

## Chapter 6: Ecology

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## 6. Ecology

### 6.1. Executive Summary

- 6.1.1. This Ecology Chapter of the Environmental Impact Assessment Report (EIAR) assesses the likely significant ecological effects of the Proposed Varied Development. The assessment builds on comprehensive baseline data collected for the Consented Development, supplemented by updated desk studies to capture any additionally available ecological information.
- 6.1.2. The assessment considers only likely changes to the conclusions of the Consented Development. Where there is unlikely to be a change to effects to any of the Important Ecological Features previously considered, these are Scoped Out of the assessment for the Proposed Varied Development.
- 6.1.3. Predicted effects to protected species such as otters, water voles, bats and aquatic species were predicted as not significant for the Consented Development due to embedded mitigation proposed. No additional impacts have been predicted arising from the Proposed Varied Development's construction or operation. Consequently, these receptors are Scoped Out from further detailed consideration.
- 6.1.4. The study area is characterised by upland habitats dominated by wet dwarf shrub heath, blanket bog, and wet heath/blanket bog mosaics, all priority habitats under UK and Scottish conservation legislation and policy. Key designated sites of international and national importance lie adjacent to or near the site boundary, including the Caithness & Sutherland Peatlands Special Area of Conservation (SAC) and the River Oykel SAC and their associated underlying Site of Special Scientific Interest (SSSI). The ecological baseline is informed by extensive previous surveys and desk studies, indicating that much of the blanket bog habitat is in a modified or degraded condition, however some areas approaching near-natural status.
- 6.1.5. The Proposed Varied Development design refinements have sought to minimise impacts on areas of highest ecological sensitivity and it should be noted that peatlands affected by the Proposed Varied Development are modified in nature and of a poor condition (as for the Consented Development) due to historical anthropogenic influence and impacts from high levels of deer grazing pressure.
- 6.1.6. Mitigation and compensation measures secured through planning conditions for the Consented Development remain appropriate and effective for the Proposed Varied Development. These include a Construction Environmental Management Plan (CEMP), Peat Management Plan (PMP), Habitat Management Plan (HMP), and Deer Management Plan (DMP).
- 6.1.7. Cumulative effects have been considered for the Proposed Varied Development with other nearby developments and given the only alterations to effects from the Proposed

Varied Development are to habitats, cumulative effects are not considered to differ from those predicted for the Consented Development.

- 6.1.8. With the implementation of embedded and secured mitigation, compensation, and enhancement measures, the Proposed Varied Development is not anticipated to result in any new or different significant adverse ecological effects compared to the Consented Development. The proposals comply with statutory policy and best practice guidance, ensuring that biodiversity conservation and habitat restoration are integral components of the development lifecycle, and with the implementation of appropriate management plans will provide significant enhancement to biodiversity.

## 6.2. Introduction

- 6.2.1. This Chapter of the EIA Report assesses the likely significant effects of the Proposed Varied Development with respect to terrestrial and freshwater ecology. The Proposed Varied Development is located at the site of the consented Achany Extension Wind Farm (the 'Consented Development') (**Figure 1.3**). The Proposed Varied Development includes an increase in the hub height of the 18 wind turbine generators (WTGs) from 149.9m to up to 200m, an increase in areas of hardstanding and foundation required for each WTG, eight new turning heads to the site access track design and a reduction in overall access track length.
- 6.2.2. The report should be read in conjunction with the development description provided in **Chapter 2: Design Iteration and Proposed Development** and with respect to relevant parts of other chapters, including **Chapter 7: Ornithology** and **Chapter 8: Hydrology and Hydrogeology**, where common receptors have been considered and where there is an overlap or relationship between the assessment of effects.
- 6.2.3. In this Chapter, receptors are referred to as ecological features, to accord with the Chartered Institute of Ecology and Environmental Management "Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine" Version 1.3 - updated September 2024 (CIEEM, 2018). The term ecological feature is defined in the guidance as pertaining to habitats, species and ecosystems.
- 6.2.4. This Chapter has been prepared by RPS Consulting Services Ltd (RPS). The lead author is an ecologist with over 18 years consultancy experience of ecological impact assessment (EcIA) and onshore wind farm developments, is a Chartered Ecologist and a Full Member of the Chartered Institute of Ecology and Environmental Management.
- 6.2.5. This Chapter has been informed by desk studies and field surveys. The field surveys were completed in 2020 by the previous consultants on the project, Wood UK Plc, and used to support the Consented Development's planning submission. This has been determined to be representative of the baseline of ecology for the Proposed Varied Development and no additional field surveys have been completed to inform this planning submission. Updated desk-based studies have been completed to capture any additional information available since the Consented Development's submission.

- 6.2.6. All field surveys completed by Wood UK Plc were led by surveyors with Associate or Full Member level of CIEEM. National Vegetation Classification (NVC) and Peatland Condition surveys were undertaken by Alba Ecology the lead surveyor of which has extensive ecological field experience in Sutherland and across the north of Scotland.

### 6.3. Scope of Assessment

- 6.3.1. A S36C Scoping Report for the Proposed Varied Development was submitted in May 2025 to statutory consultees for their consideration. This report sets out the rationale to assess or scope out ecological receptors based on the potential impacts of the Proposed Varied Development and any alterations to predicted effects from those considered for the Consented Development. The report considers the assessments completed for the Consented Development, the ecological baseline collected to support these assessments, the predicted effects of the Proposed Varied Development to Important Ecological Features (IEFs) and the proposed mitigation to reduce the significance of any effect.
- 6.3.2. The mitigation proposed in the Consented Development's planning submission have been secured through appropriately worded planning conditions to the Planning Consent. The ecological baseline, previous consultee comments to the Consented Development, planning conditions associated with Important Ecological Features and a summary of the predicted effects of the Consented Development to Important Ecological Features are provided for context in the following sections of this document.
- 6.3.3. Further to the above, the Scope of this assessment and document is to:
- Consider the previously collected baseline information used to support the Consented Development's planning submission.
  - Undertake an assessment of the predicted effects of the Proposed Varied Development to IEFs where changes associated with the Proposed Varied Development will alter the previously assessed impacts and effects of the Consented Development.
  - Consider the changes of the Proposed Varied Development and compare the predicted effects of the Consented Development to those of the Proposed Varied Development.
  - Summarise any changes in these previously assessed effects.
  - Consider the appropriateness of the mitigation, compensation and enhancement measures proposed in the EIA Report for the Consented Development to ensure they are in line with current guidelines and that the Proposed Varied Development will deliver significant biodiversity enhancements as required by National Planning Framework 4 (NPF4) Policy 3(b) Biodiversity.

