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¹ Will not be published with the EIA Report due to the potential risk to protected species. However, will be issued to the Scottish Ministers, The Highland Council, Royal Society for the Protection of Birds and NatureScot.

8. ECOLOGY

8.1 Executive Summary

- 8.1.1 This Chapter considers the potential impacts of the Proposed Development on non-avian ecology including designated sites, terrestrial and aquatic habitats, and protected species. The assessment is based on best practice guidance including the Chartered Institute for Ecology and Environmental Management's (CIEEM) Guidelines for Ecological Impact Assessment in the UK and Ireland (2022).
- 8.1.2 The scope of the ecological assessment and baseline conditions were determined through a combination of desk study, field surveys, and consultation with relevant organisations. This process established ecological features that could potentially be impacted by the Proposed Development.
- 8.1.3 There are a number of designated sites and areas of ancient woodland within 5km of the site. Most of the study area consists of degraded and actively eroding blanket bog, with wet heath, acid grassland and bare peat also present. Evidence of protected species including hare, otter, red squirrel, reptiles and water vole was recorded during surveys. A number of watercourses are present which provide some suitability for non-migratory brown trout populations; all watercourses on site are inaccessible to migratory species due to impassable barriers.
- 8.1.4 The Proposed Development has been designed to minimise impacts on important habitats, peatland and protected species as far as practicable. This has been achieved through embedded mitigation and the iterative design process. This process, combined with further commitments to certain mitigation measures pre-construction, during construction, and post-construction / during operation, allowed potential effects on several habitats and species present to be scoped-out of the assessment. The following Important Ecological Features (IEFs) were taken forward to the assessment stage: blanket bog and wet heath.
- 8.1.5 Assessment of potential effects and their significance were determined through consideration of the sensitivity of the feature and magnitude of change / effect. The most tangible effect during construction of the Proposed Development on most IEFs would be direct habitat loss due to the construction of infrastructure, in addition to some potential indirect drainage effects. The assessment concluded that there would be a **Minor adverse** and **Not Significant** effect on blanket bog and wet heath. No significant operational, decommissioning or cumulative effects were identified.
- 8.1.6 An Outline Habitat Management Plan (OHMP) for the Proposed Development would be developed to compensate for the effects on blanket bog and wet heath, and further enhance habitats. With the implementation of the HMP, overall effects on blanket bog and wet heath would be beneficial with the restoration and enhancement of habitats.
- 8.1.7 A detailed assessment of the impacts on the qualifying features of the River Spey SAC has been undertaken in a Shadow Habitats Regulations Appraisal (HRA) for the Proposed Development to meet the requirements of the Conservation of Habitats and Species Regulations (the 2017 Habitat and Species Regulations).

8.2 Introduction

- 8.2.1 This Chapter considers the potential effects of the Proposed Development on non-avian ecology, including designated sites, terrestrial and aquatic habitats, and protected species.
- 8.2.2 This ecological assessment has been carried out by MacArthur Green using guidance from NatureScot (SNH, 2018) and the Chartered Institute of Ecology and Environmental Management (CIEEM, 2022). All staff contributing to this Chapter have professional experience in ecological survey and ecological impact assessment (see **Appendix 5.1** for further team details).

- 8.2.3 This Chapter is supported by a series of figures and appendices. There is a Confidential Annex to one of the appendices and a Confidential Figure which will not be published with the EIA Report due to the potential risk to protected species. However, will be issued to the Scottish Ministers, The Highland Council, Royal Society for the Protection of Birds and NatureScot.
- 8.2.4 A detailed assessment of the impacts on the qualifying features of the River Spey Special Area of Conservation (SAC) has been undertaken in a Shadow HRA for the Proposed Development, to meet the requirements of the 2017 Habitat and Species Regulations and is included as **Appendix 8.1**.

8.3 Scope of Assessment

- 8.3.1 This Chapter considers the potential effects of the Proposed Development on the following ecological features identified during the review of desk-based information and field surveys:
- designated nature conservation sites – effects include direct (i.e., derived from land-take or disturbance to habitats or protected species) and indirect (i.e., habitat fragmentation and modification, including through changes caused by impacts to supporting systems such as groundwater or overland flow);
 - terrestrial habitats – effects include direct (i.e., derived from land-take) and indirect (i.e., habitat fragmentation and modification, including through changes caused by impacts to supporting systems such as groundwater or overland flow);
 - aquatic habitats – effects are limited to the ecological impacts of changes in water conditions through potential pollution effects (hydrological effects are considered in **Chapter 10 - Geology, Hydrology and Hydrogeology**); and
 - protected species and other notable species – effects considered include direct (i.e., loss of life; loss of key habitat; displacement from key habitat; barrier effects / fragmentation of key habitat preventing movement to / from key habitats; and general disturbance) and indirect (i.e., loss / changes of / to food resources; population fragmentation; degradation of key habitat e.g., as a result of pollution).
- 8.3.2 The area in which the Proposed Development would be sited is shown on **Figure 3.1** and includes areas for all temporary and permanent infrastructure (i.e., the 'site'), including Limits of Deviation (LoD) (i.e., the 'study area', for ecology).
- 8.3.3 The assessment is based on the description of the Proposed Development that is provided in **Chapter 3 - The Proposed Development**. This assessment also takes into consideration the routing process, which sought to avoid important ecological features where possible, as described in **Chapter 2 - Routing Process and Alternatives**. The scope of the assessment has been informed by consultation, included in **Chapter 4 - Scope and Consultation**, and appropriate policy, legislation and guidance, included in **Chapter 6 - Planning Policy and Energy Policy Context** (particular with respect to National Planning Framework 4 (NPF4; Scottish Government (2023a) and Local Development Plan policy) and other legislation, policy and guidance relevant to ecology as set out in paragraph 8.5.1.

Elements Scoped Out of Assessment

- 8.3.4 On the basis of the professional judgement of the EIA team, experience from other relevant projects and policy guidance or standards, and feedback received from consultees, generally common and widely distributed habitats or species which do not fall within the following categories were scoped out of the detailed assessment:
- Habitats listed in Annex I to the Habitats Directive, and species listed in Annex II to the Habitats Directive (i.e. European Union Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora);
 - Biodiversity Action Plan (UKBAP) or Scottish Biodiversity List (SBL) Priority Habitats; and
 - Habitats or species protected by other legislation such as The Wildlife and Countryside Act 1981 (as amended), the Nature Conservation (Scotland) Act 2004 (as amended), or The Protection of Badgers Act 1992.

8.3.5 Further ecological features and potential effects have been scoped out of the detailed assessment based on the results of the desk based study and survey work undertaken for the Proposed Development, due to a lack of potential significant effect at a relevant species population or habitat extent scale. Details of ecological features and effects scoped out after further data searches and post-survey are provided in paragraphs 8.8.3 to 8.8.29.

8.4 Consultation

8.4.1 Full details of the consultation process and responses are included in **Chapter 4 - Scope and Consultation** and associated appendices, with specific scoping responses relating to ecology included in Error! Reference source not found. overleaf.

Table 8.1: Scoping Responses

Organisation & Date	Summary of Consultation Response	EIA/Design Response to Consultee
NatureScot 21/11/2023	<p>The Proposed Development is partly within the River Spey Special Area of Conservation (SAC) catchment and crosses a number of watercourses which drain into the Spey. Would recommend a HRA and standard pollution mitigation. Notes the scoping report contains useful information on the likely presence of salmonids.</p>	<p>Assessment of impacts on the qualifying features of the River Spey SAC has been undertaken in a Shadow HRA for the Proposed Development and is included as Appendix 8.1.</p> <p>Standard pollution prevention and silt control measures included in embedded mitigation (from paragraph 8.6.32).</p> <p>Baseline data on likely presence of salmonids included in paragraph 8.7.16.</p>
	<p>It is recommended for Creag Meagaigh Site of Special Scientific Interest (SSSI), Monadhliath SSSI that the potential for deer displacement to indirectly affect protected areas (and peatland habitats) is considered in line with NatureScot guidance.</p>	<p>Impacts of deer on neighbouring habitats considered in paragraph 8.8.26.</p>
	<p>The NVC surveys to cover the whole development site, including target notes for notable plant species. This information should be used to inform the design layout process to avoid sensitive habitats such as blanket bog and montane heath. If this is not possible, impacts should be minimised and suitable mitigation, restoration and/or compensation measure be proposed.</p> <p>Assessment of the loss and damage should be presented in Outline Habitat Management Plan (OHMP) and Peat Management Plan (PMP).</p>	<p>Detailed results from NVC surveys and associated target notes (including for notable species) are included in Appendix 8.2 and Figure 8.3a-s, with a summary provided within this chapter. Results from the surveys were used to inform the iterative design process and avoid or minimise impacts on sensitive habitats where practicable. While impacts on blanket bog are unavoidable in this landscape and site setting, impacts on lichen/bryophyte heath and montane heath/dwarf herb communities have been completely avoided (see Table 8-8).</p> <p>Compensation and enhancement for loss of peatland habitat will be presented in a HMP (outline provided as Appendix 8.4).</p> <p>A Peat Management Plan (PMP) is provided as Appendix 10.2, appended to Chapter 10 – Geology, Hydrology and Hydrogeology.</p>
	<p>Assessment of the peatland condition in line with the new guidance, is recommended to be included, in addition to the NVC data. Acknowledged that the survey work for this proposal was completed in advance of this guidance being published.</p>	<p>Peatland condition is considered in paragraph 8.7.29. In line with guidance (NatureScot, 2023a), the mitigation hierarchy has been followed for peatlands as far as practicable for a Proposed Development in the prevailing setting.</p>

Table 8.1: Scoping Responses

	<p>The Proposed Development is over 600m in places, which could include montane bog. Impacts to this habitat should be avoided.</p>	<p>Habitat surveys recorded the presence of NVC community M19c above 600m in altitude which generally and broadly correlates to montane bog. Detailed survey results are included in Appendix 8.2.</p> <p>The routeing and alignment selection process for the Proposed Development has taken into consideration the potential for significant effects on ecological features such as montane bog, and for such effects to be avoided or minimised where possible. This has continued through the EIA process, with survey data informing the siting of infrastructure and access routes to further minimise effects on habitats and species where practicable. This process is detailed in Chapter 2 – Routeing Process and Alternatives.</p> <p>Potential loss of habitat by NVC community is detailed in Table 8-8. The impact assessment on blanket bog habitat, including M19c, is detailed from paragraph 8.8.39.</p>
	<p>Advise where impacts on priority peatland habitats cannot be avoided, restoration to achieve offsetting should be in the order of 1:10.</p>	<p>Noted. The compensation and enhancement proposals for the Proposed Development are set out within the OHMP (Appendix 8.4).</p>
<p>SEPA 16/11/2023</p>	<p>Groundwater Dependant Terrestrial Ecosystems</p> <p>The final submission should provide an assessment of whether the habitats are actually considered groundwater dependant and mitigation measures applied.</p>	<p>GWDTE identification is discussed in paragraph 8.7.35, and GWDTEs are assessed in Chapter 10 - Geology, Hydrology and Hydrogeology.</p>
	<p>The outline HMP should include proposals for reuse of disturbed peat in habitat restoration, if relevant; details of restoration to compensate for the area of peatland habitat directly and indirectly impacted by the development; outline proposals for peatland enhancement in other areas of the site; and monitoring proposals.</p>	<p>Compensation and enhancement for loss of peatland habitat will be presented in a HMP (OHMP provided as Appendix 8.4).</p> <p>Re-use of disturbed peat is also considered in the PMP, provided as Appendix 10.2.</p>
	<p>The Peatland Condition Assessment photographic guide should be used to identify peatland in near natural condition, and can help identify areas for peatland restoration.</p>	<p>Peatland condition is summarised in paragraph 8.7.29, see also further detailed information in Appendix 8.2.</p>

Table 8.1: Scoping Responses

<p>SEPA</p> <p>Further pre-application correspondence of 26/12/2023</p>	<p>Making use of existing infrastructure, or existing disturbed areas is welcomed. Comments on site layout provided. The layout that comes forward at the application stage to clearly show how impacts on deeper peat (and good quality habitat) have been minimised and there are a small number of areas where this could be improved based on the information now provided.</p>	<p>SEPA comments were taken on board, and adjustments were subsequently made to the layout of the Proposed Development to microsite infrastructure onto shallower peat or further from watercourses, where these changes could be accommodated – see Chapter 2 - Routeing Process and Alternatives.</p>
<p>The Highland Council</p> <p>29/02/2024</p>	<p>The EIAR should provide an account of the habitats present on the proposed development site. It should identify rare and threatened habitats, and those protected by European or UK legislation, or identified in national or local Biodiversity Action Plans. Habitat enhancement and mitigation measures should be detailed. Details of any habitat enhancement should be provided.</p>	<p>An account of the habitats present is presented in this Chapter and Appendix 8.2.</p> <p>Habitat enhancement and mitigation measures are discussed in this Chapter and Appendix 8.4.</p>
	<p>The presence of protected species such as European Protected Species must be included and considered as part of the application process.</p> <p>Surveys for other protected species will be required, including badger and pine marten. Should any mature trees require work to facilitate this proposal, red squirrel and bats should be considered.</p>	<p>Protected species have been surveyed for and considered in line with relevant methodologies and guidance. Results are summarised in this Chapter with full details of surveys and results presented in Appendix 8.3.</p>
	<p>The EIAR should address the likely impacts on the nature conservation interests in the vicinity of the proposed development. It should provide proposals for any mitigation that is required to avoid these impacts or to reduce them to a level where they are not significant.</p>	<p>Noted – this is covered throughout this Chapter.</p>
	<p>The potential impact of the development proposals on designated sites should be carefully and thoroughly considered and, where possible, appropriate mitigation measures outlined in the EIAR.</p>	<p>Designated sites are considered within this Chapter, see also Appendix 8.1.</p>
	<p>The EIAR needs to address the aquatic interests within local watercourses, including downstream interests that may be affected by the development, for example increases in silt and sediment loads resulting from construction works; pollution risk / incidents during construction; obstruction to upstream and downstream migration both during and after construction; disturbance of spawning beds / timing of works; and other drainage issues.</p>	<p>Noted. Covered in this Chapter and Chapter 10 - Geology, Hydrology and Hydrogeology.</p>

Table 8.1: Scoping Responses

	River Spey SAC - An otter survey is to be undertaken in suitable areas of habitat within 200m of the proposals. Consideration of freshwater pearl mussels is required.	An otter survey was undertaken in line with relevant methodologies and guidance. Results are summarised in this Chapter with full details of surveys and results presented in Appendix 8.3 . Freshwater pearl mussel is discussed in this Chapter and Appendix 8.1 .
	Monadhliath SAC, Creag Meagaidh SAC, Monadhliath SSSI and Creag Meagaidh SSSI - appears unlikely that they would be affected by the Proposed Development this should be confirmed.	These designated sites are considered to have no connectivity with the Proposed Development – see paragraph 8.8.3.
	An NVC survey should be carried out of the sites and within 250m from any proposed infrastructure. The development should avoid direct impacts on any rare groundwater dependant habitats and protect their water supply. If relevant, the mitigation measures required to protect surrounding GWDTE habitats from the impacts of development (such as drying out) should be outlined.	A NVC survey was carried out, as summarised in this Chapter and detailed within Appendix 8.2 . An assessment of GWDTEs is provided as part of Chapter 10 - Geology, Hydrology and Hydrogeology .
Energy Consent Unit 01/03/2024	Marine Directorate – Science Evidence Data and Digital (MD-SEDD) provide generic guidelines and standing advice for overhead line development which outline how fish populations can be impacted during the construction, operation and decommissioning of a wind farm development or overhead line development and informs developers as to what should be considered, in relation to freshwater and diadromous fish and fisheries, during the EIA process. Requirement to complete a checklist prior to the submission of the application.	MD-SEDD standing advice and guidance has been noted and fisheries interests discussed where appropriate in this Chapter and Appendix 8.1 , with watercourses also discussed in Chapter 10 - Geology, Hydrology and Hydrogeology . MD-SEDD checklist completed and included with application.

