Chleansaid Wind Farm 132 kV OHL Connection

Environmental Appraisal (EA) Report

Appendix 7.3: Habitats Regulations Appraisal

November 2024

CONTENTS

EXECUTIVE SUMMARY

WSP UK Ltd (WSP) has been commissioned by Scottish and Southern Electricity Networks Transmission (SSEN Transmission) to prepare a Habitats Regulations Appraisal (HRA) Report for the construction and operation of a new 10.5 km 132 kV overhead line (OHL) between the proposed Chleansaid Wind Farm Substation and the existing Dalchork Substation (Proposed Development'). The site of the Proposed Development comprises the proposed overhead line (the Proposed Alignment) and land encompassing all access tracks and temporary construction areas (the Site).

Following review of the potential impacts from the Proposed Development the following European Sites were identified for inclusion in the screening assessment; Lairg and Strath Brora Lochs Special Protection Area (SPA), Strath Carnaig and Strath Fleet Moors SPA, Caithness and Sutherland Peatlands SPA / Special Area of Conservation (SAC) / Ramsar Site, River Naver SAC and Dornoch Firth and Loch Fleet SPA / Ramsar Site.

Supporting information to inform the HRA Report was gathered through a review of ornithology documentation produced for relevant adjacent projects and bird surveys undertaken in 2022 and 2023 by WSP.

The HRA Screening Assessment identified the following Likely Significant Effects (LSE) from the Proposed Development:

- Strath Carnaig and Strath Fleet Moors SPA – Disturbance / displacement of hen harrier during construction;
- Lairg and Strath Brora Lochs SPA – Direct mortality of black-throated diver through collision during the operational phase; and
- Caithness and Sutherland Peatlands SPA / Ramsar Site - Direct mortality of black-throated diver through collision during the operational phase.

There was no requirement to consider in-combination effects with other plans and projects at screening stage. as all impacts not considered to result in LSE would have negligible or no effects. As LSEs were identified the HRA was required to progress to Appropriate Assessment (AA).

Mitigation prescribed to reduce the likelihood or magnitude of identified LSEs includes restricting works during the bird breeding season and restricting the limits of deviation of the proposed OHL. On review of the identified impact pathways, the magnitude of potential effects and the implementation of impact avoidance and mitigation measures no adverse effects on the integrity of any of the European Sites were identified, either for the project alone or in-combination with other projects or plans.

1. INTRODUCTION

1.1 Background

1.1.1 This Habitats Regulations Appraisal (HRA) Report has been prepared by WSP UK Ltd (WSP) on behalf Scottish and Southern Electricity Networks Transmission (SSEN Transmission) which owns, operates and develops the high voltage electricity transmission system in the north of Scotland.

1.1.2 The HRA Report is required to assess potential impacts upon European Sites of nature conservation interest from the construction and operation of a new 10.5 km 132 kV overhead line (OHL) between the proposed Chleansaid Wind Farm Substation and the existing Dalchork Substation (Proposed Development'). The site of the Proposed Development comprises the proposed overhead line (the Proposed Alignment) and land encompassing all access tracks and temporary construction areas (the Site). For details of the Proposed Development, refer to **Chapter 3: Description of the Proposed Development** of the main EA report.

1.1.3 Although it is presented as an appendix to the Environmental Appraisal (EA), this document addresses separate legislative requirements which relate solely to European Sites. Further information on the legislative context is given below.

1.2 The Habitats Regulations

1.2.1 In Scotland, the Scottish Parliament passed the UK Withdrawal from the European Union (Continuity) (Scotland) Act 2021 (hereafter the Continuity Act), meaning that Scottish legislation in relation to devolved matters – including environmental matters - remains aligned with EU law. As such, the Conservation (Natural habitats &c.) Regulations 1994 (as amended) ('The Habitats Regulations'), which transposed European Council Directive 92/43/EEC 'the Habitats Directive' into Scottish law applies to plans and projects that may have significant effects on sites designated under the Habitats Directive and the Wild Birds Directive (Council Directive 79/409/EEC). Sites designated under the Directives include Special Protection Areas (SPAs) and Special Areas of Conservation (SACs).

1.2.2 Under the Fourth National Planning Framework (NPF4)[1] which came into effect in February 2023, the effects of plans and projects on candidate SACs and proposed SPAs, and Ramsar Sites (Wetlands of International Importance under the 1971 Ramsar Convention), should also be assessed.

1.2.3 The Habitats Regulations place a duty upon 'Competent Authorities'[2], to consider the potential for effects upon European Sites prior to granting consent for projects or plans. Should Likely Significant Effects (LSEs) be identified by the initial screening process it is necessary to further consider the effects by way of an 'Appropriate Assessment' (AA). Overall, this process of assessment is known as HRA and further details of the applicable legislative context are summarised below.

1.3 Legislative Context

1.3.1 Article 6 (3) of the Habitats Directive sets out the need for AA of plans or projects that have potential to affect the integrity of European Sites (referred to as 'Natura 2000 sites in the Habitats Directive), as follows:

> *'Any plan or project likely to have a significant effect on a Natura 2000 site, either individually or in combination with other plans or projects, shall undergo an Appropriate Assessment to determine its*

[1] The Scottish Government (2023). National Planning Framework 4. Available at: https://www.gov.scot/publications/national-planning-framework-4/ [Accessed: January 2024].

[2] The Habitats Regulations state that a competent authority "includes any Minister, government department, public or statutory undertaker, public body or any description, or person holding a public office". In the case of the Proposed Development the Scottish Governments Energy Consents Unit is the Competent Authority

implications for the site. The competent authorities can only agree to the plan or project after having ascertained that it will not adversely affect the integrity of the site concerned' (Article 6(3)).

1.3.2 As the purpose of the Natura 2000 network is the preservation of examples of species and habitats across Europe, rather than preservation of individual sites, Article 6(4) allows for exceptional circumstances where negative effects may be permitted. This reads:

'*In exceptional circumstances, a plan or project may still be allowed to go ahead, in spite of a negative assessment, provided there are no alternative solutions and the plan or project is considered to be of overriding public interest*[3]*. In such cases the Member State must take appropriate compensatory measures to ensure that the overall coherence of the Natura 2000 network is protected.*' (Article 6(4)).

1.3.3 Regulation 48 (1) of the Habitats Regulations states that *'A competent authority, before deciding to undertake, or give any consent, permission or other authorisation for a plan or project which —*

(*a) is likely to have a significant effect on a European site or a European offshore marine site (either alone or in combination with other plans or projects), and*

(b) is not directly connected with or necessary to the management of that site,

— must make an Appropriate Assessment of the implications for that site in view of that site's conservation objectives.'

1.3.4 Like the Habitats Directive, the Habitats Regulations also make allowance for projects or plans to be consented if they satisfy 'imperative reasons of overriding public interest' (IROPI). Regulation 49 relates to such situations.

1.3.5 The Competent Authority is required to consult with NatureScot (the statutory nature conservation body in Scotland) in all cases where an AA is required.

1.4 Stages of Habitats Regulations Appraisal

1.4.1 Guidance on the Habitats Directive sets out the stepwise approach which should be followed to enable Competent Authorities to discharge their duties under the Habitats Directive and provides further clarity on the interpretation of Articles 6 (3) and 6 (4). The process used is usually summarised in four distinct stages of assessment:

- **Stage 1: Screening**: the process which identifies whether effects upon a European Site of a plan or project are possible, either alone or in combination with other plans or projects, and considers whether these effects are likely to be significant (i.e. LSE).
- **Stage 2: Appropriate Assessment**: the detailed consideration of the effect on the integrity of the European Site of the plan or project, either alone or in combination with other plans or projects, with respect to the site's conservation objectives and its structure and function.
- **Stage 3: Assessment of alternative solutions**: the process which examines alternative ways of achieving the objectives of the plan or project that avoid adverse effects on the integrity of the European Site.
- **Stage 4: Assessment where no alternative solutions exist and where adverse effects remain**: an assessment of whether the development is necessary for IROPI and, if so, of the compensatory measures needed to maintain the overall coherence of the European Site network.