## 6.4. Consultations

- 6.4.1. The Consented Development consulted with a range of third parties during the consenting process. The consultation responses are included in the Consented Development's EIAR and the Scoping Report for the Proposed Varied Development and as such are not repeated here.
- 6.4.2. Consultation responses received for the Scoping Report submitted for the Proposed Varied Development are included in **Technical Appendix 3.2. Table 6.1** provides a summary of these consultation responses.

**Table 6.1: Summary of all consultation responses received for the Proposed Varied Development.**

Consultee and Date	Issue Raised	Comments Addressed
SEPA (27 June 2025)	<ul style="list-style-type: none"> <li>Requires demonstration of adherence to guidance on life extension, repowering, and decommissioning of windfarms, emphasising sustainable resource use and ecological restoration.</li> <li>Requests detailed site layout drawings showing all infrastructure and groundworks.</li> <li>Emphasises avoidance and minimization of impacts on sensitive habitats, especially peatland and carbon-rich soils, supported by a Peat Management Plan.</li> <li>Requires EIA to include scale drawings of ecological sensitivities (peat depth, peat condition, GWDTE, proximity to waterbodies) overlain with proposed development.</li> <li>Advises further detailed peat surveys due to larger and relocated infrastructure compared to existing consents.</li> <li>Notes that peatlands have biodiversity value and contribute to carbon storage, water quality, and flood management, so impacts must be carefully assessed and minimised.</li> <li>Encourages early engagement and discussion of scoping issues to avoid delays and objections.</li> <li>Under Policy 3 of NPF4, EIA development must demonstrate conservation, restoration, and enhancement of biodiversity and nature networks to a better state than without intervention. Mitigation of</li> </ul>	<ul style="list-style-type: none"> <li>The development will adhere to the guidance provided throughout the EIA.</li> <li>Site Layout Plan for the Proposed Varied Development is provided in <b>Figure 1.3</b>.</li> <li>Consideration has been given throughout the design process to limit impacts to sensitive habitats..</li> <li>Peat depths, peat management and hydrology in relation to the revised infrastructure are considered in <b>Chapter 8: Hydrology and Hydrogeology and Chapter 9: Geology and Carbon Balance</b>.</li> <li>During the Consented Development's assessment it was confirmed that GWDTE were not present and so are not considered further in this assessment.</li> <li>Additional peat probing has been completed to inform the design of the development and is provided in <b>Chapter 9: Geology and Carbon Balance</b>.</li> <li>Impacts to peatland have been minimised through considered design of the Proposed Varied Development.</li> <li>The Proposed Varied Development has been cognisant of the requirements of NPF4 in design of compensation and enhancement measures as details in the Outline Habitat Management Plan.</li> <li>Consideration will be given to additional riparian planting areas to supplement the Outline Habitat Management, and where appropriate these will be agreed within the final HMP.</li> </ul>

Consultee and Date	Issue Raised	Comments Addressed
	<p>negative effects must be fully addressed before biodiversity enhancements, which should be additional.</p> <ul style="list-style-type: none"> <li>SEPA has published data identifying areas where riparian planting would be beneficial and encourages exploring riparian planting along watercourses within landownership as part of biodiversity net gain proposals.</li> </ul>	
Creich Community Council (2 July 2025)	<ul style="list-style-type: none"> <li>Requests a moratorium from THC on wind farm and infrastructure projects in the catchment area until a full ecological report for the entire region is produced and engineering impacts reviewed, to avoid fragmented and cumulative impacts.</li> <li>Stresses cumulative negative ecological impacts across the catchment, including endangered salmon, freshwater mussels, raptors, badgers, red squirrels, and other species reliant on hillsides and waterways.</li> <li>Calls for assessment of impacts on wildlife and scenic tourism as part of community benefits.</li> <li>Requests inclusion of impacts on water supplies and aquatic habitats.</li> <li>Emphasizes need for comprehensive impact assessments including cumulative effects and wider ecological context beyond the immediate site.</li> </ul>	<p>Regional ecological reports and assessment of impacts on protected species, wildlife, and scenic tourism are not within scope of this EIA as this considers only the changes to the Consented Development and any predicted change to the previously assessed effects. This approach has been agreed as part of the Scoping consultation with Scottish Ministers and statutory consultees (refer to <b>Technical Appendices 3.1 to 3.3</b>).</p> <ul style="list-style-type: none"> <li>Potential impacts of the Proposed Varied Development on PWS sources are discussed in <b>Chapter 8: Hydrology and Hydrogeology</b>.</li> </ul>

