VOLUME 1: CHAPTER 7: ECOLOGY

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7. ECOLOGY

7.1 Executive Summary

7.1.1 An assessment has been undertaken of the potential impacts of the Proposed Development with the Proposed Alignment (referred to hereafter within this chapter as the 'Proposed Alignment') on terrestrial ecology (non-avian) features and reaches conclusions as to the predicted likely significance of residual effects. The assessment is based on best practice guidance, and its scope determined through a combination of desk study, field surveys, and consultation with relevant organisations. The Proposed Development with the Alternative Alignment is assessed in **Volume 5: Chapter 5: Ecology – Alternative Alignment**. A separate chapter has been prepared to assess the potential impacts of the Proposed Alignment on ornithology features (**Volume 1: Chapter 8 - Ornithology**). Given the nature of the Proposed Alignment, most of the impacts on terrestrial ecology features would arise from construction and would be temporary. Direct permanent habitat losses are restricted to the footprints of the towers, Cable Sealing End (CSE) compound and new permanent access tracks (that would be used for construction and ongoing maintenance during operation).

7.1.2 The Proposed Alignment comprises approximately 10.5 km of a new double circuit 132 kV overhead line (OHL) supported by steel lattice towers from Strathy North 'T' (near Dallangwell) to a new CSE compound, prior to entering the Connagill 275/132 kV substation via a short section of underground cable (UGC). Once the Proposed Alignment is constructed and commissioned, a section of the existing Strathy North 132 kV trident 'H' wood pole OHL would be dismantled and removed. The Proposed Alignment forms part of a wider connection strategy for renewable generation in the area referred to as the Connagill Cluster Grid Connections. This Chapter presents the Ecological Impact Assessment (EcIA) for the Proposed Alignment.

7.1.3 The Proposed Alignment is in close proximity to the Caithness and Sutherland Peatlands Special Area of Conservation (SAC) and Ramsar and its component West Halladale Site of Special Scientific Interest (SSSI). These designations are made up of internationally important habitats (including blanket bogs, oligotrophic and dystrophic lochs, mires, heath and peat bogs) supporting rare plants, otter and freshwater pearl mussel populations. Although the majority of the Proposed Alignment is outside the boundary of the SAC/ Ramsar/ SSSI, having been designed to avoid direct impacts to the most sensitive protected habitats, one tower at the western end of the route (Tower 21) and a short section of new permanent access track leading to it, is just within the designated sites. However, the Proposed Alignment footprint impacts approximately 0.164 ha within the boundary of the designated sites, which is a tiny proportion (c. 0.0001%) of the Caithness and Sutherland Peatlands SAC / Ramsar (and its component West Halladale SSSI) alongside an existing access track at the very edge of the designations and the effect has been assessed as **Minor adverse (not significant)**. A Shadow Habitats Regulations Appraisal (SHRA) has been undertaken for the Proposed Alignment (**Volume 4: Appendix V1-7.6 Shadow HRA for the Caithness and Sutherland Peatlands SAC/ Ramsar**), to meet the requirements of the Conservation of Habitats and Species Regulations 2017 (the 'Habitats Regulations'). Likely significant effects could not be ruled out at the screening stage, although an appropriate assessment concluded that the Proposed Alignment would have no adverse effects on the integrity of the SAC / Ramsar (either alone or in combination with any other plans or projects).

7.1.4 The Proposed Alignment would directly impact habitats within the Flow Country World Heritage Site (WHS), which was formally inscribed by UNESCO in July 2024 for its internationally important blanket bog, oligotrophic and dystrophic loch, mire, heath and peat bog habitats. Its boundary is largely contiguous, although not identical, with the Caithness and Sutherland Peatlands SAC / Ramsar designated site boundary (the WHS boundary extends further north beyond the SAC / Ramsar boundary towards Strathy and Melvich). The Proposed Alignment affects only a very small proportion (c. 0.0065%) of the WHS, and the effect is assessed as **Minor adverse (not significant)**. A separate World Heritage Site Assessment has been undertaken (**Volume 4: Appendix V1-7.7: Flow Country WHS Assessment**) and concluded that the Proposed Alignment would result in no significant adverse effects on the attributes of the WHS.

7.1.5 The Caithness and Sutherland Peatlands Special Protection Area (SPA) is also overlapping with the Caithness and Sutherland Peatlands SAC / Ramsar and West Halladale SSSI designations. The potential impacts on the Caithness and Sutherland Peatlands SPA are assessed in **Volume 1: Chapter 8: Ornithology** of this EIA Report.

7.1.6 The Proposed Alignment passes over upland habitats typical of the landscape, which are dominated by mire and wet heath communities that are Annex I habitats[1] (for which the SAC / Ramsar has been designated), and some of which are Ground Water Dependent Terrestrial Ecosystems (GWDTE) that are reliant on ground water influences. However, due to the nature of the Proposed Alignment, permanent habitat losses outside the boundary of the SAC / Ramsar designated site are minor, with most of the permanent impacts associated with new access tracks. As part of the design process towers and access tracks have been sited to avoid / minimise impacts on GWDTEs that would be most vulnerable to indirect permanent habitat changes. Effects on non-designated habitats are assessed as **Minor adverse (not significant)**.

7.1.7 Signs of protected species including badger (*Meles meles*), otter (*Lutra lutra*), water vole (*Arvicola amphibious*) and pine marten (*Martes martes*) were identified within the Study Area, although the Proposed Alignment is assessed to result in no adverse effects upon them. No reptiles were recorded in the Study Area; however, the habitats are suitable for common lizard (*Zootoca vivipara*) and adder (*Vipera berus*), both of which have been recorded in the local area, and these species may therefore be present. Embedded mitigation relevant to identified ecological receptors includes the development and implementation of a site-specific Construction Environmental Management Plan (CEMP), which would be used in conjunction with the Applicant's General Environmental Management Plans (GEMPs) and Species Protection Plans (SPPs). Furthermore, a suitably experienced Ecological Clerk of Works (ECoW) would be appointed to undertake pre-construction surveys for protected species and oversee construction works to minimise any potential effects on nature conservation interests.

7.1.8 No significant cumulative effects with any of the other grid connections that form part of the Connagill Cluster Grid Connections and their associated wind farms (consented and proposed) have been identified. A landscape scale Habitat Management Plan (HMP), combining the HMPs of the Connagill Cluster Grid Connection projects, is being developed in consultation with NatureScot to address the cumulative habitat losses of peatland, including within the boundaries of the Flow Country WHS and Caithness and Sutherland Peatlands SAC / Ramsar (see **Volume 4: Appendix V1-7.8: Connagill Cluster Outline HMP**).

7.2 Introduction

7.2.1 This Chapter considers the potential impacts, including cumulative, of the Proposed Alignment on terrestrial (non-avian) ecology including designated sites, terrestrial and aquatic habitats and protected species during construction and operation, and assesses the significance of likely predicted residual effects. The assessment is based on best practice guidance including the Chartered Institute for Ecology and Environmental Management's (CIEEM) Guidelines for EcIA in the UK and Ireland (2024)[2]. This Chapter is supported by a number of Figures and Technical Appendices, as listed within the table of contents.

7.2.2 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 Alignment.

7.2.3 This Chapter should be read in conjunction with, and is supported by, the following other chapters within Volume 1 of this EIA Report, which are signposted as necessary throughout:

[1] Habitats that are listed in Annex I of the EU Habitats Directive (Directive 92/43/EC) that are under threat in their natural range, have a small natural range or present outstanding examples of typical characteristics, that member states must maintain, protect or restore to favourable conservation status within the EU. Within the UK these habitats are protected through the designation of SACs.

[2] CIEEM (2024). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. CIEEM, Winchester.

- **Chapter 8: Ornithology** – which identifies and assesses potential effects on birds, including the ornithology features of the Caithness and Sutherland Peatlands SPA, Ramsar and West Halladale SSSI; and,
- **Chapter 9: Soils, Geology and Water** – which identifies and assesses effects on hydrology, peat and soils, including hydrological effects on GWDTEs identified in the baseline section of this Chapter.

7.2.4 The assessment is based on the Proposed Alignment described in detail in **Volume 1: Chapter 3: The Proposed Development** which comprises approximately 10.5 km of 132 kV OHL supported by steel lattice towers (approximately 8 km would be constructed so that that it would be capable of operating at 275 kV in the future, if required), a CSE compound, formation of access track (of which 7.38 km would be permanent), and two single circuit 132 kV UGC (which would be capable of operation at 275 kV in the future) connections.

7.2.5 The Alternative Alignment is discussed and assessed within Volume 5 of this EIA Report, and cross reference is made to this Chapter within **Volume 5: Chapter 5: Ecology - Alternative Alignment,** where elements of the Alternative Alignment are as described in general terms for the Proposed Alignment.

Statement of Qualifications

7.2.6 This ecological assessment has been carried out by RPS using guidance from NatureScot (formerly Scottish Natural Heritage, SNH, 2018)[3] and the CIEEM Guidelines for EcIA in the UK and Ireland (2024)[2]. All staff contributing to this Chapter have professional experience in EcIA and ecological survey. A table presenting relevant qualifications and experience of key staff involved in the preparation of this Chapter is included in **Volume 4: Appendix V1-5.1: EIA Team Details**.

7.3 Scope of Assessment

Defining the Study Area

7.3.1 A key consideration in assessing the effects of any development on flora and fauna is to define the areas of habitat and the species that need to be considered. This requires the identification of a potential zone of influence (ZoI), which is defined as those areas and resources that may be affected by biophysical changes caused by project activities, however remote from a site. The desk study area is shown on **Volume 2: Figure V1-7.1**.

7.3.2 In identifying these receptors, it is important to recognise that a development can affect flora and fauna directly (e.g. the land-take required) and indirectly, by affecting land beyond the development site (e.g. through noise generation or hydrological impacts). The approach that has been undertaken for this assessment is to identify 'sensitive ecological receptors' (species and habitats that are both valued and could be affected by the Proposed Alignment) and separately, to consider legally protected species.

Issues Scoped into Assessment

7.3.3 This Chapter considers the potential impacts of the Proposed Development, including cumulative effects with other relevant developments, on the following ecological features:

- **designated nature conservation sites** – potential impacts include direct (i.e., derived from land-take or disturbance to habitats or protected species) and indirect (i.e., habitat fragmentation and/or modification, including through changes caused by impacts to supporting systems such as groundwater or overland flow);

[3] Scottish Natural Heritage and Historic Environment Scotland (2018). Environmental Impact Assessment Handbook - Version 5: Guidance for competent authorities, consultation bodies, and others involved in the Environmental impact Assessment process in Scotland.

- **terrestrial habitats** - impacts include direct (i.e., derived from land-take) and indirect (i.e., habitat fragmentation and / or modification, and changes caused by impacts to supporting systems such as groundwater or overland flow);
- **aquatic habitats** - direct impacts to watercourses and riparian habitats crossed by new access tracks and the ecological impacts of changes in water conditions through potential pollution effects (hydrological impacts are considered in **Volume 1: Chapter 9: Soils, Geology and Water** of this EIA Report); and
- **protected species and other notable species** - impacts considered include direct (i.e., loss of life; loss of key habitat; displacement from key habitat; barrier effects 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).

Issues Scoped out Of Assessment

7.3.4 The following ecological features have been scoped out of this assessment as there is no potential for the Proposed Development to give rise to significant adverse effects on them:

- Freshwater habitats – the tower locations have been designed to accommodate a minimum 20 m offset from the nearest watercourse; however, a minimum 10 m buffer would be maintained between construction works and ponds and watercourses, including the River Strathy and Halladale River. SSEN has prepared GEMPs and those relevant to the Proposed Development are identified in **Volume 4: Appendix V1-3.4**. In addition, an outline CEMP has been prepared for the Proposed Development (**Volume 4: Appendix V1-3.8**) and it is anticipated that the implementation of a CEMP would be a condition to any grant of consent. The CEMP sets out legal obligations to prevent damage to the environment during construction activities, including those elements near to and within watercourses (e.g. upgrades to existing watercourse crossings on access tracks), and would be adhered to throughout construction.
- Aquatic species – for the reasons set out above, there is no potential for significant adverse effects on aquatic habitats that could support protected/ notable fish species (including Atlantic salmon (*Salmo salmar*) and sea trout (*Salmo trutta*) and freshwater pearl mussel (*Margaritifera margaritifera*), which inhabit the River Strathy and Halladale River. There is no pathway for impacts on the water beetle *Oreodytes alpinus* (this water beetle species is listed as 'noteworthy fauna' of the Caithness and Sutherland Peatlands Ramsar) as this species inhabits lochs, none of which would be impacted (directly or indirectly) by the Proposed Development. Potential impacts on this aquatic species have therefore been scoped out of the EcIA.
- Great crested newt (*Triturus cristatus*) – the Proposed Development is outside the known range of this species in Scotland, and therefore it is scoped out of the EcIA as there is no reasonable likelihood of presence within the ZoI.
- European protected species of reptiles: sand lizard (*Lacerta agilis*) and smooth snake (*Coronella austriaca*) – the Proposed Development is outside the known range of these species in the UK and therefore they are scoped out of the EcIA as there is no reasonable likelihood of presence within the ZoI.
- Marsh saxifrage (*Saxifraga hirculus*) – this is a qualifying feature of the Caithness and Sutherland Peatlands SAC but there are no habitats within the ZoI of the Proposed Development that could support this species. Marsh saxifrage colonies are only found in wet flushes within the blanket bog in two parts of the SAC; one within Shielton Peatlands SSSI and one near Loch Ruard on the boundary of Blar nam Faoileag SSSI and Coire na Beinne Mires SSSI (NatureScot, 2021), both of which are more than 30 km south-east of the Proposed Development.
- Strathy Point SAC – this site is designated for its vegetated sea cliffs, and as this habitat is over 5 km from the Proposed Development, there is no pathway for effects on the qualifying habitats and this designated site has therefore been scoped out of the EcIA.

- Deer – deer may be present within the area of commercial forestry (Strathy Forest in the western part of the Study Area (west of the River Strathy), and a small unnamed plantation near Lochan Coulbackie in the eastern part of the Study Area) within the potential zone of noise and visual impacts during the construction and operation of the Proposed Development. However, as species of deer are not conferred legal protection in terms of their conservation status, and are not notable, rare, or threatened within Scotland, they are not considered to be an Important Ecological Feature (IEF) for the purposes of impact assessment. Furthermore, the effects of construction and operation of the Proposed Development would be unlikely to result in localised displacement of deer given that only a small section of forestry / woodland at the eastern end of the OHL would be removed (approximately 5.75 ha). It is therefore considered that there is no pathway by which displacement of deer could occur, and there is no potential for increased grazing pressure on peatland habitats within the Caithness and Sutherland Peatlands SAC / Ramsar. Deer are therefore scoped out of the EcIA.

7.4 Consultation and Scoping

7.4.1 To inform the scope of the assessment for the Proposed Development, consultation was undertaken with statutory and non-statutory bodies. **Table V1-7.1** summarises the scoping and consultation responses relevant to the terrestrial (non-avian) ecology assessment and provides information on where and / or how points raised have been addressed in this assessment.

7.4.2 Further details on consultation and scoping responses can be found in **Volume 1: Chapter 4 - Scope and Consultation**, and associated appendices within **Volume 4** of this EIA Report.

Table V1-7.1: Scoping Responses

Organisation & Date	Summary of Consultation Scoping Response	Where Addressed in the EIA Report
The Highland Council 21st May 2024	An EIAR chapter covering ecology, habitats and ornithology will be required. This must provide a baseline survey of the bird and animals (mammals, reptiles, amphibians, etc) interest on site. It needs to be categorically established which species are present, and where, before a future application is submitted. Further 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, in the contexts of both biodiversity and conservation. Details of any habitat enhancement should be provided. It is expected that the EIAR will address whether or not the development could assist or impede delivery of elements of relevant Biodiversity Action Plans.	The scope of ecology field surveys was agreed with NatureScot, and the ecological baseline defined through a combination of desk study data (utilising ecology survey data gathered for other wind farms and grid connections in the Strathy area that form part of the Connagill Cluster Grid Connections), and specific field surveys for the Proposed Alignment (see **Table V1-7.2**). A summary of the protected species baseline and evaluation is provided in **Table V1-7.4**. Detailed results from UKHab and National Vegetation Classification (NVC) surveys are summarised in **Volume 4: Appendix V1-7.3 – Habitat Technical Report** and **Volume 2: Figure V1-7.7**.
	The presence of protected species such as Schedule 1 Birds or European Protected Species must be included and considered as part of the application process, not as an issue which can be considered at a later stage. Any consent given without due consideration to these species may breach European Directives with the possibility of consequential delays or the project being halted.	Schedule 1 birds are considered in **Volume 1: Chapter 8 – Ornithology**. A summary of the protected species baseline (including any relevant European protected species) and evaluation is provided in **Table V1-7.4**.
	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.	Embedded mitigation / mitigation by design is described in Section 7.9; this summarises the measures taken to avoid and / or reduce harm to sensitive habitats including those within the Caithness and Sutherland Peatlands SAC / Ramsar, West Halladale SSSI and Flow Country WHS. The potential impacts of the Proposed Alignment are assessed in Section 7.10. Assessment of impacts on the qualifying features of the Caithness and Sutherland Peatlands SAC / Ramsar has been undertaken for the Proposed Alignment as presented in **Volume 4: Appendix V1-7.6**.

