Technical Appendix 11.1: Transport Assessment Part 1

Pell Frischmann

Revised Larbrax Wind Farm

Technical Appendix 11.1 - Transport Assessment October 2024 108060

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1 Introduction

1.1 Purpose of the Report

Pell Frischmann (PF) has been commissioned by Land Use Consultants Ltd. (LUC), on behalf Ørsted Onshore UK Ltd (hereafter referred to as 'the Applicant') to undertake a Transport Assessment (TA) for the proposed Revised Larbrax Wind Farm (hereafter referred to as the Proposed Development), which is located within the Dumfries and Galloway Council (DGC) administrative area.

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The TA 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. The findings of this report have informed the assessment of traffic and transport related effects in EIA Report Volume 2: **Chapter 11: Access, Traffic and Transport**.

1.2 Report Structure

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

- Section Two describes the Proposed Development;
- Section Three reviews the relevant transport and planning policies;
- Section Four sets out the methodology used in this assessment;
- Section Five describes the baseline transport conditions;
- Section Six describes the trip generation and distribution of traffic in the study area;
- Section Seven summarises the traffic impact assessment;
- > Section Eight considers mitigation proposals for development related traffic within the study network; and
- Section Nine summarises the findings of the TA and outlines the key conclusions.

2 Site Background

2.1 Site Location

The Site is located approximately 9 kilometres (km) west of Stranraer and lies wholly within the DGC administrative area. The site occupies an area of 345 hectares (ha) (OS grid reference NW 9712 6185). The Site is located within a relatively remote area in the north-west of the North Rhins Peninsula.

The Proposed Development is being proposed instead of the unbuilt Consented Larbrax Wind Farm.

The Site boundary is shown in Figure 1.

Figure 1 Site Location



2.2 Proposed Development

The Proposed Development will comprise the following:

- Up to 4 wind turbines with a maximum turbine height of 149.9 metres (m). The indicative total capacity at this stage, based on a typical commercial wind turbine currently available, is in the region of 19.2 MW;
- Foundations supporting each wind turbine;
- > Associated crane hardstandings (both permanent and temporary) at each turbine location;
- Approximately 3 km of access tracks (of which approximately 1km will be upgraded existing track and 2 km will be new track) and vehicle turning heads;
- > A network of underground cables to connect the turbines to an onsite substation;
- An onsite substation and control building;

- A battery energy storage system (BESS) designed to complement renewable energy generation with an indicative capacity of up to 10 MW;
- Up to eight watercourse crossings (four new and four upgraded); and
- A new road junction on the B738 to provide access for general construction vehicles and abnormal indivisible loads (AIL).

In addition to the above components associated with the operation of the Proposed Development, construction of the Proposed Development will also require the following:

- One temporary construction compound, laydown area(s) and car parking;
- > 0.34 ha of trees/scrub to be removed to facilitate access into the Site from the B738; and
- > One temporary borrow pit.

The Proposed Development is shown in Figure 2.





A complete description of the Proposed Development is provided in EIA Report Volume 2: **Chapter 4: Development Description**.

2.3 Access Arrangements

The Proposed Development will be accessed from the B738 on the eastern extents of the Site via a new simple priority junction located approximately 440 m north of the junction between the B738 and the access to Larbrax Lodge. The access junction will provide access to the Site for all AILs associated with the turbine deliveries, as well as access for heavy goods vehicles (HGVs) delivering construction materials and general site traffic. During operation, the site entrance will be gated to prevent unauthorised access.

An indicative layout of the proposed access junction is provided in **Annex A**.

Construction traffic associated with the Proposed Development will generally approach from the south and all AIL traffic will access from the Port of Entry (POE) at Glasgow King Geroge V Docks, utilising the proven AIL route used during the construction of other wind farms in the area.

2.4 Candidate Turbines

The Applicant has indicated that they wish to consider the Nordex N133 turbine with a tip height of 149.9 m and a hub height of 83.4 m for the purposes of this assessment. The details of the components have been provided by Nordex and are detailed in **Table 1**. Note these are indicative component dimensions at this time and are subject to change.

Component	Length (m)	Width (m)	Height/Min Diameter (m)	Weight (t)
N133 Blade	64.80	4.21	3.18	52.74
Top Section	34.25	4.02	3.26	50.61
Mid-Section	24.03	4.03	4.02	47.80
Bottom Section	21.02	4.30	4.03	67.01

Table 1 Turbine Component Summary

A detailed Route Survey Report (RSR) has been prepared and appends this TA as Annex B.

The selection of the final turbine model and specification will be subject to a commercial procurement process following consent of the application. The assumed dimensions may therefore vary slightly from those assumed as part of this assessment, however the turbine tip height will be no greater than 149.9 m.

With regards to the equipment used to transport the turbine components, to provide a robust assessment scenario based upon the known issues along the access routes and constraints in moving larger loads, it has been assumed that all blades would be carried on a Super Wing Carrier trailer to reduce the need for mitigation in constrained sections of the route.

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 Figure 3 to 5.

Figure 3 Superwing Carrier Trailer



Figure 4 Seven-Axle Step Frame Trailer



Figure 5 Clamp Tower Trailer



3 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.

3.2 National Policy & Guidance

3.2.1 National Planning Framework 4 (NPF4)

The National Planning Framework (NPF) is a long-term plan for Scotland that sets out where development and infrastructure is needed in the country. NPF4 sets out the Government's plan looking forward to 2045 that will guide spatial development, set out national planning policies, designate national developments and highlight regional spatial priorities. It is part of the statutory Development Plan, and so influences planning decisions across Scotland.

NPF4 puts the climate and nature crises at the heart of the Scottish planning system and was adopted in February 2023.

Policy 11: which relates to Energy makes specific reference to the impacts of construction traffic associated with renewable energy projects. Policy 11 states the following:

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

vi. impacts on road traffic and on adjacent trunk roads, including during construction."

The assessment undertaken as part of this TA and the associated EIA Report **Chapter 11** has taken cognisance of this and provided appropriate mitigation where necessary.

3.2.2 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."

3.2.3 Transport Assessment Guidance (2012)

Transport Scotland's (TS) Transport Assessment Guidance was published in 2012. It aims to assist in the preparation of TA 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.

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

The 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, preapplication 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).

3.2.5 Onshore Wind Policy Statement (2022)

The Scottish Government's Onshore Wind Policy Statement was published in December 2022 and sets out an ambition of "20 GW of installed onshore wind capacity in Scotland by 2030."

With regards to transport of Abnormal Loads and Police Escorts, the statement notes that:

"Under the Road Traffic Act 1988, any abnormal load movement on public road in Scotland must be escorted by a specially trained police officer. This puts additional pressure on both Police Scotland and hauliers, as well as the wind energy sector's ability to deploy at scale in Scotland.

In order to meet our legally-binding net-zero targets, it is estimated that 3400 turbines will be installed in Scotland between now and 2030, this is the equivalent of a new turbine being installed every day between 2025-2030. Given this, and the significant issues surrounding the transportation of components, this issue has been brought into fresh focus, as we consider it could have serious implications on the delivery of our renewable energy pipeline and subsequent threat to our 2030 net-zero targets.

To this end, the Scottish Government is working directly with senior members of Police Scotland and the renewables and haulier industries. We have come together to consider this issue and to determine what actions must be taken, both short term and long-term, to relieve the pressure on Police Scotland resources to ensure turbines components can be efficiently and effectively conveyed to site."

3.3 Local Policy & Guidance

3.3.1 Dumfries and Galloway Council Local Development Plan - The Local Development Plan 2 (2019)

The Dumfries and Galloway Council Local Development Plan - The Local Development Plan 2 (LDP2) was adopted on 3 October 2019 and replaces the adopted 2014 LDP. The LDP2 is the established planning policy for Dumfries and Galloway and sets out a settlement strategy and spatial framework for how the Council foresees development occurring in the forthcoming twenty-year period.

Policy IN2: Wind Energy outlines the following in relation to transport implications associated with the development of wind farms:

"The Council will support wind energy proposals that are located, sited and designed appropriately. The acceptability of any proposed wind energy development will be assessed against the following considerations:

Cumulative impact

The extent of any cumulative detrimental landscape or visual impact or impacts on existing patterns of development from two or more wind energy developments and the potential for mitigation.

Impact on local communities and residential interests

The extent of any detrimental impact on communities, individual dwellings, residents and local amenity, including assessment of the impacts of noise, shadow flicker, visual dominance and the potential for associated mitigation.

Impact on infrastructure

The extent to which the proposal addresses any detrimental impact on road traffic, adjacent trunk roads and telecommunications, particularly ensuring transmission links are not compromised.

Other impacts and considerations

a) the extent to which the proposal avoids or adequately resolves any other significant adverse impact on the natural environment, including biodiversity, forests and woodland, carbon-rich soils, hydrology, the water environment and flood risk, the historic environment, cultural heritage, tourism and recreational interests and public access.

b) the extent to which the proposal addresses any physical site constraints and appropriate provision for decommissioning and restoration."

3.3.2 Dumfries and Galloway Council LDP Supplementary Guidance Part 1 Wind Energy Development: Development Management Considerations (2017)

The LDP2's Policy IN2 is supported by the Supplementary Guidance 'Part 1 Wind Energy Development: Development Management Considerations'. The relevant transport elements from this policy are:

"Where wind energy developments will involve abnormal load impact on public roads, developers and their contractors will be required, in consultation with the Council as roads authority, to produce an appropriate Traffic Management Plan. Developers will also be required to enter into a Section 75 or other legal agreement.