[3] An exact definition of 'imperative reasons of overriding public interest' is not provided, but EC guidance states 'It is reasonable to consider that the "imperative reasons of overriding public interest, including those of social and economic nature" refer to situations where plans or projects envisaged prove to be indispensable:
- within the framework of actions or policies aiming to protect fundamental values for the citizens' life (health, safety, environment);
- within the framework of fundamental policies for the State and the Society;
- within the framework of carrying out activities of economic or social nature, fulfilling specific obligations of public service.'

1.5 Guidance

1.5.1 In undertaking this HRA, the following guidance was referred to:

- European Commission guidance on HRA methodology (European Commission, 2022[4]), the precautionary principle (European commission, 2000)[5], managing Natura 2000 sites (European Commission, 2019)[6] and energy transmission infrastructure specific guidance (European Commission, 2018)[7].
- The Habitats Regulations Assessment Handbook (Tyldesley, D & Chapman, C, 2013)[8];
- NatureScot guidance on assessing connectivity with Special Protection Areas (SNH, 2016)[9]; and
- NatureScot guidance on assessing and mitigating impacts of power lines on birds (SNH, 2016)[10].

1.5.2 Further guidance and reports are referred to in this HRA Report where required in relation to specific technical aspects of the assessment.

1.6 Purpose of Report

1.6.1 This report details the HRA Stage 1 Screening Assessment and provides information to allow the Competent Authority to complete HRA Stage 2 AA.

1.6.2 For the Proposed Development, it is understood that the Scottish Governments Energy Consents Unit would be the Competent Authority.

[4] European Commission (2022). Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC.
[5] European Commission (2000) Communication from the Commission on the Precautionary Principle.
[6] European Commission (2019) Managing Natura 2000 Sites, the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC.
[7] European Commission (2018) Guidance on Energy Transmission Infrastructure and EU Nature Legislation.
[8] Tyldesley,D & Chapman, C (2013). DTA Publications Limited.
[9] SNH (2016). Assessing connectivity with Special Protection Areas.
[10] SNH (2016). Assessment and mitigation of impacts of power lines and guyed meteorological masts on birds – Guidance. Version 1.

2. EUROPEAN SITE INFORMATION

2.1.1 A search for European Sites was undertaken within a minimum of 10 km of the Proposed Development (extended to 20 km for SPAs with goose qualifying interests (specifically pink-footed and greylag goose due to ranging distances[9]). This search area was deemed proportionate based on the location of the Site[11] and the type and magnitude of potential impacts from the Proposed Development. European Sites within the above search parameters are thus considered potentially be within the Proposed Development's Zone of Influence (ZoI) and / or connected to the Site due to mobile qualifying interests.

2.1.2 Eight European Sites were located within the above search parameters. Information for the European Sites is shown in **Table 3-1** below and their location relative to the Proposed Development is shown on **in Appendix 7.1 – Figure 7.1.1** (appended to the main EA report). All information in **Table 3-1** is taken from NatureScot's Site link website[12] except for population estimates which are taken from the most recent estimates provided by the Joint Nature Conservation Committee[13].

[11] The Site is located inland and therefore has no connectivity to wide-ranging species groups such as marine mammals and seabirds.

[12] NatureScot (2023). Sitelink. Available online: https://sitelink.nature.scot/home [Accessed January 2024]

[13] Stroud, D.A., Bainbridge, I.P., Maddock, A., Anthony, S., Baker, H., Buxton, N., Chambers, D., Enlander, I., Hearn, R.D., Jennings, K.R, Mavor, R., Whitehead, S. & Wilson, J.D. - on behalf of the UK SPA & Ramsar Scientific Working Group (eds.) 2016. The status of UK SPAs in the 2000s: the Third Network Review. [c.1,108] pp. JNCC, Peterborough.

Table 2-1 European site information

European Site Name and Distance from Site	Qualifying Interests	Conservation Objectives	Condition Assessment	Negative Pressures
Lairg and Strath Brora Lochs SPA. **Approximately 1.2 km south of the Site.**	Qualifies under Article 4.1 by regularly supporting populations of European importance of the following Annex 1 species during the breeding season: • Five pairs of black-throated diver (2.3 % of the Great British (GB) population).	To avoid deterioration of the qualifying habitat and species thus ensuring that the integrity of the site is maintained, and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features; and To ensure for the qualifying habitat and species that the following are maintained in the longer term: • Extent of the habitat and population of the species as a viable component on site; • Distribution of the habitat and species within the site; • Structure, function, and supporting processes of habitats and species; • Distribution of typical species of the habitat; and • No significant disturbance of typical species of the habitat.	Black-throated diver – Favourable maintained.	None listed.
Strath Carnaig and Strath Fleet Moors SPA. **Approximately 2km south-east of the Site**	Qualifies under Article 4.1 by regularly supporting populations of European importance of the following Annex 1 species during the breeding season: • Five pairs of hen harrier (0.9 % of the GB population).	To avoid deterioration of the qualifying habitat and species thus ensuring that the integrity of the site is maintained, and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features; and	Hen harrier – Unfavourable declining.	Agricultural operations. Burning. Development. Forestry operations. Game / fisheries management. Plant pests and diseases.

European Site Name and Distance from Site	Qualifying Interests	Conservation Objectives	Condition Assessment	Negative Pressures
		To ensure for the qualifying habitat and species that the following are maintained in the longer term: • Extent of the habitat and population of the species as a viable component on site; • Distribution of the habitat and species within the site; • Structure, function, and supporting processes of habitats and species; • Distribution of typical species of the habitat; and • No significant disturbance of typical species of the habitat.		
Caithness and Sutherland Peatlands SPA. **Approximately 3.5 km south-west of the Site.**	Qualifies under Article 4.1 by regularly supporting populations of European importance of the following Annex 1 species during the breeding season: • Red-throated diver – 46 pairs (3.5 % of GB population); • Black-throated diver – 29 pairs (13.2 % of GB population); • Hen harrier – 19 pairs (3.3 % of GB population); • Golden eagle – four pairs (0.9 % of GB population); • Merlin – 11 pairs (1 % of GB population); • Golden plover – 1,992 pairs (4.1 % of GB population);	To avoid deterioration of the qualifying habitat and species thus ensuring that the integrity of the site is maintained, and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features; and To ensure for the qualifying habitat and species that the following are maintained in the longer term: • Extent of the habitat and population of the species as a viable component on site; • Distribution of the habitat and species within the site; • Structure, function, and supporting processes of habitats and species;	Red-throated diver – Favourable maintained. Black-throated diver – Favourable maintained. Hen harrier – Favourable maintained. Golden eagle – Favourable maintained. Merlin – Favourable maintained. Golden plover – Favourable recovered. Wood sandpiper – Favourable maintained. Dunlin – Favourable maintained.	Red-throated diver – Burning and over grazing (deer) Black-throated diver – no negative pressures Hen harrier – Burning and overgrazing. Golden eagle – Burning and recreation / disturbance. Merlin – Burning and recreation / disturbance. Golden plover – Forestry operations and water management. Wood sandpiper – Burning. Dunlin – Forestry operations and water management.

