Scottish & Southern Electricity Networks
TRANSMISSION

CONTENTS

APPENDIX 9.3: OHL WOODLAND REPORT – FLS WOODLAND

1.1 Introduction

1.1.1 This Appendix presents information relevant to the Bhlaraidh Extension Wind Farm Grid Connection Works. It should be read in conjunction with the EA Report, specifically **Chapter 9: Forestry**, for full details of the Proposed Development.

1.1.2 Scottish and Southern Electricity Networks (SSEN) Transmission, operating under licence held by Scottish Hydro Electric Transmission plc, hereafter referred to as 'the Applicant', owns and maintains the electricity transmission network across the north of Scotland. This appendix has been prepared to support the EA that is to accompany an application for consent under section 37 of the Electricity Act 1989 to construct and operate a new single circuit 132 kV transmission line between the Bhlaraidh Extension Wind Farm and Fort Augustus Substation.

1.2 Purpose of this Woodland Report

1.2.1 As part of the EA process, it was identified that the overhead line (OHL) construction and the access tracks required to construct the Proposed Development would cross a number of woodland areas within a single private or publicly owned landholdings. The landholding property boundaries are identified in **Figure A9.3.1**

1.2.2 This woodland report considers the public ownership woodland under the management of Forestry and Land Scotland (FLS)[1].

1.2.3 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.

1.2.4 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 (hectares) to be compensatory planted to ensure no net loss of woodland is achieved.

1.3 Woodland Property

1.3.1 FLS forests associated with the Proposed Development include Bhlaraidh, to the north of the river Moriston, a section of Portclair Forest and Inverwick Forest to the south of the river. The alignment follows the Beauly-Denny OHL through Inchnacardoch forest and finally to the Fort Augustus substation.

1.3.2 The forests are subject of two Land Management Plan areas, Glenmoriston and Fort Augustus.

1.3.3 Recent harvesting activity to the Bhlaraidh area has been accessed from an existing forest road at OS Grid Reference: NH 3614 1594. While the Inchnacardoch areas are accessed from A887 near Torgyle Bridge at OS Grid Reference: NH 3076 1262 and near Auchteraw at OS Grid Reference: NH 3555 0865. The access to the Inverwick area is again near Torgyle Bridge at OS Grid Reference: NH 3093 1289

1.3.4 South of River Moriston the main access is from the west at OS Grid Reference: NH 3093 1289 where the forest tracks and minor public road join the A887 near Torgyle Bridge.

[1] Forestry and Land Scotland are the Scottish Government agency responsible for managing Scotland's national forests and land. On 1 April 2019 new Scottish Government agencies were formed to take forward the work previously undertaken by Forestry Commission Scotland and Forest Enterprise Scotland along with the new responsibilities gained following the full devolution of forestry to Scotland.

1.4 Development Requirements

132 kV Overhead Line

1.4.1 The existing Bhlaraidh wind farm is located to the west of Loch Ness, approximately 5 km north of Invermoriston on a high rocky plateau. The consented extension to the existing wind farm is due east on this plateau.

1.4.2 SSEN Transmission plan to construct a single circuit 132 kV connection from the Bhlaraidh Extension Wind Farm substation compound, for a distance of approximately 19.5 km.

1.4.3 It is anticipated that the first approximately 3 km from the on-site substation and the last 2 km of the connection into Fort Augustus substation would be by underground cable (UGC); subject to obtaining the necessary wayleave and consent approvals.

1.4.4 . The minimum safety clearance distance for trees for the OHL infrastructure is 25 m for broadleaved trees and 36 m for conifer trees. These distances have been used to calculate the operational corridor (OC) of 50 m and 72 m respectively. In some cases, such as angle poles, the requirement may be slightly in excess of this distance however the average minimum distance has been used in this assessment.

1.4.5 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[2]. 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 poles, 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 A9.3.2** has been based on the likely height of the woodland at maturity and therefore, varies in width according to the woodland type present.

1.4.6 The future felling plans of FLS woodland restructuring (clearfell and replant) have been reviewed.

1.4.7 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 72 m (36 m either side of the OHL centreline).

1.4.8 The OC width that has been assessed and identified for the safe build and energisation of the new OHL through the areas of native broadleaved woodland is 50 m (25 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.

