

APPENDIX 3.3: TRANSPORT ASSESSMENT

Appendix 3.3: Transport Assessment

- 3.3.1 Construction Traffic Interface Schedule
- 3.3.2 Buckie Harbour to Rothes III Wind Farm Route Study



LT121/122

Elchies (Rothes III) Wind Farm Grid Connection

Transport Assessment Report



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	Name	Title
Author	Ben Dodds	Civil Project Engineer
Checked by		

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1 Introduction

Scottish Hydro Electric Transmission plc ("the Applicant") who, operating and known as Scottish and Southern Electricity Networks Transmission ("SSEN Transmission") are applying for consent under section 37 of the Electricity Act (1989) to construct and operate a new single circuit 132 kV overhead line (OHL) between the Rothes III Wind Farm On-Site Substation and Blackhillock Substation.

SSEN Transmission has produced this Transport Assessment in support of a section 37 application associated with this connection.

The wind farm developer is responsible for arranging the necessary consents for the proposed Rothes III Wind Farm on-site substation at the consented Rothes III Wind Farm, including the substation platform. Any associated traffic assessment will not be considered in this report.

A series of figures are provided as follows to outline the proposed site layout.

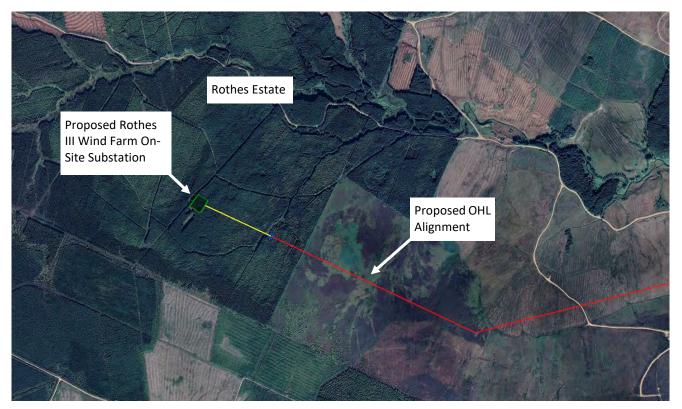


Figure 1 - Site Layout (Rothes End)

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Figure 2 - Site Layout (Blackhillock End)

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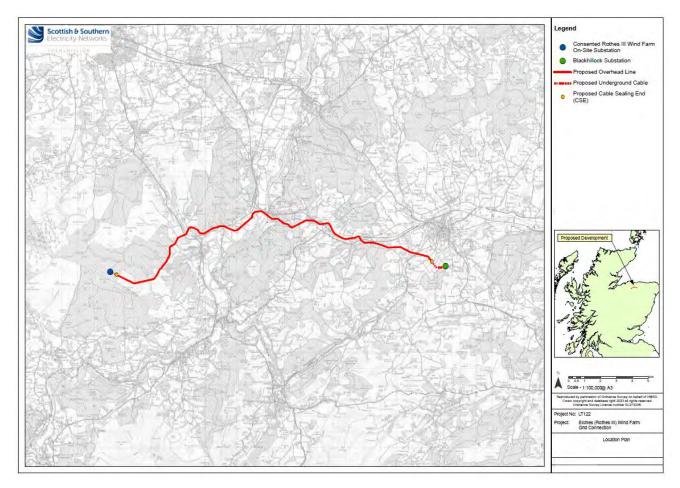


Figure 3 - Rothes III Wind Farm On-Site Substation to Blackhillock Substation Overhead Line Alignment

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 Route Strategy;
- Traffic Generation; and
- Road Network Mitigation.



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2 Development Proposals

2.1 Overview and Need for Project

SSEN Transmission have received a connection application from a developer, Fred Olsen Renewables, for a 99 MW Onshore Wind Farm at Elchies, located within Rothes Estate. The onshore wind farm is located approximately 15 km to the south of Elgin, Moray and 24 km to the west of Blackhillock where SSEN Transmission's Blackhillock Substation is located.

The connection will be provided from the on-site substation (Rothes III Wind Farm On-Site Substation) associated with the proposed windfarm development at Rothes, to the existing Blackhillock 132kV Substation through a 132kV single circuit trident wood pole overhead line (OHL), with some sections of underground cabling (UGC). The total connection length is 25.8km with OHL accounting for approximately 24.3km and UGC accounting for approximately 1.5km. The lengths of UGC are at the west from the proposed Rothes III Windfarm Substation to the Rothes Cable Sealing End and at the east from the Blackhillock Cable Sealing End to Blackhillock 132kV 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.