8.5 Legislation, Policy and Guidance

8.5.1 Relevant legislation, policy and guidance documents have been reviewed and taken into account as part of this assessment and those of particular relevance are listed below.

Legislation

- European Union Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (Habitats Directive);
- European Union Council Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy (Water Framework Directive);
- Environmental Impact Assessment Directive 85/337/EEC, as amended (EIA Directive) (as subsequently codified by Directive 2011/92/EU, as amended by Directive 2014/52/EU);
- The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017;
- The Conservation of Habitats and Species Regulations 2017;
- The Conservation (Natural Habitats &c.) Regulations 1994 (as amended) (the Habitats Regulations);
- Water Environment and Water Services (Scotland) Act 2003 (WEWS);

- Nature Conservation (Scotland) Act 2004 (as amended);
- Wildlife and Natural Environment (Scotland) Act 2011 (WANE);
- The Water Environment (Controlled Activities) (Scotland) Amendment Regulations 2013 (CAR);
- Salmon and Freshwater Fisheries (Consolidation) (Scotland) Act 2003;
- Wildlife and Countryside Act 1981 (as amended); and
- Protection of Badgers Act 1992.

National Policy

- Joint Nature Conservation Committee (JNCC) and Department for Environment, Food and Rural Affairs (DEFRA) (2012). UK Post-2010 Biodiversity Framework;
- Scottish Government (2023a). National Planning Framework 4; and
- Scottish Government (2023b). Scottish Biodiversity Strategy to 2045. Tackling the Nature Emergency in Scotland.

Guidance and Information

- CIEEM (2022). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Version 1.2;
- Collins, J. (2016). Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition)²;
- Highland Council (2023). Biodiversity Planning Guidance: Draft for public consultation;
- Highland Environment Forum (2021). Highland Nature: Biodiversity Action Plan 2021 – 2026;
- JNCC (2019a). Guidelines for selection of biological Sites of Special Scientific Interest (SSSI);
- Scottish Badgers (2018). Surveying for Badgers: Good Practice Guidelines. Version 1;
- SEPA (2017a). Land Use Planning System Guidance Note 31 – Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems;
- SEPA (2017b). Land Use Planning System Guidance Note 4 – Planning guidance on on-shore windfarm developments;
- Scottish Executive (2000). Nature conservation: implementation in Scotland of EC Directives on the conservation of natural habitats and of wild flora and fauna and the conservation of wild birds ('The Habitats and Birds Directives'). Revised guidance updating Scottish Office Circular no. 6/1995;
- Scottish Executive Rural Affairs Department (SERAD) (2001). European Protected Species, Development Sites and the Planning Systems: Interim guidance for local authorities on licensing arrangements;
- Scottish Government (2016a). Draft Peatland and Energy Policy Statement;
- Scottish Government (2017a). Planning Advice Note 1/2013 – Environmental Impact Assessment, Revision 1.0;
- Scottish Government (2017b). Planning Circular 1/2017: Guidance on The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017;
- Scottish Government, SNH, SEPA (2017). Peatland Survey – Guidance on Developments on Peatland;
- Scottish Government (2019). The Scottish Forestry Strategy 2019-2029;
- Scottish Government (2020a). EU Exit: The Habitat Regulations in Scotland;
- Scottish Government (2020b). Securing a green recovery on a path to net zero: climate change plan 2018–2032 – update;
- Scottish Government (2020c). Update to the Climate Change Plan 2018-2032;

² Methods and analysis followed the 3rd edition of the Bat Conservation Trust survey guidelines as surveys were completed before the 4th edition guidelines (Reason & Wray, 2023) were published in September 2023.

- Scottish Government (2021). Freshwater and diadromous fish and fisheries associated with onshore wind farm and transmission line developments: generic scoping guidelines;
- Scottish Government (2023c). Biodiversity: draft planning guidance.
- SNH (2015). Scotland's National Peatland Plan;
- SNH (2016a). Planning for Development: What to consider and include in deer assessments and management at development sites (Version 2);
- SNH (2016b). Planning for Development: What to consider and include in Habitat Management Plans. Version 2;
- SNH (2018). Environmental Impact Assessment Handbook – Version 5: Guidance for competent authorities, consultation bodies, and others involved in the Environmental Impact Assessment process in Scotland; and
- NatureScot (2023a). Advising on peatland, carbon-rich soils and priority peatland habitats in development management.

8.6 Methodology

Desk Study

8.6.1 A desk study was undertaken to collate available ecological information in relation to the Proposed Development and surrounding environment. This comprised a search of available online datasets and desk study resources, and consultation with other organisations. The following data sources were considered as part of the determination of scope of baseline surveys and assessment:

- National Biodiversity Network (NBN) Atlas Scotland (NBN, 2023) for protected or notable species records within 5km of the Proposed Development Area from the last 15 years (i.e., 2008 and onwards);
- NatureScot Sitelink (NatureScot, 2023b) for information regarding designated sites located within 5km of the Proposed Development;
- Ancient Woodland Inventory (AWI) (Scotland) (Scottish Government, 2023d) for ancient woodland sites located within 5km of the Proposed Development;
- Scotland's Environment Map for the Carbon and Peatland 2016 Map (Scottish Government, 2016b);
- Scottish Environment Protection Agency (SEPA) Water Environment Hub (SEPA, 2023) for watercourse classification;
- Highland Nature Biodiversity Action Plan 2021-2026 (Highland Environment Forum, 2021);
- Saving Scotland's Red Squirrels website for local species records and Priority Areas for Red Squirrel Conservation (Saving Scotland's Red Squirrels, 2023);
- Deer Distribution Survey results (British Deer Society, 2023);
- the EIA and associated documents for Cloiche (SSE, 2020), Dell (Coriolis Energy, 2014), Stronelairg (SSE, 2012) and Glenshero (Simec Wind One Ltd and RES Ltd, 2018) wind farms;
- data recorded by Ecological Clerk of Works (EcoW) during ground investigation (GI) works; and
- relevant scientific literature on protected species, habitats distribution and conservation status etc.

Field Surveys

8.6.2 The following field surveys were undertaken to further establish the baseline ecological conditions at the Proposed Development (plus appropriate buffers where relevant) to inform the appraisal, and were undertaken in line with standard methodologies and best practice guidance (respective survey areas shown in **Figures 8.3a-s** and **8.5a-h**):

- NVC surveys, incorporating Phase 1 habitat characterisation (October and November 2022);

- Protected species surveys focusing on bats (preliminary roost assessments (PRA)), badger (*Meles meles*), red squirrel (*Sciurus vulgaris*), water vole (*Arvicola amphibius*), otter (*Lutra lutra*), and pine marten (*Martes martes*) (October and November 2022); and
- Incidental records of other protected species, such as signs or features of particular importance e.g. potential signs of wildcat (*Felis silvestris*), or potential hibernacula for reptile, notable species, or invasive non-native species (INNS), were also recorded during field surveys.

8.6.3 The full details of survey methods, species-specific legislation and results are provided within **Appendix 8.2** and **Appendix 8.3**.

8.6.4 Surveys for beaver (*Castor fiber*) and great crested newt (*Triturus cristatus*) were scoped out of field surveys due to the absence of suitable habitat or the Proposed Development being located outwith the known range or distribution of these species³.

Methodology of the Assessment of Effects

8.6.5 The significance of the potential effects of the Proposed Development has been classified by professional consideration of the sensitivity of the ecological features and the spatial and temporal magnitude of the potential effect.

8.6.6 The assessment method follows the process set out in CIEEM (2022), the *Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017*, referred to hereafter as the 'EIA Regulations' and guidance on the implementation of the EU Birds and Habitats Directive (SERAD, 2001).

8.6.7 The assessment involves the following process:

- identification of the potential effects of the Proposed Development on ecological features, including both beneficial and adverse;
- considering the likelihood of occurrence of potential effects;
- defining the nature conservation value and conservation status of the ecological features present to determine sensitivity;
- establishing the magnitude of change associated with the potential effect (both spatial and temporal);
- based on the above information, making a professional judgement as to whether or not the resultant effect is significant in terms of the EIA Regulations;
- if a potential effect is determined to be significant, measures to avoid or reduce the effect are considered;
- considering opportunities for enhancement where appropriate; and
- confirming residual effects after mitigation, and considering appropriate proposals for compensation.

Sensitivity of Receptors

8.6.8 The sensitivity of the baseline conditions, including the importance of environmental features on or near to the Proposed Development or the sensitivity of potentially affected receptors, will be assessed in line with best practice guidance, legislation, statutory designations and / or professional judgement.

8.6.9 Determination of the level of sensitivity of an ecological feature is based on a combination of the feature's nature conservation value and conservation status. Nature conservation value is defined on the basis of the geographic context given in **Table 8.2** (which follows the guidance as detailed within CIEEM, 2022).

³ There are currently no beaver in the River Spey catchment, but there are plans to release the species in the upper River Spey at sites between Aviemore and Kingussie (NatureScot licence approved December 2023). Simulation modelling predicts that with 10 families being released, they would still be over 30km from the Proposed Development after 10 years (NatureScot, 2023d).

- 8.6.10 Determination of the level of importance of ecosystems, habitats and species is based on professional judgement and a combination of factors, such as level of protection, rarity, conservation status, population trends, and quality / extent of the feature on site. Published evaluation criteria (e.g., the Scottish Biodiversity List (SBL) (NatureScot, 2020), Joint Nature Conservation Committee (JNCC) on selection of biological Sites of Special Scientific Interest (SSSIs) (JNCC, 2019a)) are used where relevant.
- 8.6.11 Attributing a value to an ecological feature is generally straightforward in the case of designated sites, as the designations themselves are normally indicative of an importance level. For example, a Special Area of Conservation (SAC) designated under the Habitats Directive is implicitly of European (International) importance. In the case of species, assigning value is less straightforward as contextual information about distribution and abundance is fundamental, including trends based on historical records. This means that even though a species may be protected through legislation at a national or international level, the relative value of the population on site may be quite different (e.g., the site population may consist of a single transitory animal, which within the context of a thriving local / regional / national population of a species, is therefore of local or regional value rather than national or international).
- 8.6.12 As per CIEEM (2022) guidance, it is not necessary to carry out detailed assessment on features that are sufficiently widespread, unthreatened, and resilient to the effects of the Proposed Development. Those ecological features that are potentially affected by the Proposed Development and deemed to be of at least local importance are termed Important Ecological Features (IEFs) and are taken forward for assessment.

Table 8.2: Approach to Valuing Ecological Features (Adapted from Hill *et al.*, 2005)

Importance of Feature in Geographical Context	Description
International / European	<p>An internationally designated site (e.g., SAC), or undesignated areas that meet the criteria for international designations, or qualifying species whose presence contributes to the maintenance of such a site.</p> <p>Species present in internationally important numbers (>1% of biogeographic populations).</p>
National (UK)	<p>A nationally designated site (e.g., SSSI, or a National Nature Reserve (NNR)), or sites meeting the criteria for national designation or qualifying species whose presence contributes to the maintenance of such a site.</p> <p>Species present in nationally important numbers (>1% of UK population).</p>
Regional (Natural Heritage Zone or Local Authority Area)	<p>Regionally significant and viable areas of key habitat identified in a regional Biodiversity Action Plan (BAP).</p> <p>Species present in regionally important numbers (>1% of Natural Heritage Zone (NHZ) population).</p> <p>Areas of key habitat falling below criteria for selection as a SSSI (e.g., areas of semi-natural ancient woodland larger than 0.25 hectares (ha)).</p>
Local	<p>A site within the local area designated for nature conservation (e.g., Local Nature Reserves (LNR)).</p> <p>Areas of semi-natural ancient woodland smaller than 0.25ha.</p> <p>Areas of habitat or species considered to appreciably enrich the ecological resource within the local context, e.g. species-rich flushes or hedgerows.</p>
Negligible	<p>Usually widespread and common habitats and species that do not meet the above criteria. Features falling below local value are not considered in detail in the assessment process.</p>

Magnitude of Effect

- 8.6.13 Potential impacts of the Proposed Development and their effects are assessed considering changes in the extent and integrity of an ecological feature. A suitable definition of ecological ‘integrity’ is found within Scottish Executive circular 6/1995 updated by Scottish Executive (2000) which states that “*The integrity of a site is the coherence of its ecological structure and function, across its whole area, which enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified*”. Although this definition is used specifically regarding European level designated sites (e.g., an SAC), it is applied to wider countryside habitats and species for the purposes of this assessment.
- 8.6.14 The magnitude of potential effects will be identified through professional judgement and best practice guidance and legislation, and consider the predicted degree of change (extent / scale) to baseline conditions, how the ecological features are likely to respond to the Proposed Development, and the duration, frequency / timing, likelihood of occurrence and reversibility of an effect. Effects can be beneficial, neutral or adverse.
- 8.6.15 Magnitude of effect is considered in terms of space and time. There are five levels of spatial effects and five levels of temporal effects, as described in **Table 8.3** and **Table 8.4**.

Table 8.3: Definition of Spatial Effect Magnitude Upon the IEFs

Magnitude of Effects	Definition
Very High	Would cause the loss of the majority of a feature (>80%) or would be sufficient to damage a feature sufficient to immediately affect its viability.
High	Would have a major effect on the feature or its viability. For example, more than 20% habitat loss or damage.
Medium	Would have a moderate effect on the feature or its viability. For example, between 10 – 20% habitat loss or damage.
Low	Would have a minor effect upon the feature or its viability. For example, less than 10% habitat loss or damage.
Negligible	Minimal change on a very small scale; effects not dissimilar to those expected within a ‘do nothing’ scenario.