Developers should also carry out early consultation with the local roads and/or trunk roads officials and the Police in respect of abnormal load deliveries to the application site. Due to the size of the components being transported there can be issues in relation to the capacity of rural roads to cope with these loads; and

The route of new access roads/tracks should be carefully selected and be as sensitive to the existing contours as is practical in relation to the use it will receive."

3.4 Policy and Guidance Summary

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

4 Study Methodology

4.1 Introduction

There are three phases of the Proposed Development which 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 the three phases, the construction phase is considered to have the greatest impact in terms of transport and potential impacts on the road network and sensitive receptors. Construction plant, bulk materials and wind turbine components will be transported to Site, potentially resulting in a significant increase in traffic on the study 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 a request for an EIA Scoping Opinion to DGC in respect of the EIA which included a section considering traffic and transport. There has however been no EIA Scoping Opinion received to date. The scope of the study has been based on the submitted Scoping Report and a summary of those pertinent points is provided in EIA Report **Chapter 11**.

5 Baseline Conditions

5.1 Study Area Determination

The study area has been based on those roads that are expected to experience increased traffic flows associated with the construction of the Proposed Development. The geographic scope was determined through a review of the other developments in the area, Ordnance Survey (OS) plans and an assessment of the potential origin locations of construction staff and supply locations for construction materials.

Access for construction materials would be from the east, from the A77(T) and A75(T) corridors. Where feasible, local materials will be sourced which will avoid traffic impacting on local communities as far as practicable.

As detailed above, the likely POE used for the discharging of wind turbine components will be Glasgow King George V (KGV) Docks. AILs would likely route to the Site via the M8, M74, A6/M6, A75(T), A77 and B738 through to the Site access junction. Full details of the AIL route are provided later in the report and within **Annex B**.

Based on the above, the study area for the assessment has therefore been assumed to be:

- The A77(T) between Cairnryan and Portpatrick;
- The A75(T) between Stranraer and Dunragit;
- ➢ The A751(T); and
- > The B738 between Portpatrick and the site access junction.

Effects associated with construction traffic generated by the Proposed Development would be most pronounced in close proximity to the Site and on the final approaches to the Site. As vehicles travel away from the Proposed Development, they would disperse across the wider road network, thus diluting any potential effects. It is therefore expected that the effects relating to construction traffic are unlikely to be significant beyond the study area identified above. The study area is shown in **Figure 6**.

Figure 6 Study Area



5.2 Pedestrian and Cyclist Networks

There are no dedicated pedestrian facilities in the immediate vicinity of the Site, reflecting its rural setting. Further away from the Proposed Development in the wider study area, there are pedestrian facilities within the larger settlements, including Portpatrick, Lochans, Stranraer, Cairnryan and Castle Kennedy, where there are footways on one side or both sides of the carriageways. In addition, within Stranraer there are dedicated signalcontrolled crossing points, drop kerbs and pedestrian refuge islands for pedestrians. The level of pedestrian infrastructure is commensurate with the scale of the local settlements and their relative rural setting.

A review of the DGC Core Path network¹ indicates that there are a number of Core Paths and paths that are located either within or in the vicinity of the Site. A summary of those within the Site boundary or on roads within the study area are detailed below and shown in **Figure 7**:

- Within the Site Boundary
 - Meikle Galdenoch to Larbrax Shore LESW/413/1;
 - High Auchneel to Meikle Galdenoch LESW/361/1 to 5; and
 - Meikle Galdenoch to Larbrax Shore LESW/413/2.
- > On, adjacent to or linking to roads within study area
 - Lochnaw Estate Leswalt LESW/409/1;
 - Larbrax Shore to Portslogan Bridge LESW/405/1;
 - o Southern Upland Way UNNO/504/1 and 3;
 - Dunskey Estate, Portpatrick PORW/340/3;
 - o Cairnpat LOCA/375/1;

¹ Dumfries & Galloway Council, Core Path Plan: <u>https://new.dumgal.gov.uk/leisure-sport-culture/parks-outdoor-spaces/core-paths</u> [Accessed August 2024]

- Ailsa Gate OCHT/519/1;
- Lochryan Coastal Path STRA/429/2 and 3;
- Rotary Club Path Cairnryan CAIR/429/1 and 4;
- o Brockloch Fell Cairnryan CAIR/376/1; and
- Droughduil Primary School OLDL/570/2.

Figure 7 Core Path Network



In addition, there are a number of other recreational walking routes in the area, either in the vicinity of the Site or within close proximity to roads within the study area, which are as follows:

- The Rhins of Galloway Coast Path a long distance (144 km) route around Scotland's most south-westerly peninsula, linking with the existing Mull of Galloway Trail. The circuit starts in Stranraer, via Luce Bay, the Mull of Galloway, along the west coast and the sheltered waters of Loch Ryan.
- Mull of Galloway Trail the trail stretches for 40 km from the southernmost point of Scotland to the town of Stranraer. For much of that distance it follows the eastern coastline of the Rhins of Galloway. The walk takes in the RSPB reserve at the Mull, beaches along the coastline and quiet villages, before the final cross-country stretch to Stranraer.

With regards to cycling, a review of Sustrans National Cycle Network (NCN) map² indicates that sections of the A75(T) in Stranraer and Dunragit form part of the NCN Route 73. The route is open and signed on roads between Lochranza and Brodick on the Isle of Arran. Between Ardrossan and Kilmarnock the route is opened, signed and mainly traffic-free.

² <u>https://www.sustrans.org.uk/national-cycle-network</u> [Accessed August 2024]

5.3 Road Access

A77(T) / A77

Between Cairnryan and Stranraer the A77(T) is a single carriageway road with one lane operating in each direction and is mainly subject to the national speed limit (60 miles per hour (mph)) outwith settlements, where it reduces to 30 mph. This section of road forms part of the Trunk Road Network and is maintained by Amey on behalf of TS.

Between Stranraer and Portpatrick the A77 is a single carriageway road with one lane operating in each direction. The road is subject to the national speed limit, reducing to 30 mph within settlements, for example Lochans. This section of the road is maintained by DGC.

A75(T)

Between Stranraer and Dunragit the A75(T) is a single carriageway road with one lane operating in each direction and is mainly subject to the national speed limit outwith settlements, where it reduces to 30 mph. This section of road forms part of the Trunk Road Network and is maintained by Amey on behalf of TS.

A751(T)

The A751(T) between the A75(T) to the south and A77(T) to the north is a single carriageway road with one lane operating in each direction and is subject to the national speed limit. This section of road forms part of the Trunk Road Network and is maintained by Amey on behalf of TS.

B738

The B738 runs from Dinvin to the east of Portpatrick to Kirkcolm on the west coast of Loch Ryan. The road is a single carriageway road of varying widths. Between its junction with the A77 and the access to Little Larbrax Cottage, the road has one lane operating in each direction. From this point through to the Site, the road width reduces, operating as a single track road with no road markings. The road is subject to the national speed limit and is maintained by DGC.

Road Suitability

The Agreed Timber Route Map³ 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 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'.

'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.

³ <u>https://timbertransportforum.org.uk/</u> [Accessed August 2024]

A number of the roads within the study area form part of the agreed route network used for the extraction of timber and are therefore regularly used by HGV traffic. This includes sections of the A77(T), A75(T) and A751.

5.4 Existing Traffic Conditions

In order to assess the impact of the Proposed Development construction traffic on the study area, Automatic Traffic Counts (ATC) were undertaken on the B738 in close proximity to the Site access and on the A77 at Lochans, over a seven-day period in September 2023. To complement the ATC surveys, existing traffic count data was obtained from the Department for Transport (DfT)⁴ database and the TS⁵ database, with 2023 data utilised.

The traffic count sites used were as follows:

- 1. B738 (ATC);
- 2. A77 at Craigenquarroch (DfT count site reference: 1028);
- 3. A77 at Lochans (ATC);
- 4. A77 at Whiteleys (DfT count site reference: 20837);
- 5. A77 at Stranraer (DfT count site reference 10838);
- 6. A77(T) at Innermessan (TS count site reference: 00114);
- 7. A77(T) at Cairnryan (TS count site reference: 00383);
- 8. A751(T) (TS count site reference: 00116);
- 9. A75(T) East of Stranraer (TS count site reference: 00117); and
- 10. A75(T) West of Castle Kennedy (TS count site reference: 00118).

DfT and TS traffic data allow the traffic flows to be split into vehicle classes. The data was summarised into Cars/Light Goods Vehicles (LGVs) and HGVs (all goods vehicles >3.5tonnes gross maximum weight).

A National Road Traffic Forecast (NRTF) low growth factor was applied to the survey data, to bring the traffic data up to the base year of 2024. The NRTF low growth factor for 2023 to 2024 is 1.005.

These sites were identified as being areas where sensitive receptors on the access routes would be located. A full receptor sensitivity and effect review is provided in EIA Report **Chapter 11**.

Figure 8 shows the location of the ATC, DfT and TS survey points, while **Table 2** summarises the Annual Average Daily Traffic (AADT) traffic data collected and used in this assessment.

