

Spittal to Loch Buidhe to Beauly 400 kV OHL Connection
Environmental Impact Assessment
Volume 5, Appendix 13.1 – V:
Woodland Reports
Strathrusdale Wood

**July 2025** 





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#### 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 Strath Rusdale wood is privately owned. This is a relatively small conifer woodland area situated in the Strath Rusdale glen north to Braeantra, approximately 13 km northwest of Alness, with the B9176 being the nearest major road.
- 3.2 The woodland primarily consists of conifer species and spans elevations ranging from 270 m to over 320 m above sea level. The central grid reference for the property is NH 56310 80801, which is located within Strath Rusdale Glen east to Abhainn Glac an T-Seilich burn.
- 3.3 Access to this woodland is via the local public road east of Strath Rusdale glen to Braeantra, connecting to the forest road that provides entry to also Forest and



Land Scotland (FLS) woodlands. The Proposed Development crosses the Abhainn Glac an T-Seilich burn (also known as Black Water) at the boundary edge of the adjacent woodland, Morangie.

3.4 The site benefits from a well-maintained forest track, providing access to Strathrusdale woodland. This infrastructure supports the commercial forestry operations within the woodland. 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 Strathrusdale woodland extend from over 120 m north of Tower S68 to just 30 m south of Tower S72.
- 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<sup>1</sup>.

#### 4.2 Access Track Route Design

4.2.1 An existing infrastructure network within the property provides access to the woodland and is in proximity to the Proposed Development features however, new section of permanent road will be constructed within and

<sup>&</sup>lt;sup>1</sup>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).



outside the OC. These roads will serve as the primary vehicle access route for the Proposed Development, as illustrated in **Figure 1: Woodland Impacted by the Proposed Development**, and will undergo maintenance and upgrades as part of the construction scope.

- 4.2.2 New access tracks, also detailed in **Figure 1: Woodland Impacted by the Proposed Development**, will be built to service Towers S68 to S72.
- 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 this new access track will increase the impact of woodland removal along routes located outside the OC. The affected woodland along the new roadways will consist of a similar composition to that found within the OC, featuring coniferous plantations woodlands. Refer to **Table 9.1** below.
- 4.2.5 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.
- 4.2.6 This main road will serve as the main arterial construction route. Tree felling and timber extraction will be able to utilise this existing track, 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<sup>2</sup> <sup>3</sup>:
- 1. Native woodland
- 2. Nearly-native woodland
- 3. Open land habitat
- 4. Plantations on Ancient Woodland Sites (PAWS)
- 5.3 The woodland within this ownership is located on undulating lowlands and valley sides with gentle and strong slopes, generally not rocky. The predominant aspects are southeast and southwest-facing. The OC proposed traverses conifer plantations of a mix of conifer species established at pole stage.
- 5.4 The majority of these coniferous plantations are classified as Native Woodlands, as identified in the NWSS. Refer to **Table 5.1**.

Table 5.1: Woodland Designations				
Item	Type of Impact	Woodland Designations	Area (ha)	
Operational Corridor	Permanent	NWSS- Native woodland-	3.24	
Access track corridor	Permanent	NWSS- Native woodland-	0.25	

- 5.5 The Native Woodland, classified as native pinewood, is characterised by pole-stage immature Scots pine plantation, occasionally interspersed with birch in the upper canopy. The Scots pine trees average 10 m in height. See **Plates 1 and 2**. Scattered young birch, around 3 m tall, are present particularly in the wetter areas at the edges of the watercourses and at the bottom of the slope where watercourses join. The woodland features some canopy openings where pine trees failed during establishment.
- 5.6 Small spruce regeneration is occasionally encountered in the gaps in the canopy throughout the woodland.

https://scottishforestry.maps.arcgis.com/apps/webappviewer/index.html?id=0d6125cfe892439ab0e5d0b74d9acc 18

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.

