Scottish & Southern Electricity Networks

Spittal to Loch Buidhe to Beauly 400 kV OHL Connection

Environmental Impact Assessment

Volume 5, Appendix 13.1 – AK:

Woodland Reports

Ruttle Wood

July 2025

Scottish & Southern Electricity Networks

Contents

1. Introduction

1.1 Scottish and Southern Electricity Networks (SSEN) Transmission, hereafter referred to as 'the Applicant', owns, operates, develops and maintains the high voltage electricity transmission system in the north of Scotland and the Scottish islands. Due to the growth in renewable electricity generation in the north and north-east of Scotland, upgrade of the transmission network is required to provide the necessary increase in transmission capacity. The Applicant is applying for consent under Section 37 of the Electricity Act 1989 to construct and operate a new double circuit 400 (kilovolt) kV overhead line (OHL).

1.2 This report provides an assessment of woodland impact related to the Spittal to Loch Buidhe to Beauly 400 kV OHL Connection project (the 'Proposed Development'). The report details the woodland area affected by the Operational Corridor (OC), new access tracks (permanent), and additional felling required due to windblow risk within individual ownerships. It also includes mitigation considerations and compensatory planting recommendations.

2. Purpose of this Woodland Report

2.1 As part of the Environmental Impact Assessment (EIA) process, it was identified that construction of the OHL and associated access tracks would cross a number of woodland areas within both public and private landholdings. The landholding property boundaries are identified in **Figure 1: Woodland Impacted by the Proposed Development**.

2.2 This document provides an assessment of the woodland areas that are affected by the Proposed Development, including the requirement for woodland removal and management recommendations to mitigate the impact of the woodland removal.

2.3 Field surveys of the woodland areas have been undertaken and have been used to determine the various woodland characteristics to identify the woodland removal required and recommended. This document also sets out the area, in hectares (ha), of compensatory planting required to ensure no net loss of woodland is achieved.

3. Woodland Property

3.1 Ruttle Wood is a privately owned woodland situated approximately 7 km southwest of the village of Beauly. The nearest public road is the A831, with the closest access via a c-class road. Within the site, an existing access track extends southeast of Tower S231 within the Proposed Development. Refer to **Figure 1: Woodland Impacted by the Proposed Development**.

3.2 The property is located at NH471430, south west to the A831 public road. The woodland area is impacted by the Proposed Development from Tower S229 to mid-span between Tower S231 and Tower S232, as shown on **Figure 1: Woodland Impacted by the Proposed Development**.

4. Development Requirements

4.1 400 kV Operational Corridor

4.1.1 With reference to **Figure 1: Woodland Impacted by the Proposed Development**. the sections of OHL applicable to the Ruttle Wood property are from Tower S229 to a point mid-span between Towers S231 and S232.

4.1.2 The Study Area for this assessment is based around an operational corridor of 90 m. The Applicant defines the OC as the area in which it has rights to remove woodland for the purposes of creation of new OHL, resilience and maintenance of OHLs, or protection of electrical plant as required by the Electricity Safety, Quality and Continuity Regulations (ESQCR) 2002 regulations and The Electricity Act 1989. The OC is defined as to the distance at which a tree could fall and cause damage to the OHL, resulting in a supply outage. As a result, the final OC width would be based on the safety distance required from the OHL centreline to allow for a mature tree falling towards the OHL, taking account of topography and tree height at maturity.

4.1.3 The OC width that has been assessed and identified for the safe build and energisation of the new OHL through areas of conifer woodland is 90 m (45 m either side of the OHL centreline). Further details can be found in **Section 13.3** of **Volume 2, Chapter 13: Forestry** which outlines the extent of the study area.

4.1.4 The OC width that has been assessed and identified for the safe build and energisation of the OHL through the areas of broadleaves is also 90 m (45 m either side of the OHL centreline). This has been assessed as a maximum OC width required at these woodland locations, with the potential of further narrowing of the OC prior to construction to allow greater tree retention depending on factors such as tree height, topography, crown reduction or other mitigation strategies[1].

4.2 Access Track Route Design

4.2.1 There is existing road infrastructure near the woodland which would potentially need to be upgraded. The nearest public road is the A831, with the nearest site access possible via an unnamed minor road. Sections of permanent access track will be constructed, within and outwith the OC. These will form part of the main vehicle access route for the Proposed Development and can be seen on **Figure 1: Woodland Impacted by the Proposed Development**, and will be subject to maintenance and upgrade works as part of the construction work scope.

