Scottish & Southern Electricity Networks

Spittal to Loch Buidhe to Beauly 400 kV OHL Connection

Environmental Impact Assessment

Volume 5, Appendix 13.1 – N: Woodland Reports

Achormlarie Wood

July 2025

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 Achormlarie wood is publicly owned and managed by Forest Land Scotland. This woodland is situated south of Loch Buidhe, approximately 7.5 km northeast of Bonar Bridge, with the nearest public minor road being the Strathcarnoch road, where it meets the A949 at Bonar Bridge.

3.2 Within the local setting, the woodlands are primarily situated on the northern foothills of Beinn Domhnaill at a central grid reference point NH 67438 97850. To the north of the woodland lies a minor local road leading south to Loch Buidhe. The woodlands affected by the Proposed Development are located on gentle slopes formed by undulating hills surrounding the main Beinn Domhnaill hill from 170 m to 250 m above sea level.

3.3 Access to the site is from the minor public road south of Loch Buidhe, where an upgraded section of this road leads to the currently operating sub-station in the northwest corner of the woodland. The site features forestry access tracks throughout the woodlands and reaches some of the western side of the Proposed Development. Some of these tracks might need further upgrading to support the construction and operational phases of the project. Refer to **Figure 1: Woodland Impacted by the Proposed Development**.

3.4 Achormlarie wood is affected by the two separate lines of the Proposed Development, the Southern Line- Section C of the Operational Corridor reaching the northwest corner of the woodland and the Northern Line -Section B of the Operational Corridor.

3.5 Achormlarie Wood is included in the planning application for the New Loch Buidhe Area 400 kV (Carnaig) Substation (Ref: 24/05062/FUL), which is available through the Highland Council's planning portal. Further details in **Section 5. Woodland Characteristics**.

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 Achormlarie wood affect Tower S1 on the Section C (Southern Line) and extend from 260 m east to Tower N283 to Tower N297 and the Gantry locations on Section B (Northern Line).

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].

4.2 Access Track Route Design

4.2.1 An existing infrastructure network within the property provides access to some areas of the woodlands in proximity to the Proposed Development features; however, new sections of both temporary and permanent 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 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 N283 to N297 on Section B-Northern Line and to Tower S1 at the C-Southern Line.

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 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 commercial coniferous plantations, depending on the specific location of the roads. 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.

[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).

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 this ownership are situated on gentle slopes, on the foothill of local Beinn Domhnaill. The general aspect is northwest-facing. With several watercourses leading to Loch Buidhe and its tributary Abhainn an t-Srath Charnaig burn.

5.4 Within this landscape, the Proposed Development primarily passes through conifer plantations for commercial purposes.

5.5 The route primarily passes through coniferous plantations of a mixed species. Those are mainly dominated by Lodgepole pine and spruce mix. Refer to **Plates 1 and 2**.

5.6 All wooded areas affected by the Proposed Development in this property are coniferous woodlands with no broadleaved elements.

5.7 While the woodlands directly affected by the Proposed Development are not subject to any woodland classification, it is important to note that the wider Achormlarie Wood 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

[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.

woodland, and share with the SPA status the presence of habitat supporting species of European importance, particularly for breeding and foraging. Areas of planted commercial conifer also contribute to the overall habitat characteristics that underpin these designations.

5.8 Some coupes within the commercial woodlands appear to have been clear-felled a few years ago and have not been restocked. Additionally, a recently clear-felled site was observed as part of the ongoing major harvesting operations taking place at the time of the woodland visit. Refer to **Plate 3**.

5.9 The general aspect of the woodlands is of semi-mature mix conifer species dominated by Lodgepole pine and spruce planted between 1984 and 1988, the oldest coupes situated on the western side of Achormlarie.

5.10 The trees present an average height of 23 m, though growth varies across the area. Generally, the eastern coupes within the OC exhibit shorter trees and poorer growth. These commercial conifer plantations have not been previously thinned and are now reaching maturity, with management prescriptions recommending clear-felling within the next 5 to 10 years as part of the Long-Term Forest Plan.

Plate 1- Southern Line- Section C- Commercial conifer plantation reaching financial maturity, originally planted in 1984-1985. Trees present an average height of 23 m and a closed canopy, leaving an undeveloped understorey. Grid reference: NH 65142 97394.

Plate 2- Southern Line- Section C. Edge of conifer stand of Lodgepole pine and spruce reaching 19 m in height. Grid reference: NH 64795 97540.

Plate 3- Clear-felled site from a few years ago looking into a standing conifer plantation on the Northern Line -Section B. This site has not been restocked. Grid reference: NH 66376 97647.

5.11 Within Section B (Northern Line), there are some patches of both historic and recent windblow within the OC, with Lodgepole pine tops broken and uprooted spruce trees. Refer to **Plates 4 and 5**.