<sup>&</sup>lt;sup>2</sup> Scottish Forestry Map Viewer URL

<sup>&</sup>lt;sup>3</sup> Scottish Forestry Native Woodland Survey of Scotland: Glossary of Terms; URL: Main Title (forestry.gov.scot)



5.7 Strathrusdale is located on the northern side of Morangie Woodland, which is primarily composed of commercial forestry. Refer to **Plate 3**.



<u>Plate 1</u>- Photograph taken from across Allt a'Choire Dhuibh burn east to the OC. Native Woodland-native pinewood consists primarily of pole-stage Scots pine trees, average 10m in height, with scattered birch trees up to 3 m. Grid reference: NH 56390 80931



<u>Plate 2</u>- Native pinewood as classified within the NWSS. Pole stage Scots pine trees average 11 m with a rather open canopy with no understorey. Grid reference: NH 56339 80875.





<u>Plate 3-</u> Photograph overlooking down the hill at Strathrusdale wood with Morangie Forest on the background, at the western side of Allt a'Choire Dhuibh Burn. This area is classified as native pinewood in the NWSS. Grid reference: NH 56393 80906.

5.8 The remaining conifer coupe within the OC, which is not classified, consists of polestage Scots pine mixed with semi-mature larch and some birch along the edges of the new forest road east of Abhainn Glac an T-Seilich Burn. These trees are of a similar age to the coupes classified as native pinewood described above. Refer to Plate 4.





<u>Plate 4-</u> On the edge of the pinewood, looking up into the area classified as Native Woodland, Grid reference: NH 56193 80555.

5.9 The site soils are predominantly peaty gleyed podzols<sup>4</sup>.

# 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 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.
- 6.2 Given the nature of the woodland with coupes of pinewood of average height of 10 m along with the local characteristic of topography and exposition, it is anticipated that the introduction of the OC will not result in future windblow to the adjoining woods.

<sup>&</sup>lt;sup>4</sup> Scottish Government's Scotland's soils website https://soils.environment.gov.scot



6.3 The woodland site affected by the Proposed Development has a 'Detailed Aspect Method of Scoring' (DAMS)<sup>5</sup> windblow hazard class score of 11, classified as low. The site presents mineral soils with shallow rooting being mostly cool and moist.

## 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".
- 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.
- 7.4The 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 impact of the Proposed Development on the overall viability and continuity of woodland management has been considered. The affected woodland forms part of a larger commercial conifer area within the Strathrusdale ownership. Although the proposed OC intersects the woodland north to south, it is not expected to compromise the implementation of forest operations or ongoing management. The OC follows central sections of the woodland, running alongside the minor watercourse Allt a' Choire Dhuibh, where existing infrastructure provides access to both sides of the OC at lower elevations. As such, no significant isolation of woodland compartments is anticipated, and the Proposed Development is not considered likely to materially affect the viability of current or future woodland management operations.

<sup>&</sup>lt;sup>5</sup> Detailed Aspect method of Scoring (DAMS) Ref. Forest Research, "Forest Gales software programme" and Forestry Commission Leaflet 85 "Windthrow Hazard Classification"

<sup>&</sup>lt;sup>6</sup> 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)



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, especially in broadleaved areas as part of the proposal. The Applicant will be using a process of 'managed resilience' which will seek to retain naturally regenerated 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 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.
- 8.3 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.
- 8.1 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.
- 8.2 Impacts of 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.
- 8.3 Impacts of stability within the remaining crop have been assessed and considered as reported on above.



# 9. Woodland Removal Impact

Table 9.1: Woodland Remova	I for Infrastructure		
Item	Type of Infrastructure	Woodland type	Area (ha)
Operational Corridor	Permanent	Conifer woodland	3.48
Access track corridor	Permanent	Conifer woodland	0.25
Table 9.2: Compensatory plan	nting		
Compensatory Planting Area	ea Conifer woodland		3.73
Table 9.3: Woodland Remova	I Impact of Infrastructure		
Item	Woodland type		Area (ha)
Total Loss of Woodland Area	Conifer woodland		3.73
Total Compensatory Planting Area off-site	Conifer woodland		3.73
Total Restocking/ Replanting Area on-site			0
Total Net Loss of Woodland Area			0

# 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.** 