Table 8.4: Definition of Temporal Effect Magnitude Upon the IEFs

Magnitude of Effects	Definition
Permanent	Effects continuing indefinitely beyond the span of one human generation (taken here as 26+ years), except where there is likely to be substantial improvement after this period in which case the category Long-Term may be more appropriate.
Long term	Between 15 years up to (and including) 25 years.
Medium term	Between 5 years up to (but not including) 15 years.
Short term	Up to (but not including) 5 years.
Negligible	No effect.

Significance of Effect

8.6.16 The significance of a potential effect is determined through a standard method of assessment based on professional judgement and available evidence, considering the sensitivity (nature conservation value and conservation status) of the IEF, and the nature and magnitude of effect, in a reasoned way.

8.6.17 A significant effect is an effect that either supports or undermines biodiversity conservation objectives. Significant effects include those which result from impacts on the structure and function of defined sites, habitats or ecosystems, and the conservation status of habitats and species (including extent, abundance and distribution) (CIEEM, 2022).

8.6.18 **Table 8.5** below details the significance criteria that have been used in assessing the effects of the Proposed Development.

Table 8.5: Significance Criteria

Magnitude of Effects	Definition
Major	The effect is likely to result in a long-term adverse effect on the structure and function of defined sites, habitats or ecosystems or on the conservation status of habitat and species.
Moderate	The effect is likely to result in a medium term or partially adverse effect on the structure and function of defined sites, habitats or ecosystems or on the conservation status of habitats and species.
Minor	The effect is likely to adversely affect the feature at a low level by virtue of its limited duration and / or extent, but there will probably be no effect on the structure and function of defined sites, habitats or ecosystems or on the conservation status of habitats and species. The level of effect would be Minor and Not Significant.
Negligible	No material effect. The effect is assessed to be Not Significant.

8.6.19 Using these definitions, it must be decided whether there will be any effects which will be sufficient to adversely affect the IEF to the extent that its conservation status deteriorates beyond that which would be expected should baseline conditions remain (i.e., the 'do nothing' scenario).

8.6.20 Effects predicted to be of major or moderate significance are considered to be 'significant' in the context of the EIA Regulations.

8.6.21 Where adverse effects are identified, mitigation and / or compensation is considered to reduce or offset effects where possible, including avoidance or reduction through the implementation of, and compliance with, best practice guidance and protected species legislation.

8.6.22 Residual effects are characterised as either adverse, neutral or beneficial and either significant or not significant, taking account of mitigation proposals.

Cumulative Assessment

8.6.23 Cumulative effects can result from individually insignificant, but collectively significant, actions taking place over a period of time or concentrated in a location. As such, this requires the assessment of effects of the Proposed Development in combination with other developments, projects or activities (CIEEM, 2022).

8.6.24 The context in which these effects are considered is heavily dependent on the ecology of the feature assessed. For example, for water voles, it may be appropriate to consider effects specific to individual catchments, should the distance between neighbouring catchments be sufficient to assume no movement of water vole between them. Whereas for blanket bog, the region / NHZ may be the relevant spatial scale. Therefore, where it is considered necessary, an assessment of cumulative effects will be made for each feature, appropriate to its ecology.

Assessment Limitations

8.6.25 Limitations exist regarding the knowledge base on how some species, and the populations to which they belong, react to impacts. A precautionary approach is taken in these circumstances, and as such it is considered that these limitations do not affect the robustness of this assessment.

8.6.26 Ecological surveys are limited by factors which affect the presence of plants and animals such as the time of year, migration patterns and behaviour. The ecological surveys undertaken for the Proposed Development have not therefore produced a complete list of plants and animals, and the absence of evidence of any particular species should not be taken as conclusive proof that the species is not present or that it will not be present in the future.

8.6.27 Limitations in relation to baseline habitat surveys are detailed fully in **Appendix 8.2**. Surveys were undertaken in months generally considered to be outside the optimal survey period for vegetation and habitats (October and November). However, the overall character and type of vegetation was readily recognisable and could be accurately attributed a NVC community due to surveyor knowledge of the site and survey area from other surveys throughout the year, and the persistent and easily identifiable vegetation present (e.g. sub-shrubs, grasses, and bryophytes). The timing of the surveys is not therefore considered to be an important limitation.

8.6.28 Following completion of field surveys and upon finalisation of the Proposed Development design, a minor survey gap for habitats and protected species was identified in the north of the site to the east of Dell 2 Wind Farm substation. For habitats, the data gap at this location was resolved using a combination of surveyor knowledge of the location, desk-based extrapolation of NVC data collected for the Proposed Development using aerial imagery and adjoining habitat data as a proxy, and reviewing the previous NVC data collected in 2012 for Dell Wind Farm (which also entirely covered this gap). Protected species survey results for Dell Wind Farm are included in the desk-based study, and pre-construction surveys would be carried out prior to any works commencing, to ensure compliance with legislation. Due to the habitat types determined in this survey gap, the lack of specific protected species survey in this area is not considered a limitation to the assessment as species likely to be present are already included.

8.6.29 Whilst some generic and project-specific limitations have been identified, it is considered that there is sufficient information to enable a robust assessment of potential effects of the Proposed Development on ecological features identified.

*Embedded Mitigation*Iterative Design Process

8.6.30 The routing and alignment selection process for the Proposed Development has taken into consideration the potential for significant effects on ecological features, and for such effects to be avoided or minimised where possible. This has continued through the EIA process, with survey data informing the siting of infrastructure and access routes to further minimise effects on habitats and species where practicable. This process is detailed in **Chapter 2 – Routing Process and Alternatives**, and involved:

- the track length and alignment being designed to reduce the extent of new track and number of watercourse crossings required, where feasible considering the topography of the Proposed Development (see **Appendix 10.3**, appended to **Chapter 10 – Geology, Hydrology and Hydrogeology** for a schedule of watercourse crossings);
- a minimum 10 m buffer for any infrastructure or construction activity around all watercourses (in line with the Applicants GEMPs), except where the minimum number of watercourse crossings are required (as noted above). This will minimise effects on associated habitats and species;
- avoidance of deeper peatland (>1m), blanket bog and wet modified bog, and potential high GWDTEs, for the location of infrastructure as far as practicable (incorporating design updates following pre-application consultation with SEPA dated 26 December 2023 – see **Table 8.1** and **Chapter 2 – Routing Process and Alternatives**); and
- avoidance of all lichen/bryophyte heath and montane heath/dwarf herb communities for the location of infrastructure.

8.6.31 In line with NatureScot guidance (2023a) and NPF4 (Scottish Government, 2023a), the mitigation hierarchy has been followed and the design has aimed to avoid peatland as far as practicable, and where required, minimise impacts, where possible, such as through making use of the consented Cloiche Wind Farm tracks and the proposed Dell 2 Wind Farm tracks, as well as existing Stronelaireg Wind Farm tracks, to reduce effects on undisturbed habitat as well as minimising habitat fragmentation. Peatland habitat required for temporary land take would be restored following works using best practice methods. Any residual impacts would be compensated for by restoring degraded peatland in proximity to the site, as set out in the OHMP (**Appendix 8.4**).

Pre-construction and Construction

8.6.32 The assessment has been carried out on the basis that all works would be undertaken in accordance with industry good practice construction measures, guidance and legislation. Furthermore, the Applicant has developed General Environmental Management Plans (GEMPs) and Species Protection Plans (SPPs) in agreement with statutory consultees, including SEPA and NatureScot, which are set out within **Appendix 3.2** and **Appendix 3.3**. Similarly, the following relevant plans are included within this EIA Report: Outline Construction Environment Management Plan (CEMP) (**Appendix 3.6**); and Peat Management Plan (**Appendix 10.2**). The Proposed Development would be constructed in accordance with these plans.

8.6.33 There would be a contractual management requirement for the successful Principal Contractor to develop and fully implement a comprehensive and site-specific robust CEMP based on the outline CEMP (**Appendix 3.6**). This document would detail how the successful Principal Contractor would manage the works in accordance with all commitments and mitigation detailed in the EIA, Shadow HRA (**Appendix 8.1**), the SPP, statutory consents and authorisations, and industry good practice and guidance for environmental management, including the implementation of appropriate pollution prevention (particularly in relation to watercourses).

8.6.34 Any micrositing of infrastructure within the Limit of Deviation (LoD) will be based on a review of existing ecological data and the completion of pre-construction surveys, to consider the potential for direct

encroachment onto sensitive habitats, GWDTEs or protected species features, or indirect alteration of hydrological flows supporting sensitive habitats or GWDTEs. Any micro-siting will also take consideration of any buffer distances relating to protected features identified, as detailed within the SPP.

8.6.35 To ensure all reasonable precautions are taken to avoid negative effects on habitats, protected species and aquatic interests, a suitably qualified Ecological Clerk of Works (ECoW) will be appointed prior to the commencement of construction to advise the Applicant and the Principal Contractor on all ecological matters. The ECoW will be required to be present onsite during the construction phase and will carry out monitoring of works and briefings with regards to any ecological sensitivities within the site, to the relevant staff of the Principal Contractor and subcontractors.

8.6.36 An outline site restoration plan has been prepared to describe the principles and best practice guidance and measures that would be followed in the reinstatement and restoration of disturbed ground. This is included in **Appendix 3.3** and would be developed by the Applicant, the Principal Contractor and consenting authorities as required, prior to construction commencing. In more sensitive areas, further site-specific measures are required to ensure successful reinstatement, including site-specific soil and peat management measures, and the employment of specialist advisers (i.e., ECoWs).

8.7 Baseline Conditions

8.7.1 This section details the results of the desk study and field surveys, providing the ecological baseline for the Proposed Development and study area, and includes:

- statutory nature conservation designated sites (not including those designated for only ornithological or geological features);
- habitats and vegetation; and
- protected or notable species.

Desk Study

Statutory Designated Sites

8.7.2 The Proposed Development is not located within any international or national natural heritage designations. The following natural heritage designations (non-avian) fall within the vicinity of the Proposed Development:

- The River Spey SAC (site code: 8365) and SSSI (site code: 1699) are approximately 0.29km south of the Proposed Development at their closest point. The River Spey SSSI and SAC are designated for biological features including Atlantic salmon (*Salmo salar*), freshwater pearl mussel (*Margaritifera margaritifera*) (FWPM), otter and sea lamprey (*Petromyzon marinus*).
- Creag Meagaidh SAC (site code: 8235), SSSI (site code: 457), and NNR (site code: 5021) are approximately 1.46km south of the Proposed Development at their closest point. Creag Meagaidh SAC, SSSI and NNR are designated for natural biological features including a diverse mosaic of upland habitats of European importance. SAC qualifying features comprise: acidic scree, alpine and subalpine heaths, blanket bog (priority habitat), clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels, dry heaths, montane acid grasslands, mountain willow scrub, plants in crevices on acid rocks, plants in crevices on base-rich rocks, tall herb communities, and wet heathland with cross-leaved heath. SSSI qualifying features include: breeding bird assemblage, rocky slopes (includes inland cliff, rocky outcrops, chasmophytic vegetation), upland assemblage, upland birch woodland, and vascular plant assemblage.
- Monadhliath SAC (site code: 8324) and SSSI (site code: 1180) are located approximately 2.23km east of the Proposed Development at their closest point. The SAC is designated for blanket bog and the SSSI is designated for blanket bog and a range of upland habitats supporting rare vascular plants, as well as the

black mountain moth (*Glacies coracina*), breeding bird assemblage and breeding dotterel (*Charadrius morinellus*), which is a species of national importance.

- Ness Woods SAC (site code: 8337) is located approximately 5km west of the Proposed Development at its closest point. Ness Wood SAC is designated for European mixed woodlands on base-rich soils associated with rocky slope, western acidic oak woodland and for otter.
- Glen Tarff SSSI (site code: 725) is located approximately 5km west of the Proposed Development at its closest point. The SSSI forms part of the Ness Woods SAC and is designated for its biological features including upland mixed ash woodland and the rare beetle (*Bolitophagus reticulatus*).

Ancient Woodland

- 8.7.3 A review of the AWI identifies that no ancient woodland is within or adjacent to the Proposed Development. The nearest woodland listed on the AWI is located approximately 1.2km south of the Proposed Development at NN498944 Coill Bheag, and approximately 1.4km south of the Proposed Development at NN510940 Coill Coire A Bhein. Other areas are present to the north-east, along the Allt Odhar, to the north, along the River Killin, and to the west, along the River Tarff (**Figure 8.1**).

Local Biodiversity Action Plan

- 8.7.4 The Proposed Development falls within the area covered by the Highland BAP 2021-2026 (Highland Environment Forum, 2021). The Highland BAP includes a number of priority habitats and species for the Highlands region including the following habitats and their related species which are present within the Proposed Development: upland and moorland, peatland and wetland, woodland and forest, and freshwater.

Terrestrial Habitats

- 8.7.5 The site falls within the Monadhliath mountain range and contains upland habitats consistent with this environment.
- 8.7.6 The Carbon and Peatland Map 2016 (**Figure 8.2**) was consulted to determine likely peatland classes present at the site. The map is a predictive tool that provides an indication of the likely presence of peat at a coarse scale. The Carbon and Peatland map has been developed as a high-level planning tool and identifies areas of nationally important carbon-rich soils, deep peat and priority peatland habitat as Class 1 and Class 2 peatlands. Class 1 peatlands are also “likely to be of high conservation value” and Class 2 “of potentially high conservation value and restoration potential”.
- 8.7.7 **Figure 8.2** indicates that, according to this predictive tool, the site contains a large amount of Class 1 peatland within the central and northern areas, with a much smaller area of Class 2 peatland to the west of Sherramore Forest in the south of the site. The habitats survey data collected indicates the presence of peatland, through the presence of blanket bog and wet modified bog which is dominant and degraded within the vicinity of the Proposed Development (see field surveys section below and **Appendix 8.2** for further details).
- 8.7.8 As the Carbon and Peatland Map is a high-level tool, detailed habitat and peat depth surveys have been carried out across the Proposed Development to inform siting, design and mitigation and the detailed assessment on peatland and associated habitats. The results of the habitat surveys are discussed below and in **Appendix 8.2**, and the results of the peat depth surveys are presented and discussed in **Chapter 10 – Geology, Hydrology and Hydrogeology** and associated Appendices.

Aquatic Habitats

- 8.7.9 The site covers two river catchments; the north of the site draining into the River Ness, via Allt Oldhar and the River Tarff, and the south of the site draining into the River Spey, initially via Allt Gilbe and Allt Coire Iain Oig and then via Feith Talagain.
- 8.7.10 Allt Odhar (SEPA ID: 20277) was assessed in 2014 by SEPA as part of the Water Framework Directive (WFD) classification as having Good overall condition, with High water quality. River Tarff (inflow to Glen Doe Reservoir) (SEPA ID: 23916) was assessed in 2014 as having Good overall condition, with High water quality. The Allt Gilbe and Allt Coire Iain Oig come under 'River Spey/source to Garva' (SEPA ID: 23154) which was assessed in 2014 as having Poor overall condition, with High water quality.
- 8.7.11 Obstacles to Fish Passage (Marine Scotland, 2023) identifies an impassable natural waterfall on the River Fechlin downstream of the Allt Oldhar in the north of the site, as well as an impassable dam at Glendoe Reservoir on the River Tarff, and an impassable natural waterfall further downstream. Furthermore, there is an impassable natural waterfall on the Allt Coire Iain Oig, just north of the where it joins the River Spey. Due to the presence of obstacles in both catchments, it is considered that migratory fish would not be able to access any watercourses within the site. Progress is being made at the Spey Dam which should improve fish passage to naturally accessible watercourse reaches above the dam, however the site would remain inaccessible due to other natural barriers, see paragraph 8.7.16.

