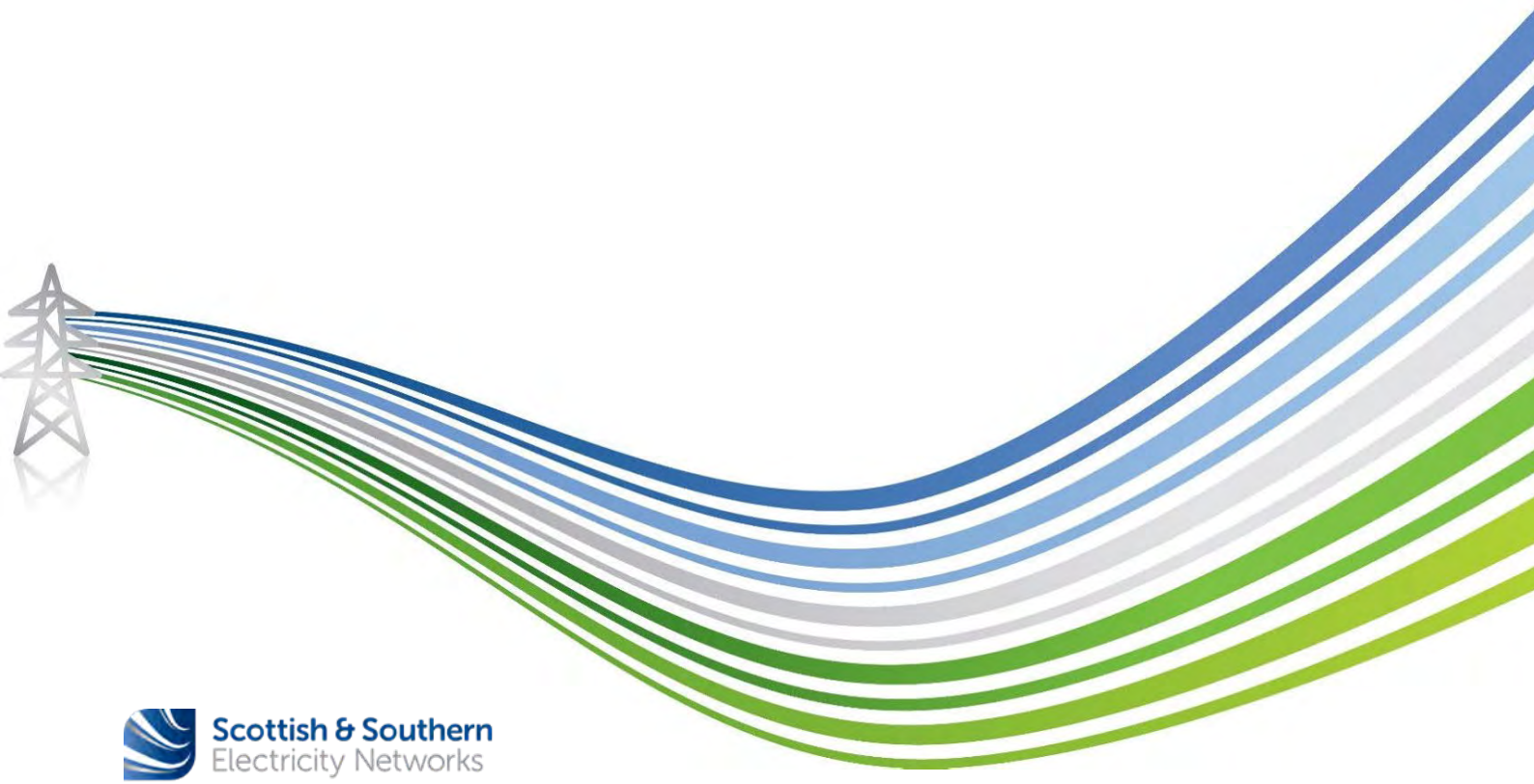
SPITTAL TO LOCH BUIDHE TO BEAULY 400 KV OHL CONNECTION: EIA REPORT

VOLUME 1: NON-TECHNICAL SUMMARY

JULY 2025



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INTRODUCTION

Overview

This Non-Technical Summary (NTS) forms part of the Environmental Impact Assessment Report ("EIA Report") prepared by Environmental Resources Management (ERM) Limited on behalf of Scottish Hydro Electric Transmission plc ("the Applicant") who, operating and known as Scottish and Southern Electricity Networks Transmission ("SSEN Transmission"), own, operate, develop and maintain the high voltage electricity transmission system in the north of Scotland and islands.

In order to support the continued growth in onshore and offshore renewables across the north of Scotland, supporting the country's drive towards Net Zero, investment in network infrastructure is needed to connect this renewable power and transport it from source to areas of demand across the country.

The Proposed Development consists of the construction of a new 400 kV Overhead Line (OHL) between Spittal, Loch Buidhe and Beauly. Given the length of the Proposed Development, for the purposes of this EIA Report the route is split into five geographically defined ‘sections’. These ‘sections’ are broadly defined as follows:

- Section A – Spittal to Brora
- Section B – Brora to Loch Buidhe
- Section C – Loch Buidhe to Dounie
- Section D – Dounie to Near Strathpeffer
- Section E – Near Strathpeffer to Beauly

The location of the Proposed Development is shown on **Figure 1: Overview of the Proposed Development.**

The aim of this NTS is to summarise the content and the main findings of this EIA Report in clear and non technical language to assist the public in understanding what the environmental effects of the Proposed Development are likely to be. The full EIA Report (**Volume 2: Main Report**; **Volume 3: Figures; Volume 4: Visualisations** and **Volume 5: Appendices**) provide a more detailed description of the Proposed Development, and the findings of the EIA.

Legislation and Policy: Consenting Strategy

This EIA Report has been prepared to accompany an application for consent under Section 37 of The Electricity Act 1989[1] (as amended) ("the 1989 Act") to construct and operate a new double circuit steel structure 400 kilovolt (kV) OHL to connect into new substation sites at Spittal (Banniskirk), Loch Buidhe (Carnaig) and Beauly (Fanellan). The project is referred to as the Spittal to Loch Buidhe to Beauly 400 kV OHL Connection (the “Proposed Development”).

[1] UK Government (1989) The Electricity Act 1989.

Banniskirk Substation

Carnaig Substation

Fanellan Substation

MORAY FIRTH

Substation
Alignment Section A
Alignment Section B
Alignment Section C
Alignment Section D
Alignment Section E
Alignment Section Break

Scotland

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Kilometres

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Figure 1
Spittal - Loch Buidhe - Beauly 400 kV OHL Connection
Overview of the Proposed Development

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PROJECTION: British National Grid

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THE NEED FOR THE PROPOSED DEVELOPMENT

Renewable energy generation volumes connecting to the SSEN Transmission licensed area, particularly offshore wind, are expected to increase towards the end of the decade and into the 2030s. Most of this is likely to connect to the far north of the SSEN Transmission network and as a result of this increase there is a requirement for additional transmission system capacity to the north of Beauly to meet this demand.