SSEN Transmission has developed this transport assessment in support of a section 37 application associated with this connection. This report will set-out the expected construction works, traffic generating activities, traffic routing strategy and conjectured traffic volumes.

The wind farm developer is responsible for arranging the necessary consents for the proposed Rothes III Wind Farm on-site substation at the consented Rothes III Wind Farm. Furthermore, it is the responsibility of the wind farm developer to construct the platform on which the substation will be placed. Any traffic assessment associated with the consented windfarm (including the substation platform) will not be considered in this report which will only focus on the traffic associated with the new OHL.

2.2 Works Activities

The following list provides an overview of the activities to be undertaken as part of the works. The works have been subdivided into those associated with the construction of the overhead lines, access roads, platforms etc. and those associated with the forestry operations.

Construction

- Delivery of construction plant and equipment;
- Site enabling works (road maintenance, street furniture, temporary laydowns etc.);
- Public road improvement works;
- Site clearance;

- Establishment of site compound;
- Excavation of access road formations;
- Installation of road drainage (trenches and culverts);



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Construction of access roading (import, placement > Delivery of poles and ancillaries; and compaction of stone);

Construction of access ramps;

Site clearance of stringing areas;

Stringing of poles;

Excavation / boring of cable route;

Laying of cable ducts;

Drawing of cables;

> Erection of poles;

Construction of Cable-Sealing-End structures;

Post-construction maintenance;

Other reinstatement works;

> Site demobilisation.

Forestry

Delivery of forestry plant and equipment;

Establishment of site compound;

Installation of forestry drainage;

Construction of forwarder ramps;

Harvesting (harvester, hand-cut etc.)

Forwarding and stacking;

> Timber extraction and haulage;

Post-forestry maintenance;

> Other reinstatement works; and

> Site demobilisation.

2.3 **Traffic Generating Activities**

The following list provides an overview of the activities that have been identified as contributing to road traffic. The traffic generating activities have been subdivided into those associated with the construction of the overhead lines, access roads etc. and those associated with the forestry operations.

Construction

- Delivery of construction plant and equipment;
- Public road improvement works;
- Delivery of site compound cabins, welfare and equipment;
- Delivery of fuel;
- > Delivery of road construction materials (asphalt, culverts, geotextiles etc.);
- Delivery of overhead line construction materials (poles, concrete, conductors, CSE structures etc.); ➤ Site demobilisation.
- Delivery of cable construction materials (cables, ducts etc.);
- Import of stone (for access roads, areas of backfill
- Export of spoil (arisings from excavations);
- ➤ Waste disposal;
- Road sweeper;
 - Site access personnel travel to and from site; and

Forestry

- Delivery of forestry plant and equipment;
- Delivery of site compound cabins, welfare and equipment;
- Delivery of fuel;
- Import of stone (for ramps etc.);
- Timber extraction and haulage;
- Site access personnel travelling to and from site; and
- Site demobilisation.

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3 Traffic Route Strategy

3.1 Overview

The site comprises a corridor spanning approximately 25.8km in which a range of construction activities and forestry activities will be undertaken. These activities are set out in Section 2.2 above.

The proposed overhead line route is well served by an extensive network of existing forestry, estate, transmission and wind farm tracks and consequently no significant lengths of new temporary or permanent stone access tracks are envisaged which will reduce the number of construction vehicles on parts of the highway network. Furthermore, the proposed overhead line structures comprise trident double timber poles which do not typically require the concrete foundations associated with steel lattice supporting towers. This reduction in concrete volume associated with the foundations will reduce the number of construction vehicles.

A significant number of the pole locations are located remote from formalised access roads and tracks and as such the works will require the use of all-terrain vehicles and excavators. Additionally, limited lengths of temporary access tracks, typically in the form of removable inter-locking panels, may be used to provide access to some of the remote locations. These panels will be in-place only for the necessary construction durations and can be placed and removed with limited land impacts (e.g. vegetation flattening). It is also possible that helicopters may be employed at the most remote locations for the transportation of heavier materials.

Construction and satellite delivery compound locations will be determined by the Principal Contractor who will be responsible for arranging the necessary consents.

The length of corridor gives rise to a significant number of interface points between traffic associated with the works and other traffic. There are also a number of interfaces between construction access, the public road network, forest road access and other forms of private access.

The interface points have been plotted on maps to show geographically where they occur. Furthermore, these interface points have been provided on a schedule which advises on the roads and access points at which the interfaces occur, the relative volume of works traffic and the anticipated nature of the works traffic. These map plans and the schedule of interface points are provided in **Appendix 3.3 - 3.3.1 - Construction Traffic Interface Schedule**.