Consultee and Date	Issue Raised	Comments Addressed
The Highland Council (25 July 2025)	<ul style="list-style-type: none"> <li>The EIAR must provide baseline surveys of birds, mammals, reptiles, amphibians, and other animal species on site.</li> <li>The Development must conserve and enhance biodiversity per NPF4 Policy 3, showing biodiversity in better state post-development.</li> <li>The EIAR should address aquatic interests in local watercourses, including sediment, pollution risk, migration obstruction, spawning disturbance, and drainage and evidence consultation with local fishery boards where relevant</li> <li>The EIAR should detail all impacts—direct, indirect, permanent, temporary—on bog habitats.</li> <li>The Development should demonstrate minimum 10% Biodiversity Net Gain per NPF4 and Highland Council guidance and can use a metric to demonstrate biodiversity enhancements, submitting raw data (spreadsheet) with the application.</li> <li>Peat restoration for the Development should follow NatureScot guidance with 1:10 offset ratio plus 10% enhancement of peatland habitats.</li> <li>THC considered the current protected species survey data (from 2020) is outdated and new surveys from within last two seasons should be completed to support the EIAR.</li> </ul>	<ul style="list-style-type: none"> <li>These receptors are out with the Scope of the Variation application as this considers only the changes to the Consented Development and any predicted change to the previously assessed effects. This approach was agreed by Scottish Ministers in the Scoping Opinion (<b>Technical Appendix 3.2</b>). The Applicant also confirmed this through further consultation with The Highland Council (15 August 2025 and 22 August 2025) (refer to <b>Technical Appendix 3.2 and 3.3</b>).</li> <li>The Proposed Varied Development has been cognisant of the requirements of NPF4 in design of compensation and enhancement measures as details in the Outline Habitat Management Plan.</li> <li>Section 6.8 details the effects on all habitats including bog.</li> <li>A metric is provided as <b>Technical Appendix 6.1</b> to this submission detailing the BNG uplift by the Proposed Varied Development.</li> <li>Significant peatland restoration is provided by the Proposed Varied Development as detailed in the Outline Habitat Management Plan.</li> <li>Protected species are Scoped Out from the assessment of the Proposed Varied Development and so the age of the data are not considered relevant to this application. Pre-Construction surveys will be completed ahead of the construction phase to ensure all species are provided appropriate protection. This approach was agreed by Scottish Ministers in the Scoping Opinion (<b>Technical Appendix 3.2</b>) and confirmed through further consultation with The Highland Council (<b>Technical Appendix 3.3</b>).</li> </ul>



Consultee and Date	Issue Raised	Comments Addressed
RSPB Scotland (28 July 2025)	<p>Comments in relation to Habitat Management Planning and Biodiversity:</p> <ul style="list-style-type: none"> <li>The proposed HMP should detail mitigation, compensation actions, and biodiversity enhancement proposals.</li> <li>Applicants must meet specific criteria demonstrating biodiversity conservation and enhancement, aligned with Scottish Government guidance on NPF4 Policy 3 implementation.</li> <li>NatureScot guidance on peatland development requires restoration offsetting at approximately a 1:10 ratio (lost:restored).</li> </ul>	<ul style="list-style-type: none"> <li>The Outline Habitat Management Plan (<b>2021 EIAR, Volume 4, Technical Appendix 8.10</b>) provides the proposed actions to compensate and enhance biodiversity at the site.</li> </ul>
NatureScot (14 July 2025)	<ul style="list-style-type: none"> <li>We are content with the proposed approach outlined by the Applicant for both Ecology and Ornithology chapters in the Scoping Report and welcome reference to NatureScot 2024 guidance "<i>Guidance on dealing with proposals for the variation of section 36 wind farm consents</i>".</li> </ul>	<ul style="list-style-type: none"> <li>Noted.</li> </ul>
Kyle of Sutherland District Salmon Fishery Board (04 July 2025)	<p>The following information is requested by KSDSFB to be included in the environmental assessment:</p> <ul style="list-style-type: none"> <li>Fish habitat data in any potentially affected watercourse both within and outwith the physical boundary of the proposed development.</li> <li>Fish presence, distribution and abundance data in all potentially affected watercourses.</li> <li>Macro-invertebrate data in all potentially affected watercourses.</li> </ul>	<ul style="list-style-type: none"> <li>Aquatic habitat receptors are Scoped Out from the assessment of the Proposed Varied Development as this considers only the changes to the Consented Development and any predicted change to the previously assessed effects. This approach was agreed by Scottish Ministers in the Scoping Opinion (<b>Technical Appendix 3.2</b>). Pre-Construction surveys will be completed ahead of the construction phase to ensure all species are provided appropriate protection.</li> </ul>

Consultee and Date	Issue Raised	Comments Addressed
	<ul style="list-style-type: none"> <li>• Freshwater pearl mussel (FWPM) abundance and distribution data in all potentially affected watercourses.</li> <li>• Hydrology data, including for any artificial drainage watercourses. Any artificial or modified drainage channels need to be fully mapped as part of the assessment process.</li> <li>• Water quality data (i.e. turbidity, pH, dissolved organic carbon, acid-neutralising capacity etc.) in all potentially affected watercourses.</li> <li>• Full mapping of the potential visual effect zones for all proposed turbines taking into account salmonid fish vision (i.e. incorporating a detailed direct visualisation and other effects such as reflection and shadow flicker.</li> <li>• Full assessment/modelling of the impact on fish behaviour and performance resulting from direct visualisation of moving turbine blades.</li> <li>• Full assessment/modelling of the impact on fish behaviour and performance resulting from shadow flicker, reflections etc.</li> </ul>	<ul style="list-style-type: none"> <li>- Information on hydrological receptors is discussed in <b>Chapter 8: Hydrology and Hydrogeology</b>.</li> </ul>

6.4.3. A summary of the planning conditions related to ecological issues for the Consented Development is provided below in **Table 6.2**. Key concerns raised by statutory consultees include:

- Peatland habitats and the loss of these through construction and operational phases.
- The high deer population in proximity to the Consented Development, which could complicate the implementation of any peatland restoration scheme.
- The potential for deer dispersal to neighbouring designated sites which might affect the sensitive qualifying habitats present there.
- Water quality issues that might affect the wider catchment, the aquatic receptors present and the River Oykel SAC.

6.4.4. The planning commitments agreed for the Consented Development will be adhered to for the Proposed Varied Development where these are considered appropriate for the predicted effects discussed in the following sections of this document.