Protected Species (non-avian)

- 8.7.12 Data from the NBN Atlas Scotland obtained as part of the desk study indicated that the following protected species have been recorded within 5km of the Proposed Development within the last 15 years i.e., 2008 onwards) (data licences and providers are detailed in **Appendix 8.3**):
- common lizard (*Zootoca vivipara*);
 - mountain hare (*Lepus timidus*);
 - otter; and
 - red squirrel.
- 8.7.13 No sightings of red squirrel have been recorded by Saving Scotland's Red Squirrels (2023) within 5km of the Proposed Development since 2010. Outwith 5km of the Proposed Development, sightings of red squirrel were recorded, with these sightings concentrated mainly around Fort Augustus, Invergarry and Newtonmore.
- 8.7.14 A review of EIA Reports for nearby wind farm developments was undertaken to gauge the presence of protected or notable species in the wider area. Protected species surveys undertaken for Cloiche Wind Farm noted the presence of protected features attributed to water vole and otter in addition to noting the presence of mountain hare, and common lizard (SSE, 2020). Surveys undertaken in support of the application for Dell 2 Wind Farm noted presence of otter, water vole, mountain hare, pine marten, common lizard, *Pipistrellus* spp. And *Myotis* spp. (Coriolis Energy, 2014). The Environmental Statement for Stronelaig Wind Farm states that otter, water vole, common lizard, soprano pipistrelle and mountain hare were present on site (SSE, 2012). Surveys for Glenshero Wind Farm recorded evidence of otter (no resting sites), water vole, common lizard, common and soprano pipistrelle, and Daubenton's bat (Simec Wind One Ltd and RES Ltd, 2018).
- 8.7.15 Surveys undertaken during Ground Investigation (GI) works for the Proposed Development as part of Ecological Clerk of Works (EcoW) duties in June / July and October / November 2023 recorded the following signs of species:
- common lizard: sightings throughout the site (June, July 2023); and
 - otter: holt and prints in vicinity of Stronelaig Wind Farm (June 2023).

Fish and Freshwater Pearl Mussel

8.7.16 The desk study search identified that resident brown trout (*Salmo trutta*) are likely to be present in various life stages within watercourses within the site, although densities may be low. There is potential that these trout populations could support FWPM if habitat conditions are suitable. European eel (*Anguilla Anguilla*) may be present in low numbers. Migratory species, including Atlantic salmon, river lamprey (*Lampetra fluviatilis*) and sea lamprey, are not likely to be present in the site. This is based on the following:

- The EIA for Cloiche Wind Farm concluded that brown trout are likely to be the only species present within the wind farm site, due to barriers to fish passage which make the area inaccessible to most fish species, and trout density in streams draining the site is likely to be low (SSE, 2020).
- Fish surveys conducted at Stronelairg Wind Farm found trout to be present, however population density at all sites was very low; watercourses within the Stronelairg Wind Farm site are upstream of known impassable barriers and therefore considered to be inaccessible to migratory fish species, with the possible exception of European eel. No other fish species were caught or seen during surveys, and no FWPM were recorded (SSE, 2012).
- In the area of the Dell 2 Wind Farm site, it was assessed that migratory fish would not be present due to the impassable Foyers waterfalls downstream of the site; in addition, watercourses located within the plateau section of the site are considered too steep and shallow to maintain trout populations, also indicating that FWPM populations would not be present (Coriolis Energy, 2014).
- In the south of the site, watercourses are hydrologically connected initially via the Allt Coire Iain Oig and Allt Gilbe, and then via Feith Talagain, to the River Spey SAC and SSSI, which are classified for Atlantic salmon, FWPM and sea lamprey. Allt Coire Iain Oig contributes to SEPA river ID:23154, River Spey – source to Garva, which is part of the Water Framework Directive (WFD) classification and was classified as Poor overall condition in 2014, with Poor access for fish migration, due to Spey Dam and Reservoir downstream presenting a significant but not impassable barrier⁴. Progress is being made at the Spey Dam which should improve fish passage to naturally accessible watercourse reaches above the dam.
- Electrofishing surveys completed as part of the Glenshero Wind Farm submission found a robust and healthy resident trout population on the Allt Coire Iain Oig (Spey Fishery Board, 2018; Simec Wind One Ltd and RES Ltd, 2018). No fish were recorded on the Allt Gilbe. Juvenile salmon were present in the lower Feith Talagain downstream of an impassable waterfall; salmon were not recorded above the waterfall on the Feith Talagain nor on any other watercourse draining the site. Feith Talagain is above Spey Dam and so the presence of juvenile salmon here, and repeatedly from many years of monitoring work by the Spey Fishery Board (Spey Fishery Board, 2018), indicates Spey Dam is not a completely impassable barrier to migratory fish. The Allt Coire Iain Oig and Allt Gilbe are larger tributaries of the Feith Talagain but are located upstream of the natural and impassable waterfalls on the lower Feith Talagain (which are just upstream of its confluence with the River Spey) and thus Allt Coire Iain Oig and Allt Gilbe and their tributaries are inaccessible to migratory fish.

Deer

8.7.17 Deer are not included in the assessment from a nature conservation perspective, but are considered due to potential welfare issues and their potential to impact on other ecological features through grazing.

8.7.18 Data from the NBN Atlas Scotland and the Deer Distribution Survey (British Deer Society, 2023) suggested the presence of the following deer species in the general area of the Proposed Development:

- Red deer (*Cervus elaphus*);
- Roe deer (*Capreolus capreolus*);
- Sika deer (*Cervus nippon*); and

⁴ www.sepa.org.uk/data-visualisation/water-environment-hub/ [Accessed February 2024]

- Fallow deer (*Dama dama*).

8.7.19 The latest Deer Working Group report (Deer Working Group, 2020) includes approximate densities of red deer across 53 deer management areas. According to the report, red deer densities in the vicinity of the Proposed Development are expected to be approximately 8.1-11 deer per km².

8.7.20 The site falls within the area managed by the Monadhliath Deer Management Group (MDMG). The MDMG commissioned a Strategic Deer Management Plan (SDMP) between 2014-2024 (Strath Caulaidh Ltd, 2015). The Red Deer Management Area (RDMA) is 150,200ha, with around 50-60% of the RDMA only being used by the deer herd in the winter, based on aerial counts. The aerial counts suggested more than 95% of red deer were found in habitats below 600m in the winter, and in the summer they are found in montane habitats above 600m.

8.7.21 In terms of habitat suitability within the site, the exposed upland habitats throughout provide grazing and commuting opportunities. Most of the site lacks woodland for shelter, although there are areas of conifer woodland present within 100m – 150m in the south of the Proposed Development.

Invasive Non-native Species (INNS)

8.7.22 INNS are a threat to biodiversity and there is a legal obligation to control their spread. No records of INNS were identified during the desk study, from within 5km of the Proposed Development in the last 15 years (NBN Atlas Scotland, 2023).

Field Surveys

National Vegetation Classification (NVC) and Phase 1

8.7.23 As detailed in **Appendix 8.2** and **Figure 8.3a-s**, the NVC 'survey area' (i.e., the entire area covered by field surveys; c.f. site and study area definitions in paragraph 8.3.2) covered several alignment options and sufficient buffers to account for potential indirect effects and the presence of potential GWDTEs, in line with SEPA guidance (SEPA, 2017a & 2017b).

8.7.24 The most common and widespread habitat within the survey area is degraded and actively eroding blanket bog in poor condition. The blanket bog within the survey area is mainly represented by M17 *Trichophorum germanicum* – *Eriophorum vaginatum* blanket mire, M19 *Calluna vulgaris* – *Eriophorum vaginatum* blanket mire, and the M15 *Trichophorum germanicum* – *Erica tetralix* wet heath NVC communities (M15 where the community appears to be present on peat over 0.5m in depth). Areas of M19 include areas of the M19c *Vaccinium vitis-idaea* – *Hylocomium splendens* sub-community above 600m in altitude, which broadly correlates to montane bog. Despite the poor condition of the peatland there are also instances of some notable species, such as *Sphagnum fuscum* and *S. austinii*, recorded as target notes (see **Appendix 8.2** and **Figure 8.3a-s**). Within and around these extensive and eroding blanket bog areas are patches and pockets of other habitat types such as wet dwarf shrub heath, areas of bare peat, unimproved acid grassland, lichen / bryophyte heath, montane heath / dwarf herb heath, acid dry dwarf shrub heath, flushes and springs. Detailed descriptions of all habitat types recorded are provided in **Appendix 8.2**.

8.7.25 The 'study area' for habitats was defined as the Limit of Deviation (LoD), i.e. a 50m buffer either side of the centre line of the new overhead line (OHL) and underground cable (UGC) routes and around the CSE compounds, as well as the general 25m buffer either side of the centre line of the proposed new access tracks (**Figure 8.3a-s**). Existing tracks did not form part of the the habitats study area for assessment purposes.

8.7.26 The NVC data collected were cross-referenced to the Phase 1 Habitat Survey Classification (JNCC, 2010) to allow a broader characterisation of habitats. The extent of Phase 1 habitat types within the study area was calculated using the correlation of NVC communities to their respective Phase 1 types specific to the study area

(see **Appendix 8.2** for details), and their extents mapped within ArcGIS software, including within mosaic areas. The NVC communities and non-NVC types recorded within the study area are provided in **Annex A, Table 8-8** and include proportions of particular habitat types that are found within the study area, including those within mosaic habitats. Full descriptions of the habitats, NVC communities and associated flora of the Proposed Development and wider survey area are provided in **Appendix 8.2**.

8.7.27 The habitats are shown on **Figure 8.3a-s** which display all data collected during surveys. The Phase 1 symbology shading in **Figure 8.3a-s** has been used to broadly characterise stands of vegetation based on the dominant NVC community within a particular area.

8.7.28 **Diagram 8-1** summarises the Phase 1 habitats which cover over 1% of the study area and shows that blanket bog, wet dwarf shrub heath, unimproved acid grassland and bare peat make up the majority of the study area. As detailed in **Table 8-8** the study area contains a variety of habitat types, and whilst some relatively homogenous stands of vegetation occur, many of the identified communities form complex mosaics and transitional areas across the study area. The only habitat types that have subsequently been scoped-in to the assessment of effects due to extent and nature conservation value are blanket bog and wet heath. Detailed descriptions of these habitats are included in **Appendix 8.2**.

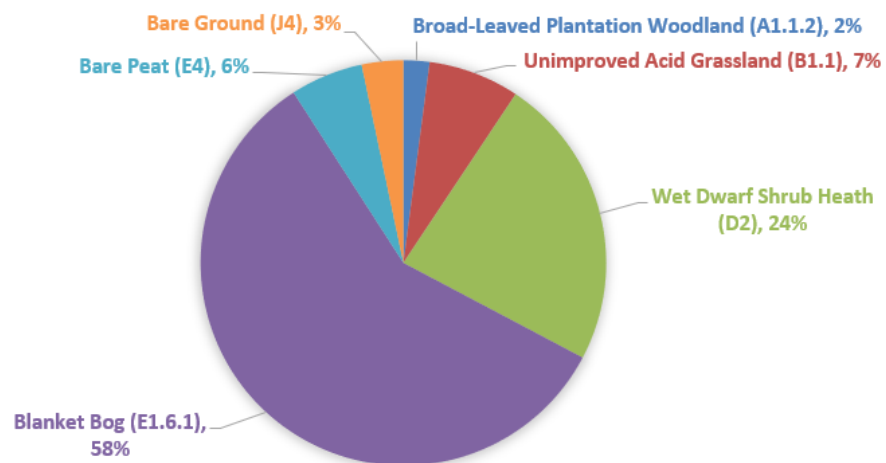


Diagram 8-1: Predominant Phase 1 habitat types recorded within the study area (habitat types making up <1% of the study area are not included)

Peatland Condition

8.7.29 The habitat surveys identified widespread degradation of peatland and bog habitats within the site and wider survey area, with extensive areas of active erosion through peat hagg and gullying, and eroding bare peat, as shown in **Plate 8.2**; further photo examples are included within **Appendix 8.2**. Nearly all the peatland along the route of the Proposed Development is actively eroding through the presence of extensive and in places very high density eroding deep hagg and gully systems with bare peat cliffs and gully bottoms.

8.7.30 Many of the gullies noted above were eroded down to the underlying substrate/mineral soils, creating disconnected baulks of peat, and were acting as drains, with active waterflow draining the surrounding peatland and resulting severance or impairment of hydrological functionality. As further discussed in **Chapter 10 - Geology, Hydrology and Hydrogeology** the erosion and drainage of the peatland evident has resulted in the lowering of groundwater levels within large areas of the peatland, with extensive areas of unsaturated (dry) catotelmic peat evident.

8.7.31 Blanket bog is the most common habitat across the survey area and is mainly represented by stands and complex mosaics of the M17 *Trichophorum germanicum* – *Eriophorum vaginatum* blanket mire community and

M19 *Calluna vulgaris* – *Eriophorum vaginatum* blanket mire community. The M15 *Trichophorum germanicum* – *Erica tetralix* wet heath community also appears to be present in places on peat over 0.5m in depth and was considered likely to have been derived from degraded areas that might have been previously classified as M19 blanket bog⁵. Sparse incidences of the M1 *Sphagnum denticulatum* bog pool community, M2 *Sphagnum cuspidatum/fallax* bog pool community and the M3 *Eriophorum angustifolium* bog pool community were also infrequently recorded in the wider survey area where the haggging/gullying was relatively less extensive, these areas have generally tended to be avoided by the Proposed Development. The majority of M3 recorded during the NVC surveys are in fact areas of bare peat that have some sparse cover of *Eriophorum angustifolium*, rather than a true bog pool feature. As noted above, the M15[^], M17 and M19 communities within the survey area are generally degraded forms of blanket bog in poor condition due to the extensive peat haggging and peat erosion features present.