⁴ <u>https://roadtraffic.dft.gov.uk/#6/55.254/-11.096/basemap-regions-countpoints</u> [Accessed August 2024]

⁵ <u>https://ts.drakewell.com/multinodemap.asp</u> [Accessed August 2024]

Figure 8 Traffic Count Locations



Table 2 24-hour Two-way Average Traffic Data (2024)

No.	Survey Location	Data Source	Cars & Lights	HGV	Total
1	B738	ATC	56	23	80
2	A77 at Craigenquarroch	DfT	1,850	104	1,954
3	A77 at Lochans	ATC	1,764	273	2,037
4	A77 at Whiteleys	DfT	5,387	202	5,589
5	A77 at Stranraer	DfT	2,469	131	2,600
6	A77(T) at Innermessan	TS	3,083	1,431	4,514
7	A77(T) at Cairnryan	TS	1,611	753	2,364
8	A751(T)	TS	1,074	1,162	2,236
9	A75(T) East of Stranraer	TS	4,776	903	5,679
10	A75(T) West of Castle Kennedy	TS	4,312	1,309	5,621

Please note minor variances due to rounding may occur.

The ATC and TS survey locations which provided traffic volume data were also used to obtain speed statistics. The two-way seven-day average and 85th percentile speeds observed at the count sites are summarised in **Table 3**.

No.	Survey Location	Data Source	Mean Speed (mph)	85%ile Speed (mph)	Speed Limit (mph)
1	B738	ATC	30.1	35.7	60
2	A77 at Craigenquarroch *	DfT	-	-	-
3	A77 at Lochans	ATC	27.5	31.6	30
4	A77 at Whiteleys *	DfT	-	-	-
5	A77 at Stranraer *	DfT	-	-	-
6	A77(T) at Innermessan **	TS	47.2	57.0	60
7	A77(T) at Cairnryan **	TS	14.7	30.4	30
8	A751(T) **	TS	53.6	62.7	60
9	A75(T) East of Stranraer **	TS	50.6	59.0	60
10	A75(T) West of Castle Kennedy **	TS	47.0	57.0	60

Table 3 Speed Summary (2024)

* No speed data available from DfT database

** Speed data from 2023 to align with traffic flow data

Speed information from **Table 3**, suggests that the recorded speeds are broadly being adhered to within the study area, with only the 85th percentile speeds recorded marginally above the speed limits at three of the seven locations surveyed. Police Scotland may wish to consider enforcement spot checks in these areas, if deemed necessary.

5.5 Accident Review

Personal Injury Accident (PIA) data for the three-year period covering January 2020 to December 2022 was obtained from the online resource CrashMap⁶ which uses data collected by the police about road traffic crashes occurring on British roads, where someone is injured. TA Guidance⁷ requires an analysis of the 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", "serious" and "fatal". The locations and severity of the recorded accidents within the study area are summarised in **Table 4**, while **Figure 9** shows their locations.

Location	Slight	Serious	Fatal	HGV Incidents
B738 between the Site and the A77	0	0	0	0
A77 between Portpatrick and Stranraer	5	1	0	0
A77(T) between Stranraer and Cairnryan	1	2	0	1
A751(T) between the A77(T) and A75(T)	0	0	0	0
A75(T) between Stranraer and Dunragit	1	1	1	1
Total	7	4	1	2
Percentage	58.3%	33.3%	8.3%	-

Table 4 Personal Injury Accident Summary

⁶ <u>https://www.crashmap.co.uk</u> [Accessed August 2024]

⁷ <u>https://www.transport.gov.scot/media/4589/planning_reform - dpmtag - development_management_dpmtag_ref_17 - transport_assessment_guidance_final - june_2012.pdf</u>

Figure 9 Accident Locations



A summary analysis of the incidents indicates that:

- > A total of 12 accidents were recorded within the study area roads within the three year period;
- Of those 12 accidents, seven were classed as "slight", four as "serious" and one as "fatal";
- The single fatality, occurred on the A75(T) in the vicinity of Inch Church, Castle Kennedy. The pedestrian was struck by a car at approximately 20:20 resulting in the fatality. There is no street lighting along this section of the road and the footway is overgrown, with a thick tree canopy;
- One of the recorded accidents involved a bicycle which collided with a car at a junction. This was recoded as a "slight" accident;
- Three of the recorded accidents involved HGVs, one "slight", one "serious" and the previously mentioned "fatal" accident. The HGV involvement in the fatality is unclear however as the recoded information states the pedestrian was struck by a car. The other two accidents occurred at junctions;
- > No recorded accidents involved a motorcycle;
- Three of the recorded accidents involved young drivers (17-20) all of which were recoded as "slight" and occurred on bends or at junctions; and
- > There were no accidents recorded on the B738 in the vicinity of the proposed Site access junction.

In general, there are no clusters of PIAs at any location in the assessed area or high numbers of accidents involving HGVs for example. The majority of PIAs recorded occurred at or on approach to junctions / access to properties, where there is an increased interaction between vehicles and on bends.

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 or within the study area that currently require to be addressed or would be exacerbated by the construction of the Proposed Development.

5.6 Future Baseline Traffic Conditions

5.6.1 2028 Traffic Flows

Construction of the Proposed Development is estimated to commence during 2028 if planning permission is granted and is anticipated to last approximately 12 months depending on weather conditions and ecological considerations.

To assess the likely effects during the construction, base year traffic flows were determined by applying a NRTF low growth factor to the surveyed traffic flows. The NRTF low growth factor for 2024 to 2028 is 1.021. These factors were applied to the survey data to estimate the 2028 base traffic flows, as shown in **Table 5**. This forecast forms the baseline for the assessment of traffic and transport related effects in EIA Report **Chapter 11**.

No.	Survey Location	Cars & Lights	HGV	Total
1	B738	58	24	81
2	A77 at Craigenquarroch	1,889	106	1,995
3	A77 at Lochans	1,801	279	2,079
4	A77 at Whiteleys	5,500	206	5,706
5	A77 at Stranraer	2,521	133	2,655
6	A77(T) at Innermessan	3,148	1,461	4,609
7	A77(T) at Cairnryan	1,645	769	2,413
8	A751(T)	1,097	1,186	2,283
9	A75(T) East of Stranraer	4,876	922	5,799
10	A75(T) West of Castle Kennedy	4,403	1,336	5,739

Table 5 24-hour Two-way Average Traffic Data (2028)

Please note minor variances due to rounding may occur.

5.7 Committed Developments

5.7.1 Onshore Wind Farm and Energy Related Planning Applications

A review of the DGC online planning portal⁸ and the Scottish Government's Energy Consents Unit portal⁹ was undertaken in the preparation of this assessment to identify any consented developments within the vicinity of the Proposed Development which would generate significant traffic within the same study area and should be included within the assessment.

TA Guidance¹⁰ 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 at the application stage 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.

The review identified the Barlockhart Moor Wind Farm Extension (21/0025/S42), which is a four turbine extension to the operational Barlockhart Moor Wind Farm located to the southeast of Glenluce on the A75(T). The project was consented in February 2022 and Directive One attached to the consent advised that the planning permission was valid for three years from the date of the decision. As such, it is considered that the development would be complete and operational prior to the construction of the Proposed Development, which is scheduled to commence in 2028 and no further consideration of this is required within the assessment.

In addition Mid Moile Wind Farm (ECU00003405), which is a 15 turbine development, located to the east of Cairnryan was identified. Access to the project would be taken directly from the A77(T) via an upgraded

⁸ <u>https://eaccess.dumgal.gov.uk/online-applications/</u> [Accessed August 2024]

⁹ <u>https://www.energyconsents.scot/ApplicationSearch.aspx?T=1</u> [Accessed August 2024]

¹⁰ https://www.gov.uk/guidance/travel-plans-transport-assessments-and-statements

junction, located immediately to the south of the access to Stena Line Cairnryan. The project is currently at the application stage however and therefore does not require to be included as a committed development. Should this or any other schemes be consented and constructed at the same time as the Proposed Development, the Applicant would welcome the opportunity to engage with other developers in consultation with DGC to ensure appropriate traffic management measures would be implemented to minimise any cumulative impacts. In the event of all the sites being constructed at the same time it is suggested this would be mitigated through the use of an overarching Traffic Management and Monitoring Plan (TMMP) for all of the sites and by introducing a phased delivery plan which would be agreed with DGC and Police Scotland.

Furthermore, it is extremely unlikely that peak traffic conditions would occur should more than one scheme be constructed at the same time, due to differences in construction programmes, material supplies and developer resources.

The review did not identify any other wind farms or related planning applications that should be considered as a committed development and included within any cumulative assessment.

Based on the above, there are no current consented onshore wind farms or other energy related planning schemes that would share common access routes during their respective construction phases, that would require consideration as a committed development within the assessment.

5.7.2 Other Planning Applications

A review of the DGC online planning portal was also undertaken for 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 30%).

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 NRTF low growth assumptions has provided a basis for general local development growth within the study area.

6 Trip Generation and Distribution

6.1 Construction Phase

6.1.1 Trip Derivation

During the 12-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 concrete materials and crushed rock;
- > Components relating to the BESS element, substation components and associated infrastructure; and
- > AILs consisting of the wind turbine sections and heavy lift cranes.

Average monthly traffic flow data was used to establish the construction trips associated with the Proposed Development, based on the assumptions detailed in the following sections. It should be noted that there may be variations in the following calculations due to rounding, which are not considered significant.