**Table 6.2: Planning Conditions of the Consented Development Relevant to Important Ecological Features**

Plan / Document	Reason
13. Ecological Clerk of Works (ECoW)	To secure effective monitoring of and compliance with the environmental mitigation and management measures associated with the Development during the decommissioning, restoration, and aftercare phases.
14. Construction and Environmental Management Plan (CEMP)	To ensure that all construction operations are carried out in a manner that minimises their impact on road safety, amenity, and the environment, and that the mitigation measures contained in the Environmental Impact Assessment Report are fully implemented to avoid significant effects on Caithness and Sutherland Peatland Special Area of Conservation and the Caithness & Sutherland Peatlands Special Protection Area.
18. Finalised Peat Management Plan (PMP)	To ensure that a plan is in place to deal with the storage and reuse of peat within the application site, including peat stability and slide risks.
19. Habitat Management Plan (HMP)	In the interests of protecting ecological features and to ensure that the development secures positive effects for biodiversity.
20. Water Quality and Fish Monitoring Plan	To ensure no deterioration of water quality and to protect fish populations within and downstream of the development area.
21. Bat Species Protection Plan (BSPP)	In the interests of nature conservation.

Plan / Document	Reason
23. Deer Management Plan (DMP)	To protect ecological interests of the Caithness and Sutherland Peatlands Special Area of Conservation.
32. Species Specific Surveys and Protection Plans	In the interests of nature conservation.

## 6.5. Assessment Methodology

- 6.5.1. The assessment of effects for the Proposed Varied Development follows the guidance of the Chartered Institute of Ecology and Environmental Management (CIEEM, 2018). A detailed summary of this methodology was provided in the Consented Development's EIAR and is not repeated here for brevity.
- 6.5.2. Desk and field survey data are used to support the assessment. As the information used for the assessment is that present for the Consented Development, the method of data collection is not included within this document.

### Embedded Measures and Mitigation

- 6.5.3. Embedded Measures and mitigation for the Proposed Varied Development continue to be those as described for the Consented Development, these are summarised in **Table 6.3** for receptors considered within the scope of assessment for the Proposed Varied Development.

**Table 6.3: Summary of Embedded Mitigation for the Consented Development**

Important Ecological Feature(s)	Changes and Effects	Embedded Mitigation Measures and Influence on Assessment
<b>Construction Phase</b>		
<b>Blanket bog and peatland habitats</b>	Direct habitat loss and temporary disturbance during construction	<p>The following measures would be incorporated in order to minimise construction effects to blanket bog and other sensitive terrestrial habitats:</p> <ul style="list-style-type: none"> <li>Site supervision would be provided by a suitably experienced Environmental Clerk of Works (ECoW), who would be responsible for monitoring implementation of embedded measures, including pollution prevention (see below), monitoring of buffers around construction areas and reference to areas of high ecological sensitivity, and adherence to current construction good practice.</li> </ul>

Important Ecological Feature(s)	Changes and Effects	Embedded Mitigation Measures and Influence on Assessment
		<ul style="list-style-type: none"> <li>• Pre-construction surveys of all works areas over blanket bog would be undertaken to identify locations of any rare bog species (notably dwarf birch and dwarf juniper) and propose suitable avoidance buffers, or consideration of translocation elsewhere within the Site as necessary.</li> <li>• A Peat Management Plan would be developed and submitted pursuant to an anticipated condition of the deemed planning permission, in consultation with a suitably experienced peatland ecologist, hydrologist and the relevant consultees, in advance of construction works commencing.</li> <li>• An outline CEMP is provided in the <b>2021 EIAR, Technical Appendix 3.1</b>, this includes methods for the removal and storage for vegetated turves and peat together with good practice reinstatement measures for the re-use of excavated peat within the Site.</li> <li>• Best practice techniques of vegetation and habitat reinstatement would be adopted and implemented in areas of disturbed vegetation, such as cut track sides, cranepads, substation and borrow pits. Early reinstatement of all disturbed areas would be undertaken to minimise the effects of soils and peat exposure erosion. Any plant material used in reinstatement techniques would be of local provenance and be appropriate for locations being restored. Reinstatement techniques would be agreed in consultation with relevant consultees before construction operations begin and would be included within the Construction Environment Management Plan (CEMP) (Condition 14 of the Consented Developments consent) and the Peat Management Plan (PMP) (Condition 18 of the Consented Development's consent).</li> <li>• A Habitat Management Plan (HMP) (<b>2021 EIAR Technical Appendix 8.10</b>) would be implemented with the aim of ensuring successful restoration of poor condition blanket bog and wet heath within the Glencassley Estate. The HMP would be finalised and submitted pursuant to a condition of the deemed planning permission (as with planning condition 19 for the Consented</li> </ul>

Important Ecological Feature(s)	Changes and Effects	Embedded Mitigation Measures and Influence on Assessment
		Development), following consultation with NatureScot and SEPA.
<b>Operational Phase</b>		
In accordance with the Applicant's accredited ISO 14001 Environmental Management System (EMS), an operational site Environmental Management Plan (EMP) would be prepared and would serve as the means by which the Applicant shall ensure that the wind farm operates in compliance with all applicable environmental legislation, planning conditions and other regulatory commitments.		
<b>Decommissioning Phase</b>		
<b>All ecological features</b>	Similar changes and effects to construction phase	During the decommissioning of the Consented Development, potential effects on ecological features are expected to be similar to those encountered during the construction phase and therefore similar environmental measures would be required. Any new legislation published prior to decommissioning would be adhered to and incorporated into a Decommissioning Plan, prior to decommissioning taking place.

## Cumulative Effects

- 6.5.4. The impact of the Proposed Varied Development will be assessed with other developments to identify any cumulative effects on IEFs scoped in. The cumulative assessment for the Proposed Varied Development, as with the Consented Development, has focussed on other wind farms. Cumulative effects are considered for each IEF based on the relevant impact pathways, which may differ between IEFs. For example, a wind farm located close to the Proposed Varied Development but in a different catchment may not result in cumulative impacts on freshwater fish (due to a lack of hydrologic connection) but could impact bats.

