Technical Appendix 12.1: Transport Assessment

Contents

ANNEXES

Annex A - Abnormal Indivisible Load Route Survey Report

1.0 Introduction

1.1 Purpose of the Report

Pell Frischmann Limited (PF) has been commissioned by Oliver Forest Wind Farm Limited (the Applicant) to undertake a Transport Assessment (TA) for the proposed Oliver Forest Wind Farm (hereafter referred to as 'the Proposed Development'), located in the Scottish Borders Council (SBC) administrative area.

The report identifies the key transport and access issues associated with the Proposed Development, including the route for abnormal loads. The TA identifies where the Proposed Development may require mitigation works to accommodate the predicted traffic; however, the detailed design of these remedial works is beyond the agreed scope of this report. Any mitigation works will be agreed with the appropriate road authority prior to construction and deliveries taking place.

This TA informs the assessment of effects in the EIA Report Chapter 12.

1.2 Report Structure

Following this introduction, the TA report is structured as follows:

- Section 2 describes the site location and the Proposed Development;
- Section 3 reviews the relevant transport and planning policies;
- Section 4 sets out the methodology used within this assessment;
- Section 5 describes the baseline transport conditions;
- Section 6 describes the trip generation and distribution of traffic in the study area;
- Section 7 summarises the traffic impact assessment;
- Section 8 considers mitigation proposals for development-related traffic within the study network; and
- Section 9 summarises the findings of the TA and outlines the key conclusions.

2.0 Site Background

2.1 Site Location

The site is located in the Tweed Valley in the Southern Uplands of Scotland within SBC's administrative area. The site is intersected by the A701. The location of the site is shown in Figure 1.1.

The site is approximately 350 hectares and currently comprises forestry and open moorland.

2.2 Proposed Development

The Proposed Development will comprise up to seven wind turbines with a maximum tip height of 250 m. The proposed layout is shown in Figure 3.2.

In addition to the turbines, the associated infrastructure would include the following components:

- permanent foundations supporting each turbine;
- crane hardstandings adjacent to each turbine;
- widening/improvement works to existing tracks on-site;
- new on-site access tracks providing access from existing track to all turbine locations;
- underground cabling linking each turbine with the substation control building;
- a substation compound including a control building;
- one Scottish Power Energy Networks (SPEN) construction compound which would be the location for the Battery Energy Storage System (BESS) following the construction of the wind turbines;

- two temporary construction compounds;
- temporary borrow pit search areas for the extraction of construction aggregates on-site; and
- a recreational heritage trail with associated car parking spaces and interpretation boards.

2.3 Candidate Turbines

A detailed Route Survey Report (RSR) considered the delivery of a Nordex N163 turbine components in detail along the proposed access route and is attached as Annex A.

The RSR was based on the worst-case in terms of maximum component size to be installed on-site within the parameters of the Proposed Development. Whilst it is currently unknown exactly which turbine would be installed on-site, the RSR is considered to be a robust assessment of the maximum dimensions and weight of turbine components that may be transported along the proposed abnormal indivisible load (AIL) delivery route.

The details of the Nordex N163 components are summarised in Table 1.

Table 1 – N163 Turbine Size Summary

Component	Length (m)	Width (m)	Height (m)	Weight (t)
Blade	81.500	4.395	4.110	28.871
Base Tower	11.561	4.300	4.292	83.318
Mid Tower 1	16.430	4.292	4.286	82.391
Mid Tower 2	21.125	4.286	4.279	81.401
Mid Tower 3	29.972	4.279	4.268	82.563
Top Tower	35.000	4.268	3.258	60.569

The selection of the final turbine model and specification will be subject to a commercial procurement process following the consent of the application. The assumed dimensions may therefore vary slightly from those assumed as part of this assessment.

The proposed Port of Entry (POE) is King George V (KGV) Docks in Glasgow. The port is the closest port to the site and as such is in line with the Government's "Water Preferred" policy towards AIL movements.

The port has been used by renewables deliveries in the past for a number of wind farms, including Kype Muir, Kilgallioch, Rigmuir and Clyde Wind Farms.

The port has sufficient quay and storage space and is well located for the strategic trunk road network.

To provide a robust assessment scenario based upon the known issues along the access route, it has been assumed that all blades would be carried on a Super Wing Carrier trailer.

Towers would be carried in a 4+7 clamp adaptor style trailer, whereas loads such as the hub, nacelle housing, and top towers would be carried on a six-axle step frame trailer.

Examples of the vehicles and trailers that are likely to transport loads are shown in Photograph 1 and 2.

Photograph 1 – Super Wind Carrier Trailer

Photograph 2 – Tower Trailer

3.0 Policy Context

3.1 Introduction

An overview of relevant transport planning policies has been undertaken and is summarised below for national and local government policies. Relevant policies are set out in Chapter 4 and a summary of the policy provisions relevant to access, traffic and transport is outlined below.

3.2 National Policy and Guidance

National Planning Framework 4 (NPF4)

The National Planning Framework 4 (NPF4) was adopted on 13 February 2023.

Policy 11: Energy within the NPF4 notes that:

"Development proposals for all forms of renewable, low-carbon and zero emissions technologies will be supported. These include:

- *Wind farms including repowering, extending, expanding and extending the life of existing wind farms; and*
- *Energy storage, such as battery storage and pumped storage hydro.*

In addition, project design and mitigation will demonstrate how the following impacts are addressed:

- *Impacts on communities and individual dwellings, including, residential amenity, visual impact, noise and shadow flicker;*
- *Public access, including impact on long-distance walking and cycling routes and scenic routes;*
- *Impacts on road traffic and on adjacent trunk roads, including during construction; and*
- *Cumulative impacts."*

Planning Advice Note (PAN) 75

Planning Advice Note (PAN) 75: Planning for Transport provides advice on the requirements for Transport Assessments. The document notes that:

"… transport assessment to be produced for significant travel generating developments. Transport Assessment is a tool that enables delivery of policy aiming to integrate transport and land use planning."

"All planning applications that involve the generation of person trips should provide information which covers the transport implications of the development. The level of detail will be proportionate to the complexity and scale of the impact of the proposal...For smaller developments, the information on transport implications will enable local authorities to monitor potential cumulative impact and for larger developments, it will form part of a scoping exercise for a full transport assessment. Development applications will therefore be assessed by relevant parties at levels of detail corresponding to their potential impact."

Transport Assessment Guidance (2012)

Transport Scotland's (TS) Transport Assessment Guidance was published in 2012. It aims to assist in the preparation of TAs for development proposals in Scotland such that the likely transport effects can be identified and dealt with as early as possible in the planning process. The document sets out requirements according to the scale of development being proposed.

The document notes that a TA will be required where a development is likely to have significant transport effects but that the specific scope and contents of a TA will vary for developments, depending on location, scale and type of development.

