured by a Requirement of the DCO (see Enhancements, above).

11.8 Summary of Likely Significant Residual Effects

- 11.8.1 **Table 11-8:** and **Table 11-9** summarise the likely residual significant effects of the Proposed Development on Terrestrial and Aquatic Ecology and receptors following implementation of mitigation.
- 11.8.2 An assessment of cumulative effects with other proposed developments that could interact with the effects of this Proposed Development will be carried out in the final ES, when the short-list of other developments has been finalised, as detailed in **Chapter 24: Cumulative and Combined Effects. Chapter 24: Cumulative and Combined Effects** of the ES will also assess the in-combination effects of multiple aspects on one receptor.

Table 11-8: Summary of Likely Significant Residual Effects (Construction)

Receptor	Sensitivity (value)	Description of Impact	Classification of Effect (prior to Additional Mitigation)	Additional Mitigation / Enhancement Measure	Residual Effect after Additional Mitigation
Dee Estuary SPA/Ramsar/SAC	International	Habitat loss/ damage; changes in air quality / hydrology and water quality	Likely significant effects cannot be ruled out. This will be fully assessed through the HRA process which is in progress and NRW are engaged. It is likely that an Appropriate Assessment (AA) may be required		
The River Dee and Bala Lake/ Afon Dyfrdwy a Llyn Tegid SAC	International	Changes in air quality / hydrology and water quality	Likely significant effects cannot be ruled out. This will be fully assessed through the HRA process which is in progress and NRW are engaged. It is likely that an AA may be required		
Deeside and Buckley Newt sites SAC	International	No direct or indirect construction impacts are anticipated due to their distance away and lack of impact pathways (located approximately 1.5 km south of the Indicative Site Boundary and 2.1 km south of the Main Site). This will however be confirmed within the HRA.			
Halkyn Mountain / Mynydd Helygain SAC	International	No direct or indirect impacts are anticipated during construction due to their distance away and lack of impact pathways (located approximately 3.6 km south of the Indicative Site Boundary and 5.3 km south of the Main Site). This will however be confirmed within the HRA.			
Alyn Valley Woods /Coedwigoedd Dyffryn Alun SAC	International	No direct or indirect impacts are anticipated during construction due to their distance away and lack of impact pathways (located approximately 6.8 km south of the Indicative Site Boundary and 8.5 km south of the Main Site). This will however be confirmed within the HRA.			
Mersey Estuary SPA / Ramsar (England)	International	No direct or indirect impacts are anticipated during construction due to their distance away and lack of impact pathways (located approximately 12.7 km south of the Indicative Site Boundary and 13.0 km south of the Main Site). This will however be confirmed within the HRA.			
Dee Estuary/ Aber Afon Dyfrdwy SSSI	National	Habitat loss / changes in air quality / hydrology and water quality	Likely significant effects cannot be ruled out. Will be assessed as part of the HRA for the Dee Estuary SPA/Ramsar/SAC.		
Dee Estuary SSSI (England)	National	Changes in air quality / hydrology and water quality	Likely significant effects cannot be ruled out. Will be assessed as part of the HRA for the Dee Estuary SPA/Ramsar/SAC.		