- 8.7.32 The majority of peatland within the study area (and wider survey area) corresponded with either the 'drained' or 'actively eroding' peatland condition categories, with much lesser amounts of modified bog, as defined and detailed in the Peatland Condition Assessment guide⁶. The scale of degradation can readily be seen in the aerial imagery covering the site and surrounding area.
- 8.7.33 No specific areas of 'near-natural' peatland were identified within the study area; however, one small and isolated area of blanket bog (M17a NVC community) in the south of the study area (approximately NN 50561 95737) was noted as being in better condition / less modified than the rest of the peatland within the survey area, although peat erosion features do border this small stand of mire and there are grazing impacts from deer. Areas of relatively more intact and less eroded or drained peatland are scarce within the study area and are limited to small and isolated pockets scattered among the degraded peatland.
- 8.7.34 In light of the above, and the current condition of the peatland, much of it would be considered to be drained with much disruption and modification to, and in places severance of, hydrological flows paths which ultimately reduces the hydrological and ecological functionality of the peatland unit.

⁵ N.B. within this chapter and associated technical reporting such areas have been identified and mapped as M15[^].

⁶ <https://www.nature.scot/sites/default/files/2023-02/Guidance-Peatland-Action-Peatland-Condition-Assessment-Guide-A1916874.pdf>

Plate 8.1: Landscape scale of peat erosion



Plate 8.2: Example of peat gully erosion



Groundwater Dependent Terrestrial Ecosystems (GWDTEs)

8.7.35 The NVC results were referenced against SEPA guidance (SEPA, 2017a and 2017b) to identify those habitats which may be classified, depending on the hydrogeological setting, as being potentially groundwater dependent. Potential GWDTE NVC communities recorded within the survey area are identified in **Appendix 8.2** and shown on **Figure 8.4a-s**.

8.7.36 Within **Figure 8.4a-s**, the potential GWDTE sensitivity of each polygon containing a potential GWDTE community was classified on a four-tier approach as follows:

- 'Highly – dominant' where potential high GWDTE(s) dominate the polygon;
- 'Highly – sub-dominant' where potential high GWDTE(s) make up a sub-dominant percentage cover of the polygon;
- 'Moderately – dominant' where potential moderate GWDTE(s) dominate the polygon and no potential high GWDTEs are present; and
- 'Moderately – sub-dominant' where potential moderate GWDTE(s) make up a sub-dominant percentage cover of the polygon and no high GWDTEs are present.

8.7.37 Where a potential high GWDTE exists in a polygon, it outranks any potential moderate GWDTE communities within that same polygon.

8.7.38 GWDTE sensitivity has been assigned solely on the SEPA listings. However, many of the NVC communities on the list are common habitat types across Scotland and generally of low nature conservation value. Furthermore, depending on several factors such as geology, superficial geology, presence and depth of peat, and topography, many of the potential GWDTE communities recorded may in fact be only partially groundwater fed or not dependent on groundwater. Because designation as a potential GWDTE is related to groundwater dependency and not nature conservation value, GWDTE status has not been used as criteria to determine a habitat's nature conservation value and similarly does not factor in the identification of IEFs within ecological impact assessments. There is however a requirement to consider GWDTEs and the data gathered during the NVC surveys has been used to inform this assessment in **Chapter 10 - Geology, Hydrology and Hydrogeology**.

Annex 1 Habitats

8.7.39 Many NVC communities can also correlate with various Annex I habitat types listed under the Habitats Directive. The fact that an NVC community can be attributed to an Annex I type however does not necessarily mean all instances of that NVC community will constitute Annex I habitat. Its status can depend on various factors such as quality, extent, species assemblages, geographical setting, and substrates.

8.7.40 NVC survey data and field observations have been compared to JNCC Annex I habitat listings and descriptions. Those habitats within the survey area which could be considered Annex I habitats are provided within **Appendix 8.2**.

Scottish Biodiversity List (SBL) Habitats

8.7.41 The SBL is a list of animals, plants and habitats that Scottish Ministers considered to be of principal importance for biodiversity conservation in Scotland. The SBL identifies habitats which are the highest priority for biodiversity conservation in Scotland; these are termed 'priority habitats'. Some of the priority habitats are quite broad and can be correlated to many NVC types. Relevant SBL priority habitat types and corresponding associated NVC types recorded within the Proposed Development Area are summarised in **Appendix 8.2**.

8.7.42 These SBL priority habitats correspond with UK BAP Priority Habitats (JNCC 2019b).

Protected Species (non-avian)

8.7.43 This section outlines the results from the protected species surveys. Detailed methodologies, survey timings, and results, including the legal status of each species, are included within **Appendix 8.3**. Results are presented in **Figure 8.5a-h**.

8.7.44 Surveys recorded signs of common lizard, hare (brown and mountain), otter, red squirrel, and water vole. A bat box and a pine marten den box were also recorded (unknown if either in use). The main findings of the surveys were:

- bats: one bat box recorded at Melgarve substation. It is unknown whether the box is currently in use. Majority of the site offers poor suitability for bat roosting, foraging and commuting due to the lack of tree cover and exposed conditions. Limited roosting opportunities may be present at Melgarve substation.
- common lizard: one sighting in the south of the survey area. Suitable habitat throughout the site for foraging and some suitability for hibernacula.
- hare: five brown and one mountain hare sighting. Suitable habitat for the species' across the site.
- otter: spraint recorded on Allt na Craidhleig and its associated tributaries, Allt a' Choire Odhair, Allt Creag Chomaich, Allt nan Sidhean and Allt Coire Lain Oig. No protected features were recorded and habitat was noted as having limited suitability for resting sites.
- pine marten: one den box recorded. No signs of use at the time of survey.
- red squirrel: feeding signs recorded in conifer plantation (grey squirrel (*Sciurus carolinensis*) distribution does not cover this area of Scotland and therefore any squirrel field signs are considered to be indicative of red squirrel). Majority of the site is unsuitable for the species' due to lack of woodland.
- water vole: evidence (burrows, latrines, runways and one sighting of an individual) on a number of watercourses, notably Allt na Craidhleig, Allt Creag Chomaich and its tributaries, and Allt Coire Lain Oig.

Other Species

8.7.45 Large herds of red deer were commonly seen on and around site during field surveys. No signs or sightings of other notable species or INNS were recorded during field surveys.

The Do-Nothing Scenario

8.7.46 In the absence of the Proposed Development, it is likely that the IEFs would generally remain as they are at present, although numbers and distribution of species may fluctuate naturally. Vegetation and habitat composition and extents in the study area may fluctuate marginally in the long-term in line with increasing or decreasing livestock grazing and natural fluctuations in deer browsing. The historically degraded peatland habitats on site would likely deteriorate further with existing peat hags, gullies and bare peat becoming further eroded with corresponding loss of the peatland and carbon resource.

8.8 Potential Effects

8.8.1 This section provides an assessment of the likely effects of the Proposed Development on the IEFs identified in the baseline studies. The assessment of effects is based on the project description outlined in **Chapter 3 - The Proposed Development**.

Ecological Features and Effects on Ecological Features Scoped-Out of the Assessment

8.8.2 In addition to those ecological features and effects already scoped-out as detailed within paragraph 8.3.4, with consideration of the desk-study and baseline data collected, and following the iterative design and embedded mitigation measures described above (from paragraph 8.6.30), several further ecological features and potential effects can be scoped-out of the detailed assessment, based on the professional judgement of the EIA team and experience from other relevant projects and policy guidance or standards and / or due to a lack of potential significant effect at a relevant species population or habitat extent scale. This includes effects from the construction and operational phases of the Proposed Development, as well as cumulative effects. The following paragraphs detail the ecological features and effects that have been scoped-out following further desk studies and field surveys.

Designated Sites and Ancient Woodland

- 8.8.3 It is considered there is no connectivity between the Proposed Development and Creag Meagaidh SAC, SSSI and NNR, Monadhliath SAC and SSSI, Ness Woods SAC, and Glen Tarff SSSI; the sites are situated over 1.4km to 5km from the Proposed Development (see paragraph 8.7.2) and there is no hydrological connectivity. Due to the distance, the nature of works, and the adoption of best practice construction methods, no potential effects on the qualifying features and / or Notified Natural Features of these designated sites have been identified, and the sites are scoped out of further assessment.
- 8.8.4 Based on the distance between areas of ancient woodland and the Proposed Development (see paragraph 8.7.3), it is considered that there is no connectivity between them, and ancient woodland is therefore scoped out of the assessment.
- 8.8.5 The Proposed Development is hydrologically linked to the River Spey SAC and SSSI, which are designated for qualifying features including Atlantic salmon, sea lamprey, FWPM and otter. As detailed in paragraphs 8.8.32 to 8.6.35, the embedded mitigation includes that construction work would comply with a CEMP developed by the Principal Contractor, which would be monitored by a suitably experienced ECoW. The CEMP would include good practice mitigation for effective silt and pollution prevention and undertaking works in accordance with SEPA best practice guidance. With this embedded mitigation in place, water pollution impacts and associated indirect effects on qualifying species associated with the Proposed Development are considered unlikely. The River Spey SAC is specifically considered further in a Shadow HRA for the Proposed Development; see **Appendix 8.1**.
- 8.8.6 From the desk study, it has been concluded that migratory fish species, including Atlantic salmon and sea lamprey, are unlikely to be present at the site due to impassable barriers downstream of the Proposed Development (see paragraphs 8.7.11 and 8.7.16). The River Spey SAC Conservation Advice Package (NatureScot, 2020) notes that the upper Spey populations of FWPM are small and isolated, and populations are not successfully recruiting at an adequate density to maintain the population upstream of Granttown on Spey. No FWPM have been identified in the desk study, including a review of field survey data for Cloiche, Dell 2, Glenshero and Stronelairst Wind Farms. FWPM require stable, fast flowing, clean water with coarse sand / fine gravel, as well as bankside cover and young salmonids which form an integral part of juvenile FWPM development. The larval stage of FWPM rely on salmonid species so there could be potential for indirect impacts through impacts on salmonid populations. The desk study concluded that watercourses within the site are not accessible to migratory fish due to impassable barriers, although it is possible that low densities of brown trout are present within some of the watercourses onsite. Due to the lack of FWPM records and suitable habitat at the site, direct impacts on FWPM would be unlikely (although pre-construction surveys would still be carried out in accordance with the SPP). FWPM is therefore scoped out of further assessment, along with Atlantic salmon and sea lamprey.
- 8.8.7 Otter that form part of the River Spey SSSI population may use habitat within the Proposed Development for predominantly commuting and foraging (suitable habitat for resting sites is limited). Home ranges of otter are large, and individuals are unlikely to be fully dependent on prey availability and access within watercourses within the Proposed Development. Otter that form part of the River Spey SSSI population may therefore be present within the Proposed Development, but the likelihood of direct impacts taking place such as mortality through collision with site vehicles or disturbance of a resting site is very low considering the suitability of habitat to resting sites, the size of the construction area in relation to watercourses, as well as working time primarily being in the day and otter movements primarily being crepuscular / nocturnal. Furthermore, the proposed embedded mitigation of the provision and implementation of the SPP, CEMP (including Pollution Prevention Plan) and presence of an ECoW during construction (incorporating pre-construction otter surveys and ongoing otter monitoring during the construction period) would ensure that all reasonably practicable

measures are taken during construction so that provisions of the relevant wildlife legislation are complied with, and no impacts on a Nationally designated site will result.

- 8.8.8 These measures would ensure direct and indirect effects on otter are avoided or reduced to a negligible level. Should otter be affected by minor and non-significant levels of disturbance and / or temporarily displaced during construction, there are abundant foraging opportunities locally for this mobile and wide-ranging species that would ensure that there are no risks to the otters' population viability or overall distribution within the River Spey SSSI and locally. The Proposed Development is also not considered likely to result in any otter population or territory fragmentation, nor create any barrier effects with respect to the movement of otter within the River Spey SSSI or locally. In taking account of the above and standard and proven mitigation measures, any adverse effects on otter in relation to the River Spey SSSI can be discounted and no significant effects are predicted.
- 8.8.9 No effects on the qualifying features of the River Spey SSSI are therefore anticipated, and the designated site is scoped out of further assessment. The River Spey SAC is specifically considered further in a Shadow HRA for the Proposed Development; see **Appendix 8.1**

Terrestrial Habitats

- 8.8.10 As per paragraph 8.3.4, habitats that are considered to be of low conservation value and are common habitat types locally and regionally are scoped out of the assessment. Within the study area these include:
- young broadleaved plantation woodland;
 - unimproved acid grassland; and
 - bare peat.
- 8.8.11 Marshy grassland is also scoped out of the assessment. Marshy grassland covers 0.33ha (0.18% of the study area) and comprises small patches of the M25a *Molinia caerulea* – *Potentilla erecta* mire NVC community and the non-NVC 'Je' community, dominated by soft rush (*Juncus effusus*) (see **Table 8-8**). These communities present within the study area are common habitat types locally, regionally and nationally and the relatively small direct and indirect losses predicted, as per **Table 8-8**, are of minor significance. These marshy grassland communities are considered potential GWDTE's in line with guidance (SEPA, 2017a and 2017b). However, designation as a GWDTE does not infer an intrinsic biodiversity value, and GWDTE status has not been used as criteria to determine conservation value in the ecology assessment. There is however a statutory requirement to consider GWDTEs and the data gathered during the NVC surveys has been used to inform this assessment (see **Chapter 10 - Geology, Hydrology and Hydrogeology**).
- 8.8.12 A number of other habitats recorded within the study area are of local importance, some due to their listing as Annex I habitats or SBL Priority Habitats (see **Appendix 8.2**). However, as they occupy such small areas within the study area, they are species-poor or degraded examples, and / or any direct or indirect effects on the habitat will not occur or will be negligible in magnitude (see **Table 8-8**), all effects on them are scoped out of the assessment. These habitats include:
- acid dry dwarf shrub heath;
 - acid / neutral flush and spring;
 - montane heath / dwarf herb; and
 - lichen / bryophyte heath.

