Scottish & Southern Electricity Networks

TRANSMISSION

Creag Dhubh to Dalmally 275kV Connection

Environmental Impact Assessment

Volume 4 | Appendix 11.1i

Overhead Line (OHL) Woodland Report

Properties: Kinachreachan and Dalmally Woodlands

April 2022

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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 Transmission plc (the Applicant) who, operating and known as Scottish and Southern Electricity Networks Transmission (SSEN Transmission), own, operate and develop the high voltage electricity transmission system in the north of Scotland and remote islands. 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: Location Plan and Overview (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 The forest properties Kinachreachan and Dalmally Woodlands are under private ownership and are located from approximately 1 km to 2 km south west of the village of Dalmally, **Figure 11.1(EIAR Volume 3a)**. The woodland properties are large areas of commercial conifer woodland, with an existing forest road infrastructure.

3.1.2 Kinachreachan and Dalmally Woodlands forest vehicle access is serviced off the A819 public road heading east via a hard metalled forest road. The main vehicle access point is located at national grid reference 'NN 13452 27181'.

4 Development Requirements

4.1 275kV Overhead Line

4.1.1 Reference to **Plate 4.1** , the section of OHL applicable to the Kinachreachan property is from Tower 34 to 35. The Proposed Development impacts Dalmally Woodlands for access track build only. No OHL tower locations are sited within the Dalmally Woodlands property boundary.

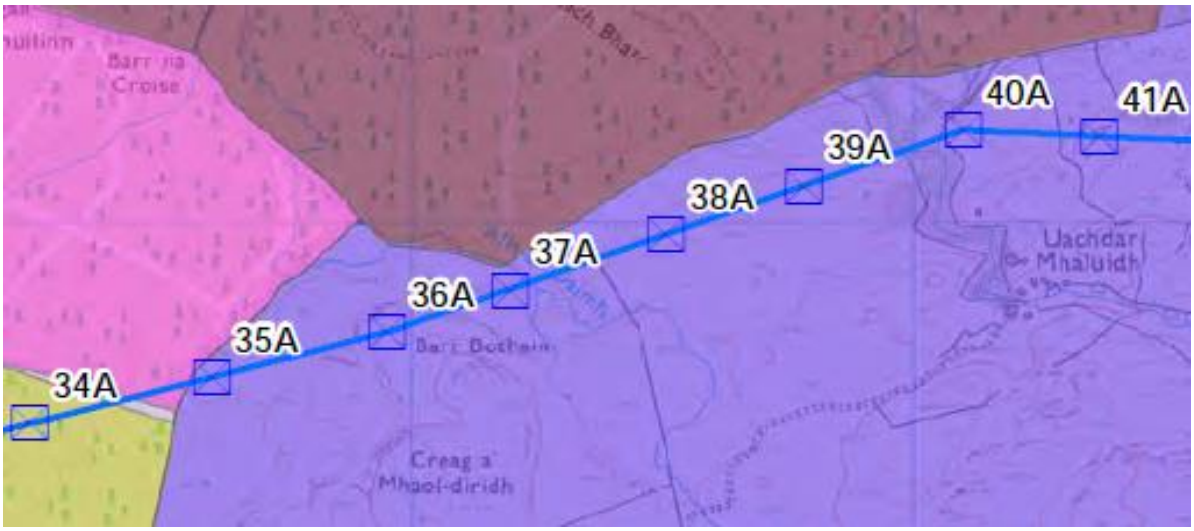

Plate 4.1: Section of OHL relevant to Kinachreachan property (Full Figure 11.1)

4.1.2 The 275kV OHL standard tower dimensions for the project have a width of 17 m at the widest part (crossarm) of the tower i.e. from outside conductor to outside conductor, in addition to this the safety vicinity zone from each conductor is a 4 m radius around the conductor.

4.1.3 The OHL infrastructure and minimum safety clearance distance is therefore 25 m (12.5 m either side of the OHL centreline) and this has been utilised to calculate the area of the operational corridor occupied by infrastructure. In some cases, such as angle towers the requirement may be slightly in excess of this distance, however the average minimum distance has been used in this assessment.

4.1.4 The Study Area for this assessment is based around the OC. The Applicant defines the area in which it has rights to remove woodland for the purposes of creation of new 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 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 **Figure 11.4 (EIAR Volume 3a)** has been based on the likely height of the woodland at maturity and therefore, varies in width according to the woodland type present.

4.1.5 The OC width that has been assessed and identified for the safe build and energisation of the new OHL through the areas of commercial conifer woodland is 85 m (42.5 m either side of the OHL centreline).