## Comparison of Effect

- 6.5.5. The assessment of effects of the Proposed Varied Development will focus on where and how these differ from those predicted for the Consented Development. This will determine the alterations to mitigation, compensation and enhancement required (if at all). The assessment will consider construction, operational and decommissioning phases of both developments.

## 6.6. Consented Development EIA Report Baseline

6.6.1. The Consented Development (and Proposed Varied Development) is located approximately 1.5km north-east of the River Cassley and 5km south-west of the western shore of Loch Shin, near Lairg (**Figure 1.3**). The Site is characterised by upland rocky hills and valleys, dominated by mire and heath habitats, and forms part of a sporting estate primarily used for fishing and deer-stalking. The area features distinct summits, two small lochs, and several watercourses.

6.6.2. No statutory designated nature conservation sites are located within the Site. However, several designated sites of ecological importance exist within 10km, as summarised in **Table 6.4**. Designated sites within the 10km areas are provided in **Figure 6.1**.

**Table 6.4: Designated Nature Conservation Sites. Only ecological qualifying features are listed.**

Site Name	Qualifying Interest Features	Distance from Consented Development
Caithness and Sutherland Peatlands SAC and Ramsar Grudie Peatlands SSSI	SAC, Ramsar site and SSSI: <ul style="list-style-type: none"> <li>blanket bog.</li> </ul> SAC only: <ul style="list-style-type: none"> <li>acid peat-stained lakes and ponds;</li> <li>clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels;</li> <li>depressions on peat substrates;</li> <li>marsh saxifrage (<i>Saxifraga hirculus</i>);</li> <li>otter;</li> <li>very wet mires often identified by an unstable 'quaking' surface; and</li> <li>wet heathland with cross-leaved heath (<i>Erica tetralix</i>).</li> </ul>	Borders eastern boundary
River Oykel SAC	<ul style="list-style-type: none"> <li>Atlantic salmon; and</li> <li>freshwater pearl mussel.</li> </ul>	3.5km south
Strath an Loin SSSI	<ul style="list-style-type: none"> <li>blanket bog.</li> </ul>	2.5km north-west
Kyle of Sutherland Marshes SSSI	<ul style="list-style-type: none"> <li>floodplain fen;</li> <li>vascular plant assemblage; and</li> <li>wet woodland</li> </ul>	4km south-west
Ben More Assynt SSSI	<ul style="list-style-type: none"> <li>mesotrophic loch;</li> <li>oligotrophic river/stream;</li> <li>upland assemblage; and</li> <li>vascular plant assemblage.</li> </ul>	10km north-west

6.6.3. The dominant habitats within the study area include wet dwarf shrub heath and blanket bog, as detailed in **Table 6.5** which summarises the results of the Phase 1 Habitat

surveys completed in 2012 and 2020. These are typical of the upland environment of the site. **Figure 6.2** provides an overview of the habitats present within the site boundary and their location and context in relation to the Proposed Varied Development.

**Table 6.5: Habitat Types and Areas**

Habitat Type	Area (ha)
Wet dwarf shrub heath	683.10
Blanket bog	520.31
Wet heath/blanket bog mosaic	370.56
Marsh/marshy grassland	170.40
Coniferous plantation woodland	60.73
Dry dwarf shrub heath - acid	31.35
Mixed plantation woodland	27.14
Acid grassland/marshy grassland mosaic	25.62
Not surveyed*	10.45
Hardstanding	9.65
Dry heath/ wet heath mosaic	9.56
Dry dwarf shrub heath/ acid grassland mosaic	7.99
Wet heath/ marshy grassland mosaic	7.38
Dry modified bog	4.3
Dry modified bog/ blanket bog mosaic	3.53
Standing water	3.51
Other habitat	3.1
Dry modified bog/ marshy grassland mosaic	2.38
Marshy grassland/ blanket bog mosaic	1.71
Semi-improved acid grassland	1.51
Wet modified bog	1.12
Recently felled woodland	0.62
Continuous bracken	0.45
Buildings	0.07
<b>Total</b>	<b>1,945.72</b>



## Habitat Type

## Area (ha)

\* Area not surveyed in 2020 due to access restrictions, however these areas within the study area are not affected by the Consented Development or Proposed Varied Development. As such, this does not affect the robustness of the baseline available for the impact assessment.

6.6.4. Further National Vegetation Classification (NVC) surveys were completed at the Site coupled to peatland condition assessment surveys in 2020 and 2021 to further quantify the value and condition of the habitats present, and the potential impacts of the Consented Development to these. Most of the areas of blanket bog were found to be modified, but some areas in better condition were identified. The results of this survey are provided in **Table 6.6**, and shown in **Figures 6.3 and 6.4**.

**Table 6.6: Peatland Habitat Condition Survey Results**

Peatland Condition	Area (ha)	% of Total Area
Modified	664	83%
Modified/Drained	27.4	3%
Modified/Drained/Actively Eroding	81.8	10%
Modified (Near Natural)	11.6	1%
Near Natural	13.3	2%

6.6.5. NVC communities with potential groundwater dependency were identified in the Consented Development EIA Report. The assessment completed for the Consented Development confirmed that these were rainwater fed rather than reliant on ground water influences (**2021 EIAR Chapter 10: Hydrology and Hydrogeology** and **Technical Appendix 10.1: GWDTE Risk Assessment**) and so are not considered further in this assessment.

6.6.6. With regards to peatland habitats, large areas of blanket bog communities recorded include M17a, M17b, and M19. The conditions of these habitats are summarised in the following bullet points.

