Connah's Quay Low Carbon Power

Environmental Statement Volume IV Appendix 11-A: Ecological Impact Assessment Methodology

Planning Inspectorate Reference: EN010166
Document Reference: EN010166/APP/6.4
Planning Act 2008 (as amended)
Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 - Regulation 5(2)(a)
Revision 00

August 2025

Prepared for:
Uniper UK Limited

Prepared by:
AECOM Limited

Table of Contents

Tables

1. Ecological Impact Assessment Methodology

1.1 Overview

1.1.1 This report forms a technical appendix accompanying **Chapter 11: Terrestrial and Aquatic Ecology** (**EN010166/APP/6.2.11**) of the **Environmental Statement** for the Connah's Quay Low Carbon Project (the 'Proposed Development').

1.1.2 The Ecological Impact Assessment (EcIA) methodology follows the guidelines provided by the Chartered Institute of Ecology and Environmental Management (CIEEM) in their "Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland v1.3" (Ref 1) (hereafter referred to as 'the CIEEM Guidelines'). The British Standards Institute's "Biodiversity: Code of Practice for Planning and Development" published by the British Standards Institute (BS 42020:2013) cites the CIEEM Guidelines as the acknowledged reference on EcIA. The CIEEM Guidelines are consistent with the British Standard on Biodiversity (Ref 2), which provides recommendations on topics such as professional practice, proportionality, pre-application discussions, ecological surveys, adequacy of ecological information, reporting and monitoring.

1.1.3 In line with the CIEEM Guidelines, the approach to EcIA involves the following steps:

- **predicting activities:** identifying activities associated with the Proposed Development that might cause biophysical changes potentially affecting Important Ecological Features (IEFs);
- **determining the Zone of Influence (ZoI):** identifying the areas (relevant to species or habitat accordingly) likely to be influenced by these activities;
- **scoping:** selecting the ecological features (habitats, species, ecosystems, and their functions/processes) that might be affected within the predicted ZoIs;
- **evaluating IEFs:** the importance of ecological features that may be affected, is evaluated to place their relative biodiversity and nature conservation value into a geographic context in which they are considered important;
- **impact identification:** identifying and characterising potential impacts (positive and negative) on IEFs and evaluating their significance at different geographic levels;
- **applying the mitigation hierarchy:** refining the Proposed Development to avoid or mitigate negative effects on IEFs and to enhance positive impacts, aiming for net gains;

- **assessing residual effects:** evaluating the significance of remaining effects and identifying any policy-driven needs for additional mitigation or compensation; and
- **providing policy and legislation advice:** ensuring conformance with relevant policies and legislation.

1.2 Method of Evaluating Ecological Importance

1.2.1 The evaluation method for this EcIA utilises a geographic scale to determine the importance of ecological features which include:

- international (typically this is within an international context, reflecting the general availability of good 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 (North Wales);
- county (Flintshire);
- district (Deeside);
- local (features that do not meet criteria for valuation at a District or higher level, but have sufficient value at the Site[1] level to merit retention or mitigation); and
- 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 a wider relevant biodiversity objective and can be screened out).

1.2.2 The EcIA focuses on features that are at least of 'Local' ecological importance and are likely 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 'Net Benefit for Biodiversity.' Features protected by legislation are also discussed in **Chapter 11: Terrestrial and Aquatic Ecology** (**EN010166/APP/6.2.11**).

1.2.3 'Ecological Importance' within this EcIA is determined based on these elements:

- statutory requirements and policy objectives (e.g., site designations, country lists of habitats, and priority species); and
- biodiversity value (e.g., diversity, rarity, scarcity, ecosystem function, and population trends).

1.2.4 Where available, relevant guidance is used to inform importance of ecological features. Resources relevant to the study area (as defined in **Chapter 11: Terrestrial and Aquatic Ecology** (**EN010166/APP/6.2.11**), and

[1] The term 'Site' is used in the Ecological Impact Assessment Methodology in line with the CIEEM Guidelines.

Appendix 11-B: Terrestrial and Aquatic Ecology Baseline Surveys and Study Areas (**EN010166/APP/6.4**)) include:

- identification of ecological features of value in North East Wales (Bionet Local Nature Partnership for North East Wales) (Ref 3);
- the Flintshire Local Biodiversity Duty Delivery Plan (Ref 4); and
- relevant National Landscape Character Area profiles (NCA) (Ref 5).