Aquatic Habitats and Species

- 8.8.13 In OHL sections of the Proposed Development, the majority of towers would be positioned at least 10 m from watercourses (see **Chapter 3 - The Proposed Development**). Within the UGC sections of the Proposed Development, the cable would cross watercourses by trenching within the channel using water management (see **Chapter 10 - Geology, Hydrology and Hydrogeology** for further details); although directional drilling beneath channels would be considered if it was a significant body of water, or if the flow of water could not be managed to allow trenching to happen. The design of permanent and temporary access track crossings would comply with SEPA good practice guidance to minimise impacts on fish and their habitat.
- 8.8.14 Effects on aquatic habitats including standing water, running water, fisheries and FWPM interests are scoped out of the assessment due to the reasons outlined below.
- 8.8.15 The Proposed Development has the potential to impact adversely on water quality and hydrogeomorphology in the absence of mitigation. However, as detailed above, the embedded mitigation includes that construction work would comply with a CEMP developed by the Principal Contractor, which would be monitored by a suitably experienced ECoW. The CEMP would include good practice mitigation for effective silt and pollution prevention, as well as undertaking works in accordance with SEPA best practice guidance (SEPA, 2010). With this embedded mitigation in place, water pollution impacts and associated likely significant effects associated with the Proposed Development on watercourses and aquatic ecology, fish and FWPM are considered unlikely and therefore these pollution impacts are scoped out of further assessment.
- 8.8.16 Watercourses on site may be accessible for European eel, although none were recorded in baseline surveys for the respective wind farms adjoining the site (paragraph 8.7.16). European eel are catadromous and breed in the marine environment (the Sargasso sea) returning to freshwater where they spend the majority of their lives. The species is widespread and mobile. Legislation for eel relates to the taking of European eel. With embedded mitigation in place, no impacts from the Proposed Development are expected on the species, and European eel is therefore scoped out of the assessment.
- 8.8.17 Potential effects upon non-migratory fish may arise from direct construction impacts during trenching works in the vicinity of watercourses (where required), and in the construction of permanent and temporary access track crossings. From the desk study, it has been concluded that migratory species are unlikely to be present at the site due to impassable barriers (see paragraphs 8.7.11 and 8.7.16). Effects on fish species are therefore limited to resident brown trout populations.
- 8.8.18 Regarding UGC impacts, trenched crossings would have a direct localised impact on fish habitat where the cable is laid, with potential for silt impacts in the immediate vicinity downstream. In a typical watercourse with widespread juvenile salmonid habitat, damage to a small area through trenching would not be expected to have significant impacts on fish populations, however trenching in important, sensitive, and potentially very limited habitat such as an optimal spawning area (redd) could have significant adverse local impacts on fish populations.
- 8.8.19 Directional drilling beneath the channel, if required, would not directly impact fish habitats, but potential indirect impacts include changes to fish behaviour and mechanical shock to eggs caused by vibrations. Changes in fish behaviour would be of particular concern ahead of and during spawning if fish are deterred from using a particular spawning area. Depending on the amount of vibration caused by drilling, mechanical shock to eggs may also be a concern during the early stages of development, should crossing locations coincide with active redds. Further possible impacts of trenching could be destabilisation of riverbanks in areas where heavy machinery might be used on banks composed of unstable or loose material, and pollution or siltation from runoff from construction work close to and up-slope of watercourses, which could kill fish directly or degrade the habitat.

- 8.8.20 The construction of temporary or permanent access track watercourse crossings may also have the potential to directly impact fish populations due to the physical disturbance involved in construction (culvert installation for example). However, direct impacts due to access track crossings would generally be temporary and associated with minor watercourses which are less suitable for spawning salmonids.
- 8.8.21 To ensure protection of fish populations and no deterioration of water quality, the CEMP would ensure effective silt and pollution prevention, as identified in the GEMP (**Appendix 3.2**). Other measures would include:
- In-stream working window to be confirmed with the Ness and Spey District Salmon Fishery Boards. No instream works will occur within this window on any watercourse containing suitable fish spawning substrates within the vicinity of the crossing locations without further survey and assessment by a fisheries consultant or an appropriately skilled ECoW in advance of works, in accordance with SEPA guidance.
 - No machinery would work within an agreed distance of watercourses, to avoid damage or exacerbating existing erosion of banks.
- 8.8.22 Implementation and monitoring of such measures would be undertaken via a Water Quality and Fish Monitoring Plan (WQFMP) in line with Marine Scotland Science guidelines (Scottish Government, 2021).

Protected Species

- 8.8.23 Effects on badger, bats, beaver, great crested newt, otter, pine marten, red squirrel, reptiles and wildcat are scoped out of the assessment due to the absence of protected features, lack of suitable habitat, limited desk-based or field evidence within the study area, and / or lack of potential effects from the Proposed Development. The Species Protection Plan (SPP) details the required monitoring and measures within the mitigation hierarchy (avoidance, disturbance, destruction) (**Appendix 3.3**) which would ensure that all reasonably practicable measures are taken during construction so that provisions of the relevant wildlife legislation are complied with in relation to all protected species, should any evidence be found during pre-construction surveys.
- 8.8.24 Effects on brown and mountain hare are scoped out of the assessment. These are mobile species capable of avoiding disturbance except when the juveniles (leverets) are very young. Best practice guidance would be followed during construction, to ensure that all reasonably practicable measures are taken during the breeding season to comply with wildlife legislation. This would include undertaking a sweep survey for leverets immediately prior to any earth-moving / ground clearance operations or vehicular activity over uncleared ground during the mountain hares' breeding season (March to October inclusive) (NatureScot, 2023c). No significant effects are anticipated on the species' and they are scoped out of further assessment.
- 8.8.25 Whilst evidence of water vole activity was found at a number of locations across the survey area, no evidence was found beneath the footprint of the Proposed Development or within the LoD (**Figure 8.5a-h**). Due to the widespread availability of similar and connected suitable habitat within the vicinity, it is considered likely that if water vole populations within the site were to be disturbed, they would be able to disperse to unoccupied areas of habitat. Embedded mitigation, minimising potential impacts on watercourses, would avoid fragmentation of suitable water vole habitat. This, in combination with the implementation of the SPP, will result in no likely significant effects of the Proposed Development on water vole. As such, water vole is scoped out of the assessment.

Other Species

- 8.8.26 Effects on deer are scoped out of the assessment. Desk studies show that roe, red, sika and fallow deer may be present in the local area. Due to the open nature of the site with minimal forestry present, a loss of sheltering habitat is not expected. Grazing habitat loss has been minimised through design, and with the extensive amount of similar suitable grazing habitat in the surrounding land and its availability and accessibility, any loss of this habitat is expected to be negligible to the wide-ranging species.

8.8.27 Due to the relatively narrow width of the Proposed Development corridor and the lack of deer fencing, it is considered that it would not pose a significant barrier to any local movements or migrations of deer and therefore deer may pass through uninhibited. In addition, it is considered that there would be no long-term land use changes as a result of the Proposed Development that could impact deer.

8.8.28 Any disturbance or displacement to deer, from construction activities, is not expected to create a deer welfare issue due to the suitability of surrounding land and its availability and accessibility for grazing and commuting locally, and deer would not be forced into areas of risk. Furthermore, disturbance impacts during construction would be localised and for a short period of time, rather than impacting the entire site at the same time. As a result of the nature and size of the Proposed Development and the extensive suitable habitat locally, no negative effects on deer are predicted. Due to minimal displacement outwith the Proposed Development during construction and operation, no adverse effects, through increased browsing / trampling on surrounding habitats, are expected. As such, deer are scoped out of further assessment as significant impacts are considered unlikely.

Decommissioning Effects

8.8.29 The Proposed Development would not have a fixed operational life. The effects associated with the construction phase can be considered to be representative of worst-case decommissioning impacts, and therefore no separate assessment is necessary, and has therefore been scoped out of the EclA assessment.

Important Ecological Features

8.8.30 A summary of the Nature Conservation Value of the remaining IEFs identified within the study area and surrounding area (as confirmed through survey results and consultation outlined above) which have been scoped-in to the assessment is provided in **Table 8-6** below, together with the justification for inclusion. These comprise blanket bog and wet heath.

Table 8-6: Nature Conservation Value of Scoped-in IEFs

IEF	Nature Conservation Value	Relevant Legislation / Guidance & Justification
Blanket Bog	Local	<p>The Proposed Development would result in direct and potentially indirect habitat loss for blanket bog habitats.</p> <p>Blanket bog covers 104.97ha (57.59%) of the study area, (Table 8-8). This habitat is also extensive locally outwith the study area (e.g., see Figure 8.3a-s).</p> <p>The blanket bog communities present include M15 (on peat over 0.5m in depth, denoted here as M15[^]), M17 and M19 with some infrequent M1, M2 and M3 bog pools (much of the M3 present is bare peat recolonisation by common cottongrass). Degraded areas of M17 and M19 are widespread and there are large areas of peat haggling and actively eroding bare peat (see paragraphs 8.7.29 to 8.7.33 and Appendix 8.2 for further details).</p> <p>These habitats are associated with SBL blanket bog habitat with some areas also corresponding to Annex I type 7130 blanket bog habitat, including M17, M19, and M1-M3 communities.</p> <p>The Proposed Development would cover some areas of Class 1 and Class 2 peatland from the SNH Carbon and Peatland Map (Figure 8.2).</p>

IEF	Nature Conservation Value	Relevant Legislation / Guidance & Justification
		<p>It is recognised that this definition is not solely for nature conservation and so not directly applicable to evaluating the value of a peatland.</p> <p>Despite some of these communities being associated with Annex I and SBL blanket bog classifications, the habitat within the study area is not considered to be Nationally or Regionally important due to its condition, quality, size and distribution. Therefore, assigning a Nature Conservation Value higher than Local is not deemed appropriate. In addition, mire habitat of this quality (and greater) is relatively widespread across the local area as well as within Highlands and beyond, which further reduces the relative value of this habitat within the study area.</p>
Wet Dwarf Shrub Heath	Local	<p>The Proposed Development would result in direct and potentially indirect habitat loss for wet dwarf shrub heath.</p> <p>Wet dwarf shrub heath is listed as an Annex I habitat in the Habitats Directive and is part of the SBL upland heathland priority habitat.</p> <p>Wet dwarf shrub heath (D2) is common and extensive covering 42.14ha (23.12%) of the study area. It is entirely made up of the various forms of the M15 <i>Trichophorum germanicum</i> – <i>Erica tetralix</i> wet heath NVC community, with all the sub-communities being recorded; however, the drier M15c <i>Cladonia</i> spp. sub-community is the most prevalent. M15 is a very common wet heath type within the region and across the uplands of Scotland.</p> <p>Wet heath within the study area is considered of no greater than Local value due to its extent and quality. This type of habitat is widespread throughout the local area.</p>

Assumptions of the Assessment

8.8.31 The following assumptions are included in the assessment of otherwise unmitigated effects on IEFs:

- Work on the Proposed Development is predicted to last for approximately 24 months and will be staggered across the site.
- Work on the Proposed Development includes vegetation clearance and construction of new access tracks, tower foundations, associated tower construction compound areas, excavation for UGC and cable sealing end compounds. Much of this infrastructure would be permanent, however any sections of temporary access track, tower construction compounds and storage areas would be restored at the end of construction. Trenches excavated for installing UGC would be backfilled and habitat reinstated where feasible. The Outline Site Restoration Plan (**Appendix 3.3**) will ensure that bare areas revegetate, and habitats are re-instated. However, temporary work areas may still result in habitat modification of certain habitat types due to the potential effects on the structure and function of supporting ecological systems, for instance effects on wetland or peatland habitats due to disrupted peatland hydrology and / or the quantity and quality of groundwater or overland flow.
- Permanent access tracks during construction are expected to have a working corridor of approximately 3.5m, except in limited areas of deeper peat where they may require to be different techniques and may be

widened to a maximum of 6 m – see **Appendix 3.4** (for the purposes of the assessment a 6m working corridor has been assumed for all permanent access tracks during construction, to represent the worst case scenario). However, to minimise longer term impacts, permanent track width will be reduced to approximately 2.5m for the operational period (the exception being two short sections of track serving cable sealing end compounds that will need to be 3.5m in width during the operational period), with track-side habitat reinstated.

- Temporary access tracks will be 3.5m wide.
- Tower compound working areas during construction are expected to be approximately 45m x 45m (temporary habitat loss), with foundations buried and soil and habitat reinstated above the buried foundations, following works so that only the four leg supports at each would be remaining above ground and result in permanent loss. An area of 1.2m² at each tower foundation has therefore been identified and will be used in the calculation for permanent habitat loss.
- UGC habitat loss has been assessed as a 25m working corridor along Cloiche and Dell 2 separate connections, and 37m working corridor where the cables combine to join to Melgarve substation (see **Figure 3.1a-b**).
- There may be some indirect habitat losses or modification to wetland habitats due to potential drainage effects associated with permanent infrastructure. For the purposes of this assessment, it is assumed that wetland habitat losses or modification due to indirect drainage and drying impacts may extend out to 10m from permanent infrastructure. It is expected that any indirect drainage effects would only affect wetland habitats such as blanket bog, wet heath, flushes etc, and where there is functioning hydrological connectivity. No indirect drainage impacts are expected to affect or alter the quality or composition of non-wetland habitats, such as dry heath, acid grassland etc. and as such only direct habitat loss applies to those habitats.
- Where new watercourse crossings are required, the design of the crossing would be in accordance with best practice guidelines and taking account of any ecological or hydrological constraints. The design of crossings would be agreed with SEPA prior to construction and be regulated by the Water Environment (Controlled Activities) (Scotland) Amendment Regulations 2013 (CAR). Measures to mitigate potential effects of watercourse crossings of temporary tracks which would be used during the construction phase of the Proposed Development, would be agreed in the site-specific CEMP.
- As a precautionary approach, habitat losses due to the creation of temporary access tracks and other temporary infrastructure such as tower construction compounds, as well as habitat losses due to temporary trench works and the working corridor for UGC are included in the habitat loss calculations. The existing habitat would be lost in temporary works areas, and although areas would be restored at the end of the construction period, the habitat type present after restoration may not be the same as the original habitat type due to changes in topographical or hydrological conditions. In particular, areas of land-take for this temporary infrastructure may represent permanent losses for habitat types such as blanket bog due to the effects on the structure and function of the habitat type, and the complexities and long timescales involved in restoring or re-creating these particular habitat types. It is assumed this potential habitat loss applies to the area of direct impact only and that there would be no, or very unlikely to be, notable long-term indirect drying effects on wetland habitats surrounding areas of temporary infrastructure. The main reasons for this assumption are:
 - temporary working areas will be reinstated and restored within two years and following good practice and the Applicants GEMPs;
 - no permanent dewatering of the UGC working corridor, cable route or associated cable trench is required;
 - underground cable trenches would be installed progressively and the length of time the cable trench would remain open would be minimised;
 - once the cable has been installed the trench would be restored and backfilled in the same order that the material was excavated from the trench, and available turves would then be replaced on the backfilled trench;

- where required, low permeability barriers or bunds would be installed in the trench to prevent the trench forming a preferential water flow path or acting like a sub-surface drain, this will also help retain water / soil moisture in the trench and immediately surrounding peat and soils;
 - there is considered to be a negligible - low risk that any heat generated in cables would result in a drying effect on the surrounding peat as the cables will be laid on stone and surrounded by sands for thermal regulation within a geotextile wrap, this will absorb or dissipate any heat generated, and along with the natural saturation levels in the peat, in combination with other mitigation and assumptions detailed here, any heat will be readily transferred and lost without resulting in a drying effect on the peat; and
 - the high density and prevalence of erosion features such as peat hags and gullies, many of which have eroded to the mineral substrata and have resulted in hydrological severance or disruption across the peat mass (see also the section on Peatland Condition above).
- The embedded pre-construction and construction phase mitigation described in paragraphs 8.6.32 - 8.6.36 will be fully applied, e.g., the presence of an ECoW, adherence to the agreed SPP and CEMP post-consent.

Construction Impacts

8.8.32 This section provides an assessment of the likely effects of the construction of the Proposed Development upon the scoped-in IEF.