Organisation & Date	Summary of Consultation Scoping Response	Where Addressed in the EIA Report
	It is noted that the Applicant wishes to scope out marsh saxifrage which is a qualifying feature of the Caithness and Sutherland Peatland SAC and the potential impacts on the Strathy Point SAC, the North Caithness Cliffs SPA (scoped in for the alternative development) and the North Sutherland Coastal Islands SPA. It is anticipated that NatureScot can also provide specific advice in respect of designated sites. NatureScot will also advise further regarding Habitat Regulations Assessment considerations. If an Appropriate Assessment is likely to be required and based on NatureScot's advice, the Planning Authority would encourage the Applicant to provide a Shadow Habitats Regulation Appraisal and Appropriate Assessment with its application.	NatureScot has agreed that marsh saxifrage and Strathy Point SAC can be scoped out of the EIA Report (see **Volume 1: Chapter 4** and its supporting appendices). Assessment of the direct and indirect impacts on the Caithness and Sutherland Peatlands SAC (and Ramsar) is presented in Section 7.10. A Shadow Habitats Regulations Appraisal (SHRA) for the Caithness and Sutherland Peatlands SAC / Ramsar is included in **Volume 4: Appendix V1-7.6**. Potential impacts on SPA/ Ramsar ornithology features are assessed in **Volume 1: Chapter 8** of this EIA Report (see also the SHRA for the Caithness and Sutherland Peatlands SPA / Ramsar and North Caithness Cliffs SPA included in **Volume 4: Appendix V1-8.3**).
	Whilst the Council's Ecology Officer has been unable to comment on this Scoping Report, comments were made at the pre-application stage. Particular attention is drawn to the advice provided regarding the candidate Flow Country World Heritage Site (WHS).	A World Heritage Site Assessment has been undertaken for the Flow Country WHS (see **Volume 4: Appendix V1-7.7**). This was informed by assessment work presented in this Chapter and in the SHRA (**Volume 4: Appendix V1-7.6**) in respect of the potential impacts of the Proposed Alignment on the Caithness and Sutherland Peatlands SAC / Ramsar, which overlaps with the WHS boundary within the Proposed Alignment limit of deviation (LoD). The WHS assessment has concluded that there would be no adverse effects on the WHS attributes.
	NatureScot will lead on priority peatland and protected species. NatureScot advise that on peatland carbon-rich soils and priority peatland habitats, the restoration of peatland should be a 1:10 restoration level with an additional 10% to provide enhancement measures. In relation to protected species it is noted in section 6.3.4 of the Scoping Report that through consultation with NatureScot it has been agreed that no further surveys for protected species are required. It will be for NatureScot to confirm this in their response.	An overarching HMP for the Connagill Cluster Grid Connections is being developed in consultation with NatureScot (see **Volume 4, Appendix V1-7.8**). This will aim to deliver landscape-scale habitat enhancement, and to mitigate the potential cumulative impacts on peatland habitat within the Caithness and Sutherland Peatlands SAC / Ramsar to achieve 10% net gain. This will also include measures to compensate for direct and indirect permanent impacts on peatland habitats outwith the SAC / Ramsar boundary.

Organisation & Date	Summary of Consultation Scoping Response	Where Addressed in the EIA Report
		NatureScot has confirmed that the level of survey effort undertaken to inform the EcIA is adequate and that no additional protected species surveys are necessary.
	NPF4's commitment to deliver positive effects for biodiversity through development. Policy 3 states that, '*Development proposals for national, major and of EIA development should only be supported where it can be demonstrated that the proposal will conserve and enhance biodiversity, including nature networks within and adjacent to the site, so that they are in a demonstrably better state than without intervention, including through future management*.' A draft or outline Habitat Management Plan (HMP) and Species Protection Plan (SPP) should be produced as part of the EIA, including any proposals for mitigation and enhancement in relation to important habitats and species. Any compensatory planting plans should be carefully considered and included in the HMP. It is noted that the application will be supported by a Biodiversity Net Gain Metric, this is supported.	As above. Species Protection Plans (SPPs) have been developed and agreed with NatureScot (see **Volume 4: Appendix V1-3.5)**. The Applicant is committed to incorporating BNG into their projects and a BNG assessment would be produced in agreement with relevant consultees secured by a condition of consent. In addition to mitigation, biodiversity net gain will be achieved through landscape-scale enhancement of the peatland habitat and these measures are set out in the overarching HMP for the Connagill Cluster Grid Connections (see **Volume 4: Appendix V1-7.8**)
	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.	The Proposed Alignment would not directly impact any watercourses, and a minimum buffer of 10 m would be maintained between construction activities and watercourses. The towers have been designed to achieve a minimum offset of 20 m from watercourses. The potential for pollution to watercourses is assessed in respect of potential impacts to otter (a qualifying feature of the Caithness and Sutherland Peatlands SAC/ Ramsar) in Section 7.10.
NatureScot 26th April 2024	<u>Caithness and Sutherland Peatlands SAC</u> *Otter:* We note that most of the otter survey results have hydrological connectivity to this SAC. Therefore, any otters and their shelters, which might be affected are most likely to be linked with this SAC, even if they are found outwith it. Assessments should be carried out to inform the level of impact to otters, ensuring works do not undermine the potential for SAC otter restoration, see https://apps.snh.gov.uk/sitelink-api/v1/sites/8218/documents/66. Holts and lie-up sites close to the OHL route should be protected within the concept of a Species Protection Plan (SPP). See our otter	The Proposed Alignment would not directly impact any watercourses, and a minimum buffer of 10 m would be maintained between construction activities and watercourses. The towers have been designed to achieve a minimum offset of 20 m from watercourses. The potential for pollution to watercourses is assessed in respect of potential impacts to otter (a qualifying feature of the Caithness and Sutherland Peatlands SAC/ Ramsar) in Section 7.10.

Organisation & Date	Summary of Consultation Scoping Response	Where Addressed in the EIA Report
	guidance for further information and feel free to contact us, should you need more site-specific advice for any monitoring/camera trap work at holt site.	
	Peatland habitats (e.g. wet heath, etc.) & bog: Peatland habitats (e.g. wet heath, etc.) & bog: See our previous comments within Annex A. In addition, we recommend that deer are taken into consideration in context to any potential increase in trampling effects to peatland SAC habitats, because of construction works. This should feature within the shadow HRA. For more information, see https://www.nature.scot/doc/guidance-planning-and-development-what-consider-and-include-deer-assessment-and-management.	Potential impacts to peatland habitats and bog due to an increase in deer trampling have been scoped out on the basis that only a very small area of forestry would be removed (see Section 7.3).
	Flow Country World Heritage (WHS) Site (proposed)[4] We note that many of the wind farm developments which have generated the need for this proposal also fall firmly within the WHS too, which may potentially negate the need for this project if they are refused planning permission. We have a remit to advise on the WHS but any decision of approval, or not, rests with the decision maker, so SSEN should be fully aware of project viability and risk in this regard. The Outstanding Universal Value (OUV) of the site encompasses several attributes, such as bog habitat and bird assemblage. More details on this are available from the Highland Council website, including their Planning Position Statement.	A WHS Assessment has been undertaken for the Flow Country WHS (see **Volume 4: Appendix V1-7.7**). This was informed by assessment work presented in this Chapter and in the SHRA (**Volume 4: Appendix V1-7.6**) in respect of the potential impacts of the Proposed Alignment on the Caithness and Sutherland Peatlands SAC / Ramsar, which overlaps with the WHS boundary within the Proposed Alignment LoD. The WHS assessment has concluded that there would be no adverse effects on the WHS attributes.
	West Halladale SSSI Any potential impacts to the SSSI bog habitat, black-throated diver, common scoter and breeding bird assemblage, should be assessed and presented within the EIAR. The breeding bird assemblage species list to be considered is “Upland moorland with water bodies”, see https://hub.jncc.gov.uk/assets/16bd76ad-bb74-4724-9e06-5df02b459524. At present, all the SSSI features, other than common scoter, have favourable condition status. An assessment of effects should be undertaken for all SSSI features (as above), indicating any potential impacts and the likely duration of these. We would welcome avoidance and mitigation measures to reduce any potential impacts to nationally important interests.	Potential impacts on SSSI ornithology features are assessed in **Volume 1: Chapter 8** of this EIA Report. Potential impacts on SSSI bog habitat are assessed in Section 7.10.

[4] The Flow Country World Heritage Site (WHS) was inscribed as a WHS by UNESCO in July 2024 and therefore is no longer a ‘proposed WHS’.

Organisation & Date	Summary of Consultation Scoping Response	Where Addressed in the EIA Report
	Peatland & priority peatland habitats – wider countryside In context to NPF4 (policy 3), it will be important for applications to clearly distinguish between those actions mitigating / compensating for adverse impacts (i.e. within an HMP), and actions proposed to enhance (i.e. within an Environmental Management Plan (EMP)). Annex 1 of our Peatland Guidance (updated Nov 2023) provides a template for inclusion within the EIAR to help provide an understanding on peatland quality that may be impacted by the development. We recommend that this is completed and included, see; https://www.nature.scot/doc/advising-peatland-carbon-rich-soils-and-priority-peatland-habitats-development-management. Annex 2 presents some useful information on restoration that can be included within a Habitat Management Plan, or BNG Plan.	An overarching HMP for the Connagill Cluster Grid Connections is being developed in consultation with NatureScot (see **Volume 4: Appendix V1-7.8**). This will aim to deliver landscape-scale habitat enhancement, and to mitigate the potential cumulative impacts on peatland habitat within the Caithness and Sutherland Peatlands SAC / Ramsar to achieve 10% biodiversity net gain. This will also include measures to compensate for direct and indirect permanent impacts on peatland habitats outwith the SAC / Ramsar boundary.
	Enhancement / Biodiversity Net Gain We welcome SSEN's biodiversity commitment to protect and enhance the environment and look forward to seeing enhancement measures in due course. Any enhancement plans should be presented in full within the EIA, allowing complete assessments to be undertaken in context to Habitat Regulation Appraisals (HRAs).	The Applicant is committed to incorporating BNG into their projects and a BNG assessment would be produced in agreement with relevant consultees secured by a condition of consent. In addition to mitigation, as set out above, biodiversity net gain will be achieved through landscape-scale enhancement of the peatland habitat and these measures are set out in the overarching HMP for the Connagill Cluster Grid Connections (see **Volume 4: Appendix V1-7.8**).
Scottish Environment Protection Agency (SEPA) 12th April 2024	Figure 12 [of the Scoping Report] indicates that there will be peat or peaty soils over all of the route and therefore from our perspective demonstrating that the proposals meet the requirements of Policy 5 of NPF4 will be of most significance and in this regard we refer the developer to section 3 of the appendix. Peat probing information should be provided so that it is ensured that there is depth information available for all locations where infrastructure – including all temporary construction infrastructure and any borrow pits – is proposed. It should be clearly demonstrated that the cable route corridor, location of individual tower hardstandings and supporting infrastructure such as tracks avoids the areas of deepest peat and any near natural condition habitat. Proposals for peatland compensation/offsetting should be outlined, and in addition proposals for biodiversity gain.	A peat probing campaign has been carried out across the project to establish peat depths and inform siting of infrastructure, as well as appropriate mitigation (see **Volume 1: Chapter 9** and its supporting appendices of this EIA Report). The condition of the peat is discussed in **Volume 1: Chapter 9,** specifically in **Volume 4: Appendix V1-9.4,** and an assessment of the potential impacts on the Flow Country World Heritage Site (WHS) is included in **Volume 4: Appendix V1-7.7**. Habitat Management Plan: an overarching HMP for the Connagill Cluster Grid Connections is being developed in consultation with NatureScot (see **Volume 4: Appendix V1-7.8**). This will aim to deliver landscape-scale habitat enhancement, and to mitigate the

Organisation & Date	Summary of Consultation Scoping Response	Where Addressed in the EIA Report
		potential cumulative impacts on peatland habitat within the Caithness and Sutherland Peatlands SAC / Ramsar. This will also include measures to compensate for direct and indirect permanent impacts on peatland habitats outwith the SAC / Ramsar boundary.
	The submitted habitat survey (which the text of the report suggests is to National Vegetation Classification Standard – but is a Phase 1 Habitat Survey) indicates that the development will have an impact on habitats that are potentially groundwater dependant. The final submission should provide an assessment of whether the habitats are actually groundwater dependant in the area, and mitigation measures to maintain local hydrology where necessary.	Potential areas of GWDTE are shown on **Volume 2: Figure V1-9.8** and discussed within **Volume 1: Chapter 9**. Where required, measures to safeguard local hydrology and water flow paths are given.
	In view of the comment in section 6.5.1 of the report we highlight that a buffer of 50 m should be aimed for to protect local water features; we do not consider 10 m suitable.	A minimum 20 m buffer to watercourses has been incorporated into the proposed design of the tower locations.
Royal Society for the Protection of Birds (RSPB) 31st May 2024 [comments pertaining to terrestrial ecology only, refer to **Volume 1: Chapter 8: Ornithology** for comments relating to avian interests]	**Bird Species of Conservation Concern and Designated Sites** The proposed OHL passes through the Caithness and Sutherland Peatlands Special Protection Area (SPA), Special Area of Conservation (SAC) and Ramsar site and the West Halladale Site of Special Scientific Interest (SSSI). The routes are also adjacent to the East Halladale SSSI and within connectivity distance to qualifying features of the Caithness Lochs SPA. Due to likely significant effects on European Sites, the EIA Report must include sufficient information to inform an Appropriate Assessment by the competent authority, as required by The Conservation of Habitats and Species Regulations 2017. As the proposed development has the potential to impact on a number of qualifying features of these designated sites, we welcome the commitment in Section 3.5.1 of the Scoping Report that a shadow Habitats Regulation Appraisal (HRA) will be provided in the EIA report.	Assessment of the direct and indirect impacts on the Caithness and Sutherland Peatlands SAC (and Ramsar) is presented in Section 7.10. A Shadow Habitats Regulations Appraisal (SHRA) for the Caithness and Sutherland Peatlands SAC / Ramsar is included in **Volume 4: Appendix V1-7.6**. Potential impacts on the Caithness and Sutherland Peatlands SPA/ Ramsar ornithology features are assessed in **Volume 1: Chapter 8** of this EIA Report (see also the SHRA for the Caithness and Sutherland Peatlands SPA / Ramsar, included in **Volume 4: Appendix V1-8.3**).
	Peatland and habitats The site is part of the wider Flow Country, internationally important for its blanket bogs which, when in a healthy condition, naturally sequester and store of carbon. The NatureScot Carbon and Peatland Map 2016, identifies that both the Proposed [and the Alternative] OHL pass through significant areas of nationally important Class 1 (Nationally important carbon-rich soils, deep peat and priority peatland	A habitat map showing the extent and distribution of NVC habitat types within the Study Area is displayed on **Volume 2: Figure V1-7.7**. A peat probing campaign has been carried out across the project to establish peat depths and inform siting of infrastructure, as well as

Organisation & Date	Summary of Consultation Scoping Response	Where Addressed in the EIA Report
	habitat / areas likely to be of high conservation value) and Class 2 (Nationally important carbon-rich soils, deep peat and priority peatland habitat). We support the following statement in Section 8.5.12 [of the Scoping Report]: "*Regarding peat, in accordance with NPF4, the mitigation hierarchy would be applied so that impacts are avoided, or minimised as far as possible, and where they cannot be avoided appropriate measures would be proposed to safeguard peat and carbon rich soils.*" Data from the peat depth survey should be used to inform siting, in order to minimise impacts on peat by helping to avoid areas deeper than 0.5 m. Horizontal directional drilling through bedrock should be considered for sensitive peatland habitats that cannot be avoided. Alignment finalisation must consider minimising impacts on peat by appropriate micro-siting or HDD. We note that, "*a 100m LOD (50 m either side of the centre line of the OHL alignment) would be sought to allow for micro-siting of the OHL during construction*" and "*a 50 m LOD will be sought for the construction of new access tracks*" (section 2.3.2 of the Scoping Report). This should also be considered in assessments. Section 11.6.8 states that climate change is scoped out of the EIA assessment. Although, we understand that the proposed development, would support the renewable network, an assessment of carbon emissions in line with Policy 5d)iii) of NPF4 which requires, a detailed site specific assessment to identify 'the likely net effects of the development on climate emissions and loss of carbon'.	appropriate mitigation (see **Volume 1: Chapter 9** and its supporting appendices of this EIA Report). Horizontal directional drilling (HDD) would be technically very challenging to undertake and would require a large laydown and construction compound at either end of the HDD section(s). This could require large areas of peat to be cleared or disturbed. The alternative options considered and reasons for identifying the Proposed Alignment and design solution is discussed in **Volume 1: Chapter 2: The Routeing Process and Alternatives.** The future baseline for the Study Area, including within the context of future climate change, is considered within Section 7.8. A specific climate change assessment for the Proposed Alignment was scoped out and the rationale is presented in **Volume 1: Chapter 4: Scope and Consultation.**
	World Heritage Site This site overlaps the candidate Flow Country World Heritage Site. In section 6.3.4 [of the Scoping Report], it is stated that there is a "small overlap between the Proposed Development footprint and the WHS". In fact there seems to be what would generally be considered as a large overlap between the WHS and both the Proposed Development (approximately 5 km) and the Alternative (approximately 6.7 km). No proposals have been set out for assessing the impacts on the candidate World Heritage Site. The Highland Council's Flow Country Candidate World Heritage Site Planning Position Statement (April 2023)4, states that, developments within the WHS, should be assessed utilising the UNESCO Impact Assessment Guidance	A World Heritage Site Assessment has been undertaken for the Flow Country WHS utilising the UNESCO Impact Assessment Guidance Toolkit (see **Volume 4: Appendix V1-7.7**). This was informed by assessment work presented in this Chapter and in the SHRA in respect of the potential impacts of the Proposed Alignment on the Caithness and Sutherland Peatlands SAC / Ramsar, which overlaps with the WHS boundary within the Proposed Alignment LoD. The WHS assessment has concluded that there would be no adverse effects on the Flow Country WHS attributes. Since the Scoping Report was submitted (in March 2024) the Flow Country WHS was formally inscribed by UNESCO (in July 2024);