6.1.2 Construction Staff

Staff will arrive in non-HGV vehicles and where possible will be encouraged to car share. The workforce onsite will depend on the activities undertaken, but, based on previous wind farm construction site experience for a project of this scale which suggests five staff per wind turbine during the short peak period of construction is likely, the maximum number of staff expected onsite could be around 20 per day.

For the purposes of estimating traffic movements, it was assumed that 40% of staff would be transported by minibus and 60% 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 20 vehicle movements (10 inbound trips and 10 outbound trips) per day during the peak period of construction.

6.1.3 Abnormal Indivisible Load Deliveries

The wind turbines are broken down into components for transport to the Site. The nacelle, blade and tower sections are classified as AILs due to their weight, length, width and height when loaded. For the purposes of the assessment, the 'worst case' numbers of components requiring transport are illustrated in **Table 6**.

Component	Number of Components per Turbine
Rotor Blades	3
Tower Sections	3
Nacelle	1
Hub	1
Drive Train	1
Nose Cone	1
Transformer	1
Ancillary	1
Site Parts	0.25 (parts shared between 4 wind turbines on one delivery)

Table 6 Turbine Components

In addition to the wind turbine deliveries, up to 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 wind 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 AIL turbine component loads would be delivered per convoy. This would result in 13 convoys on the network (excluding cranes), with a total of approximately 76 escort vehicle movements (38 inbound trips and 38 outbound trips).

Wind turbine components that do not classify as AILs, would be delivered in addition to these, resulting in a further approximate 26 movements (13 inbound trips and 13 outbound trips). All of these deliveries are expected to occur over a period of approximately two months.

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

6.1.4 General Deliveries

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

6.1.5 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.

The Site is large enough to warrant onsite batching of concrete. All wind turbine, substation foundation concrete will be mixed onsite, with deliveries of cement powder, water and sand and aggregates being delivered by HGV. For the purpose of this assessment, it is assumed that the cement powder and water will be delivered from local concrete suppliers to the north / north-east.

Sand and aggregate not sourced from onsite borrow pits will be delivered by tipper HGV and is expected to come from local quarries to the east. There are a number of potential suppliers including the following:

- Breedon Clayshant Quarry, Sandhead, Stranraer, DG9 9DX aggregates;
- Breedon Whitecrook Quarry, Dunragit, Stranraer, DG9 8PY aggregates (incl. sand and gravel);
- > Breedon Barlockhart Quarry, Glenluce, Newton Stewart. DG8 0JQ aggregates; and
- > Breedon Tormitchell Quarry, Old Dailly, Girvan, KA26 0TT aggregates.

The estimated total volume of concrete required on site is 5,966 m³, based upon expected wind turbine foundation, substation foundation and miscellaneous uses across the Proposed Development. The individual deliveries associated with the raw materials have been estimated and result in inbound trips of 13 cement tankers, 189 sand and aggregate tippers, and 76 water tankers. It may be possible to extract some aggregate for use in concrete production from borrow pits within the Site, however 100% of the concrete aggregate has been assumed in the assessment to present a worst-case scenario.

Steel reinforcement required in the foundations across the Proposed Development for wind turbines, substation etc. are estimated to total 315 tonnes, resulting in a total of 22 vehicle movements (11 inbound trips and 11 outbound trips.

The proposed access tracks will generally be 6 m in width and would be designed to accommodate 13 tonne axle loads. In addition to the access tracks, crane hardstands will be constructed to enable the wind turbine erection process. While it is anticipated that 100% of these aggregate requirements will be sourced from onsite borrow pits, as a worst-case assessment, it is estimated that 50% of the aggregate material requirements will be imported to the Site. It is assumed that the aggregate material will arrive to Site from quarries to the south as detailed above.

The estimate of imported material is detailed in Table 7.

Table 7 Aggregate Material Deliveries

Element	Volume / Installation (m ³)	Total Weight (t)	Lorry Capacity (t)	Inbound Trips	Total Movements
Stone / Aggregates	11,845	26,058	20	1,303	2,606

Geotextile will be delivered to Site in rolls. A total of 36 large rolls may be required at Site and will be delivered by HGV which will result in 4 vehicle movements (2 inbound trips in and 2 outbound trips).

Cables will connect each wind turbine to the substation compound. Trip estimates for the cable materials are provided below in **Table 8** and **9**. Three cables are to be provided within each cable trench and will be backfilled with cable sand. Geotextiles will be used to shield the trench and ducting will be used to protect the cable when it runs under roadways, with a 20 vehicle movements predicted (10 inbound trips and 10 outbound trips).

Table 8 Cable Trip Estimate

Element	Total Cable Length (m)	Length per Drum (m)	Number of Drums	Inbound Trips	Total Movements
Cables	10,800	500	22	3	6

Table 9 Cable Sand Trip Estimate

Element	Volume (m ³)	Total Weight (t)	Lorry Capacity (t)	Inbound Trips	Total Movements
Cable Sand	980	1,568	20	79	158

One substation building will be constructed on the Site. This will require deliveries of building materials and structural elements and will result in 250 vehicle movements (125 inbound trips in and 125 outbound trips). Battery storage deliveries will result in a further 38 HGV vehicle movements for battery, invertor and cabin / building deliveries etc (19 inbound trips in and 19 outbound trips).

The resulting traffic generation estimates have been plotted onto the indicative 12 month construction programme to illustrate the peak journeys on the network. **Table 10** illustrates the trip generation throughout the construction programme for each month, showing two-way construction vehicle movements, i.e. an inbound and outbound trip.

Table 10 Construction Traffic Profile (Two-Way Trips)

Activity	Class	Month											
		1	2	3	4	5	6	7	8	9	10	11	12
Site Establishment & Remediation	HGV	30	20	20								30	20
General Site Deliveries	HGV	40	40	40	40	40	40	40	40	40	40	40	40
Bulk Material Deliveries	HGV			521	521	521	521	521					
Plant Deliveries	HGV	30											30
Concrete Batching Deliveries	HGV					185	185	185					
Reinforcement	HGV					22							
Cable & Ducting Deliveries	HGV							9	9	9			
Cabling Sand	HGV							53	53	53			
Geotextile Deliveries	HGV			2	2								
Substation	HGV								83	83	83		
AIL Cranage	HGV										10	10	
Turbine Deliveries	HGV										49	49	
AIL Escorts	Car & LGV										38	38	
Battery Storage	HGV							13	13	13			
Commissioning	Car & LGV											40	40
Staff	Car & LGV	220	352	440	440	440	440	440	440	440	440	352	220
Total HGV	HGV	100	60	584	564	770	748	822	198	198	184	130	90
Total Cars / LGV	Car & LGV	220	352	440	440	440	440	440	440	440	478	430	260
Total Movements		320	412	1,024	1,004	1,210	1,188	1,262	638	638	662	560	350
Total HGV per Day		6	4	28	26	36	34	38	10	10	10	6	6
Total Cars / LGV per Day		10	16	20	20	20	20	20	20	20	22	20	12
Total per Day		16	20	48	46	56	54	58	30	30	32	26	16

Please note minor variances due to rounding may occur.

Calculations assume that there are 22 working days per month.

The peak of construction activity is expected to occur in month seven when there will be a total of 58 vehicle movements per day, comprising 38 two-way HGV movements and 20 two-way car / LGV movements.

This would equate to approximately five two-way total vehicles movements or three two-way HGV movements per hour, across a typical 12-hour day, assuming a flat traffic profile, where traffic arrived and departed the Site equally throughout the working day.

6.1.6 Distribution of Construction Trips

The distribution of Proposed Development construction traffic on the network will vary depending on the types of loads being transported. The assumptions for the distribution of construction traffic during the construction phase are as follows:

- All construction traffic enters the Site via the B738;
- Deliveries associated with concrete materials, such as cement powder and water, will be sourced from concrete suppliers, which for the purpose of this assessment will originate from the A77(T) from the north and will travel through to the Site via the A77(T), A77 and B738;
- For the purpose of this assessment it is proposed that 50% of access track and hardstand aggregate requirements will be sourced from local quarries, which are assumed to originate from the A75(T) to the east from the Breedon Quarry at Whitecrook, travelling through to the Site via the A75(T), A77 and B738;
- For the purpose of this assessment it is proposed that 100% of sand requirements will be sourced from the A75(T) to the east from the Breedon Quarry at Whitecrook, travelling through to the Site via the A75(T), A77 and B738;
- HGV deliveries associated with cabling and associated materials, etc. will arrive via the A77(T) from the north and will travel through to the Site via the A77(T), A77 and B738;
- Staff working at the Site are likely to be based locally. It is assumed that 20 % will come from the Stranraer area and the remaining 80 % with be split equally between the north via the A77(T) and the east via the A75(T); and
- > General site deliveries will be split 70/30 via the A77(T) from the north and A75(T) from the east.

