Scottish & Southern Electricity Networks

Spittal to Loch Buidhe to Beauly 400 kV OHL Connection

Environmental Impact Assessment

Volume 5, Appendix 13.1 – AB:

Woodland Reports

Torrachilty 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 Torrachilty Woodland is managed and owned by Forestry and Land Scotland (FLS). It is an extensive commercial forest located at the foothills of the Wyvis mountain range, approximately 2.5 km from Strathpeffer. The nearest major road is the A834 to the east and A835 to the south.

3.2 The property is located at central Grid ref NH 47517 60565, close to the Peffery burn.

3.3 The main access to Torrachilty Woodland is via the FLS car park off the A835, located at the western end of Contin village, southwest of the Proposed Development. To

facilitate description, the woodland is divided into two main areas based on their location and divided by the existing railway, 20 m north of Peffery burn.

3.4 The site benefits from an extensive and well-maintained network of tracks, providing access across both sides of the railway and crossing most of the major watercourses. This infrastructure supports the commercial forestry operations within the woodland. Refer to **Figure 1: Woodland Impacted by the Proposed Development** for further details.

4. Development Requirements

4.1 400 kV Operational Corridor

4.2.4 With reference to **Figure 1: Woodland Impacted by the Proposed Development,** the OHL sections relevant to Torrachilty forest extend from over 160 m north of Tower S140 to just south of Tower S158.

4.2.5 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.

4.2.6 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.

4.2.7 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 infrastructure network within the property provides access to various areas of the woodlands and is in proximity to the Proposed Development features; however, new sections of both temporary and permanent access tracks will be constructed within and outside the OC.

4.2.2 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.

4.2.3 New access tracks, also detailed in **Figure 1: Woodland Impacted by the Proposed Development**, will be built to service Towers S140 to S158.

4.2.4 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.

4.2.5 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, mainly, depending on the location of the access tracks. Refer to **Table 9.1** below.

4.2.6 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.

4.2.7 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.

4.2.8 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 woodland is primarily composed of conifer species and varies in elevation from 150 m to over 300 m above sea level.

5.4 The railway line runs through the woodland, dividing it into two distinct landscapes with differing aspects and characteristics. Additionally, several major watercourses traverse the site.

5.5 The woodlands within this ownership are located on hills and valley slopes with strong inclines. While the terrain is hilly and undulating, the predominant aspects are north- and south-facing. Within this landscape, the Proposed Development primarily traverses conifer plantations, interspersed with small coupes of broadleaf plantations and limited areas of semi-natural broadleaved woodland.

5.6 The existing woodlands comprise a mix of age classes and species, primarily consisting of conifer plantations dominated by spruce and lodgepole pine. Scots pine is dominant in the Native woodland areas, alongside established birch and other broadleaved species, particularly near the Ancient Woodland Site. This dynamic ecosystem is characterised by a blend of commercial forestry and natural regeneration.

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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.

5.7 Some of these coniferous plantations are classified as Native Woodlands, as identified in the Native Woodland Survey of Scotland (NWSS). Additionally, an Ancient Woodland Site of Semi-Natural Origin (AWSNO) 2a is designated near the Peffery burn, south of the railway. Refer to **Table 5.1**.

5.8 While most Native Woodlands within the site are classified as an unidentifiable type, the southeasternmost section, where Torrachilty borders Kinloch Wood within the OC, is specifically identified as native pinewood.

Table 5.1: Woodland Designations

Item	Type of Infrastructure	Woodland Designations	Area (ha)
Operational corridor	Permanent	AWI- AWSNO 2a	0.85
		NWSS- Native woodland	2.71
Access track corridor	Permanent	AWI- AWSNO 2a	0.53
Management Felling*	Temporary	NWSS- Native woodland	0.91

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

5.9 The AWSNO (2a) classification within the OC covers 0.85 ha of predominantly birch woodland in a wet area that feeds into the Peffery Burn. It consists of scattered, mostly pole-stage immature birch trees in relatively good condition, with some regenerated rowan, hazel, and willow in the understorey. The woodland has a rather open canopy, with birch trees sparsely distributed across the site. Occasional spruce regeneration is present, likely from seedlings originating in the adjacent commercial conifer woodland. The trees vary in height (from 3 m to 8 m) and age, with some reaching a biologically semi-mature stage, while others remain in the early stages of growth. Refer to **Plates 1 and 2**.

Plate 1- AWSNO-designated woodland composed primarily of young and regenerating birch trees, with an average height of 6 m. Grid reference: NH 47508 60363.