Organisation & Date	Summary of Consultation Scoping Response	Where Addressed in the EIA Report
	Toolkit (section 5.14). Therefore, we recommend that this is undertaken alongside the EIA.	therefore, the references throughout this document have been updated to reflect that it is no longer a candidate WHS.
	Biodiversity Net Gain (BNG) / Biodiversity Enhancement and HMP We welcome the Applicant's commitment to Biodiversity Net Gain (Section 2.10.3 of the Scoping Report). NPF4 was adopted in February 2023, is now part of the Statutory Development Plan and Policy 3 Biodiversity requires developments to leave nature in a better state than before they took place. Scottish Government draft guidance on Biodiversity and the implementation of policy 3b) was issued on 30 November 2023 and should be referred to. Only after impacts are avoided, mitigated then compensated for, can opportunities to enhance biodiversity be identifies and taken. We encourage consideration of ways this can be delivered at as early a stage as possible and in a way which gives consideration to species, surrounding habitats and potential links to other land management practices.	The Applicant is committed to incorporating BNG into their projects. Biodiversity Net Gains for the project will be set out in the overarching Habitat Management Plan (HMP) for the Connagill Cluster Grid Connections, which is being developed in consultation with NatureScot (see **Volume 4: Appendix V1-7.8**). This aims to deliver landscape-scale habitat enhancement in accordance with SSEN's BNG commitments, as well as to meet the requirements of NPF4 Policy 3. In addition, a BNG assessment would be produced in agreement with relevant consultees secured by a condition of consent.
	RSPB Scotland does not believe that biodiversity enhancement for development (as required by Policy 3 of NPF4) should be delivered within designated sites, except in exceptional circumstances, and any enhancement should be truly additional.	An overarching HMP for the Connagill Cluster Grid Connections is being developed in consultation with NatureScot to deliver landscape-scale habitat enhancement (see **Volume 4: Appendix V1-7.8**). In addition, a BNG assessment would be produced in agreement with relevant consultees secured by a condition of consent.
	We support the overall aim of the Applicant in Section 6.5.4 [of the Scoping Report] of enhancing biodiversity and achieving biodiversity net gain and the preparation of an outline Habitat Management Plan (HMP), which will take into account HMPs for other developments in the surrounding area. However, opportunities for habitat enhancement through a BNG scheme should be implemented alongside the mitigation hierarchy, including avoiding damage to protected sites and species where possible. We suggest this HMP contains detailed ecological justification for any habitat management proposals and seek to enhance key habitats, such as blanket bog, occurring within the area.	As stated above, an overarching HMP for the Connagill Cluster Grid Connections is being developed in consultation with NatureScot to deliver landscape-scale habitat enhancement (see **Volume 4: Appendix V1-7.8**). In addition, a BNG assessment would be produced in agreement with relevant consultees secured by a condition of consent.

Study Area

7.4.3 The Study Area encompasses the area over which all desk-based and field data were gathered to inform the assessment presented in this Chapter. The Field Study Area comprises habitats directly impacted by the Proposed Alignment, and incorporates temporary and permanent infrastructure, including Limits of Deviation (LoD) for the OHL, CSE compound, access tracks and UGC's and an appropriate buffer (see **Volume 2: Figure V1-7.1**). The Field Study Area therefore included land within 100 m of the proposed OHL and UGC alignment (50 m either side), 100 m from the edge of the CSE compound, and a minimum of 50 m (25 m either side) from proposed new access tracks. The Desk Study Area was extended some kilometres beyond the LoD boundaries to review information from all nearby wind farms and associated grid connections that are part of the Connagill Cluster.

7.5 Legislation, Policy and Guidance

7.5.1 This assessment has been undertaken with reference to relevant international, national and local legislation, policy and guidance, notably the following (further details are provided in **Volume 4: Appendix V1-7.1**):

Legislation Context

- Council Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Flora and Fauna (the Habitats 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 (as amended);
- The Wildlife and Countryside Act 1981 (as amended) (WCA) 1981;
- The Conservation (Natural Habitats &c.) Regulations 1994 (as amended) (i.e. the Habitats Regulations);
- The Conservation of Habitats and Species Regulations 2017 (as amended) (in relation to certain specific activities (reserved matters) including consents granted under sections 36 and 37 of the Electricity Act 1989);
- The Wildlife and Natural Environment (Scotland) Act 2011 (as amended) (WANE Act);
- Nature Conservation (Scotland) Act 2004 (as amended) (NCA); and
- The Protection of Badgers Act 1992 (as amended).

Policy Context

- National Planning Framework 4 (NPF4) (Scottish Government, 2023); and
- Highland-wide Local Development Plan (HwLDP) 2012.

Technical Guidance and Information

- Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th Edition) (Bat Conservation Trust, 2023);
- Guidance for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine Version 1.2 Updated April 2022 (CIEEM, 2018);
- Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems (Scottish Environmental Protection Agency, 2017);
- Highland Nature (2021) Biodiversity Action Plan 2021 – 2026; and
- The Scottish Biodiversity List (SBL) (Scottish Government, 2013).

7.6 Methodology

Desk Study

7.6.1 The following freely downloadable data from the following sources were searched for information on statutory and non-statutory designated sites, the presence of native woodland habitat and the distribution of species of conservation concern:

- Highland Biological Recording Group (HBRG);
- Scottish Natural Heritage;
- Scottish Wildlife Trust;
- Flow Country Rivers Trust;
- Botanical Society of Britain and Ireland;
- Joint Nature Conservation Committee (JNCC) website (https://www.jncc.gov.uk/);
- NatureScot Site Link website (https://sitelink.nature.scot/home/);
- NatureScot Natural Spaces (https://gateway.nature.scot/natural-spaces/datasets/);
- Habitat Map of Scotland (HabMos) website (https://www.nature.scot/landscapes-and-habitats/);
- Native Woodland Survey of Scotland data (https://forestry.gov.scot/support-regulations/scottish-forestry-map-viewer/);
- Carbon and Peatland Map, available online (https://map.environment.gov.scot/soil_maps/);
- Open source data from the National Biodiversity Network (https://nbnatlas.org) (NBN Atlas); and
- Large-scale 1:10,000 Ordnance Survey (OS) maps in conjunction with colour 1:25,000 OS map (to determine the presence of ponds and other features of nature conservation interest).

7.6.2 In addition, a review of existing publicly available data from developments in the area such as wind farms and grid connections within the Strathy area commonly referred to as the 'Connagill Cluster' (which includes Strathy South Wind Farm, Strathy Wood Wind Farm, Kirkton Energy Park and Melvich Wind Energy Hub and their associated grid connections) was undertaken as a desk-based exercise to identify habitats and species of conservation interest in the wider area. The proposed Armadale Wind Farm was originally included within the Connagill Cluster Grid Connections project, however, in May 2024 the developer of the proposed Armadale Wind Farm withdrew the section 36 application and consequently no longer require a grid connection. As such, this project has been removed from the Connagill Cluster Grid Connections. Nevertheless, the survey data collected for this development is potentially relevant to the desk study for the Proposed Alignment and therefore has been included within this Chapter.

7.6.3 The following reports were examined for relevant data:

- Melvich Wind Energy Hub: Environmental Impact Assessment Chapter 7 – Ecology and Nature Conservation dated March 2023 (Belltown Power, 2023)[5]
- Armadale Wind Farm: Further Environmental Impact Assessment Report Volume 1, Chapter 7 – Ecology, dated May 2023 (Arcus Consultancy Services Ltd, 2023)[6]
- Kirkton Energy Park: Environmental Impact Assessment Report Volume 2, Chapter 8 – Ecology, dated November 2022 (SLR, 2022)[7]
- Strathy Wood Wind Farm: Environmental Statement Volume 1, Chapter 8 – Ecology, dated November 2013 (EON, 2013)[8]

[5] https://melvichwindenergyhub.com/ [Accessed December 2024]
[6] https://armadalewindfarm.co.uk/resources/ [Accessed December 2024; however, this website is no longer active]
[7] https://kirktonwindfarm.co.uk/ [Accessed December 2024]
[8] https://www.energyconsents.scot/ApplicationDetails.aspx?cr=EC00005239 [Accessed December 2024]

- Strathy South Wind Farm; Environmental Impact Assessment Report Volume 2, Chapter 9 – Ecology (non-avian) (SSE, 2020)[9]

7.6.4 Further information on the nature conservation features that have the potential to be affected by the Proposed Development was obtained through searches of internet sources (e.g. UK Biodiversity Action Plans (UKBAP), Scottish Biodiversity List (SBL), Local Biodiversity Action Plans (LBAP)) and relevant published literature (i.e. relevant guidance documents and scientific papers). The Proposed Alignment falls within the area covered by the Highland Nature Biodiversity Action Plan 2021 - 2026.

Field Survey

7.6.5 A large amount of baseline habitat and protected species data has been collected through field surveys for other consented and proposed wind farms and their grid connections in the Connagill Cluster (see paragraph 7.6.3), the results of which were reviewed as part of the desk-based study. The includes other associated works required to complete the connection of the Proposed Alignment including the Strathy Wood Wind Farm Grid Connection[10]; a 4.5 km section of double circuit 132 kV OHL supported by steel lattice towers that would be used as shared infrastructure for the consented Strathy South and Strathy Wood wind farms. Field survey data for these developments covers the period 2007 to 2022.

7.6.6 In addition to data collected in the wider local area, a National Vegetation Classification (NVC) survey of the Proposed Alignment was undertaken in 2022 to 'ground truth' existing historic data recorded between 2009 and 2013. Further habitat surveys within the Proposed Alignment Study Area have been undertaken in 2024 to address gaps in baseline data.

7.6.7 Protected species surveys for otter, water vole (*Arvicola amphibius*), badger and bats were undertaken for the Proposed Alignment between August and October 2022.

7.6.8 The survey areas for the field surveys are illustrated in **Volume 2: Figure V1-7.3: Protected Species Survey Area** (confidential) and **Figure V1-7.4: Habitats Survey Area**. Static bat recorder survey locations are shown on **Figure V1-7.5: Static Bat Recorder Survey Locations**.

7.6.9 A summary of the field surveys that have been used to inform this EcIA is provided in **Table V1-7.2** below, with further details in **Volume 4: Appendix V1-7.3 (Habitats)**, **Appendix V1-7.4 (Protected Species)** (confidential) and **Appendix V1-7.5 (Bats)**.

Table V1-7.2: Summary of Ecology Field Surveys

Ecology Feature	Scope	Survey Area	Date
Habitats	Phase 1 Habitat surveys	Strathy North Wind Farm and projects in the Connagill Cluster including Strathy South Wind Farm and Strathy Wood Wind Farm, and associated infrastructure and grid connections.	2007 - 2013

[9] https://www.energyconsents.scot/ApplicationDetails.aspx?cr=ECU00002133 [Accessed December 2024]
[10] Strathy Wood Wind Farm Grid Connection (ECU Reference ECU00005221)
https://www.energyconsents.scot/ApplicationDetails.aspx?cr=ECU00005221 [Accessed December 2024]

Ecology Feature	Scope	Survey Area	Date
	Phase 1 Habitat survey	Strathy Wood Wind Farm Grid Connection and 100 m buffer.	2022
	National Vegetation Classification (NVC) survey	Strathy Wood Wind Farm Grid Connection and 100 m buffer.	2022
		Track through Strathy Forest (for Strathy Wood Wind Farm Grid Connection and 100 m buffer)	2024
		Proposed Alignment and 100 m buffer	2022 and 2024
Bats (foraging / commuting)	Activity surveys (walked transects and static detector deployment)	Strathy Wood Wind Farm	2011 and 2012
	Activity surveys (walked transects and static detector deployment)	Strathy North Wind Farm	2016
	Activity surveys (static detector deployment)	Armadale Wind Farm	2019
	Habitat assessment survey and activity surveys (static detector deployment)	Kirkton Energy Park	2020 and 2021
	Habitat assessment survey and activity surveys (static detector deployment)	Melvich Wind Energy Hub	2022
	Habitat assessment survey	Strathy Wood Wind Farm Grid Connection	2022
	Activity surveys Static detector deployments in 8 locations for 10 nights per deployment	Strathy Wood Wind Farm Grid Connection	2022
	Habitat assessment survey	Proposed Alignment	2022
	Activity surveys Static detector deployments in 8 locations for 10 nights per deployment	Proposed Alignment	2022
Bats (roosting)	Preliminary bat roost assessment	Strathy Wood Wind Farm	2011 and 2012
	Emergence survey	Braerathy Lodge (Strathy Wood Wind Farm)	2011
	Roost searches and radio-tracking	Strathy North Wind Farm	2016

Ecology Feature	Scope	Survey Area	Date
	Habitat appraisal to identify potential roost features.	Strathy Wood Wind Farm Grid Connection and 30 m buffer	2022
	Habitat appraisal to identify potential roost features.	Proposed Alignment and 30 m buffer	2022
Otter and water vole	Field signs survey	Strathy North Wind Farm and 200 m buffer	Various surveys for planning application and pre-construction 2007 - 2013
	Field signs survey	Strathy Wood Wind Farm including 500 m buffer of all proposed infrastructure	2011
	Field signs survey	Armadale Wind Farm including 200 m buffer	2019
	Field signs survey	Kirkton Energy Park including 250 m buffer	2020 and 2021
	Field signs survey	Melvich Wind Energy Hub including 250 m buffer	2022
	Field signs survey	Strathy Wood Wind Farm Grid Connection and 200 m buffer (for otter) and 30 m buffer (for water vole), plus 100 m upstream and downstream of watercourse crossing points	2022
	Field signs survey	Proposed Alignment and 200 m buffer (for otter) and 30 m buffer (for water vole), plus 100 m upstream and downstream of watercourse crossing points	2022
Pine marten and wildcat	Field signs survey	Strathy North Wind Farm and 250 m buffer	Various surveys for planning application and pre-construction 2007 - 2013
	Field signs survey	Strathy Wood Wind Farm including 500 m buffer of all proposed infrastructure	2011

Ecology Feature	Scope	Survey Area	Date
	Field signs survey	Armadale Wind Farm including 250 m buffer	2019
	Field signs survey	Kirkton Energy Park including 250 m buffer	2020 and 2021
	Field signs survey	Melvich Wind Energy Hub including 250 m buffer	2022
	Field signs survey	Strathy Wood Wind Farm Grid Connection and 250 m buffer	2022
	Field signs survey	Proposed Alignment and up to 250 m buffer	2022
Red squirrel	Field signs survey	Armadale Wind Farm and 50 m buffer	2019
	Field signs survey	Strathy Wood Wind Farm Grid Connection and up to 250 m buffer	2022
	Field signs survey	Proposed Alignment and up to 250 m buffer	2022
Badger	Field signs survey	Strathy North Wind Farm and 100 m buffer	Various surveys for planning application and pre-construction 2007 - 2013
	Field signs survey	Strathy Wood Wind Farm including 500 m buffer of all proposed infrastructure	2011
	Field signs survey	Armadale Wind Farm including 100 m buffer	2019
	Field signs survey	Kirkton Energy Park including 250 m buffer	2020 and 2021
	Field signs survey	Melvich Wind Energy Hub including 250 m buffer	2022
	Field signs survey	Strathy Wood Wind Farm Grid Connection and up to 50 m buffer	2022
	Field signs survey	Proposed Alignment and up to 50 m buffer	2022

Assessment of Effects

7.6.10 This assessment has been undertaken in accordance with the current EcIA guidance detailed by the CIEEM (CIEEM, 2024)[2]. Further details are provided in **Volume 4: Appendix V1-7.2: Ecological Impact Assessment Methodology**.

