

TECHNICAL APPENDIX - 14.1: WOODLAND REPORTS

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1.1 Summary

- 1.1.1 The Applicant seeks consent under section 37 of the Electricity Act 1989 to construct and operate approximately 13 kilometres (km) of new double circuit steel structure 400 kilovolt (kV) overhead transmission line (OHL) to facilitate a grid connection between the consented Coire Glas Pumped Storage Scheme and the existing Fort Augustus Substation and ancillary works. The project, referred to hereafter as ‘the Proposed Development’.
- 1.1.2 The Proposed Development would also form part of a wider rationalisation exercise to reduce the overall amount of electrical grid infrastructure in the surrounding area. The Proposed Development would therefore include re-routing the existing 132 kV Fort Augustus to Fort William OHL and the existing 132 kV Invergarry Tee OHL into the proposed Loch Lundie Substation. Following the construction of the Proposed Development, the existing 132 kV Fort Augustus to Fort William OHL would also be decommissioned and dismantled between the proposed Loch Lundie Substation and the existing Fort Augustus Substation. The Proposed Development would also include a new temporary OHL diversion approximately 0.7 km in length, to enable the continued operation of the 132 kV Fort Augustus to Fort William OHL whilst the OHL is rerouted into the proposed new Loch Lundie Substation. Full details of the Proposed Development are provided in **Volume 1, Chapter 3: Project Description**.
- 1.1.3 Where the Proposed Development passes through existing woodland, tree clearance would be required to allow the construction and, thereafter, to maintain an operational corridor (OC) which should prevent current or future risk of damage to the electricity infrastructure, from falling trees. It is acknowledged that the creation of the OC could result in wider potential indirect effects on the surrounding woodland areas. These areas would be subject to potential increased risk of damage (windthrow). As a result, the assessment work includes a series of OHL Woodland Reports, which are included as Annexes to this Technical Appendix. The OHL Woodland Reports have been prepared for each of the woodlands affected by the Proposed Development (6 in total) and identify all areas of felling required to form the OC and access tracks, as well as further areas of felling to leave a windfirm edge. Any felling undertaken out with the OC would be solely under the control of the relevant landowner (and not the Applicant).

1.2 Scope

- 1.2.1 The scope of this Technical Appendix and associated Woodland Reports (that form Annexes to this Technical Appendix), is to cover the information needed for the assessment of impacts on the 6 forests and woodlands intersected by the Proposed Development. The purpose is to provide environmental information in relation to the assessment of likely significant effects on forests and woodlands affected by the Proposed Development for the EIA Report that is required as part of the process of obtaining statutory consents under section 37 of the Electricity Act 1989.
- 1.2.2 The Woodland Reports provide a record of current woodland type, present condition and current and future management objectives for the 6 forests and woodlands along the alignment of the Proposed Development that will be affected. The information contained in these Reports has been obtained from the local forest managers and owners, where available, and on-site observations from surveys carried out between February and March 2023. OHL Woodland Reports have been prepared for each of the 6 forests and woodlands affected by the Proposed Development. These are provided in Annexes 1 (a) to (f).
- 1.2.3 The Woodland Reports and this Technical Appendix focus on the impacts resulting from the creation and maintenance of the Operational Corridor (OC), as well as further areas of felling out with the OC to establish a windfirm edge¹. By definition the OC is deemed to include any tree with the potential to become a “Red Zone” tree as defined within the Forest Industry Safety Accord (FISA), Guidance note 804 (see **Plate 1.1**). This refers

¹ Any felling undertaken outwith the OC would be solely under the control of the relevant landowner (and not the Applicant).

to any tree with the potential to fall into the vicinity zone of the overhead line conductors or directly onto the conductors causing damage or failure.

- 1.2.4 The assessment work in relation to the forestry and woodlands follows the principle of the need to adjust the particular clearance specifications to reflect the operating conditions under The Electricity Safety, Quality and Continuity Regulations 2002 (and amendment to regulations, 2006)², in terms of safety and resilience, existing land use and habitat, public interest and risk in different areas.
- 1.2.5 Any felling or clearance of trees would be carried out using the powers that the Applicant has under the Electricity Act 1989, Schedule 4, Paragraph 9 – ‘Felling and lopping of trees etc.’.
- 1.2.6 The principles of good practice for vegetation management near electricity equipment are as detailed in the Energy Networks Association Engineering Technical Report 136³.
- 1.2.7 Each Woodland Report (see **Annexes 1 (a) to (f)**) contains a Location Plan showing the relationship between the Proposed Development and each woodland area. The additional Figures attached to each of the Woodland Reports show how the forestry and/or native woodland would be directly or indirectly affected by the Proposed Development. Felling Maps are provided with each of the Woodland Reports, detailing the required felling operations and the extent of the OC based on the final crop tree height, with tree species noted. Proposed restocking plans included have been designed in conjunction with the relevant landowners and/or forest managers.