Onshore Wind Turbines, Online Renewables Planning Advice (May 2014)

The most recent Scottish Government advice note regarding onshore wind turbines was published in 2014. The advice note identifies the typical planning considerations in determining applications for onshore wind turbines including landscape impact, impacts on wildlife and ecology, shadow flicker, noise, ice throw, aviation, road traffic impacts, cumulative impacts and decommissioning.

In terms of road traffic impacts, the guidance notes that in siting wind turbines close to major roads, pre-application discussions are advisable as this is important for the movement of abnormal indivisible loads during the construction period, ongoing planned maintenance and for decommissioning (if applicable).

3.3 Local Policy and Guidance

Scottish Borders Council Local Development Plan (2016)

The Scottish Borders Council Local Development Plan (LDP) was adopted in 2016 and has been prepared to address Scottish Borders community's future requirements up to 2025.

Policy ED9: Renewable Energy Development:

"The council will support proposals for both large scale and community scale renewable energy development including commercial wind farms, single or limited scale wind turbines, biomass, hydropower, biofuel technology, and solar power where they can be accommodated without unacceptable significant adverse impacts or effects, giving due regard to relevant environmental, community and cumulative impact considerations…"

Policy IS4: Transport Development and Infrastructure:

"… Proposals that generate significant travel demand will be required to provide the following criteria:

a) Transport Assessments and Travel Plans
b) Developer contributions where appropriate"

Policy IS5: Protection of Access Routes:

"Development that would have an adverse impact upon an access route available to the public will not be permitted unless a suitable diversion or appropriate alternative route, as agreed by the Council, can be provided by the developer."

Scottish Borders Council Supplementary Guidance Renewable Energy (2016)

In relation to road and traffic implications associated with wind energy developments, The Scottish Borders Council Supplementary Guidance Renewable Energy states:

"During construction, wind energy developments have the potential to generate significant levels of traffic, including abnormal loads associated with transporting the turbine components. The Council expects all proposals to fully consider the potential impacts of the development on the Scottish Borders road network in terms of the structural and physical ability of both roads and bridges to accommodate the additional traffic generated and the need to minimise any disturbance to local communities. Should turbine transportation routes require to cross third-party land, the applicant should ensure that appropriate agreements are in place to allow access to be achieved. Early contact should be made with the Council's roads planning section in terms of the scope and extent of a Transport Assessment and Construction Traffic Management Plan which would be required to address issues such as routeing, timing of deliveries, community liaison and road infrastructure improvements."

3.4 Policy Summary

The Proposed Development can align with the stated transport policy objectives. The design of the site and proposed mitigation measures will ensure compliance with national and local objectives.

4.0 Study Methodology

4.1 Introduction

There are three phases of the life of the Proposed Development. All three phases have been considered in this assessment and are as follows:

- the construction phase;
- the operational phase; and
- the decommissioning phase.

4.2 Project Phases – Transport Overview

Of all of the three phases, the construction phase is considered to have the greatest impact in terms of transport. Construction plant, bulk materials and turbine sections will be transported to site and may potentially have a significant increase in traffic on the study area network.

The operational phase is restricted to occasional maintenance operations which generate significantly lower volumes of traffic that are not considered to be in excess of daily traffic variation levels on the road network.

The decommissioning phase involves fewer trips on the road network than the construction phase, as minor elements of infrastructure are likely to be left in place, adding to local infrastructure that can potentially be used for further agricultural or leisure uses in the future.

It should be noted, however, that construction effects are short-lived and transitory in nature, whilst the operational phase assessment has been assumed to be based on typical operating conditions with occasional operational and maintenance traffic.

4.3 Scoping Discussions

The Applicant submitted an EIA Scoping Report to the Scottish Ministers in November 2022 in respect of the EIA which included a section considering traffic and transport. A full review of the EIA Scoping Opinion and responses from stakeholders is provided in Chapter 12 of the EIA Report.

5.0 Baseline Conditions

5.1 Access Arrangement

The Proposed Development would be accessed directly from the upgraded forestry access junction along the A701. The access junction will be designed to accommodate deliveries for the larger turbine components, as well as being suitable for general construction traffic.

The access junction would have the first 10 m surfaced in a bituminous macadam, appropriate junction markings and reflective junction markers would be provided at the access bell-mouth. The throat of the junction would be widened to a minimum of 5.5 m to ensure that opposing vehicles can pass safely.

Visibility splays of 215 m in both directions with a setback distance of 4.5 m from the centre of the junction would be provided.

The layout of the junction is illustrated in Figure 12.5.

5.2 Study Area Determination

The study area was proposed within the EIA Scoping Report and includes local roads that are likely to experience increased traffic flows resulting from the Proposed Development.

The geographic scope was determined through a review of Ordnance Survey (OS) plans and an assessment of the potential origin locations of construction staff and supply locations for construction materials.

Strategic access to the site will be from the A74(M) (north and south of Junction 15), via the A701. Construction materials could be brought to the site along the A701 from the A74(M) and Moffat or from the direction of Broughton, depending upon the source.

Abnormal loads associated with the wind turbines will be delivered to the site from the POE at KGV Docks via the M8, M74 and A701.

The study area for this assessment is therefore as follows:

- A74(M) to the north and south of Junction 15; and
- A701 between the A74(M) and Broughton.

The study area is illustrated on Figure 12.1.

5.3 Pedestrian and Cyclist Networks

A review of the SBC Core Paths Plan (Tweedsmuir – Area 37[1]) available on the SBC website indicates that there are no Core Paths within the site boundary.

A review of Sustrans cycle network plan[2] of the United Kingdom revealed that there are no on-road cycle routes along National Cycle Network within the study area.

The A701 comprises the route of the Tour o' the Borders which will return as a closed-road event on 07 September 2025, having previously taken place in 2023.

[1] Available at: https://www.scotborders.gov.uk/downloads/file/1181/tweedsmuir_core_paths
[2] Available at: https://www.sustrans.org.uk/national-cycle-network

The length of the A701 road between Rachan and Tweedsmuir forms part of the Megget, Talla and Tweeddale 86 km route which is included in the Innerleithen Cycling Tours from the SBC's Borders towns cycle routes[3].

5.4 Road Access

The A701 is a two-way single carriageway road which is generally subject to the national speed limit for vehicles less than 7.5 tonnes (t) outwith settlements, which reduces to 40 miles per hour (mph) and 30 mph when travelling through Moffat and 20 mph and 30 mph when travelling through Broughton. Signage along the A701 shows that vehicles over 7.5 t are subject to a 40 mph speed limit, and there is also speed camera signage along the road. The A701 is generally in good condition however there are some locations along the road where deterioration is evident from online imagery. Signage along the road warns motorists of sharp bends and advises to reduce speeds. To the south of Campbell Hunter Woodland there is signage that warns motorists of the presence of deer in the area. There are some parking locations along the length of the road. The A701 is maintained by SBC and DGC.