7.6.11 Ecological features that are important and potentially affected by the Proposed Alignment are referred to as Important Ecological Features (IEF), and these features are scoped into the EcIA The IEFs are determined based on CIEEM guidance and professional judgement and can include for example international and national statutory designated sites, local non-statutory designated sites, UK Priority Species and Habitats and Red Listed, Rare and Legally Protected Species. Other habitats and species may not be designated / legally protected, but may be locally rare or threatened, or provide a key migratory corridor and are therefore judged to be important.

7.6.12 The assessment of the significance of predicted effects on IEFs is based on the 'sensitivity' of a receptor and the nature and magnitude of the impact that the Proposed Alignment would have on it. Effects on biodiversity may be direct (e.g. the loss of species or habitats), or indirect (e.g. effects due to noise, dust, or disturbance) on receptors located within or outside the Study Area.

7.6.13 The overall significance of effect is defined using a combination of magnitude and sensitivity. It also takes into account:

- duration (short, medium, long term);
- reversibility;
- whether the effect is positive / negative, indirect / direct;
- performance against environmental standards; and
- compatibility with environmental policies, as appropriate.

Limitations to the Assessment

7.6.14 As stated above, most of the baseline ecology field surveys were undertaken in 2022 for the Proposed Alignment and therefore the data are now over two years old. It was agreed with NatureScot at the pre-scoping stage that these data are sufficient to inform the EcIA for the Proposed Alignment, particularly given the large amount of ecology baseline data that has been recorded for the existing, consented and proposed wind farms within the area plus their associated grid connections (commonly referred to as the 'Connagill Cluster Grid Connections'), and which have also informed the EcIA for these developments. This was also the approach taken to the planning application for the preceding section of OHL grid connection (referred to as 'Strathy Wood Wind Farm Grid Connection'). Further details on the consultation undertaken with NatureScot is provided in **Volume 1: Chapter 4** of this EIA Report and is summarised in **Table V1-7.1**.

7.6.15 No further limitations to the assessment completed for the Proposed Alignment were identified. As required by the relevant professional guidance (CIEEM, 2024), the precautionary principle has been adopted when undertaking the assessment to ensure that conclusions on predicted residual effects are robust and realistic. Any assumptions made regarding effects to IEFs are based on current guidance, scientific knowledge, and the expert professional opinion of the author of this Chapter and are therefore deemed appropriate in the context of the Study Area.

7.7 Baseline Conditions

Designated Sites

7.7.1 A search for the following statutory designated nature conservation sites was completed using Geographic Information System (GIS) data available on the NatureScot SiteLink website:

- Sites of international importance[11] i.e. SACs and Ramsar sites within 10 km of the Proposed Alignment; and
- Sites of national importance i.e. SSSI and National Nature Reserves (NNRs) designated for ecology features within 2 km of the Proposed Alignment.

7.7.2 **Volume 2: Figure V1-7.2** provides an overview of the results of this desk-based assessment and the designated sites present in proximity to the Proposed Alignment.

7.7.3 At its western end, the Proposed Alignment directly impacts a very small section of the Caithness and Sutherland Peatlands SAC / SPA / Ramsar (although the SPA designated ornithology features are considered within **Volume 1: Chapter 8** of this EIA Report), the boundaries of which are mostly overlapping. This vast area of designated peat bog and wetland habitat covers approximately 145,000 ha[12] (with a proposed extension consulted on by NatureScot in 2022 for an extension by a further 2,446 ha). The SAC / SPA / Ramsar is underpinned by ten SSSIs, of which the Proposed Alignment crosses part of the West Halladale SSSI.

7.7.4 The Proposed Alignment skirts around the northern edge of the Caithness and Sutherland Peatlands SAC / SPA / Ramsar designation, which extends westwards as far as the existing access track to Strathy South Wind Farm, which is crossed by the section of OHL between Towers 20 and 21 (Tower 21 is the only tower within the boundary of the designated sites plus a short section of proposed new permanent access track leading to it). All other existing and proposed temporary and permanent access tracks cross habitats to the north of the OHL route and are therefore outside the boundary of the SAC/ Ramsar/ SSSI.

7.7.5 The vast expanse of peatland crossed by the OHL route is also within the Flow Country WHS, the boundary of which is mostly (although not entirely) overlapping with the Caithness and Sutherland Peatlands SAC / SPA / Ramsar designation although extends northwards as far as Melvich and Strathy. Towers 21 and 30 to 48 (inclusive) are within the WHS boundary.

7.7.6 A summary of the designated sites identified within these search areas are presented in **Table V1-7.3** (listed in order of proximity to the Proposed Alignment).

[11] Excluding SPAs, which are considered in Chapter 8: Ornithology.

[12] Caithness and Sutherland Peatlands SAC = 145,960.53 ha; Caithness and Sutherland Peatlands SPA = 147,726.54 ha; Caithness and Sutherland Peatlands Ramsar = 143,502.79 ha; figures taken from relevant citations.

Table V1-7.3: Statutory Designated Sites within 10 km (SACs / Ramsar's) and 2 km (SSSIs / NNRs) of the Proposed Alignment

Site	Designation	Proximity to nearest part of Proposed Alignment	Qualifying Features (non-avian)	Scoped into EcIA?
Caithness and Sutherland Peatlands	SAC	0 km (overlaps the Proposed Alignment)	Annex I habitats of the EC Habitats Directive that are a primary reason for site designation: • Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or of the *Isoëto-Nanojuncetea* (Clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels); • Natural dystrophic lakes and ponds (Acid peat-stained lakes and ponds (also known as 'dubh lochans')); and • Blanket bogs (Priority feature). Other Annex I habitats present as a qualifying feature but not a primary reason for designation: • Northern Atlantic wet heaths with *Erica tetralix* (Wet heathland with cross-leaved heath); • Transition mires and quaking bogs (Very wet mires often identified by an unstable 'quaking' surface (also known as ladder fen)); and • Depressions on peat substrates of the *Rhynchosporion*. Annex II species that are a primary reason for site designation: • Otter (*Lutra lutra*); and • Marsh saxifrage (*Saxifraga hirculus*).	Yes
Caithness and Sutherland Peatlands	Ramsar	0 km (overlaps the Proposed Alignment)	The site qualifies under Ramsar criterion 1 by virtue of it containing a variety of wetland types: • Blanket bog;	Yes

Site	Designation	Proximity to nearest part of Proposed Alignment	Qualifying Features (non-avian)	Scoped into EcIA?
			• Mire communities; • Oligotrophic lochs; • Dystrophic lochs; • Lochans and pools; and • Wet heath. The site also qualifies under Ramsar criterion 2 as it supports a number of rare species of wetland plants and animals: • Bog orchid (*Hammarbya paludosa*); • Lindberg's bog-moss (*Sphagnum lindbergii*); • Olive bog-moss (*Sphagnum majus*); • *Oreodytes alpinus* (a water beetle species); • Freshwater pearl mussel (*Margaritifera margaritifera*); and • Otter (*Lutra lutra*).	
Flow Country	WHS	0 km (overlaps the Proposed Alignment)	Nominated for its exceptional blanket bog and the biodiversity (bird and plant life) it supports. Of the 187,026 ha proposed as a WHS, 73% is already covered by existing designations (including the Caithness and Sutherland Peatlands SAC / SPA / Ramsar and its component SSSIs).	Yes
West Halladale	SSSI	0 km (overlaps the Proposed Alignment)	Component of the Caithness and Sutherland Peatlands SAC / SPA / Ramsar Non-avian notified features: • Blanket bog.	Yes
East Halladale	SSSI	0.7 km east	Component of the Caithness and Sutherland Peatlands SAC / SPA / Ramsar Notified features:	No – there are no pathways by which the

Site	Designation	Proximity to nearest part of Proposed Alignment	Qualifying Features (non-avian)	Scoped into EcIA?
			• Blanket bog.	SSSI feature could be impacted.
Lochan Buidhe Mires	SSSI	1.9 km west	Component of the Caithness and Sutherland Peatlands SAC / SPA / Ramsar Non-avian notified features: • Blanket bog	No – there are no pathways by which the SSSI feature could be impacted.
Strathy Coast	SSSI	2.1 km north	Designated for its machair on largely calcareous shell sand, maritime (cliff) vegetation, sand dunes and saltmarsh habitats supporting a diverse assemblage of plant species, including vascular plants. This SSSI is part of the Strathy Point SAC.	No – there are no pathways by which the SSSI feature could be impacted.
Armadale Gorge	SSSI	2.5 km north-west	A long narrow gorge designated for its woodland and dry heath plant communities.	No – there are no pathways by which the SSSI feature could be impacted.
Red Point Coast	SSSI	4 km north	A 6 km stretch of coastline between Sandside Bay in Caithness and Melvich Bay in Sutherland. Designated for its maritime cliff vegetation including the nationally scarce Scottish primrose *Primula scotica.*	No – there are no pathways by which the SSSI feature could be impacted.
Strathy Point	SAC	4.4 km north	Annex I habitat of the EC Habitats Directive that is a primary reason for site designation: • Vegetated sea cliffs of the Atlantic and Baltic Coasts (Vegetated sea cliffs)	No – as set out in Section 7.3, there are no pathways by which the qualifying habitat of the SAC could be impacted.
Strathy Bogs	SSSI	4.7 km south-west	Component of the Caithness and Sutherland Peatlands SAC / SPA / Ramsar Notified features: • Blanket bog.	No – there are no pathways by which the SSSI feature could be impacted.

Site	Designation	Proximity to nearest part of Proposed Alignment	Qualifying Features (non-avian)	Scoped into EcIA?
Forsinard Flows	NNR	7.4 km south	Large expanse of blanket bog with sheltered river valleys and mountains.	No – there are no pathways by which the NNR could be impacted.
Sandside Bay	SSSI	7.5 km north-east	Comprises the foreshores, dunes, dune slacks and banks of the Burn of Isauld, and an area of herb-rich grassland within the golf course.	No – there are no pathways by which the SSSI feature could be impacted.
Skelpick Peatlands	SSSI	8.8 km south-west	Nationally important site for blanket bog.	No – there are no pathways by which the SSSI feature could be impacted.
Loch Caluim Flows	SSSI	9.6 km south-east	Extensive area of blanket bog interspersed with lochs and lochans.	No – there are no pathways by which the SSSI feature could be impacted.

Habitats

7.7.30 The Site comprises of a mosaic of blanket bog and wet heath habitats (see **Volume 2: Figure V1-7.7**) between the River Strathy in the west and the Halladale River in the east. The wider landscape comprises an extensive coniferous plantation woodland block to the west of the River Strathy (Strathy Forest) and further blanket bog habitat to the east, which is within the Caithness and Sutherland Peatlands SAC / Ramsar, West Halladale SSSI and the Flow Country WHS. There are a number of small waterbodies within the Proposed Alignment boundary that would be crossed by temporary and permanent access tracks. Several small lochs are present within the SAC / Ramsar boundary to the south of the OHL. A small unnamed forestry block is present in the eastern part of the Site near to Kirkton. Detailed descriptions of the habitats present within the Study Area, along with an assessment of their condition and the aggregate areas covered are provided in **Volume 4: Appendix V1-7.3**.

7.7.31 The majority of blanket bog habitats correspond to the M17 *Trichophorum germanicum-Eriophorum vaginatum* mire, with some stands classified to the M17a *Drosera rotundifolia-Spahgnum* species or the M17b *Cladonia* species sub-communities. This blanket bog community and its associated subcommunities were scatted across the entire survey area north to south. These communities are characteristic of blanket bog vegetation of the more oceanic parts of Britain, occurring extensively on waterlogged ombrogenous peat. The peats show varying humification but are typically highly acidic, with a surface pH usually not above 4 and often less. Grazing and burning was evidently having effects on the floristics and structure of this community and draining and peat-cutting were also evident in areas. Some grazing and in places trampling by deer was evident throughout the M17 communities but there were no obvious signs of burning.

Protected Species

7.7.32 Desk study records from HBRG were obtained from a data search within c. 10 km of the Strathy South Wind Farm in 2019, the boundary of which is partly overlapping with the Proposed Alignment. HBRG returned only a small number of records for protected species, all of which were >10 km from the nearest part of the Proposed Alignment.

7.7.33 A review of all protected species surveys completed for nearby developments associated with the Connagill Cluster Grid Connection projects and their associated wind farms was completed (see paragraph 7.6.2). This identified that badger, otter, water vole, pine marten and common lizard are present in the wider landscape surrounding the Proposed Alignment where habitats are suitable to provide appropriate refugia, foraging and commuting opportunities.

7.7.34 A summary of the protected species baseline and nature conservation evaluation is provided in **Table V1-7.4** below. This table also identifies the IEFs that have been taken forward for EcIA. Further details on the desk study and field survey methods, and the survey results are provided within **Volume 4: Appendix V1-7.4: Protected Species Technical Report** (confidential) and **Appendix V1-7.5: Bat Technical Report**. **Volume 2: Figure V1-7.6** provides an overview of the protected species survey results from surveys completed in 2021 and 2022 within the Study Area and across the wider Connagill Cluster Grid Connections, which includes grid connections between the wind farms at Strathy South, Strathy Wood, Kirkton Energy Park and Melvich Wind Energy Hub, and the application for the preceding section of OHL grid connection (referred to as 'Strathy Wood Wind Farm Grid Connection') and the existing Strath Halladale to Dallangwell 132 kV OHL. As described in paragraph 7.6.2, the proposed Armadale Wind Farm was originally included within the Connagill Cluster Grid Connections project, however the wind farm section 36 application has been withdrawn and consequently a grid connection is no longer required. As such, this project has been removed from the Connagill Cluster Grid Connections. Nevertheless, the protected species survey data collected for this development is potentially relevant to the desk study for the Proposed Alignment and therefore has been included within this Chapter.

Table V1-7.4: Summary of Protected Species Baseline and Evaluation

Species	Desk Study Summary	Baseline Field Survey Summary	Nature Conservation Value	Technical Appendix (within Volume 4 of the EIA Report)	Scoped into EcIA?
Bats (roosting)	Bat roost surveys undertaken for the Strathy Wood Wind Farm and Strathy South Wind Farm identified small (i.e. low numbers of bats) common pipistrelle (*Pipistrellus pipistrellus*) roosts at the following locations: • Braerathy Lodge (NC 823 561) in 2011 – approximately 5 km south of the Proposed Alignment; and • Croft House (NC 792 488) in 2019, which is approximately 12 km south of the Proposed Alignment boundary. Bat roost surveys for the Strathy North Wind Farm in 2016 identified roosts at the following locations:	Common pipistrelle roosts at Dallangwell Cottage, Bowside Lodge and Stock Shed, which are just outside the Survey Area, are assumed to remain present. There is no other potentially suitable roosting habitat within the LoD.	Local (Low)	**Appendix V1-7.5**	Yes – potential for noise/ visual disturbance to roost at Bowside Lodge. Braerathy Lodge was demolished in 2024 and therefore is not considered further. The roosts at Croft House, Dyke, Dallangwell Cottage and Stock Shed are scoped out on the basis they are well outside the ZoI of any potential noise / visual disturbance.

Species	Desk Study Summary	Baseline Field Survey Summary	Nature Conservation Value	Technical Appendix (within Volume 4 of the EIA Report)	Scoped into EcIA?
	• Potential Daubenton's (*Myotis daubentonii*) and brown long-eared (*Plecotus auritus*) roost in a disused building at Dyke (NC 870 503) approximately 6 km south-west of the Proposed Alignment. • Small numbers of common pipistrelles roosting in several buildings at Bowside Lodge (NC 829 610) approximately 200 m west of the Proposed Alignment. • Small number of common pipistrelles roosting at Dallangwell Cottage (NC 825 598) approximately 0.5 km south-west of the Proposed Alignment. • Small number of common pipistrelles roosting at Stock Shed (NC 830 599) approximately 0.5 km south of the Proposed Alignment.				
Bats (foraging / commuting)	One record (a sighting) of common pipistrelle bat at NC 82 60, which is c. 300 m north-west of the Proposed Alignment. Activity surveys for other wind farms and grid connections in the Connagill Cluster recorded common pipistrelle, soprano pipistrelle (*P. pygmaeus*), *Myotis* species and Daubenton's bat. Levels of activity were generally low or very low. Surveys for Strathy Wood Wind Farm in 2016 recorded higher levels of activity around Braerathy Lodge and the River Strathy.	Automated detector surveys of the Proposed Alignment site in 2022 recorded common pipistrelle, soprano pipistrelle and *Myotis* bat species. Common pipistrelle was the species recorded most frequently, with the highest levels of activity approximately 700 m north-east of Braerathy Lodge near the southern end of the Proposed Alignment (which may be individuals from the previously identified common pipistrelle roost at Braerathy Lodge). Levels of bat activity by other bat species and at other survey locations were low.	Local (Low)	**Appendix V1-7.5**	No – the Proposed Alignment would not impact any bat foraging or commuting habitat, and there would be no nighttime working requiring task lighting that could disturb foraging / commuting bats.