Receptor	Sensitivity (value)	Description of Impact	Classification of Effect (prior to Additional Mitigation)	Additional Mitigation / Enhancement Measure	Residual Effect after Additional Mitigation
Afon Dyfrdwy (River Dee) SSSI	National	Changes in hydrology and water quality	Significant adverse effect at the National level (Major Adverse, Significant)	Refer to Chapter 13: Water environment and Flood Risk for Additional Mitigation Enhancement Measures for the River Dee.	Not significant (Neutral, Not Significant)
River Dee (England) SSSI	National	Changes in hydrology and water quality	Significant adverse effect at the National level (Major Adverse, Significant)	Refer to Chapter 13: Water environment and Flood Risk for Additional Mitigation Enhancement Measures for the River Dee.	Not significant (Neutral, Not Significant)
The River Dee LWS	County	Changes hydrology and water quality	Significant adverse effect at the County level (Major Adverse, Significant)	Refer to Chapter 13: Water Environment and Flood Risk for Additional Mitigation Enhancement Measures for the River Dee.	Not significant (Neutral, Not Significant)
Saltmarsh	National	Habitat loss / changes in air quality / hydrology and water quality	Refer to Dee Estuary SPA/Ramsar/SAC/SSSI above. Likely significant effects cannot be ruled out. Saltmarsh is a qualifying feature of the Dee Estuary Aber Afon Dyfrdwy SAC / Ramsar. This will be fully assessed through the HRA process which is in progress and NRW are engaged. It is likely that an AA will be required.		
Rivers (River Dee Estuary)	National	Habitat loss / changes in air quality / hydrology and water quality	Refer to Dee Estuary SPA/Ramsar/SAC/SSSI above. Likely significant effects cannot be ruled out. This will be fully assessed through the HRA process which is in progress and NRW are engaged. It is likely that an AA will be required.		
Possible Open Mosaic Habitats	Up to District	Habitat loss	Significant adverse effect at the County level (Major Adverse, Significant) in the short term; reducing to no significant effect in the medium to long term.	<ul style="list-style-type: none"> Botanical surveys in 2024 to feedback into the design process. Refine the design to avoid / minimise the most sensitive areas where possible. 	Not significant (Minor Adverse ¹⁴ , Not Significant)

¹⁴ Feedback mechanism required for management and monitoring, therefore precautionary assessment of Minor Adverse given instead of Neutral to allow for corrective action to be taken (where / if applicable).

Receptor	Sensitivity (value)	Description of Impact	Classification of Effect (prior to Additional Mitigation)	Additional Mitigation / Enhancement Measure	Residual Effect after Additional Mitigation
				<ul style="list-style-type: none"> Mitigate lost habitat within the Indicative Site Boundary or off-Site (once on-Site options exhausted). Further consultation with FCC to agree mitigation and compensation strategy e.g. replacement ratios (as appropriate) Continued management in line with the existing Conservation Areas Management Plan. Monitor habitats post-construction. 	
Other neutral grassland	Local	Habitat loss	Significant adverse effect at the Local level (Minor Adverse, Not Significant)	<ul style="list-style-type: none"> Refine the design to avoid / minimise habitat loss where possible. Additional mitigation to also include grassland habitat within the landscape design or enhance similar existing habitat present within the Indicative Site Boundary. ideally in advance of construction activities. Continued management in line with the existing Conservation Areas Management Plan for the Main Site (where applicable). Monitor habitats post-construction. 	Significant adverse effect at the Local level (Minor Adverse, Not Significant) in the short-term (during construction); reducing to Not significant (Neutral, Not Significant) in the medium to long term (post-construction).
Other lowland mixed deciduous woodland	Local	Habitat loss	Significant adverse effect at the County level (Moderate Adverse, Significant)	<ul style="list-style-type: none"> Refine the design to avoid / minimise habitat loss where possible. Additional mitigation to also include woodland habitat within the landscape 	Significant adverse effect at the Local ¹⁵ level (Minor Adverse, Not Significant)

¹⁵ It is assumed that a reduced footprint impacted during construction and monitoring implemented post-construction (i.e. additional mitigation measures), would decrease the level at which the significance of effect would occur i.e. Local level in comparison to County level.