Access Route Track Change

1.4.9 Given the current wind farm and forest access track network it is not proposed to design and construct additional tracks.

1.5 Woodland Characteristics

1.5.1 The forest data has been drawn up from FLS compartment schedules.

[2] 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)

1.5.2 Forest walkovers were conducted in the selection of the alignment for the Proposed Development.

1.5.3 A desk-based study of the woodland areas was conducted, utilising web based data provided by Scottish Forestry[3] and referencing the Scottish Government's Ancient Woodland Inventory (AWI)[4], to identify current woodland environmental designations and classifications.

1.5.4 The Scottish Forestry Map Viewer provides spatial data on the Native Woodland Survey of Scotland (NWSS) and classifies the woodland types into four categories:

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

1.5.5 The extent which FLS forests would be impacted by the Proposed Development, are illustrated in **Figure A9.3.3**.

1.5.6 The OHL would enter FLS Bhlaraidh Forest compartment 502, (mature Sitka spruce and Douglas fir). The alignment then enters an area of previously felled coniferous woodland which would be re-established as native woodlands. The planned felling date for this area is 2059/2060.

Photograph 1: Planting year 1967 Douglas fir / Sitka spruce and open ground with retained oak trees

1.5.7 On re-entering FLS land, after the quarry, compartment 506 is Sitka spruce planted in 1966 part of which has a planned felling date of 2037/2038. Prior to crossing the A887 the alignment includes part of compartment 508, Douglas fir planted in 1966. This area has a planned felling date of 2029/2030.

[3] https://forestry.gov.scot/support-regulations/scottish-forestry-map-viewer

[4] https://www.data.gov.uk/dataset/c2f57ed9-5601-4864-af5f-a6e73e977f54/ancient-woodland-inventory-scotland

Photograph 2: Planting year 1966 Sitka spruce at existing OHL corridor west of quarry

1.5.8 Between the public road and River Moriston is a small area of birch and Sitka spruce.

1.5.9 All the woodland areas within the OC north of the river are designated as AWI (ASNO1750) and NWSS (mainly PAWS with a small area of upland oakwood either side of the public road).

Photograph 3: Broadleaves and conifer adjacent to A887

1.5.10 There is a short section of 1928 Scots pine (compartment 308) immediately south of crossing the river and an equally short section within a felled area (compartment 301). These areas are both within the AWI (ASNO1750) and NWSS Pinewood designations.

1.5.11 The Proposed Development follows the existing OHL and cuts the edge of FLS compartment 585 (Scots pine, planting year 1900). This area is AWI (ASNO1750) and NWSS (PAWS). The OC re-enters and leaves FLS Compartment 580 (Scots pine and birch, planting year 1900).

1.5.12 On turning south following the Beauly-Denny OHL the Proposed Development enters compartment 579, following the edge of Scots pine with a planting year 1890. This area is AWI (ASNO1750) and NWSS (Pinewood).

Photograph 4: Planting year attributed as 1890 Scots pine adjacent to Beauly-Denny OHL

1.5.13 Two isolated compartments, 632a and 632b, of P. 1992 Lodgepole pine and Sitka spruce lie within the OC.

1.5.14 The total area of management felling proposed is 15.98 ha of commercial conifer woodland. The felling of these areas is subject to land manager agreement and felling permission approval or Land Management Plan formal amendment by Scottish Forestry.[5]

1.6 Windthrow Risk Impact

1.6.1 Within the Bhlaraidh forest, immediately west of the quarry, the commercial conifer areas planted in 1966 would be at risk of windthrow following the felling of the OC.

1.6.2 Felling the edge of the 1890s Scots pine poses less risk of windthrow due to the open grown nature and recognition of the importance of these trees.

1.6.3 Felling the OC for the two isolated Lodgepole pine and Sitka spruce compartments would leave relatively small areas of trees with felled edges likely to blow down. These two sub compartments amount to 1.41 ha and felling would take place as management felling.

[5] This felling is not included within the scope of the proposed development (for the purpose of the application for consent under S37 of the Electricity Act 1989). This additional 'management felling' would be subject to a requirement for separate felling licence approval from Scottish Forestry

1.7 Woodland Management Impact

1.7.1 The OHL would create additional challenges for the future management of the forest as it dissects existing management coupes and introduces an electrical hazard. The constraint associated with the electrical hazard would be reduced by regular maintenance of the OC, which would avoid the incidences of "Red Zone" trees.[6]

1.7.2 The OHL within Bhlaraidh Forest and would be built to the regulatory safe height clearances above any forest roads/access tracks, which would reduce the hazard in respect of future timber haulage. However, as the proposed long term management for this area is for a native woodland little further constraint on forest management is envisaged.