Species	Desk Study Summary	Baseline Field Survey Summary	Nature Conservation Value	Technical Appendix (within Volume 4 of the EIA Report)	Scoped into EcIA?
Badger (*Meles meles*)	The HBRG desk study returned one record of badger at Rimsdale (NC 74 41), which is approximately 18 km south-west of the Proposed Alignment. Two badger setts were identified within the boundary of the Strathy North Wind Farm, one of which was closed under licence prior to construction of the wind farm (the other was active when most recently surveyed in 2023). Field signs of badger (snuffle holes / foraging signs) were recorded during surveys for Strathy Wood Wind Farm. This included badger activity recorded in close proximity to the existing access track (NC 829 575) and on the bank of the River Strathy (NC 822 562), close to Braerathy Lodge at the southern end of the Proposed Alignment.	Areas of woodland and woodland edge habitat could provide suitable habitat for badger, and field signs of this species have been recorded in the field survey area. Species assumed present in the wider local area, although no setts have been recorded in areas surveyed around the consented / existing wind farms at Strathy Wood.	Less than Local (Very Low)	**Appendix V1-7.4 (confidential)**	No – standard construction phase mitigation (as set out in **Volume 4: Appendix V1-3.6: Species Protection Plans**) would address any potential risk to this common and widespread species.
Otter (*Lutra lutra*)	The HBRG desk study returned one record of otter, which was on the River Naver at Bettyhill (NC 705 608) approximately 13 km north-west of the Proposed Alignment. Several otter spraints, couches and feeding remains were recorded on the River Strathy and Halladale River during surveys in 2021 for relevant elements of the Connagill Cluster Grid Connection project. Two holts were recorded at NC 894 603 on the Halladale River but were not considered to be natal (breeding) holts; these are approximately 75 m east of Tower 59 and 100 m north of Tower 59.	Extensive field signs of otter (spraints, couches and feeding remains) recorded on River Strathy and Halladale River. Two holts recorded on Halladale River. It is assumed that otter is widespread throughout the Strathy and Halladale Rivers and suitable tributaries based on the results of surveys in the wider local area.	International (Very High) This is a qualifying feature of the SAC / Ramsar	**Appendix V1-7.4 (confidential)**	Yes

Species	Desk Study Summary	Baseline Field Survey Summary	Nature Conservation Value	Technical Appendix (within Volume 4 of the EIA Report)	Scoped into EcIA?
	Otter is a designated feature of the Caithness and Sutherland Peatlands SAC / Ramsar, which indicates the importance of the wider local area for the species.				
Water vole	The HBRG desk study returned no records of water vole. There are records of this species on the Allt an Reidhe Ruaidh (a tributary of the River Strathy), which is within the Proposed Alignment boundary. Surveys for the Melvich Wind Energy Hub recorded small colonies of water vole at the following locations: • Alltan Domhaich[13] - crossed by an existing access track that would be used during construction of the Proposed Alignment). • Allt na Cleite[12] – crossed by the OHL span between Towers 40 and 41. • Some minor tributaries of the Halladale River.	It is assumed that water vole is widespread throughout the small watercourses and some minor tributaries of the Halladale River.	Regional (Medium)	**Appendix V1-7.4 (confidential)**	Yes
Red squirrel (*Sciurus vulgaris*)	The HBRG desk study returned no records of red squirrel. This species was not recorded during surveys for wider Connagill Cluster surveys.	The Proposed Alignment is outside the current range of red squirrel in Scotland and therefore it is concluded that this species is likely absent.	Likely absent	**Appendix V1-7.4 (confidential)**	No – species concluded likely absent.

[13] Watercourse is not connected to the River Strathy or Halladale River and flows straight out to the sea just west of Portskerra.

Species	Desk Study Summary	Baseline Field Survey Summary	Nature Conservation Value	Technical Appendix (within Volume 4 of the EIA Report)	Scoped into EcIA?
Pine marten (*Martes martes*)	The HBRG desk study returned one record of pine marten at Bettyhill (NC 71 57), which is approximately 13 km west of the proposed Alignment. Several pine marten scats were recorded in the area during surveys for wider Connagill Cluster surveys most recently in 2021. Pine marten was also sighted during the construction of the Strathy North Wind Farm in 2014.	Pine marten scats were recorded in the southern part of the Survey Area along the banks of the River Strathy. Areas of woodland and woodland edge habitat provide suitable habitat for pine marten and field signs of this species have been recorded at other existing and proposed wind farm development sites in the area. This species is therefore assumed widespread and present in suitable habitat in the Survey Area. Pine marten is a Highland Nature BAP priority species.	Regional (Medium)	**Appendix V1-7.4 (confidential)**	Yes
Wildcat	The HBRG desk study returned no records of wildcat. The Proposed Alignment Survey Area is not within a 'Wildcat Priority Area' as identified in the Scottish Wildcat Conservation Action Plan 2013 (Scottish Natural Heritage, 2013), although there are records of sightings in the Strathy and Melvich areas from a 2006-2008 survey published in the Action Plan. NatureScot research published in 2023 found no verified records of wildcats north of Lairg, with all records of wild-living cats in the far north of Scotland being of hybrid animals (Campbell et al, 2023). This species was not recorded during surveys for wind farms in the surrounding Connagill Cluster.	Areas of woodland and woodland edge habitat could provide suitable habitat for wildcat, but no field signs for this species have been recorded at other existing, consented and proposed wind farm development sites in the area. The occasional presence of wildcats or wildcat hybrids within the Proposed Alignment area cannot be ruled out. Wildcat is a European Protected Species (EPS) and Highland Nature BAP priority species.	Regional (if present) (Medium)	**Appendix V1-7.4 (confidential)**	Yes – on a precautionary basis.

Species	Desk Study Summary	Baseline Field Survey Summary	Nature Conservation Value	Technical Appendix (within Volume 4 of the EIA Report)	Scoped into EcIA?
Reptiles	The HBRG desk study returned two records of common lizard (*Zootoca vivipara*) at Rimsdale (NC 72 41 and NC 72 43), which is approximately 23 km south-west of the Proposed Alignment. A common lizard was recorded during surveys for the Strathy Wood Wind Farm in 2021 at NC 803 527, approximately 9 km south-west of the Proposed Alignment.	The Proposed Alignment is outside the UK range for sand lizard and smooth snake and therefore these species are concluded absent. Adder (*Vipera berus*) was recorded incidentally within the Proposed Alignment during ornithology surveys. This species is assumed present in suitable habitats within the Proposed Alignment boundary. Common lizard and adder is therefore assumed present in all suitable habitats within the Proposed Alignment boundary. These species are UK BAP Priority species but are likely to be widespread and relatively common given the abundance of suitable upland habitats both within and adjacent to the Proposed Alignment Survey Area.	Local (Low)	**Appendix V1-7.4 (confidential)**	Yes – potential for loss of and / or damage to habitats supporting reptiles; potential for fragmentation/ isolation of populations; potential for accidental killing / injury of reptiles.

7.8 Future Baseline

7.8.1 In the absence of the Proposed Alignment, it is likely that any identified ecological receptors would largely remain unchanged. Areas of commercial forestry within the Study Area would continue to mature until a time when they would be subject to a future felling plan, which may create temporary localised changes.

7.8.2 Other changes over time may occur as a result of climatic change. These changes are likely to involve increased precipitation and risk of severe weather events as well as gradual increases in average temperatures. Some change in the vegetation assemblage is likely to occur as a result of these changes.

7.9 Embedded Mitigation / Mitigation by Design

7.9.1 In the context of this Chapter, embedded mitigation includes a range of environmental measures to avoid or reduce potential effects on nature conservation and biodiversity that have been incorporated into the Proposed Alignment from design stage through to operation.

Routeing and Consideration of Alternatives

7.9.2 The routeing and alignment selection process for the Proposed Alignment has taken into consideration the potential for significant effects on ecological features, and for such effects to be avoided or minimised where possible (see **Volume 1: Chapter 2** of this EIA Report). 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, following the mitigation hierarchy as described in CIEEM guidance (CIEEM, 2024[2]).

Pre-Construction and Construction

General Environmental Management

7.9.3 This assessment has been carried out on the basis that all works would be carried out in accordance with industry good practice construction measures, guidance and legislation. Furthermore, the Applicant has developed a series of GEMPs and SPPs in agreement with statutory consultees, including SEPA and NatureScot. These can be found in **Volume 4: Appendix V1-3.4: General Environmental Management Plans (GEMPs)** and **Appendix V1-3.5: Species Protection Plans (SPPs)**. SPPs have been prepared for bats, otter, water vole, badger, pine marten, wildcat and reptiles.

7.9.4 The appointed Principal Contractor would be committed to the implementation of a comprehensive and Site-specific CEMP. This document would detail how the Principal Contractor would manage the works in accordance with all commitments and mitigation detailed in the EIA, the Applicant's GEMPs and SPPs, statutory consents and authorisations, and industry good practice and guidance, including pollution prevention guidance. It would also detail measures to manage, control and monitor the potential effects of construction including noise, dust, waste, pollution and personnel / vehicular movements. Best practice pollution control measures, with reference to Guidance for Pollution Prevention (GPPs) and Control of Substances Hazardous to Health (COSHH) guidelines, would be included in the CEMP. Particular reference would be made to managing handling, storage and use of hazardous chemicals and fuels used during the construction process. A detailed spill response plan would be developed as part of the CEMP and fully briefed to all site operatives. An Ecological Management Plan (EMP) would also be included as part of the CEMP, which would include relevant information on habitats and protected species local to the Proposed Alignment, requirements for pre-construction surveys and toolbox talks (TBTs), reference to relevant SPPs and information on licencing requirements and procedures. An Outline CEMP is provided in **Volume 4: Appendix V1-3.8.**

Pre-construction Surveys

7.9.5 Pre-construction surveys for protected species would be undertaken no more than 6 months in advance to identify any new ecological constraints and to ascertain the activity status of previously identified features within proximity of planned works.

Micrositing of Infrastructure

7.9.6 Any micrositing of infrastructure within the defined LoDs would be based on a review of existing ecological data and the completion of pre-construction surveys, to take into consideration the potential for direct encroachment onto protected species features, sensitive habitats or GWDTEs, or indirect alteration of hydrological flows supporting sensitive habitats of GWDTEs. Any micrositing would also take consideration of any buffer distances on protected features identified, as detailed within the SPPs (see **Volume 4: Appendix V1-3.4** and **Appendix V1-3.5** of this EIA Report).

Construction Access

7.9.7 Vehicle access would be required to each tower location for the creation of foundations and to facilitate tower installation. **Volume 2: Figure V1-3.1** shows the proposed indicative access arrangements, which comprise existing and a combination of new temporary and permanent access tracks.

7.9.8 Access for construction would make use of existing tracks as far as practicable, upgraded as required. Existing bellmouth junctions off the A836 would also be utilised where possible, subject to improvements. The construction of one new bell mouth would be required off the A897 to access the terminal tower and CSE compound. The locations of the proposed and improved bellmouth works are shown on **Volume 2: Figure V1-3.1**.

7.9.9 New permanent and new temporary access routes would be required where no existing tracks can be used. These are shown on **Volume 2: Figure V1-3.1** and an access track schematic is included **in Volume 4: Appendix V1-3.3: Access Track Schematic**. Where the existing ground provides the appropriate bearing capacities, the new accesses would be constructed on-formation. Where the existing ground does not provide the appropriate bearing capacities and / or where peat is located, the new accesses would likely be floated on top of the soft ground, circumnavigating the requirement for deep excavations and disturbance to the peat. All new tracks would be constructed in accordance with best practice construction methods, and with reference to NatureScot's good practice guide on constructing tracks in Scottish uplands[14].

7.9.10 Other access by low ground pressure vehicles may be required between towers and along the length of the UGC. Such access would not require formal access tracks as access would either be via tracked vehicles or temporary trackway systems would be utilised in boggy / soft ground areas where required.

7.9.11 For steel lattice tower construction, it is anticipated that access would mainly be achieved through installation of new stone tracks (permanent and temporary), to access each steel tower from the existing track. Floating stone road or trackway panel construction (typically a short-term solution) may be installed in sensitive areas such as over deeper areas of peat.

7.9.12 Redundant parts of the existing Strathy North 132 kV trident 'H' wood pole OHL would be dismantled following completion and commissioning of the Proposed Alignment. The use of new permanent and temporary access tracks proposed as part of the Proposed Alignment would also be available to be used during dismantling works. Where existing and proposed tracks do not extend to each individual pole location, the use of tracked vehicles may also be required. It is not anticipated that any new access tracks would be required to facilitate

[14] https://www.nature.scot/doc/planning-and-development-presentation-good-practice-track-construction

dismantling. A Dismantling Plan explaining the works involved is provided in **Volume 4: Appendix V1-3.7: Dismantling Plan**.

Watercourse Crossings

7.9.13 A total of four new permanent and one temporary watercourse crossings are required to facilitate construction (and subsequently operational) access, and 16 existing watercourse crossings would be upgraded so that they are suitable for construction vehicles. Standard mitigation measures would be implemented during construction to prevent pollution and/ or damage to watercourses and riparian habitats, which include silt traps / check dams used to capture suspended solids generated during construction. Construction would be conducted in accordance with appropriate SEPA and CIRIA guidance and the design and capacity of the watercourse crossings would be agreed by the Principal Contractor and the project EnvCoW, and if required in consultation with SEPA as part of the detailed design.

Habitat Reinstatement and Restoration

7.9.14 Reinstatement would be undertaken during construction (and immediate post-construction phase) to address any areas of ground disturbance and changes to the landscape as part of the construction works and minimise the impacts on habitats disturbed during construction.

7.9.15 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 **Volume 4: Appendix V1-3.6: Outline Site Restoration Plan**, 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 would be implemented to ensure successful reinstatement, including site specific soil and peat management measures, and the employment of specialist advisers (i.e. ECoW). Such measures are set out in **Volume 4: Appendix V1-3.4** of this EIA Report.

7.9.16 A summary of the construction working areas that would be reinstated and typically how this would be achieved is provided in the paragraphs below.

Reinstatement of Access Tracks

7.9.17 As shown in **Volume 2: Figure V1-3.1**, new permanent and new temporary tracks are required to facilitate construction and operation of the Proposed Alignment. Tracks to be retained would be partially reinstated on commissioning of the OHL to reduce their running width to approximately 3.5 m (plus 1.5m for drainage and pollution prevention measures) for use by SSEN Transmission for maintenance access (this is also included below as operational mitigation). Other tracks noted as temporary would be removed and the land reinstated.

7.9.18 Reinstatement would involve replacement of subsoil, then topsoil, grading and installation of drainage as required with turves replaced vegetation side up. Where there are insufficient turves the ground would be allowed to vegetate naturally, although some seeding may be required to stabilise sites and prevent erosion, or where landowner requirements dictate otherwise. Methods for the reinstatement of peat would be set out in the Peat Management Plan (see **Volume 4: Appendix V1-9.2: Outline Peat Management Plan**).

Reinstatement of Work Areas (Towers and Underground Cable)

7.9.19 Soil would be stored within the working area for each element of the work during construction. Subsoils and topsoil removed to enable the construction of the foundations and would be temporarily stockpiled in separate bunds within the working area or corridor, with stripped turves stored on top of the bunds.

7.9.20 Reinstatement would involve replacement of subsoil, then topsoil with turves replaced vegetation side up. Where there are insufficient turves the ground would be allowed to vegetate naturally, although some seeding may be required to stabilise sites and prevent erosion, or where landowner requirements dictate otherwise.

Reinstatement of Construction Compound(s)

7.9.21 At the end of construction all materials, buildings, and temporary compounds would be removed. Where required the land would be regraded with subsoil put down first, then topsoil with turves replaced vegetation side up. Where there are insufficient turves the ground would be allowed to vegetate naturally, although some seeding may be required to stabilise sites and prevent erosion.

Ecological Clerk of Works (ECoW)

7.9.22 To ensure all reasonable precautions are taken to avoid negative effects on habitats and protected species, a suitably qualified ECoW would be appointed prior to the commencement of construction to advise the Applicant and the Principal Contractor on all ecological matters. The ECoW would be required to be present onsite as appropriate during the construction phase and would carry out monitoring of works and briefings with regards to any ecological sensitivities to the relevant staff of the Principal Contractor and subcontractors.

Operational Measures

Access Tracks

7.9.23 To minimise longer term impacts on habitats (both direct and indirect), the sections of permanent access track width would be reduced from 6.5 m to 5 m for the operational period (this includes 1.5 m for drainage infrastructure), with all track-side habitat reinstated. This has been taken into account within the habitat loss calculations for the operational phase.

Maintenance

7.9.24 In general, OHLs require very little maintenance. Regular inspections are undertaken to identify any unacceptable deterioration of components, so that they can be replaced. From time to time, inclement weather, storms or lightning can cause damage to either the insulators or the conductors on OHLs. If conductors are damaged, short sections may have to be replaced.