Reinforcement of the electricity transmission network between Beauly Substation and the existing Loch Buidhe Substation and the need to create new electricity transmission between Loch Buidhe Substation and Spittal has been identified as a key requirement in increasing transmission capacity in the north. This also involves construction of new standalone substations at Spittal (Banniskirk), Loch Buidhe (Carnaig) and Beauly (Fanellan). Substations are consented under separate legislation to OHLs and are being progressed separately.

DESCRIPTION OF THE PROPOSED DEVELOPMENT

Proposed Development Overview

The Proposed Development includes the installation, operation and keeping installed of:

- Approximately 96 km of new double circuit 400 kV OHL on steel lattice towers, including downleads, between the proposed Banniskirk and Carnaig 400 kV substations;
- Approximately 77 km of new double circuit 400 kV OHL on steel lattice towers, including downleads, between the proposed Carnaig and Fanellan 400 kV substations;
- Permanent diversion works required to existing 132 kV and 275 kV OHLs (referred to within this EIA Report as special arrangements), of approximately 18 km in total, to enable the construction of the Proposed Development including the temporary diversion works required to construct the permanent diversions.

In total, the Proposed Development would comprise approximately 191km of new OHL.

The Proposed Development also includes the following ancillary development:

- The formation of access tracks (permanent, temporary, and upgrades to existing tracks) and the installation of bridges and culverts to facilitate access;
- Public road improvements (PRI) which would be required in some areas to facilitate construction traffic;
- The upgrade of existing, or creation of new, ‘bellmouths’ (i.e. junctions with curved entry and exit points) at public road access points;
- Other temporary measures required during construction, such as measures to protect existing infrastructure and water crossings during construction (scaffolding etc.);
- Formation of flat areas from which the conductor will be pulled during construction, which will contain earthed metal working surfaces referred to as Equipotential Zones (EPZs);
- Working areas around infrastructure to facilitate construction;
- Removal of the redundant section of the existing OHLs, following construction and energisation of the permanent diversion works; and
- Tree felling and vegetation clearance to facilitate safe construction and operation of the Proposed Development.

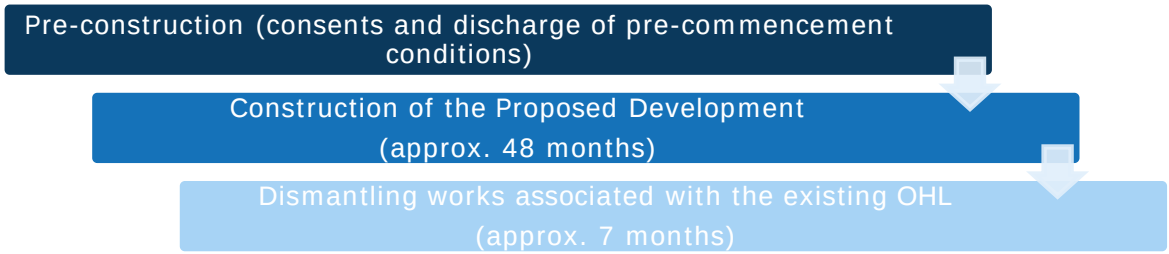
In most cases construction access would be taken via the existing public road network and would make use of existing forest and estate tracks, as far as practicable, and upgraded as required. In some areas, public road improvement works (PRI) would be required to facilitate construction traffic.

Operational access to the Proposed Development will be required for inspection and maintenance purposes, including in remote areas or in difficult terrains.

Construction Programme and Hours of Work

It is anticipated that construction of the Proposed Development will take place over an approximate 48 month period, following the granting of consents and discharge of pre-commencement conditions. A further approximately seven months will be required for dismantling works associated with the existing OHL.

Plate 1: Proposed Development Programme



Construction work is likely to be during daytime periods only. Working hours are anticipated seven days a week between approximately 07.00 to 19.00 during British Summer Time (BST) and 07.00 to 18.00 during Greenwich Mean Time (GMT), seven days a week.

Environmental Management

Table 1 Proposed Environmental Management during construction, operation and maintenance

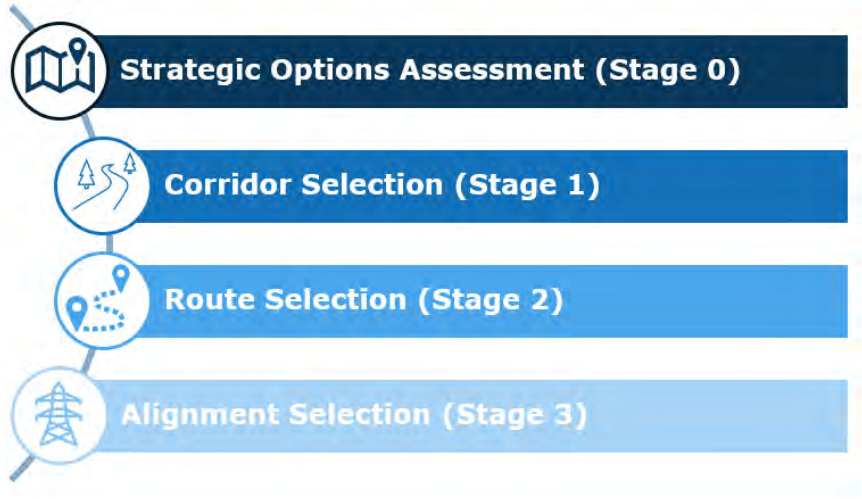
Construction	Operation And Maintenance
• All works would be carried out in accordance with the Applicant's General Environmental Management Plans (GEMPs) and Species Protection Plans (SPPs), which have been developed by the Applicant to ensure best practice working methods are adapted to minimise potential environmental effects. • A contractual management requirement of the Principal Contractors would be the development and implementation of a Construction Environmental Management Plan (CEMP). This document will detail how the Principal Contractors will manage the site in accordance with all commitments and mitigation detailed in this EIA Report, statutory consents and authorisations, and industry best practice and guidance. • A Construction Traffic Management Plan (CTMP) will be prepared by the Principal Contractors, in consultation with SSEN Transmission, The Highland Council (THC) and Transport Scotland. The CTMP will describe all mitigation and signage measures that are proposed on the public road network.	• 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. • During the operation of the Proposed Development, it would be necessary to manage vegetation along the line of the OHL to maintain required safety clearance distances.

THE ROUTEING PROCESS AND ALTERNATIVES

Introduction

The approach to corridor, route and alignment selection involved four stages. Each stage is an iterative process and involves an increasing level of detail and resolution, bringing cost, technical and environmental considerations together in a way which seeks to achieve the best balance.