8.8.33 The most tangible effect during construction of the Proposed Development would be direct habitat loss due to the construction of infrastructure such as new access tracks, tower foundations, associated tower construction compound areas, excavation for UGC and cable sealing end compounds. Much of this infrastructure would be permanent, however any sections of temporary access track, and construction compounds and storage areas would be restored at the end of construction. Trenches excavated for installing UGC would be backfilled and habitat reinstated where feasible.

8.8.34 The Outline Site Restoration Plan (**Appendix 3.3**) will ensure that bare areas revegetate, and habitats are reinstated. It may be that habitat reinstated may be different from baseline habitats due to the potential effects on the structure and function of supporting ecological systems, for instance effects on wetland or peatland habitats due to disrupted peatland hydrology and/or the quantity and quality of groundwater or overland flow. However, due to the degraded condition of peatland on site and extensive erosion, haggging and subsequent drainage present, it is considered that the reinstatement of habitats following works, using peatland restoration techniques and carried out following best practice guidance, could potentially improve the condition of habitats at the site and reduce ongoing erosion and associated carbon losses.

8.8.35 Over time there may also be some potential indirect habitat losses or modifications to blanket bog and wet heath habitats due to drainage effects. For the purpose of this assessment, it is assumed that wetland habitat losses due to indirect drainage and drying effects may extend out to 10m from infrastructure (i.e. in keeping with standard indirect drainage assumptions within carbon calculator guidance (SEPA, undated). Due to the eroded condition and frequent haggging and gullying across much of the peatland (often down to the mineral substrate and therefore severing hydrological connectivity and functionality), this assumption would likely be an over-estimate on the area of habitat affected indirectly, and that indirect effects, would be unlikely to materialise given that the peatland present is already effectively drained (the Peatland Code (IUCN, 2023) considers peatland within 30m of an artificial/natural drain (e.g. from a hagg or gully) as drained). As further discussed in **Chapter 10 - Geology, Hydrology and Hydrogeology** the erosion and drainage of the peatland has resulted in the lowering of groundwater levels within large areas of the peatland, with extensive areas of unsaturated (dry) catotelmic peat evident.

8.8.36 **Table 8-7** details the estimated relative losses expected to occur, by habitat type, for all new permanent infrastructure.

8.8.37 As a precautionary approach, direct habitat losses due to the creation of temporary access tracks and other temporary infrastructure such as tower construction compounds, as well as due to temporary trench works and the working corridor for UGC are included in habitat loss calculations, dimensions as detailed in paragraph 8.8.31, and predicted losses presented in **Table 8-7**. As also discussed in paragraph 8.8.31, it is expected that there are unlikely to be notable indirect drainage or drying effects from temporary infrastructure, and as such these are not applicable to **Table 8-7**.

Table 8-7: Estimated Loss and Modification of IEF Habitats for Permanent and Temporary Infrastructure

Phase 1 Habitat Type	Phase 1 Study Area Extent (ha)	NVC Community Code or Habitat Type ⁷	Direct Habitat Loss (ha)	Direct Habitat Loss (ha) as a % of Phase 1 Type in Study Area	Direct & Indirect Habitat Loss (ha) in Study Area	Direct & Indirect Habitat Loss as a % of Phase 1 Type in Study Area
Permanent						
Blanket bog (E1.6.1)	104.97	M1, M3, M15 [^] b-c, M17, M17a-b, M19 and M19c	0.98	0.93% (0.07% of blanket bog in survey area)	6.84	6.51 (0.49% of blanket bog in survey area)
Wet dwarf shrub heath (D2)	42.14	M15a-c	0.20	0.47 (0.04% of wet heath in survey area)	2.86	6.79 (0.52% of wet heath in survey area)
Temporary						
Blanket bog (E1.6.1)	104.97	M1, M3, M15 [^] b-c, M17, M17a-b and M19a-c	19.34	18.42 (1.39% of blanket bog in survey area)	N/A	N/A
Wet dwarf shrub heath (D2)	42.14	M15a-c	6.71	15.92 (1.22% of wet heath in survey area)	N/A	N/A
Total Permanent and Temporary Loss						
Blanket bog (E1.6.1)	104.97	M1, M3, M15 [^] b-c, M17, M17a-b, M19 and M19a-c	20.32	19.36 (1.46% of blanket bog in survey area)	26.18	24.94 (1.88% of blanket bog in survey area)
Wet dwarf shrub heath (D2)	42.14	M15a-c	6.91	16.40 (1.26% of wet heath in survey area)	9.57	22.71 (1.74% of wet heath in survey area)

8.8.38 The following Sections assess the effect of these losses for each IEF scoped-in.

Blanket Bog

8.8.39 **Impact:** Impacts upon blanket bog will be direct (through permanent and temporary habitat loss) and indirect (through potential drying effects upon neighbouring bog habitats) occurring from the construction period into the

⁷ Only NVC communities affected are presented here, with detailed potential losses of each NVC community included in **Annex A, Table 8.8**.

operational period. Direct loss would occur in areas where permanent infrastructure such as permanent access tracks, tower foundations, link pillars and sealing end compounds are sited on the habitat. The excavation of the habitat for temporary infrastructure may also lead to the losses of blanket bog due to the long-term effect on the ecological and hydrological structure and function of the habitat. In addition, there may be indirect losses as a result of drainage and disruption to hydrological flows around infrastructure (precautionarily around 10m from infrastructure is assumed as per SEPA (undated)).

- 8.8.40 Fragmentation could involve the creation of smaller areas of habitat which in turn could impair the functioning and reduce the resilience of hydrological processes essential to the maintenance of the habitat. This could make the impacted habitat more vulnerable to future decline in condition and potentially lead to a transition to a different habitat type such as from blanket bog to wet modified bog / wet heath or more subtle sub-community shifts.
- 8.8.41 For blanket bog, fragmentation effects are a function of the extent of the hydrological unit, location of impact within the unit and magnitude of direct and indirect impact in the context of the hydrological unit. **Figure 8.3a-s** shows that blanket bog habitats exist together and with other wetland in large expansive and connected mosaics across the study area and in the wider survey area. The large scale of these wetland habitat mosaics reduces the likelihood that small, fragmented habitat patches would be created. No small-scale habitat fragments appear to be created by the location of tracks and other infrastructure, and where some wetland habitats are subject to infrastructure, there are good practice construction methods that will allow the maintenance of sub-surface hydrological connectivity between areas. It is therefore unlikely that the potential effects of fragmentation would lead to further loss of blanket bog in addition to that predicted to occur as a result of direct loss and precautionary indirect loss figures detailed above.
- 8.8.42 **Nature Conservation Value:** Local (as detailed in **Table 8-6**).
- 8.8.43 **Conservation Status:** Conservation Status of this habitat as assessed in the JNCC report on blanket bog is 'Unfavourable Bad' and 'Stable' at the UK level (JNCC, 2019c).
- 8.8.44 **Magnitude of Effect:** The UK has an estimated 2,182,200ha of blanket bog (JNCC, 2019c) of which around 1,759,000ha to 1,800,000ha (approximately 80% to 82% of the UK total) is in Scotland (JNCC, 2019d) (approximately 23% of the land area). The Highland Council (i.e., the council area in which the Proposed Development is situated) covers a land area of 2,565,700 ha and the terrestrial environment contains large, open stretches of moorland and heathland.
- 8.8.45 Blanket bog covers 104.97ha (57.59%) of the study area, with a split between the M15[^], M17 and M19 NVC communities which comprise the bulk of the blanket bog vegetation (see **Table 8-8**). As per **Table 8-7**, the direct habitat loss for blanket bog is predicted to be 0.98ha, due to permanent infrastructure with up to an additional 19.34ha due to temporary works areas. This results in a potential total direct loss of 20.32ha, equivalent to 19.36% of the blanket bog within the study area (includes 5.04ha of montane bog, i.e., M19c above 600m in altitude).
- 8.8.46 In addition, there may be some indirect losses because of the zone of drainage around permanent infrastructure. The actual distance of the effects of drainage on a peatland is highly variable and depends on various factors such as the type of peatland and its characteristics and properties of the peat; the type, size distribution and frequency of drainage feature; and whether the drainage affects the acrotelm, penetrates the catotelm, or both. Consequently, drainage effects can be restricted to just a few metres around the feature or extend out to tens of metres, or further (e.g., see review within Landry & Rochefort (2012)). The hydraulic conductivity of the peatland is one of the key variables which affect the extent of drainage. In general, less decomposed more fibric peatlands (which tend to be found commonly in fen type habitats) generally have a higher hydraulic conductivity and drainage effects can extend to around 50m, whilst in more decomposed (less fibrous) peatland, peat drainage effects may only extend to around 2m. Blanket bog habitats commonly are

associated with more highly decomposed peats (Nayak *et al.* 2008). For this assessment, indirect effects are precautionarily assumed to extend out to 10m from infrastructure (as per SEPA, undated).

- 8.8.47 As per **Table 8-7**, if indirect drainage effects are fully realised out to a distance of 10m around permanent infrastructure in all blanket bog areas, then the total predicted potential habitat modification or habitat losses increases to 6.84ha. This worst-case scenario of direct and indirect habitat loss for permanent infrastructure and direct habitat loss for temporary works areas is an overall total of 26.18ha (24.94% of the blanket bog in the study area (i.e. within the LoD)); and 1.88% of blanket bog habitat within the survey area).
- 8.8.48 However, it is considered highly unlikely that indirect drainage effects of this scale (i.e., out to a distance of 10m either side of all permanent infrastructure) would occur or would have such an effect on the habitat as to result in any notable effect on the type of bog present or shifts to a lower conservation value habitat type (such as acid grassland for example). For instance, Stewart & Lance (1991) found that a lowering of the water table next to drains was slight and confined to just a few metres either side of the drain, on sloping ground the uphill zone of drawdown was even narrower. Subtle variations in plant species abundance were noted, with species dependent on high water-tables having a lower cover-abundance near to drains, and species with drier heathland affinities having higher cover than at places farther away. However, there were no wholesale changes in vegetation or the species assemblage; for instance, declines in *Sphagna* cover were highly localised and took nearly 20 years to achieve statistical significance. Anecdotal observations from wind farms and other upland grid infrastructure around Scotland also suggest that bog habitats readily persist around such infrastructure and within this 10m zone of possible influence. In addition, as per paragraphs 8.7.29 to 8.7.34, given the eroding and degraded condition of peatland known to be present onsite, with extensive haggling, gullies acting like drains, and naturally drained peatland, it is assumed due to the long history of this naturally occurring and already present drying effects it is unlikely these potential indirect effects as a result of the Proposed Development would materialise (as much of the habitat and supporting peatland is already effectively drained to a degree; see also **Chapter 10 - Geology, Hydrology and Hydrogeology**). The existing long-term natural drainage onsite as a result of erosion is already likely to have led to the presence of wet heath vegetation on peat over 0.5m in depth (i.e., M15[^]) and the increased prevalence of the drier M17b *Cladonia* spp. sub-community.
- 8.8.49 It should also be noted that the predicted indirect losses due to drainage are calculated in GIS and based on the habitat survey mapping, there may be small-scale local specific factors such as those relating to natural breaks in hydrology, geology or topography, or the presence of non-wetland habitats that act as a barrier or buffer, that would prevent the full predicted indirect drainage effects from materialising.
- 8.8.50 Overall, evidence suggests that if some drainage effects materialise locally around infrastructure due to the Proposed Development, the most likely effect will not be a major change in overall bog habitat type but rather a potential change in vegetation micro-topography, certain species cover, or abundance that may result in a subtle NVC community or sub-community shift, and which may only be apparent in the long-term. If severe indirect drying effects are observed long term, then blanket bog may transition to wet modified bog, wet heath (e.g., NVC type M15), dry modified bog, or dry heath. Examples of historical and natural community shifts due to drying effects from peatland erosion onsite are evident through the presence of M15[^] which appears to be derived from degraded areas that might have been previously classified as M19 blanket bog (see paragraph 8.7.31 and **Appendix 8.2**). Wet and dry heaths are still habitats of conservation interest, being Annex I, UKBAP and SBL Priority Habitats also.
- 8.8.51 The habitat surveys identified widespread degradation of bog habitats within the study area and wider survey area, with extensive evidence of drainage of the peatland and also large areas of peat haggling and eroding bare peat; no specific areas of near-natural peatland was identified within the study area.

- 8.8.52 When considering the scale of the above habitat losses (i.e., direct and precautionary indirect effects on up to 26.18ha of the blanket bog within the study area) and accounting for the relative abundance, distribution and degraded quality of the blanket bog within the study area and connected immediately adjacent, an effect magnitude of Low Spatial and Long-Term / Permanent Temporal is appropriate.
- 8.8.53 **Significance of Effect:** Given the above consideration of Nature Conservation Value, Conservation Status and Magnitude of Effect, the effect significance is considered to be **Minor adverse** and **Not Significant**.
- Wet Dwarf Shrub Heath*
- 8.8.54 **Impact:** Impacts are the same as those discussed for blanket bog in paragraph 8.8.39; direct and indirect loss of habitat resulting in a reduction in the extent and distribution of this habitat.
- 8.8.55 Due to their connectivity, habitat fragmentation impacts are considered above for both blanket bog and wet heath. The same conclusion applies here that it is unlikely the potential impact of fragmentation would lead to further loss of wet heath in addition to that predicted to occur as a result of direct loss and precautionary indirect loss figures.
- 8.8.56 **Importance of Ecological Feature:** Local (as per **Table 8-6**).
- 8.8.57 **Conservation Status:** Conservation Status of this habitat as assessed in the JNCC report on Northern Atlantic wet heaths with *Erica tetralix* is 'Unfavourable – Bad' and 'Deteriorating' at the UK level (JNCC, 2019e).
- 8.8.58 **Impact Magnitude:** The UK has an estimated 508,817 ha of this wet heath type. The majority, around 340,000 to 400,000 ha (approximately 66% to 78% of the UK), is in Scotland (which covers 23% off the UK land area) (JNCC, 2019f).
- 8.8.59 Wet heath covers 42.14ha (23.12%) of the study area; the majority of which is M15b and M15c (detailed in **Table 8-8**). The direct habitat loss for wet heath across the Proposed Development is predicted to be a total of 6.91ha due to permanent (0.20ha) and temporary (6.71ha) infrastructure (**Table 8-8**).
- 8.8.60 As described in paragraph 8.8.46, there may be some indirect losses because of the zone of drainage around permanent infrastructure. If indirect drainage impacts are fully realised out to a distance of 10m in all wet heath areas, then predicted losses amount to an additional 2.66ha around permanent infrastructure.
- 8.8.61 This worst-case scenario of direct and indirect wet heath habitat loss for permanent infrastructure and direct habitat loss for temporary works areas is an overall total of 9.57ha, or 22.71%, of the study area (and 1.74% of wet heath habitat within the survey area).
- 8.8.62 It is considered unlikely that indirect drainage impacts would have a significant effect on the wet heath present or result in large-scale vegetation shifts to a lower conservation value habitat type. If drainage impacts materialise then this could, depending on the degree of drying, result in some subtle shifts of community or vegetation type, and this would likely be shifts to other sub-communities within the M15 NVC community (e.g., from M15b to M15c or M15d) and may take many years to transition. In response to more severe drying effects then M15 wet heath would be expected over time to transition towards a dry heath community, such as H9, H10 and / or H12 dry heaths. For the purposes of the EIA, dry heath is considered to be of the same conservation value, and therefore overall, it is unlikely there would be a decline in locally important habitat types due to any indirect drainage effects on wet heath.