7.9.25 During the operation of the Proposed Development, it may be necessary to manage vegetation to maintain required safety clearance distances from infrastructure. However, this would be undertaken with advice from an ecologist and an ECoW employed for the duration of any works as necessary.

7.10 Assessment of Likely Significant Effects

7.10.1 This section considers the potential impacts and associated effect significance of the construction and operation of the Proposed Alignment based on the typical activities described in **Volume 1: Chapter 3** of this EIA Report. The assessment takes into account the embedded mitigation measures described in Section 7.9 above. A summary of the IEFs taken forward for EcIA is provided in **Table V1-7.5**.

Table V1-7.5: Summary of IEFs Scoped into the Ecological Impact Assessment

IEF	Nature Conservation Value	Justification
Caithness and Sutherland Peatlands SAC / Ramsar Qualifying Annex I habitats: Blanket Bog Northern Atlantic wet heaths with *Erica tetralix*	International (Very High)	Potential for direct and indirect habitat loss, change and / or damage during construction. Potential for localised habitat disturbance / damage during small-scale maintenance operations during operation.
Flow Country WHS	International (Very High)	Potential for direct and indirect habitat loss, change and / or damage during construction.

IEF	Nature Conservation Value	Justification
Assemblage of peatland and bog habitats.		Potential for localised habitat disturbance / damage during small-scale maintenance operations during operation.
West Halladale SSSI Non-avian notified features: Blanket bog	National (High)	Potential for direct and indirect habitat loss and / or damage during construction. Potential for localised habitat disturbance / damage during small-scale maintenance operations during operation.
Non-designated peatland and upland assemblage habitats: Acid grassland (U20 / U20b) Bog (M15b, M15c, M17, M17a, M17b, M20, M25, M25a, M5b) Dwarf shrub heath (H10)	Regional (Medium)	Potential for direct and indirect habitat loss, change and/ or damage during construction. Potential for localised habitat disturbance/ damage during small-scale maintenance operations during operation.
Bats (roosting)	Local (Low)	Potential noise / visual disturbance to small common pipistrelle roost Bowside Lodge during construction and operation.
Otter	International (Very High)	Potential for loss of / damage to otter habitats during construction. Potential for disturbance to otter during construction and operation.
Water vole	Regional (Medium)	Potential for loss of / damage to water vole habitats during construction. Potential for disturbance to water vole during construction and operation.
Pine marten	Regional (Medium)	Potential for loss of and / or damage to habitats supporting pine marten during construction. Potential for fragmentation/ isolation of populations during construction. Potential for localised disturbance / displacement during operation.
Wildcat	Regional (if present) (Medium)	Potential for loss of and / or damage to habitats supporting wildcat during construction. Potential for fragmentation/ isolation of populations during construction. Potential for localised disturbance/ displacement during operation.
Reptiles	Local (Low)	Potential for loss of and / or damage to habitats supporting adder and common lizard during construction. Potential for fragmentation / isolation of populations during construction. Potential for accidental killing or injury during construction. Potential for localised disturbance/ displacement during operation.

7.10.2 The potential effects on ecological receptors which may arise from the Proposed Alignment relate principally to the construction phase, which includes the construction of OHL towers, with their corresponding working areas and access tracks (temporary and permanent), a new CSE compound south-west of Connagill 275/132 kV substation and a new UGC, and dismantling of the redundant parts of the existing Strathy North 132 kV trident 'H' wood pole OHL.

7.10.3 Site access for construction for most of the OHL towers would mostly utilise the existing access tracks off the A836 and would be upgraded to be suitable for construction vehicles. Where access tracks (including existing sections of access track to be upgraded, and new sections of temporary and permanent access tracks) cross watercourses, temporary measures to protect watercourses (e.g. scaffolding and temporary bridges) would be installed. Sections of new permanent and temporary track (floating stone road or tracking panels in more sensitive areas e.g. deeper areas of peat) would be constructed where possible to provide access to the tower and CSE compound construction areas. However, the assessment has assumed the worst-case scenario that all new access tracks would be constructed on formation. A small amount of woodland loss would be required within the unnamed plantation close to Kirkton, although the OHL route has been designed to avoid the plantation as far as possible and just clips the northern corner (see **Volume 1: Chapter 12** of this EIA Report). There are further small losses of woodland in the eastern extent of the OHL route.

7.10.4 The proposed OHL would cross several watercourses however associated construction activities would not be required within or near watercourses as the OHL conductors (e.g. not tracks) would span the crossings. The locations of the new steel lattice towers have been designed to be offset from watercourses by a minimum of 20 m, with no construction activities undertaken within 10 m of the watercourse. The Proposed Alignment has sought to use existing tracks and access routes wherever possible. However, four new permanent watercourse crossings, one new temporary watercourse crossing, and 16 existing crossings on tracks which are scheduled to be upgraded, and two crossings for the UGC, would be required. The locations of the proposed crossings are shown on **Volume 2: Figure V1-9.1** and a schedule of these crossing points, which includes photographs and dimensions of each crossing, is presented in **Volume 4: Appendix V1-9.3.**

7.10.5 Potential impacts are generally limited to the construction phase and are anticipated to be largely temporary, low magnitude and localised.

7.10.6 Operational effects would occur as a result of the permanent presence of the OHL towers and the CSE compound (for which permanent direct habitat losses and permanent indirect habitat losses have been calculated as part of the construction phase impact assessment), and the presence of new permanent access track sections (for which a separate calculation has been undertaken due to the reduction in overall width when compared to the temporary construction phase access track), and the permanent indirect habitat losses that would occur within a 10 m buffer (for hydrologically dependent habitats, to account for potential alterations to habitats through changes to local hydrology).

7.10.7 The predicted temporary and permanent land take for each element of the Proposed Alignment is summarised in **Table V1-7.6**. Detailed calculations of habitat losses, based on the assumptions below, are provided in **Table V1-7.7**.

Table V1-7.6: Predicted Temporary and Permanent Land Take

Proposed Alignment Element	Quantum	Construction (Temporary Land Take)	Operation (Permanent Land Take)
Access track (existing)	5.7 km	None – tracks are already present	None – tracks are already present

Proposed Alignment Element	Quantum	Construction (Temporary Land Take)	Operation (Permanent Land Take)
Access track (upgrade)	13.33 km	8.66 ha[15]	6.67 ha[16]
Access track (temporary)	5.81 km	2.91 ha[17]	None – all temporary land take would be reinstated post-construction
Access track (permanent)	7.38 km	4.80 ha[18]	3.69 ha[19]
Temporary construction working area at towers and poles	30 steel lattice suspension towers (including 6 no. x L7c towers and 24 no. x L8c towers) 15 steel lattice angle/ tension towers (including 4 no. x L7c towers and 11 no. x L8c series) 1 steel lattice terminal tower (L8c tower)	17.14 ha[20]	None – all temporary land take would be reinstated post-construction
Cable Sealing End (CSE) Compound (plus earthworks)	1	0.3 ha	0.3 ha
Permanent land take for 132 kV steel lattice towers (excluding terminal tower which is within CSE compound)	45	0.24 ha[21] (relates just to tower feet)	0.24 ha (relates just to tower feet)
Underground Cable (Permanent)	780 m	3.12	None – all temporary land take would be reinstated post-construction

7.10.8 In addition to the assessment presented in the below sections, the following standalone technical assessments have been undertaken:

- Shadow Habitats Regulations Appraisal (SHRA) of the potential construction and operational impacts on the Caithness and Sutherland Peatlands SAC / Ramsar (**Volume 4: Appendix V1-7.6**).

[15] 6.5 m temporary track width x 13330 m in length = 86,645 m^2

[16] 5 m permanent track width x 13330 m in length = 66,650 m^2

[17] 5 m temporary track width x 5810 m length = 29,050 m^2

[18] 6.5 m temporary track width x 7380 m length = 47,970 m^2

[19] 5 m permanent track width (reduced from 6.5 m needed during construction) x 7380 m length = 36,900 m^2

[20] Steel lattice angle/tension tower: 70 m^2 x 4 towers = 19,600 m^2; and 80 m^2 x 11 towers = 70,400 m^2; steel lattice suspension tower: 50 m^2 x 30 towers = 75,000 m^2; + 1 steel lattice terminal tower: 80 m^2 x 1 tower = 6,400 m^2; '. Total for all towers = 171,400 m^2

[21] 1.96 m^2 (per L7c tower foot) x 4 tower feet = 15.376 m^2 per tower x 10 towers = 153.67 m^2 and 4 m^2 (per L8c tower foot) x 4 feet = 64 m^2 per tower x 35 towers = 2,240 m^2. Total for all towers = 2,393.67 m^2

- Flow Country WHS assessment using the Flow Country Candidate World Heritage Site Impact Assessment Toolkit[22] for potential impacts on Outstanding Universal Value (OUV) attributes of the WHS and its integrity (**Volume 4: Appendix V1-7.7**).

Construction Effects

7.10.9 The majority of the impacts of the Proposed Alignment would be temporary, with ground disturbance required for construction access and the working areas for the OHL towers and wood pole dismantling. Potential effects of the Proposed Alignment on IEFs are considered to comprise:

- Temporary or permanent direct or indirect loss of Annex I habitats, including qualifying habitat features of the Caithness and Sutherland Peatlands SAC / Ramsar site and notified features of the West Halladale SSSI, Flow Country WHS and / or other sensitive (non-designated) habitats such as groundwater-dependent terrestrial ecosystems (GWDTEs);
- Temporary or permanent direct or indirect damage, change and/or fragmentation of Annex I habitats that are qualifying habitat features of the Caithness and Sutherland Peatlands SAC / Ramsar;
- Temporary or permanent direct or indirect damage, change and/ or fragmentation of notified habitat features of West Halladale SSSI;
- Temporary or permanent direct or indirect damage, change and/ or fragmentation of habitat attributes of the Flow Country WHS;
- Temporary or permanent direct or indirect damage, change and/ or fragmentation of other sensitive (non-designated) habitats such as GWDTEs;
- Loss of and / or damage to habitats supporting otter, and disturbance to otter (a qualifying feature of the Caithness and Sutherland Peatlands SAC);
- Loss of and / or damage to habitats supporting water vole, and disturbance to water vole;
- Noise and / or visual disturbance and/or displacement of roosting common pipistrelle at Bowside Lodge.
- Loss of and / or damage to habitats supporting common lizard and adder; and accidental killing or injury common lizard and adder;
- Loss of and / or damage to habitats supporting pine marten; and
- Loss of and / or damage to habitats supporting wild cat.

<u>Caithness and Sutherland Peatlands SAC/ Ramsar</u>

Loss of and / or Damage to Designated Habitats

7.10.10 One of the 46 steel lattice towers (Tower 21) would be constructed within the boundary of the Caithness and Sutherland Peatlands SAC / Ramsar. Permanent loss of habitat would be restricted to the footprint of each tower and a small section of new permanent access track leading to the tower. The CSE compound and UGC is not within the boundary of the designated site.

7.10.11 Habitat loss calculations within the designated site have been completed for the Proposed Alignment (see **Table V1-7.7**). The parameters for the calculations are based on the physical land take required (as set out in **Table V1-7.6** and **Volume 1: Chapter 3** of this EIA Report), and an understanding of the effects of temporary and permanent disturbance to peatland habitats gained during previous work for the nearby consented and operational wind farms and grid connections:

[22] It is noted that the Flow Country WHS has been formally inscribed as a WHS since the toolkit was published, and therefore is no longer a 'candidate' WHS. However, the toolkit has yet to be updated and therefore the 'candidate' WHS toolkit remains applicable until such time an updated version is published by The Highland Council.

- Direct Habitat Loss (direct effect, permanent, irreversible) – the permanent footprint of any component of the infrastructure that would not be restored following construction. This is limited to the small footprint of the tower legs, and the new sections of permanent access tracks;
- Temporary Habitat Loss (direct effect, temporary, reversible) – any infrastructure component that would be restored following construction, which includes temporary access tracks and temporary construction working areas at the towers. This area also includes a 4 m buffer surrounding infrastructure to allow machinery to work outwith the permanent footprint of any infrastructure component. Such areas would all be restored following construction as detailed in **Volume 4: Appendix V1-3.6** for the Proposed Development; and
- Permanent Habitat Change (indirect effect, permanent, irreversible) – a 10 m buffer has been applied to the permanent footprint for each component of the Proposed Alignment where hydrologically dependent habitats (referred to as 'GWDTE' in **Volume 1: Chapter 9** of this EIA Report) are present to account for the potential alterations to habitats through changes to hydrological flows to these.

7.10.12 **Table V1-7.7** details the quantities of permanent and temporary habitat losses within the boundary of the SAC / Ramsar / SSSI of the Proposed Alignment.

Table V1-7.7: Construction Habitat Loss and Damage Calculations within Caithness and Sutherland Peatlands SAC / Ramsar and West Halladale SSSI (By Habitat Type)

Habitat	Corresponding NVC Habitat Type	Areas (ha)			
		Direct Permanent Loss	Indirect Permanent Loss due to Habitat Change	Temporary Loss	Total (by habitat type)
Qualifying Annex I Habitats					
Blanket Bog (Bog)	M15, M15b, M15c,	0.009	0.109	0.000	0.119[23]
Dwarf shrub heath	H12	0.000	0.000	0.005	0.006
Non-qualifying Habitats					
Acid grassland	U20	0.014	0.000	0.025	0.039
Total (all habitats)		**0.023**	**0.109**	**0.030**	**0.164**

7.10.13 The Proposed Alignment identifies a total overall effect to habitats of 0.164 ha within the Caithness and Sutherland Peatlands SAC boundary resulting from the Construction Phase, which is approximately 0.0001 % of the total SAC designated area of 145,960.53 ha. This includes 0.023 ha of direct permanent habitat loss, 0.03 ha of temporary habitat loss and 0.109 ha of indirect permanent habitat loss due to habitat change. The proportion of habitat loss within the Ramsar is even smaller as the Ramsar site area is smaller than that of the SAC at 143,503 ha.

7.10.14 The majority of the habitat impacted by the Proposed Alignment within the SAC boundary is blanket bog, with some minor losses of dwarf shrub heath and upland acid grassland. Blanket bog and dwarf shrub heath are Annex I habitats that are qualifying features of the SAC and are therefore internationally important, although

[23] Rounded due to areas being calculated to many decimal places.

they are common and widespread in the regional context. The Annex I bog habitats are also GWDTEs. The magnitude of impact is assessed as Low, as the direct habitat losses are very small in context with the whole SAC designation, which covers hundreds of thousands of hectares of peatland. The permanent unmitigated losses would not reasonably substantially affect the distribution or extent of Annex I habitats within the designated sites. The unmitigated effect of temporary and permanent habitat losses within the Caithness and Sutherland Peatlands SAC / Ramsar is therefore assessed as **Minor adverse (Not significant)**.

7.10.15 A Shadow HRA has also been undertaken and is presented in **Volume 4: Appendix V1-7.6 Shadow HRA for the Caithness and Sutherland Peatlands SAC/ Ramsar**.

Loss of and / or Damage to Habitats Supporting Otter

7.10.16 Otter is known to be present on the River Strathy and Halladale River and is assumed potentially present on other suitable watercourses in the river catchments. However, the Proposed Alignment would not result in any direct impacts on these rivers. Tower 19 is the closest to the River Strathy, and Towers 63 and 64 are the closest to the Halladale River. As part of the Proposed Alignment design all of the OHL towers are offset from the rivers / watercourses by a minimum of 20 m. No construction activities for the OHL would be undertaken within a 10 m buffer from rivers / watercourses.

7.10.17 For access tracks during construction, a total of four new permanent watercourse crossings would be constructed (crossing three unnamed watercourses and the Allt na Ceardaich, all of which are tributaries of the River Strathy) and one new temporary crossing would be constructed (crossing a tributary of the Allt an Reidhe Rudaidh, which is a tributary of the River Strathy). In addition, 16 existing watercourse crossings on tracks which are scheduled to be upgraded so they are suitable for construction vehicles, and two crossings for the UGC would be required.

7.10.18 Standard embedded mitigation measures to control surface water run-off during construction would be implemented as required for environmental legislative compliance and would be set out in the CEMP. The watercourse crossings would not result in any barrier effects to wildlife including otter, because foraging animals would still be able to use the riparian corridors. The magnitude of impact to otter riparian habitats are therefore predicted to be negligible, and the resulting effects of the Proposed Alignment on otter habitats are **Negligible (Not significant)**.

Disturbance to Otter

7.10.19 No natal holts were identified within the Survey Area, and therefore there is no potential for disturbance to breeding otter. The holts identified on the Halladale River are within approximately 100 m of two steel lattice towers (Towers 58 and 59) and close to the existing access track that would be used for construction. The implementation of a 10 m buffer alongside watercourses as part of the embedded mitigation for the construction phase of the Proposed Alignment would minimise the potential for any noise or visual disturbance to riparian and aquatic habitats that may be used by otter for foraging / on passage, or to any new holts or couches that are established in the intervening period prior to the commencement of construction activities. No nighttime working would be undertaken, and therefore there is negligible potential for noise or visual disturbance to foraging / commuting otter. The magnitude of impact is assessed as negligible, and the resulting effect is **Negligible (Not significant)**.