4.2.2 Sections of new access track detailed in **Figure 1: Woodland Impacted by the Proposed Development** will be built as part of the construction work scope, to service the Towers S229 to S231.

[1] As specified by the 'Red Zone' set out in paragraph 41 of the Forest Industry Safety Accord. (2020) Safety Guide 804 Electricity at Work: Forestry. [pdf] Available at: FISA 804 (ukfisa.com).

4.2.3 The access track corridor width required for clearing through the woodland is 20 m (10 m on either side of the centreline), but this will be evaluated in situ to determine the suitability for further tree retention.

4.2.4 The construction of these new access tracks will increase the impact of woodland removal along routes located outside the OC. The affected woodland along the new access tracks will consist of a similar composition to that found within the OC, featuring a combination of coniferous plantations and broadleaved woodlands, depending on the location of the access Tracks. Refer to **Table 9.1** below.

4.2.5 Felling, stump removal and residue mulching will be required for the installation of new access tracks and at each tower location for the formation of temporary construction working areas.

4.2.6 These access tracks can serve as the main arterial construction route. Tree felling and timber extraction would be able to utilise existing tracks, prior to any construction activity.

4.2.7 Where existing tracks require maintenance or upgrading, this may involve the removal of trees and scrub to facilitate the works, particularly to accommodate the creation of additional passing places. While much of the upgrade activity would fall within standard forest access maintenance, which typically involves the removal of scrub, regeneration, and crown management, some sections may require additional tree clearance within a corridor of up to 12 m in width.

5 Woodland Characteristics

5.1 A desk-based study of the woodland areas was conducted, to identify current woodland environmental designations and classifications.

5.2 The web-based data provided by Scottish Forestry and referencing the Scottish Government's Ancient Woodland Inventory (AWI), and

- The Scottish Forestry Map Viewer provides spatial data on the Native Woodland Survey of Scotland (NWSS) and classifies the woodland types into four categories[2] [3]:

[2] Scottish Forestry Map Viewer URL https://scottishforestry.maps.arcgis.com/apps/webappviewer/index.html?id=0d6125cfe892439ab0e5d0b74d9acc18

[3] Scottish Forestry Native Woodland Survey of Scotland: Glossary of Terms; URL: Main Title (forestry.gov.scot)
Native Woodland – woods where the canopy cover is composed mainly of native species (i.e., over 50%).
Nearly Native Woodland - where native species make up between 40% and 50% of the canopy. These are woods that could have potential to be converted into native woodlands by altering their species mix.
Open Land Habitat – areas with <20% canopy cover of trees and shrubs adjoining a native woodland.
PAWS - Plantation on Ancient Woodland Sites. These are surveyed in the NWSS where they are recorded in the Scottish ancient woodland inventory (SAWI). These woodlands appear to have originated through natural regeneration sometime before the mid-19th century, but were later converted to planted wood.

1. Native woodland
2. Nearly-native woodland
3. Open land habitat
4. Plantations on Ancient Woodland Sites (PAWS)

5.3 The woodland is situated on a small hill, bordered by the River Beauly to the west and open fields to the east, with the western side descending steeply towards the River Beauly gorge. Within this landscape, the Proposed Development primarily passes through coniferous plantations designated as - Long-Established Woodland of Plantation Origin 2b (LEPO). To the west of Tower S229 and east to River Beauly, an Ancient Woodland Site of Semi-Natural Origin (AWSNO) 2a is present, mainly along the steep cliffs formed by the river gorge. Some of this area is also within the NWSS categorised as Native woodland dominated by Pinewoods. Refer to **Table 5.1**.

Table 5.1: Woodland Designations

Item	Type of impact	Woodland Designations	Area (ha)
Operational corridor	Permanent	AWI- AWSNO 2a	0.95
		NWSS- Native woodland	0.95
		AWI-LEPO 2b	6.74
		NWSS- Native woodland	1.54
Access track corridor	Permanent	AWI-LEPO 2b	0.73
Management Felling*	Temporary	AWI-LEPO 2b	11.80
		NWSS- Native woodland	1.28

*Management Felling reference and details described in **Section 6**- Windblow Risk Impact.

5.4 The AWSNO 2a site is composed of pole-stage to semi-mature native upland birchwood with varying canopy cover, interspersed with scattered mature conifers, including Scots pine, spruce, and larch. This area circa 0.95 ha is also included within the NWSS as Native woodland. Refer to **Plates 1 and 2**.

Plate 1- Ancient Woodland of Semi-Natural Origin (2a. 1860). Grid ref: NH 47159 43068. Photograph taken across River Beauly. Significant presence of mature spruce amongst the birch.

