

LT295 Bhlaraidh Extension Wind Farm Grid Connection

Transport Assessment

(Technical Appendix 3.3)



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	Name	Title
Author	Cameron Scott	Civil Engineer
Checked by		
Approved by		

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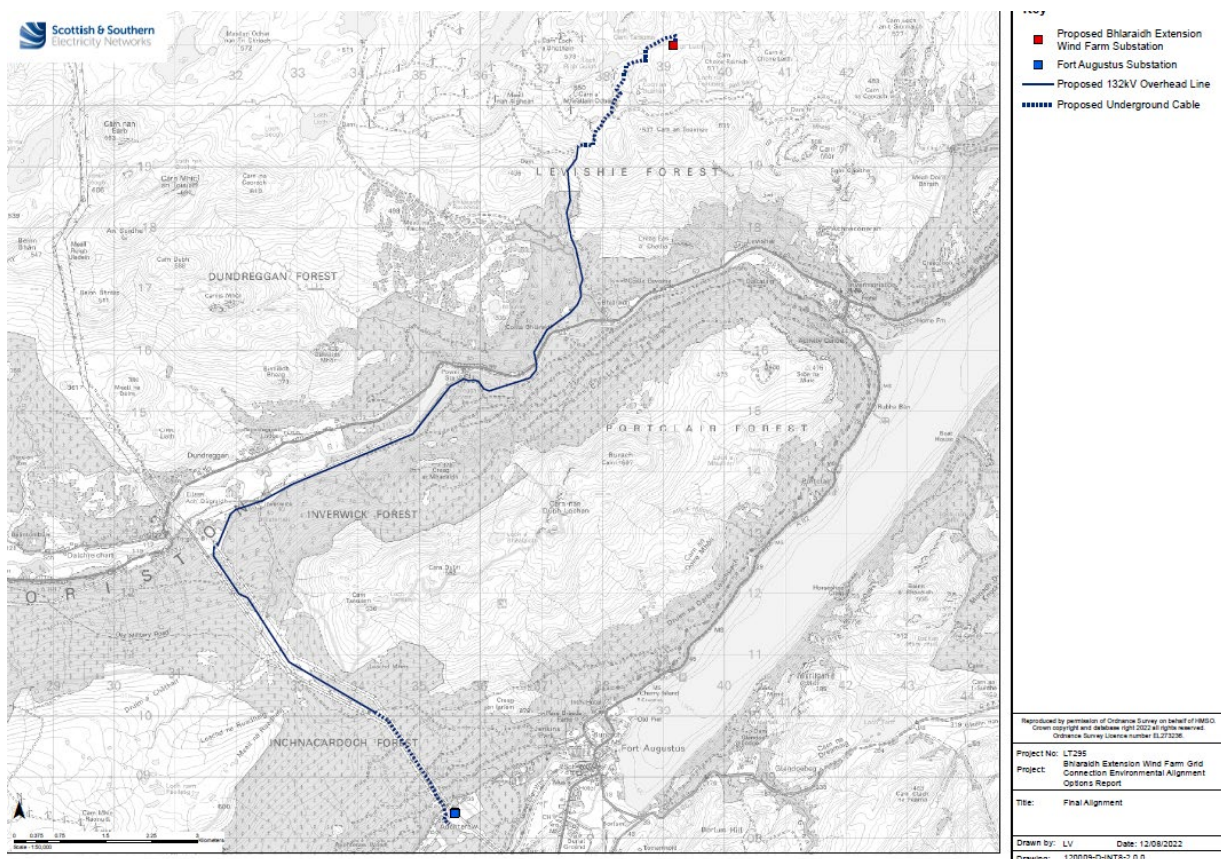
1 INTRODUCTION

SSEN Transmission has developed this transport assessment in support of a section 37 application for a new 132kV single circuit between the consented Bhlaraidh Extension Wind Farm substation and the existing Fort Augustus substation. The circuit comprises approximately 14.5 km of trident wood pole overhead line (OHL) (the Proposed Development) and approximately 5 km of underground cable (UGC).

The wind farm developer has been responsible for arranging the necessary consents for the new substation and control buildings at the consented Bhlaraidh Extension Wind Farm. Any associated traffic assessment will not be considered in this report.

This report considers traffic generated by the OHL works (the Proposed Development). The UGC works would be undertaken under the Applicant's Permitted Development rights as a Statutory Undertaker¹ and as such are not assessed in this report. They will be assessed in the Principal Contractors Construction Traffic Management Plan prior to commencement of works.