European Site Name and Distance from Site	Qualifying Interests	Conservation Objectives	Condition Assessment	Negative Pressures
	• Wood sandpiper– one pair (9 % of GB population); • Dunlin – 1,366 pairs (17 % of GB population); and • Short-eared owl – 30 pairs (5 % of GB population). Qualifies under Article 4.2 by regularly supporting populations of European importance of the following migratory species during the breeding season: • Common scoter– 21 pairs (40 % of GB population); • Greenshank – 653 pairs (59.1 % of GB population); and • Wigeon – 43 pairs (14.3 % of GB population).	• Distribution of typical species of the habitat; and • No significant disturbance of typical species of the habitat.	Short-eared owl – Not assessed. Common scoter – Unfavourable declining. Greenshank – Favourable maintained. Wigeon – Favourable maintained.	Short-eared owl – Burning. Common scoter – To be identified. Greenshank – Water management. Wigeon – Burning.
Caithness and Sutherland Peatlands Ramsar Site. **Approximately 3.5 km south-west of the Site.**	Qualifies under Ramsar Criterion 1 for containing a variety of wetland types: • Blanket bog; • Mire; • Oligotrophic lochs; • Dystrophic lochs, lochans and pools; and • Wet heath. Qualifies under Ramsar Criterion 2 by supporting: • Two nationally scarce moss species, *Sphagnum lindbergii* and *S. majus;* • A nationally scarce higher plant the bog orchid *Hammarbya paludosa*;	None listed. Conservation objectives follows those of the overlapping Caithness and Sutherland Peatlands SPA and SAC.	Condition follows those listed for Caithness and Sutherland Peatlands SPA / SAC.	Negative pressures follow those listed for Caithness and Sutherland Peatlands SPA / SAC.

European Site Name and Distance from Site	Qualifying Interests	Conservation Objectives	Condition Assessment	Negative Pressures
	• The nationally rare water beetle Oreodytes alpinus; • Otter *Lutra lutra;* and • Freshwater peal mussel *Margaritifera margaritifera.* Further qualifies under Ramsar Criterion 2 by supporting: • Red-throated diver – 46 pairs (3.5 % of GB population); • Black-throated diver – 29 pairs (13.2 % of GB population); • Golden plover – 1,992 pairs (4.1 % of GB population); • Wood sandpiper– one pair (9 % of GB population); and • Dunlin – 1,366 pairs (17 % of GB population). Qualifies under Ramsar Criterion 4 by supporting: • Common scoter– 21 pairs (40 % of GB population); • Greenshank – 653 pairs (59.1 % of GB population); and • Wigeon – 43 pairs (14.3 % of GB population).			
Caithness and Sutherland Peatlands SAC. **Approximately 3.5 km south-west of the Site.**	Qualifies for supporting the following Annex I habitats:	Overarching Conservation Objectives for all qualifying features: • To ensure that the qualifying features of Caithness and Sutherland Peatlands SAC	Oligotrophic to mesotrophic standing waters – Unfavourable declining.	Oligotrophic to mesotrophic standing waters – Forestry operations and water quality.

European Site Name and Distance from Site	Qualifying Interests	Conservation Objectives	Condition Assessment	Negative Pressures
	• Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or of the *Isoëto-Nanojuncetea*; • Natural dystrophic lakes and ponds; and • Blanket bog. Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site (97/62/EC): • Northern Atlantic wet heaths with cross leaved heath *Erica tetralix*; • Transition mires and quaking bogs; and • Depressions on peat substrates (of the *Rhynchosporion*). Annex II qualification: • Otter; and • Marsh saxifrage *Saxifraga hirculus*.	are in favourable condition and make an appropriate contribution to achieving favourable conservation status; and • To ensure that the integrity of Caithness and Sutherland Peatlands SAC is restored by meeting objectives 2a, 2b and 2c for all qualifying features[14].	Natural dystrophic lakes and ponds - Favourable maintained. Blanket bog – Unfavourable no change. Northern Atlantic wet heaths - Unfavourable no change. Transition mires and quaking bogs – Favourable declining. Depressions on peat substrates – Unfavourable no change. Otter – Unfavourable declining. Marsh saxifrage – Favourable maintained.	Natural dystrophic lakes and ponds – Burning, game/fisheries management, invasive species, and trampling. Blanket bog – Burning, game/fisheries management, invasive species, and trampling. Northern Atlantic wet heaths – Burning, game/fisheries management and trampling. Transition mires and quaking bogs – No negative pressures. Depressions on peat substrates – Burning, game/fisheries management and trampling. Otter – Forestry operations and natural event. Marsh saxifrage – No negative pressures.
River Naver SAC. **Approximately 9.6 km north of the Site.**	Qualifies for supporting the following Annex II species: • Freshwater peal mussel *Margaritifera margaritifera*; and • Atlantic salmon *Salmo salar.*	Overarching Conservation Objectives for all qualifying features: • To ensure that the qualifying features of River Naver SAC are in favourable condition and make an appropriate	Freshwater peal mussel – Unfavourable no change. Atlantic salmon – Favourable recovered.	Freshwater peal mussel – Climate Change, water management and wildlife crime.

[14] Ful details on conservation objectives available in NatureScot (2021) Caithness and Sutherland Peatlands SAC – Conservation Advice Package. Available online: Conservation_Advice_Package_8218 (2).pdf

European Site Name and Distance from Site	Qualifying Interests	Conservation Objectives	Condition Assessment	Negative Pressures
		contribution to achieving favourable conservation status; and • To ensure that the integrity of River Naver SAC is restored by meeting objectives 2a, 2b and 2c for both qualifying features (and 2d for freshwater pearl mussel)[15].		Atlantic salmon – Forestry operations and game / fisheries management.
Dornoch Firth and Loch Fleet SPA. **Approximately 18.3 km south-east of the Site.**	Qualifies under Article 4.1 by regularly supporting populations of European importance of the following Annex 1 species: Breeding season: • Osprey – five pairs nesting within site and 14 pairs within feeding range of site (2.5 % and 7 % of GB population respectively). Non-breeding season: • Bar-tailed godwit – 884 individuals (2.3 % of GB population). Qualifies Under Article 4.2 by regularly supporting populations of European importance of the following migratory species during the non-breeding season: • Greylag goose – 2,823 individuals (3.2 % of GB population). Also qualifies under Article 4.2 by regularly supporting in excess of 20,000 individual waterbirds.	To avoid deterioration of the qualifying habitat and species thus ensuring that the integrity of the site is maintained, and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features; and To ensure for the qualifying habitat and species that the following are maintained in the longer term: • Extent of the habitat and population of the species as a viable component on site; • Distribution of the habitat and species within the site; • Structure, function, and supporting processes of habitats and species; • Distribution of typical species of the habitat; and • No significant disturbance of typical species of the habitat.	Osprey – Favourable maintained. Bar-tailed godwit - Favourable maintained. Greylag goose – Favourable maintained.	Osprey – Forestry operations. Bar-tailed godwit – None. Greylag goose – Recreation / disturbance.