Plate 2- Ancient Woodland of Semi-Natural Origin. Upland birchwood with scattered established circa 16 m height of non-native conifers within the Proposed Development. Grid ref: NH 47278 43044.

5.5 Within the OC and areas identified for new access tracks, the woodland is predominantly semi-mature to mature, largely unthinned, and consists of mixed conifers, including Scots pine, Sitka spruce blocks, diverse conifer stands, and pure larch blocks.

5.6 Scattered throughout the Ruttle Wood are occasional large, biologically mature trees of fir, spruce, and larch, which enhance the landscape's strong

conifer character specially to the north of the pond. These trees fit within the Category A- 2- mainly as landscape qualities- as classify by the BS5837: 2012.

5.7 There are areas classified as upland birchwood within the NWSS (see **Plate 3**). This area is also identified as AWSNO within the AWI database. These native woodland areas are primarily composed of Scots pine, which gradually transitions into birchwood as they approach the River Beauly.

Plate 3- Native woodland. Mix of Scots pine, Birch and Larch within the Native Pinewood classification areas. Grid ref: NH 47477 42996.

5.8 The LEPO-classified areas, circa 5.2 ha, do not exhibit remnant features of longevity, although scattered deadwood and regenerated coppiced birch trees at a pole-stage maturity have been observed in the northern section near the pond. Refer to **Plate 4**.

5.9 The majority of stands within this woodland show limited natural tree regeneration, as most areas affected by the OC, new access tracks, and proposed Management Felling, which are predominantly characterised by a closed canopy.

Plate 4- LEPO (2b). Stand of Pole stage Sitka spruce circa 14 m height within Proposed Development. Grid ref: NH 47627 42989.

5.10 Ruttle Wood is dominated by a mix of conifer species of varying ages, with tree heights ranging from approximately 14 m in immature Sitka spruce stands to 25 m in mature spruce and Scots pine stands. Refer to **Plate 5.**

Plate 5- LEPO (2b). Mix mature conifers on the forest track circa 25 m height, within the Proposed Development. Grid ref: NH 47874 42901.

5.11 The site soils are predominantly peaty gleyed podzols[4].

6. Windblow Risk Impact

6.1 An assessment was undertaken of the risk of windblow to areas of woodland adjacent to the OC which would be exposed due to the tree clearance required for the OC. This assessment was based on the professional judgement of the

[4] Scottish Government's Scotland's soils website https://soils.environment.gov.scot/

forestry surveyor with consideration being given to the soil and moisture regime, the topography, tree species, top height, exposure, altitude and aspect in relation to the prevailing wind direction and any previous management regimes. This assessment was also based on site visits and observations, and available data of the site. Reference was also made to Forest GALES 2.5 Forest Research decision support system where appropriate. Felling outwith the OC to a windfirm boundary is termed Management Felling and is presented within **Figure 1: Woodland Impacted by the Proposed Development**.

6.2 Given the unthinned nature of some of the conifer stands present on this site, some of which are reaching maturity (tree height average 18 m), along with the local soils, topography and aspect, it is anticipated that the introduction of the OC will result in future windblow to the adjoining woodlands. Refer to **Table 9.1**.

6.3 The woodland site affected by the Proposed Development has a 'Detailed Aspect Method of Scoring' (DAMS)[5] windblow hazard class score of 12, which is classified as moderately exposed. The site has mineral soils with shallow rooting which are mostly cool and moist.

6.4 Management felling is proposed in the areas adjacent to the OC and the access track corridors to minimize the future risk of windblow. However, certain areas within the woodland contain more open coupes, which are likely to remain wind-stable. These coupes have been assessed up to the nearest green-edge and are therefore considered stable in the current conditions. Refer to **Table 9.4**.

6.5 While management felling is proposed by the Applicant as part of sound forestry practice, the decision to implement such operations ultimately rests with the forest owner, who must align any felling activities with their broader forest management plans and objectives. Felling permission for these areas must be obtained by the landowner through an application to Scottish Forestry. As part of this regulatory process, Scottish Forestry will consider the appropriateness of the proposed felling and will attach conditions requiring the restocking of felled areas to ensure continued sustainable forest management.

7. Woodland Management Impact

7.1 The OHL will create additional challenges for the future management of the forest as it dissects existing management coupes and introduces an electrical hazard. The risks associated with the electrical hazard will be reduced by

[5] Detailed Aspect method of Scoring (DAMS) Ref. Forest Research, "Forest Gales software programme" and Forestry Commission Leaflet 85 "Windthrow Hazard Classification"

regular maintenance of the OC, so maintaining the compliance of the OC and reducing any need for future tree clearance operations within the "Red Zone".[6]

7.2 The sterilisation of the OC, however, will have an impact on forest restructuring, potentially impacting the landowner's ability to utilise the forest's commercial viability in accordance with the UK Forestry Standard. Mitigation opportunities are discussed in the following **Section 8**.

