Scottish & Southern Electricity Networks

Spittal to Loch Buidhe to Beauly 400 kV OHL Connection

Environmental Impact Assessment

Volume 5, Appendix 13.1 – C:

Woodland Reports

Forse Estate

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 Forse Estate presents woodlands and adjacent grazing land affected by the Proposed Development. It is situated approximately 18 km north of Dunbeath and a similar distance south of Halkirk village, east of the A9 public road.

3.2 The affected woodlands within the estate consist of coniferous commercial woodland. The central point grid reference is ND 17893 45445.

3.3 The woodland area is divided into several conifer blocks along the eastern side of the A9.

3.4 The northernmost woodland block lies on the edge of the Shielton Peatlands, a designated Special Site of Scientific Interest (SSSI) recognised for its biological significance. No woodland is affected by this designation.

3.5 A small estate track branches off from the A9, running along the edge of the southern conifer block. Refer to **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 Overhead Line (OHL) sections relevant to Forse Estate extend from Tower N36 to 150 metres (m) south of Tower N46.

4.1.2 The Study Area for this assessment is based around an OC 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].

[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 Access Track Route Design

4.2.1 An existing track within the property provides access from the A9 to the edge of the woodland and is in proximity to the Proposed Development features; however, new sections of temporary access tracks will be constructed within the OC. These access tracks will serve as the primary vehicle access route for the Proposed Development, and will undergo maintenance and upgrades as part of the construction scope.

4.2.2 New access tracks will be built to service Towers N36 to N46. Refer to **Figure 1: Woodland Impacted by the Proposed Development.**

4.2.3 The construction of these new access tracks will not increase the impact of woodland removal as they fall within the OC.

4.2.4 Tree 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.

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

4.2.6 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]:

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

5.3 The route primarily passes through coniferous plantations, which are primarily commercial. The dominant species within these plantations are spruce and Lodgepole pine. Reference to **Table 9.1**.

5.4 There are no woodland classifications or designations within this property.

5.5 The conifer woodlands at Forse Estate are distributed across multiple blocks, most of which are of the same age class, suggesting they were planted simultaneously. However, the northernmost block is notably younger, with shorter/younger trees. Refer to **Plate 1.**

5.6 All conifer blocks share a similar species composition, spruce and Lodgepole pine mix with spruce being more prevalent. Larch is also present, but in smaller numbers.

5.7 The semi-mature spruce and Lodgepole pine in the southern conifer blocks average 18 m in height. These stands have not undergone thinning and have now reached financial maturity. The upper canopy is dense, allowing little to no light to reach the understorey. Natural regeneration is sparsely observed only at the edges of the conifer blocks in open ground. Refer to **Plates 2 and 3**.

5.8 The northernmost conifer block consists of younger trees averaging 12 m in height, with the same species mix of spruce and pine. This pole-immature woodland is densely packed, with numerous lateral branches that make movement through the block difficult. Refer to **Plate 4.**

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[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.

Plate 1- Woodland block consisting of a semi-mature conifer plantation with a mix of spruce and Lodgepole pine. Located at the southern edge of the OC within Forse Estate. Grid reference: ND 17920 44950.

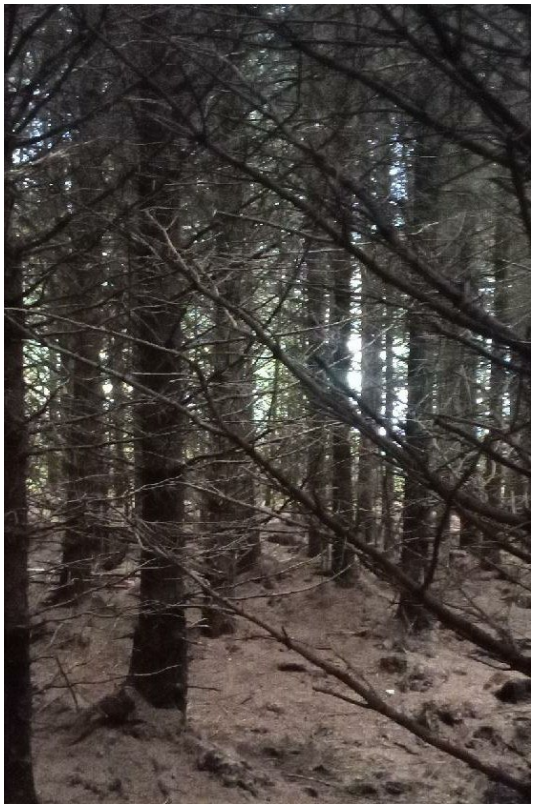

Plate 2- Semi-mature conifer block composed of a spruce and Lodgepole pine mix, with no developed understorey. Trees average 18 m in height. Grid reference: ND 17891 45124.

Plate 3- Conifer blocks on either side of the middle woodland ride through the OC, looking north towards Halsary Windfarm. Commercial conifer plantation. Grid reference: ND 17860 45425.