Plate 2: Stages of corridor, route and alignment selection



Strategic Options Assessment (Stage 0)

SSEN Transmission determined the need for a comprehensive routeing strategy. This included identifying the key environmental, technical, and community factors that would influence the route, and setting out a clear consultation process for each stage

Corridor Selection (Stage 1)

Corridor options were identified by SSEN Transmission as broad study areas within which route options for the proposed 400 kV OHL could subsequently be identified.

Due to the length of the proposed 400 kV OHL, the corridor was separated into two geographic sections:

- Northern Corridor Options – located between Spittal and Loch Buidhe: Two corridor options were identified on the northern section of the proposed OHL; western and eastern.
- Southern Corridor Options - located between Loch Buidhe and Beauly. Three corridor options were identified on the southern section of the proposed OHL; western, central and eastern.

Following an appraisal of environmental, technical, and community constraints, the Eastern Corridor in the southern section was ruled out due to significant challenges. The remaining corridors were taken forward for more detailed route development (Stage 2).

Route Selection (Stage 2)

The route selection stage involved the identification of route options within which subsequent OHL alignments may be identified. The route options identified were approximately 1 km wide to allow for a reasonable number of alignment options to be identified. Due to the length of the proposed 400 kV OHL, the route was separated

into five route 'Sections' from north to south (Sections A to E). A number of route options were identified within each Section.

A series of in-person public consultation events were held between 20th February 2023 and 2nd March 2023. Consultation feedback led to the development of new route options in Sections D and E which were publicised at subsequent consultation events held in March 2024. This round of public consultation also set out a series of Refined Routes to update consultees on revisions made to the Preferred Routes in Sections A, B, C, D and E.

As a result of analysis of feedback from communities, statutory consultees and other local groups and key agencies, proposed route options were selected and taken to alignment selection (Stage 3).

Alignment Selection (Stage 3)

An iterative design development process was implemented with SSEN Transmission's OHL Contractors to develop Potential Alignments.

Feedback was sought from all interested parties on the Potential Alignment through a series of in-person public consultation events that were held between 4th June 2024 and 13th June 2024. Following review of consultation responses, and considering the need to balance cost, technical and environmental factors when developing a project, SSEN Transmission identified a proposed alignment.

Further Consideration of Alternatives during the EIA Process

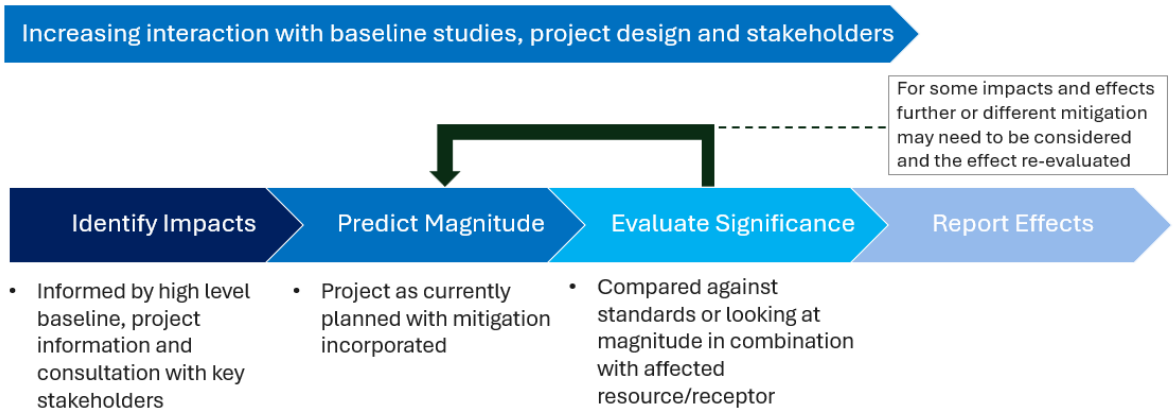
The consideration of alternatives continued during the later stages of design and focussed on tower positions and the siting of ancillary infrastructure, including access tracks. This was informed by more detailed environmental and engineering information including habitat survey and peat probing data from field surveys.

EIA APPROACH, SCOPE & CONSULTATION

Environmental Impact Assessment (EIA) is a structured process used to understand how a proposed development might affect the environment. EIA identifies the potential impacts on the environment considered to be the most significant, in order to guide decision makers on whether to grant consent and guide developers on how to avoid, reduce, or manage impacts.

For this project, the EIA was carried out in accordance with the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017. An outline of the EIA process is shown in **Plate 3** and the findings of the EIA are presented in full in Volumes 2, 3, 4 and 5 of this EIA Report. The EIA Report provides the public and relevant statutory organisations with the environmental information needed to understand and comment on the development.

Plate 3: Outline EIA Process



Scoping the EIA

An EIA Scoping Report describing the proposed approach to the EIA was issued to the Energy Consents Unit (ECU) of the Scottish Government in October 2024 and a Scoping Opinion was provided by the ECU in February 2025. The responses, contained within the Scoping Opinion, were considered in detail during the EIA process and were used to refine the scope of the EIA.

Consultation With the Local Community

SSEN Transmission has actively engaged with communities along the proposed route throughout the development process. This has included:

- Public consultation events during the route option and alignment selection stages;
- Engagement with local elected members such as Ward Councillors and Community Councils; and
- Engagement with landowners, residents and businesses that may be affected by the Proposed Development.

SUMMARY OF ENVIRONMENTAL EFFECTS

This section provides a topic-by-topic summary of the environmental effects of the Proposed Development. This includes any significant effects, mitigation measures and key conclusions associated with the following topics:

- Landscape and Visual
- Ecology and Nature Conservation
- Ornithology
- Water Environment
- Geological Environment
- Cultural Heritage
- Forestry
- Traffic and Transport
- Noise and Vibration
- Tourism and Recreation

Landscape and Visual

The Proposed Development, from Spittal to Beauly, would pass through a wide range of landscapes characterised by mountain glens, inland and coastal loch-shores, and moorland, interspersed with areas of forest and settled croft land and glens. **Figure 2** shows the Proposed Development in the context of designated and protected landscapes.

