

Spittal to Loch Buidhe to Beauly 400 kV OHL Connection

Environmental Impact Assessment

Volume 5, Appendix 13.1 – AD:

Woodland Reports

Corriehallie, Cornhill and Fairburn Woodlands

July 2025





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1. Introduction

- 1.1 Scottish and Southern Electricity Networks (SSEN) Transmission, hereafter referred to as 'the Applicant', owns, operates, develops and maintains the high voltage electricity transmission system in the north of Scotland and the Scottish islands. Due to the growth in renewable electricity generation in the north and north-east of Scotland, upgrade of the transmission network is required to provide the necessary increase in transmission capacity. The Applicant is applying for consent under Section 37 of the Electricity Act 1989 to construct and operate a new double circuit 400 (kilovolt) kV overhead line (OHL).
- 1.2 This report provides an assessment of woodland impact related to the Spittal to Loch Buidhe to Beauly 400 kV OHL Connection project (the 'Proposed Development'). The report details the woodland area affected by the Operational Corridor (OC), new access tracks (permanent), and additional felling required due to windblow risk within individual ownerships. It also includes mitigation considerations and compensatory planting recommendations.

2. Purpose of this Woodland Report

- 2.1 As part of the Environmental Impact Assessment (EIA) process, it was identified that construction of the OHL and associated access tracks would cross a number of woodland areas within both public and private landholdings. The landholding property boundaries are identified in Figure 1: Woodland Impacted by the Proposed Development.
- 2.2 This document provides an assessment of the woodland areas that are affected by the Proposed Development, including the requirement for woodland removal and management recommendations to mitigate the impact of the woodland removal.
- 2.3 Field surveys of the woodland areas have been undertaken and have been used to determine the various woodland characteristics to identify the woodland removal required and recommended. This document also sets out the area, in hectares (ha), of compensatory planting required to ensure no net loss of woodland is achieved.

3. Woodland Property

- 3.1 Corriehallie, Fairburn, and Cornhill properties are part of the same ownership, covering extensive areas of woodland and moorland. These woodlands are situated approximately 5 km west of Muir of Ord, with the nearest major public road being the A832, accessible via a minor road leading to Fairburn House/Hotel.
- 3.2 These woodlands are located between two main watercourses that define the property boundaries—River Conon to the north and Allt Goibhre Burn to the south. Running through the middle of these properties, the River Orrin creates a clear distinction between two separate wooded landscapes. South of the River Orrin, the land is described locally by its prominent hills, including Cornhill and, Bridgepark area



on the flat lowlands, which lie within the Corriehallie forest area. To the north of the River Orrin, the forest and hills are known as Muirton.

3.1 The site features an extensive and upgraded network of tracks spanning the entire property, providing access to the moorland and connecting to previously constructed hydro and wind farm schemes. 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 OHL sections relevant to Cornhill, Fairburn and Corriehallie extend from Tower S178 to south of Tower S197.
- 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.
- 4.1.5 Within Fairburn, Corriehallie and Cornhill, 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 manage the intersection of these lines while minimising operational and environmental impacts during construction and ongoing maintenance.

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).



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 access tracks 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 S178 to S197.
- 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 and broadleaved woodlands, 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 categories² ³:
 - 1. Native woodland
 - 2. Nearly-native woodland
 - 3. Open land habitat
 - 4. Plantations on Ancient Woodland Sites (PAWS)
 - 5.3 The route primarily passes through coniferous plantations classified as Long-Established Woodland of Plantation Origin (LEPO) (2b 1860). South of Tower S197 and north of Allt Goibhre, the Proposed Development intersects an Ancient Woodland Site of Semi-Natural Origin (AWSNO) (2a-1860) along the riparian bank of the Allt Goibhre burn LEPO and AWSNO classifications fall under the Ancient Woodland Inventory (AWI), while Native Woodlands are identified through the Native Woodland Survey of Scotland (NWSS). Refer to **Table 5.1**.
 - 5.4 The woodlands within this ownership are situated on gentle slopes, transitioning into undulating lowlands, particularly around Bridgepark, and then into steeper foothills, as seen in Muirton and Cornhill woodlands. While the woodland is situated on undulating land, the general aspect is north- and east-facing in the northern sections (north of the River Orrin) and east-facing in the southern sections (south of the River Orrin). The woodland ranges in elevation from approximately 100 to 250 m above sea level.
 - 5.5 Within this landscape, the Proposed Development primarily passes through conifer plantations and broadleaf woodlands, with some areas within the estate's landscape where conifer species have been planted for aesthetic purposes rather than commercial forestry.