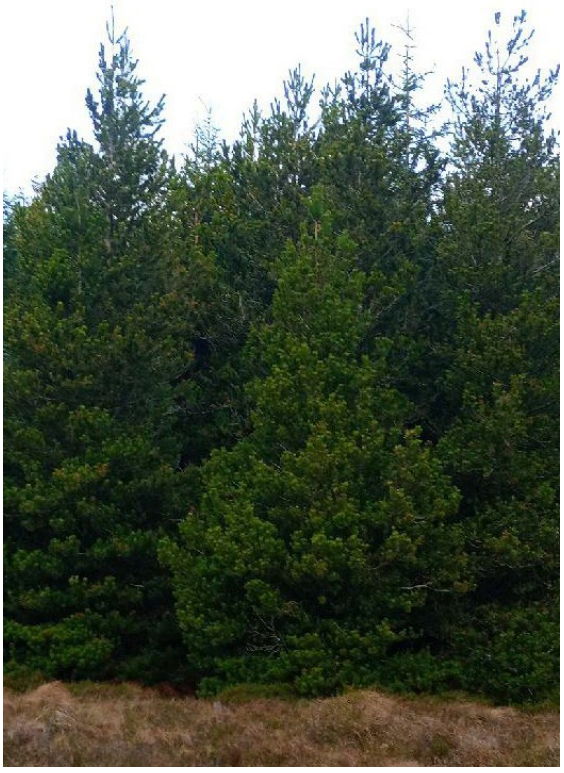

Plate 4- The conifer block in the northern woodland area of Forse Estate consists of younger trees, averaging 12 m in height. The species mix includes spruce and Lodgepole pine. Grid reference: ND 17906 45641.

5.9 Some patches of windblow damage are present within the area affected by the OC. The damage appears to be a few years old, with tree roots completely detached from the ground. Refer to **Plate 5**.

Plate 5- Windblown patch within the semi-mature conifer stand. Uprooted trees and entire fallen trees lying on the ground, showing signs of damage from several years ago. Grid reference: ND 17976 45353.

5.10 The site soils are predominantly peaty gleys.[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 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 undertaken from site visits and

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

data available of the site. Reference was also made to Forest GALES 2.5 Forest Research decision support system where appropriate. Felling out with the OC to a windfirm boundary is termed Management Felling and is presented in **Figure 1: Woodland Impacted by the Proposed Development.**

6.2 Given the nature of the woodlands- those of semi-mature unthinned conifer stands of an average height of 19 m and the local characteristics of soils, topography and aspect, it is anticipated that the introduction of the OC will result in future windblow to the adjoining woods.

6.3 The woodland site affected by the Proposed Development has a 'Detailed Aspect Method of Scoring' (DAMS)[5] windblow hazard class score of 17, classified as highly exposed. The site presents mineral soils with shallow rooting.

6.4 Management felling is proposed in the areas adjacent to the OC and the access track corridors to minimise the future risk of windblow. Refer to **Table 9.4**.

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 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

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

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 impact of the Proposed Development on the overall viability and continuity of woodland management has been considered. The Proposed Development will impact woodland management within the property due to the size of the area affected and the increased risk of windblow on remaining trees. The OC will fragment the woodland, creating exposed edges. Effective woodland management will be crucial to mitigate these risks and ensure long-term sustainability.

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 The Applicant will be using a process of 'managed resilience' which will seek to retain naturally regenerated broadleaf trees and shrubs as close as possible to the line to keep as much tree cover as possible.

8.2 Smaller and lower-growing tree species and shrubs are able to be retained closer to the line. OHL vegetation maintenance would take place on a 4-yearly cycle as required.

8.3 Before the construction phase, these areas 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 project requirements, particularly ensuring the safety of OHL wiring operations during construction.

8.4 The OC woodland removal area is required for the construction and operation of the new OHL infrastructure. Opportunities will be assessed for encouraging woodland regeneration within the OC, 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 will fully mitigate the loss of forest resource within the OC through compensatory planting of the equivalent area (ha) of woodland removed.

8.5 Impacts on tree windfirm stability within the remaining crop have 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.

8.6 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	Conifer woodland	6.38
Table 9.2: Compensatory planting			
Compensatory Planting Area			6.38

Table 9.3: Woodland Removal Impact of Infrastructure		
Item	**Woodland type**	**Area (ha)**
Total Loss of Woodland Area	Conifer woodland	6.38
Total Compensatory Planting Area off-site	Conifer woodland	6.38
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	12.04
Replanting / Restocking	Adhere to the Forestry and Land Management (Scotland) Act 2018.	Conifer woodland	12.04
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

N34
N35
N36
N37
N38
N39
N40
N41
N42
N43

A
B
C
D
E

Scale 1:350,000

Scale @ A3 1:10,000
N
0 0.25 0.5 km

Legend

- Landownership boundary/parcel
- Operational Corridor
- Central line Operational Corridor
- Proposed 400kV OHL Towers
- Management Felling
- Conifer woodland- Operational Corridor 90m
- Access Tracks- New Stone Perm
- Access Tracks- New Stone Temp

Woodland report
Project No- LT000132
Spittal- Loch Buidhe - Beauly 400kV Connection
Figure 1. Woodland Impacted by the Proposed Development
Section A- Forse Estate

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