[15] Ful details on conservation objectives available in NatureScot (2020) River Naver SAC – Conservation Advice Package. Available online: file:///C:/Users/ukrxw032/Downloads/Conservation_Advice_Package_8362%20(1).pdf

European Site Name and Distance from Site	Qualifying Interests	Conservation Objectives	Condition Assessment	Negative Pressures
Dornoch Firth and Loch Fleet Ramsar. **Approximately 18.3 km south-east of the Site.**	Qualifies under Ramsar Criterion 1 for containing a variety of wetland types: • Estuarine alder woodland; • Estuaries; and • Sand dunes. Qualifies under Ramsar Criterion 2 by supporting: • Two nationally scarce Baltic rush *Juncus balticus* and seaside centaury *Centaurium littorale;* • The scarce dwarf eelgrass *Zostera noltei* and eelgrass *Z. marina*; • Harbour seal *Phoca vitulina;* • Otter; and • Osprey – five pairs nesting within the site and 14 pairs within feeding range of site (2.5 % and 7 % of GB population respectively). Qualifies under Ramsar Criterion 5 by supporting in excess of 20,00 waterbirds during the non-breeding season. Qualifies under Ramsar Criterion 6 by supporting greater than 1 % of the falling species during the non-breeding season: • Greylag goose – 2,823 individuals (3.2 % of GB population);	None listed. Conservation objectives follows those of the overlapping Dornoch Firth and Loch Fleet SPA (above) and Dornoch Firth and Morrich More SAC[16].	Condition follows those listed for Dornoch Firth and Loch Fleet SPA.	Negative pressures follow those listed for Dornoch Firth and Loch Fleet SPA.

[16] NatureScot (undated). Conservation Objectives for Dornoch Firth and Morrich More Special Area of Conservation

European Site Name and Distance from Site	Qualifying Interests	Conservation Objectives	Condition Assessment	Negative Pressures
	• Bar-tailed godwit - 884 individuals (2.3 % of GB population); and • Wigeon – 11,451 (2.6 % of GB population).			

3. SUPPORTING INFORMATION

3.1.1 A desk top study and suite of ornithology and ecology surveys were undertaken by WSP in 2023/24 to inform the EA and HRA for the Proposed Development. Full details of the methodology and results are provided in the following appendices (appended to the main EA report):

- **Appendix 7.1 – Habitats Technical Appendix**;
- **Appendix 7.2 – Protected Species Technical Appendix**; and
- **Appendix 8.1 – Ornithology Technical Appendix**.

3.1.2 A high-level summary of methodology relevant to this HRA is included below with results incorporated into **Section 4** and **Section 4.2.4** where applicable.

3.2 Methodology

3.2.1 The desk study and field surveys described below were undertaken across the Proposed Route (or routes) of the Proposed Development as determined during the optioneering stages. See **Chapter 2: Route Selection and Alternatives** of the main EA for full details of the optioneering process.

Desk Study

3.2.2 Information on the use of all potential Route Options and surrounding areas by avian qualifying species was obtained by a review of the documentation produced for the following adjacent projects:

- Creag Riabhach Wind Farm Grid Connection (directly adjacent to the Proposed Alignment to the west);
- Chleansaid Wind Farm (the northern connection point of the Proposed Alignment);
- Lairg to Loch Buidhe Reinforcement (connects to the southern connection point of the Proposed Alignment at Dalchork Substation); and
- Strath Tirry Wind Farm (approximately 1 km north of the Proposed Alignment).

3.2.3 Additionally, ornithology records were requested from the Royal Society for the Protection of Birds and the Highland Raptor Study Group from the preceding ten years (2014 – 2023) within 2 km of the Route Options (extending to 6 km for golden and white-tailed eagle).

Ornithology Surveys

3.2.4 The following ornithology surveys were undertaken across 2023/24:

- flight activity surveys across three Vantage Points (VPs) overlooking the Proposed Route. Surveys were undertaken from March 2023 to February 2024[17];
- moorland breeding bird survey undertaken across the Proposed Route plus a minimum 500 m buffer. Surveys were undertaken across four survey visits between April and July 2023; and
- scarce breeding bird survey undertaken across the proposed Route plus a minimum 2 km survey buffer. Surveys were undertaken across four survey visits between March and July 2023.

Ecology

3.2.5 The following relevant habitat and protected species surveys were undertaken:

[17] Flights were considered at Potential Risk of Collision (PRC) if they crossed the Proposed Alignment plus an additional 100 m buffer at heights of between 10 and 30 m above ground level (Potential Collision Heigh (PCH)).

- habitat surveys undertaken in April 2023 following the UKHab methodology across three proposed Alignment Options plus a 100 m Limit of Deviation (LoD) plus an additional 150 m buffer either side of the centreline, to form a 500 m survey corridor for each Alignment Option under consideration at the time; and
- otter surveys undertaken in July 2023 across all suitable habitat within 250 m of the preferred Alignment (as confirmed at the time).

4. SCREENING FOR LIKELY SIGNIFICANT EFFECTS

4.1.1 This section details the HRA Screening Assessment for the Proposed Development. In accordance with established caselaw HRA Screening comprises a 'cursory check' to establish if closer examination of possible effects is required (i.e., during an AA) or if effects self-evidently can be excluded as nil or negligible.

4.2 Potential Impacts on Qualifying Features

4.2.1 Potential impacts include construction and operational impacts. The principal potential impacts of the Proposed Development would be as follows:

Construction Phase:

- Loss / degradation of habitats on Site – felling of woodland to facilitate construction and maintenance of an operational corridor. Temporary loss / degradation of habitats under wood poles, temporary working areas and access tracks. Loss / degradation of habitat could also occur in areas adjacent to the Site due to disruption of supporting hydrological pathways, introduction and / or spread of non-native plant species and / or the release of dust;
- Disturbance / displacement of qualifying species from the Site and adjacent areas – visual and acoustic disturbance from the movement and operation of plant, equipment and personnel. As a worst case, this impact could result in direct mortality of dependant young / chicks of qualifying species (e.g., birds and otter) due to abandonment of eggs / dependant young;
- Direct mortality – direct mortality of bird eggs / chicks due to overlap with works areas and death of otter due to road traffic collisions or entrapment in excavations; and
- Changes in water quality - impacts on freshwater through the release of sediment and hydrocarbons during work activities.

Operational Phase:

- Collison mortality – death / injury to birds due to collision with OHL infrastructure; and
- Predation and displacement – increased predation of qualifying species by raptors using the Proposed Development infrastructure for perching to increase hunting efficiency. Increased raptor presence could also displace qualifying species from potentially suitable habitat.

4.2.2 The following potential impacts were considered but not taken forward to screening due to the following considerations:

- Electrocution - The Proposed Development comprises no earth wires and all conductors would be configured in a three phase conductor sitting horizontally 2.5 m apart and the crossarms are not grounded (and therefore conductive). At 2.5 m apart the distance between the conductors is greater than the wingspan of golden eagle (Robinson, 2005)[18], the largest species recorded that could potentially perch on the infrastructure. As the crossarms are not grounded no electrocution would result if birds make contact with a crossarm and a conductor simultaneously.
- Displacement - the proposed OHL would emit no significant noise and has no 'moving parts' beyond the movement of the conductors in the wind. It is unlikely that a relatively unobtrusive structure would displace birds from the surrounding habitat. In addition, the proposed OHL would be sited directly adjacent to existing 132 kV and 11 kV OHL and therefore would not be a 'novel' structure in the landscape. Additionally, as existing perching opportunities are present on the existing OHLs, and woodland throughout the Site, it

[18] Robinson, R.A. (2005) BirdFacts: profiles of birds occurring in Britain & Ireland. BTO, Thetford. Available at: http://www.bto.org/birdfacts

is not considered that the Proposed Development would increase the number of perching predators (e.g. common buzzard) to the extent that they may result in displacement of qualifying species from potentially suitable habitat.

