Scottish & Southern Electricity Networks

TRANSMISSION

Creag Dhubh to Dalmally 275kV Connection

Environmental Impact Assessment

Volume 4 | Appendix 11.1f

Overhead Line (OHL) Woodland Report

Property: Glen Lochy (Temporary Diversion)

April 2022

Contents:

1 Introduction

1.1.1 This Technical Appendix (TA) presents information relevant to the Creag Dhubh to Dalmally 275kV Connection. It should be read in conjunction with the **Volume 2 – EIA Report** specifically **Chapter 11: Forestry,** for full details of the Proposed Development.

1.1.2 Scottish Hydro Electric (SHE) Transmission, hereafter referred to as 'the Applicant', owns and maintains the electricity transmission network across the north of Scotland. Due to the growth in renewable electricity generation in the north and north-east of Scotland, upgrade of the transmission network is required in order to provide the necessary increase in transmission capacity.

1.1.3 The Applicant is proposing to apply for consent under Section 37 of the Electricity Act 1989 to construct and operate a 13.3 kilometre (km) double circuit 275 kV overhead line (OHL), supported by lattice steel towers between a proposed substation at Creag Dhubh to the existing Scottish Power Energy Networks (SPEN) 275 kV OHL that runs from Dalmally to Inverarnan, near Succoth Glen, connecting via a tie-in connection (the 'Proposed Development'). The location of the Proposed Development is shown in **Figure 1.1 (EIAR Volume 3a**).

2 Purpose of Woodland Report

2.1.1 As part of the Environmental Impact Assessment (EIA) process, it was identified that the overhead line construction and the access tracks required to construct the Proposed Development would cross a number of woodland areas within private or state-owned landholdings. The landholding property boundaries are identified in **Figure 11.1(EIAR Volume 3a**).

2.1.2 This document provides a conceptual assessment of the woodland areas that are affected by the Proposed Development, including the requirement of woodland removal and management recommendations to mitigate the impact of the woodland removal.

2.1.3 Field surveys of the woodland areas have been undertaken and have been used to determine the various woodland characteristics in order to identify the woodland removal required and recommended. This document also sets out the area quantity (ha) to be compensatory planted to ensure no net loss of woodland is achieved.

3 Woodland Property

3.1.1 Glen Lochy forest is owned by the Scottish Ministers and managed by Forestry and Land Scotland (FLS) – West Argyll Forest District, **Figure 11.1(EIAR Volume 3a**). The forest property is located approximately 2.5 km east of the village of Dalmally. The woodland property is a large area of commercial conifer woodland, with an existing forest road infrastructure.

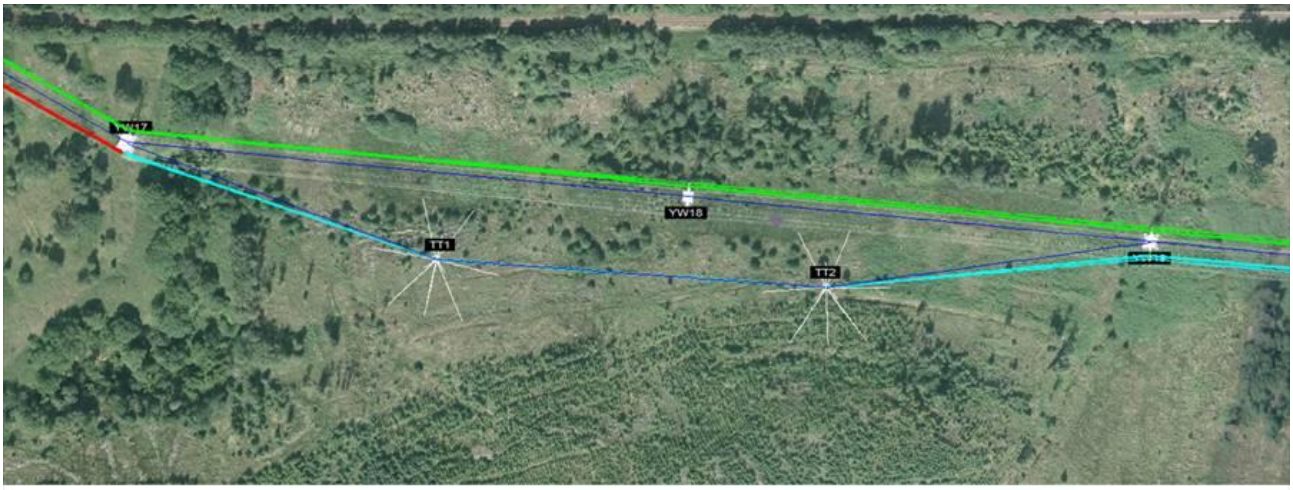
3.1.2 Glen Lochy forest vehicle access is serviced off the A85 public road heading south via a hard metalled forest road. The main vehicle access point is located at national grid reference NN 19309 27537.