40. Cape Wrath
North - West Sutherland
37. Foinaven - Ben Hee
Kyle of Tongue
38. Ben Hope - Ben Loyal
39. East Halladale Flows
Bens Griam and Loch nan Clar
36. Causeymire -Knockfin Flows
The Flow Country and Berriedale Coast
Ben Klibreck and Loch Choire
35. Ben Klibreck - Armine Forest
33. Quinag
Assynt - Coigach
34. Reay - Cassley
32. Inverpolly - Glencanisp
Loch Fleet, Loch Brora and Glen Loth
29. Rhiddoroch - Beinn Dearg - Ben Wyvis
Fannichs, Beinn Dearg and Glencalvie
Dornoch Firth
28. Fisherfield - Letterewe - Fannichs
Ben Wyvis
Strathconon, Monar and Mullardoch
24. Central Highlands

Alignment Section
- Section A
- Section B
- Section C
- Section D
- Section E
- Flow Country World Heritage Site (WHS)
- Special Landscape Area (SLA)
- Wild Land Area (WLA)
- National Scenic Area (NSA)
- Gardens and Designed Landscape (GDL)

Edinburgh
United Kingdom

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Kilometers

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Figure 2
Designated and Protected Landscapes

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The Proposed Development passes through a range of landscape character types and will result in direct effects on these due to changes to ground cover and the installation of the towers. The main change to the landscape results from the introduction of new steel lattice towers, which would be visible as tall vertical structures. These would have the most noticeable impact within distances of up to 700 - 900 m of the Proposed Development or less depending on local landform and vegetation. Beyond this distance, the influence of the Proposed Development would reduce, and the effects would reduce in significance across the wider landscape character types.

It was concluded that the Proposed Development would have significant adverse effects on the character of some landscapes, particularly where the towers are introduced into open or undeveloped areas. This includes parts of The Flow Country and Berriedale Braes Special Landscape Area (SLA) and the Loch Fleet, Loch Brora and Glen Loth SLA. In these areas, the Propsoed Development would reduce the sense of wildness and tranquillity, especially in upland and remote locations. No National Scenic Areas (NSAs)would be directly affected, and no significant effects are expected on designated Wild Land Areas (WLAs).

There would also be significant adverse visual effects for residents living in close proximity to the route of the OHL, as well as for road users, railway users and users of core paths. These effects would be most noticeable in the northern section (Spittal to Brora), where the landscape is more open, and in the southern sections (Dounie to near Strathpeffer, and from there to Beauly), where there are more homes, roads, and recreational routes.

In combination with other developments including the associated substations and other developments such as proposed wind farms, the Proposed Development would be likely to give rise to significant adverse effects on both landscape and visual receptors.

A separate Residential Visual Amenity Assessment (RVAA) has been completed to identify if the effect of the Proposed Development on Residential Visual Amenity may affect ‘living conditions’ or residential amenity. It is concluded that the views of the Proposed Development would not be so dominant as to breach the residential visual amenity threshold.

Ecology and Nature Conservation

The Proposed Development has been designed to minimise impacts on ecologically designated sites, important habitats, peatland and protected species as far as practicable. This includes mitigation measure that have been built into the design and specific measures that will be put in place before and during construction, as well as during operation.

Seventeen ecologically designated sites were identified as potentially affected including Sites of Special Scientific Interest and Special Areas of Conservation. Through careful design and mitigation, no significant effects are expected on any of these sites.

Figure 3 shows the Proposed Development in the context of ecologically designated sites.

Alignment Section

- Section A
- Section B
- Section C
- Section D
- Section E
- Special Area Of Conservation (SAC)
- Special Protection Area (SPA)
- Site Of Special Scientific Interest (SSSI)

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Figure 3
Ecological Designated Sites

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Surveyors have collected evidence of protected species presence through identification of field signs and shelters. **Plate 4** shows some examples of ecology survey evidence of protected species. Eleven protected species were considered in the assessment. For ten of these protected species, no significant effects are expected due to the mitigation measures in place. For bats, a significant effect is predicted. The Proposed Development may disrupt their flight paths used for commuting and feeding, and it is not possible to fully reduce this impact due to the requirement to maintain operational safety of the Proposed Development, which requires to be kept clear to tree and shrub species, with offsite mitigation not an option due to the site-specific nature of the impact.

Plate 4: Ecology Survey Evidence of Protected Species

Common Toad Sighting

Otter Spraint

Twenty-eight habitats were identified within the footprint of the Proposed Development. Of these, significant residual effects were predicted for the following eight habitats:

- w1e Upland birchwoods;
- w1h Other woodland; mixed;
- w2b Other Scot's Pine woodland;
- w2a5 Caledonian forest (H91C0);
- h1b5 Dry heaths; upland (H4030);
- h1b6 Wet heathland with cross-leaved heath; upland (H4010);
- f1a Blanket bog; and
- f1a5 Blanket bog (H7130).

Plate 5 shows some examples of these habitats identified in ecology surveys.

Plate 5: Ecology Survey Habitat Photographs

f1a - Blanket bog

f1a5 - Blanket bog (H7130)

h1b5 - Dry heaths; upland (H4030)

AWI sites were predicted to be subject to significant effects as a result of the Proposed Development. Of these woodlands, significant residual effects are predicted to be limited to Category 2b woodland within Section E.

When the effects of the Proposed Development are considered together with other nearby projects, no significant cumulative effects are predicted.

Ornithology

The assessment follows current best practice and focused on potential effects on key ornithological features. Desk-based studies and field surveys were carried out in and around the Proposed Development to establish baseline conditions and the species and populations present. The baseline surveys followed established and recognised methods published by NatureScot/Scottish Natural Heritage.

Twenty-five species were identified as important ornithological features and taken forward for detailed assessment. **Figure 4** shows the Proposed Development in the context of European designated sites for ornithology.

Alignment Section

- Section A
- Section B
- Section C
- Section D
- Section E
- Special Protection Area (SPA)
- Site Of Special Scientific Interest (SSSI)
- Ramsar Site

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Figure 4
European Designated Sites for Ornithology

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The main risks to birds from the Proposed Development include loss of habitat, disturbance during construction, and the potential for birds to collide with the OHLs. The risk of population decline due to these impacts is considered minimal. To reduce the risk of bird collisions, special markers called bird flight diverters will be installed on the earth wires in areas where bird flight activity is high. These will be used in Sections A, B, D, and E of the route and are expected to significantly reduce the risk of collision.

With mitigation measures in place, the assessment concluded that the overall effects on bird species during both construction and operation are not significant.

The route of the Proposed Development passes near several protected areas known as Special Protection Areas (SPAs), which are designated protected areas for birds. A detailed review called a Report to Inform Habitat Regulations Appraisal (HRA) was carried out on each relevant SPA. This review showed that the Proposed Development would not harm the integrity of any of the SPAs. The SPAs considered are:

- Caithness and Sutherland Peatlands SPA
- East Caithness Cliffs SPA
- Caithness Lochs SPA
- Dornoch Firth and Loch Fleet SPA
- Strath Carnaig and Strath Fleet Moors SPA
- Novar SPA
- Glen Affric to Strathconon SPA
- Cromarty Firth SPA
- Inner Moray Firth SPA

There is the potential for cumulative effects to occur between other projects in development and the Proposed Development. With mitigation measures identified for the Proposed Development in place, cumulative effects will be not significant.