1.2.5 The status of habitat and species that are rare or threatened is outlined nationally in various Red Data Books and Lists and also in Section 7 Priority species and Section 7 Priority habitats within the Environment (Wales) Act 2016 (Ref 6). There are national criteria for rarity and level of threat to populations for different groups of species and guidance on the assessment of relative values such as the Ratcliffe Criteria (Ref 7). Species may be widespread or common nationally, but of scarce occurrence in the County or District. Conversely, a species may be common in a County or District context but considered rare nationally. In addition, some species termed legally protected species, such as badgers, bats, and reptiles, are given statutory protection that protects them from harm or forms of disturbance but that does not necessarily translate to biodiversity importance e.g. a transitory occurrence of a single individual of protected bat species would not be afforded the same weight as a regularly occurring large population of bats.

1.2.6 Expert judgement has also been used as appropriate when assigning importance, particularly where species or habitats are poorly known, or guidance is lacking. Ecological features may be identified that are not included in lists of notable habitats and species, but that can be considered important on the basis of expert judgment e.g. because of their local rarity or because they enable effective conservation of other important features (Ref 1).

1.3 Assessment Methodology

1.3.1 The assessment includes:

- the identification of potential impacts on important ecological features by considering likely biophysical changes from the proposed activities;
- characterising impacts by their extent, magnitude, duration, timing, frequency, reversibility, and whether they are beneficial / positive or adverse / negative; and
- considering cumulative impacts with other planned or approved projects.

1.3.2 These impacts are then assessed based on their likelihood to be 'significant' in EcIA terms.

1.4 Characterising Ecological Impacts

1.4.1 When describing potential impacts (and where relevant the resultant effects) reference is made to the following characteristics:

- beneficial/ adverse - i.e. is the change likely to be in accordance with nature conservation objectives and policy:

  - beneficial (i.e. positive) - a change that improves the quality of the environment, or halts or slows an existing decline in quality e.g. increasing the extent of a habitat of conservation value;
  - adverse (i.e. negative) - a change that reduces the quality of the environment e.g. destruction of habitat or increased noise disturbance;
- magnitude - the 'size', 'amount' or 'intensity' of an impact - this is described on a quantitative basis where possible;
- spatial extent - the spatial or geographical area or distance over which the impact/effect occurs;
- duration - the time over which an impact is expected to last prior to recovery or replacement of the resource or feature. The likely duration of the impact should be quantified (e.g. 2 weeks duration; 5 to 10 years). Consideration has been given to how this duration relates to relevant ecological characteristics such as a species' lifecycle. However, it is not always appropriate to report the duration of impacts in these terms. The duration of an effect may be longer than the duration of an activity or impact;
- reversibility - i.e. is the impact temporary or permanent. A temporary impact is one from which recovery is possible or for which effective mitigation is both possible and enforceable. A permanent effect is one from which recovery is either not possible, or cannot be achieved within a reasonable timescale (in the context of the feature being assessed); and
- timing and frequency - i.e. consideration of the point at which the impact occurs in relation to critical life-stages or seasons.

1.4.2 For each IEF only those characteristics relevant to understanding the ecological effect and determining the significance are described.

1.5 Significant Effects within EcIA

1.5.1 According to the CIEEM Guidelines:

"*Significance is a concept related to the weight that should be attached to effects when decisions are made. For the purpose of EcIA, 'significant effect' is an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features' or for biodiversity in general (...) in broad terms, significant effects encompass impacts on structure and function of defined sites, habitats or ecosystems and the conservation status of habitats and species (including extent, abundance, and distribution).*"

1.5.2 An effect is deemed significant if it likely alters the structure and function of the Site's ecosystems or the conservation status of habitats and species. Professional judgment about significance considers conservation objectives for the affected feature, including conservation status or integrity in terms of structure, function, and condition. The effect of natural and human-induced trends in the absence of development is also factored in, along with the potential for cumulative impacts.

1.5.3 Further guidance on how to assess conservation status is provided in the CIEEM Guidelines as follows:

- for habitats "*conservation status is determined by the sum of the influences acting on the habitats that may affect its extent, structure and functions as well as its distribution and its typical species within a given geographical area*"; and
- for species: "*conservation status is determined by the sum of influences acting on the species concerned that may affect its abundance and distribution within a given geographical area*".

1.5.4 In considering effects on structure and function, and conservation status, reference is made to relevant available guidance on the current conservation status of the ecological feature under consideration. Effects will either be:

- Not significant (no ecologically meaningful effect); or
- Significant (an ecologically meaningful effect).

1.5.5 Such judgements have been based, wherever possible, on quantitative evidence. However, where necessary the professional judgement of an experienced ecologist has been applied.