For the purposes of preparing EIA Report **Chapter 11** and this TA, it has been assumed that all abnormal load traffic will access the Site via the following route:

- > Loads would depart the KGV Docks and proceed to exit the roundabout onto Kings Inch Drive;
- > At the roundabout loads would take the 2nd exit and stay on Kings Inch Drive;
- Loads would merge onto the M8 via the ramp to Glasgow;
- Loads would take the M74 exit toward Carlisle;
- > At Junction 42, loads would take the A6 exit to Carlisle;
- > At the roundabout loads will exit onto the M6 ramp;
- At Junction 22 loads would take the A75(T) exit;
- Loads will continue west on the A75(T) to Stranraer, where they would turn left on to Commerce Road continuing through to the A77;
- Loads would turn left onto the A77 heading south to its junction with the A716 where they would turn right continuing on the A77; and
- At the junction between the A77 and B738 the loads would turn right and continue through to the Site access junction. Access to turbine locations will be made by purpose built access tracks or upgraded existing tracks.

The above route is shown in Figure 10.

Figure 10 AIL Component Delivery Route



The above route has been considered, within the AIL RSR, provided in Annex B.

6.1.7 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 (month seven) are summarised in **Table 11**. Note where road links show no assignment of traffic flows, this is due to no construction traffic associated with the peak month routing to the Site via this route.

Survey Location	Cars / LGV	HGV	Total
B738	20	38	58
A77 at Craigenquarroch	20	38	58
A77 at Lochans	20	38	58
A77 at Whiteleys	20	38	58
A77 at Stranraer	20	38	58
A77(T) at Innermessan	8	4	12
A77(T) at Cairnryan	8	4	12
A751(T)	0	0	0
A75(T) East of Stranraer	8	36	44
A75(T) West of Castle Kennedy	8	36	44

Table 11 Peak Daily Construction Traffic

Please note that variances may occur due to rounding.

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 phase 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 Traffic Impact Assessment

7.1 Construction Impact

The peak month (month seven) traffic data was combined with the future baseline year (2028) 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 12**.

Ref No.	Survey Location	Cars & LGV	HGV	Total Traffic	Cars & LGV % Increase	HGV % Increase	Total Traffic % Increase
1	B738	78	62	139	34.72%	161.01%	71.42%
2	A77 at Craigenquarroch	1,909	144	2,053	1.06%	35.95%	2.91%
3	A77 at Lochans	1,821	317	2,137	1.11%	13.64%	2.79%
4	A77 at Whiteleys	5,520	244	5,764	0.36%	18.42%	1.02%
5	A77 at Stranraer	2,541	171	2,713	0.79%	28.49%	2.18%
6	A77(T) at Innermessan	3,156	1,465	4,621	0.25%	0.27%	0.26%
7	A77(T) at Cairnryan	1,653	773	2,425	0.49%	0.52%	0.50%
8	A751(T)	1,097	1,186	2,283	0.00%	0.00%	0.00%
9	A75(T) East of Stranraer	4,884	958	5,843	0.16%	3.90%	0.76%
10	A75(T) West of Castle Kennedy	4,411	1,372	5,783	0.18%	2.69%	0.77%

Table 12 2028 Baseline + Construction Development – Flows and Impact

Please note minor variances due to rounding may occur.

The total traffic movements are predicted to increase by a maximum of 71.42 % on the B738, where the proposed Site access junction is located and as such all construction traffic will use. On the rest of the study area, the highest total traffic increase is 2.91 %, which occurs on the A77 in the vicinity of Craigenquarroch.

Table 12 shows that highest HGV traffic movements increase will occur on the B738, where it is estimated to increase by 161.01 %, and whilst this increase could be considered high, it is generally caused by the low HGV flows on the road at this location. To put the increase into perspective, the B738 will see an additional 38 HGV movements per day or three HGV movements per hour over the course of a typical 12-hour shift. This is not considered significant in terms of overall traffic flows.

The next highest HGV traffic movement increase would occur on the A77 in the vicinity of Craigenquarroch, with a 35.95 % increase. To put the increase in to perspective, the A77 will see an additional 38 HGV movements per day, three HGV movements per hour over the course of a typical 12-hour shift. This is not considered significant in terms of overall traffic flows.

A review of existing theoretical road capacity has been undertaken using The NESA Manual, formerly part of the Design Manual for Roads and Bridges, Volume 15, Part 5. 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 B738 has been split in to two distinct sections for the capacity assessment, to take account of the change in character of the road, primarily the reduction in width. The results are summarised in **Table 13**.

Ref. No.	Survey Location	2028 Baseline Flow	2028 Base + Development Flows	Theoretical Road Capacity (12hr)	Spare Road Capacity %	
1	B738 between the A77 and Little Larbrax Cottage	81	139	19,200	99.3%	
	B738 between Little Larbrax Cottage and the Site	81	139	3,360	95.9%	
2	A77 at Craigenquarroch	1,995	2,053	19,200	89.3%	
3	A77 at Lochans	2,079	2,137	21,600	90.1%	

Table 13 2028 Peak Traffic Flow Capacity Review

Revised Larbrax Wind Farm Technical Appendix 11.1 - Transport AssessmentTechnical Appendix 11.1 - Transport Assessment

Ref. No.	Survey Location	2028 Baseline Flow	2028 Base + Development Flows	Theoretical Road Capacity (12hr)	Spare Road Capacity %
4	A77 at Whiteleys	5,706	5,764	21,600	73.3%
5	A77 at Stranraer	2,655	2,713	19,200	85.9%
6	A77(T) at Innermessan	4,609	4,621	28,800	84.0%
7	A77(T) at Cairnryan	2,413	2,425	28,800	91.6%
8	A751(T)	2,283	2,283	21,600	89.4%
9	A75(T) East of Stranraer	5,799	5,843	28,800	79.7%
10	A75(T) West of Castle Kennedy	5,739	5,783	28,800	79.9%

The results indicate there are no road capacity issues with the addition of construction traffic associated with the Proposed Development,

8 Proposed Traffic Mitigation Measures

8.1 Construction Traffic

8.1.1 Construction Traffic Management Plan (CTMP)

During the construction period, a project website, blog or social media feed would be regularly updated to provide the latest information relating to traffic movements associated with vehicles accessing the Site. This will be agreed with DGC.

The following measures will be implemented during the construction phase through the CTMP:

- Agree AIL route modifications and improvements with DGC, TS and other relevant stakeholders. Works which will be required to facilitate turbine deliveries are outlined in the RSR, which is presented in Annex B;
- Where possible, the detailed design process will minimise the volume of material to be imported to Site to help reduce HGV numbers;
- A Staff Travel Plan, including transport modes to and from the worksite (including pick up and drop off times);
- > A Transport Management Plan for AIL deliveries;
- 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 DGC;
- Normal Site working hours will be limited to between 0700 and 1900 Monday to Friday and 0700 and 1300 on Saturdays though component delivery and turbine erection may take place outside these hours i.e. depending on when police escort is available;
- Appropriate traffic management measures will be put in place on the A77 and B738 leading through to the Site, to avoid conflict with general traffic, subject to the agreement of DGC. Typical measures will include HGV turning and crossing signs and / or banksmen at the Site access and warning signs;
- Provide construction updates on the project website, social media feeds and a newsletter to be distributed to residents within an agreed distance of the Site;
- Adoption of a voluntary reduced speed limits, for example on the A77 and B738 in the vicinity of the Site access junction and at other locations to be agreed with DGC;
- > All drivers will be required to attend an induction to include:
 - o A toolbox 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.

DGC 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 DGC's 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.

Damage to road infrastructure caused directly by construction traffic will be remediated, and street furniture that is removed on a temporary basis will be fully reinstated.

There will be a regular road condition review, and any debris and mud will be removed from the carriageway using an onsite road sweeper to ensure road safety for all road users.

Before the AILs traverse the proposed delivery route, the following tasks will be undertaken to ensure load and road user safety:

- > Ensure any vegetation which may foul the loads is trimmed back to allow passage;
- Confirm there are no roadworks or closures that could affect the passage of the loads;
- Check no new or diverted underground services on the proposed route are at risk from the abnormal loads; and
- Confirm the police are satisfied with the proposed movement strategy.

8.2 Abnormal Load Traffic

8.2.1 Abnormal Load Transport Management Plan

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

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

The majority of potential conflicts between construction traffic and other road users will occur with abnormal load 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 abnormal loads and other road users can occur at a variety of locations and circumstances. The main potential conflicts are likely to occur:

- > On sections of single carriageway road or narrow road sections, for example on the A77 and B738;
- 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 a 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 11**. 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 covered by the Traffic Management contractor.

Figure 11 Example Information Sign



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 Traffic Management Proposal for the project.

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The Abnormal Load Transport Management Plan will 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 lay over areas to allow overtaking;
- A diary of proposed delivery movements to liaise with the communities to avoid key dates such as local events;
- 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 group 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.

8.2.2 Public Information

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

Information will relate to expected vehicle movements from the POE through to the Site access junction. This will assist residents in understanding the timing of the convoy movements and may help reduce any potential conflicts.

The applicant will also ensure information is distributed through its communication team via the project website, local newsletters, and social media.

8.2.3 Convoy System

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

The AIL convoys will be no more than three AILs vehicles 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 will travel will need to be agreed with Police Scotland who have sole discretion on when loads can be transported.

8.3 Outdoor Access Management Plan (OAMP)

Within the Site, consideration has been given to pedestrians and cyclists alike due to potential interactions between construction traffic and users of the Core Paths and public roads. A Path Planning Study will be conducted post consent and will be secured through a planning condition if deemed necessary. Findings from the study will be used to formulate a set of measures into an Outdoor Access Management Plan (OAMP) if required.