The nature of the works and the length of the construction corridor mean that any given interface point, works traffic will be relatively low. At most of the interface points traffic will comprise a number of accesses over a number of days. The only exceptions to this are likely to be at western end of the corridor, at the access to the proposed Rothes III substation, at the entrance into Sourden Woods off the B9015 and at the eastern end of the corridor at the access to the Blackhillock Cable Sealing End structures. Traffic at all the other interface points should not be viewed as that associated with many other forms of construction activities, such as most residential developments, most commercial developments, heavy agricultural use etc.

The proposed access routes outlined in this report are based on an internal SSEN Transmission desk-study, SSEN Transmission engineer site visits, the access strategy provided by the appointed overhead line consultant, the access strategy provided by the SSEN Transmission internal forestry team and on the proposed wayleaves.



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The primary public roads serving access to the site corridor are as follows (from western end at Rothes to the eastern end at Blackhillock) – A941, B9015, B9103, A95, B9014 and the A96.

The remainder of the works access comprises a series of other C-Class and Unclassified Roads, Access Roads, Forest Roads, Access Tracks and Field accesses.

It is important to note that not all of the necessary works' accesses have been finalised. With respect to the design of the OHL alignment, SSEN Transmission commissioned an external consultant to produce a compliant overhead line alignment and develop an associated indicative construction access proposal. The OHL alignment has been confirmed however the access strategy is conjectured and will be confirmed by the construction contractor. There are however not anticipated to be any further new or upgraded accesses beyond those that are shown in the maps in **Appendix 3.3 - 3.3.1 - Construction Traffic Interface Schedule**. With respect to the forestry operations, the SSEN Transmission internal forestry team have developed a corresponding forestry works plan and associated indicative forestry access proposal. The necessary forestry access requirements are shown also in the **Appendix 3.3 - 3.3.1 - Construction Traffic Interface Schedule** maps. Ultimately however, it will be the responsibility of the appointed OHL works contractor to develop the associated OHL construction works accesses, and the responsibility of the appointed forestry works contractor to develop the associated forestry works accesses. Consequently, the accesses and interface points detailed in **Appendix 3.3 - 3.3.1 - Construction Traffic Interface Schedule** and discussed in the following section are conjectured. Having said this, there is confidence that the access to be taken by the appointed contractors will be those which has been discussed in this report.

The following section provides an outline of the site access points, interfaces with other road traffic and the general construction traffic routing strategy.

3.2 General Construction Traffic Routing Strategy

The works will involve the employment of a range of contractors; including those required for forestry works, erection of the overhead lines and poles, civils works, cabling works etc. The origin of all of the associated works' traffic cannot be clearly defined and thus the assumed access strategy from key origins is provided below.

From Inverness and the north, works traffic is likely to travel eastbound along the A96 through Nairn and skirting Forres towards Elgin, before departing the A96 at Elgin onto the A941 travelling southbound towards the western end of the works corridor at Rothes.

From Peterhead and the east, the majority of works traffic is likely to travel south then south-west along the A90 to the A90-A948 (Ellon) Roundabout, then travel west along the A920 through Ellon and Oldmeldrum before joining the A96 to the north of Colpy. The traffic will then travel north and north-west along the A96, bypassing Huntly and heading northwards to Keith, to the eastern end of the works corridor at Blackhillock. This route is unlikely to be suitable for some HGV's and thus larger vehicles are likely to instead, travel southbound at Invernettie Roundabout towards Aberdeen then departing the A90 onto the A96 at the Craibstone Roundabout before heading northbound along the A96.



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From Aberdeen and the south-east, works traffic is likely to travel north-west along the A96, skirting Inverurie, bypassing Huntly and heading northwards to Keith, to the eastern end of the works corridor at Blackhillock.

From the south, the majority of works traffic is likely to take one of two routes. The first route comprising site access via the A9 and A95, with traffic heading northbound along the A9 before departing onto the A95, to the north of Aviemore. Traffic will then travel north-east along the A95 via Speybridge and Ballindalloch until its junction with the A941 at Craigellachie, where traffic will travel north towards the western end of the works corridor. The second route comprising site access via the A90 and A96, with traffic heading northbound along the A90 before departing onto the A96 at the Craibstone junction. Traffic is then likely to travel north-west along the A96, skirting Inverurie, bypassing Huntly and heading northwards to Keith, to the eastern end of the works corridor at Blackhillock.