The proposed OHL alignment, location of the consented Bhlaraidh Extension Wind Farm and existing Fort Augustus substation is shown below.



Location Map.

¹ The Town and Country Planning (General Permitted Development) (Scotland) Order 1992 (Class 40)

This transport assessment examines the effect of the Proposed Development on the surrounding transportation network with specific reference to vehicles required to access the site during the construction phase. The assessment includes the following;

- Development Proposals;
- Traffic Generation; and
- Road Network Mitigation.

2 DEVELOPMENT PROPOSALS

Overview and Need for the Project

A connection application has been made to SSEN Transmission to connect the consented Bhlaraidh Extension Wind Farm on Glenmoriston Estate, to the national grid electricity network at Fort Augustus substation located approximately 15 km south of Bhlaraidh. The site is adjacent to the existing Bhlaraidh Wind Farm. Transmission infrastructure is required to connect into the 132kV busbars of the recently constructed 132kV substation building at Fort Augustus substation.

SSEN Transmission has a statutory duty under Schedule 9 of the Electricity Act 1989 to develop and maintain an efficient, co-ordinated and economical transmission system in its licenced areas. SSEN Transmission has obligations to offer non-discriminatory terms for connection to the transmission system.

As part of the development there is a requirement to construct a new substation at Bhlaraidh Extension Wind Farm. The wind farm developer is responsible for obtaining the associated consents and therefore associated construction traffic will not be considered as part of this traffic assessment other.

Proposed Transport Vehicles

Vehicles travelling to and from the Proposed Development would be formed of:

- Vehicles transporting construction workers;
- Vehicles transporting construction plant and machinery; and
- Vehicles transporting construction material such as wood poles.

The main primary access to the site for the OHL works is the A887 from Invermoriston. Invermoriston is located just off the A82 which accesses Inverness to the north and Fort William to the south.

Proposed access routes have been based on desktop analysis, engineers walkovers and on proposed wayleaves.

OHL Works

Access to the existing operational Bhlaraidh Wind Farm is already taken from the A82/A887.

Secondary access to all OHL structure positions can be obtained from the A887 from either the existing access track to Bhlaraidh Wind Farm, the old quarry access, off the A887 itself, access to and through Dundreggan Dam to the existing estate/forestry tracks and finally from estate/forestry tracks at Torgyle bridge. A further secondary access route to the southern end of the OHL can be made using existing forestry tracks from another primary access to Auchterawe substation. This secondary access links up with the A887 at Torgyle bridge. The routes are identified on Figure 3.1a-d of the Environmental Appraisal (EA).

The proposed OHL route is well served by an extensive network of existing forestry, estate, transmission and wind farm tracks and consequently no significant new or temporary permanent stone access tracks are envisaged, which will reduce the number of construction vehicles on parts of the highway network. It is considered one section of permanent stone access track of approximate length of 20 m and 5 m wide running surface will be required to connect one (of two) proposed Cable Sealing End (CSE) hardstanding areas. OHL structures comprise trident double timber poles which do not require concrete foundations associated with steel lattice supporting towers. Similarly, this will reduce the number of construction vehicles.

Due to the proximity to existing stone access tracks on this project, the construction of the OHL (including wood pole erection and stringing) will require All Terrain Vehicles and small excavators. Helicopters may be considered for transporting heavier materials.

Limited lengths of secondary temporary access tracks may be required for the OHL works. Generally removable inter-locking panels will be used.

It is anticipated that access routes from the public highway will not require upgrade. Refer to Figure 3.1a-d of the Environmental Appraisal for these locations. The Principal Contractor will consider this in more detail in its Construction Traffic Management Plan (CTMP) and will liaise with the relevant authorities as appropriate to arrange the necessary permits.

Construction and satellite delivery compound locations will be determined by the Principal Contractor who will be responsible for arranging the necessary consents. Several possible sites have been identified including at the existing wind farm access off the A887, the quarry off the A887 and the existing lay down space at Auchterawe substation, however, final locations will be determined by the Principal Contractor following its detailed design.

3 TRAFFIC GENERATION & MOVEMENTS

As part of the EA, construction traffic generation is estimated based upon required material volumes, staffing and construction plant. Associated access, traffic and transport impacts have then been assessed.