West Halladale SSSI

Loss of and / or Damage to Notified Habitats

7.10.20 The assessment presented in respect of the Caithness and Sutherland Peatlands SAC / Ramsar is also applicable to the assessment of potential impacts on the West Halladale SSSI non-avian notified habitat feature (blanket bog) because the SSSI is entirely within the boundary of the SAC / Ramsar. The proportion of SSSI

habitat impacted by the Proposed Alignment is approximately 0.0019 % of the total designated area of 8,658.85 ha. The unmitigated effect of temporary and permanent habitat losses within the West Halladale SSSI is therefore assessed as **Negligible (Not significant)**.

Flow Country WHS

Loss of and / or Damage to OUV Attributes

7.10.21 The assessment presented in respect of the Caithness and Sutherland Peatlands SAC / Ramsar is also applicable to the assessment of potential impacts on the habitat assemblage that is an attribute of the Flow Country WHS, because the boundary overlaps with the majority of the SAC / Ramsar although extends further north than that of the SAC / Ramsar and therefore overlaps with a greater proportion of the OHL route. Twenty of the 46 steel lattice towers are within the WHS boundary, along with several of the existing and new temporary and permanent access track sections. The proportion of WHS habitat impacted by the Proposed Alignment is 28.05 ha (this includes habitat both within and outwith the SAC / Ramsar, because the WHS boundary is larger), which is approximately 0.015 % of the total designated area of approximately 200,000 ha. The unmitigated effect of temporary and permanent habitat losses within the Flow Country WHS is therefore assessed as **Minor adverse (Not significant)**.

7.10.22 **Table V1-7.8** details the quantities of permanent and temporary habitat losses within the boundary of the WHS to the Proposed Alignment.

Table V1-7.8: Construction Habitat Loss and Damage Calculations within Flow Country WHS (By Habitat Type)

Habitat	Corresponding NVC Habitat Type	Areas (ha)			
		Direct Permanent Loss	Indirect Permanent Loss due to Habitat Change	Temporary Loss	Total (by habitat type)
Qualifying Annex I Habitats					
Blanket Bog (Bog)	M15, M15b, M15c, M17, M17a, M17b, M18, M19, M20, M20b, M25, M25a, M25b	4.03	21.77	0.00	25.80
Dwarf shrub heath	H10, H10a, H12	0.41	0.00	1.10	1.51
Non-qualifying Habitats					
Acid grassland	U20, U4a	0.02	0.00	0.18	0.20
Fen, marsh and swamp	M6, M6c, M23b	0.02	0.50	0.00	0.53
Dense scrub	N/A	0.01	0.00	0.00	0.01

Habitat	Corresponding NVC Habitat Type	Areas (ha)			
		Direct Permanent Loss	Indirect Permanent Loss due to Habitat Change	Temporary Loss	Total (by habitat type)
Total (all habitats)		**4.49**	**22.27**	**1.28**	**28.05**

7.10.23 A separate WHS assessment has also been undertaken and is presented in **Volume 4: Appendix V1-7.7 Flow Country WHS Assessment.**

Habitats (Non-designated)

Loss of and / or Damage to Habitats

7.10.24 A total of 25 of the 46 steel lattice towers, some sections of temporary and permanent access track, the UGC, and the CSE compound would be constructed within peatland, grassland and woodland habitat outwith the boundary of the Caithness and Sutherland Peatlands SAC / Ramsar and West Halladale SSSI, and Flow Country WHS. As set out above in respect of the habitats within the SAC / Ramsar / SSSI and WHS, permanent losses of non-designated habitat would be restricted to the footprint of each tower and the CSE compound and some sections of permanent access track. Habitat loss calculations have been completed for the Proposed Alignment (see **Table V1-7.9**). The parameters for the calculations are based on the physical land take required (as set out in **Table V1-7.5** and **Volume 1: Chapter 3** of this EIA Report), and an understanding of the effects of temporary and permanent disturbance to peatland habitats gained during previous work for the nearby consented and operational wind farms and grid connections, and are as set out above in the assessment of effects on the Caithness and Sutherland Peatlands SAC / Ramsar and West Halladale SSSI and Flow Country WHS.

7.10.25 **Table V1-7.9** details the quantities of permanent and temporary non-designated habitat losses and the associated NVC communities within the Proposed Alignment boundary.

Table V1-7.9: Construction Habitat Loss and Damage Calculations for Non-designated Habitats (by Habitat Type)[24]

Habitat	Corresponding NVC Habitat Type	Areas (ha)			
		Direct Permanent Loss	Indirect Permanent Loss due to Habitat Change	Temporary Loss	Total (by habitat type)
Annex I Habitats					
Blanket Bog (Bog)	M15, M15b, M15c, M17, M17a, M17b, M18, M19, M20, M20b,	0.70	5.52	0.00	6.22

[24] Calculations exclude non-vegetated habitats e.g. developed land, sealed surface. Calculations exclude rivers and streams habitat as this is a linear impact.

Habitat	Corresponding NVC Habitat Type	Areas (ha)			
		Direct Permanent Loss	Indirect Permanent Loss due to Habitat Change	Temporary Loss	Total (by habitat type)
	M25, M25b, M25a				
Dwarf shrub heath	H10, H10a, H10b, H12	0.04	0.00	0.18	0.22
Other Habitats					
Acid grassland	U20, U2a, U4a	0.83	0.00	1.58	2.41
Fen, marsh and swamp	M6, M6c, M23b	0.22	1.25	0.00	1.47
Dense scrub	N/A	0.11	0.00	0.00	0.11
Coniferous woodland[23]	N/A	0.03	0.00	0.00	0.03
Neutral grassland	MG5, MG5c, M6, MG6b, OV23a, MG10	0.17	0.00	0.44	0.61
Modified grassland	N/A	0.63	0.00	1.80	2.42
Total (all habitats)		**2.73**	**6.77**	**4.00**	**13.49**

7.10.26 The Proposed Alignment identifies a total overall effect to non-designated upland habitats of 13.49 ha resulting from the Construction Phase, approximately 4 ha of which is temporary and reversible. The remaining permanent habitat losses have been calculated from a combination of the direct footprint associated with the Proposed Alignment (including permanent access tracks) as well as assumed permanent indirect habitat loss due to habitat changes effected by impacts on local hydrology within the ZoI of the permanent infrastructure.

7.10.27 The Annex I habitats affected are blanket bog and dwarf shrub heath, which all have European legislation pertaining to them but are common and widespread in a regional context; consequently, their conservation value is assessed as Regional. The other habitats affected are not particularly rare or notable but contribute to the overall Regional level importance of the peatland habitat mosaic within the area that falls outwith the SAC / Ramsar, WHS and SSSI designations. The magnitude of impact is assessed as low as it would result in very small permanent habitat losses in the context of the wider area. As such, the unmitigated effects to non-designated peatland habitats resulting from the construction of the Proposed Alignment are assessed as **Minor adverse (Not significant)**.

Bats

Noise / Visual Disturbance to Roosts

7.10.28 The identified bat roost at Bowside Lodge is more than 100 m and on the opposite side of the existing access track from the nearest construction activities, which are associated with Towers 21 and 22. Dismantling activities associated with the existing OHL poles would be slightly closer, as these are located on the same side of the access track as Bowside Lodge. However, dismantling works would not reasonably be considered to result in any substantial noisy activities that could disturb roosting bats. It is therefore concluded that at this distance, there is no potential for noise disturbance to roosting bats in the buildings during the construction phase. No night-time working is proposed and therefore there is no potential for visual disturbance to bats through the illumination of foraging and commuting pathways away from or to the roosts. The magnitude of impact is therefore assessed as negligible to roosting bats and the resulting effect is **Negligible (Not significant)**.

Loss of and / or Damage to Habitats Supporting Water Vole

7.10.29 Water vole is known to be present in the Study Area and is assumed potentially present on any suitable watercourse within the Study Area. As part of the Proposed Alignment design all of the OHL towers are offset from the rivers / watercourses by a minimum of 20 m. No construction activities for the OHL would be undertaken within a 10 m buffer from rivers / watercourses.

7.10.30 A total of four new permanent watercourse crossings would be constructed (crossing three unnamed watercourses and the Allt na Ceardaich, all of which are tributaries of the River Strathy) and one new temporary crossing would be constructed (crossing a tributary of the Allt an Reidhe Rudaidh, which is a tributary of the River Strathy) for the permanent and temporary construction access tracks. In addition, 16 existing watercourse crossings on tracks which are scheduled to would be upgraded so they are suitable for construction vehicles, and two crossings for the UGC would be required.

7.10.31 Water vole has been confirmed present at a number of these locations and the works may result in direct damage and displacement of water vole. However, given that the watercourse crossings would be limited in terms of their width, permanent riparian habitat loss associated with the construction phase would be very minor. The habitat losses would not reasonably result in habitat fragmentation, because water voles would be able to continue to transit along the watercourse pre- and post-development. It is therefore assessed that the impacts of habitat loss to the local water vole population would be minor, and the resulting effect is **Minor Adverse (Not significant)**.

7.10.32 Standard embedded mitigation measures to control surface water run-off during construction would be implemented as required for environmental legislative compliance and would be set out in the CEMP. The watercourse crossings would not result in any barrier effects to wildlife including otter, because foraging animals would still be able to use the riparian corridors. The magnitude of impact to water vole riparian habitats are therefore predicted to be minor, and the resulting effects of the Proposed Alignment on water vole habitats are **Minor Adverse (Not significant)**.

Disturbance to Water Vole

7.10.33 The implementation of a 10 m buffer alongside watercourses as part of the embedded mitigation for the construction phase of the Proposed Alignment would minimise the potential for any noise or visual disturbance to riparian and aquatic habitats that may be used by water vole during tower construction. The magnitude of impact is assessed as negligible, and the resulting effect is **Negligible (Not significant)**.

Reptiles

Loss of and / or Damage to Habitats and Fragmentation / Isolation of Populations

7.10.34 The small losses of habitat (both temporary and permanent) are unlikely to significantly affect any local populations of common lizard and adder that may be present in habitats directly impacted by the Proposed

Alignment. This is on the basis that there are very extensive areas of similar, connected, habitat in the wider local area that would be unaffected into which displaced reptiles can disperse. There is no potential for fragmentation or isolation of any reptile populations, because the majority of impacts of habitats are temporary and reversible, and permanent habitat losses are limited to small discrete areas. The magnitude of impact on reptiles is therefore assessed as low, and the resulting effect is **Minor adverse (Not significant)**.

Accidental Killing / Injury

7.10.35 The potential for accidental killing / injury of reptiles during site preparation works and vegetation clearance for the construction phase would be addressed through embedded mitigation for a precautionary working method statement for reptiles, that would form part of the CEMP. Any accidental killing/ injury would therefore be very unlikely; however, in the absence of mitigation would be unlikely to affect anything other than a small number of individuals that would not threaten the population size or distribution in the wider local areas. The magnitude of impact on the local reptile population is therefore assessed as negligible, and the resulting effect is **Negligible (Not significant)**.

Pine Marten

Loss of and / or Damage to Habitats and Fragmentation / Isolation of Populations

7.10.36 The small permanent losses of woodland that would be required to create an Operational Corridor for the construction and safe operation of the proposed OHL including the creation of new access tracks, as displayed on **Volume 2: Figure V1-12.3**, would be unlikely to significantly affect any local populations of pine marten that may be present in woodland habitats directly impacted by the Proposed Alignment. This is on the basis that there are very extensive areas of similar, connected, forestry habitat in the wider local area that would be unaffected into which displaced animals can disperse. The magnitude of impact on pine marten is therefore assessed as negligible, and the resulting effect is **Negligible (Not significant)**.

Wildcat

Loss of and / or Damage to Habitats and Fragmentation / Isolation of Populations

7.10.37 The small permanent losses of woodland that would be required to create an Operational Corridor for the construction and safe operation of the proposed OHL including the creation of new access tracks, as displayed on **Volume 2: Figure V1-12.3**, would be unlikely to significantly affect any local populations of wildcat, if this species is present in the woodland (noting that the presence of this species is considered unlikely based on the available evidence). This is on the basis that there are very extensive areas of similar, connected, forestry habitat in the wider local area that would be unaffected into which displaced animals can disperse. The magnitude of impact on wildcat is therefore assessed as negligible, on a precautionary basis assuming that the species could be present, and the resulting effect is **Negligible (Not significant)**.

Operational Effects

Habitats

7.10.38 Potential impacts on habitats both within and outwith the Caithness and Sutherland Peatlands SAC / Ramsar and West Halladale SSSI and Flow Country WHS from the Proposed Alignment during its operational phase are considered to be limited, resulting from small-scale maintenance operations. This may result in some localised habitat disturbance around the base of the towers, but access to these areas would utilise temporary trackway matting (or similar measures appropriate to the site conditions), to minimise the risk of any irreversible damage to habitats. The operational footprint of the new permanent access track sections is reduced in width upon completion of construction, so the habitat losses resulting from the operation of the permanent access tracks is reduced when compared to the construction phase. There are permanent indirect impacts resulting from the hydrological changes within the 10 m buffer zone, but as set out in **Table V1-7.6**, the losses are minor

in the context of the wider peatland habitat within the SAC / Ramsar and SSSI and WHS. The magnitude of impact is assessed as low, and the resulting unmitigated effect is **Minor adverse (Not significant)**.

Protected Species

7.10.39 Effects to protected species from the operational phase of the Proposed Alignment are also considered to be very limited. There may be some temporary impacts for operational maintenance around the bases of the towers, and these could potentially disturb habitats supporting common lizard and adder. However, any disturbance to habitats and potential displacement of reptiles from these habitats would be very limited in both extent and duration. Any potential noise or visual disturbance impacts would not reasonably result in any substantial displacement or disturbance to protected species including bats roosting at Bowside Lodge (which is >100 m from the nearest towers), pine marten or wildcat. The magnitude of impact on protected species is assessed as low, and the resulting unmitigated effect is **Negligible (Not significant)**.

7.10.40 There is no potential for operational impacts to otter or water vole habitats, as there are no towers within 20 m of any watercourses. Any periodic maintenance operations would be undertaken in daylight hours only and would occur at the tower locations which are >20 m from the River Strathy, Halladale River and other watercourses. It is therefore concluded that there would be no risk of disturbance to otters and / or water voles foraging and commuting along the river, or any damage / disturbance to habitats or places of rest / shelter that may be present. The magnitude of impact on otter and water vole is assessed as negligible, and the resulting unmitigated effect is **Negligible (Not significant)**.

7.11 Mitigation

7.11.1 General and embedded mitigation and mitigation by design measures for habitats and species, such as complying with best practice, micrositing provisions, presence of an ECoW and adherence to a detailed CEMP and SPP are included in Section 7.9. Whilst the EcIA has not identified any significant effects on IEFs, specific mitigation at a landscape level would be delivered for habitat losses within the boundary of the Caithness and Sutherland Peatlands SAC / Ramsar, West Halladale SSSI and Flow Country WHS designations.

Caithness and Sutherland Peatlands SAC / Ramsar and West Halladale SSSI / Flow Country WHS

7.11.2 A landscape scale HMP, combining the HMPs of the Connagill Cluster Grid Connection projects, is being developed in consultation with NatureScot to address the cumulative habitat losses of peatland resulting from the construction of the grid connections in line with the existing HMPs for the associated renewable energy developments, including within the boundaries of the Flow Country WHS and Caithness and Sutherland Peatlands SAC / Ramsar (see **Volume 4: Appendix V1-7.8**).

Water vole

7.11.3 Prior to the commencement of works, an updated water vole survey would be undertaken at each of the proposed new, temporary and upgraded watercourse crossings by a suitably qualified ecologist. The survey would include a minimum buffer of 150 m either side of the working area.

7.11.4 Where water voles are confirmed present a Species Protection Plan would be prepared, and a licence would be obtained from NatureScot prior to the commencement of construction works. Given the very minor impacts of the construction phase on riparian habitats that may support water vole, it is not proposed to undertake a fenced trapping and translocation, because water voles would only need to be locally displaced from short sections of each affected watercourse to accommodate either a new crossing, or an upgrade to the existing crossing.

7.11.5 Appropriate water vole displacement measures would be implemented in accordance with standard guidance (Dean *et al*. 2016) under licence from NatureScot.

Other Protected Species

7.11.6 All other protected species mitigation has been included as embedded mitigation and relevant SPPs prepared for inclusion within the CEMP. This embedded mitigation has been taken into account when completing the ecological impact assessment and has resulted in a conclusion of no significant effects for any protected species. No additional mitigation is therefore necessary.