1.3 Operational Corridor

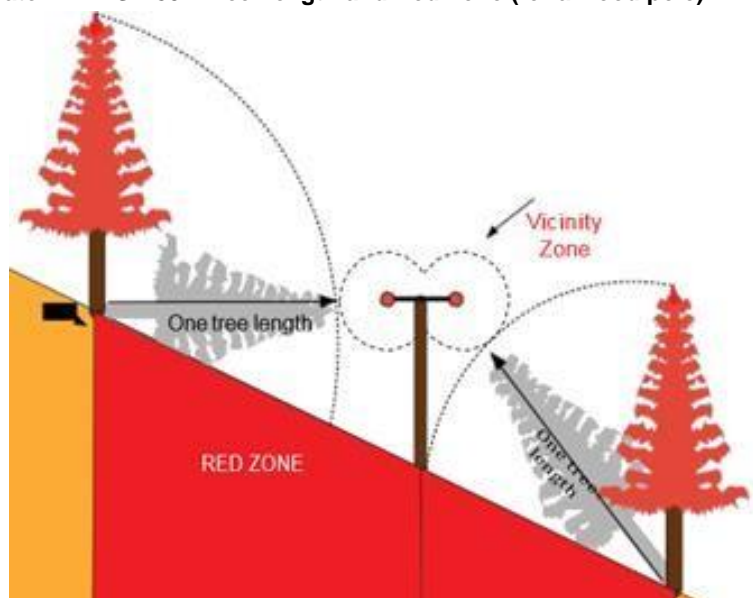
- 1.3.1 The approach to creating an OC for the Proposed Development is incorporated at this stage and seeks to provide a safe resilient transmission line.
- 1.3.2 A resilient line through woodlands requires the avoidance, by design, of trees falling onto the conductors or support structures through the lifetime of the tree. The adoption of the Red Zone as defined in the FISA ‘Safety Guide 804 Electricity at work: Forestry’ (FISA 804)⁴, is a practical approach to achieving this resilience.
- 1.3.3 The safety guidance is specifically for tree felling operations near OHLs where the Red Zone is defined as the area next to the OHL containing all trees within falling distance of the vicinity zone of any conductor and all trees which could cause damage to any support structure. It is recognised that the extent of the Red Zone can vary greatly along the length of the OHL when taking full account of variations in line height, cross-arm widths, steep slopes, valleys and variations in tree heights.
- 1.3.4 **Plate 1.1** below is an extract from FISA 804 which illustrates this principle.

² The Electricity Safety, Quality and Continuity Regulations 2002 and amendment to regulations, 2006, Electricity Act 1989

³ Engineering Technical Report 136, Energy Networks Association

⁴ Safety Guide 804 Electricity at work: Forestry, Forest Industry Safety Accord (FISA)

Plate 1.1: FISA 804 Tree Length and Red Zone (for a wood pole)



- 1.3.5 By definition the OC is deemed to include any tree with the potential to become a “Red Zone” tree as defined within the Forest Industry Safety Accord (FISA), Guidance note 804 (see Plate 1.1). This refers to any tree with the potential to fall into the vicinity zone of the overhead line conductors or directly onto the conductors causing damage or failure..
- 1.3.6 Top heights of standing trees within the OC were taken during the 2023 site visits and are summarised below with assumptions on tree height potential. Maximum tree height achieved may be dependent on a number of matters including:
- Commercial objectives may require a productive conifer rotation length to achieve a tree size for the optimal return on investment;
 - Forest management intervention such as thinning;
 - Ecological objectives within Ancient Woodland sites, Special Area of Conservation (SAC) or Sites of Special Scientific Interest (SSSI) or other woodland designations;
 - General rooting, soil strength and crop stability conditions; and
 - Storm events causing windthrow.
- 1.3.7 Summary of tree heights is provided in **Table 1.1** below:

Table 1.1: Summary of Tree Heights

Species	Current Largest Tree Heights Measures (m)	Estimated Maximum Potential Tree Heights (m)
Birch	12 m	14 m
Scots pine	20 m	21 m
Sitka spruce	27 m	30 m
Lodgepole pine	17 m	20 m
Douglas fir	21m	25 m
Norway spruce	22 m	25 m

Species	Current Largest Tree Heights Measures (m)	Estimated Maximum Potential Tree Heights (m)
Larch	18 m	25 m

1.3.8 Each area of woodland where there would be interaction with the Proposed Development was assessed on the characteristics of species, present or planned, and slope.