In Scotland, the M74/A74(M) provides a connection between Glasgow and Gretna Green. The M74/A74(M) comprises three lanes in each direction which are separated by a central reserve and is the responsibility of Transport Scotland. The M74 runs from Glasgow to Junction 13 at Abington, where it then becomes the A74(M) connecting to the A701 at Junction 15. South of the English border, the motorway is designated as the M6 and is the responsibility of National Highways.

The Agreed Timber Route Map[4] has been developed by The Timber Transport Forum who are a partnership of the forestry and timber industries, local government, national government agencies, timber hauliers and road and freight associations. One of the key aims of the forum is to minimise the impact of timber transport on the public road network, on local communities and the environment. A and a way of achieving this is to categorise the roads leading to forest areas in terms of their capacity to sustain the likely level of timber haulage vehicles i.e., HGVs. The routes are categorised into four groups, namely; ‘Agreed Routes’, ‘Consultation Routes’, ‘Severely Restricted Routes’ and ‘Excluded Routes’.

Within the study area, the A701forms part of the Agreed Route network used for the extraction of timber and are therefore regularly used by HGV traffic. Within the Agreed Timber Route Map[5], ‘Agreed Routes’ are categorised as routes used for timber haulage without restriction as regulated by the Road Traffic Act 1988. A-roads are classified as ‘Agreed Routes’ by default unless covered by one of the other road classifications.

5.5 Existing Traffic Conditions

In order to assess the impact of construction traffic on the study area, existing traffic data was obtained from the Transport Scotland database. Traffic data was also sourced from the Department for Transport (DfT) database at locations where traffic data was not available from Transport Scotland.

Available traffic data from 2019 was used to estimate existing traffic flows, as this data was not affected by Covid-19 travel restrictions. National Road Traffic Forecasts (NRTF) low growth factors were applied to the 2019 data to estimate 2024 flows. The low growth factor for 2019 to 2024 is 1.033.

The traffic survey locations are as follows and are shown in Figure12.2:

1. A701, Broughton (DfT Count Point 50955);
2. A701, Site Access (DfT Count Point 1064);
3. A701, north-west of Moffat (DfT Count Point 30877);
4. A701, south-west of Moffat (DfT Count Point 10875);
5. A74(M), near Newton Wamphray northbound (TS Count Point ATC6_31N);
6. A74(M), near Newton Wamphray southbound (TS Count Point ATC6_31S);
7. A74(M), south of Crawford northbound (TS Count Point ATC6_22N); and

[3] Available at: https://www.scotborders.gov.uk/directory-record/12641/innerleithen_cycle_trails

[4] Timber Transport Forum, 2024 Available at: https://timbertransportforum.org.uk/agreed-routes-map/introduction-to-agreed-routes-map/
‘Agreed Routes’ are categorised as routes used for timber haulage without restriction as regulated by the Road Traffic Act 1988. A-roads are classified as ‘Agreed Routes’ by default unless covered by one of the other road classifications. Those links classed as ‘Consultation Routes’ are categorised as a route which is key to timber extraction, but which are not up to ‘Agreed Route’ standard. Consultation with the local authority is required, and it may be necessary to agree limits of timing, allowable tonnage etc. before the route can be used. B-roads are classified as ‘Consultation Routes’ by default unless covered by one of the other classifications. ‘Severely Restricted Routes’ are not normally to be used for timber transport in their present condition. These routes are close to being Excluded Routes. Consultation with the local authority is required prior to use. Finally, ‘Excluded Routes’ should not be used for timber transport in their present condition. These routes are either formally restricted, or are close to being formally restricted, to protect the network from damaging loads.

8. A74(M), south of Crawford southbound (TS Count Point ATC6_22S).

These traffic count sites were identified as being areas where sensitive receptors on the access route would be located. A full receptor sensitivity and effect review is presented in Chapter 12.

The traffic count data allowed the traffic flows to be split into vehicle classes and the data have been summarised into cars/ light goods vehicles (lights) and heavy goods vehicles (HGVs) (buses and all goods vehicles >3.5 tonnes gross maximum weight).

Table 2 summarises the 24-hour average daily traffic data at the count sites in 2024.

Table 2 – 24-hour Average Traffic Data (2024)

No.	Survey Locations	Data Source	Cars & Lights	HGV	Total	% HGV
1	A701, Broughton	DfT	1,191	124	1,315	9
2	A701, Site Access*	DfT	942	100	1,042	10
3	A701, north-west of Moffat	DfT	1,253	98	1,351	7
4	A701, south-west of Moffat	DfT	6,237	312	6,549	5
5	A74(M), near Newton Wamphray northbound	TS	11,654	5,853	17,507	33
6	A74(M), near Newton Wamphray southbound	TS	11,752	5,739	17,492	33
7	A74(M), south of Crawford northbound	TS	12,479	6,124	18,602	33
8	A74(M), south of Crawford southbound	TS	12,598	5,993	18,592	32

Please note minor variances due to rounding may occur.

* Assumed that the DfT count site is located at the site access.

The two-way seven-day average and 85th percentile speeds observed at the Transport Scotland count sites are summarised in Table 3. No speed data is available at the DfT count points.

Table 3 – Speed Summary (2024)

No.	Survey Locations	Mean Spped (mph)	85th %ile Speed (mph)	Speed Limit (mph)
1	A701, Broughton	No Data Available		20
2	A701, Site Access			60
3	A701, north-west of Moffat			60
4	A701, south-west of Moffat			40
5	A74(M), near Newton Wamphray northbound	67.3	76.7	70
6	A74(M), near Newton Wamphray southbound	67.0	76.7	70
7	A74(M), south of Crawford northbound	67.7	77.3	70
8	A74(M), south of Crawford southbound	66.9	75.9	70

The speed information shown in Table 3 indicates that the 85th percentile speeds exceed the speed limit at all of the count locations where speed information is available. The results suggest that there is a need for greater enforcement at these locations and greater enforcement measures may be required by the relevant authorities.

5.6 Accident Review

Road traffic accident data for the three-year period commencing 01 January 2020 through to the 31 December 2022 was obtained for the relevant road sections within the Study Area. This information was sourced from the online resource CrashMap[6] which uses data collected by police about road traffic crashes occurring on British roads where an accident occurred. TA Guidance[7] requires an analysis of the

[6] https://www.crashmap.co.uk/

[7] https://www.transport.gov.scot/media/4589/planning_reform_-_dpmtag_-_development_management__dpmtag_ref__17__-_transport_assessment_guidance_final_-_june_2012.pdf Accessed 21/03/2024

Personal Injury Assessment (PIA) on the road network in the vicinity of any development to be undertaken for at least the most recent 3-year period.

The statistics are categorised into three categories, namely “slight” for damage-only incidents, “serious” for injury accidents and “fatal” for accidents that result in a death.

The locations of the accidents recorded along the A701 within the study area are shown in Figure 12.3.