4 Development Requirements

4.1 275kV Overhead Line and SPEN Tie-In Temporary Diversion

4.1.1 The Tie-In connection will comprise the proposed OHL being connected to the existing SPEN 275 kV OHL, known as the YW route, via a new terminal tower YW17R (referred to as T48 throughout the EIAR) located between existing SPEN Towers YW17 and YW18, from the proposed T47 (see **Figure 2.1a-j, EIAR Volume 3a**).

4.1.2 A temporary diversion will be required as part of the ancillary works to facilitate the Tie in connection to YW17R (T48). The temporary diversion will be approx. 0.7km in length and will extend from towers YW17 to YW19 on the YW Route (see **Figure 2.1a-j, EIAR Volume 3a).**



Temporary Mast	X – Coordinate	Y – Coordinate
TT1	219106.2	726211.0
TT2	219325.0	726195.3

4.1.3 The temporary diversion will require installation of two temporary masts with supporting stays (guide wires). The masts will be approx. 45 m high and conductor width is approx. 7 m. The stays will extend up to 35m in circumference from the base of the masts.

4.1.4 The temporary diversion infrastructure minimum safety clearance distance is 80 m (40 m either side of the temporary diversion centreline). This been utilised to calculate the area of the Operational Corridor (OC) occupied by infrastructure, in which tree removal will be necessary. In addition, trees will need to be cleared between the existing SPEN YW Route between YW17 and YW19 to swing the conductors over to the temporary diversion.

4.1.5 The Study Area for this assessment is based around the OC and the area required to swing the conductors. The Applicant defines the area in which it has rights to remove woodland for the purposes of a new diversion using temporary masts to support overhead lines (OHLs), 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 with reference to the distance at which a tree could fall and cause damage to the overhead line, resulting in a supply outage[1]. As a result, the final corridor width would be based on the safety distance required to allow for a mature tree falling towards the OHL or the temporary mast stays at the mid-point on an OHL span between two towers, taking account of topography and tree height at maturity. Where the OC passes through areas of native woodland, it is noted that the width of woodland removal is likely to be reduced due to the lower height of the tree species present. The proposed OC illustrated in **TA Figure 11.31** has been based on the likely height of the woodland at maturity and therefore, varies in width according to the woodland type present.

4.1.6 The future plans of landowner woodland restructuring (clear fell and replant) have been reviewed.

4.1.7 The OC width that has been assessed and identified for the safe build and energisation of the temporary diversion through the areas of commercial conifer woodland is 80 m (40 m either side of the temporary diversion centreline).

4.1.8 The OC width that has been assessed and identified for the safe build and energisation of the new temporary diversion through the areas of native broadleaved woodland is 80 m (40 m either side of the temporary diversion centreline). This has been assessed as a maximum OC width required at

[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)

these woodland locations, with the potential of further narrowing of the OC prior to construction to allow greater tree retention.

4.2 Access Track Route Design

4.2.1 The Glen Lochy forest is well serviced by existing hard metalled forest roads, that provides vehicle access off the A85 public road **Figure 11.1 and 11.4 (EIAR Volume 3a**). This will form part of the main vehicle access route for the Proposed Development and will be subject to maintenance and upgrade works as part of the construction work scope. This section of forest road/access track will be utilised during the forestry works.

4.2.2 General access track tree maintenance work may be required along the existing forest road/access track in preparation for the civil engineering access track upgrade works.