4.2 Access Track Route Design

4.2.1 The Kinachreachan and Dalmally Woodlands properties are serviced from the A819 public road by well-constructed hard metalled forest roads, regularly used for timber haulage. These forest roads will form part of the main vehicle access route for the Proposed Development **Figure 11.4 (EIAR Volume 3a),** and will be subject to maintenance and upgrade works as part of the construction work scope. The existing forest roads will be utilised during the forestry works.

[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)

4.2.2 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 A section of new access track **Figure 11.4 (EIAR Volume 3a)** is required to be built on the Dalmally Woodlands property as part of the construction work scope, to link into the OHL section Towers 35 to 39 on the neighbouring Brackley Farm property. The new access track build route on Dalmally Woodlands is located outwith the 85 m wide operational corridor.

4.2.4 The access track new build corridor width required to be cleared through woodland is 20 m wide (10 m either side of centreline) **Figure 11.4(EIAR Volume 3a)** . This will increase the impact of woodland removal along new build access track routes that are outside the OHL operational corridor.

4.2.5 Stump removal and residue mulching will be required for the installation of new access tracks and at each tower location for the formation of a construction compound and temporary crane pad.

5 Woodland Characteristics

5.1.1 The woodland properties comprise of a large areas of commercial conifer woodland with sporadic broadleaved woodland and integrated open ground including forest rides **Figures 11.1 and 11.4(EIAR Volume 3a)**. The conifer mature forest area has undergone significant woodland restructuring in recent years, under the woodland management regime of clear fell and replant. The predominant tree species of the woodland replanting is Sitka spruce.

5.1.2 The access track build section within Dalmally Woodlands **Figure 11.4 (EIAR Volume 3a)** has been routed along an existing forest ride through semi-mature Sitka spruce woodland. A 20 m wide access track corridor will be required to be felled along this route, impacting woodland removal.

5.1.3 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.

5.1.4 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)

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

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 (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 - 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.

Plate 5.1: Looking east to tower location 35.

5.1.6 **Plate 5.1** shows an area of checked Sitka spruce of approximately 30 years old, located on the Kinachreachan property. This area is impacted by the 85 m OHL operational corridor, with tree removal being required.

6 Windthrow Risk Impact

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

6.1.2 The woodland site affected by the Proposed Development has a 'Detailed Aspect Method of Scoring' (DAMS)[6] windthrow hazard class score of 13, classified as moderately 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 checked growth Sitka spruce trees on the Kinachreachan property within the OHL operational corridor.

6.1.5 The woodland removal of the access track build corridor route along the forest ride within the semi-mature Sitka spruce woodland of Dalmally Woodlands, will increase the windthrow risk of the woodland. Mitigation measures have been identified and detailed in **Section 8** of this report.

[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 Woodland Management Impact

7.1.1 The OHL alignment will create additional challenges for the future management of the forest as it will be within proximity of existing management coupes and introduces an electrical hazard. 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 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.

7.1.3 The Proposed Development will permanently remove existing young conifer woodland from the operational corridor. This will reduce the forestry restructuring/planting land available within the woodland property area, as the operational corridor will be maintained clear of trees.

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 The woodland windthrow risk of the access track build corridor on Dalmally Woodlands **Figure 11.4 (EIAR Volume 3a)**, will be minimised by utilising the existing forest ride and only felling trees on the west side of the forest ride. This being the leeward side from the predominant westerly winds of the area. The retained large forest blocks of semi-mature Sitka spruce on the east and west of the access track build corridor will provide increased shelter from tree windthrow. Prior to construction the potential for reducing the 20 m wide access track build corridor will be assessed at this location to further mitigate the windthrow risk.

8.1.2 The operational corridor woodland removal area is required for the construction and functioning of the new OHL infrastructure. Opportunities will be assessed for woodland replanting within the operational corridor, the identification of suitable areas cannot be guaranteed due to the requirement of maintaining the safe energisation of the OHL. Reference to **Section 9** of this report, will fully mitigate the operational corridor woodland removal area by replanting the area quantity (hectares) of woodland removed.

9 Woodland Removal Impact

Table 9.1 Woodland Removal for Infrastructure

Item	Woodland Type	Area
OHL	Semi mature 'checked' growth conifer tree crop	0.97 ha
Access Track Corridor	Semi mature conifer	1.82 ha

Table 9.2 Compensatory Planting

Compensatory Planting Area	Mixed conifer or mixed broadleaves	2.79 ha

[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)

Table 9.3 Woodland Removal Impact of Infrastructure		
Total Loss of Woodland Area		2.79 ha
Total Compensatory Planting Area		2.79 ha
Total Nett Loss of Woodland Area		**0.00 ha**

10 Compensatory Planting

10.1.1 Compensatory planting to achieve the area quantity (hectares) of woodland removal will be provided for the OHL 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

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