4.2.3 Potential impact pathways from the Proposed Development and their potential effects on the qualifying features of the European Sites are detailed in **Table 5-1** to **Table 5-6**. Due to overlapping designated areas and qualifying features with the namesake SPAs / SACs the Caithness and Sutherland Peatlands Ramsar and Dornoch Firth and Loch Fleet Ramsar are not listed separately. It is considered that the screening assessment for the respective SPAs and SAC will capture LSE on these Ramsar Sites. As such they are not referred to separately in the following sections of this report.

Table 4-1 Lairg and Strath Brora Lochs SPA Screening Assessment for the Proposed Development Alone

Potential Impact pathway	Screening Assessment
Construction Phase	
Loss / degradation of habitats	The Site does not overlap the SPA and terrestrial habitats lost / degraded within the Site are not supporting habitats for black-throated diver. As works would not encroach closer than approximately 1.2 km to the SPA (at Loch Beannach) there would be no impacts from dust or the spread of invasive plant species on SPA lochs. The closet potentially functionally linked lochs[19], are the unnamed lochan north of Loch Beannach and Beag na Fuaralachd approximately 550 m north and 900 m west of the Site respectively. The unnamed lochan north of Loch Beannach is screened from the Site by dense plantation woodland. No records of divers were recorded on either loch from surveys or the desk study. **No Likely Significant Effects identified**
Changes to water quality	All SPA lochs are at a higher altitude than (and hence upstream of) the Site and therefore there is no potential for pollutants or sediment released on Site to impact water quality in the waterbodies of the SPA. The Site crosses a number of watercourses, including Feith Osdail in the north and Allt Chaiseagail in the south, which ultimately discharge into Loch Shin located approximately 1.2 km west of the Site. In the absence of systematic survey information it is reasonable to assume that Loch Shin provides at least an occasional foraging resources for black-throated divers and potentially loafing / displaying habitat for pre, post breeding and non-breeding individuals. Loch Shin could therefore be a functionally linked loch. Potential pollutants from the Proposed Development would be limited to accidental fuel spills from plant and the release of sediment at water crossing locations. Due to the size of Loch Shin, pollutants released would be diluted and dispersed to the extent that negligible impacts on water quality would result. While not required to conclude no LSE, the Principal Contractor will adhere to SSEN Transmissions suite of General Environmental Management Plans (GEMPs) (**Appendix 6** appended to EA Report) to minimise the likelihood and magnitude of pollution impacts. **No Likely Significant Effects identified**
Disturbance or displacement of qualifying species	Construction activities will be located approximately 1.2 km north of the closest SPA loch (Loch Beannach). The maximum disturbance distance listed for black-throated diver is 750 m from source[20]. The closest potentially functionally linked lochs are the unnamed lochan north of Loch Beannach and Beag na Fuaralachd approximately 550 m south and 900 m north of the Site respectively. The unnamed lochan north of Loch Beannach is screened from the Site by dense plantation woodland. No records of divers were recorded on either loch from surveys or the desk study. Based on the above there is no effect pathway for disturbance / displacement of black-throated diver during construction. **No Likely Significant Effects identified**

[19] In accordance with NatureScot (2016) functionally linked habitat for black-throated diver could comprise breeding lochs and foraging/loafing lochs within 1 km 10 km of the SPA respectively.

[20] Goodship, N.M. and Furness, R.W. (MacArthur Green, 2022). Disturbance Distances Review: An updated literature review of disturbance distances of selected bird species. NatureScot Research Report 1283.

Potential Impact pathway	Screening Assessment
Direct mortality	As described above under 'disturbance and displacement' works areas do not overlap with breeding areas and therefore there is no potential for direct mortality of eggs or dependant young. **No Likely Significant Effects identified**
Operational Phase	
Collision mortality	OHLs are a known collision risk for birds and species groups such as waterfowl, which are particularly susceptible to collisions[21]. Two flights of black-throated diver were recorded during the flight activity surveys undertaken by WSP in 2022/23. Both flights were recorded flying from the direction of Loch Shin towards the general direction of Loch Beannach and lochs to the north-east. Both flights were recorded at heights of less than 30 m when crossing the Site and therefore at PRC with the proposed OHL infrastructure (see **Appendix 8.1** for details on the methodology). **Likely Significant Effects identified**

Table 4-2 Strath Carnaig and Strath Fleet Moors SPA Screening Assessment for the Proposed Development Alone

Potential Impact pathway	Screening Assessment
Construction Phase	
Loss / degradation of habitats	The Site is approximately 2 km south-east of the SPA and therefore no SPA habitat would be lost / degraded. Habitat within 1 km and 2 km of the SPA has the potential to provide functionally linked hen harrier nesting habitat and foraging habitat respectively (core foraging range listed as 2 km[9]). No nesting hen harrier were recorded during surveys undertaken by WSP in 2023. Surveys of relevant functionally linked habitat (habitat within 3 km of the SPA[22]) was undertaken during pre-construction monitoring for the Lairg to Loch Buidhe Reinforcement in 2021 and 2022. No nesting hen harrier were recorded in 2022 and two nests were recorded in 2021. Both nest sites were recorded across open moorland to the south-east of the Site with no records overlapping with the Site, the closest being approximately 500 m from the Site. Habitats lost / degraded during construction within 2 km of the SPA include potentially suitable nesting and foraging habitat (e.g. upland heathland that was previously plantation forestry). Habitat loss / degradation would be limited to temporary degradation (maximum of two breeding seasons) of habitat that is considered to result in negligible effects on hen harrier based on the extent of suitable foraging within the SPA and 2 km core foraging range. Areas of anticipated habitat loss / degradation would be located to the north of the existing Dalchork Substation (the southern terminal point of the Proposed Alignment) although the presence of

[21] J. Bernardino, K. Bevanger, R. Barrientos, J.F. Dwyer, A.T. Marques, R.C. Martins, J.M. Shaw, J.P. Silva, F. Moreira (2018). Bird collisions with power lines: State of the art and priority areas for research, Biological Conservation, Volume 222, Pages 1-13.

[22] This assumes a 1 km distance between alternative nest sites (i.e. 1 km from SPA) plus 2 km core foraging range from that.

Potential Impact pathway	Screening Assessment
	the substation may displace hen harrier from these areas in any case. While not required to conclude no LSE, the Principal Contractor will adhere to SSEN Transmission's suite of GEMPs to minimise temporary impacts to habitats. **No Likely Significant Effects identified**
Changes to water quality	The Site is not hydrologically connected with the SPA (i.e. no watercourses flow from the Site to the SPA) and watercourses and waterbodies do not provide supporting habitat for hen harrier. Potential impacts would comprise accidental fuel spills from plant onto functionally linked hen harrier foraging habitat. As such pollution events would be rare and localised to small areas of terrestrial habitat it is considered that any effects on hen harrier would be negligible. While not required to conclude no LSE, the Principal Contractor will adhere to SSEN Transmission's suite of GEMPs to minimise the likelihood and magnitude of pollution impacts. **No Likely Significant Effects identified**
Disturbance or displacement of qualifying species	The potential for disturbance / displacement of nesting SPA birds is limited to the functionally linked habitat within approximately 1 km of the SPA that overlaps the southern extent of the Site. No nesting hen harrier were recorded in this area during surveys for the Proposed Development. However, in 2021 two territories were recorded in this area (during monitoring surveys for the Lairg to Loch Buidhe Reinforcement project) and records from previous years (desk study data from 2002 to 2012 gathered to inform the EIA stage) indicate the area to the south is frequently used by nesting hen harrier. As a precaution it is considered that any nesting hen harrier across moorland habitat to the south-east of the Site (i.e. with a maximum of 2 km from the SPA) may comprise SPA birds[23]. It is assumed that at least one pair may be present within 750 m of the Site during construction and therefore may be subject to disturbance and displacement. This is considered an LSE. **Likely Significant Effects identified (nesting birds only)**
Operational Phase	
Collision mortality	No flights of hen harrier were recorded during the 2022/23 WSP surveys. Of the projects reviewed as part of the desk study, flights of hen harrier were only recorded for the Chleansaid Wind Farm project (the Proposed Development will connect to Chleansaid Wind Farm at the eastern terminus) which is approximately 6 km north of the SPA (so outwith the core hen harrier foraging range from the SPA). As a precaution it is assumed that nesting hen harrier may be present to the south-east of the Site during operation (based on recent historical records) and therefore potentially be subject to collision risk. **Likely Significant Effects identified**

[23] NatureScot (2016)10 list distances between alternative breeding sites for hen harrier as 'usually within 1 km' with a 2 km core foraging range. Based on the long term historic use of moorland habitats adjacent to the SPA, and the defined area bounded by woodland to the north, it is assumed that all breeding hen harrier in the area to the southeast of the Site (within 2km of SPA) are SPA individuals.