- The majority of blanket bogs habitats recorded are modified due to grazing and historical management (e.g., burning), especially M17b, M19, and M20.
- Some areas of M17a and M17c are in better condition, indicated by the bog-mosses present.
- The least modified blanket bog is M18, considered closest to 'Near-Natural,' featuring bog pools and hummocks with intact bog-moss carpets recorded despite some grazing impacts being identified.
- Portions of M17a are near-natural due to hummock/hollow structure and surface water, though some parts are modified or drained.
- Multiple drainage ditches exist, mainly in the south of the study area; some effectively drain the bog while others are less effective.

- Certain blanket bog areas, notably degraded M17b and M3, show active erosion and drainage through erosion features.
- Overall, the blanket bog condition is mostly modified, with only c. 2% of the peatlands in a near natural condition. There is variation in the quality of the blanket bog across the site, with pockets of higher quality bog mixed with that of poorer quality drain habitat.
- Deer grazing impacts are evident and were found to be unchanged between the 2012 and 2020 surveys; erosion areas remained fairly stable.

6.6.7. Protected species surveys were completed for the Consented Development. However, as effects to protected species are not predicted to alter from construction, operation and decommissioning of the Proposed Varied Development no further information is present in this document with regards to these IEFs.

## 6.7. Summary of Effects Predicted & Mitigation Measures suggested for the Consented Development

6.7.1. **Table 6.7** below summarises the predicted effects of the Consented Development to Important Ecological Features scoped into the assessment of the Proposed Varied Development, the mitigation proposed and the significance of the effects both prior to and post implementation of any mitigation measures.

**Table 6.7: Summary of Residual Effects**

Important Ecological Feature	Predicted Effect	Significance	Mitigation	Significance of Residual Effect
<b>Construction and Decommissioning</b>				
<b>Blanket bog</b>	Direct loss and temporary damage to terrestrial habitats	<b>Significant</b>	There is the potential for significant adverse impacts arising from construction works to blanket bog habitat. The implementation of the measures contained within the Habitat Management Plan, will compensate for the loss of blanket bog and will contribute a net positive balance to the blanket bog resource within and around the site.  The DMP provides detailed measures on the management of deer numbers to help minimize damage of the blanket bog habitat both on and off- site from trampling	Not significant

Important Ecological Feature	Predicted Effect	Significance	Mitigation	Significance of Residual Effect
			and grazing.	
	Indirect disturbance and changes to composition of plant communities resulting from hydrological change	Not significant	No further mitigation beyond embedded mitigation as detailed in <b>Table 6.3</b> .	Not significant
<b>Operation</b>				

No effects identified for the Consented Development to IEFs scoped into the Proposed Varied Development's assessment within this document.

## 6.8. Revised Assessment of Effects for the Proposed Varied Development

6.8.1. Considering the information provided in the preceding sections and the changes introduced in the Proposed Varied Development, this assessment focuses solely on habitat loss and change. The potential loss and disturbance to habitats resulting from the increased size of the infrastructure will be evaluated. Since the only changes in the Proposed Varied Development relate to the infrastructure size and no significant effects were previously identified for other Important Ecological Features (IEFs) in the Consented Development, the assessment of effects on these IEFs is not expected to differ.

6.8.2. **Table 6.8** provides a summary of the effects of construction and operation to habitats from the Proposed Varied Development. The criteria used in these habitat loss calculations mirror those used for the Consented Development planning submission and a summary of the relevant parameters is provided in the below bullet points. **Technical Appendix 8.7 of the Consented Development's 2021 EIAR** provides a detailed description of the habitat loss calculations methodology and rationale.

- Direct Habitat Loss:

- Working areas at each turbine site (turbine base and hardstanding).
- Area of proposed new stone track.
- Working areas for substation, Lidar unit, and temporary development areas.

- Indirect Habitat Modification:

- Calculated as a 10m buffer around turbine bases, hardstandings access tracks and turning heads.
- Represents the worst-case scenario of habitat indirectly affected by the development.

- Temporary Habitat Loss:

- Includes temporary laydown areas, borrow pit search areas and construction compounds.
- Areas surrounding built infrastructure subject to physical disturbance (e.g., drainage ditches, cable trenches, banked cut faces).
- A 4m buffer around all infrastructure for machinery operation outside the permanent footprint.
- These temporarily affected areas will be restored according to the outline Construction Environmental Management Plan (CEMP).

**Table 6.8: Summary of Habitat Loss Calculation Results for the Proposed Varied Development.**

Proposed Varied Development						
Phase 1 habitat type	Total areas of habitat within Study Area (Ha)	Direct Habitat Loss (Ha)	Temporary habitat loss /disturbance (Ha)	Indirect habitat modification (Ha)	Total area of habitat affected (ha)	% of total habitat in footprint affected by construction
D2: Wet dwarf shrub heath	455.52	9.21	22.92	7.30	39.43	8.66%
E1.6.1: Blanket bog	261.44	6.72	14.64	6.58	27.94	10.69%
D2 E1.6. Wet dwarf shrub heath Blanket bog mosaic	162.75	2.08	6.66	2.21	10.95	6.73%
B5: Marsh/marshy grassland	74.46	1.89	2.06	1.38	5.33	7.16%
B2.1 B5: Neutral grassland - unimproved Marsh/marshy grassland mosaic	2.16		2.13		2.13	98.71%
J5: Other habitat	1.64		1.56		1.56	95.40%
A1.2.2: Coniferous woodland - plantation	2.08		0.55		0.55	26.35%
C1.1: Continuous bracken	0.88	0.24	0.04	0.05	0.33	37.42%

Proposed Varied Development						
Phase 1 habitat type	Total areas of habitat within Study Area (Ha)	Direct Habitat Loss (Ha)	Temporary habitat loss /disturbance (Ha)	Indirect habitat modification (Ha)	Total area of habitat affected (ha)	% of total habitat in footprint affected by construction
D2 B5 Wet dwarf shrub heath / marshy grassland mosaic	2.35		0.12		0.12	5.13%
D1.1: Dry dwarf shrub heath - acid	10.85	0.04	0.08	0.09	0.21	1.98%
E1.8 E1.6 Mosaic bare peat blanket bog	1.32	0.00	0.01	0.01	0.02	1.86%
<b>TOTALS</b>	519.93	20.18	50.77	17.63	88.58	