Water Environment

To inform the assessment field walkover surveys and a desk-based assessment was conducted to establish the baseline conditions at the location of the Proposed Development. The field and desk-based assessments indicate that the Proposed Development crosses the following catchments below from north to south;

- River Thurso;
- Wick River;
- Wick Coastal;
- Dunbeath Water;
- Berriedale Water;
- Brora Coastal;
- River Helmsdale;
- River Brora;
- River Fleet;
- Dornoch Coastal;
- River Shin;
- Dornoch Firth;
- River Carron;
- River Alness;
- River Glass;
- Cromarty Coastal;
- River Conon; and
- River Beauly.

The assessment identified that there are 44 Water Framework Directive (WFD) watercourses hydrologically connected to the Proposed Development:

The Proposed Development design has followed guidance from the Scottish Environment Protection Agency (SEPA), including maintaining buffer zones around water features where possible. In a few locations, due to engineering constraints, these buffers could not be maintained. In those areas, additional protective measures will be put in place to safeguard the water environment.

Subject to adoption of best practice construction techniques and mitigation informed by the GEMPs, and the CEMP, no significant adverse effects on the water environment have been identified.

Assuming cumulative developments also employ effective controls and best practice measures, no significant in-combination cumulative effects are identified.

Geological Environment

This assessment was based on a combination of desk studies and field investigations to understand existing conditions along the route. The design of the Propsoed Development includes best practice construction methods to protect peat, soils, and geological features. These measures will be built into the detailed construction plans to help avoid or reduce impacts.

The assessment has concluded that with regard to soils (including peat) and geology, the potential effect of the Proposed Development on the Caithness and Sutherland Peatlands (SAC, Ramsar, SPA) Shielton Peatlands (SSSI, SPA, Ramsar, SAC) that form part of The Flow Country World Heritage Site (WHS), Dunbeath Water (SSSI) and Banniskirk Quarry (SSSI) in Section A and Strathfleet (SSSI) and Aberscross Burn to Kinnauld (GCR) in Section B is minor and not significant.

The potential effects of the Proposed Development on the geological environment have been assessed as not significant in relation to the disturbance of deep peat, loss and compaction of peat and soils, the impact on solid geology, geological designations and contaminated land across all sections.

In addition, the impact on peat stability is considered not significant in Sections A, C, D and E. In Section B, there is a known historical peat slide area within the Limit of Deviation (LoD). Even with additional mitigation, the risk of further peat movement here is considered to have a moderate residual effect due to the sensitivity of the peatland and the nature of the terrain. This will be reassessed through visual inspections before, during and after construction, especially following periods of heavy rainfall to identify slope stability risks. A Peat Landslide Hazard Risk Assessment (PLHRA) will be updated throughout the project.

During the operational phase, no significant effects on the geological environment are expected, and the overall impact is considered negligible.

When considered alongside other nearby developments, the combined cumulative effects on geology, soils, and peat are expected to be minor during construction and negligible during operation, and therefore not significant overall.

Cultural Heritage

The purpose of the assessment was to identify heritage features that could be directly affected by construction, as well as those that could be indirectly affected by changes to their surroundings (known as their “setting”). This was informed by detailed desk studies, site walkovers, and site visits to assess how heritage assets are experienced in the landscape. The results of these surveys have been factored into the assessment baseline and have informed the impact assessment**. Plate 6** shows site visit photographs of key heritage assets taken during the site walkover survey.

Plate 6: Cultural Heritage Site Survey Photographs

Dunrobin Castle (LB7044)

Kilphedir Broch (SM1870)

Fyrish Monument (LB369)

Carrol Broch (SM1846)

The assessment considered a wide range of heritage assets within 10 km of the Proposed Development, including scheduled monuments, listed buildings, gardens and designed landscapes (GDLs), conservation areas, battlefields and non-designated assets, where those assets were considered to derive part of their cultural significance from their setting.

A total of 5,014 cultural heritage assets have been identified as part of the baseline. These are assets potentially susceptible to impacts resulting from the introduction of the Proposed Development, either physically (direct) or as a result of changes to setting.

Figure 5 shows the Proposed Development in the context of designated heritage assets.

Alignment Section

- Section A
- Section B
- Section C
- Section D
- Section E
- Category A Listed Building
- Category B Listed Building
- Inventory of Battlefields
- Inventory of Gardens and Designed Landscapes
- Conservation Area
- Scheduled Monument

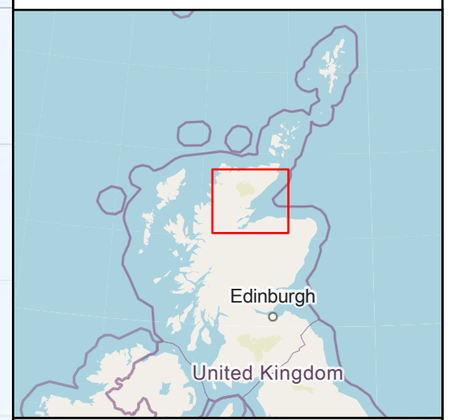

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Figure 5
Designated Heritage Assets