Receptor	Sensitivity (value)	Description of Impact	Classification of Effect (prior to Additional Mitigation)	Additional Mitigation / Enhancement Measure	Residual Effect after Additional Mitigation
				<p>design or enhance similar existing habitat present within the Indicative Site Boundary.</p> <ul style="list-style-type: none"> Continued management in line with the existing Conservation Areas Management Plan for the Main Site (where applicable). Monitor habitats post-construction. 	
Hedgerows	Up to County	Habitat loss	Significant adverse effect at up to County level (Moderate Adverse, Significant) in the short to medium term (i.e. ≤ 2 years post construction) reducing to no significant adverse effect (Minor Adverse, Not Significant) in the long term (i.e. >2 years post construction)	<ul style="list-style-type: none"> Refine the design to avoid / minimise hedgerow loss where possible. Translocation of any species-rich hedgerows (to be confirmed through further botany surveys in 2024), within the Indicative Site Boundary (and/ or off-Site) Replacement planting to be done in advance where possible within the Indicative Site Boundary (and/or off-Site). 	Significant adverse effect at up to Local ¹⁶ level (Minor Adverse, Not Significant) in the short to medium term (i.e. ≤ 2 years post construction) reducing to no significant adverse effect (Neutral, Not Significant) in the long term (i.e. >2 years post construction)

¹⁶ It is assumed that a reduced footprint impacted during construction and monitoring implemented post-construction (i.e. additional mitigation measures), would decrease the level at which the significance of effect would occur i.e. Local level in comparison to County level.

Receptor	Sensitivity (value)	Description of Impact	Classification of Effect (prior to Additional Mitigation)	Additional Mitigation / Enhancement Measure	Residual Effect after Additional Mitigation
Other rivers and stream	Up to County	Habitat loss	Significant adverse effect at up to the County level (Moderate Adverse, Significant) in the short term (i.e. during construction) reducing to no significant adverse effect (Neutral, Not Significant) in the medium to long term (i.e. immediately post construction).	<ul style="list-style-type: none"> Refine the design to avoid / minimise habitat loss where possible. Monitor habitats post-construction (i.e. Allt-Goch Brook and Tributary). 	Significant adverse effect at up to the Local level ¹⁷ (Minor Adverse, Not Significant) in the short term (i.e. during construction) reducing to no significant adverse effect (Neutral, Not Significant) in the medium to long term (i.e. immediately post construction).
Ornithology	Up to Regional (depending on species)	Habitat loss / Noise and visual disturbance / Impacts on Water Quality / Physical interaction with Proposed Development infrastructure	Likely significant effects cannot be ruled out. Ornithology surveys are ongoing and bird species will also need to be considered as part of the HRA which is ongoing. NRW are engaged on both the survey methodology and HRA process.		
Bats	Up to County	Habitat loss and fragmentation / Incidental Mortality / Disturbance	Likely significant effects cannot be ruled out. Further assessment is required, and bat surveys are ongoing.		
Otter	Up to County	Habitats loss / fragmentation / Incidental Mortality / Disturbance	Likely significant effects cannot be ruled out. Further assessment is required, and otter surveys are ongoing.		

¹⁷ It is assumed that a reduced footprint impacted during construction and monitoring implemented post-construction (i.e. additional mitigation measures), would decrease the level at which the significance of effect would occur i.e. Local level in comparison to County level.

Receptor	Sensitivity (value)	Description of Impact	Classification of Effect (prior to Additional Mitigation)	Additional Mitigation / Enhancement Measure	Residual Effect after Additional Mitigation
Water vole	Up to County	Habitats loss / fragmentation / Incidental Mortality / Disturbance	Likely significant effects cannot be ruled out. Further assessment is required, and water vole surveys are ongoing.		
Terrestrial Invertebrates	Up to County	Habitat loss	Likely significant effects cannot be ruled out. Further assessment is required, and Terrestrial Invertebrate surveys are ongoing.		
Aquatic Ecology (Aquatic Invertebrates, Fish, Aquatic Macrophytes)	Up to National (depending on species)	Habitat loss / incidental mortality / changes to water quality	Likely significant effects cannot be ruled out. Further assessment is required, and Aquatic Ecology surveys are ongoing.		