7.3 The OHL will cross the woodland road network at either approximately 45 or 90 degrees and will be built to the regulatory safe height clearances above forest access tracks, which will reduce the hazard in respect of future timber haulage. It may still, however, impact on machine operations within the proximity of the OHL, such as stacking and loading; mitigation of which could be incorporated into the access design, following discussions with the landowner.

7.4 The OHL may be restrictive to future in-forest machinery access. The requirement for dedicated forestry machine OHL crossing points will be discussed with the landowner and if required, will be identified once the OHL has been constructed, thus providing a safe OHL crossing point(s) for future working within the woodland.

7.5 The potential impact of the Proposed Development on the overall viability and continuity of woodland management has been assessed. Ruttle Wood forms part of a broader landscape comprising commercial conifer blocks interspersed with riparian broadleaved woodlands along the River Beauly. While the proposed OC traverses several woodland compartments, the presence of established access routes on both sides of the OC ensures continued operational access. As such, no fragmentation or isolation of either coniferous or broadleaved woodland elements is anticipated. Accordingly, the Proposed Development is not considered likely to have a significant effect on the current or future woodland management regime.

7.6 The impacts arising from the Proposed Development are not anticipated to affect the wider woodland management regime, nor are they expected to necessitate any alteration to the current or planned species composition.

8. Mitigation Opportunities

8.1 Mitigation to reduce the extent of tree felling within the OC will be considered and incorporated in areas of broadleaved woodlands as part of the Proposed Development. This includes effects on the riparian broadleaved trees within the AWI of trees on the bank of the River Beauly. The Applicant will be using a process of 'managed resilience', which will seek to retain naturally regenerated

[6] As specified by the 'Red Zone' set out in paragraph 41 of the Forest Industry Safety Accord (FISA) Safety Guide 804. Electricity at Work: Forestry (2020) FISA 804 (ukfisa.com)

broadleaved trees and shrubs as close as possible to the line to keep as much tree cover as possible. Smaller- and lower-growing tree species and shrubs can be retained closer to the OHL. OHL vegetation maintenance would take place on a 4-yearly cycle as required.

8.2 Subject to confirmation, the Proposed Development is not expected to adversely affect the Ancient Woodland site within Ruttle Wood, provided that Towers S229 within Ruttle Wood ownership, and S228 located on the adjacent property to the west, are positioned to take advantage of the local topography. Specifically, situating these towers on higher ground above the slope bordering the River Beauly, where the most ecologically valuable broadleaved woodland is concentrated, could avoid direct impact. This will require further consideration of micrositing opportunities within the defined Limits of Deviation (LoD).

8.3 Impacts on woodland restock opportunities, resulting from the OC sterilisation, could be addressed through the amendment of the Felling Licence Application or the Long-Term Forest Plan (LTFP), adhered to the regulations of the Forestry and Land Management (Scotland) Act 2018, and in line with the UK Forestry Standard guidance to utilise wayleave corridors as designed Open Ground, repurposing currently unplanted areas to maintain the commercial productivity of the woodland.

8.4 Before the construction phase, these areas, along with access tracks, will be assessed for selective felling and also crown reduction to determine if greater tree retention is feasible. The final extent of tree retention will depend on the requirements of the Proposed Development, particularly ensuring the safety of OHL wiring operations during construction.

8.5 The OC woodland removal area is required for the construction and operation of the Proposed Development. Opportunities will be assessed for encouraging woodland regeneration within the OC, however, the identification of suitable areas cannot be guaranteed due to the requirement of maintaining the safe energisation of the OHL. Reference to **Tables 9.2 and 9.3** below, this will fully mitigate the loss of forest resource within the OC through compensatory planting of the equivalent area (ha) of woodland removed.

8.6 Impacts on tree windfirm stability within the remaining crop has been assessed and considered as noted in **Section 6**. Woodland loss and management felling have been minimised through retention of crops identified as likely to be windfirm.