8.8.63 When considering the above habitat loss, and accounting for the abundance, distribution and quality of the habitat within the study area as well as the wider area, an effect magnitude of Low Spatial and Long-Term / Permanent Temporal is appropriate.

8.8.64 **Significance of Effect:** Given the above consideration of nature conservation value, conservation status and magnitude of impact, the effect is considered to be **Minor Adverse** and **Not Significant** under the terms of the EIA Regulations.

Operational Effects

8.8.65 No operational effects on scoped-in IEFs are predicted.

8.8.66 All likely direct and indirect effects on habitats have been considered in the Construction Effects section above.

8.8.67 Although there is some habitat loss associated with infrastructure required for the operation of the Proposed Development (rather than temporary construction infrastructure), the physical loss of habitat would occur during the construction phase and is therefore considered above.

8.8.68 Indirect effects on wetland habitats would largely occur during the operational phase as potential drying effects become established following construction. However, for ease and clarity assessing effects on habitats, these are considered together in Construction Effects.

8.9 Cumulative Effects

8.9.1 The purpose of the assessment of cumulative effects is to identify situations where effects on habitats or species populations that may be non-significant from individual developments, are judged to be significant when combined with nearby existing or proposed projects. In the interests of focusing on the potential for similar significant effects, this assessment considers the potential for cumulative effects with other infrastructure developments, including those that are under construction, consented or at application stage (operational developments are considered part of the baseline). Developments at scoping stage have been scoped out of the cumulative assessment because they generally do not have sufficient information on potential effects to be included, as the baseline survey period is ongoing, or results have not been published. Developments that have been refused or withdrawn are also scoped out.

8.9.2 Two proposed EIA projects / developments were identified in proximity to the Proposed Development:

- Cloiche Wind Farm (consented November 2023); and
- Dell 2 Wind Farm (new application submitted March 2024 following site re-design, after initial Dell Wind Farm consent granted in August 2019).

8.9.3 In general, for wind farm developments where peatland habitats are present or affected, mitigation and / or additional restoration / enhancement / creation of peatland and upland habitats is proposed to compensate and offset any effects. Mitigation and enhancement areas also tend to be larger or many orders of magnitude greater than the area of predicted loss. The Outline Habitat Management Plan for Cloiche Wind Farm aims to restore and enhance approximately 150ha of blanket bog habitat, following habitat loss predictions from the Development including approximately 19.2ha direct loss and 23.84ha indirect loss of blanket bog (Wood Group UK Ltd., 2022). The EIA indicates that direct and indirect habitat loss for wet heath from the project would be 7.18ha (with no temporary loss of wet heath expected) and was considered not significant. The Outline Habitat Restoration Management Plan for Dell 2 Wind Farm includes restoration of around 237ha of degraded peatland, following habitat loss predictions from the Development including approximately 6.6ha direct loss and 14.48ha indirect loss of blanket bog, modified bog and bare peat (LUC, 2024). The Dell 2 Wind Farm EIA indicates a further small permanent loss of approximately 0.12ha of wet heath. Effects on bog and wet heath habitats were assessed as not significant.

8.9.4 Therefore, blanket bog and wet heath have been scoped out of the cumulative assessment as it is considered unlikely that any significant residual cumulative effects at a local or regional level would arise as a consequence of the Proposed Development adding to habitat loss associated with other projects. This applies to both the construction period and also any limited potential drainage effects which may continue into the operational period. This is due to the relatively small nature of habitat losses associated with the Proposed Development in respect to the wider area, and the Applicant's commitment to the delivery of a HMP for the Proposed Development which will include provisions for the maintenance, restoration and / or enhancement of peatland and upland habitats within or in proximity to the site. As such, no adverse cumulative effects are predicted.

8.9.5 Overall, despite direct habitat loss in the short-term, the long-term cumulative enhancement and restoration of peatland and upland habitats in the region should lead to a longer-term increase in the extent, and in many cases quality, of bog and associated upland habitats.

8.10 Mitigation

Construction Phase

8.10.1 General and embedded mitigation measures for habitats and species, such as complying with best practice, micro-siting provisions, presence of an ECoW and adherence to a detailed CEMP and SPP are included in paragraphs 8.6.32 - 8.6.36.

8.10.2 No significant construction effects were identified, and no non-standard mitigation is proposed for the construction phase.

Operational Phase

8.10.3 No IEFs are scoped-in to the assessment of potential operational effects.

8.11 Residual Effects

8.11.1 No significant effects identified, with all scoped-in IEFs remaining as Minor adverse, or less, and **Not Significant**.

8.11.2 Whilst no significant adverse effects are concluded on blanket bog or wet heath, the final HMP for the Proposed Development will ensure the loss of peatland is compensated for and enhancement is delivered by restoring an appropriate area of peatland habitat, compared to the predicted losses. The HMP will include provisions for the maintenance, restoration and/or enhancement of bog habitats and other upland habitats, as indicated and detailed in the outline HMP (**Appendix 8.4**).

8.11.3 The detailed final HMP will be agreed with the Local Authority and NatureScot in advance of construction and will secure significant biodiversity enhancements, through restoring degraded habitats and strengthening nature networks. In the longer term, with the implementation of the HMP, there may be a residual **beneficial Significant** effect at a local level, as the effect would be likely to result in a long-term effect on the structure and function of the habitat.

8.12 Biodiversity Enhancement

8.12.1 In line with NPF4 (Scottish Government, 2023a), the Onshore Wind Policy Statement (Scottish Government, 2022a), and the Scottish Biodiversity Strategy to 2045 (Scottish Government, 2023b), consideration has been given to how the Proposed Development can deliver significant enhancements to biodiversity over its lifetime.

8.12.2 The outline HMP (**Appendix 8.4**) for the Proposed Development proposes measures which will conserve, restore and enhance biodiversity including nature networks. The final HMP will focus on peatland restoration, and this will be developed further through the course of the applications determination period. Discussions are

ongoing with affected landowners to identify land and put the necessary agreements in place to deliver the HMP and Biodiversity Net Gain (BNG) compensation arising from the Proposed Development. The aim is to provide a 'near' site opportunity to restore and improve existing peatland that is in a hagged, eroding and degraded condition.

- 8.12.3 The Proposed Development may impact approximately 26.18ha of degraded blanket bog habitat (considering permanent direct (0.98ha) and indirect (5.86ha) and temporary direct (19.34ha) losses as detailed above). An area in the order of 50ha – 85ha is proposed for peatland restoration, depending on further surveys and the condition and characteristics of the peatland within the HMP search areas. Peatland restoration associated with the Proposed Development will be achieved through various techniques appropriate to the site-specific location, prevailing conditions, and erosion features present. Peatland restoration will follow recommended guidance, such as those set out in the Peatland Action Technical Compendium⁸, and include measures such as hagg/gully/peat bank re-profiling and stabilisation, surface bunds in gullies and across micro-erosion, use of textiles, and potentially mulching and transplanting propagules. Such measures encourage water retention and facilitates the recolonisation of bare peat and the regeneration of blanket bog and upland moorland vegetation. Furthermore, maintenance and restoration of peat habitats prevents the loss of carbon to the atmosphere, an important factor in controlling climate change, and helps to improve water quality and ameliorate flood events in surrounding watercourses. Peatland restoration works will be regularly monitored as part of the HMP to ensure success of the works. Further details are provided in **Appendix 8.4**.
- 8.12.4 The SSEN BNG project toolkit has been used to quantify the biodiversity value of the baseline habitats, the loss of biodiversity units during works, the reinstatement of habitats in temporary working areas, and the compensation and enhancement proposals presented in the outline HMP. The Applicant is committed to delivering a 10% net gain for biodiversity following implementation of the outline HMP (**Appendix 8.4**) in line with the Applicants biodiversity ambition and environmental legacy commitments⁹, Sustainability Strategy¹⁰ and Sustainability Plan¹¹.

8.13 Summary and Conclusions

- 8.13.1 The ecological assessment is based on best practice guidance including the CIEEM Guidelines for Ecological Impact Assessment in the UK and Ireland. The scope of the assessment and baseline conditions were determined through a combination of desk study, targeted surveys, and consultation with relevant nature conservation organisations.
- 8.13.2 This process established ecological features that could potentially be affected by the Proposed Development. No potential effects on statutory designated sites or ancient woodland were identified. The Proposed Development has been designed to minimise impacts on important habitats, peatland and protected species as far as practicable. This has been achieved through embedded mitigation and the iterative design process. This process, combined with further commitments to certain mitigation measures pre-construction, and during construction allowed potential effects on the majority of habitats and species present to be scoped-out of the assessment. The following IEFs were taken forward to the assessment stage: blanket bog and wet heath.
- 8.13.3 Assessment of potential effects and their significance were determined through consideration of the sensitivity of the feature and the magnitude of change. The most tangible effect during construction of the Proposed Development on IEFs would be direct habitat loss due to the construction of infrastructure, in addition to some

⁸ <https://www.nature.scot/doc/peatland-action-technical-compendium>

⁹ SSEN Transmission (2023). Delivering a positive environmental legacy. <https://www.ssen-transmission.co.uk/globalassets/documents/sustainability-and-environment/environmental-legacy-booklet>

¹⁰ Delivering a smart, sustainable energy future: The Scottish Hydro Electric Transmission Sustainability Strategy (2018) <https://www.ssen-transmission.co.uk/media/2701/sustainability-strategy.pdf>

¹¹ Our Sustainability Plan: Turning Ambition into Action. (2019) SHE Transmission. <https://www.ssen-transmission.co.uk/media/3215/our-sustainability-plan-consultation-report.pdf>

potential indirect drainage effects. The assessment concluded that there would be a **Minor adverse** and **Not Significant** effect on blanket bog and wet heath. No significant operational or cumulative effects were identified.

- 8.13.4 A Habitat Management Plan (HMP) as proposed in outline in **Appendix 8.4** would be finalised prior to commencement of development which will compensate for the identified effects on blanket bog within the site. With the implementation of the HMP, overall effects on blanket bog would be beneficial with the restoration and enhancement of habitats.

8.14 References

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ANNEX A

Table 8-8: Habitat Baseline Composition and Habitat Loss Calculations for Study Area

Phase 1 Description (Code)	NVC ¹²	Study Area (LoD)		Permanent Direct Loss		Permanent Direct + Indirect Loss (wetlands only)		Temporary Direct Loss	
		NVC Area (ha)	Phase 1 Area (ha)	NVC Area (ha)	Phase 1 Area (ha)	NVC Area (ha)	Phase 1 Area (ha)	NVC Area (ha)	Phase 1 Area (ha)
Grand Totals		182.27	182.27	1.52	1.52	10.12	10.12	33.61	33.61
Broadleaved Plantation Woodland (A1.1.2)	YBP	3.74	3.74	0.01	0.01	0.01	0.01	1.31	1.31
Unimproved Acid Grassland (B1.1)	U4	8.32	13.06	0.04	0.06	0.04	0.07	2.10	2.98
	U5	3.76		0.01		0.01		0.65	
	U4a	0.41		<0.01		<0.01		0.09	
	U5a	0.14		0.00		0.00		0.04	
	U6a	0.11		<0.01		0.02		0.03	
	U6	0.05		0.00		<0.01		0.01	
	U5b	0.25		<0.01		<0.01		0.07	
	U5e	0.01		<0.01		<0.01		<0.01	
Marsh/Marshy Grassland (B5)	M25a	0.29	0.33	0.00	0.00	0.01	0.02	0.07	0.08
	Je	0.04		0.00		0.01		0.01	
Acid Dry Dwarf Shrub Heath (D1.1)	H12b	0.30	0.51	0.01	0.01	0.01	0.01	0.03	0.03
	H12c	0.21		0.00		0.00		0.00	
Wet Dwarf Shrub Heath (D2)	M15c	28.33	42.14	0.17	0.20	1.91	2.86	4.39	6.71
	M15b	13.25		0.04		0.94		2.23	
	M15a	0.50		<0.01		0.01		0.08	
	M15	0.06		0.00		0.00		0.01	
Lichen/Bryophyte Heath (D3)	H13a	0.05	0.18	0.00	0.00	0.00	0.00	0.00	0.00
	H13	0.04		0.00		0.00		0.00	
	H14	0.08		0.00		0.00		0.00	

¹² See **Appendix 8.2** for full community names and description of the habitats within the study area.

Phase 1 Description (Code)	NVC ¹²	Study Area (LoD)		Permanent Direct Loss		Permanent Direct + Indirect Loss (wetlands only)		Temporary Direct Loss	
		NVC Area (ha)	Phase 1 Area (ha)	NVC Area (ha)	Phase 1 Area (ha)	NVC Area (ha)	Phase 1 Area (ha)	NVC Area (ha)	Phase 1 Area (ha)
Montane Heath/Dwarf Herb (D4)	U7b	0.005	0.01	0.00	0.00	0.00	0.00	0.00	0.00
	U7	0.009		0.00		0.00		0.00	
Blanket Bog (E1.6.1)	M19c	30.68	104.97	0.40	0.98	3.23	6.84	4.69	19.34
	M17b	25.30		0.05		0.78		4.41	
	M17a	19.26		0.18		1.25		5.15	
	M15c^	10.01		0.11		0.48		2.34	
	M3	4.24		0.02		0.14		0.95	
	M19	5.52		0.01		0.15		0.51	
	M15b^	6.31		0.18		0.57		0.65	
	M17	3.31		0.02		0.24		0.56	
	M19b	0.10		0.00		0.00		0.02	
	M19a	0.08		0.00		0.00		0.01	
Acid Neutral Flush (E2.1)	M6a	0.50	0.51	<0.01	<0.01	0.04	0.05	0.12	0.12
	M32a	0.01		<0.01		<0.01		<0.001	
Bare Peat (E4)	ExP	10.44	10.44	0.04	0.04	0.04	0.04	2.45	2.45
Standing Water (G1)	SW	0.02	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Running Water (G2)	RW	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00
Building (J3.6)	BD	0.08	0.08	0.00	0.00	0.00	0.00	0.00	0.00
Bare Ground (J4)	BG	6.03	6.03	0.21	0.21	0.21	0.21	0.50	0.50
Other Habitat (J5)	DG	0.12	0.16	<0.01	<0.01	<0.01	<0.01	0.04	0.09
	DG>U6	0.04		0.00		0.00		0.04	