A summary analysis of the incidents indicates that:

- a total of 13 accidents were recorded along the A701, within the study area, during the three-year period;
- of the 13 accidents, five were recorded as slight accidents, seven were recorded as serious accidents and one involved a fatality;
- the fatal accident involved a motorcycle and was a single-vehicle accident, recorded on a slight bend to the south of the SBC / DGC boundary;
- a total of eight accidents were recorded to involve motorcycles, of which five were single-vehicle accidents;
- five of the accidents were recorded to involve cars, all of which were recorded as multi-vehicle accidents;
- four accidents were recorded to involve HGVs, of which one was a multi-vehicle accident, two accidents were recorded as single-vehicle accidents not involving others and one was a single-vehicle accident involving a pedestrian;
- the accident involving the pedestrian and a HGV occurred on the A701, between the A701 / High Street junction in Moffat, and was classified as slight;
- an accident involving a pedestrian and a car occurred on the A701, near the A701 / Church Place junction in Moffat, and was classified as serious; and
- one accident involved a collision between a bicycle and a car at the A701 / High Street junction in Moffat, and was classified as slight.

Based on the information available, it has been established that there are no specific road safety issues within the immediate vicinity of the Proposed Development that currently require need to be addressed or would be exacerbated by the construction of the Proposed Development. The majority of recorded accidents occurred on or the approach to bends on the carriageway or in the vicinity of junctions, where there is an increased level of vehicle interaction.

5.7 Future Baseline Conditions

Construction of the Proposed Development could commence during 2029 if consent is granted and is anticipated to take approximately 18 months depending on weather conditions and ecological considerations.

To assess the likely effects during the construction phase, base year traffic flows were determined by applying a NRTF low growth factor to 2024. The NRTF low growth factor for 2024 to 2029 is 1.026. This factor was applied to the 2024 traffic data previously presented in Table 2 to estimate the 2029 baseline traffic flows. The 2029 baseline traffic flows are shown in Table 4.

Table 4 – 24-hour Average Traffic Data (2029)

No.	Survey Locations	Cars & Lights	HGV	Total	% HGV
1	A701, Broughton	1,222	127	1,349	9
2	A701, Site Access	967	103	1,069	10
3	A701, north-west of Moffat	1,286	101	1,386	7
4	A701, south-west of Moffat	6,399	320	6,719	5
5	A74(M), near Newton Wamphray northbound	11,957	6,005	17,962	33
6	A74(M), near Newton Wamphray southbound	12,058	5,889	17,947	33
7	A74(M), south of Crawford northbound	12,803	6,283	19,086	33
8	A74(M), south of Crawford southbound	12,926	6,149	19,075	32

5.8 Committed Developments

A review of surrounding developments on the Energy Consents Unit (ECU) database[8] and SBC's, South Lanarkshire Council's (SLC's) and DGC's Planning Portals has been undertaken in order to identify a number of consented (i.e. committed developments) proposals in the surrounding area which are anticipated to impact on the study area.

TA guidance[9] advises that only those projects with extant planning permission or local development plan allocations within an adopted or approved plan require to be included in any assessment. Those projects in scoping or not yet determined should not be included in cumulative assessments as they have yet to be determined. When considering traffic impacts specifically in relation to the construction phase of a project, the potential traffic impact is highly speculative and as such, cannot be included in the assessment.

Local Wind Farms

A review of surrounding wind farm planning applications within 15 km has been undertaken and the findings of this are detailed in Table 5.

Table 5 – Committed Development Wind Farm and Energy Schemes

Reference	Wind Farm	Number of Wind Turbines	Current Status
22/01887/FUL (SBC Reference)	Glenkerie Wind Farm	11	Operational. Awaiting decision on extension of life.
13/00552/FUL (SBC Reference)	Glenkerie Wind Farm Extension	6	Planning permission granted.
15/00020/S36 and 20/00789/S36 (SBC References)	Whitelaw Brae Wind Farm	14	Under construction.
ECU00004635 (ECU Reference)	Overhead Line Connection For Whitelaw Brae Wind Farm	N/A	Application.
22/00681/NECON (SBC Reference) and ECU00003446 (ECU Reference)	Grayside Wind Farm	15	Application.
P/19/1803 (SLC Reference)	Priestgill Wind Farm	7	Planning permission granted.

It should be noted that the construction period of a wind farm development is transitory in nature and all impacts are short-lived and temporary, therefore, traffic flows associated with the consented wind farm developments will not be included in the 2029 Future Baseline Flows to be used in the Construction Peak Traffic Impact Assessment. The inclusion of further traffic flows in the baseline will dilute the potential impact that the Proposed Development's proposals will have. The approach taken is therefore considered to be a robust assessment.

However, in order to inform the planning authorities of possible issues if the consented sites were to be constructed concurrently with the Proposed Development, a combined sensitivity review will be undertaken as part of the cumulative assessment, which is presented in Chapter 12 of the EIA Report.

[8] https://www.energyconsents.scot/ApplicationSearch.aspx?T=1 Accessed 21/03/2024

[9] UK Government, (2014) It is important to give appropriate consideration to the cumulative impacts arising from other committed development (ie development that is consented or allocated where there is a reasonable degree of certainty will proceed within the next 3 years).

As a robust assessment, the sensitivity review will assess the wind farm development's peak construction period.

A review of the wind farms outlined in Table 5 is presented below.

A review was undertaken of Glenkerie Wind Farm's application to extend the operational period of the existing wind farm for a further ten years, from 25 years to 35 years. A review of the online planning submission documents associated with the time extension application shows that transport has been scoped out of the EIA as "*The extension of the operational life of Glenkerie will not generate any significant additional regular traffic movements*". As such, trips associated with Glenkerie Wind Farm's application to extend its operational period by an additional ten years and is not included as a cumulative development in the combined sensitivity review.

Glenkerie Wind Farm Extension was granted planning permission for a total of six wind turbines following an appeal on 29 July 2015. An online search did not find any recent information regarding plans to commence construction of the wind farm. However, as Glenkerie Wind Farm Extension has planning consent, it is included as a cumulative development within the combined sensitivity review.

An application to vary the consent for the approved Whitelaw Brae Wind Farm was granted on 23 November 2021. The wind farm is currently under construction with advanced felling and access tracks being installed. A review of the project timeline[10] notes that in Summer 2026 that the grid connection should be complete and final turbines will be erected and commissioned. As such, it is expected that Whitelaw Brae Wind Farm will be constructed prior to the commencement of the Proposed Development's construction phase and is therefore not included as a cumulative development within the combined sensitivity review.

An application for an Overhead Line (OHL) connection for Whitelaw Brae Wind Farm has been made which is currently at application stage. A review of the online planning application documents notes that construction traffic movements associated with the proposal can be accommodated on the A701. As the construction traffic movements can be accommodated and as the proposal does not have planning permission, it is therefore not included as a cumulative development in the combined sensitivity review.

A review of the Grayside Wind Farm application indicates that the wind farm has not yet received consent and as such it cannot be considered as a committed development. It should also be noted that a review of the associated online planning submission documents found that general construction traffic associated with the development would not impact the Proposed Development's Study Area. For these reasons, Grayside Wind Farm is not included as a cumulative development in the combined sensitivity review.