4.2.3 Sections of new access track are required to be built as part of the construction phase to access the tie-in connection T48 / YW17R and to construct the temporary diversion (see **TA Figure 11.31**). The access track new build corridor width required to be cleared through woodland is 20m wide. This will increase the impact of woodland removal along new build access track routes that are outside the OHL operational corridor.

4.2.4 Stump removal and residue mulching will be required for the installation of new access tracks and at the two temporary mast locations for the formation of a construction works area and temporary crane pad.

5 Woodland Characteristics

5.1.1 The woodland areas impacted by the Proposed Development are young conifer restock and mixed native broadleaves with open ground. The predominant conifer and broadleaved tree species are Sitka spruce and birch interspersed with scattered willow scrub **Figure 11.4 (EIAR Volume 3a)**.

5.1.2 A desk based study of the woodland areas was conducted, utilising web based data provided by Scottish Forestry[2] and referencing the Scottish Government's Ancient Woodland Inventory[3], to identify current woodland environmental designations and classifications.

5.1.3 The Scottish Forestry Map Viewer provides spatial data on the Native Woodland Survey of Scotland and classifies the woodland types into four categories[4]:

- Native woodland
- Nearly-native woodland
- Open land habitat
- Plantations on Ancient Woodland Sites (PAWS)

5.1.4 An area of 2.26 ha of broadleaved woodland located within the Glen Lochy Forest property between towers YW17 to YW19, **Figure 11.4 (EIAR Volume 3a)** has been identified as native woodland

[2] Scottish Forestry Land Information Search URL: https://map.environment.gov.scot/LIS_Agri/Agri.html
Scottish Forestry Map Viewer URL: https://scottishforestry.maps.arcgis.com/apps/webappviewer/index.html?id=0d6125cfe892439ab0e5d0b74d9acc18

[3] Ancient Woodland Inventory (Scotland) URL: Ancient Woodland Inventory (Scotland) - data.gov.uk

[4] 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 (ie 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 - Plantations 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 woods.

classification. Despite the area's classification, most of the current habitat comprises scattered scrub and coniferous plantation as opposed to mature oak broadleaf woodland.

5.1.5 There are no formal environmental woodland designations present for the conifer woodland area.

5.1.6 **Plates 5.1, 5.2** and **5.3** show the section of SPEN OHL towers YW17 to YW19 and is host to native broadleaved woodland on the South side of the OHL of which the temporary masts will affect. The woodland is predominantly mixed native broadleaves of variable age class ranging from mature to young broadleaves with some planted in tree shelters. Some Sitka spruce trees growing individually and in small clumps are present throughout the mixed native broadleaved woodland area.

Plate 5.1: Looking east towards Tower 19.

Plate 5.2: Looking north west towards Tower 17.

Plate 5.3 : Looking north between Tower 17 and 18.

5.1.7 The conifers will be removed within the 80 m wide operational corridor. An operational corridor width of 80 m has been assessed for the mixed native broadleaved and coniferous woodland area. Prior to the construction phase these areas will be assessed for further selective felling to identify if greater broadleaved tree retention can be achieved.

6 Windthrow Risk Impact

6.1.1 Most of the site lies on soil classified as peaty gleys, with pockets of peat present sporadically around the site[5].

6.1.2 The woodland site affected by the Proposed Development has a 'Detailed Aspect Method of Scoring' (DAMS)[6] windthrow hazard class score ranging between 14 and 17, classified as moderately to highly exposed. The local climate is classified as cool and wet.

6.1.3 These factors suggest that a moderate range of tree species can be grown on site.

6.1.4 No impact of windthrow risk will be created by the removal of the young conifer plantation areas within the OHL operational corridor and access track corridors.

6.1.5 The areas of mixed native broadleaved woodland have become established on the exposed open moorland. The continued exposure, woodland structure and ground conditions are favourable for the trees remaining windfirm. These woodlands have been assessed of having a minimal windthrow risk following the tree felling of the OHL operational corridor.

7 Woodland Management Impact

7.1.1 The OHL alignment being located on the northern fringe of the conifer woodland block will have a minimal impact on the future woodland management activities. The constraint associated with the electrical hazard will be reduced by regular maintenance of the operational corridor, which will avoid the incidences of "Red Zone" trees.[7]

7.1.2 The OHL alignment crosses the forest road network at either approximately 45 or 90 degrees and will be built to the regulatory safe height clearances above forest roads/access tracks, which will reduce the hazard in respect of future timber haulage.