8.7 Impact of stability within the remaining crop has been assessed and reported on above.

9. Woodland Removal Impact

Table 9.1: Woodland Removal for Infrastructure			
Item	**Type of infrastructure**	**Woodland type**	**Area (ha)**
Operational corridor	Permanent	Broadleaved woodland	0.95
		Conifer woodland	6.74
Access track corridor	Permanent	Conifer woodland	0.73

Table 9.2: Compensatory planting		
Compensatory Planting Area		8.42

Table 9.3: Woodland Removal Impact of Infrastructure			
Item	**Woodland type**		**Area (ha)**
Total Loss of Woodland Area	Broadleaved woodland		0.95
	Conifer woodland		7.47
Total Compensatory Planting Area off-site	Broadleaved woodland		0.95
	Conifer woodland		7.47
Total Restocking/ Replanting Area on-site			0
Total Net Loss of Woodland Area			**0**

Table 9.4: Woodland Removal for Management Felling			
Item	**Type of impact**	**Woodland type**	**Area (ha)**
Management Felling	Temporary	Conifer woodland	13.08
Replanting / Restocking	Adhere to the Forestry and Land Management (Scotland) Act 2018.	Conifer woodland	13.08
Net Loss of Woodland Area			**0**
Note: Felling approval is via the Scottish Forestry Felling Licence Application process or Long-Term Forest Plan application or amendments process.			

10. Compensatory Planting

10.1 Compensatory planting to achieve the area quantity (ha) of woodland removal as a result of the Proposed Development will be in accordance with the Scottish Government's Control of Woodland Removal Policy of no net loss of woodland. A compensatory planting strategy is set out in **Volume 5, Appendix 13.3: Compensatory Planting Strategy.**

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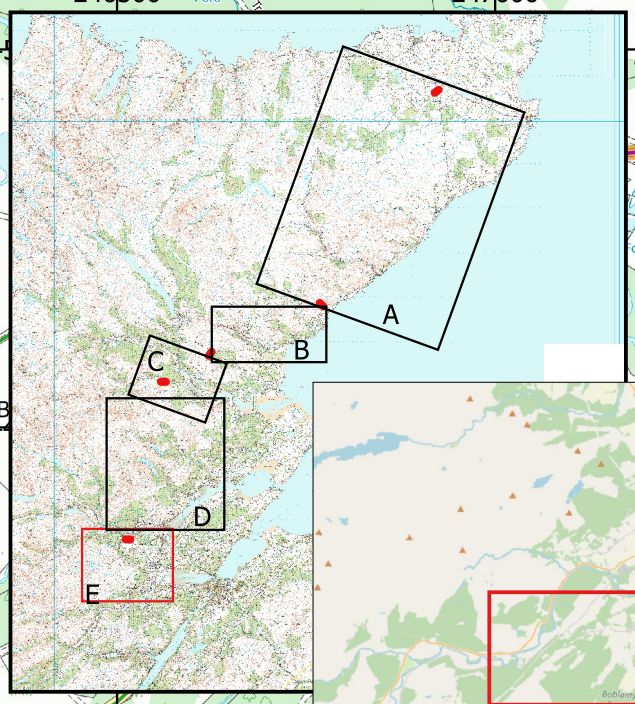
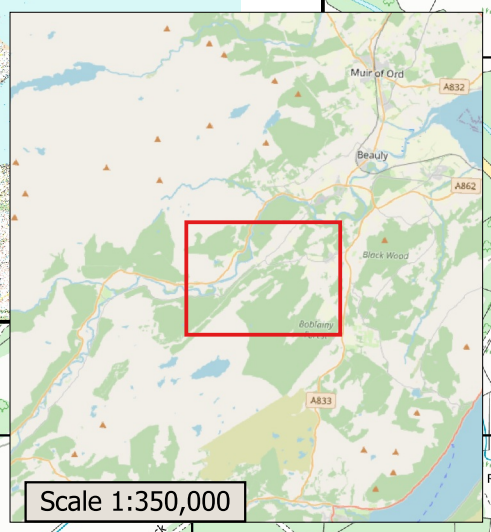
TRANSMISSION





S227
S228
S229
S230
S231
S232

Scale @ A3 1:10,000

N

0 0.25 0.5 km

Legend

- Landownership boundary/parcel
- Central line Operational Corridor
- Proposed 400kV OHL Towers
- 20m Access Corridor
- Access Tracks- Existing Upgrade
- Access Tracks- New Stone Perm
- Access Tracks- New Stone Temp
- NWSS- Native woodland
- Conifer woodland- Operational Corridor 90m
- Broadleaved woodland- Operational Corridor 90m

Woodland report
Project No- LT000132
Spittal- Loch Buidhe - Beauly 400kV Connection
Figure 1. Woodland Impacted by the Proposed Development
Section E- Ruttle Wood

Ref No: 28-06-2025