Table 11-9: Summary of Significant Residual Effects (Operation)

Receptor	Sensitivity (value)	Description of Impact	Classification of Effect (prior to Additional Mitigation)	Additional Mitigation / Enhancement Measure	Residual Effect after Additional Mitigation
The Dee Estuary SPA / Ramsar / SAC	International	Changes in air quality / alteration of local hydrology and water quality	Likely significant effects cannot be ruled out. This will be fully assessed through the HRA process which is in progress and NRW are engaged. It is likely that an AA may be required		
The River Dee and Bala Lake/ Afon Dyfrdwy a Llyn Tegid SAC	International	Changes in air quality / alteration of local hydrology and water quality	Likely significant effects cannot be ruled out. This will be fully assessed through the HRA process which is in progress and NRW are engaged. It is likely that an AA may be required.		
Deeside and Buckley Newt sites SAC	International	Changes in air quality	Likely significant effects cannot be ruled out. This will be fully assessed through the HRA process which is in progress and NRW are engaged. It is likely that an AA may be required.		

Receptor	Sensitivity (value)	Description of Impact	Classification of Effect (prior to Additional Mitigation)	Additional Mitigation / Enhancement Measure	Residual Effect after Additional Mitigation
Halkyn Mountain / Mynydd Helygain SAC	International	Changes in air quality	Likely significant effects cannot be ruled out. This will be fully assessed through the HRA process which is in progress and NRW are engaged. It is likely that an AA may be required.		
Alyn Valley Woods /Coedwigoedd Dyffryn Alun SAC	International	Changes in air quality	Likely significant effects cannot be ruled out. This will be fully assessed through the HRA process which is in progress and NRW are engaged. It is likely that an AA may be required.		
Mersey Estuary SPA / Ramsar (England)	International	Changes in air quality	Likely significant effects cannot be ruled out. This will be fully assessed through the HRA process which is in progress and NRW are engaged. It is likely that an AA may be required.		
Dee Estuary / Aber Afon Dyfrdwy SSSI	National	Changes in air quality	Likely significant effects cannot be ruled out. Will be assessed as part of the HRA for the Dee Estuary SPA/Ramsar/SAC.		
Afon Dyfrdwy (River Dee) SSSI	National	Changes in air quality	Likely significant effects cannot be ruled out. Will be assessed as part of the HRA for the River Dee and Bala Lake / Afon Dyfrdwy a Llyn Tegid SAC.		
Shotton Lagoons and Reedbeds SSSI	National	Changes in air quality	Significant adverse effect at the National level (Major Adverse, Significant)	Reducing at source the air quality emissions (where possible). Further analysis of operational air quality data and designated site habitat information.	Significant adverse effect at the National level (Major Adverse, Significant) ¹⁸
Inner Marsh Farm SSSI	National	Changes in air quality	Significant adverse effect at the National level (Major Adverse, Significant)	Management and monitoring of habitats through the operational phase.	Significant adverse effect at the National level (Major Adverse, Significant) ¹⁹
Connah's Quay Ponds and Woodland SSSI	National	Changes in air quality	Significant adverse effect at the National level (Major Adverse, Significant)		Significant adverse effect at the National level (Major Adverse, Significant) ²⁰

¹⁸ Until further assessment is completed residual significant effects remain.

¹⁹ Until further assessment is completed residual significant effects remain.

²⁰ Until further assessment is completed residual significant effects remain.