Table 4-3 Caithness and Sutherland Peatlands SPA Screening Assessment for the Proposed Development Alone

Potential Impact pathway	Screening Assessment
Construction Phase	
Loss / degradation of habitats	The Site does not overlap the SPA and therefore no SPA habitat would be lost / degraded. Based on guidance provided in NatureScot[9] habitats on or adjacent to site are too distant from the SPA to provide functionally linked nesting habitat for any qualifying species. However, the habitat on or adjacent to Site could provide functionally linked foraging habitat for hen harrier, golden eagle, merlin and short-eared owl. Very few records of the above species were recorded during the 2022/23 WSP surveys (two flights of golden eagle, one flight of merlin and no records of hen harrier or short-eared owl). These results indicate that the Site is of relatively low importance to these species. In addition, the records of merlin and golden eagle were recorded approximately 7 km and 10 km east of the SPA respectively and are therefore unlikely to be SPA qualifying individuals (i.e. those distances being greater than the species' core ranging distances). Effects on these species are therefore anticipated to be negligible due to this low level of importance and temporary localised nature of the impacts. While not required to conclude no LSE, the Principal Contractor will adhere to SSEN Transmission's suite of GEMPs to minimise temporary impacts to habitats. **No Likely Significant Effects identified**
Changes to water quality	Potential impacts on water quality would comprise the potential for pollution of Loch Shin, potentially functionally linked habitat for black-throated diver, red-throated diver and common scoter, as described in Table **4-1**' changes in water quality'. Due to the size of Loch Shin and the scale / nature of pollutants released it is expected that pollutants would be diluted and dispersed to the extent that negligible impacts on water quality would result. While not required to conclude no LSE, the Principal Contractor will adhere to SSEN Transmission's suite of GEMPs to minimise the likelihood and magnitude of pollution impacts. **No Likely Significant Effects identified**
Disturbance or displacement of qualifying species	As described in 'loss / degradation of habitats' above this impact would only effect foraging hen harrier, golden eagle, merlin and short-eared owl and survey results indicate that the Site is of relatively low importance for these species. As works will be undertaken largely sequentially only a small proportion of the Site would be impacted at any one time and impacts would be restricted to a maximum of two breeding seasons. It is considered that this impact would result in negligible effects. **No Likely Significant Effects identified**
Operational Phase	
Collision mortality	As detailed above hen harrier, golden eagle, merlin, short-eared owl, black-throated diver and red-throated diver could utilise functionally linked habitat on or adjacent to Site and therefore be at risk of collision with the Proposed Alignment. Of these species, only flights of black-throated diver, as described in **Table 4-1**, were recorded at PRC during the 2022/23 WSP surveys. Other species recorded were as follows:

Potential Impact pathway	Screening Assessment
	• Golden eagle – two flights at the eastern end of the Site approximately 10 km from the SPA. These individuals are unlikely to be SPA qualifying birds (based on a core foraging range of 6 km listed in NatureScot (2016)[9]) and flights were recorded over the Site above PCH. Of the projects reviewed as part of the desk study, flights of golden eagles were only recorded for the Chleansaid Wind Farm project with flights recorded across a similar area to those recorded during the WSP surveys (the Proposed Development will connect to Chleansaid Wind Farm at the eastern terminus). • Merlin – one flight at PRC in the central section of the Site. As this flight was approximately 7 km east of the SPA this bird is unlikely to have been part of the SPA qualifying population. **Likely Significant Effects identified (black-throated diver only).**

Table 4-4 Caithness and Sutherland Peatlands SAC Screening Assessment for the Proposed Development Alone

Potential Impact pathway	Screening Assessment
Construction Phase	
Loss / degradation of habitats	The Site does not overlap the SAC and therefore no SAC habitat would be lost / degraded. Habitat on or adjacent to Site could provide functionally linked habitat for otter, particularly for wider-ranging males (home ranges can extent across 32 km (NatureScot 2024[24])). Use of the Site and adjacent habitats by otter was evidenced by the presence of four otter spraints across the Feith Osdail and Allt Chaiseagail watercourses recorded during WSP surveys in 2023. No resting sites were recorded and therefore activity on site is considered to comprise commuting and foraging individuals along watercourses. Degradation of functionally linked habitat would be restricted to small, localised areas of terrestrial habitat at watercourse crossing points. It is considered that the temporary degradation of localised sections of terrestrial habitat would have negligible effects on the SAC otter population. **No Likely Significant Effects identified**
Changes to water quality	Potential impacts on water quality would comprise the potential for pollution of watercourses within the Site and Loch Shin to the west. Potential pollutants from the Proposed Development would be limited to accidental fuel spills from plant and the release of sediment at watercourse crossing locations. Due to the size of Loch Shin and the scale / nature of pollutants released it is expected that pollutants would be diluted and dispersed to the extent that negligible impacts on water quality would result. While not required to conclude no LSE, the Principal Contractor will adhere to SSEN Transmission's suite of GEMPs to minimise the likelihood and magnitude of pollution impacts. **No Likely Significant Effects identified**

[24] NatureScot (2014). Otter. Available online: https://www.nature.scot/plants-animals-and-fungi/mammals/land-mammals/otter. Date accessed: March 2024

Potential Impact pathway	Screening Assessment
Disturbance or displacement of qualifying species	As described in 'loss / degradation of habitats' above, this impact would only affect foraging and commuting otter. As works will be undertaken largely sequentially only a small proportion of the Site would be impacted at any one time and impacts would be restricted to a maximum of 18 months. It is considered that this impact would result in negligible effects. **No Likely Significant Effects identified**
Direct mortality	No significant excavations are required to install the wood poles that could result in entrapment of otters. While otters are at risk of mortality from road traffic collisions this impact is present on public roads adjacent to site (as part of the baseline) and traffic speeds on temporary access tracks would be lower than public roads, thereby reducing this risk from being associated with the construction works. **No Likely Significant Effects identified**
Operational Phase	
Collision mortality	Not applicable as no avian qualifying species. **No Likely Significant Effects identified**

Table 4-5 River Naver SAC Screening Assessment for the Proposed Development Alone

Potential Impact pathway	Screening Assessment
Construction Phase	
Loss / degradation of habitats Changes to water quality Disturbance or displacement of qualifying species Direct Mortality	The SAC is approximately 9.6 km north of the Site and is within a different catchment to watercourses crossed by the Site or Loch Shin to the west (which all watercourses discharge into). Consequently, there is no connectivity between the Site and the SAC and so any Atlantic salmon or freshwater peal mussel (including host fish) potentially affiliated with Site would not comprise SAC qualifying individuals. **No Likely Significant Effects identified**