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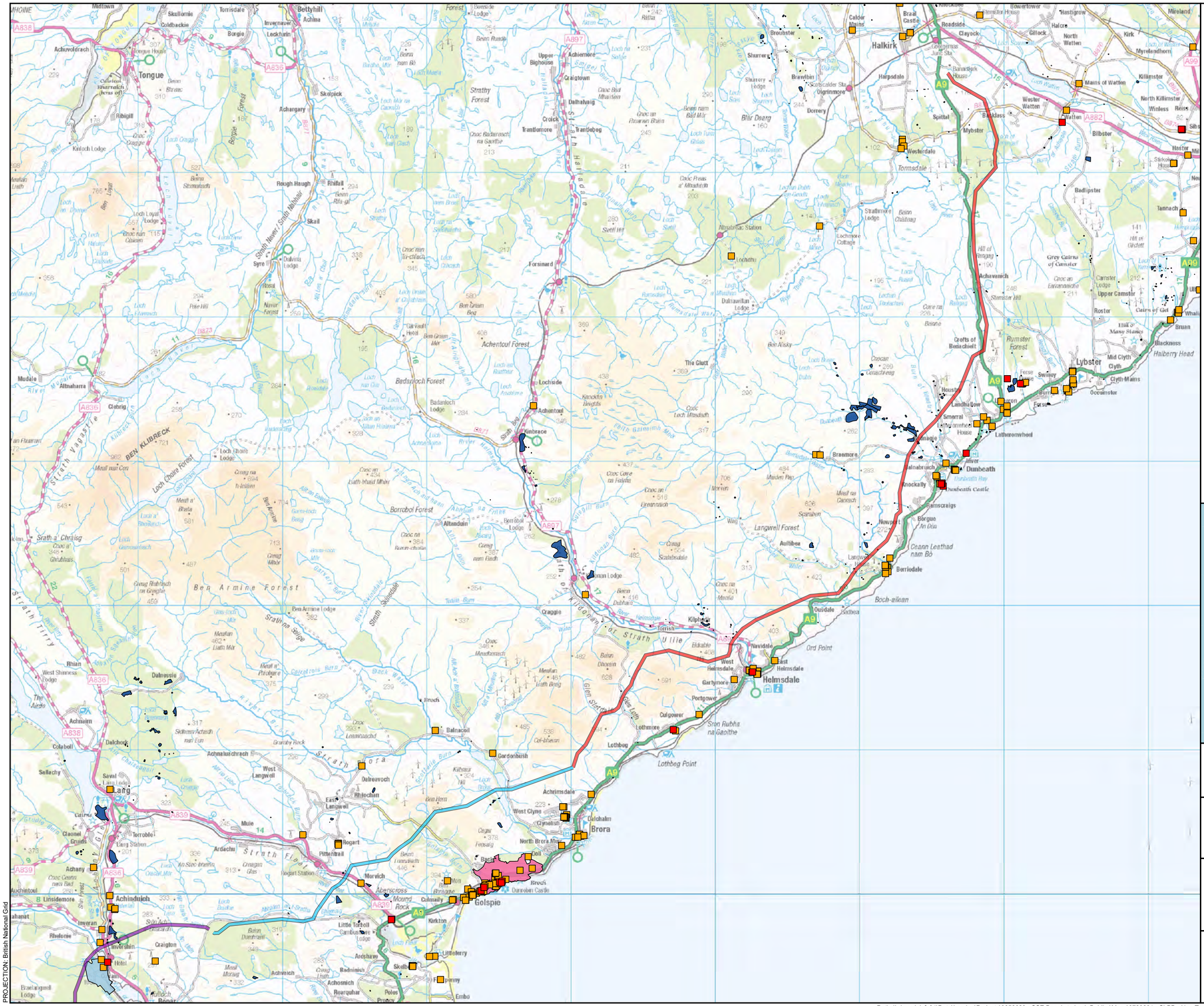

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Figure 5 (Northern Sections)
Designated Heritage Assets

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Scottish & Southern Electricity Networks TRANSMISSION

PROJECTION: British National Grid

Path: \\uksprdgisfs01\Data\London\Projects\0652629 - SSE Beauly to Loch Buidhe\Maps\0720281 - SLBB - Non-Technical Summary.aprx\0720281 - SLBB - NTS - Designated Heritage Assets - North - A01

Alignment Section

- Section B
- Section C
- Section D
- Section E
- Category A Listed Building
- Category B Listed Building
- Inventory of Battlefields
- Inventory of Gardens and Designed Landscapes
- Conservation Area
- Scheduled Monument

0 5 10
Kilometers

N

SCALE: See Scale Bar	VERSION: A01
SIZE: A3	DRAWN: WB
PROJECT: 0720281	CHECKED: SL
DATE: 7/3/2025	APPROVED: KG

Figure 5 (Southern Sections)
Designated Heritage Assets

ERM

Scottish & Southern Electricity Networks TRANSMISSION

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The Proposed Development has the potential to result in 76 significant adverse effects to cultural heritage assets. Of these 32 are anticipated to result from the direct (physical) impact of the Proposed Development, specifically the construction groundworks, upon heritage assets, e.g., their truncation or removal, including 31 non-designated assets (cairns, hut circles, dykes, mounds, enclosures etc.) and one GDL. The remaining 44 effects would be anticipated to derive from adverse changes to the setting of heritage assets, including 43 scheduled monuments and one Category B Listed Building.

The majority of the identified significant effects result from the installation of the Proposed Development along Section A, which passes through an area of concentrated archaeological activity. Notably fewer significant effects have been identified within each of the remaining four sections (B-E).

The assessment concluded that the cumulative effect to setting from the Proposed Development and developments results in significant adverse cumulative effects.

Fairburn Garden and Designed Landscape GDL00174 would experience a significant cumulative effect due to direct physical impacts and setting impacts during the construction phase and residual setting impacts during operation of the Proposed Development. The interaction of these construction and operational phase impacts is predicted to result in a cumulative moderate adverse effect, which would be considered significant in the context of EIA Regulations.

Forestry

It is anticipated that 536.74 hectares (ha) of woodland may need to be felled to allow for the construction and operation of the Proposed Development. This includes 453.93 ha of commercial conifer woodland (mix of plantations and native conifer woodlands, including 32.86 ha currently felled and awaiting replanting). In addition, in the forests adjacent to the operational corridor, it is anticipated that there will be a requirement for a further 536.65 ha of management felling of commercial conifer forest to reduce the risk of windblow (i.e. the uprooting of trees by the wind). This management felling will be undertaken only with the landowner's consent and will require replanting.

The total classified woodland within the Ancient Woodland Inventory (AWI) and Native Woodland Survey of Scotland (NWSS) databases affected by the Proposed Development (excluding Management Felling areas) is 182.89 ha, including:

- 12.23 ha of which is ancient woodland;
- 67.88 ha of Long-Established Woodland of Plantation Origin (LEPO);
- 100.73 ha of native woodland; and
- 2.05 ha of Plantations on Ancient Woodland Sites (PAWS).

The effect on both ancient woodland and semi-natural broadleaved woodland during construction is considered significant.

As the Proposed Development would result in the permanent loss of forestry or woodland, the Applicant is committed to provide compensatory planting offsite thus meeting the Scottish Government’s Control of Woodland Removal Policy objective of no net loss of woodland. Replanting or compensatory planting cannot mitigate the loss of ancient woodland, as it is recognised as an irreplaceable habitat.

Overall, the impact of the Proposed Development on forest management across the entire site is assessed as not significant.

It was concluded that the cumulative effect of the permanent and temporary loss of semi-natural broadleaved woodland and the temporary loss of ancient woodland is assessed as moderate for the Proposed Development as a whole and therefore significant. The cumulative effect within the Proposed Development of the permanent loss of ancient woodland is assessed as major and therefore significant.

Traffic and Transport

The assessment considered how construction traffic might impact local roads, communities, and people walking, cycling, or using other non-motorised forms of travel. Before any mitigation was applied, the assessment concluded that there was a moderate to major and therefore significant effect for the following:

- Severance of communities;
- Non-motorised user amenity;
- Non-motorised user delay (pedestrian delay); and
- Fear and intimidation on and by road users

A range of mitigation and traffic management measures will be put in place during construction to reduce the identified impacts. With these measures in place, the residual effects on traffic are expected to be minor and not significant.

Traffic generation during the operation and maintenance of the Proposed Development is predicted to be minimal when compared to construction traffic, therefore this was scoped out of the traffic and transport assessment.