Users of the Core Paths / Rights of Way will be separated from construction traffic through the use of barriers. Crossing points will be provided where required, with path users having right of way and temporary diversions will be provided where necessary. Appropriate Traffic Signs Manual Chapter 8¹¹ compliant temporary road signage will be provided to assist at these crossings for the benefit of all users.

¹¹ <u>https://assets.publishing.service.gov.uk/media/5a74adeaed915d7ab83b5ab2/traffic-signs-manual-chapter-08-part-01.pdf</u>
The principal contractor will ensure that speed limits are always adhered to by their drivers and associated subcontractors. This is particularly important within close proximity to the Core Paths, Rights of Way and at crossing points. Advisory speed limit signage will also be installed on approaches to areas where path users may interact with construction traffic.

Signage will be installed on the Site exit that makes drivers aware of local speed limits and reminding drivers of the potential presence of pedestrians and cyclists in the area. This will also be emphasised in the weekly toolbox talks.

No scoping response has been received from The British Horse Society, however measures implemented on similar schemes will be given consideration as part of the Proposed Development. These measures are predominantly focused around the interactions between HGV traffic and horses. Horses are normally nervous of large vehicles, particularly when they do not often meet them. Horses are flight animals and will run away in panic if really frightened. Riders will do all they can to prevent this but, should it happen, it could cause a serious accident for other road users, as well as for the horse and rider.

The main factors causing fear in horses in this situation are:

- > something approaching them, which is unfamiliar and intimidating;
- > a large moving object, especially if it is noisy;
- lack of space between the horse and the vehicle;
- the sound of air brakes; and
- > anxiety on the part of the rider.

The British Horse Society has previously recommended the following actions that will be included in the Site training for all HGV staff:

- on seeing riders approaching, drivers must slow down and stop, minimising the sound of air brakes, if possible;
- if the horse still shows signs of nervousness while approaching the vehicle, the engine should be shut down (if it is safe to do so);
- > the vehicle should not move off until the riders are well clear of the back of the HGV;
- if drivers are wishing to overtake riders, please approach slowly or even stop in order to give riders time to find a gateway or lay by where they can take refuge and create sufficient space between the horse and the vehicle. Because of the position of their eyes, horses are very aware of things coming up behind them; and
- all drivers delivering to the Site must be patient. Riders will be doing their best to reassure their horses while often feeling a high degree of anxiety themselves.

8.4 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;
- Car parking management; and
- Restrictions on parking, for example on the public road network and verges in the vicinity of the Site entrance.

8.5 Operational Phase Mitigation

The B738 and access tracks near the Site entrance will be well maintained and monitored during the operational life of the Proposed Development. Regular maintenance will be undertaken to keep the access track drainage systems fully operational and to ensure there are no run-off issues onto the public road network.

9 Summary and Conclusions

Pell Frischmann has been commissioned by Land Use Consultants Ltd., on behalf Ørsted Onshore UK Ltd ('the Applicant) to undertake a Transport Assessment for the proposed Revised Larbrax Wind Farm, which is located approximately 9 km west of Stranraer within the Dumfries and Galloway Council administrative area.

The Proposed Development will be accessed from the B738 on the eastern extents of the Site via a new simple priority junction located approximately 440 m north of the junction between the B738 and the access to Larbrax Lodge. The access junction will provide access to the site for all Abnormal Indivisible Loads associated with the turbine deliveries, as well as access for HGVs delivering construction materials and general site traffic.

Construction traffic associated with the Proposed Development will generally approach from the south and all AIL traffic will access from the POE at Glasgow King Geroge V Docks, utilising the proven AIL route used during the construction of other wind farms in the area.

Existing traffic data from the DfT and TS was supplemented by new ATC surveys for the study area, with the data used to establish a base point for determining the impact during the construction phase. This was factored to future levels (2028) to help determine the impact of construction traffic on the local road network.

The construction traffic will result in a temporary increase in traffic flows on the road network surrounding the Proposed Development. The maximum traffic increase associated with construction of the Proposed Development is predicted to occur in month seven of the construction programme. During this month, a total of 58 vehicle movements, comprising 38 two-way HGV movements and 20 two-way car / LGV movements are predicted per day.

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 was 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 abnormal loads associated with the delivery of the turbine components. It is considered that these can be secured by condition with Dumfries and Galloway Council.

The Proposed Development will 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 Site.

Annex A: Indicative Access Junction Layout



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Proposed Track and Junction

KEY:

ALL WORKS BY THE CONTRACTOR MUST BE CARRIED OUT IS SUCH A WAY THAT ALL REQUIREMENTS UNDER THE HEALTH AND SAFETY AT WORK ACT ARE SATISFIED. ALL WORKS ARE TO BE CARRIED OUT IN COMPLIANCE WITH THE REQUIREMENT OF THE STATUTORY AUTHORITIES AND CONSTRUCTION DESIGN MANAGEMENT REGULATIONS.

. ALL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE SPECIFICATION FOR HIGHWAY WORKS AND THE TURBINE MANUFACTURERS STANDARDS AND ALL RELEVANT DRAWINGS WITHIN THE PROJECT DESIGN PACKAGE. . ALL WORKS TO BE EXECUTED IN ACCORDANCE WITH THE DMRB, THE MANUAL OF CONTRACT DOCUMENTS FOR HIGHWAY WORKS, DESIGN MANUAL FOR ROADS AND BRIDGES, AND TRAFFIC SIGNS MANUAL.

. ALL DIMENSIONS ARE IN METRES UNLESS STATED OTHERWISE. ALL LEVELS ARE IN METRES AND RELATE TO ORDNANCE DATUM.

I. DO NOT SCALE FROM ANY DRAWING. WORK TO FIGURED DIMENSIONS ONLY. ANY DISCREPANCIES IN DIMENSIONS ARE TO BE REFERRED TO THE DESIGNER BEFORE WORK IS PUT TO HAND.

. ALL DIMENSIONS AND LEVELS ARE TO BE CHECKED ON SITE BY THE CONTRACTOR PRIOR TO PREPARING ANY WORKING DRAWINGS OR COMMENCING ON SITE.

NOTE:

Annex B: Route Survey Report

Pell Frischmann

Pell Frischmann

Revised Larbrax Wind Farm

Annex B: Abnormal Indivisible Load Route Survey Report

October 2024

Revised Larbrax Wind Farm Annex B: Abnormal Indivisible Load Route Survey Report

This report is to be regarded as confidential to our Client and is intended for their use only and may not be assigned except in accordance with the contract. Consequently, and in accordance with current practice, any liability to any third party in respect of the whole or any part of its contents is hereby expressly excluded, except to the extent that the report has been assigned in accordance with the contract. Before the report or any part of it is reproduced or referred to in any document, circular or statement and before its contents or the contents of any part of it are disclosed orally to any third party, our written approval as to the form and context of such a publication or disclosure must be obtained.

Report	Ref.	Appendix 11.1 Annex B_Revised Larbrax Wind Farm_Ail Rsr_V3_Final				
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Rev	Suit	Description Date Originator Checker Approver				Approver
01		Draft	16-11-2023	J Stirrat	S McGarva	S McGarva
02		POI 48 revision	28-11-2023	J Stirrat	S McGarva	S McGarva
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04		Final AIL route_V2 29-10-2024 J Stirrat S McGarva S McGarva				
Ref. reference. Rev revision. Suit suitability.						

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1 Introduction

1.1 Purpose of the Report

Pell Frischmann (PF) has been commissioned by Ørsted Onshore UK Ltd (Ørsted) to undertake a route access review of potential delivery routes for wind turbine Abnormal Indivisible Loads (AIL) associated with the proposed Revised Larbrax Wind Farm (hereafter referred to as the Proposed Development), which is located within the Dumfries and Galloway Council (DGC) administrative area.

This Route Survey Report (RSR) has been prepared to help inform Ørsted on the likely issues associated with the development of the Site with regards to off-site transport and access for AIL traffic. The report identifies the key issues associated with AIL deliveries and notes that remedial works, either in the form of physical works or as traffic management interventions will be required to accommodate the predicted loads.

The detailed assessment and subsequent designs of any remedial works are beyond the agreed scope of works between PF and Ørsted at this point in time.

It is the responsibility of the wind turbine supplier to ensure that the entirety of the proposed access route is suitable and meets with their satisfaction. The turbine supplier will be responsible for ensuring that the finalised proposals meet with the appropriate levels of health and safety consideration for all road users and have been made in accordance with the relevant legislation at the time of delivery.

2 Site Background

2.1 Site Location

The Site is located approximately 9 kilometres (km) west of Stranraer and lies wholly within the DGC administrative area. The site occupies an area of 345 hectares (ha) (OS grid reference NW 9712 6185). The Site is located within a relatively remote area in the north-west of the North Rhins Peninsula. Figure 2-1 illustrates the Site location.

Figure 2-1: Site Location Plan



2.2 Candidate Turbine

Ørsted has indicated that they wish to consider the worst case components from a Nordex N133 turbine with the proposed hub height of 83.4 metres (m). The details of the components have been provided by Nordex and are detailed in Table 2-1.

Component	Length (m)	Width (m)	Height / Min Diameter (m)	Weight (t)
N133 Blade	65.50	4.21	3.18	52.74
Top Section	34.25	4.02	3.26	50.61
Mid-Section	24.03	4.03	4.02	47.80
Bottom Section	21.02	4.30	4.03	67.01

Table 2-1: Turbine Components Summary

2.3 Proposed Delivery Equipment

To provide a robust assessment scenario based upon the known issues along the access route, it has been assumed that all blades will be carried on a Superwing trailer to reduce the need for mitigation in constrained sections of the route.