Table 4-6 Dornoch Firth and Loch Fleet SPA Screening Assessment for the Proposed Development Alone

Potential Impact pathway	Screening Assessment
Construction Phase	

Potential Impact pathway	Screening Assessment
Loss / degradation of habitats	The Site does not overlap the SPA and therefore no SPA habitat would be lost / degraded. Of the qualifying species listed only greylag goose could be potentially connected to the Site if SPA birds forage on or adjacent to Site (core foraging range for greylag goose is listed as 20 km from roost sites in NatureScot (2016)[9]). Of the 13 greylag goose flights recorded seven were recorded during the summer season (defined as May to August inclusive) and are therefore likely to be resident birds and not SPA qualifying migratory, overwintering individuals.. Habitats overlapping and adjacent to the Site recorded during the UKHab survey are suboptimal for foraging greylag geese with only a small area of suitable habitat (modified grassland) recorded to the south of the Site. Habitats on and adjacent to site are therefore not considered 'functionally linked' to the SPA as they are unlikely to provide an important role in maintaining or restoring the population of qualifying species at favourable conservation. **No Likely Significant Effects identified**
Changes to water quality	Aquatic habitats on or adjacent to Site are unlikely to be used by greylag goose on a regular basis as birds associated with the SPA would likely be foraging on grassland habitats (and roosting on waterbodies in the SPA). **No Likely Significant Effects identified**
Disturbance or displacement of qualifying species	As described in 'loss / degradation of habitats' above the Site and adjacent habitats are of negligible importance to greylag goose. As works will be undertaken largely sequentially only a small proportion of the Site would be impacted at any one time and impacts would be restricted to a maximum of 18 months. It is therefore considered that this impact would result in negligible effects. **No Likely Significant Effects identified**
Operational Phase	
Collision mortality	As described under 'loss / degradation of habitats' above SPA qualifying individuals are unlikely to use habitat on or adjacent to site and therefore be at risk of collision. Therefore, the three flights were recorded at PRC during the winter months are unlikely to be SPA qualifying individuals. **No Likely Significant Effects identified**

4.2.4 In summary, LSE could not be ruled out for Lairg and Strath Brora Lochs SPA, Strath Carnaig and Strath Fleet Moors SPA and Caithness and Sutherland Peatlands SPA based on impacts from the Proposed Development alone. As all impacts not considered to result in LSE would have negligible or no effects there is no potential for these effects to act in combination with effects from other plans or projects. As such there is no requirement to consider in-combination effects at screening stage.

4.2.5 As LSE have been identified, the HRA is required to progress to Stage 2 AA. Information to inform the AA has been provided in **Section 4.2.4**.

5. INFORMATION TO INFORM APPROPRIATE ASSESSMENT

5.1 Introduction

5.1.1 The following LSEs were identified during the screening assessment:

- Lairg and Strath Brora Lochs SPA – Collision mortality for black-throated diver during operation;
- Strath Carnaig and Strath Fleet Moors SPA - Disturbance or displacement of hen harrier during construction and collision mortality of hen harrier during operation; and
- Caithness and Sutherland Peatlands SPA - Collision mortality for black-throated diver during operation.

5.1.2 This section provides information to inform an AA, to be undertaken by the Competent Authority. The information will allow the Competent Authority to consider potential Adverse Effects on Site Integrity (AESI) for the above SPAs as a consequence of the Proposed Development.

5.1.3 Identified LSEs are described in relation to details of the Proposed Development, European site information, ecological supporting information and impact avoidance and mitigation measures.

5.2 Impact Avoidance and Mitigation

5.2.1 All impact avoidance and mitigation measures described in this section will be incorporated into a site-specific Construction Environmental Management Plan (CEMP) to be produced by the Principal Contractor. Compliance with the CEMP will be the responsibility of the Principal Contractor with supervision and advice provided by an Ecological Clerk of Works (ECoW) employed by the Principal Contractor.

5.2.2 Where pre-construction surveys or monitoring of works are prescribed these tasks could be undertaken by the ECoW if suitably qualified or by a separate person if specialist skills (e.g. ornithology) are required. For simplicity these tasks are assigned to the ECoW in **Table 6-1** although some surveys may be undertaken in advance of construction. Pre-construction surveys and monitoring will inform a Hen harrier Breeding Bird Protection Plan to be produced by the Principal Contractor and agreed in advance of construction with the Energy Consents Unit and The Highland Council.

5.3 Consideration of the Proposed Development Alone

5.3.1 Information to inform an AA is provided in **Table 6-1** and **6-2** in the form of a 'Shadow AA[25]'. On review of the identified impact pathways, magnitude of potential effects and the availability of impact avoidance and mitigation measures, there will be no AESI on the Lairg and Strath Brora Lochs SPA, Strath Carnaig and Strath Fleet Moors SPA or Caithness and Sutherland Peatlands SPA by the Proposed Development alone.

[25] The AA is 'shadow' as the Competent Authority is responsible for undertaking the AA which this document seeks to inform.

Table 5-1 Lairg and Strath Brora Lochs SPA AA

Likely Significant Effects	Impact Avoidance and Mitigation	Summary of Residual Effects in relation to Conservation Objectives
Collision mortality of black-throated diver during operation	Felling of woodland within 100 m to the west of the Proposed Alignment (not including that felled as part of the Proposed Development operational corridor) will only be undertaken with prior review and agreement of NatureScot and The Highland Council. This will ensure that existing screening woodland is maintained that will necessitate that black-throated diver overfly the Proposed Alignment to the west. The review will consider the potential for woodland felling to increase the potential for collision mortality for black-throated diver, to the extent that it may result in an AESI.	Bird collisions with OHL infrastructure typically involve the 'wires' (conductors, earth wires and stays), with the towers assumed to be sufficiently visible to the birds. It is generally acknowledged that the less visible the wires are the greater the risk of collision and as such the lighter / thinner earth wires generally pose a greater risk than conductors which are heavier / thicker. The risk of collision could be assumed to be directly proportional to the thickness (and therefore visibility) of the wires concerned[26]. The Proposed Development includes no earth wires and comprises a single row of three conductors present above crossarms. Two black-throated diver flights were recorded during 36 hours of survey effort undertaken at each of three VPs surveyed by WSP in 2022. Both flights were recorded at a height of 10 to 30 m above ground level flying west to east over the Proposed Alignment, one in the direction of Loch Beannach and the other in a north easterly direction north of Loch Beannach. Both flights flew over the existing Creag Riabhach 132 kV OHL, located directly west of the proposed OHL in this area. This OHL was constructed in 2022 and is of the same technical specification as the Proposed Development with a single plane of conductors (no earth wire) approximately 15 m above ground level. As no interaction with the existing OHL was noted for the two black-throated diver flights recorded during the Proposed Development surveys it is assumed that the flights flew over the existing OHL at heights greater than 15 m above ground level. Habitats around the Site crossed by the flights comprise extensive plantation woodland (northern flight) and remnant patches of plantation woodland (southern flight). The woodland is typically of greater height than the OHL conductors and at least remnant patches of woodland exist across the length of the Proposed Alignment in this area. The topography rises from approximately 100 m above sea level at Loch Shin to 130 m above sea level at the Proposed Alignment to 190 m above level at Loch Beannach to the west. No flights by black-throated diver were recorded during flight activity surveys undertaken from VPs that overlapped the Proposed Alignment for the Strath Tirry Wind Farm Creag Riabhach Wind Farm OHL or Lairg to Loch Buidhe Reinforcement project. These results, and records of only two flights from the WSP surveys, indicate that flights between Loch Shin and lochans to the west (including Loch Beannach) are very infrequent. Topography, woodland and existing infrastructure would also mean that the majority of flights are likely to pass over the Proposed Alignment at heights greater than the level of conductors. This is also likely to be the case for the two flights recorded during the WSP surveys due to the presence of the Creag Riabhach 132 kV OHL and woodland. Based on the above it is considered that the likelihood of collision with the proposed OHL is very low with associated negligible effects on the SPA population of black-throated diver (which is currently assessed as in favourable condition). While not required to conclude no AESI, the mitigation stipulated will ensure the likelihood of collision does not increase by sensitively managing woodland in the vicinity of the Proposed Alignment. **Due to the factors described above, no significant effects on black-throated diver are anticipated with respect to the conservation objectives listed in Table 3-1. Therefore, no AESI have been identified on the Lairg and Strath Brora Lochs SPA.**