The assessment concluded that with careful and coordinated planning, the cumulative effect of the Proposed Development and other developments in the area would not lead to any changes in the significance of effects from those associated with the Proposed Development alone.

Noise and Vibration

The assessment has considered the potential noise effects that could arise due to the Proposed Development during the construction and operational phases at the closest residential properties, known as noise sensitive receptors (NSRs).

A detailed noise assessment was carried out to assess the effects of the works on any NSRs, in line with BS 5228: Code of Practice for Noise and Vibration Control on Construction and Open Sites, a British Standard that provides guidance on how to predict, assess, and manage noise and vibration from construction activities.

Before any mitigation is applied, the assessment found that if construction takes place in the evenings and weekends, significant noise effects (classified as major) could occur at several locations during certain activities, including:

- Tree felling, affecting 47 NSR;
- Tower assembly and erection, affecting 42 NSRs;
- Foundation works, affecting 47 NSRs;
- Civil/access works, affecting 58 NSRs; and
- Stringing of overhead lines, affecting 23 NSRs.

To reduce these impacts, a Construction Noise Management Plan (CNMP) will be developed and implemented. This will include measures to limit noise levels, manage working hours, and reduce the duration of noisy

activities. With these measures in place, the residual noise effects during construction are expected to be minor and not significant.

Impacts for potential vibration works have been assessed as up to high in some instances. In this realistic worst case, the vibration would affect residential environments, therefore, the significance of effect for construction vibration is major and significant. Limiting the energy of the equipment used for ground compaction helps reduce vibration levels, making them less disruptive to nearby residents. These measures would reduce the predicted impact from construction ground-borne vibrations to low impact, therefore making the significance minor and not significant.

In addition, the significance of effect for construction traffic vibration is minor and not significant. Construction-related traffic vibrations are typically temporary and transient, depending on the frequency and volume of construction vehicle movements. Ten or more days or nights within any 15 consecutive days, or 40 or more days within any six consecutive months shall constitute a potential significant effect.

Once the Proposed Development is built and operating, noise levels have been assessed using recognised standards (TGN(E)322 and BS4142). The assessment found that all NSRs passed the initial screening, meaning that operational noise will be negligible and not significant. No further mitigation is required.

Cumulative noise has been considered for operational noise from nearby cumulative developments. Due to the low predicted operational noise of the Proposed Development and the distance to NSRs, cumulative operational noise has been assessed as negligible. However, the cumulative effects of construction noise should be considered if construction schedules of nearby developments overlap with the construction of the Proposed Development, this should be managed by the Principal Contractors through an updated CNMP.

Tourism and Recreation

The assessment concluded that the effect on the availability, accessibility and amenity of tourist and recreational assets during construction for Sections A, B, C and D, is minor adverse and therefore not significant. In Section E, the effect during construction for the study area as a whole is assessed as minor adverse, but in the Strathpeffer and Contin area where there is a concentration of tourist and recreational receptors it is assessed as moderate adverse and therefore significant.

Mitigation including measures to be set out in an agreed construction method, and continued engagement with THC and other relevant stakeholders, would reduce the magnitude of the impact, resulting in a minor adverse effect that is not significant. In addition, the assessment concluded that the effect on changes in demand for tourism accommodation would be minor adverse, and not significant.

It is not expected that there will be any significant effects on tourism and recreation once the Proposed Development is in operation.

The Tourism and Recreation assessment has considered the cumulative effects on tourism and recreation activity within the study area from the interaction of effects identified in the Landscape and Visual, Traffic and Transport, and Noise and Vibration assessments. As well as an assessment of the cumulative effects of the Proposed Development in combination with other developments, no significant cumulative effects are anticipated.

Summary of Cumulative Effects

In accordance with the EIA Regulations, the assessment has considered 'cumulative effects'. Cumulative effects occur when potential and/or predicted effects from the Proposed Development itself, or alongside separate existing or future development projects, could combine to cause a greater overall effect leading to a significant effect on a particular receptor (e.g. people, wildlife, landscape).

There are two aspects to cumulative effects, defined as follows:

- **Intra and inter project in-combination effects**: the combined effect of the Proposed Development together with other reasonably foreseeable future developments taking into consideration effects at the site preparation and earthworks, construction and operational phases; and
- **Effect interactions**: the combined or synergistic effects caused by the combination of a number of effects on a particular receptor (taking into consideration effects at the site preparation and earthworks, construction and operational phases), which may collectively cause a more significant effect together than individually. A theoretical example is the culmination of disturbance from dust, noise, vibration, artificial light, human presence and visual intrusion on sensitive fauna (e.g. certain bat species) adjacent to a construction site.

The scope of in-combination effects is considered in relation to:

- the Proposed Development and other SSEN Transmission Accelerated Strategic Transmission Investment (ASTI) associated developments required to connect the Proposed Development to the network (referred to as “intra”); and
- the Proposed Development and other SSEN Transmission and third-party projects (referred to as “inter”).

The list of developments considered for ‘intra-project effects’ are set out in **Table 2** and the list of developments considered for ‘inter-project effects’ are set out in **Table 5.3** of **Volume 2, Chapter 5: EIA Process and Methodology** (see also **Volume 3, Figure 5.1: Cumulative Developments**). Such developments include those for which consent has been granted, or future development for which it is reasonable to assume, at the date that the list of cumulative developments is frozen, that the developer will proceed with an application for consent.

Table 2: List of projects considered for ‘intra-project’ effects

Development	Application Status	Sections of Relevance
Banniskirk 400 kV Substation and High-Voltage Direct Current (HVDC) Converter Station	Under Consideration	A
Carnaig 400 kV Substation	Under Consideration	B, C
Fanellan 400 kV Substation and HVDC Converter Station	Under Consideration	E

Each of the individual technical EIA Report chapters clarify the study area used in the assessment. The maximum search radius was up to 30 km from the Proposed Development, which was used to identify projects with the potential for cumulative ornithological effects in **Volume 2, Chapter 9: Ornithology**. In most cases, the search area is significantly less than 30 km (for example in **Volume 2, Chapter 7: Landscape and Visual** it is 10 km).

Table 3 provides a summary of the cumulative effects identified for each topic.