1.3.9 The typical width of the OC required within areas of commercial conifer forestry for a 132 kV OHL is 90 m. 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 for this project through areas of native woodland has been reduced to 50 m (i.e. 25 m either side of the OHL). This has been based on the likely height of the woodland at maturity.

1.4 Tree Clearance Techniques

1.4.1 Conventional timber harvesting would take place where the tree size justifies this and where access to a road suitable for timber lorries may reasonably be undertaken.

1.4.2 Where small numbers of trees would require to be felled but not extracted these may be cut up on site to form ecologically beneficial woody debris.

1.4.3 Where tree size is below a marketable specification and/or access for wood product extraction would not be practical, the trees may be mulched, i.e. fragmented in situ. The areas and volumes to be treated in this way are assessed in accordance with Land Use Planning System SEPA Guidance Note LUPS-GU27 'Use of Trees Cleared to Facilitate Development on Afforested Land' – Joint Guidance from SEPA, SNH⁵ and FCS, 9 April 2014, and 'Management of Forestry Waste', WST-G-027, SEPA Guidance, version 2, July 2013⁶.

1.4.4 Some areas have been felled and replanted, these would require removal; thereafter the areas would be maintained as open ground. Other areas have been felled and are awaiting replanting or regeneration and would require maintaining as open ground.

1.5 Restocking

1.5.1 Scottish Forestry⁷ accepts the restocking of felled areas through natural regeneration as an acceptable practice. Guidance states the site must be within 50 m of a woodland edge and viable seed source, however this could exceed 50 m if there is favourable topography and wind direction, other viable seed trees are present out with the existing forest area, or evidence of suppressed natural regeneration is already present. The site must meet a minimum stocking density of 1600 trees per hectare for native woodland and 2500 trees per hectare for commercial woodland within 5 years of felling.

1.6 Compensatory Planting

1.6.1 The Scottish Government's Policy on Control of Woodland Removal⁸ states the purpose of any required Compensatory Planting is to secure, through new woodland on site (replanting) or off site (on appropriate sites elsewhere), at least the equivalent woodland-related net public benefit embodied in the woodland to be removed. Where it is not possible to accommodate Compensatory Planting on site, planting can be undertaken

⁵ Land Use Planning System SEPA Guidance Note LUPS-GU27 Use of Trees Cleared to Facilitate Development on Afforested Land - Joint Guidance from SEPA, SNH and FCS, 9 April 2014

⁶ Management of Forestry Waste, WST-G-027, SEPA Guidance, version 2, July 2013

⁷ Scottish Forestry- Felling Permission – Application Guidance (2019)

⁸ Control of Woodland Removal, Forestry Commission (2009)

on appropriate sites anywhere in the same council region that can deliver the equivalent woodland-related net public benefits than the woodland removed. Compensatory Planting should at least equal the net area of woodland that would - in the absence of the proposal for woodland removal and in accordance with the principles of sustainable forest management expressed in the UK Forestry Standard - have remained on the site through an approved restructuring long-term forest plan.

1.7 Site Details

- 1.7.1 This Technical Appendix and associated Woodland Reports (that are produced as separate Annexes to this Technical Appendix), covers 6 different woodland sites from the first of the woodlands in Section 1 FLS Glengarry , FLS Auchterawe Farm woodland in Section 6. Two of these are private woodlands and four are managed by Forestry and Land Scotland. These woodlands are predominantly productive conifer plantations with some areas of ancient semi-natural woodlands. The productive conifer woodlands are at, or approaching, the restructuring stage with some Long Term Forest Plans in place or in the approval process.
- 1.7.2 **Annexes 1 (a) to (f)** provides details of each woodland site affected by the Proposed Development. A summary of areas and volumes of timber due to be felled in Sections 1 to 6 of the route for the Proposed Development, in order to create the OC, is contained in **Annex 2** to this Appendix.