6.8.3. As summarised in **Table 6.3**, embedded mitigation has sought to reduce the impacts of the Proposed Varied Development during its design stage through, wherever possible, locating infrastructure in areas of least sensitive habitats. As detailed within **Table 8.15 of Chapter 8 of the Consented Development's 2021 EIAR**, of the c.800 ha of blanket bog present, only 13.3 ha of this habitat is in a near natural condition (1.67%). The remaining c. 787 ha of blanket bog habitats are in a degraded and modified condition, and the priority has been to avoid all deep peat areas. Where effects to areas of peatland are unavoidable, the development only affects degraded blanket bog. Areas of near natural blanket bog have been avoided and impacts on peat have been minimised as per the mitigation hierarchy.

6.8.4. Further consideration has been given to reducing effects to habitats through the construction and operational phases of the development through the implementation of both Construction and Operational Environmental Management Plans, Peat Management Plan (PMP) as committed to in the Consented Development's planning submission and secured through appropriate conditions to the consent as summarised in **Table 6.2**.

6.8.5. In consideration of the potential effects of the Proposed Varied Development to habitats, given the predicted quantum of habitats lost or affected by construction of the Proposed Varied Development, only wet dwarf shrub heath (39.43 ha), blanket bog (27.94 ha) and

wet dwarf shrub heath / blanket bog mosaic (10.95 ha) are considered as of conservation value and therefore considered further in this assessment of effects. These equate to 78.32 ha of the total 88.58 ha of the overall predicted effect of the Proposed Varied Development.

- 6.8.6. Wet dwarf shrub heath and blanket bog habitats are peatland habitats, classified as priority habitats within the Scottish Biodiversity List, Annex 1 Habitats under The Conservation of Habitats and Species Regulations (2017) as amended (Habitat Regulations), Nature Conservation (Scotland) Act (2004) and National Planning Framework 4 (NPF4) when on peat of a depth greater than 50cm. Given the wide ranging protection afforded to these habitats within the region, the Conservation Value of the habitats, considering their poor condition, is considered to be National, however given these are common for the region, this conservation value is thereby reduced to a level of Regional.
- 6.8.7. **Table 6.8** provides an assessment of the total area of habitat types present within the site boundary (survey area) and the percentage total of these to be affected by the Proposed Varied Development. These are 8.66% (wet dwarf shrub heath), 10.69% (blanket bog) and 6.73% (wet dwarf shrub heath / blanket bog mosaic). Considering this, the magnitude of the impact is considered to be medium.
- 6.8.8. Considering the sensitivity of the IEF and the currently degraded nature of the habitats, and the magnitude of the impact, the predicted effect of the Proposed Varied Development to these is assigned as **Moderate Adverse (significant)**.

## 6.9. Revised Mitigation Measures for the Proposed Varied Development

- 6.9.1. Proposed mitigation measures for the Consented Development are summarised in **Table 6.3** for the IEFs scoped into the assessment for the Proposed Varied Development. Specifically in relation to impacts to habitats and the associated effects, embedded mitigation measures have been considered in the initial assessment of effects in Section 6.8 above.
- 6.9.2. Further compensation and enhancement is required to reduce the potential effects of the Proposed Varied Development to the IEFs identified, and in compliance with NPF4 provide significant enhancement for biodiversity. Biodiversity Net Gain (BNG) has been assessed in line with NPF4 and is detailed in **Technical Appendix 6.1: Biodiversity Net Gain Assessment**.
- 6.9.3. The Consented Development's proposed Habitat and Deer Management Plans sought to provide proportional but robust compensation and enhancement in consideration of the predicted effects. Key parameters of the plans are:

### Deer Management Plan (DMP)

- Provides detailed measures to manage deer numbers on and around the site.
- Aims to minimise damage to blanket bog habitat caused by trampling and grazing.
- Supports sustainable deer populations to prevent overgrazing and promote habitat recovery.
- Works in conjunction with habitat management proposals to improve habitat quality.

### Habitat Management Plan

- Provided to conserve, enhance, and restore degraded or modified blanket bog habitats.
- Proposes restoration and enhancement of approximately 307 hectares of blanket bog.
- Restoration measures include:
  - Reinstating natural drainage patterns to restore hydrology.
  - Encouraging re-vegetation of bog surfaces.
  - Monitoring of water table levels and vegetation condition.
- Habitat management aims to contribute a net positive balance to the blanket bog resource within and around the site.
- The HMP and DMP are designed to work together to ensure habitat restoration success by balancing vegetation recovery with sustainable deer grazing pressure.

6.9.4. In consideration of the predicted effects of the Proposed Varied Development and the requirements of NPF4 to provide significant enhancements for biodiversity, it is considered that the measures proposed in the Habitat Management Plan and Deer Management Plan to support the Consented Development remain robust and proportionate to the predicted effects from the Proposed Varied Development. .

6.9.5. To support this, the baseline biodiversity value at the Proposed Development has been calculated at 3694.30BU (refer to **Technical Appendix 6.1**). During construction it is anticipated that the Proposed Development will incur a decrease in area-based biodiversity value by minus 962.25BU (against the baseline value). The decrease in BU's is a result of the permanent construction footprint, the temporary loss of habitats e.g. construction compounds and indirect habitat modification (out to 10m). This temporary decrease in biodiversity value is however offset by the re-instatement and enhancement (peatland restoration) of area-based habitats proposed within the Consented Development's outline HMP, which fully compensates for the loss in biodiversity units during construction (-962.25BU) and permanent habitat change (footprint), to deliver increases in biodiversity value by +536.49BU (**+15%**) on top of the baseline biodiversity value. The final biodiversity value, post development is anticipated to be 4230.78BU. It should be noted that opportunities for further biodiversity enhancement are being explored e.g. riparian planting and should be included in the Proposed Varied

Development's final HMP should the necessary agreements be finalised. The BNG assessment can be updated to reflect any changes to the final HMP.