1.7.3 On FLS land south of River Moriston the OC follows existing OHL corridors through to Fort Augustus substation and presents little additional management challenges.

1.7.4 The Proposed Development would permanently remove existing conifer woodland and broadleaved woodland from the operational corridor. This would reduce the forestry restructuring/planting land available within the woodland property area, as the OC would be maintained clear of trees.

1.7.5 During the construction phase, a level of disruption to routine forestry management activities undertaken by the forest owner on the woodland property would occur. This will be project managed through communication and agreement with the affected stakeholders.

1.8 Mitigation Opportunities

1.8.1 A reduced OC width of 50 m has been assessed for the areas of native broadleaved woodland. Prior to the construction phase these areas would be assessed for further selective felling and crown reduction/pruning to identify if greater tree retention can be achieved. This will be dependent on the requirements of the development project and in particular the safety of OHL wiring operations.

1.8.2 The OC width of 72 m has been assessed for the areas of Scots pine (AWI and PAWS) woodland. This has been determined by the tree species characteristics and growth height. Existing open ground has been utilised where possible within the OC. Prior to the construction phase these areas would be assessed for further selective felling and crown reduction/pruning to identify if greater tree retention can be achieved. This will be dependent on the requirements of the development project and in particular the safety of OHL wiring operations.The OC woodland removal area is required for the construction and functioning of the new OHL infrastructure. Opportunities will be assessed for woodland replanting within the OC, the identification of suitable areas cannot be guaranteed due to the requirement of maintaining the safe energisation of the OHL. Compensatory planting would fully mitigate the OC woodland removal area by replanting the area quantity (hectares) of woodland removed.

1.8.3 The management felling areas will be replanted by the forest owner, in-line with the Scottish Forestry felling permission[7] regulations, unless an exemption is agreed in terms of suitable habitat management improvement.

1.9 Woodland Removal Impact

Table 9-1: Woodland Removal for Infrastructure

Item	Woodland Type	Area (ha)
OHL	Conifer	1.93
	Mixed Broadleaves	0.35

[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] Felling permission, https://forestry.gov.scot/support-regulations/felling-permissions, visited 24/10/2022

	Native Clearfelled	2.32
	NWSS (PAWS) Mixed conifer	8.47
	NWSS (Pinewood)	7.86
	Unplanted	5.43
	NWSS (Upland birch)	1.24
	NWSS (Upland Oak)	0.76
Total		28.36

Table 9-2: Compensatory Planting

Item	Woodland Type	Area (ha)
Compensatory Planting Area	Mixed conifer or mixed broadleaves	28.36

Table 9-3: Woodland Removal Impact of Infrastructure

Item	Area (ha)
Total Loss of Woodland Area	28.36
Total Compensatory Planting Area	28.36
Total Net Loss of Woodland Area	0.00

Table 9-4: Woodland Removal for Management Felling

Item	Woodland Type	Area (ha)
Management Felling	Mature mixed conifer plantation	15.98
Replanting / Restocking	Predominantly mixed conifer	14.57
Net Loss of Woodland Area	Isolated upland compartments to be habitat restoration and not replanted	1.41

Note: Felling approval is via Scottish Forestry Felling Licence application process or Land Management Plan application or amendment process.

1.10 Compensatory Planting

1.10.1 Compensatory planting to achieve the area quantity (hectares) of woodland removal would be provided for the OHL and would be in accordance with the Scottish Government's Control of Woodland Removal Policy[8] of no net loss of woodland.

[8] The Scottish Government's Policy on Control of Woodland Removal, https://forestry.gov.scot/publications/285-the-scottish-government-s-policy-on-control-of-woodland-removal, visited 24/10/2022

1.11 List of Annexes

Figure 9.3.1 - Landownership Boundary

Figure 9.3.2 – Forestry Project OC Felling

Figure 9.3.3 – FLS Proposed Felling

Figure 9.3.4 – FLS Proposed Future Land Management