Priestgill Wind Farm will comprise a total of seven wind turbines and was granted planning permission on 30 March 2021. A review of online planning submission documents indicates that general construction traffic will not impact the Proposed Development's Study Area and as such is not included as a cumulative development in the combined sensitivity review.

Should any of the current schemes under planning consideration at present be consented or constructed concurrently with the Proposed Development, any crossover of traffic with the Proposed Development flows will be addressed via an overarching Traffic Management and Monitoring Plan (TMMP).

Other Planning Applications

A review of the SBC's, SLC's and DGC's online planning portals was also undertaken for other any other developments with planning consent, which should be considered within this assessment. The review examined consented developments whose trips are considered significant in scale (i.e., has associated traffic impact of over 10%).

The review did not identify any other significant traffic-generating developments in the study area that may occur during the construction period associated with the Proposed Development.

It should be noted that the use of low NRTF growth assumptions has provided a basis for general local development growth within the study area.

[10] https://rippleenergy.com/our-projects/whitelaw-brae-wind-farm [Accessed: 21/05/2024]

6.0 Trip Generation and Distribution

6.1 Construction Phase

Trip Derivation

During the approximate 18-month construction period, the following traffic will require access to the site:

- staff transport, in either cars or staff minibuses;
- construction equipment and materials, deliveries of machinery and supplies such as crushed rock;
- components relating to the battery storage element, substation components and associated infrastructure; and
- abnormal loads consisting of the wind turbine sections and also a heavy lift crane.

Average monthly traffic flow data were used to establish the construction trips associated with the site based on the assumptions detailed in the following sections.

It should be noted that there may be variances in the following calculations due to rounding errors. These are not considered to be material.

Construction Staff

Staff would arrive in non-HGV vehicles and where possible will be encouraged to car share. The workforce on-site will depend on the activities undertaken but based on previous wind farm construction site experience for a project of this scale, which suggests three staff per turbine during the short peak period of construction is likely, the maximum number of staff expected on-site could be around 21 per day.

For the purposes of estimating traffic movements, it was assumed that 60 % of staff would be transported by minibus and 40 % would arrive by car (single-car occupancy was assumed as the worst case at this stage with potentially fewer movements through car sharing).

Based on these assumptions, staff transport cars and light vehicles would account for a maximum of 30 journeys (15 inbound and 15 outbound) per day during the peak period of construction.

Abnormal Indivisible Load Deliveries

The turbines are broken down into components for transport to the site. The nacelle, hub, drive train, blade, tower sections are classified as AIL due to their weight, length, width and height when loaded. For the purposes of the report, the 'worst case' numbers of components requiring transport are illustrated in Table 6.

Table 6 – Turbine Components

Component	Number of Components per Turbine
Rotor Blades	3
Tower Sections	5
Nacelle	1
Hub	1
Drive Train	1
Nose Cone	1
Transformer	1
Ancillary	1
Site Parts	0.2

In addition to the turbine deliveries, two high capacity erection cranes would be needed to offload a number of components and erect the turbines. The cranes are likely to be mobile cranes with a capacity up to 1,000 tonnes that are escorted by boom and ballast trucks to allow full mobilisation on-site. Smaller erector cranes would also be present to allow the assembly of the main cranes and to ease the overall erection of the turbines.

Escort vehicles would accompany the AIL convoys to support the traffic management measures. Up to three vehicles would be deployed, and it is assumed that three turbine components would be delivered per convoy. The nacelle, hub, drive train, blade and tower sections are classified as AIL due to their weight and / or length, width and height when loaded, resulting in 11 AIL loads per turbine. This would result in 26 convoys on the network, with a total of 158 escort journeys (79 trips inbound and 79 trips outbound).

The escort vehicles have been assumed to be police cars and light goods vehicles. Motorcycles may be deployed, depending upon Police resources.

General Deliveries

Throughout the construction phase, general deliveries will be made to site via HGV. These would include fuel, site office supplies and staff welfare. At the height of construction, it is assumed that up to 40 journeys to site are made (20 inbound and 20 outbound) per month.

Material Deliveries

Various materials will need to be delivered to site to construct the site based infrastructure. At the outset of the construction works, HGV deliveries will deliver plant and initial material deliveries to the site to enable the formation of the site compound and to deliver construction machinery.

As a worst-case assessment, it assumes that all concrete required for the construction of the turbines, substation and ancillary elements will be delivered to the site as ready-mix concrete. The estimated total volume of concrete required on site is 6,557 m³. The deliveries associated with the ready-mix concrete will result in a total of 1,640 journeys (820 inbound and 820 outbound).

There are a number of potential suppliers in the area, however for the purposes of the assessment, those highlighted in Table 7 have been assumed as being the most likely source of materials.

Table 7 – Supplier Locations

Company Name	Address	Material	Approx. Distance	Route
Tillicoultry Quarries Ltd: Edston Quarry	Peebles EH45 8NW	Aggregate and Crushed Rock	39 km	A72 and A701
Tillicoultry Quarries Ltd: Ryeflatt Quarry	Ryeflat Road, Carnwath, Lanark ML11 8SA	Sand and Gravel	44 km	A70, A721 and A701
Grange Quarry Ltd – Lockerbie Plant	Kirkburn Industrial Estate, Lockerbie DG11 2FF	Concrete	46 km	B7076, B7068, A74(M) and A701
Beatson's Concrete	Eastfield Industrial Estate, Eastfield Drive, Penicuik EH26 8BA	Concrete (8 wagons)	47 km	A701
Tarmac Jericho Bridge Quarry	Locharbriggs, Dumfries DG1 1QS	Aggregates	50 km	A701
Breedon Hyndford Quarry	Hyndford Rd, Lanark ML11 9TA	Aggregates	54 km	Hyndford Road, A73, A74(M), B719 and A701

Reinforcement for the turbine bases, substation and miscellaneous works are detailed in Table 8 below.

Table 8 – Reinforcement Deliveries

Element	Weight / Installation (t)	Total Weight (t)	Lorry Capacity (t)	Inbound Trips	Total Journeys
Turbine Foundation	80	560	30	19	38
Substation Foundation and Miscellaneous	78	78	30	3	6

The access tracks would generally be 5 m in width and would be designed to accommodate 16 tonne (t) axle loads. In addition to the roads, crane pads will be constructed to enable the turbine erection process. The tracks, crane pads and compounds would require geotextile in the foundations.

To provide a robust assessment of potential traffic impact, it has been assumed that 50 % of the material for tracks, hardstandings and compound areas would be imported to the site and is shown in Table 9. This represents an overestimate, with the expectation that the on-site borrow pits will be capable of providing 100 % of the required material. The assessment is therefore considered robust. For the purpose of this assessment it is assumed that aggregate material would be delivered from quarries near Peebles (as the closest likely location).