Plate 2- AWSNO-classified woodland dominated by birch trees of varying age classes near Peffery Burn. Deadwood, broken limbs, and signs of decay are present throughout this Ancient Woodland. Grid reference: NH 47407 60330.

5.10 The Native Woodlands encountered throughout the OC are situated south of Peffery Burn and primarily consist of a conifer mix, including Scots pine, lodgepole pine, and Sitka spruce as the dominant species. Scattered semi-mature larch with pole-stage birch regeneration also present in the understorey. Refer to **Plate 3.**

5.11 Within the southeasternmost Native Pinewood coupe of the OC, the woodland consists of commercially planted Scots pine dating back to 1955, now reaching financial maturity. Refer to **Plate 4.**

Plate 3- Native Woodland areas within the OC feature a mix of conifer species, including spruce, lodgepole pine, and larch, with Scots pine being the predominant species in intimate association. Grid ref: NH 47384 60151.

Plate 4- Native Woodland classified as pinewood in the NWSS, located in the southernmost compartment of Torrachilty within the OC. This semi-mature Scots pine woodland has been previously thinned, with trees averaging 18 m in height. Scattered regeneration of spruce and fir saplings is present throughout. Grid reference: NH 46382 57550

5.12 Rest of the woodlands features differences between the southern side of the forest, southern to Peffery burn and north to this.

5.13 The northern side of the Proposed Development features predominantly younger conifer plantations, generally 1- 1.5 m tall, primarily established in 2016, 2018, and 2022. These plantations mirror the species composition found in the more established woodlands to the south, consisting mainly of commercial spruce and lodgepole pine, with minor inclusions of Scots pine. In the areas near the railway and the Peffery burn, native broadleaf species have been introduced, including birch, willow, and alder. This broadleaved influence extends north of the railway into recently restocked conifer sites. Refer to **Plates 5 and 6.**

Plate 5- Restructured commercial conifer with strong influence of birch closer to the AWSNO on the northern side of the railway. Grid ref: NH 47494 60478.

Plate 6- Younger plantations are located on the northern side of the OC, consisting of a 7-year-old mix of spruce and lodgepole pine, along with some regenerated birch interspersed throughout. Grid reference: NH 48946 61716.

5.14 The southern areas of the Proposed Development are characterised by a diverse mix of species and age classes, with a strong presence of natural regeneration throughout. Refer to **Plate 7**. The dominant species are Sitka spruce and lodgepole pine, occasionally interspersed with clusters of larch or birch. These woodlands range from pole stage to semi-mature, with some areas exhibiting mature trees and patches of checked growth, particularly in the poorest and wettest soils. Refer to **Plate 8**. Tree heights vary, with spruce reaching between 14 to 20 m, while other conifer species are slightly shorter. Evidence of windblow is present, particularly in areas containing entire coupes of financially mature commercial conifer plantations.

Plate 7- Mixed species and age classes within a young coupe located on the southern side of the OC. Grid reference: NH 46828 59286.

Plate 8- Semi-mature woodlands on the southern side of the OC, featuring mixed conifer species, predominantly dominated by lodgepole pine and spruce. Grid reference: NH 47237 59890.

5.15 The site presents soils of the composition of 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 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 nature of some of the woodlands- those of semi-mature and mature conifer woodlands of averaging height of 18 m with a mixture of both thinned and unthinned stands and the local characteristic of soils, topography and aspect, it is anticipated that the introduction of the OC will result in future windblow to the adjoining woods. 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 minimise 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.

[4] Scottish Government's Scotland's soils website https://soils.environment.gov.scot
[5] Detailed Aspect method of Scoring (DAMS) Ref. Forest Research, "Forest Gales software programme" and Forestry Commission Leaflet 85 "Windthrow Hazard Classification"

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 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 woodland setting comprising predominantly commercial conifer blocks. Although the proposed OC intersects several of these woodland compartments, it is not expected to compromise the implementation of forest operations or ongoing management. The OC traverses central sections of the woodland, where established access infrastructure is present on both sides, thereby maintaining operational accessibility. Consequently, no significant fragmentation or isolation of woodland units is anticipated, and the Proposed Development is not considered to materially affect the viability of the current or future 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. Refer to **Section 13.5.3** Good practice and **Section 13.7.1** Mitigation

[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)

within **Volume 2, Chapter 13: Forestry**. This includes effects to the riparian broadleaved trees within the AWI on the bank of the Peffery Burn. 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**. 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	Broadleaved woodland	4.48
		Conifer woodland	42.73
Access track corridor	Permanent	Conifer woodland	5.83
		Broadleaved woodland	0.53
	Temporary	Conifer woodland	2.17
Equipotential Zone (EPZ) Pulling Positions	Temporary	Conifer woodland	1.05