Plate 4- Patches of windblow within the conifer coupes mix of Lodgepole pine and spruce. Uprooted trees. Grid reference: NH 66477 97943.

Plate 5- Patch of windblow (recent) within the conifer stand with broken tops of Lodgepole pine. Grid reference: NH 67071 97975.

5.12 The eastern coniferous blocks present a poorer establishment rate with some shorter and lower yield trees throughout this area. Trees here are of the same composition of Lodgepole pine and spruce, averaging 18 m in height. **Refer to Plate 6**.

Plate 6- Semi-mature trees of conifer species mix from Lodgepole pine and spruce reaching 18 m in the eastern coupes of Achormlarie wood. Grid reference: NH 69558 98241.

5.13 Among the conifer coupes on the northern edge of the woodland, where the proposed OC is planned, the areas are separated by watercourses and interspersed with designated open ground. In these open areas, natural regeneration of both spruce and pine is evident, with some regenerated trees reaching heights of up to 2 m. **Refer to Plate 7**.

Plate 7- Edge of the conifer stand surrounded by open ground where regenerated trees is encountered. Grid reference: NH 67501 98003.

5.14 Towards the eastern areas of Achormlarie wood affected by the Proposed Development, a few open ground areas have been cultivated and planted in recent years. They present the same species mix as the existing throughout the woodland, Lodgepole pine and spruce. Tree establishment success varies across these areas, with some sections performing better than others. These coupes were not part of the original planting when the currently semi-mature trees were first established between 1984 and 1988.

5.15 The woodland is also affected by a second planning application related to the development of the proposed Loch Buidhe Substation (Ref: 24/05062/FUL). The OC overlaps with the Loch Buidhe (Carnaig) Substation proposal over approximately 4.75 ha of commercial conifer woodland. This overlap occurs at both ends of the line: at the northern end, between Tower N296 and the gantry, and at the southern end, near the location of Tower S1.

5.16 In addition to the above, a further 31.39 ha of commercial conifer plantation, sharing similar characteristics to those within the OC, is proposed to be felled as part of woodland management operations. These felling operations are associated with both the Proposed Development and the Loch Buidhe (Carnaig) Substation; refer to **Table 9.4**.

5.17 The site soils are predominantly peaty gleyed podzols.[4]

6. Windthrow 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 pole immature and semi-mature conifer woodlands of an average height of 17 m with unthinned stands 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. Refer to **Table 9.1.**

[4] 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)[5] windthrow hazard class score of 16, classified as moderately exposed to exposed. The site presents mineral soils with shallow rooting that 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 rather open coupes have been assessed and are therefore considered stable in the current conditions.

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.

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.

[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 affected woodland forms part of a larger commercial conifer plantation, which is currently managed for forestry purposes. The proposed OC intersects several woodland compartments, primarily along the woodland edges and in the northwest corner, thereby avoiding the majority of the commercial woodland located south of Achormlarie. As such, the development is not expected to compromise forest operations or ongoing management activities.

7.6 Where the OC passes through sections of the woodland with established access infrastructure existing on both sides, this ensures continued operational accessibility. As a result, no significant fragmentation or isolation of woodland units is anticipated, and the Proposed Development is not expected to materially impact the viability of current or future woodland management practices.

7.7 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 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 Considering the designated status of Achormlarie Woodland area as both a SSSI and SPA, it is important to contextualise the scale of woodland affected. Achormlarie extends over approximately 1,350 ha of commercial conifer plantation. The proposed permanent removal of 47.30 ha of conifer woodland

represents only 3.5% of the total woodland area. As such, this loss is not considered a significant impact in terms of habitat availability, particularly given that commercial conifer plantation constitutes just one component of the broader habitat mosaic that supports key nesting and foraging species associated with Strath Carnaig SSSI and SPA designation.

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.

9 Woodland Removal Impact

Table 9.1: Woodland Removal for Infrastructure

Item	Type of Infrastructure	Woodland type	Area (ha)
Operational corridor	Permanent	Felled (Conifer woodland)	12.62
		Conifer woodland	33.35
Access track corridor and Equipotential Zone (EPZ) Pulling Positions	Permanent access track corridor	Felled (Conifer woodland)	0.93
		Conifer woodland	0.38
	Temporary access track corridor and EPZ Pulling Positions	Felled (Conifer woodland)	1.26
	Temporary access track corridor and	Conifer woodland	5.89

	EPZ Pulling Positions		

Table 9.2: Compensatory planting		
Compensatory Planting Area	Conifer woodland	54.43

Table 9.3: Woodland Removal Impact of Infrastructure		
Item	**Woodland type**	**Area (ha)**
Total Loss of Woodland Area	Conifer woodland	54.43
Total Compensatory Planting Area off-site	Conifer woodland	47.28
Total Restocking/ Replanting Area on-site	Conifer woodland	7.15
Total Net Loss of Woodland Area		**0**