7.1.3 The development project will remove existing conifer and broadleaved woodland. This in-turn will reduce the forestry restructuring/planting land available within the woodland property area.

7.1.4 During the construction phase, a level of disruption will be created for the undertaking of routine forestry management activities by the Landowner on the woodland property. This will be required to be project managed through communication and agreement with the affected stakeholders.

8 Mitigation Opportunities

8.1.1 A reduced operational corridor width is desirable for the areas of native broadleaved woodland. Prior to the construction phase these areas will be assessed for further selective felling to identify if greater tree retention can be achieved. This is dependent on the requirements of safe OHL wiring operations and the access track build corridor. However, the open habitats in this location, may allow for micrositing the temporary diversion infrastructure to avoid or reduce tree loss or disturbance to sensitive ground flora.

8.1.2 The operational corridor woodland removal area is required for the construction and functioning of the temporary diversion infrastructure. Opportunities will be assessed for woodland replanting within the operational corridor, following removal of the temporary diversion. The identification of suitable areas cannot be guaranteed due to the requirement of maintaining the safe energisation of the OHL. Reference to **Section 10** of this report, will fully mitigate the operational corridor woodland removal area by replanting the area quantity (hectares) of woodland removed.

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

[6] Detailed Aspect method of Scoring (DAMS) Ref. Forest Research, "Forest Gales software programme" and Forestry Commission Leaflet 85 "Windthrow Hazard Classification"

[7] 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)

9 Woodland Removal Impact

Table 9.1 Woodland Removal for Infrastructure		
Item	**Woodland Type**	**Area**
OHL (Temporary Diversion)	Young conifer tree crop	0.12 ha
	Mixed Native Broadleaved Woodland	2.26 ha

Table 9.2 Compensatory Planting		
Compensatory Planting Area	Mixed conifer or mixed broadleaves	2.38 ha

Table 9.3 Woodland Removal Impact of Infrastructure		
Total Loss of Woodland Area		2.38 ha
Total Compensatory Planting Area		2.38 ha
Total Nett Loss of Woodland Area		**0.0 ha**