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

² Scottish Forestry Map Viewer URL

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.



5.6 All wooded areas affected by the Proposed Development in this section are identified as either Ancient Woodland, LEPO, or Native Woodland. A significant portion of the conifer woodlands within this project area is classified as Native Pinewood under the NWSS, primarily consisting of conifer plantations.

Table 5.1: Woodland Designations			
Item	Type of Impact	Woodland Designations	Area (ha)
Operational corridor	Permanent	AWI- AWSNO 2a	0.47
		AWI-LEPO 2b	20.02
		NWSS- Native woodland	28.52
Access track corridor and Equipotential Zone (EPZ) Pulling Positions	Permanent	AWI-LEPO 2b	0.05
		NWSS- Native woodland	0.69
	Temporary	AWI-LEPO 2b	0.26
		NWSS- Native woodland	0.31
		AWI- AWSNO 1a	0.96
Special Arrangements*	Temporary	AWI- LEPO 2b	0.36
		NWSS- Native woodland	3.07
Management Felling**	Temporary	AWI- LEPO 2b	10.23
		NWSS- Native woodland	15.66

^{*}Special arrangements shown in Table 9.1.

- 5.7 The AWSNO (1a 1760) designation encompasses approximately 0.96 ha of native broadleaved woodland, predominantly composed of birch. The woodland is characterised by being formed of clusters of trees with a relatively open upper canopy. In addition to birch, rowan, and other minor broadleaved species are also present. Refer to **Plate 1**.
- 5.8 The AWSNO (2a) designation covers 0.47 ha of predominantly birch woodland and open ground, featuring scattered immature trees in relatively poor condition, with some leaning or uprooted. The woodland has an open canopy, with an understorey composed of scattered juniper shrubs and areas of dense bracken. Refer to **Plate 2**. Birch trees are sparsely distributed across the site, exhibiting signs of early decay and past windblow damage. An erected deer fence now adds protection to deer and livestock browsing in these woodlands, enclosing the main areas of AWSNO.

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





<u>Plate 1</u>- AWSNO-stand of birch located near the Allt Goibhre burn, south of the property. The trees average 5 m in height. Grid reference: NH 47607 50570.



<u>Plate 2</u>- Scattered juniper species amongst the birchwood on the AWSNO north to Allt Goibhre burn. Grid ref: NH 47628 5062.

- 5.9 Within the Native Woodlands, a distinction can be made between young and established regenerated pinewoods and upland birchwood at the semi-mature/pole stage.
- 5.10 The Native upland birchwood is primarily found in the southern part of the property at Bridgepark, situated in wetter and flatter areas compared to the rest of



the site. These woodlands consist predominantly of birch, with some willow regeneration in the understorey, and range in height from 6 to 14 m.

- 5.11 Areas of mature birch Native Woodland are located along the northern edge of the property, near the River Conon. These birch trees exhibit a semi-mature structure and are partially surrounded by dense rhododendron. Refer to **Plate 3**.
- 5.12 In addition to the Native Woodlands, there are mixed broadleaved areas classified as LEPO. These areas include old hedgerows of beech and mixed stands of birch, beech, and occasional pine scattered throughout. No remnant veteran features have been identified within the LEPO.
- 5.13 There are 10.05 ha within the OC which are jointly classified under the AWI and NWSS databases and classified as LEPO and as Native Woodland- native pinewood.
- 5.14 Within the Management Felling area specifically, 10.79 ha are classified as LEPO and 16.22 ha as native pinewood. These classifications overlap on 10.31 ha of the Management Felling area.



<u>Plate 3-</u> This Native Woodland upland birchwood features a dense and thick understorey of bracken, beneath the birch canopy. Grid reference: NH 47203 50905.



- 5.15 The areas identified as native Scots pinewoods are commercially managed plantations consisting predominantly of mixed conifer species such as spruce and larch mainly. These woodlands are primarily located in Cornhill and north of the River Orrin, where mature woodland characteristics are evident.
- 5.16 In Cornhill, a semi-mature commercial pine plantation, averaging 22 m in height. This has undergone thinning and exhibits signs of recent windblow. Within the OC, and as a unique case, a solitary 32 m tall spruce tree stands at the base of the hill, serving as a prominent landscape feature along the main estate access track. Refer to **Plate 4.**



<u>Plate 4</u>- A Native Woodland pinewood plantation with commercial characteristics, previously thinned. Signs of past windblow damage are evident on the slope. Canopy gaps have allowed for some natural regeneration, with spruce being the predominant species establishing in these areas. Grid reference: NH 45351 52115.