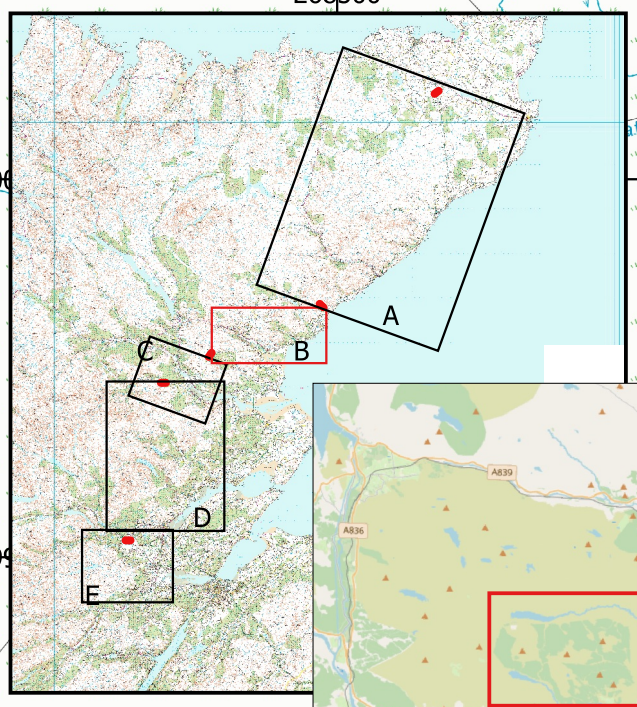
Table 9.4: Woodland Removal for Management Felling			
Item	**Type of impact**	**Woodland type**	**Area (ha)**
Management Felling	Temporary	Conifer woodland	58.53
Replanting / Restocking	Adhere to Forestry and Land Management (Scotland) Act 2018.	Conifer woodland	58.53
Net Loss of Woodland Area			0
Note: Felling approval is via Scottish Forestry Felling Licence Application process or Long-Term Forest Plan application or amendments process.			

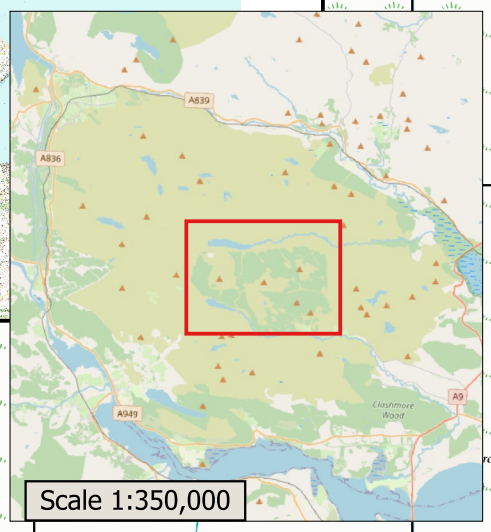
10. Compensatory Planting

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.**

Scottish & Southern Electricity Networks

TRANSMISSION





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900000 899500 899000 898500 898000 897500 897000

Allt Lochan Iain Bhuidhe
Strath Tollaidh
Allt a' Chraig
Hut Circle
Daileag an Loin
Meall Clais nan Each
Hut Circles
FB
Kiln
Broch
Creag Caolsaidh
Kiln
An Saoltadh
Srath Carnaig
Abhainn an t-Stratha Chàrnaig
Brae Cottage
Track
Leathad a' Chaorainn
Allt Loch-na-Feannaig
Loch na Feannaig
Meall a' Chaorainn
Maolanaidh Beag
Lòn Ghuibhais

N280 N281 N282 N283 N284 N285 N286 N287 N288

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
- 20m Access Corridor
- Management Felling
- Access Tracks- New Stone Perm
- Access Tracks- New Stone Temp
- Conifer woodland- Operational Corridor 90m

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

A

B

C

D

E

Scale 1:350,000

Loch Buidhe

N287

N288

N289

N290

N291

N292

N293

N294

N295

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
- Management Felling
- Conifer woodland- Operational Corridor 90m
- Felled - Operational Corridor 90m
- 20m Access Corridor
- Access Tracks- Existing Upgrade
- Access Tracks- New Stone Perm
- Access Tracks- New Stone Temp

Woodland report
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Figure 1. Woodland Impacted by the Proposed Development
Section B-Achormlarie Wood
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Scottish & Southern Electricity Networks
TRANSMISSION

A
B
C
D
E

Scale 1:350,000

Loch Buidhe

S1
S2
S3
N291
N292
N293
N294
N295
N296
N297

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
- 20m Access Corridor
- Access Tracks- New Stone Temp
- Access Tracks- Existing Upgrade
- Access Tracks- New Stone Perm
- Conifer woodland- Operational Corridor 90m
- Felled - Operational Corridor 90m
- HLP/EPZs buffer

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