Scottish & Southern Electricity Networks

# Spittal to Loch Buidhe to Beauly 400 kV OHL Connection

# Environmental Impact Assessment

# Volume 5, Appendix 13.1 – M:

# Woodland Reports

# Cambusmore 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 Cambusmore is a privately owned estate situated approximately 13 km north west of the Dornoch village and within the Strath Carnaig glen. The nearest public road is the A9, as it passes by the Loch Fleet and is about 6 km away from the crossing of the Proposed Development (PD). Refer to **Figure 1: Woodland Impacted by the Proposed Development.**

3.2 The woodlands within this property are located at central grid reference NH 72167 98430, in the vicinity of Albahinn an t-Strath Charnaig burn and Allt na h-Innse Aonair Burn, east to Loch Buidhe. Towers, N270 to N282, are located within this ownership as shown on **Figure 1: Woodland Impacted by the Proposed Development**.

3.3 Access to the areas affected by the Proposed Development is via the minor Strath Carnoch Road, which runs south of the Allt a' Bhainne an t-Strath Charnaig from the A9 at Loch Fleet.

3.4 The woodland area in Cambusmore consists of two main blocks, both located near watercourses. The northern block is situated around the Allt na h-Innse Aonair Burn, while the southern woodland patch is near the Allt a' Bhainne an t-Strath Charnaig and the local minor road.

# 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 Overhead Line (OHL) applicable to the Cambusmore area 90 m north to Tower N270 to 70 m west of Tower N282. Both towers N270 and N282 are within this ownership.

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].

4.1.5 Within Cambusmore, a special arrangement feature has been implemented to facilitate the safe and efficient crossing of two overhead lines: the existing 132 kV double circuit line and the Proposed Development. This feature is designed to

[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).

manage the intersection of these lines while minimising operational and environmental impacts during construction and ongoing maintenance.

## 4.2 Access Track Route Design

4.2.1 The nearest major public road is the A9, reaching from the east of the estate. From the A9, a minor road known as the Strathcarnoch road crosses the OC in the vicinity of the woodland around Tower N276. Farm tracks are seen within the estate reaching several areas close to the Proposed Development. Sections of both permanent and temporary roads will be constructed, within and outside the OC. These roads 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 tracks seen in **Figure 1: Woodland Impacted by the Proposed Development**, are required to be built as part of the construction work scope, to service the Towers N270 to N282.

4.2.3 It is anticipated that the construction of these new access tracks will not impact woodland cover outside the OC. Refer to **Table 9.1** below.

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 roads 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.

4.2.6 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 woodlands within the Proposed Development area on Cambusmore Estate are divided into two separate blocks. Both consist of broadleaved woodland and are situated along the banks of two watercourses within the estate.

5.4 Cambusmore Estate is designated as a Site of Special Scientific Interest (SSSI) for its biological value and as a Special Protection Area (SPA). The SSSI designation relates to notable biological features present within the woodland, and shares with the SPA status the presence of habitat supporting species of European importance, particularly for breeding and foraging. Areas of native woodland and open ground encountered in Cambusmore also contribute to the overall habitat characteristics that underpin these designations. Refer to **Table 5.1.**

5.5 The Proposed Development primarily passes through semi-mature to mature broadleaved woodland, some of which hold woodland classifications. The topography is generally a gentle slope interspersed with small glens and steep burn banks. Elevation ranges between 80 m and 120 m above sea level, with orientation varying due to the presence of small micro-gulleys.

[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.

| Table 5.1: Woodland Designations | | | |
|---|---|---|---|
| **Item** | **Type of Impact** | **Woodland Designations** | **Area (ha)** |
| Operational corridor | Permanent | AWI- AWSNO (2a) | 0.60 |
| | | NWSS- Native woodland | 0.53 |
| Access track corridor | Permanent | NWSS- Native woodland | 0.04 |
| Equipotential Zone (EPZ) Pulling Positions | Temporary | AWI- AWSNO (2a) | 0.05 |
| | | NWSS- Native woodland | 0.22 |

5.6 As shown in the **Table 5.1** shown above, within the OC, 0.60 ha of woodland are designated as an Ancient Woodland Site of Semi-Natural Origin (AWSNO) (2a) under the Ancient Woodland Inventory (AWI). Refer to **Plates 1 and 2**. This woodland block is located south of the minor local road, on the southern side of the property within the OC. It consists mainly of pole-stage and semi-mature birch trees. South of the road, the woodland extends up a small bank, where tree density decreases as it reaches the plateau above. Tree sizes vary, with those near the roadside averaging around 3 m in height.