Table 9 – Aggregate Material Deliveries

Element	Volume / Installation (m³)	Total Weight (t)	Lorry Capacity (t)	Inbound Trips	Total Journeys
Tracks	4,834	10,634	20	532	1,064
Crane pads	8,400	18,480	20	924	1,848
Compounds	2,700	5,940	20	297	594
Substation	2,100	4,620	20	231	462

Geotextile would be delivered to site in rolls. A total of 171 large rolls may be required at site and would be delivered by HGV which will result in 18 journeys (9 trips inbound and 9 trips outbound).

Cables would connect each turbine to the substation and control building Trip estimates for the cable materials are provided below in Tables 10 and 11.

It is estimated that on average three cables would be provided within each cable trench and would be backfilled with cable sand. The cable materials would be likely sourced from the north of the site and delivered via the A74(M) and A701.

Table 10 – Cable Trip Estimate

Element	Total Cable Length (m)	Length per Drum (m)	Number of Drums	Inbound Trips	Total Journeys
Cabling	6,400	500	38	5	10

Table 11 – Cable Sand Trip Estimate

Element	Volume / Installation (m^3)	Total Weight (t)	Lorry Capacity (t)	Inbound Trips	Total Journeys
Cable sand	2,160	3,456	20	173	346

Additionally, ducting material deliveries will account for 10 journeys (5 trips inbound and 5 trips outbound).

One substation building would be constructed on the site. This would require deliveries of building materials and structural elements and would result in 240 journeys (120 trips inbound and 120 trips outbound). Storage battery deliveries will result in a further 88 HGV journeys (44 inbound and 44 outbound) for battery, inverter and cabin / building deliveries.

In order to accommodate the Proposed Development, forestry extraction would be required on-site during the construction phase resulting in a total of 300 journeys (150 trips inbound and 150 trips outbound).

The resulting traffic generation estimates have been plotted onto the indicative construction programme to illustrate the peak journeys on the network. Table 12 illustrates the predicted trip generation throughout the construction programme.

Table 12 – Predicted Construction Traffic Profile

Activity	Class	Month																	
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**
Site Establishment	HGV	50	50	50															
General Site Deliveries	HGV	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Access & Site Tracks	HGV		177	177	177	177	177	177											
Forestry Removal	HGV		100	100	100														
Compounds	HGV		594																
Crane Hardstanding	HGV			264	264	264	264	264	264	264									
Turbine Foundations	HGV				205	205	205	205	205	205	205								
On-site Cabling - Cabling and Ducting Deliveries	HGV				5		5		5		5								
On-site Cabling - Cabling Sand	HGV				43	43	43	43	43	43	43	43							
Substation Civils Works	HGV		83	83	83														
Substation Construction	HGV					116	116	116	116	40	40	40	40	40	40				
Cranage	HGV										20				20				
Battery deliveries	HGV										44	44							
Turbine Delivery and Erection	HGV										50	50	50	50					
Site Reinstatement	HGV																40	40	40
Turbine Escorts	Car & LGV										40	40	40	40					
Commissioning & Testing	Car & LGV																40	40	40
Staff	Car & LGV	352	352	660	660	660	660	660	660	660	660	660	660	660	660	660	352	352	352
Total HGV		90	1,044	714	918	846	851	846	673	593	447	217	130	130	100	40	80	80	80
Total Cars / LGV		352	352	660	660	660	660	660	660	660	700	700	700	700	660	660	392	392	392
Total Movements		442	1,396	1,374	1,578	1,506	1,511	1,506	1,333	1,253	1,147	916	829	829	760	700	472	472	472
Total HGV per Day		**4**	47	32	42	38	39	38	31	27	20	**10**	**6**	**6**	**5**	**2**	**4**	**4**	**4**
Total Cars / LGV per Day		**16**	16	30	30	30	30	30	30	30	32	**32**	**32**	**32**	**30**	**30**	**18**	**18**	**18**
Total per Day		**20**	63	62	72	68	69	68	61	57	52	**42**	**38**	**38**	**35**	**32**	**21**	**21**	**21**

Please note minor variances due to rounding may occur. Calculations assume that there are 22 working days per month

From Table 12, it can be seen that the peak of construction occurs in Month 4 with an estimated 72 daily journeys (30 Car & LGV and 42 HGV journeys).

Distribution of Construction Trips

The distribution of construction traffic on the network would vary depending on the types of loads being transported. The assumptions for the distribution of construction traffic during the peak months would be as follows.

- All construction traffic enters the site via the new / upgraded forest access junction from the A701.
- For the purpose of this assessment, it is assumed that deliveries associated with cement, water, sand and aggregates would be delivered from suppliers located off the A74(M) to the south, and via A701.
- It is assumed that 50% of aggregate material requirements will be imported to the site and will be delivered from the quarries to the north of the site, near Peebles via the A72 and A701. The Balance of Plant (BoP) contractor will confirm final quarry and material sourcing with the SBC in the Construction Traffic Management Plan (CTMP).
- HGV deliveries associated with the High Voltage (HV) electrical installation, control buildings, batteries, etc will arrive form the Central Belt via the A74(M) from the north.
- Staff working at the site are likely to be based locally. It is assumed that 20% will be based to the north of the site and 20% will be based in Moffat. It is also assumed that 30% of staff will arrive from the north via the A74(M) and 30% will arrive from the south via the A74(M) and will access the site via the A701.
- General site deliveries are assumed to arrive from the north via the A701 to the site. These are generally smaller rigid HGV vehicles.

Loads relating to the turbine components would be delivered from KGV Docks in Glasgow. The access route within the study area is shown on Figure 12.4, while the whole route would be as follows:

- loads would exit KGV Docks in Glasgow onto Kings Inch Drive;
- loads would continue along Kings Inch Drive before turning left onto the M8 slip road, Mayo Avenue;
- loads would then merge onto the M8 at junction 25A;
- vehicles would continue east on the M8 to Junction 21 where they would join the M74 and then A74(M) travelling south;
- loads would depart the A74(M) at Junction 15;
- loads would turn left at the Junction 15 roundabout and would join the A701 northbound, passing through Moffat;
- vehicles would continue on the A701 northbound; and
- to the south of Tweedsmuir, loads would turn left into an upgraded access junction and would continue to site using private access tracks.

Peak Construction Traffic

Following the distribution and assignment of traffic flows to the Study Area network, the resultant daily traffic during the peak of construction are summarised in Table 13.

Table 13 – Peak Construction Traffic

Ref. No.	Survey Location	Cars & LGV	HGV	Total
1	A701, Broughton	6	26	32
2	A701, Site Access	30	42	72
3	A701, north-west of Moffat	24	16	40
4	A701, south-west of Moffat	18	16	34
5	A74(M), near Newton Wamphray northbound	5	6	10
6	A74(M), near Newton Wamphray southbound	5	8	13
7	A74(M), south of Crawford northbound	5	2	7

Ref. No.	Survey Location	Cars & LGV	HGV	Total
8	A74(M), south of Crawford southbound	5	0	5

Please note minor variances due to rounding may occur.