Receptor	Sensitivity (value)	Description of Impact	Classification of Effect (prior to Additional Mitigation)	Additional Mitigation / Enhancement Measure	Residual Effect after Additional Mitigation
Gathering Grounds Woods and Llwyni Pond LNR	District	Changes in air quality	Likely significant effects cannot be ruled out at this stage. Will be assessed as part of ES.		
Leadbrook Wood LWS	County	Changes in air quality	Likely significant effects cannot be ruled out at this stage. Will be assessed as part of ES.		
Top-y-fron Dingle and Kelserton Brook LWS	County	Changes in air quality	Likely significant effects cannot be ruled out at this stage. Will be assessed as part of ES.		
Llwyn-onn LWS	County	Changes in air quality	Likely significant effects cannot be ruled out at this stage. Will be assessed as part of ES.		
Cheshire Farm LWS	County	Changes in air quality	Likely significant effects cannot be ruled out at this stage. Will be assessed as part of ES.		
Caeau Alt-vois LWS	County	Changes in air quality	Likely significant effects cannot be ruled out at this stage. Will be assessed as part of ES.		
Shotton Steelworks LWS	County	Changes in air quality	Likely significant effects cannot be ruled out at this stage. Will be assessed as part of ES.		
The River Dee LWS	County	Changes in air quality	Likely significant effects cannot be ruled out at this stage. Will be assessed as part of ES.		
Coed Stanley LWS	County	Changes in air quality	Likely significant effects cannot be ruled out at this stage. Will be assessed as part of ES.		
Coed Bryn-y-Garreg LWS	County	Changes in air quality	Likely significant effects cannot be ruled out at this stage. Will be assessed as part of ES.		
Wepre Wood LWS	County	Changes in air quality	Likely significant effects cannot be ruled out at this stage. Will be assessed as part of ES.		
Coed y Cra LWS	County	Changes in air quality	Likely significant effects cannot be ruled out at this stage. Will be assessed as part of ES.		
Brown Oak Wood Wild Ground Reserve	Local	Changes in air quality	Likely significant effects cannot be ruled out at this stage. Will be assessed as part of ES.		
Llwyni Valley Wild Ground Reserve	Local	Changes in air quality	Likely significant effects cannot be ruled out at this stage. Will be assessed as part of ES.		

Receptor	Sensitivity (value)	Description of Impact	Classification of Effect (prior to Additional Mitigation)	Additional Mitigation / Enhancement Measure	Residual Effect after Additional Mitigation
Ancient Woodland	National	Changes in air quality	Likely significant effects cannot be ruled out at this stage. Will be assessed as part of ES.		
Saltmarsh	National	Changes in air quality	Refer to Dee Estuary SPA/Ramsar/SAC/SSSI above. Likely significant effects cannot be ruled out. Saltmarsh is a qualifying feature of the Dee Estuary Aber Afon Dyfrdwy SAC / Ramsar. This will be fully assessed through the HRA process which is in progress and NRW are engaged. It is likely that an AA may be required.		
Rivers (River Dee Estuary)	National	Changes in air quality	Refer to Dee Estuary SPA/Ramsar/SAC/SSSI above. Likely significant effects cannot be ruled out. This will be fully assessed through the HRA process which is in progress and NRW are engaged. It is likely that an AA may be required.		
Possible Open Mosaic Habitat	Up to District	Changes in air quality	Likely significant effects cannot be ruled out at this stage. Will be assessed as part of ES.		
Ornithology	Up to Regional (depending on species)	Noise and visual disturbance.	Likely significant effects cannot be ruled out. Ornithology surveys are ongoing and bird species will also need to be considered as part of the HRA which is ongoing. NRW are engaged on both the survey methodology and HRA process.		