10 Compensatory Planting

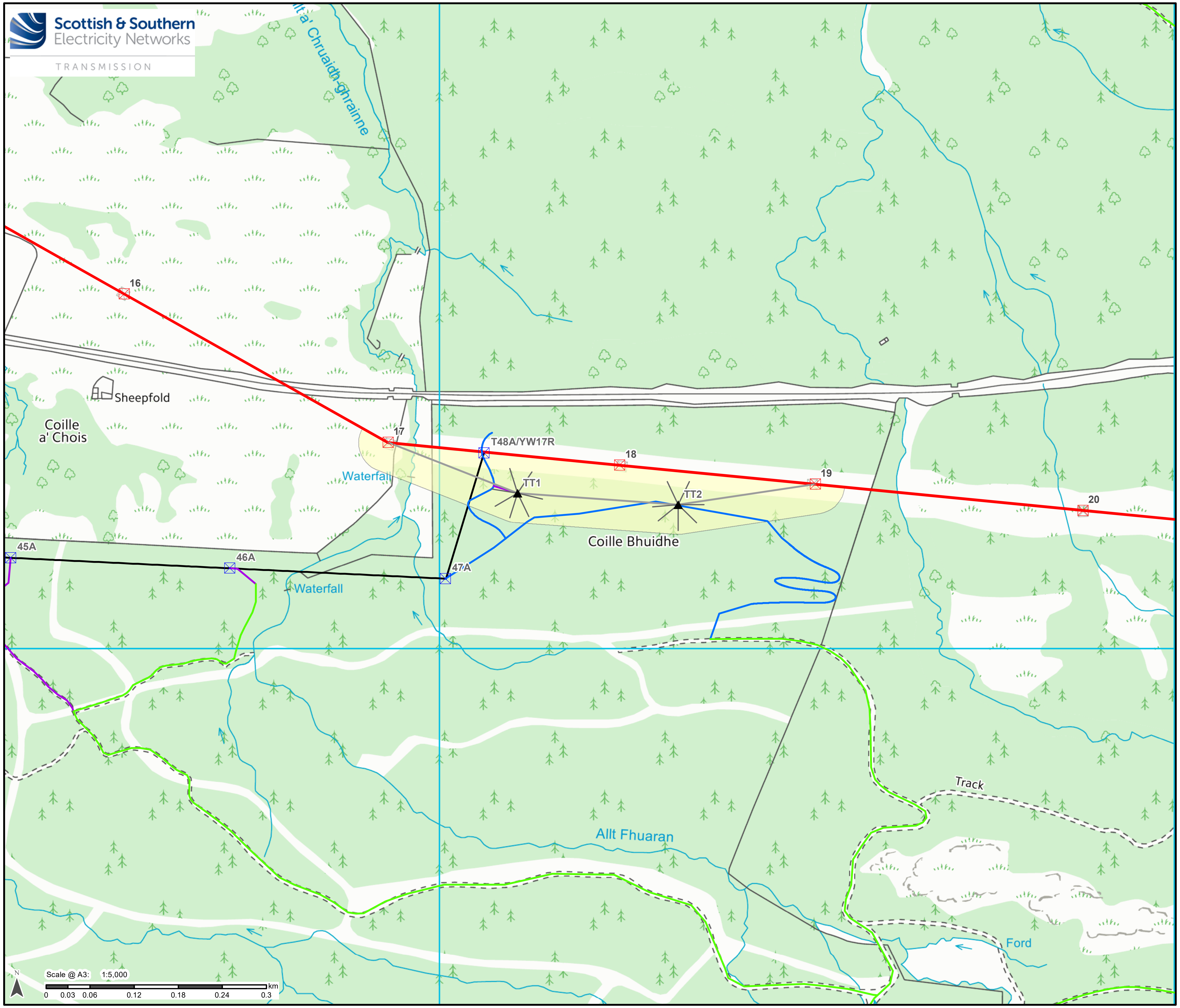
10.1.1 Compensatory planting to achieve the area quantity (hectares) of woodland removal will be provided for the OHL temporary diversion and access track operational corridor area and will be in accordance with the Scottish Government's Control of Woodland Removal Policy[8] of no net loss of woodland.

11 List of Figures

- Figure 11.1 - Landownership Boundary Map
- Figure 11.4 – Forestry Project Felling Maps

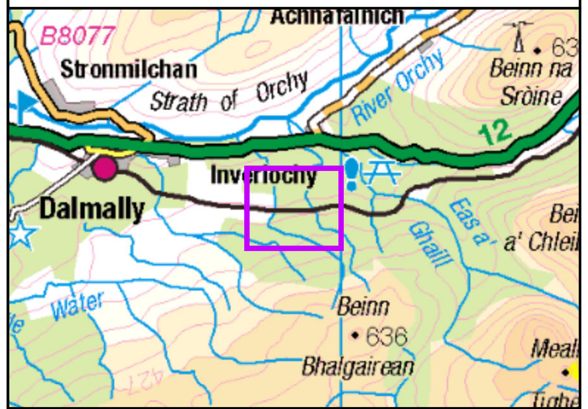
- TA Figure 11.31 - SPEN Temporary Diversion Forestry Felling Areas

[8] https://forestry.gov.scot/publications/285-the-scottish-government-s-policy-on-control-of-woodland-removal/viewdocument/285



Legend

- Proposed OHL Towers
- Existing SPEN 132kV OHL Towers
- SPEN Temporary Diversion Towers
- Indicative Proposed Alignment
- SPEN Temporary Diversion OHL
- Existing SPEN 275kV OHL
- Access Tracks - Existing Upgrade
- Access Tracks - New Stone Permanent
- Access Tracks - New Stone Temporary
- Temporary Mast Stays (Guide Wires) 35m
- Temporary Diversion Forestry Felling



Project No: LT000029

Project: Creag Dhubh to Dalmally 275kV Connection

Title:

SPEN Temporary Diversion Forestry Felling Areas

Drawn by: IF

Date: 05/05/2022

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