- 6.9.6. The proposed 307ha area proposed within the Consented Development HMP to be taken under management for the restoration and enhancement of blanket bog habitats is significantly greater than the area affected by the Proposed Varied Development (27.94ha, **Table 6.8**) of which only 6.72ha will be directly lost beneath the footprint of the development. Management of deer will further reduce impacts to wet heath and blanket bog habitats allowing the quality and quantity of these to increase within the site and wider landscape. The proposed restoration search areas presented within the HMP will continue to be brought forwards for the Proposed Varied Development. These will be further ground truthed to provide a detailed scheme for inclusion in the Proposed Varied Development's Detailed Habitat Management Plan, which is proposed to be a condition of consent.
- 6.9.7. The implementation of these measures will reduce the effects of the Proposed Varied Development to habitats and provide a net beneficial effect to these, and wider biodiversity as required by NPF4. The residual impact from the Proposed Varied Development to habitats is predicted as minor beneficial (not significant).

## 6.10. Comparison of Effects of the Proposed Varied Development with the Effects of the Consented Development

- 6.10.1. Prior to mitigation measures both the Proposed Varied Development and Consented Development are predicted to have a Significant Effect on peatland habitats. The implementation of appropriate Habitat Management and Deer Management Plans to provide appropriate mitigation, compensation and enhancement to these receptors and have, in both cases, provided a beneficial effect to the IEFs as required by NPF4, improving the significance of effect in both cases to minor (beneficial).

## 6.11. Cumulative Effects

- 6.11.1. Cumulative effects have been considered for the Proposed Varied Development as with the Consented Development. The Consented Development considered developments within a 10km buffer which was limited to the Braemore, Sallachy and Meall Buidhe Wind Farms (**Table 8.13 of the Consented Developments EIAR**).
- 6.11.2. For the Proposed Varied Development it is considered that there is no alteration to the previously completed assessment of cumulative effects; no significant cumulative effect.
- 6.11.3. As detailed in previous sections of this Chapter, effects to protected species have been scoped out of the assessment as the changes within the Proposed Varied Development's design would not alter the conclusions of the assessment made for the Consented Development with regards to these; no significant cumulative effect.



- 6.11.4. Cumulative effects to habitats were scoped out of the assessment for the Consented Development, as stated in paragraph 8.11.3 of the Consented Development's EIAR; "With embedded mitigation measures (Table 8.11), any effects on habitats due to the Proposed Development are not anticipated to extend beyond the Site."
- 6.11.5. It is considered that this remains true for the Proposed Varied Development. Any development within the 10km buffer of the Proposed Varied Development would provide appropriate mitigation, compensation and enhancement in compliance with relevant legislation and guidance so that consideration of cumulative effects is not necessary.

## 6.12. Conclusion

- 6.12.1. This chapter has identified likely effects of the construction and operation of the Proposed Varied Development to Important Ecological Features and how these may differ from those predicted for the Consented Development. Only peatland habitats were identified as an IEF whose effect may differ from those predicted for the Consented Development. Effects to all other previously identified IEFs were determined to remain as previously predicted for the Consented Development.
- 6.12.2. An assessment of the effects to peatland habitats has been completed, informed by a robust baseline derived from comprehensive desk studies and field surveys previously undertaken for the Consented Development.
- 6.12.3. The ecological baseline comprises predominantly upland habitats including wet dwarf shrub heath, blanket bog, and wet heath/blanket bog mosaics, which are recognised as priority habitats under relevant UK and Scottish legislation and planning policy. Designated sites of international and national importance, such as the Caithness and Sutherland Peatlands SAC and River Oykel SAC, lie adjacent to or near the Site, however it is determined that the effect of the Proposed Varied Development to these would not differ from that of the Consented Development.
- 6.12.4. The assessment has demonstrated that the effects identified for peatlands for the Proposed Varied Development were comparable to those identified for the Consented Development, and a beneficial (**not significant**) residual effect was identified for the Proposed Consented Development after additional mitigation and compensation measures were considered. Furthermore, the Proposed Varied Development has been designed to avoid areas of highest ecological sensitivity where possible, instead affecting peatland that it is in a modified or degraded condition.
- 6.12.5. Mitigation and compensation measures secured through planning conditions for the Consented Development, including a detailed Construction Environmental Management Plan, Peat Management Plan, Habitat Management Plan and Deer Management Plan, remain appropriate and effective for the Proposed Varied Development. These measures aim to minimise construction impacts, ensure protection of key species and habitats, and deliver net positive biodiversity outcomes in line with NPF4 requirements.

- 6.12.6. A BNG assessment at +15% above baseline provides confidence that the Proposed Development will achieve demonstrably positive effects for biodiversity, in accordance with NPF4 Policy 3, and the site will be left in a measurably better state than beforehand.
- 6.12.7. Predicted effects on other protected species such as otter, water vole, and bats remain negligible or not significant **for the Proposed Varied Development due to embedded mitigation and the absence of new significant impacts arising from the varied elements.**
- 6.12.8. Cumulative effects with other nearby developments have been considered and are not anticipated to differ materially from those previously assessed for the Consented Development, given the similarity in the scale and nature of impacts and the enhanced mitigation proposals.
- 6.12.9. In summary, with the implementation of embedded and secured mitigation, compensation, and enhancement measures, the Proposed Varied Development is not expected to result in any new or materially different significant adverse ecological effects compared to the Consented Development. The proposals align with best practice guidance and statutory policy, ensuring that biodiversity conservation and restoration are integral to the development lifecycle.

## 6.13. References

Chartered Institute of Ecology and Environmental Management (CIEEM). (2018). *Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland: Terrestrial, Freshwater, Coastal and Marine* (Version 1.3). CIEEM, Winchester.

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