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 Figure 2-2 to 2-4.

Figure 2-2: Superwing Carrier Trailer



Figure 2-3: Tower Trailer



Figure 2-4: Clamp Tower Trailer



3 Access Route Review

3.1 Port of Entry

The nearest feasible Port of Entry (PoE) for the Site is the King George V (KGV) Docks in Glasgow. The port has been used by turbine imports in the past, such as for Sanquhar, Kype Muir, Clyde, Clyde 2, and Andershaw Wind Farms.

3.2 Proposed Access Route

The proposed access route from KVG is detailed below:

- > Loads would depart the KGV Docks and proceed to exit the roundabout onto Kings Inch Drive;
- At the roundabout loads would take the 2nd exit and stay on Kings Inch Drive;
- Loads would merge onto the M8 via the ramp to Glasgow;
- Loads would take the M74 exit toward Carlisle;
- > At Junction 42, loads would take the A6 exit to Carlisle;
- At the roundabout loads will exit onto the M6 ramp;
- At Junction 22 loads would take the A75(T) exit;
- Loads will continue west on the A75(T) to Stranraer, where they would turn left on to Commerce Road continuing through to the A77;
- Loads would turn left onto the A77 heading south to its junction with the A716 where they would turn right continuing on the A77; and
- At the junction between the A77 and B738 the loads would turn right and continue through to the Site access junction. Access to turbine locations will be made by purpose built access tracks or upgraded existing tracks.

The proposed access route is illustrated in Figure 3-1.



Figure 3-1: Proposed AIL Access Route

3.3 Route Constraints

The constraints noted on the route are provided in the table below. These cover all constraints from the port exit through to the proposed Site access junction. No consideration of the transport issues within the port have been undertaken within the report. Matters relating to the Site access junction and within the Proposed Development Site are covered separately within the Environmental Impact Assessment (EIA).

Plans illustrating the location of the constraints are provided in Annex A.



POI	Key Constraint	Details
1	KGV Port Access Gate	Loads will exit KGV docks from the Abnormal Loads gate onto Kings Inch Drive and cross through the centre of the roundabout using an existing overrun area.
		A swept path assessment has been undertaken and indicates that the existing overrun area on the central island should be utilised.
	the the manual state	Two signs should be removed from their NAL sockets on the exit splitter island.
		Swept path assessment SK01 is included in Annex B.
2	Kings Inch Drive Roundabout 1	Loads will continue on Kings Inch Drive, taking the second exit back onto Kings Inch Drive.
		A swept path assessment has been undertaken and indicates that loads will oversail both verges through this location but no works are required.
		Swept path assessment SK02 is included in Annex B.
3	Kings Inch Drive Roundabout 2	Loads will continue along Kings Inch Drive, taking the first exit back onto Kings Inch Drive.
		A swept path assessment has been undertaken and indicates that no physical mitigation measures will be required.
		Swept path assessment SK03 is included in Annex B.

Revised Larbrax Wind Farm

POI	Key Constraint	Details
4	Kings Inch Drive / Mayo Avenue	Loads will turn left from Kings Inch Drive onto Mayo Avenue.
		A swept path assessment has been undertaken and indicates that loads will oversail the splitter island where three traffic signals and the guardrail should be removed. One bollard will be oversailed.
	Part Parts	Loads will oversail the inside of the junction where the pedestrian call post will be set down. Potential third party land required.
		Police escorts should hold back oncoming traffic on the northern carriageway on approach.
		Swept path assessment SK04 is included in Annex B.
5	M8 Merge	AIL deliveries will join the M8 eastbound at Junction 25A and continue eastwards until it joins onto to the M74 extension at Junction 1.
		No mitigation is required as the transition from the M8 to the M74 is a simple lane change.M8.
6	M6 Junction 42	Loads will take the sixth exit at the roundabout.
		A swept path assessment has been undertaken and indicates that loads will oversail the eastern verge of the entry arm where one road sign and one lit road sign should be removed.
		Loads will oversail the south eastern splitter island where one road sign and one lighting column should be removed.
		Loads will oversail throughout the central island but no works are required.
		One road sign should be removed from the north western splitter island.
		Loads will oversail the western verge on exit where vegetation should be cleared and one road sign should be removed.
		One lit road sign should be removed from the eastern verge on exit.
7	M6 Junction 22	Swept path assessment SK05 is included in Annex B. Loads will depart the M6 at Junction 22 to join the A75 westbound.

Revised Larbrax Wind Farm

POI	Key Constraint	Details
8	A75 / A780 Roundabout	Loads will contraflow the roundabout to take the second exit. A swept path assessment has been undertaken and indicates that loads will oversail both verges through the roundabout where loads should be raised to their highest suspension setting to oversail the raised island. Swept path assessment SK06 is included in Annex B.
9	A75 / A709 Roundabout	Loads will contraflow the roundabout to take the second exit. A swept path assessment has been undertaken and indicates that loads will oversail and overrun the eastern verge on entry where the existing overrun area should be utilised. Loads will oversail the eastern splitter island where one road sign should be removed. Loads will oversail the north eastern verge of the central island where one lit chevron sign should be removed. Vegetation should be cleared and loads should be raised to their highest suspension setting to oversail the raised island. Swept path assessment SK07 is included in Annex B
10	A75 / A701 Roundabout	Loads will take the second exit at the roundabout. A swept path assessment has been undertaken and indicates that loads will oversail the southern verge of the entry arm but no works are required. Loads will utilise the existing overrun area on the western verge upon exit. The exiting overrun area should be extended. One lighting column should be removed. Swept path assessment SK08 is included in Annex B.
11	A75 / A76 Roundabout	Loads will take the fourth exit at the roundabout. A swept path assessment has been undertaken and indicates that loads will oversail then south eastern verge of the central island and the southern verge on entry where no mitigation is required. One lit chevron sign should be removed on the south western verge of the central island. Swept path assessment SK09 is included in Annex B.

POI	Key Constraint	Details
12	A75 / A780 Roundabout	Loads will take the second exit at the roundabout.
	the sum them	A swept path assessment has been undertaken and indicates that loads will oversail and overrun the eastern verge of the central island where the existing overrun area should be utilised and one set of lit chevron sign should be removed. Swept path assessment SK10 is included in Annex B.
13	A75 Garroch Roundabout	Loads will contraflow the roundabout and take the third exit.
		A swept path assessment has been undertaken and indicates that loads will oversail the northern verge of the central island where one lit chevron sign should be removed. Loads will oversail the northern verge on the exit arm but no
		works are required. Swept path assessment SK11 is included in Annex B.
	and the second s	
14	A75 Drummore Roundabout	Loads will take the second exit at the roundabout.
	An mart	A swept path assessment has been undertaken and indicates that loads will oversail and overrun the southern verge of the central island where the existing overrun are should be utilised. Two lit chevron signs should be removed. Swept path assessment SK12 is included in Annex B.
15	A75 Shot Hill, Crocketford	Loads will continue on the A75 westbound.
		Two bollards should be removed from the central island to allow for passage of loads.
16	A75 Shenrick, Crocketford	Loads will continue on the A75 westbound.
		Two bollards should be removed from the central island to allow for passage of loads.

POI	Key Constraint	Details
17	A75 / A745 Roundabout	Loads will take the second exit at the roundabout.
		A swept path assessment has been undertaken and indicates that loads will oversail the eastern verge on entry where one lighting column should be removed.
		Loads will overrun and oversail the south eastern verge of the central island where the existing overrun area should be utilised and two lit chevron signs should be removed.
		Swept path assessment SK13 is included in Annex B.
18	A75 / B736 Roundabout	Loads will take the second exit at the roundabout.
		A swept path assessment has been undertaken and indicates that loads will overrun and oversail the south eastern verge of the central island where the existing overrun area should be extended. Two lit chevron signs should be removed.
		Swept path assessment SK14 is included in Annex B.
19	A75 / A714 Roundabout	Loads will contraflow the roundabout and take the second exit.
		A swept path assessment has been undertaken and indicates that loads will oversail the northern verge on entry but no works are required.
	and the second s	One chevron sign should be removed from the northern verge of the central island.
	the second second	Bollards and the safety barrier will be oversailed on the northern verge on exit.
20	A75 The Crossings	Swept path assessment SK15 is included in Annex B.
20	A75 The Crossings	Loads will continue on the A75 westbound. Loads will occupy the width of the carriageway and escorts should hold back oncoming vehicles to allow for safe
		passage of deliveries. No physical mitigation measures are required.
21	A75 Ardachie	Loads will continue on the A75 at this location.
		A swept path assessment has been undertaken and indicates that loads will oversail the southern verge through the bend where vegetation should be trimmed.
		Bollards will be oversailed on the northern verge.
		A topographical survey is recommended to confirm the mitigation.
		Swept path assessment SK16 is included in Annex B.