5.17 Muirton Wood exhibits a diverse structure of mature and semi-mature conifer trees, varying in species, age classes, and woodland characteristics. This woodland is characterised by a mix of tree species, including larch, spruce, and firs, but is predominantly composed of Scots pine of varying ages. Stands of mature, thinned Scots pine are found alongside younger areas where



trees show occasionally checked and stunted growth, particularly on wetter ground when found with mixtures of spruce and larch. In the northern section, where the canopy opens, semi-mature pinewood dominates the drier areas. The open canopy has allowed the development of a dense understorey of heavy bracken and scattered rhododendron. Natural regeneration of spruce is minimal and considered insignificant. Most sections of the woodland have undergone previous thinning operations, shaping its current structure and composition.

- 5.18 This woodland is classified as either Native Woodland (pinewood) or LEPO (2b). Scattered mature Scots pines are present with over 50 cm of diameter and 21 m tall, some showing broken limbs and early signs of decay. Though past their financial maturity, these trees hold conservation value within the LEPO designation. They remain viable trees and would be expected to persist in the landscape for at least another 20 years. Refer to **Plate 5.**
- 5.19 According to the British Standard BS5837: 2012, these mature Scots pine trees can be classified as Category A.3. This category applies to groups of trees with significant conservation value, like in this case, where the conifer woodland exhibits potential to develop characteristics associated with Ancient Woodland.



<u>Plate 5</u>- Native Woodland pinewood and LEPO classification with elements of mature Scots pine surrounded by a less mature conifer species mix, from fir, larch and younger Scots pine. Grid ref: NH 45025 52571.

5.20 Woodlands closest to the main Fairburn House and Fairburn Tower are well integrated within the house gardens. Amongst the native pinewood, single exotic tree species such as hemlock and red cedar have been planted in the past, contributing to species diversity.



5.21 Within the OC, there are 2.60 ha of historical clear-felled on Bridgepark wood within Corriehallie forest that have not been restocked. Refer to **Plate 6**.



<u>Plate 6</u>- The OC features scattered broadleaved trees classified as LEPO, situated on a historically clear-felled site that remains unplanted. In the background, birch and beech trees contribute to the woodland structure. Grid reference: NH 46809 51096.

- 5.22 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 minor elements of larch and clusters of birch and rowan.
- 5.23 The site soils are predominantly 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

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



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 16m 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 minimize 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.

7. Woodland Management Impact

- 7.1 The OHL will create additional challenges for the future management of the forest as it dissects existing management coupes and introduces an electrical hazard. The risks associated with the electrical hazard will be reduced by regular maintenance of the OC, so maintaining the compliance of the OC and reducing any need for future tree clearance operations within the "Red Zone".
- 7.2 The sterilisation of the OC, however, will have an impact on forest restructuring, potentially impacting the landowner's ability to utilise the forest's commercial

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)



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 estate 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 within **Volume 2**, **Chapter 13**. **Forestry**. This includes effects to the riparian broadleaved trees within the AWI of trees on the bank of the River Beauly. 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 has 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 Woodland type Infrastructure		Area (ha)
Operational corridor	Permanent	Broadleaved woodland	12.24
		Conifer woodland	23.67
		Felled- awaiting restocking	2.36
Access track corridor	Permanent	Broadleaved woodland	0.24
		Conifer woodland	0.50
	Temporary	Broadleaved woodland	0.88
Special Arrangements	Permanent	Broadleaved woodland	3.07
Equipotential Zone (EPZ) Pulling Positions	Temporary	Broadleaved woodland	0.57



Table 9.2: Compensatory planting		
Compensatory Planting Area	Mix of broadleaved and conifer woodland	43.53

Table 9.3: Woodland Removal Impact of Infrastructure		
Item	Woodland type	Area (ha)
Total Loss of Woodland Area	Broadleaved woodland	17.00
	Conifer woodland	26.53
Total Compensatory Planting Area off-site	Broadleaved woodland	15.55
	Conifer woodland	26.53
Total Restocking/ Replanting Area on-site	Broadleaved woodland	1.45
Total Net Loss of Woodland Area		0

Table 9.4: Woodland Removal for Management Felling			
Item	Type of infrastructure	Woodland type	Area (ha)
Management Felling	Temporary	Conifer woodland	15.66
Replanting / Restocking	Adhere to the Forestry and Land Management (Scotland) Act 2018.	Conifer woodland	15.66
Net Loss of Woodland Area			0

Note: Felling approval is via the 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.**