1.5.6 For those effects considered significant, the effect will also be characterised as appropriate (e.g. adverse / negative or beneficial / positive) and qualified with reference to the geographic scale at which the effect is significant (e.g. an adverse effect significant at a national level). Section 1.7 provides commentary on how the EcIA terminology has been translated to provide consistent terminology with the remainder of the Environmental Statement (ES).

1.5.7 The scale of significance of an effect may not be the same as the geographic context in which the feature is considered important. For example, an effect on a species which is on a national priority list may not have a significant effect on its national status.

1.6 Application of the Mitigation Hierarchy

1.6.1 The identification and specification of mitigation proposals in this assessment has been undertaken with regard to the principles of the mitigation hierarchy i.e.:

1) avoid harm to ecological features where possible;
2) reduce (minimise) the magnitude of the potential impact e.g. through iterative design and/ or advance commitment to sensitive methods or timing of working (sometimes termed as embedded mitigation or mitigation by design);
3) mitigate the potential effect through the application of additional proven measures, such that the residual effect realised is reduced in magnitude (additional mitigation); and
4) compensate for significant residual effects, e.g. by providing suitable habitats elsewhere. Proposals should achieve appropriate compensation in a reasonable timeframe and be legally enforceable.

1.6.2 This hierarchy requires the highest level to be applied where possible. Only where this cannot reasonably be adopted should lower levels be considered. Where it is reasonably practicable to do so then attempts have been made to avoid potential impacts. Where impacts cannot be avoided then efforts have been made to limit the magnitude of the potential impact and to mitigate the resultant effects through the provision of appropriate measures. Where effects cannot be mitigated to a level where they are not significant then compensatory measures should be employed to (as far as is reasonably possible) offset any remaining adverse effects.

1.7 Comparing CIEEM Assessment Outputs with Significance Terminology used in Other ES Chapters

1.7.1 To provide consistency of terminology in the conclusions of the assessment, the residual effects of the Proposed Development are translated to a significance level on a scale of neutral, minor, moderate and major comparable to that used in other ES chapters as outlined in **Table 1**. These conclusions are provided in each case in brackets following the equivalent CIEEM assessment conclusion.

Table 1: Relating CIEEM assessment terms to those used in other ES chapters

CIEEM Assessment Methodology	Equivalent significance terminology used in other ES Chapters	
Beneficial effect on structure / function or conservation status at regional, national or international level	Significant (beneficial)	Major beneficial
Beneficial effect on structure / function or conservation status at county level		Moderate beneficial
Beneficial effect on structure/function or conservation status at Site or local level	Not significant	Minor beneficial
No effect on structure/function or conservation status	No effect	Neutral
Adverse effect on structure/function or conservation status at Site or local level	Not significant	Minor adverse
Adverse effect on structure/function or	Significant	Moderate adverse

CIEEM Assessment Methodology	Equivalent significance terminology used in other ES Chapters	
conservation status at county level	(adverse)	
Adverse effect on structure/function or conservation status at regional, national or international level		Major adverse

References

Ref 1. CIEEM (2024) Guidelines for Ecological Impact Assessment in the UK and Ireland. Available online.

Ref 2. BS 42020:2013 (2013) Biodiversity: Code of Practice for Planning and Development.

Ref 3. Bionet Local Nature Partnership for North Wales (2024). Conserving, protecting and promoting Nature in North East Wales. Available Online.

Ref 4. Flintshire County Council (2020) Supporting Nature in Flintshire. Our plan to maintain and enhance biodiversity under the Environment (Wales) Act 2016. January 2020 – 2023 [Available online from: https://www.flintshire.gov.uk/en/PDFFiles/Countryside--Coast/Biodiversity/Flintshire-County-Council-Environment-Act-Section-6-Biodiversity-Duty-Delivery-Plan-update-2020.pdf] (Accessed 28/03/2025).

Ref 5. Natural Resource Wales (2014) National Landscape Character NLCA13 Deeside and Wrexham [Available online at: https://cdn.cyfoethnaturiol.cymru/media/682570/nlca13-deeside-and-wrexham-description.pdf?mode=pad&rnd=131550580272430000] (Accessed 28/03/2025).

Ref 6. Welsh Government (2016) Environment (Wales) Act 2016 Priority Species and Habitats [Available online from: https://www.biodiversitywales.org.uk/Environment-Wales-Act] (Accessed 28/03/2025).

Ref 7. Ratcliffe, D. A (1977). A nature conservation review, Cambridge University Press.