References

- Ref 11-1 UK Government, 2017; The Conservation of Habitats and Species Regulations 2017. [Available at: [The Conservation of Habitats and Species Regulations 2017 \(legislation.gov.uk\)](https://www.legislation.gov.uk) (Accessed 05/03/24)].
- Ref 11-2 UK Government, 1981; Wildlife and Countryside Act 1981. [Available at: Wildlife and Countryside Act 1981 ([legislation.gov.uk](https://www.legislation.gov.uk)) (Accessed 05/03/24)].
- Ref 11-3 UK Government, 2021; Environment Act 2021. [Available at: <https://www.legislation.gov.uk/ukpga/2021/30/contents> (Accessed 30/08/24)]
- Ref 11-4 UK Government, 2016; Environment (Wales) Act 2016. [Available at: [Environment \(Wales\) Act 2016 \(legislation.gov.uk\)](https://www.legislation.gov.uk/ukpga/2016/12/contents) (Accessed 01/09/24)]
- Ref 11-5 UK Government, 2000; Countryside and Rights of Way Act 2000. [Available at: <https://www.legislation.gov.uk/ukpga/2000/37/contents> (Accessed 30/08/2024)]
- Ref 11-6 UK Government, 1997; The Hedgerows Regulations 1997. [Available at: [The Hedgerows Regulations 1997 \(legislation.gov.uk\)](https://www.legislation.gov.uk/ukpga/1997/12/contents) (Accessed 05/03/24)].
- Ref 11-7 UK Government, 1996; Wild Mammals (Protection) Act 1996. [Available at: [Wild Mammals \(Protection\) Act 1996 \(legislation.gov.uk\)](https://www.legislation.gov.uk/ukpga/1996/12/contents) (Accessed 05/03/24)].
- Ref 11-8 UK Government, 1992; Protection of Badgers Act 1992. [Available at: [Protection of Badgers Act 1992 \(legislation.gov.uk\)](https://www.legislation.gov.uk/ukpga/1992/12/contents) (Accessed 05/03/24)].
- Ref 11-9 Department for Environment, Food & Rural Affairs (Defra), 2017; The Water Environment (Water Framework Directive (WFD)) (England and Wales) Regulations 2017 – Explanatory Memorandum. [Available at: https://www.legislation.gov.uk/uksi/2017/407/pdfs/uksem_20170407_en.pdf (Accessed 01/09/24)]
- Ref 11-10 UK Government, 2015; The Water Framework Directive (Standards and Classification) Directions (England and Wales) 2015. [Available at The Water Framework Directive (Standards and Classification) Directions (England and Wales) 2015 ([legislation.gov.uk](https://www.legislation.gov.uk/uksi/2015/1212/pdfs/uksi_20151212_en.pdf)) (Accessed 05/03/24)].
- Ref 11-11 UK Government, 1975; Salmon and Freshwater Fisheries Act 1975. [Available at [Salmon and Freshwater Fisheries Act 1975 \(legislation.gov.uk\)](https://www.legislation.gov.uk/ukpga/1975/12/contents) (Accessed 05/03/24)].
- Ref 11-12 UK Government, 2009; The Eels (England and Wales) Regulations 2009. [Available at [The Eels \(England and Wales\) Regulations 2009 \(legislation.gov.uk\)](https://www.legislation.gov.uk/uksi/2009/1212/pdfs/uksi_20091212_en.pdf) (Accessed 05/03/24)].
- Ref 11-13 UK Government, 2019; The Invasive Alien Species (Enforcement and Permitting) Order 2019. [Available at: [The Invasive Alien Species \(Enforcement and Permitting\) Order 2019 \(legislation.gov.uk\)](https://www.legislation.gov.uk/uksi/2019/1212/pdfs/uksi_20191212_en.pdf) (Accessed 05/03/24)].
- Ref 11-14 Welsh Government, 2021; Future Wales: The National Plan 2040. [Available at: <https://www.gov.wales/sites/default/files/publications/2021-02/future-wales-the-national-plan-2040.pdf> (Accessed 30/08/24)].
- Ref 11-15 Department for Energy Security and Net Zero (DESNZ), 2023; Overarching National Policy Statement for Energy (EN-1) [online]. [Available at: <https://assets.publishing.service.gov.uk/media/65a7864e96a5ec0013731a93/overarching-nps-for-energy-en1.pdf> (Accessed 26/02/24)]
- Ref 11-16 DESNZ, 2023; National Policy Statement for Natural Gas Electricity Generating Infrastructure (EN-2) [online]. [Available at: <https://assets.publishing.service.gov.uk/media/655dc15a544aea000dfb3239/nps-natural-gas-electricitygenerating-infrastructure-en2.pdf> (Accessed 26/02/24)]