5.7 This woodland block is characterised by dense coppice regrowth of birch trees along the roadside bank, transitioning to a more open canopy on the flat plateau to the south of the designated woodland.

Plate 1- Ancient Woodland of Semi-Natural Origin (2a. 1860). Broadleaved woodland composed by birch trees of biological immaturity pole-stage, on the roadside banks. Grid ref: NH 72152 98375.

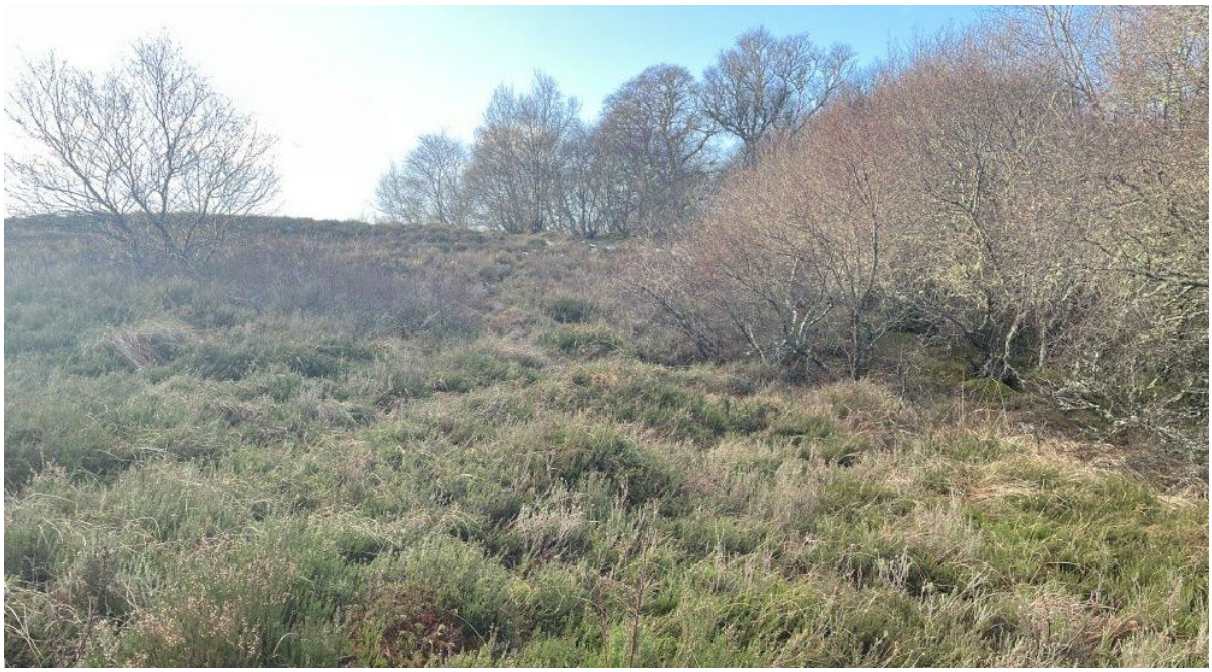

Plate 2- Ancient Woodland of Semi-Natural Origin (2a. 1860). Birch trees showing coppice regrowth on the flat plateau above the local road. Trees are more spaced out and slightly shorter, averaging 2 m in height. Understorey is thick heather and patches of bracken. Grid ref: NH 72138 98337.

5.8 Additionally, 0.53 ha of broadleaved woodland within the estate are classified as Native Woodland under the Native Woodland Survey of Scotland (NWSS). Of this area, 0.13 ha are designated as wet woodland, while the remainder is classified as upland birchwood. These woodlands are situated on both sides of the estate's main watercourses, north along the shore of Allt na-h-Innse Aonair and south along Abhainn na-t-Strath Chranaig Burn. Refer to **Plate 3**.