The following types of vehicle movements will be generated

- Light vehicles used by staff, courier vans and off-road pick-up trucks;
- Construction plant such as excavators; and
- HGVs transporting construction materials such as wood poles, access track panels and stone.

The frequency of these vehicle movements will vary throughout the course of the construction phase. The average number of daily movements has been calculated on the basis of a 30 day month, with all HGV deliveries taking place during weekdays i.e. based on a 22 day working month. The average number of monthly movements for a particular type of vehicle has been calculated by including only those months where movements of that particular type of vehicle are expected. The stated movements consider traffic flows in both directions.

The assessment conservatively considers that any stone material for the two new cable sealing end hardstandings and upgrades to existing tracks will be imported.

It should be noted the amount of existing access track upgrade work is difficult to ascertain at this stage and a conservative view has been taken. The Principal Contractor will undertake detailed existing access track condition surveys prior to the site works which will provide a more accurate estimate of quantities and be included in its CTMP.

Table 1 below shows approximate daily numbers of vehicles anticipated. **This will be subject to amendment by the Principal Contractor with final figures verified within its CTMP.**

Phase	Estimated Construction Period	Total Traffic Movements	Traffic Movements / Day (based on estimated construction period)
Contractors Personnel and Visitors	5 months	4400	40
Upgrade to existing stone access tracks and formation of two number stone cable sealing end hardstandings	4 months	374	5
General construction plant/materials delivery	5 months	528	5
OHL Timber Pole Delivery	3 months	180	3

Table 1 – Transport numbers

Notes:

- 1) Vehicle numbers include two-way traffic flows.
- 2) The civil engineering and electrical phases would not occur concurrently.

- 3) The above are initial estimates only. Actual movement depend on Contractor's plant and working methods.
- 4) The Principal Contractor, once appointed, will provide a detailed Construction Traffic Management Plan.
- 5) Heavy vehicles are assumed to be 32 tonnes maximum.

4 ROAD NETWORK MITIGATION

The proposed works will create additional traffic on the local and trunk road network. The presence of slow-moving construction plant on the road network may cause some short-term congestion, however the impacts are envisaged to be temporary and short term.

In order to address potential impacts from construction traffic, it is proposed that the construction contract would require the Principal Contractor to prepare a Construction Traffic Management Plan (CTMP), which would include the following mitigation measures:

- The Contractor will liaise with all relevant Local Authorities and Transport Scotland to determine appropriate traffic management arrangements for construction vehicle movements;
- The Contractor will agree appropriate and safe routes to and from the site with the relevant Local Authorities and Transport Scotland. All construction vehicles will be required to use approved access routes;
- Issues relevant to the public road network that the Contractor should consider and mitigate against include, inter alia, measures to minimise dust and dirt being deposited due to construction operations;
- Appropriate signage warning other motorists of the presence of construction vehicles should be implemented, where appropriate;
- Appropriate signage restricting vehicle speeds on the Trunk and Minor road to be considered in discussion with the relevant Local Authorities and Transport Scotland;
- Police escort or other escort approved by the relevant Police Authority will accompany any loads deemed necessary by the road's authorities;
- The Contractor will monitor and ensure that agreed mitigation measures are being implemented;
- The CTMP will remain a live document and will be updated during the construction period as required if any amendment to traffic management is required;
- The Contractor will ensure that a road condition survey is undertaken prior to the commencement of construction works; this will form the baseline and will be provided to the road authorities for approval prior to works commencing; and
- The Contractor will ensure that all permits and notifications, including, as necessary, Temporary Traffic Regulation Orders (TTROs) are in place prior to any movements and are applied for in sufficient time for review and approval and agreement with the road authority.

5 SUMMARY

The assessment has considered the types of traffic that would be travelling to and from the Proposed Development during construction, this would be vehicles transporting workers, construction plant and machinery and construction material such as wood poles. It also considers conservative estimates of the number of vehicle movements expected.

Section 4 sets out road network mitigation and the Principle Contractor would develop a detailed Construction Traffic Management Plan (CTMP) once appointed which would incorporate these.

The Contractor will ensure that a road condition survey is undertaken prior to the commencement of construction works; this will form the baseline and will be provided to the road authorities for approval prior to works commencing.

As such, any potential effects on the road network are considered to be capable of being managed through the CTMP.

Once operational, maintenance of the infrastructure would be relatively minor requiring approximately one to two vehicles visit per week. Therefore, the operational implications are not considered as part of the Transport Assessment