- Ref 11-17 DESNZ, 2023; National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4) [online]. [Available at: <https://assets.publishing.service.gov.uk/media/655dc2d4046ed4000d8b9dd9/nps-natural-gas-supply-infrastructurepipelines-en4.pdf>] (Accessed 26/02/24)]
- Ref 11-18 DESNZ, 2023; National Policy Statement for Electricity Networks Infrastructure (EN-5) [online]. [Available at: <https://assets.publishing.service.gov.uk/media/655dc25e046ed400148b9dca/nps-electricity-networks-infrastructure-en5.pdf>] (Accessed 26/02/24)]
- Ref 11-19 Welsh Government, 2024; Planning Policy Wales: Edition 12 [online]. [Available at: <https://www.gov.wales/sites/default/files/publications/2024-07/planning-policy-wales-edition-12.pdf>] (Accessed 30/08/24)]
- Ref 11-20 FCC, 2023; Flintshire Local Development Plan 2015 – 2030. Adopted Plan 24th January 2023. [Online] [Available at: <https://flintshire.gov.uk/en/PDFFiles/Planning/Examination-Library-Documents/FINAL-LDP-Written-Statement-English.pdf>] (Accessed 26/02/24)]
- Ref 11-21 Flintshire County Council, 2020; Supporting Nature in Flintshire. [Available at: [2120/14390 Supporting Nature in Flintshire Plan.indd](#)] (Accessed 29/03/2024)].
- Ref 11-22 Arcadis, 2019; Habitats Regulations Assessment to inform the assessment of the Flintshire Local Development Plan. [Available at: [Final Habitats Regulations Assessment \(flintshire.gov.uk\)](#)] (Accessed 29/03/2024)].
- Ref 11-23 CIEEM, 2021; Good Practice Guidance for Habitats and Species.
- Ref 11-24 CIEEM, 2017; Guidelines for Preliminary Ecological Appraisal (GPEA).
- Ref 11-25 CIEEM, 2018; Guidelines for Preliminary Ecological Appraisal (GPEA). [Available at: [TR010044-001949-Cambridgeshire County Council, Huntingdonshire District Council and South Cambridgeshire District Council - CIEEM - Guidelines for Ecological Impact Assessment in the UK and Ireland.pdf \(planninginspectorate.gov.uk\)](#)] (Accessed 29/03/2024)].
- Ref 11-26 UK Government, 2023; Statutory biodiversity metric tools and guides. [Available [Statutory biodiversity metric tools and guides - GOV.UK \(www.gov.uk\)](#)] (Accessed 05/03/24)].
- Ref 11-27 CIEEM (2019) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater.
- Ref 11-28 MAGIC, 2023; Multi Agency Geographic Information for the Countryside. [Available at: [Magic Map Application \(defra.gov.uk\)](#)] (Accessed 05/03/24)].
- Ref 11-29 JNCC, 2023; Joint Nature Conservation Committee. [Available at: [JNCC - Adviser to Government on Nature Conservation](#)] (Accessed 05/03/24)].
- Ref 11-30 Welsh Government, 2023; Data Map Wales. [Available at: [Home | DataMapWales \(gov.wales\)](#)] (Accessed 05/03/24)].
- Ref 11-31 Aspect Ecology, 2023; Connah's Quay Power Station: Northern and Southern Land Parcel, Phase 1 Habitat and Faunal Surveys
- Ref 11-32 Aspect Ecology, 2023; Connah's Quay Power Station: Northern and Southern Land Parcel, Breeding, Passage and Wintering Bird Surveys.
- Ref 11-33 Aspect Ecology, 2023; Connah's Quay Power Station: Northern and Southern Land Parcel, Reptile Surveys.
- Ref 11-34 NBN. 2023; National Biodiversity Atlas. [Available at: [NBN Atlas - UK's largest collection of biodiversity information](#)] (Accessed 05/03/24)].
- Ref 11-35 COFNOD, 2024; North Wales Environmental Service. Available at: [Cofnod - North Wales Environmental Information Service | Home](#)] (Accessed 05/03/24)].