5.9 The Native Woodland, classified as wet woodland, contains slightly larger trees than those found on the roadside bank. This area is dominated by birch trees, with small elements of rowan and willow. The trees form a narrow strip along the watercourse and do not extend beyond the water's edge. On average, these trees reach a height of 5 m. Refer to **Plate 4.**

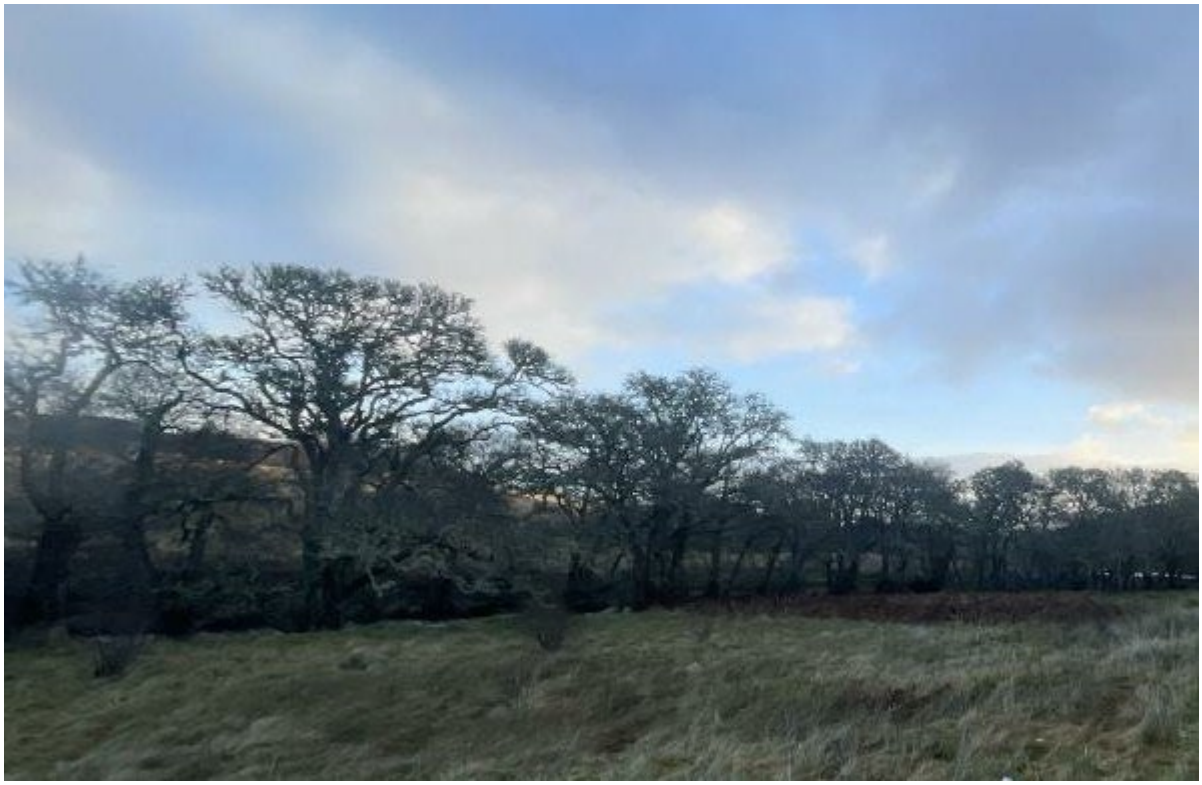

Plate 3- Native Woodland – wet woodland type. An open upper canopy dominated by birch trees along the Abhainn na-t-Strath Chranaig burn. No understorey development or natural regeneration observed. Grid reference: NH 72147 98461.

5.10 The Native Woodland classified as upland birchwood, situated along the edges of Allt na-h-Innse Aonair, consists primarily of semi-mature birch trees. These trees form a relatively closed upper canopy in a narrow, strip-like formation along the watercourse, with an average height of 6 m.

