

**Spittal to Loch Buidhe to Beauly 400
kV OHL Connection
Environmental Impact Assessment
Volume 5, Appendix 13.1 – G:
Woodland Reports
Kildonan Estate**

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 Beaully 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 Kildonan Estate is privately owned and situated approximately 13 km south of Helmsdale village. Within this estate, the woodlands affected by the Proposed Development are accessible via a minor unclassified road off the A9 at Lothbeg. This minor road goes along the Glen Loth to the Strath of Kildonan.
- 3.2 These woodlands are primarily located on open hillside, at the western side of the road parallel to the Loth Burn, which acts as a boundary between properties, Kildonan Estate and its neighbour. The areas affected by the Proposed Development face southeast, positioned on the gentle slopes of the glen.

- 3.3 There is currently a hill access track throughout the open ground and the woodland; however, this does not provide direct access to all areas within the Proposed Development. New access tracks will need to be constructed, and existing tracks will require upgrades to facilitate the construction and operational phases of the project. 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 Kildonan Estate extend from 252 m south to Tower N183 to over 120 m south of Tower N188.
- 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 strategies¹.

4.2 Access Track Route Design

- 4.2.1 There is only one hill track reaching some areas within the Proposed Development, therefore, new sections of both permanent and temporary roads will be constructed within and 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**

¹As 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).

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 N183 to N188.
- 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 slightly 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 a combination of newly planted broadleaved woodland. 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 These roads 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.
- 4.2.7 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}:

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

5.3 The woodlands affected by the Proposed Development within Kildonan Estate are situated on a gentle slope at the foothills of Druim Dearg. These woodlands are located at an average elevation of 160 m above sea level.

5.4 The route primarily passes through newly planted broadleaved woodlands, with some conifer presence within the OC.

5.5 No woodland classifications are identified within this property.

5.6 These new plantations consist of a mix of broadleaved and coniferous trees, with broadleaved species dominating the areas affected by the Proposed Development. Birch is the primary species, accompanied by elements of rowan and alder. Among these broadleaved trees, Scots pine is the main conifer component observed within the OC. Refer to **Plate 1**.

5.7 Trees have an average height of 0.5 m, showing signs of recent planting, likely within the past one to two years.

5.8 Evidence of ground preparation techniques undertaken is still visible on-site.

5.9 A newly erected ring fence is in place to protect the trees from deer browsing.

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- Newly planted mixed woodland consisting of both conifer and broadleaved species. Birch trees dominate the area, with Scots pine as the primary conifer species. Trees average less than 1 m in height and have been planted at lower densities following native woodland practices.

Photograph taken from the edge of Glen Loth to Kildonan public road. Grid reference: NC 93430 13504.

5.10 The site soils are predominantly Brown earths.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

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

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 some of the woodlands, very young broadleaved and conifer woodlands, along with the local characteristics of 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 10, classified as low. The site presents mineral soils with shallow rooting that are mostly cool and moist.

6.4 All woodlands affected by the Proposed Development are believed to remain wind-stable. These rather open coupes have been assessed and are therefore considered stable in the current conditions.

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.

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

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)

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 woodland comprises a recently established native broadleaved planting scheme. As it is still in the early stages of establishment, some management input will be required in the coming years to support the successful development of the native woodland. The introduction of new access tracks through the site will facilitate these operations by improving accessibility. This enhanced infrastructure will also support future forestry activities as the woodland matures. Overall, management requirements are considered low, and as such, the presence of the OHL is not expected to have any significant impact on woodland management.

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 proposal. Refer to **Section 13.5.3** Good practice and **Section 13.7.1** Mitigation within **Volume 2, Chapter 13: Forestry**. 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.

8.4 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**.