- Ref 11-36 Deeside Naturalists Society, 2024; Deeside Naturalists Society Available at: <https://www.deenats.org.uk/>.
- Ref 11-37 K Ltd (2022) HyNet North West Environmental Statement – (Volume III) Appendix 9.2 Great Crested Newt Survey Report. HyNet Carbon Dioxide Pipeline DCO . [Available at: [Environmental Statement \(Volume III\) \(planninginspectorate.gov.uk\)](#)]
- Ref 11-38 WSP UK Ltd (2022) HyNet North West Environmental Statement – (Volume III) Appendix 9.3 Bat Activity Survey Report. HyNet Carbon Dioxide Pipeline DCO . [Available at: <https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN070007/EN070007-000236-D.6.3.9.3%20Appendix%209.3%20Bat%20Activity%20Survey%20Report%20Part%201%20Rev%20A.pdf> (Accessed 01/09/24)]
- Ref 11-39 WSP UK Ltd (2022) HyNet North West Environmental Statement – (Volume III) Appendix 9.8 Bat Activity Survey Report. HyNet Carbon Dioxide Pipeline DCO . [Available at: [Environmental Statement \(Volume III\) \(planninginspectorate.gov.uk\)](#) (Accessed 01/09/24)]
- Ref 11-40 Environment Agency, 2024. Ecology and Fish Data Explorer. [Available at: [EA Ecology & Fish Data Explorer](#) (Accessed 05/04/24)].
- Ref 11-41 National Resource Wales, 2024. Request Environmental Data. [Available at: [Natural Resources Wales / Request environmental data](#) (Accessed 05/04/24)].
- Ref 11-42 UK Government, 2017; The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019.[Available at: [The Conservation of Habitats and Species Regulations 2017 \(legislation.gov.uk\)](#) Accessed 05/03/24].
- Ref 11-43 UK Government, 2020; European Union (Withdrawal Agreement) Act 2020. [Available at: [European Union \(Withdrawal Agreement\) Act 2020 \(legislation.gov.uk\)](#) (Accessed 05/03/24)].
- Ref 11-44 UK Government, 2019; The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. [Available at: [The Conservation of Habitats and Species \(Amendment\) \(EU Exit\) Regulations 2019 \(legislation.gov.uk\)](#) Accessed 05/03/24].
- Ref 11-45 Welsh Government, 2017; TAN 5: nature conservation and planning (May 2017) [online]. [Available at: [Technical advice note \(TAN\) 5: nature conservation and planning | GOV.WALES](#) (Accessed 06/03/24)]
- Ref 11-46 UK Government, 2024; Air emissions risk assessment for your environmental permit. [Available at: [Air emissions risk assessment for your environmental permit - GOV.UK \(www.gov.uk\)](#) Accessed 05/03/24)].
- Ref 11-47 European Commission, 2000; Assessment of plans and projects significantly affecting Natura 2000 Sites: Methodological Guidance on the Provisions of Article 6(3) and 6(4) of the Habitats Directive.
- Ref 11-48 UK Government, Guidance on the use of Habitats Regulations Assessment. [Available at: [Appropriate assessment - GOV.UK \(www.gov.uk\)](#) Accessed 05/03/24)].
- Ref 11-49 Planning Inspectorate, 2022; PINS, 2022; Advice Note 10: Habitats Regulations Assessment [online]. [Available at: <https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-ten/> (Accessed 01/09/24)]
- Ref 11-50 Bat Conservation Trust & Institute of Lighting Professionals (ILP), 2023; Guidance Note 8 Bats and Artificial Lighting. ILP Publications. [Available At: <https://theilp.org.uk/publication/guidance-note-8-bats-and-artificial-lighting/> (Accessed 01/09/24)]