6.2 Decommissioning Phase

Prior to decommissioning of the site, a traffic assessment would be undertaken, and appropriate traffic management procedures followed.

The decommissioning phase would result in fewer trips on the road network than the construction or operational phases as it is considered likely that elements of infrastructure such as access tracks would be left in place and structures may be broken up on-site to allow transport by a reduced number of HGVs.

7.0 Traffic Impact Assessment

7.1 Construction Impact

The peak month traffic data was combined with the future year (2029) traffic data to allow a comparison between the baseline results to be made. The increase in traffic volumes is illustrated in percentage increases for each class of vehicle. This is illustrated in Table 14.

Table 14 – 2029 Peak Monthly Daily Traffic Data

Ref. No.	Survey Location	Cars & LGV	HGV	Total Traffic	Cars & LGV % Increase	HGV % Increase	Total Traffic % Increase
1	A701, Broughton	1,228	153	1,381	0.49	20.16	2.34
2	A701, Site Access	997	145	1,141	3.10	40.57	6.71
3	A701, north-west of Moffat	1,310	117	1,426	1.87	15.97	2.89
4	A701, south-west of Moffat	6,417	336	6,754	0.28	5.02	0.51
5	A74(M), near Newton Wamphray northbound	11,962	6,011	17,973	0.04	0.10	0.06
6	A74(M), near Newton Wamphray southbound	12,063	5,897	17,959	0.04	0.14	0.07
7	A74(M), south of Crawford northbound	12,808	6,285	19,093	0.04	0.04	0.04
8	A74(M), south of Crawford southbound	12,931	6,149	19,080	0.03	0.00	0.02

Please note minor variances due to rounding may occur.

The total traffic movements are not predicted to increase by more than 7 % on all of the study area, with the highest increase occurring on the A701 in the vicinity of the site access.

Table 14 shows that HGV traffic movements would increase by 40.57 % on the A701, near the site access. Whilst this increase could be considered high, it is generally caused by relatively low HGV flows on this link which would see an increase of 42 daily HGV movements. This represents approximately four HGV movements per hour on the A701 during construction activities, which is not considered significant in terms of overall traffic flows.

It should be noted the construction phase is transitory in nature and the peak of construction activities is short lived, occurring over a relatively short timeframe when taking account of the whole construction programme.

A review of existing road capacity has been undertaken using “The NESA Manual”, formerly part of the Design Manual for Roads and Bridges. The theoretical road capacity has been estimated for each of the road links for a 12-hour period that makes up the study area. The results are summarised in Table 15.

Table 15 – 2029 Peak Traffic Flow Capacity Review

Ref. No.	Survey Location	2029 Baseline Flow	2029 Base + Development Flows	Theoretical Road Capacity (12hr)	Spare Road Capacity %
1	A701, Broughton	1,349	1,381	19,200	92.81
2	A701, Site Access	1,069	1,141	19,200	94.06
3	A701, north-west of Moffat	1,386	1,426	21,600	93.40
4	A701, south-west of Moffat	6,719	6,754	21,600	68.73
5	A74(M), near Newton Wamphray northbound	17,962	17,973	68,400	73.72
6	A74(M), near Newton Wamphray southbound	17,947	17,959	68,400	73.74
7	A74(M), south of Crawford northbound	19,086	19,093	68,400	72.09
8	A74(M), south of Crawford southbound	19,075	19,080	68,400	72.11

Please note minor variances due to rounding may occur.

The results indicate there are no road capacity issues with the addition of the construction traffic associated with the construction of the Proposed Development and ample spare capacity exists within the trunk and local road network to accommodate construction phase traffic.

Whilst no capacity issues are predicted, there are mitigation measures that can be used to reduce the impact of construction traffic on other road users and nearby residents. These are outlined in Section 8.

8.0 Proposed Traffic Mitigation Measures

8.1 Construction Traffic

During the construction phase HGV traffic levels are expected to increase by 40.57% on sections of the A701. The following mitigation measures are proposed to mitigate the effects of the increase in construction traffic and reduce the significance of effect.

Construction Traffic Management Plan (CRMP)

During the construction period, a project website, blog or Twitter feed would be regularly updated to provide the latest information relating to traffic movements associated with vehicles accessing the site. This would be agreed with SBC.

The following measures would be implemented through a CTMP during the construction phase. The CTMP would be agreed with the relevant road authorities prior to construction works commencing:

- where possible the detailed design process would minimise the volume of material to be imported to site to help reduce HGV numbers;
- deliveries will be co-ordinated so that vehicles will not be idle on-site. In instances where vehicles are required to wait to carry out the deliveries, the engines of stationary vehicles will be turned off in order to reduce emissions;
- a Staff Travel Plan, including transport modes to and from the worksite (including pick up and drop off times);
- all materials delivery lorries (dry materials) should be sheeted to reduce dust and stop spillage on public roads;
- specific training and disciplinary measures should be established to ensure the highest standards are maintained to prevent construction vehicles from carrying mud and debris onto the carriageway;
- wheel cleaning facilities may be established at the site entrance, depending on the views of the local road authorities;
- normal site working hours would be limited to between 07:00 and 19:00 (Monday to Friday) and 07:00 and 13:00 (Saturday) though component delivery and turbine erection may take place outside these hours;
- appropriate traffic management measures would be put in place on the A701 in the vicinity of the site access junction providing access to the site to avoid conflict with general traffic, subject to the

agreement of the roads authority. Typical measures would include HGV turning and crossing signs and/ or banksmen at the site access and warning signs;

- provide construction updates on the project website and or a newsletter to be distributed to residents within an agreed distance of the site;
- adoption of a voluntary speed limit of 20 mph for all construction vehicles along the A701, in the vicinity of the site access;
- all drivers would be required to attend an induction to include:
  - a tool box talk safety briefing;
  - the need for appropriate care and speed control;
  - a briefing on driver speed reduction agreements (to slow site traffic at sensitive locations through the villages); and
  - identification of the required access routes and the controls to ensure no departure from these routes.

Roads authorities may request that an agreement to cover the cost of abnormal wear and tear on its road network is made. Video footage of the pre-construction phase condition of the abnormal loads access route and the construction vehicles route will be recorded to provide a baseline of the condition of the road prior to any construction work commencing. This baseline will provide evidence of any change in the road condition during the construction phase. Any necessary repairs will be coordinated with the appropriate roads team. Any damage caused by traffic associated with the Proposed Development during the construction period, that would be hazardous to public traffic, would be repaired immediately.

Any damage to road infrastructure caused directly by construction traffic would be made good, and street furniture that is removed on a temporary basis would be fully reinstated.

There would be a regular road edge review and any debris and mud would be removed from the public carriageway to keep the road clean and safe during the initial months of construction activity, until the construction junction and immediate access track works are complete.

8.2 Abnormal Load Transport Management Measures

AIL Route Survey Report

The AIL RSR highlights a number of pinch points on the proposed access route, which have been assessed within the report using swept path assessment software. The locations of the pinch points and the swept path drawings are included in Annex A.