Table 5-2 Strath Carnaig and Strath Fleet Moors SPA AA

Likely Significant Effects	Impact Avoidance and Mitigation	Summary of Residual Effects in relation to Conservation Objectives
Disturbance or displacement of hen harrier during construction	The following impact avoidance measures will be taken: • No works on Site within 750 m of Pole 1 will be undertaken between the 1st of April and 1st of June inclusive. It is considered that by the 1st of June if no breeding hen harrier are present there would be no potential for nest sites later than this (and therefore no potential for displacement of breeding hen harrier). Pole 1 is the closest works site to potential hen harrier moorland breeding habitat to the south-east. • Pre-construction hen harrier surveys will be undertaken during the breeding season prior to construction. Surveys will be undertaken across moorland habitat to the south-east of Pole 1 to encompass a 750 m	The mitigation stipulated in the BBPP will reduce the potential for disturbance / displacement of breeding hen harrier associated with the SPA to negligible levels. **Due to the factors described above, no significant effects on hen harrier are anticipated with respect to the conservation objectives listed in Table 3-1. Therefore, no AESI has been identified on the Strath Carnaig and Strath Fleet Moors SPA.**

[26] Raptor Protection of Slovakia (2021). Electrocutions & Collisions of Birds in EU Countries: The Negative Impact & Best Practices for Mitigation. Raptor Protection of Slovakia, Bratislava

Likely Significant Effects	Impact Avoidance and Mitigation	Summary of Residual Effects in relation to Conservation Objectives
	radius from Pole 1 as a minimum. Surveys will be undertaken by a competent ornithologist in accordance with the methodologies detailed in **Appendix 8.1**. The aim of the survey will be to record presence, breeding behaviour and any nest locations of hen harrier. These surveys will add updated baseline information to inform a Hen Harrier Breeding Bird Protection Plan (hereafter BBPP), as outlined below. • The BBPP will be produced by the Principal Contractor and agreed in advance with the Energy Consents Unit and The Highland Council in consultation with NatureScot. It is anticipated that the BBPP will include the following as a minimum: - Details of baseline breeding bird conditions. - Details of works scheduled to be undertaken during the breeding bird season (April to August inclusive). - Survey and monitoring requirements. To ensure that no nesting birds or dependant young are disturbed by works after 1st of June the ECoW will monitor nesting birds in advance of works, if present, to determine the 'baseline' behaviour of the birds in the absence of any disturbance sources. **No disturbance to nesting birds or dependant young will be permitted during works**[27]. The ECoW will undertake a watching brief during works to monitor the behaviour of the birds. If disturbance is recorded, as determined by the ECoW, works will cease. Works will not commence again until either the working method has been adapted, additional mitigation applied, or the birds have left the area (e.g. no longer within 750 m of the works). - Details of mitigation to be implemented during works.	
Collision mortality of hen harrier during operation	None required.	No flights of hen harrier were recorded during flight activity surveys. As a precaution it is assumed that nesting hen harrier may be present to the south-east of the Site during operation (based on recent historical records collected for the Lairg to Loch Buidhe Reinforcement project). Harrier species are considered to be of relatively low risk of collision mortality with OHL due to their relative slow hunting flight speed. manoeuvrability and excellent vision. Additionally, based on the general location of historic breeding sites, the Proposed Alignment would be a minimum of 200 m from suitable moorland habitat and separated by the existing Dalchork Substation. The presence of the existing Dalchork Substation is likely to reduce the likelihood of hen harrier foraging in this area due to ongoing displacement effects. By way of context, the HRA undertaken for the recently constructed Lairg to Lairg to Loch Buidhe Reinforcement [28], which connects to Dalchork Substation and runs in a south-easterly direction across the above hen harrier breeding habitat, concluded no significant effects on hen harrier due to collision mortality[29]. Based on the above it is considered that the potential for hen harrier to collide with the Proposed Development is negligible to the extent that no discernible effects on the SPA population would occur. **Due to the factors described above, no significant effects on hen harrier are anticipated with respect to the conservation objectives listed in Table 3-1. Therefore, no AESI have been identified on the Strath Carnaig and Strath Fleet Moors SPA**

[27] In addition to requirements under the Habitats Regulations it is an offence under the Wildlife and Countryside Act (1981) to disturb nesting hen harrier or the dependant young of these species.

[28] Of steel lattice construction, in comparison to wood pole of the Proposed Development

[29] Baseline hen harrier surveys undertaken to inform the Lairg to Loch Buidhe 132 kV OHL EIA/HRA identified a hen harrier nest approximately 1 km to the south of the alignment. Pre-construction surveys identified two nest sites within 1 km to the north of the alignment in 2021.

Table 5-3 Caithness and Sutherland Peatlands SPA

Likely Significant Effects	Impact Avoidance and Mitigation	Summary of Residual Effects in relation to Conservation Objectives
Collision mortality during operation	Felling of woodland within 100 m to the west of the Proposed Alignment (not including that felled as part of the Proposed Development's operational corridor) will only be undertaken with prior review and agreement of NatureScot and The Highland Council. This will ensure that existing screening woodland is maintained that will necessitate that black-throated diver overfly the Proposed Alignment to the west. The review will consider the potential for woodland felling to increase the potential for collision mortality for black-throated diver, to the extent that would result in an AESI.	Effects on black-throated diver will mirror those described for Lairg and Strath Brora Lochs SPA as both SPAs have the same conservation objectives and their respective black-throated diver populations are in favourable conservation status. **Due to the factors described above, no significant effects on black-throated diver are anticipated with respect to the conservation objectives listed in Table 3-1. Therefore, no AESI have been identified on the Caithness and Sutherland Peatlands SPA .**

5.4 In-combination Assessment

5.4.1 As only negligible effects on the Lairg and Strath Brora Lochs SPA, Strath Carnaig and Strath Fleet Moors SPA and Caithness and Sutherland Peatlands SPA remain following mitigation (if required) there is no requirement to consider effects in-combination with other projects or plans.

6. CONCLUSIONS

6.1.1 This document has considered the potential for impacts arising from the construction and operation of the Proposed Development that would have the potential to adversely affect European Sites with regard to their qualifying features and conservation objectives.

6.1.2 The assessment set out in this report ascertains that the Proposed Development would result in LSE on the Lairg and Strath Brora Lochs SPA, Strath Carnaig and Strath Fleet Moors SPA and Caithness and Sutherland Peatlands SPA. Following the implementation of mitigation (where required), no adverse effect upon any of the above European Sites was identified during the AA stage. This conclusion was in relation to the Proposed Development alone and in-combination with any other plans or projects.