3.3 Key Access Points

3.3.1 IP1 – Access to Rothes III Substation off A941

The wind farm developer has a consented access route to the site of their proposed Rothes III Wind Farm which forms part of their S36 consent. At the time of writing this report, SSEN Transmission do not have a consented site access route and thus are not at this stage bound to the same consented access route as the developer. The works traffic volumes associated with the construction of the overhead line from Rothes to Blackhillock and any other SSEN Transmission associated works are expected to be significantly less than those associated with the development of the wind farm. However, it is assumed that traffic associated with the SSEN Transmission works will use the same access route as that of the wind farm developer. This access is taken from the A941 approximately 1.5km to the south of Fogwatt and is shown below.

This access is considered to be the most heavily trafficked during the works and as such there will be greatest volume of traffic interfacing with the public road network (A941) at this location. Works traffic here will be associated with the construction of the cable-sealing end structure, overhead line construction, forestry operations (incl. felling and extraction), cable-laying and construction of a 400m long permanent stone access track.

There is an existing large bellmouth junction at this interface point between the works access and the A941 which will facilitate the safe access onto and egress from the public road network.



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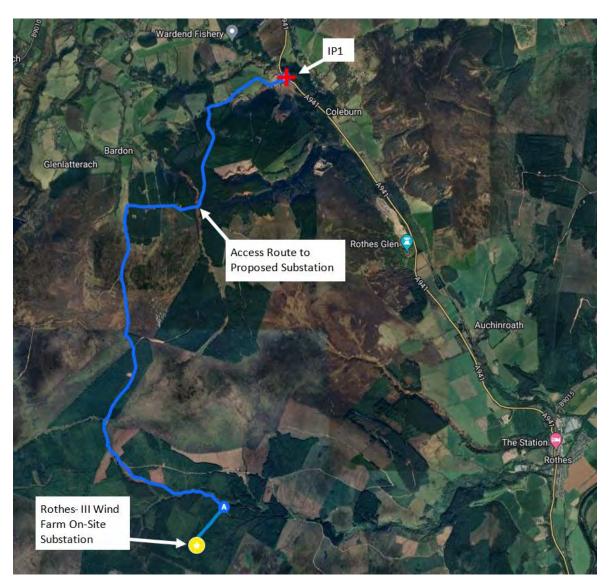


Figure 4 - IP1 - Access to Rothes Substation off A941

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3.3.2 IP12-16 – Access to OHL Route (Sourden Woods) off B9015

At this planning stage, there are 5 no. identified accesses required off the B9015. These access points are shown on Figure 5 below.

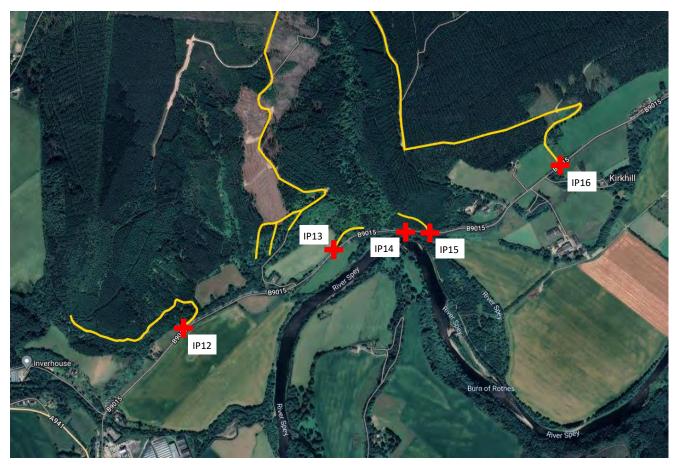


Figure 4 - IP12-16 - Access to OHL Route (Sourden Woods) off B9015

These access points provide construction access for 21 no. overhead line pole locations, a considerable area of forestry operations (in the area known as Sourden Woods) and challenging terrain which will require the construction of new access tracks and the upgrade of existing access tracks.

These 5 no. access points are all sited at the location of existing access points off the B9015. Only two of these access points are maintained, with the remaining having all fallen into disrepair. Consequently, it will be necessary to reinstate the remainder of these access points to a suitable standard. SSEN Transmission have engaged with Moray Council Roads Authority on the reinstatement of these bellmouths and are in the process of agreeing an access approach which provides safe egress from and access onto the B9015.

It is assumed that as a minimum, some degree of traffic management will be required at these access points.