The RSR identifies key points and issues associated with the route that require mitigation works. Examples of the anticipated mitigation works include temporary removal of obstacles such as street furniture, lighting columns, traffic / pedestrian crossing signals, road signs, bollards, fences / barriers and utility poles. It is also proposed to introduce traffic management measures such as suspension of parking as well as vegetation trimming, the provision of load bearing surfaces and land profiling to determine if tar wedges are required. An upgraded access junction will also be provided. These works are to be agreed with relevant roads authorities and other relevant stakeholders.

AIL mitigation works can be designed to be temporary in nature to enable the restoration to their original condition (if required by the Council).

Abnormal Load Transport Management Plan (TMP)

There are a number of traffic management measures that could help reduce the effect of AIL convoys.

All abnormal load deliveries would be undertaken at appropriate times (to be discussed and agreed with the relevant roads authorities and police) with the aim to minimise the effect on the local road network. It is likely that the AIL convoys would travel in the early morning periods, before peak times while general construction traffic would generally avoid the morning and evening peak periods.

The majority of potential conflicts between construction traffic and other road users would occur with AIL traffic. General construction traffic is not likely to come into conflict with other road users as the vehicles are smaller and road users are generally more accustomed to them.

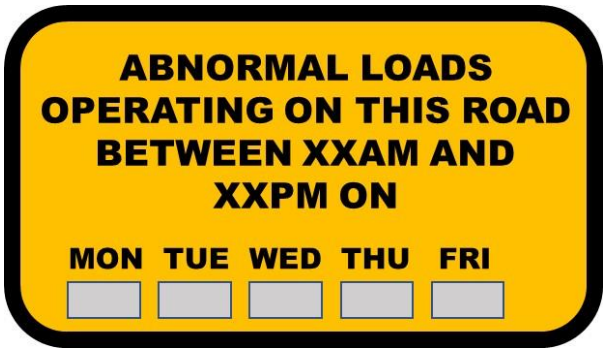
Potential conflicts between the AILs and other road users can occur at a variety of locations and circumstances. The main potential conflicts are likely to occur:

- on sections of the local road network, for example on the A701;

- at locations where there are significant changes in the horizontal alignment of the carriageway, requiring the loads to use the full carriageway width;
- where traffic turns at road junctions, requiring other traffic to be restrained on other approach arms; and
- in locations where high speeds of general traffic are predicted.

Advance warning signs will be installed on the approaches to the affected road network. Information signage could be installed to help assist drivers and an example is illustrated in Figure 1. Flip up panels (shown in grey) would be used to mask over days where convoys would not be operating. When no convoys are moving, the sign would be bagged over by the Traffic Management contractor.

Figure 1 – Example Sign Plate



This signage will assist in helping improve driver information and allow other road users to consider alternative routes or times for their journey (where such options exist). The location and numbers of signs would be agreed post consent and would form part of the wider Traffic Management Proposal for the project.

The Abnormal Load Transport Management Plan would also include:

- procedures for liaising with the emergency services to ensure that police, fire and ambulance vehicles are not impeded by the loads. This is normally undertaken by informing the emergency services of delivery times and dates and agreeing communication protocols and layover areas to allow overtaking;
- a diary of proposed delivery movements to liaise with the communities to avoid key dates;
- a protocol for working with local businesses to ensure the construction traffic does not interfere with deliveries or normal business traffic; and
- proposals to establish a construction liaison committee to ensure the smooth management of the project / public interface with the Applicant, the construction contractors, the local community, and if appropriate, the police forming the committee. This committee would form a means of communicating and updating on forthcoming activities and dealing with any potential issues arising.

Public Information

Information on the turbine convoys would be provided to local media outlets such as local papers and local radio to help assist the public.

Information would relate to expected vehicle movements from the POE through to the site access junction. This will assist residents becoming aware of the convoy movements and may help reduce any potential conflicts.

The Applicant would also ensure information was distributed through its communication team via the project website, local newsletters and social media.

Convoy System

A police escort would be required to facilitate the delivery of the predicted AILs. The police escort would be further supplemented by a civilian pilot car to assist with the escort duty. It is proposed that an advance escort would warn oncoming vehicles ahead of the convoy, with one escort staying with the convoy at all times. The escorts and convoy would remain in radio contact at all times where possible.

The abnormal load convoys would be no more than three AILs long, or as advised by the police, to permit safe transit along the delivery route and to allow limited overtaking opportunities for following traffic where it is safe to do so.

The times in which the convoys would travel will need to be agreed with Police Scotland who have sole discretion on when loads can be moved.

8.3 A Staff Travel Plan

A Staff Travel Plan will be deployed where necessary, to manage the arrival and departure profile of staff and to encourage sustainable modes of transport, especially car-sharing. A package of measures could include:

- appointment of a Travel Plan Coordinator (TPC);
- provision of public transport information;
- mini-bus service for transport of site staff;
- promotion of a car-sharing scheme;
- restrictions on parking, for example on the public road network and verges in the vicinity of the site entrance; and
- car parking management.

8.4 On-site Measures delivered using an Access Management Plan (AMP)

Within the site, consideration has been given to pedestrians and cyclists alike due to potential interactions between construction traffic and users of the paths. Preliminary Access Management Plan (PAMP) is provided as Technical Appendix 14.1 which include a proposed paths plan as Figure 14.1.1. The PAMP will be developed into an AMP to be delivered via an appropriately worded planning condition.

8.5 Operational Phase Mitigation

Site entrance roads will be well maintained and monitored during the operational life of the Proposed Development. Regular maintenance will be undertaken to keep the site access track drainage systems fully operational and to ensure there are no run-off issues onto the public road network.

9.0 Summary and Conclusions

Pell Frischmann Limited has been commissioned by the Applicant to undertake a Transport Assessment for the Proposed Development, located in the Scottish Borders Council administrative area.

Existing traffic data established a base point for determining the impact during the construction phase and was factored to future levels to help determine the effect of construction traffic on the local road network.

The construction traffic would result in a temporary increase in traffic flows on the road network surrounding the Proposed Development. The maximum traffic effect associated with construction of the Proposed Development is predicted to occur in Month 4 of the construction programme. During this month, an average of 42 HGV movements is predicted per day and it is estimated that there would be a further 30 car and light van movements per day to transport construction workers to and from the site.

In addition, a review of the theoretical road capacity was undertaken for the study area which showed that with the addition of construction traffic associated with the Proposed Development, there remained significant spare capacity within the road network.

A series of mitigation measures and management plans have been proposed to help mitigate and offset the impacts of the construction phase traffic flows for both general construction traffic and AILs associated with the delivery of the turbine components. It is considered that these can be secured by condition with SBC.

The Proposed Development would lead to a temporary increase in traffic volumes within the study area during the construction phase only, however this can be appropriately and effectively managed. It is therefore concluded that there are no transport related matters which would preclude the construction of the Proposed Development.

ANNEX A - AIL ROUTE SURVEY REPORT