Plate 4- Photograph taken from the Strathcarnoch local road. Trees to the left of the road are classified as AWSNO, and trees to the right are classified as Native Woodland of wet woodland type. Grid reference taken from: NH 72114 98417.

5.11 The site soils are predominantly Humus-iron podzols with alluvial soils.[4]

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

# 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 these broadleaved woodlands present on this site along with the local soils, topography and aspect, it is anticipated that the introduction of the OC will not 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] windthrow hazard class score of 11, classified as low. The site presents mineral soils with shallow rooting that are 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".[6]

7.2 While the OC will result in the sterilisation of some woodland areas, this is not expected to impact forest restructuring. This is due to the fact that native woodlands are generally not subject to commercial management. Opportunities for mitigation and woodland enhancement are outlined in **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.

[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)

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 impact of the Proposed Development on the overall viability and continuity of woodland management has been considered. The OC crosses woodland primarily located along riparian areas, particularly adjacent to the Abhainn na t-Strath Chranaig burn, where there is currently no established access infrastructure. Despite this, woodland management activities in the area are minimal and not expected to intensify in the near future. As such, the Proposed Development is not anticipated to compromise the implementation of future forest operations or ongoing management and it is not considered to materially affect the viability of the existing 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 proposals. Refer to **Section 13.5.3** Good practice and **Section 13.7.1** Mitigation within **Volume 2, Chapter 13: Forestry**. This affects all the woodlands within Cambusmore, but specifically within the AWSNO classification. 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 The permanent loss of 1.18 ha of native broadleaved woodland within Cambusmore, although impacted as designated woodland part of the SSSI and SPA, is not considered significant in terms of overall habitat availability. This area accounts for less than 0.5% of the total native woodland within the designated site and represents only a small component of the broader habitat mosaic that

supports key nesting and foraging species associated with the Strath Carnaig SSSI and SPA designations.

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 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.

8.6 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.

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

8.8 In terms of potential fragmentation, particularly concerning designated woodland areas, the removal of trees within these zones may lead to the separation of adjacent designated habitats. To mitigate this risk, it is recommended that tree removal within designated areas be avoided wherever possible. Where removal is unavoidable, positive mitigation should include the establishment through encouraging natural regeneration of low-growing native shrubs to maintain habitat continuity. With these measures in place, no significant fragmentation or isolation of woodland units is anticipated as a result of the Proposed Development.

# 9. Woodland Removal Impact

**Table 9.1: Woodland Removal for Infrastructure**

| Item | Type of Infrastructure | Woodland type | Area (ha) |
|---|---|---|---|
| Operational corridor | Permanent | Broadleaved woodland | 1.30 |
| Access Track corridor | Permanent | Broadleaved woodland | 0.04 |

| | | | |
|---|---|---|---|
| Special Arrangements | Permanent | Broadleaved woodland | 0.16 |
| Equipotential Zone (EPZ) Pulling Positions | Temporary | Broadleaved woodland | 0.27 |

| Table 9.2: Compensatory planting | | |
|---|---|---|
| Compensatory Planting Area | Broadleaved woodland | 1.77 |

| Table 9.3: Woodland Removal Impact of Infrastructure | | | |
|---|---|---|---|
| **Item** | **Woodland type** | | **Area (ha)** |
| Total Removal of Woodland Area | Broadleaved woodland | | 1.77 |
| Total Compensatory Planting Area off-site | Broadleaved woodland | | 1.50 |
| Total Restocking/ Replanting Area on-site | Broadleaved woodland | | 0.27 |
| **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.**

Scottish & Southern Electricity Networks

TRANSMISSION

A

B

C

D

E

Scale 1:350,000

N269

N270

N271

N272

N273

N274

N275

N276

N277

N278

N279

N280

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
- HLP/EPZs buffer
- Special arrangements buffer 90m
- 20m Access Corridor
- Access Tracks- New Stone Perm
- Access Tracks- New Stone Temp
- Broadleaved woodland- Operational Corridor 90m
- NWSS- Native woodland



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

Ref No: 28-06-2025