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3.3.3 Access to Works at Blackhillock Substation

At the eastern end of the works corridor, at and adjacent to the existing Blackhillock substation, various works are proposed including the construction of the Blackhillock cable sealing end structure, the construction and erection of a length of overhead line and the laying of a length of cable and the connection of this cable into the existing substation.

The particulars of the works access here have not yet been defined – this will fall to the contractor to confirm. Access from the public road could occur at a number of interface points however it is assumed that primary access for the cable-sealing end works, overhead line installation and cabling works will be from the A96 at its junction with Denwell Road, to the immediate south of Keith. The primary access for the works in the substation will from the A96 via the Blackhillock Substation access.



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4 Traffic Generation

4.1 General Construction Traffic

Construction traffic approaching the proposed development would be formed of:

- Vehicles transporting workers;
- Vehicles transporting construction plant and machinery; and
- ➤ Vehicles transporting construction materials such as stone or cabling, poles.

As previously noted, the works are spread over a large construction corridor with a range of works happening in different locations at different times. For this reason, construction traffic volumes have been calculated for the works at the western end of the construction corridor, comprising the construction of the proposed Rothes III Substation, cable sealing end structure, associated new access track, upgrade of existing access roads and tracks, installation of overhead line poles and laying of buried electrical cable. The primary site access point associated with these works is the junction between the site access road and A941, located approximately 1.5km to the south of Fogwatt.

As previously noted, construction traffic at the western end of the construction corridor is likely to be far greater than construction traffic encountered elsewhere along the construction corridor and as such, these traffic volumes will provide an expected maximum traffic volume for the wider works.

Table 1 - General Construction Vehicle Numbers

Location	Period	Peak Light Vehicles / Day	Peak Heavy Vehicles / Day
Western End (Rothes) (IP1)	2025-26	20	10

Notes:

- 1) Vehicle numbers are two-way traffic flows
- 2) The above are initial estimates only. Actual movement depend on Contractor's plant and working methods.
- 3) The Principal Contractor, once appointed, will provide a detailed Construction Traffic Management Plan.
- 4) Light Vehicles less than 18 tonnes. Heavy vehicles 18-44 tonnes

4.2 Forestry Works Traffic

A proportion of the land occupied by the proposed overhead line alignment, cable route, new access roads and areas of platform are planted with trees and shrubs. These areas of plantation on which the proposed construction works are located require clearance to facilitate the delivery of these construction works. In some areas, an Operational Corridor of up to 72 m would require felling to ensure the necessary safety clearances are maintained between vegetation and electrical plant.

As noted above, the greatest construction traffic volumes are anticipated at the western end of the construction corridor. For this reason, the anticipated forestry traffic volumes in this area have been calculated. These traffic volumes, when viewed alongside the construction traffic volumes provided above, provide an indication of the



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total likely works traffic. It is also anticipated that there will be timber extracted at Sourden Woods. The plan for the felled timber here is that it be extracted, with the associated timber haulage departing the site access roads onto the B9015 and on to their final destinations. For this reason, the likely forestry associated traffic at Sourden Woods has also been provided below.

Table 2 – Timber Haulage Volumes

Location	Year	Total Timber Loads	Peak Timber Haulage / Day
Western End (Rothes) (IP1)	2025-26	35	5
Sourden Woods (IP12-15)	2025-26	30	4

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5 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, short term and minor.

To address potential impacts from construction traffic, the construction contract will 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, Stakeholders 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, Stakeholders and Transport Scotland. All construction vehicles will be required to use approved access routes
- ➤ The contractor will ensure that all permits and notifications, including, as necessary, Temporary Traffic Regulation Orders (TTROs) are in place prior to any AIL movements and are applied for in sufficient time for review and approval and agreement with the road authority.
- Movement of AIL will be restricted to take place outside peak flow hours to minimise disruption to general traffic flows;
- ➤ 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;
- Issues relevant to local landowners (including council and commercial premises) that the Contractor should consider and mitigate against include, inter alia, measures to disruption to associated parking and access;
- ➤ 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 roads are to be considered in discussion with the relevant Local Authorities and Transport Scotland;
- > The Contractor will monitor and ensure that agreed mitigation measures are being implemented; and
- > 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.



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6 Access Maps

- ➤ Map 1 Rothes Cable Sealing End Access
- ➤ Map 2 Small Burn Farm Access
- ➤ Map 3 Sourden Woods Access Sheet 1
- ➤ Map 4 Sourden Woods Access Sheet 2
- ➤ Map 5 Sourden Woods Access Sheet 3
- ➤ Map 6 Ben Aigan Access
- ➤ Map 7 Blackhillock Cable Sealing End Access