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	Broadleaved woodland	8.41
Access track corridor	Permanent	Broadleaved woodland	0.57
Equipotential Zone (EPZ) Pulling Positions	Temporary	Broadleaved woodland	0.12

Table 9.2: Compensatory planting

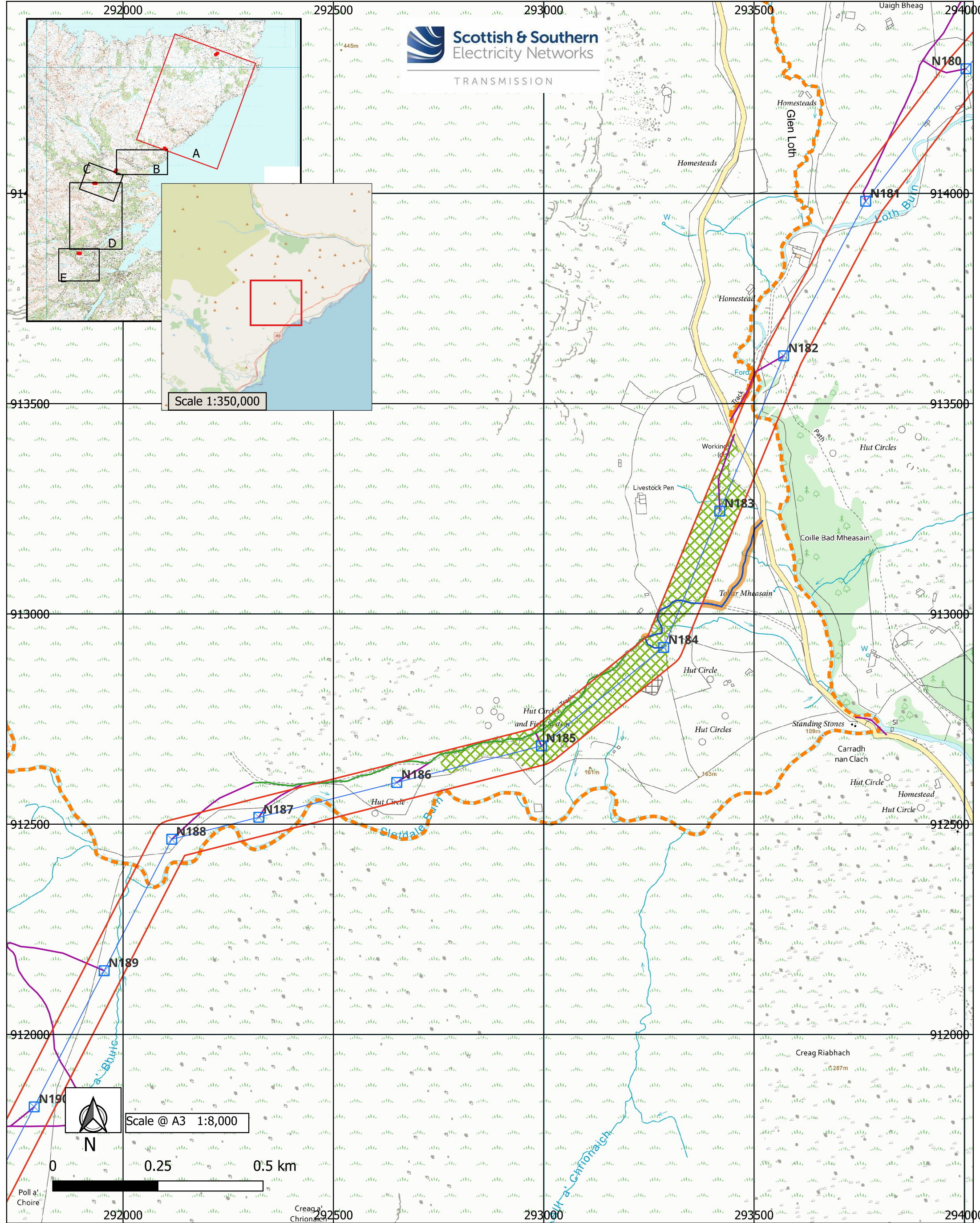
Compensatory Planting Area		9.10
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Table 9.3: Woodland Removal Impact of Infrastructure

Item	Woodland type	
Total Loss of Woodland Area	Broadleaved woodland	9.10
Total Compensatory Planting Area off-site	Broadleaved woodland	8.98
Total Restocking/ Replanting Area on-site	Broadleaved woodland	0.12
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**.



Legend

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

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

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