Table 9.2: Compensatory planting		
Compensatory Planting Area		56.78

Table 9.3: Woodland Removal Impact of Infrastructure		
Item	**Woodland type**	**Area (ha)**
Total Loss of Woodland Area	Broadleaved woodland	5.01
	Conifer woodland	51.78
Total Compensatory Planting Area off-site	Broadleaved woodland	5.01
	Conifer woodland	48.56
Total Restocking/ Replanting Area on-site	Conifer woodland	3.22
Total Net Loss of Woodland Area		**0**

Table 9.4: Woodland Removal for Management Felling			
Item		**Woodland type**	**Area (ha)**
Management Felling	Temporary	Conifer woodland	10.93
Replanting / Restocking	Adhere to Forestry and Land Management (Scotland) Act 2018.	Conifer woodland	10.93
Net Loss of Woodland Area			0
Note: Felling approval is via 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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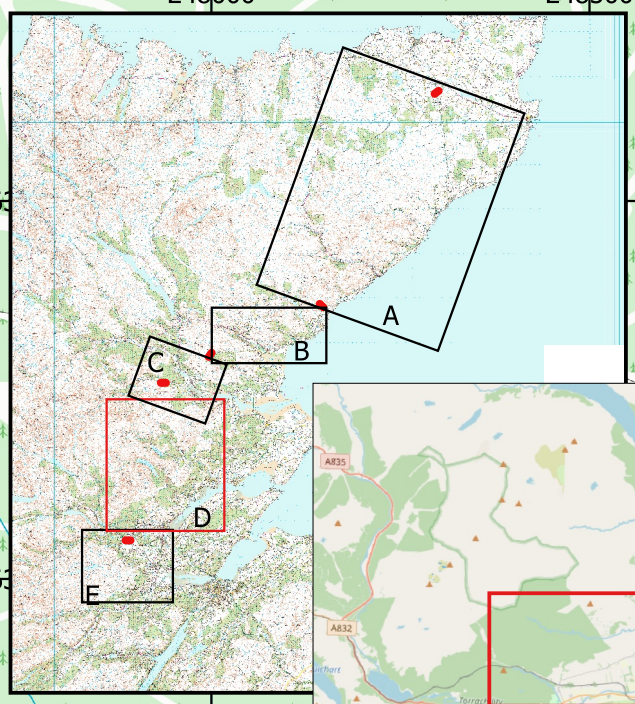
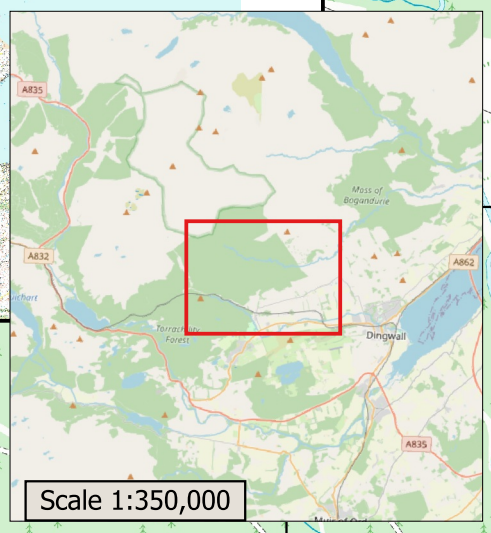
TRANSMISSION





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Cnoc a' Bhuiridh 390m
Allt Bad na h-Achaise
S140 S141 S142 S143 S144 S145 S146 S147 S148 S149 S150 S151
Allt Leth-allt 299m
Abhainn Sgitheach
Cnoc na Bainne
Cnoc na h-Uamha
Druim an t-Sluichd
Bog nam B
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Druim a' Chuilein 357m 347m
Allt an Ruamhair
Druim Dubhran
Cairn
Hut Circle Enclosure
Burnt Mound
Sheep Wash
Strathcarrick House
New House
Tigh na Otraich
Heights of Keppoch
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313m
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Legend

- Landownership boundary/parcel
- Operational Corridor
- 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
- Management Felling
- HLP/EPZs buffer

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Figure 1. Woodland Impacted by the Proposed Development
Section D-Torrachilty
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TRANSMISSION

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S163

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

Legend

- Landownership boundary/parcel
- Operational Corridor
- Central line Operational Corridor
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- Broadleaved woodland- Operational Corridor 90m
- Management Felling
- HLP/EPZs buffer

Woodland report
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Spittal- Loch Buidhe - Beauly 400kV Connection
Figure 1. Woodland Impacted by the Proposed Development
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