7.12 Cumulative Effects

7.12.1 The purpose of the assessment of cumulative effects is to identify situations where effects on IEFs 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 similar infrastructure developments in the Strathy area, including those that are under construction, consented or at application stage (operational developments are considered part of the baseline). Developments at pre-application or scoping stage generally do not have sufficient information on potential effects to be subject to detailed cumulative effects assessment, as the baseline survey period is ongoing, and/ or the results and impact assessments have not been published. However, an assessment of likely/ potential cumulative effects with the Proposed Alignment has been undertaken where possible, informed by any relevant information available in the public domain with professional judgement applied. Developments that have been refused or withdrawn have been scoped out.

7.12.2 Four proposed or consented wind farms and associated infrastructure (grid connections and substations) are present within a 20 km radius of the Proposed Alignment, the grid connections for which are collectively referred to as the 'Connagill Cluster Grid Connections', see **Table V1-7.10**.

7.12.3 For the purposes of the assessment of the Proposed Alignment it is assumed that the proposed Melvich Wind Energy Hub and grid connection would not be constructed and therefore that the two projects are mutually exclusive. However, this is considered within the cumulative assessment for the Proposed Development with the Alternative Alignment (see **Volume 5: Chapter 5: Ecology – Alternative Alignment).**

7.12.4 No other proposed or consented (but not yet constructed) developments that could potentially interact with the construction and / or operational phases of the Proposed Alignment, and result in cumulative effects to the same qualifying habitats and species of the Caithness and Sutherland Peatlands SAC / Ramsar, have been identified.

Table V1-7.10: Developments Scoped into Cumulative Effects Assessment

Development Name	Status	Total permanent land-take for development (ha)	No. of turbines / length of OHL or UGC
Kirkton Energy Park (including Kirkton Substation)	Application submitted	15.29	11 turbines
Kirkton Energy Park Grid Connection	Pre-application	Not yet confirmed	Approximately 0.18 km of OHL supported by trident wood pole
Strathy Wood Wind Farm (including Strathy Wood Substation)	Consented	13.00	11 turbines
Strathy South Wind Farm (including Strathy South Substation)	Consented	28.38 (plus 24.19 ha of permanent habitat change)	35 turbines

Development Name	Status	Total permanent land-take for development (ha)	No. of turbines / length of OHL or UGC
Strathy South Wind Farm 'Southern Section' Grid Connection	Anticipated to be Permitted Development	-	Approximately 5 km of 132 kV UGC
Strathy Wood Wind Farm Grid Connection	Submitted	2.19 (plus 2.13 ha of permanent habitat change)	Approximately 4.5 km of 132 kV OHL
Strathy Switching Station	Pre-application	Not yet confirmed	N/A

7.12.5 Given the proximity of the numerous wind farm and their associated grid connections there is the potential for cumulative effects on the Caithness and Sutherland Peatlands SAC / Ramsar and its component SSSIs, the Flow Country WHS and other non-designated peatland habitats, and protected species as a result of the construction and operation of the projects listed in **Table V1-7.10** with the Proposed Alignment.

7.12.6 The potential for cumulative effects on IEFs scoped into this assessment for each of the projects listed in **Table V1-7.10** with the Proposed Alignment has been assessed (see **Table V1-7.11**). Although habitat loss associated with the Proposed Alignment alone is very minor, and the effects on both designated and non-designated habitats are assessed as not significant, it is acknowledged that cumulative impacts with other nearby projects may result in a greater magnitude of impact on the habitats in the wider context. Each of the projects alone has / would have its own HMP to mitigate for peatland habitat losses, which the majority occur outside the boundary of the Caithness and Sutherland Peatlands SAC / Ramsar. In addition, an Outline HMP, combining the HMPs of the 'Connagill Cluster Grid Connection' projects, is being developed in consultation with NatureScot to mitigate the cumulative losses of habitat resulting from the construction of the grid connections (see Section 7.11 and **Volume 4: Appendix V1-7.8**). With this mitigation in place, it is reasonable to conclude that there would be no significant cumulative effects on the designated and non-designated peatland habitats.

7.12.7 Cumulative effects on the Caithness and Sutherland Peatlands SAC / Ramsar and West Halladale SSSI for the Proposed Alignment with each project listed in **Table V1-7.10**, as well as the Proposed Alignment with all of the other projects combined, are therefore assessed as **Minor adverse (Not significant)**. A Shadow HRA has also been undertaken and concluded that there would be no adverse effects on the integrity of the SAC / Ramsar either alone or in-combination with other plans or projects (see **Volume 4: Appendix V1-7.6**).

7.12.8 There is no potential for significant cumulative effects on otter, a qualifying feature of the Caithness and Sutherland Peatlands SAC. The other project assessments for which information was available concluded that there would be no significant effects on otter; given the spatial separation of the projects it is reasonable to conclude that any localised disturbance to otter within the ZoI of a particular project that falls below the threshold of a significant effect in isolation, would not reasonably combine with any other projects within the Connagill Cluster of wind farms and associated grid connections to give rise to a significant noise / visual disturbance to otter when combined with the Proposed Alignment. Cumulative effects on otter are therefore assessed as **Negligible (not significant)**.

7.12.9 The mitigation measures to be implemented for the impacts of the Connagill Cluster Grid Connections and wind farms on the Caithness and Sutherland Peatlands SAC / Ramsar and West Halladale SSSI would be similarly applicable to mitigate for any potential cumulative impacts on the Flow Country WHS. Cumulative effects on the WHS for the Proposed Alignment with each project listed in **Table V1-7.10**, as well as the Proposed Alignment with all of the other projects combined, are therefore assessed as **Minor adverse (Not significant)**. A separate WHS assessment has been undertaken and concluded that there would be no significant adverse in-combination effects on the attributes of the WHS (see **Volume 4: Appendix V1-7.7**).

7.12.10 A summary of the cumulative effects assessment on the individual projects within the Connagill Cluster is provided in **Table V1-7.11**.

Table V1-7.11: Summary of Potential Cumulative Effects

Development Name	Potential Cumulative Effects with the Proposed Alignment		
	Caithness and Sutherland Peatlands SAC/ Ramsar and West Halladale SSSI	Flow Country WHS	Protected Species
Kirkton Energy Park (including Kirkton Substation)	There would be no direct habitat loss within the Caithness and Sutherland SAC / Ramsar, and therefore is no potential for cumulative effects with the Proposed Alignment. There would be no direct habitat loss within the West Halladale SSSI, and therefore is no potential for cumulative effects with the Proposed Alignment.	All turbines are within the WHS boundary, with a total permanent land take of 15.29 ha. When combined with the permanent habitat losses resulting from the Proposed Alignment (26.76 ha), the cumulative total habitat loss would be 42.05 ha, which represents approximately 0.014% of the total WHS area and is negligible when considered in the context of the wider site. Cumulative effects on the WHS are therefore assessed as **Negligible (not significant)**.	Pine marten, wildcat and badger were considered absent from affected habitats. The assessment concluded there would be no significant effects on otter and common pipistrelle bat, and therefore there is no potential for cumulative effects on these species with the Proposed Alignment.
Kirkton Energy Park Grid Connection	There is no potential for cumulative effects arising from this grid connection. The route of the grid connection falls outwith the designated sites of the surrounding area and the development is unlikely to affect qualifying interests of these sites.	**Volume 4: Appendix V1-7.8, Table 4** assesses the potential effects to habitats from the construction and operation of the Kirton Energy Park Grid Connection as the design of this development is not complete. The assessment predicts that 0.327 ha of habitats may be affected by the grid connection. The proposed HMP seeks to compensate for the effects along with providing suitable enhancement. Consequently, it is considered that there would be no cumulative effects from the Kirton Energy Park Grid Connection in combination with the Proposed Alignment.	The scheme may affect protected species, but as the Proposed Alignment would not significantly affect any protected species, the potential for cumulative effects is low.
Strathy South Wind Farm (and Strathy South Substation)	There would be no direct habitat loss within the Caithness and Sutherland SAC / Ramsar/ SSSI resulting from the turbine footprints. The access track crosses the designated sites but is already in place (and would be upgraded);	There would be no direct habitat loss within the WHS resulting from the turbine footprints. There would be no direct permanent habitat loss within the WHS boundary. The access track route crosses the same habitats within the WHS as it	The assessment concluded there would be no significant effects to protected species and therefore there is no potential for cumulative effects with the Proposed Alignment.

Development Name	Potential Cumulative Effects with the Proposed Alignment		
	Caithness and Sutherland Peatlands SAC/ Ramsar and West Halladale SSSI	Flow Country WHS	Protected Species
	impacts on qualifying habitats are very minor in extent (approximately 3.71 ha of peatland, of which 3.02 ha is atypical having been hydrologically impacted by the original construction of the access track). When combined with the permanent habitat losses resulting from the Proposed Alignment (0.132 ha), the cumulative total habitat loss would be 3.84 ha, which represents approximately 0.003% of the total designated area and is very small and localised when considered in the context of the wider site. Cumulative effects with the Proposed Alignment are therefore assessed as **Minor adverse (Not Significant).**	does for the SAC/ Ramsar and SSSI because the boundaries overlap at this location. Such minor impacts in the context of the thousands of hectares of peatland within the WHS would reasonably continue to be below the threshold at which a significant effect would occur. Cumulative effects on the WHS are therefore assessed as **Negligible (not significant)**.	
Strathy South Wind Farm 'Southern Section' Grid Connection	The UGC would connect the consented Strathy South Wind Farm to a new CSE compound near Strathy Wood Wind Farm on-site substation. Although the UGC would directly impact land within the SAC / Ramsar and SSSI (approximately half of the route is within the designated site boundary), the alignment is included within the ground of the Strathy South Wind Farm upgraded access track which has been carefully chosen to avoid Annex I habitats. The UGC and upgraded access track route would potentially impact habitats on the western side of the existing access track; the peatland habitats in this location are atypical having been hydrologically impacted by the original construction of the access track. The impacts would also be temporary given the nature of the construction activities. Cumulative effects	The UGC route impacts the same habitats within the WHS as it does for the SAC / Ramsar and SSSI because the boundaries overlap at this location. Such minor and temporary impacts in the context of the c.190,000 ha of peatland within the WHS would reasonably continue to be below the threshold at which a significant effect would occur. Cumulative effects on the WHS are therefore assessed as **Negligible (not significant)**.	No significant cumulative effects on protected species are predicted given the minor extent of the works, and that the impacts would occur alongside the existing track.

Development Name	Potential Cumulative Effects with the Proposed Alignment		
	Caithness and Sutherland Peatlands SAC/ Ramsar and West Halladale SSSI	Flow Country WHS	Protected Species
	on designated habitats with the Proposed Alignment are therefore assessed as **Minor adverse (Not Significant).**		
Strathy Wood Wind Farm (and Strathy Wood Substation)	There would be no direct habitat loss within the Caithness and Sutherland SAC / Ramsar/ SSSI, and therefore there is no potential for cumulative effects with the Proposed Alignment.	There would be no direct habitat loss within the WHS, and therefore is no potential for cumulative effects with the Proposed Alignment.	The assessment concluded there would be no significant effects on protected species and therefore there is no potential for cumulative effects with the Proposed Alignment.
Strathy Wood Wind Farm Grid Connection	Direct habitat loss within the Caithness and Sutherland SAC / Ramsar / SSSI is calculated at 4.32 ha in total, and therefore the cumulative habitat losses with the Proposed Alignment are calculated at 4.45 ha. Cumulative habitat losses within the SAC / Ramsar / SSSI resulting from the construction and operation of projects within the Connagill Cluster would be addressed through a site-wide HMP and therefore it is reasonable to conclude that there would be no significant cumulative effects on the designated peatland habitats.	Direct habitat loss within the Flow Country WHS is calculated at 4.32 ha in total and therefore the cumulative habitat losses with the Proposed Alignment are calculated at 31.08 ha. It is reasonable to assume that the habitat enhancement measures proposed within the outline HMP for the Connagill Cluster would successfully mitigate impacts on the internationally important peatland habitats that are attributes of the WHS. No significant cumulative effects are therefore predicted with the Proposed Alignment.	The assessment concluded there would be no significant effects to protected species and therefore there is no potential for cumulative effects with the Proposed Alignment.
Strathy Switching Station	There would be no direct habitat loss within the Caithness and Sutherland SAC / Ramsar/ SSSI, and therefore there is no potential for cumulative effects with the Proposed Alignment.	There would be no direct habitat loss within the WHS, and therefore there is no potential for cumulative effects with the Proposed Alignment.	Given the minor footprint of the development, the potential for cumulative effects on protected species with the Proposed Alignment can be discounted.

7.13 Biodiversity Enhancement

7.13.1 In line with NPF4 (Scottish Government, 2023), the Onshore Wind Policy Statement (Scottish Government, 2022), and the Scottish Biodiversity Strategy to 2045 (Scottish Government, 2024), consideration has been given to how the Proposed Development can deliver significant enhancements to biodiversity over its lifetime.

7.13.2 An Outline HMP for the Connagill Cluster Grid Connections, which includes the Proposed Development, is being developed in consultation with NatureScot to deliver landscape-scale habitat enhancement to meet the requirements of NPF4 Policy 3 (see **Volume 4: Appendix V1-7.8**). The final HMP would focus on peat restoration, and this would be developed further through the course of the application determination period. Potential areas for peatland restoration areas that could be taken forwards across the wider landscape are currently under consideration but require landowner agreement before these can be progressed to deliver the HMP and Biodiversity Net Gain (BNG) compensation arising from the Proposed Alignment.

7.13.3 The SSEN BNG project toolkit would be 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 Connagill Cluster Outline HMP (**Volume 4: Appendix V1-7.8**) in line with the Applicant's biodiversity ambition and environmental legacy commitments, Sustainability Strategy and Sustainability Plan.

7.14 Residual Effects

7.14.1 The assessment concluded that there would be no significant adverse effects on any IEF as a result of the construction or operation of the Proposed Alignment, with various mitigation measures taken into account including the preparation of a CEMP and Outline HMP. Residual effects therefore remain the same as reported in Section 7.10. Similarly, the cumulative impact assessment in Section 7.12 has concluded that with embedded mitigation there would be no significant cumulative effects with any of the other wind farms and associated grid infrastructure in the Connagill Cluster.

7.15 Summary and Conclusions

7.15.1 Given the nature of the Proposed Alignment, most of the impacts on terrestrial ecology features would arise from construction (which includes the dismantling of the existing wood pole OHL and the construction of the short section of UGC), with direct habitat losses restricted to the footprints of the towers, CSE compound and the new sections of permanent access track. The Proposed Alignment has followed the mitigation hierarchy to avoid harm to ecological features through careful site selection and mitigating effects through embedded mitigation and mitigation by design.

7.15.2 The Proposed Alignment would pass over upland habitats typical of the landscape, which are dominated by mire and wet heath communities that are Annex I habitats and some of which are reliant on ground water influences (GWDTEs). These habitats are internationally important, and their nature conservation importance is recognised through their designation as the Caithness and Sutherland Peatlands SAC and Ramsar and its component West Halladale SSSI, as well as the Flow Country WHS. However, due to the nature of the Proposed Alignment impacts to habitats within the boundary of the designated site would be very minor and (see **Table V1-7.7**). As part of the design process towers and infrastructure have been microsited to avoid / minimise impacts on GWDTEs that would be most vulnerable to indirect permanent habitat changes. Effects of habitat loss on designated and non-designated habitats resulting from construction and operation of the Proposed Alignment are assessed as **Minor adverse (not significant)**.

7.15.3 Signs of protected species including bats, badger, otter, water vole, pine marten, common lizard, and adder were identified within the Study Area. The Proposed Alignment was assessed as resulting in **no significant effects** on these species during construction or operation.

7.15.4 Although there were no field signs indicating wildcat presence in the local area, the desk study indicated that there were records of sightings in the Strathy and Melvich areas (most likely to be hybrids rather than true native wildcats), and therefore the occasional presence of the species could not be ruled out. However, if this species is present, habitat loss/ fragmentation and potential disturbance/ displacement was assessed as negligible and effects on the species concluded to be **Negligible (not significant)**.

7.15.5 Embedded mitigation relevant to identified ecological receptors include the routeing design process (which sought to minimise impacts on sensitive habitats), the development and implementation of a site-specific CEMP, which would be used in conjunction with the Applicant's General Environmental Management Plans (GEMPs) and Species Protection Plans (SPPs). Furthermore, a suitably experienced ECoW would be appointed to undertake pre-construction surveys for protected species and oversee construction works to minimise any potential effects on nature conservation interests.

7.15.6 As no specific mitigation requirements have been identified as necessary to reduce the magnitude of impacts to any IEFs (over and above the embedded mitigation and mitigation by design that has informed the ecological impact assessment, and NatureScot licensing requirements for water vole where they are present on watercourse crossings), the Proposed Alignment is also predicted to result in **no significant residual effects** on habitats or protected species.

7.15.7 No significant cumulative effects to IEFs with any of the other wind farms and grid connections (consented and proposed) that form part of the Connagill Cluster have been identified. A landscape scale HMP, combining the HMPs for all of the other projects, is being developed in consultation with NatureScot to address the cumulative habitat losses of peatland, including within the boundaries of the Flow Country WHS and Caithness and Sutherland Peatlands SAC / Ramsar.

7.16 References

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