Table 3: Summary of Cumulative Effects Assessment

Topic	Justification
Landscape and Visual	The assessment within **Volume 2, Chapter 7: Landscape and Visual** considers potential cumulative landscape and visual effects resulting from the Proposed Development in combination with related projects including the Carnaig 400 kV Substation and the Banniskirk 400 kV Substation and HVDC Converter Station and in addition to 'third party' energy generation/transmission projects (e.g. proposed wind farms and grid connections) identified within the Study Area to each Section of the Proposed Development. In combination with other developments associated with the Proposed Development and 'third party' developments (e.g. proposed wind farm developments) the Proposed Development would be likely to give rise to significant adverse effects on both landscape and visual receptors.
Cultural Heritage	The assessment within **Volume 2, Chapter 12: Cultural Heritage** notes that four major adverse cumulative/in-combination effects are reported as a result changes in setting, are predicted for four designated assets. Cumulative/in-combination effects relating to Ardross Castle (LB7926) and Boath, three chambered cairns (SM6644) relate to interactions between the Proposed Development and Ceislein Wind Farm (24/03524/SCOP). Cumulative/in-combination effects relating to Invershin Farm, settlement and burnt mound (SM5470) and Invershin Farm, settlement and burnt mound (SM5497) relate to interactions between the Proposed Development and Lairg II Wind Farm Redesign (21/00849/FUL). The cumulative effect to setting from the Proposed Development and proposed wind farms would add to the minor predicted effect generated from the Proposed Development alone, resulting in a major adverse cumulative effect, which is significant. Cumulative effects are present for Fairburn GDL (GDL00174) concerning the inter-phase interaction of direct physical impacts/setting impacts at construction phase and the residual setting impacts throughout the operational phase of the Proposed Development. The interaction of these construction and operational phase impacts is predicted to result in a cumulative moderate adverse effect, which would be considered significant in the context of EIA Regulations.
Forestry	The assessment within **Volume 2, Chapter 13: Forestry** notes other developments within the vicinity of the Proposed Development that have been considered within the cumulative assessment include: Banniskirk 400 kV Substation and HVDC Converter Station, Carnaig 400 kV Substation, and Fanellan 400 kV Substation and HVDC Converter Station. Due to the Applicant's commitment to compensatory planting, and in line with the Scottish Government's policy on Woodland Removal, for the loss of trees required to achieve the operational corridor the cumulative effect of the permanent loss of woodland resource is assessed as none, not significant with regards to commercial woodland and as major, therefore significant for the loss of ancient woodland given that these are irreplaceable woodland habitat for the Proposed Development as a whole. Fanellan 400 kV Substation and HVDC Converter Station has an impact on semi-natural broadleaved woodlands of the extent of 3.76 ha. The cumulative effect of the permanent loss of semi-natural broadleaved trees is assessed as moderate for the Proposed Development as a whole and therefore significant in the context of the EIA Regulations. The mitigation measures proposed do not reduce the level of significance, given the local value of these semi-natural woodlands. The cumulative effect within the Proposed Development of the permanent loss of ancient woodland is assessed as major and therefore significant in the context of EIA Regulations. The cumulative effect of the loss of semi-natural broadleaved, within the areas of EPZ pulling positions, special arrangements and construction of temporary and permanent access tracks, is assessed as moderate, therefore significant. The cumulative effect of the loss of ancient woodland within the areas for construction of temporary and permanent access tracks is assessed as moderate and therefore significant in the context of EIA Regulations.

Effect Interactions

People close to the Site will experience an interaction of effects due to the combination of construction noise and vibration impacts, construction traffic impacts and changes to visual amenity. These effects would be temporary, intermittent and short-term. The predicted effect interactions would be minor adverse leading to a localised magnification of effects and are not significant. No additional potential effect interactions were identified for the operational phase.

Mitigation

Mitigation measures are proposed throughout this EIA Report to minimise or offset the potential effects of the Proposed Development on the environment. These are summarised in a chapter of this EIA Report.

During construction of the Proposed Development, relevant mitigation measures will be detailed within and implemented through the CEMP, to be developed by the Principal Contractors. This will include the CTMP and the application of SSEN Transmission's SPPs to mitigate impacts on birds and species including bats, badgers and great crested newt.

SUMMARY

This Non-Technical Summary provides a summary of this EIA Report for the Proposed Development. Potential significant residual effects (i.e. after mitigation) are as follows:

- The landscape and visual chapter concludes that temporary significant landscape and visual effects would occur during the construction of the Proposed Development. These effects would be localised in nature and primarily focused upon receptors in closest proximity to the Site. Localised significant landscape and visual effects would continue to occur in the long term, particularly at close range, where due to the absence of screening the proposed steel lattice towers would form noticeable new elements within the landscape. There would be significant cumulative effects on landscape character types predominantly at the local level and on SLAs, and views from a small number of transport routes and outdoor visitor locations.
- The ecology chapter concludes that effects on commuting / foraging bats are predicted to be significant due to severed potential commuting routes. Eight habitats are expected to experience significant residual effects. AWI sites were predicted to be subject to significant effects as a result of the Proposed Development. Of these woodlands, significant residual effects are predicted to be limited to Category 2b woodland. Significant cumulative effects are only predicted between the Proposed Development and the Beauly to Blackhillock to New Deer to Peterhead 400 kV OHL, with significant adverse effects predicted on bats.
- The geological environment chapter concludes that for a limited area in Section B the impact on peat stability is considered significant, due to the known presence of a historical peat slide within the LoD, a high receptor sensitivity of the peatland and a moderate magnitude of impact rating. This decision will be reassessed through visual inspections before, during and after construction, especially following periods of heavy rainfall to identify slope stability risks.
- The cultural heritage chapter concludes that the Proposed Development has the potential to result in 76 significant adverse effects to cultural heritage assets. Of these 32 are anticipated to result from the direct (physical) impact of the Proposed Development, specifically the construction groundworks, upon heritage assets, e.g., their truncation or removal. The remaining 44 effects would be anticipated to derive from adverse changes to the setting of heritage assets. The majority of the identified significant effects would result from the installation of the Proposed Development along Section A, which passes through an area of concentrated archaeological activity. Notably fewer significant effects have been identified within each of the remaining four sections (B-E). Four major adverse cumulative/in-combination effects are reported as a result changes in setting. Cumulative effects are also present for Fairburn Garden and Designed Landscape (GDL00174) concerning the inter-phase interaction of direct physical impacts/setting impacts at construction phase and the residual setting impacts throughout the operational phase of the Proposed Development. The interaction of these construction and operational phase impacts is predicted to result in a cumulative moderate adverse effect, which would be considered significant in the context of EIA Regulations.
- The forestry chapter concludes that during construction there are significant residual effects associated with the permanent and temporary loss of semi-natural broadleaved woodland and ancient woodland. For Section E it was concluded that the likely residual construction and operational effect on forest management was moderate and significant. The cumulative effect of the permanent and temporary loss of semi-natural broadleaved woodland and the temporary loss of ancient woodland is assessed as moderate for the Proposed Development as a whole and therefore significant. The cumulative effect within the Proposed Development of the permanent loss of ancient woodland is assessed as major and therefore significant.

All other chapters identified no significant residual effects from the Proposed Development following implementation of the recommended mitigation. The Applicant is committed to implementing the necessary mitigation measures to reduce environmental effects.