POI	Key Constraint	Details
22	A75 / Commerce Rd Junction	Loads will turn left and depart the A75 to join Commerce Rd westbound.
		A swept path assessment has been undertaken and indicates that two lighting columns, one lit road sign, and one road sign should be removed from the inside of the turn.
	Contraction of the second	One lighting column should be removed from the northern verge on approach.
		One road sign should be removed from the entry splitter island. Two bollards will be oversailed.
		Swept path assessment SK17 is included in Annex B.
23	<image/>	The vertical profile of the road at this location is pronounced and should be reviewed during the test run stage to ascertain if tar wedges will be required to prevent grounding.
24	Commerce Rd / A77 Junction	Loads will turn left and depart Commerce Rd to join the A77 southbound.
		A swept path assessment has been undertaken and indicates that loads will oversail the northern verge on approach where one lit road sign and two road signs should be removed. Trees and vegetation should be trimmed. The blade tip will oversail one street name sign.
		Two lighting columns, two lit road signs, one road sign and one street name sign should be removed from the inside of the junction.
		A load bearing surface should be laid on the splitter island and two bollards should be removed.
		Loads will overrun and oversail the central reserve west of the carriageway where a load bearing surface should be laid. Two lighting columns, one utility pole, bollards and three road signs should be removed.
		Police escorts should hold back oncoming traffic on all approach arms to the junction.
		Swept path assessment SK18 is included in Annex B.

POI	Key Constraint	Details
25	<image/>	A review of overhead utility line clearances should be undertaken at this location. A 5m clear head height, plus flashover protection, should be provided and consultation with the utility operator should be undertaken prior to loads passing underneath. One lit sign should be removed from the splitter island and the two bollards will be oversailed.
26	Stoneykirk Road North of Whiteleys	A review of overhead utility line clearances should be undertaken at this location. A 5m clear head height, plus flashover protection, should be provided and consultation with the utility operator should be undertaken prior to loads passing underneath.
27	A77 Whiteleys	A review of overhead utility line clearances should be undertaken at this location. A 5m clear head height, plus flashover protection, should be provided and consultation with the utility operator should be undertaken prior to loads passing underneath.

POI	Key Constraint	Details
28	A77 Corner House Cottage	Loads will proceed southbound on the A77.
		A swept path assessment has been undertaken and indicates that trees and vegetation should be cleared on the eastern verge of the A77 prior to the turn. Several bollards should be oversailed, and a land search is recommended to determine if third party land is required.
	THE REAL PROPERTY OF	One road sign should be removed from the inside of the turn and the bollards oversailed.
		A load bearing surface should be laid on the southern verge of the A77 following the turn. Trees and vegetation should be cleared and land reprofiling will be required.
	Mar and	A review of overhead utility line clearances should be undertaken at this location. A 5m clear head height, plus flashover protection, should be provided and consultation with the utility operator should be undertaken prior to loads passing underneath.
	The second s	A topographical survey is recommended to confirm the mitigation.
		Swept path assessment SK19 is included in Annex B.
29	A77 Mount Pleasant	Loads will proceed southbound on the A77. The street furniture on the crossing island should be removed to allow for passage of wider loads. A review of overhead utility line clearances should be undertaken at this location. A 5m clear head height, plus flashover protection, should be provided and consultation with the utility operator should be undertaken prior to loads passing underneath.





POI	Key Constraint	Details
33,34	A77 Millstone Hill	Loads will proceed southbound on the A77.
		A swept path assessment has been undertaken and indicates that loads will oversail both verges of the first left- hand bend where vegetation should be trimmed. One utility pole should be removed on the eastern verge and third party land is required.
		The blade tip will over-sail the hedge on the outside of the following right-hand bend, where three utility poles and one chevron sign should be removed. Third party land will be required. On the inside of the bend vegetation should be trimmed, and vertical clearance of loads to the embankment should be confirmed during the test run.
		A review of overhead utility line clearances should be undertaken at this location. A 5m clear head height, plus flashover protection, should be provided and consultation with the utility operator should be undertaken prior to loads passing underneath.
		Swept path assessment SK21 is included in Annex B.
35		A review of overhead utility line clearances should be undertaken at this location. A 5m clear head height, plus flashover protection, should be provided and consultation with the utility operator should be undertaken prior to loads passing underneath.
36	A77 Burn Bank	Loads will proceed southbound on the A77. A review of overhead utility line clearances should be undertaken at this location. A 5m clear head height, plus flashover protection, should be provided and consultation with the utility operator should be undertaken prior to loads passing underneath.

POI	Key Constraint	Details
37	A77 Knockamoory	A review of overhead utility line clearances should be undertaken at this location. A 5m clear head height, plus flashover protection, should be provided and consultation with the utility operator should be undertaken prior to loads passing underneath.
38	A77 Craigenquarroch	A review of overhead utility line clearances should be undertaken at this location. A 5m clear head height, plus flashover protection, should be provided and consultation with the utility operator should be undertaken prior to loads passing underneath.
39	<image/>	A review of overhead utility line clearances should be undertaken at this location. A 5m clear head height, plus flashover protection, should be provided and consultation with the utility operator should be undertaken prior to loads passing underneath.
40	A77 South East of Spittal Hill	A review of overhead utility line clearances should be undertaken at this location. A 5m clear head height, plus flashover protection, should be provided and consultation with the utility operator should be undertaken prior to loads passing underneath.



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POI	Key Constraint	Details
44	A77 Little Pinminnoch	A review of overhead utility line clearances should be undertaken at this location. A 5m clear head height, plus flashover protection, should be provided and consultation with the utility operator should be undertaken prior to loads passing underneath.
45		A review of overhead utility line clearances should be undertaken at this location. A 5m clear head height, plus flashover protection, should be provided and consultation with the utility operator should be undertaken prior to loads passing underneath.
46	A77 South of Enoch	A review of overhead utility line clearances should be undertaken at this location. A 5m clear head height, plus flashover protection, should be provided and consultation with the utility operator should be undertaken prior to loads passing underneath.

POI	Key Constraint	Details
47 -50	A77 north of High Merrick to Merrick	Loads will turn right and depart the A77 to join the B738 northbound.
		A swept path assessment has been undertaken and indicates that on navigating the junction loads will overrun and oversail the southern verge on approach where a load bearing surface should be laid and the ditch culverted. Detailed design is required. One road sign and two metal poles should be removed and third party land is required. Trees and vegetation should be cleared.
		A load bearing surface should be laid on the western verge of the junction where a load bearing surface should be laid and the ditch culverted. Detailed design is required A section of safety barrier should be removed and third party land is required. Trees and vegetation should be cleared.
	KORT	Loads will oversail the western verge through the following left bend where one road sign should be removed. Loads will oversail the safety barrier.
		Loads will oversail both verges through the right bend where the vertical clearance over the hillside should be confirmed on the west. Third party land is required on both verges.
	Carles Stary	Trees and vegetation will require trimming on both verges throughout this section.
		Road widening to 4.5m minimum is required on the B738.
		A review of overnead utility line clearances should be undertaken at this location. A 5m clear head height, plus flashover protection, should be provided and consultation with the utility operator should be undertaken prior to loads passing underneath.
		Swept path assessment SK24 is included in Annex B.

POI	Key Constraint	Details
51	B738 northeast of Dunskey Home Farm	Loads will proceed northbound on the B738.
& 52		A swept path assessment has been undertaken and indicates that loads will oversail both verges of the carriageway through this location where trees and vegetation will require trimming/clearing.
		Road widening to 4.5m minimum is required throughout. A review of overhead utility line clearances should be undertaken at this location. A 5m clear head height, plus flashover protection, should be provided and consultation with the utility operator should be undertaken prior to loads passing underneath.
		through this section. Swept path assessment SK25 is included in Annex B.
53	B738 McCubbin's Hill	A review of overhead utility line clearances should be undertaken at this location. A 5m clear head height, plus flashover protection, should be provided and consultation with the utility operator should be undertaken prior to loads passing underneath.

POI	Key Constraint	Details
54	B738 New Loch	Loads will proceed northbound on the B738.
		A swept path assessment has been undertaken and indicates that loads will oversail both verges of the carriageway where vegetation and trees should be trimmed.
	A Contraction of the second se	A review of overhead utility line clearances should be undertaken at this location. A 5m clear head height, plus flashover protection, should be provided and consultation with the utility operator should be undertaken prior to loads passing underneath.
		Trees require trimming to provide a 5m clear head height through this section.
		Swept path assessment SK26 is included in Annex B.
55,56,57	B738 Bridge End & Craigslave	Loads will proceed northbound on the B738.
		A swept path assessment has been undertaken and indicates that load bearing surfaces should be laid on the north eastern verge of the first left-hand bend. One road sign should be removed from the eastern verge. Vegetation should be trimmed on both verges. One utility pole should be removed from the western verge.
		A load bearing surface should be laid on the western verge of the following right-hand bend. One road sign and one wooden trail sign should be removed. Third party land is required to construct the widening.
		Trees and vegetation will require trimming on both verges throughout the section.
		The vertical profile of the road at this location is pronounced and should be reviewed during the test run stage to ascertain if tar wedges will be required to prevent grounding.
		A review of overhead utility line clearances should be undertaken at this location. A 5m clear head height, plus flashover protection, should be provided and consultation with the utility operator should be undertaken prior to loads passing underneath.
		A topographical survey is recommended to confirm the mitigation.
		Swept path assessment SK27 is included in Annex B.

POI	Key Constraint	Details
58,59	B738 Knock and Maize & west of Knock and	Loads will proceed northbound on the B738.
		A swept path assessment has been undertaken and indicates that trees and vegetation will require trimming on both verges throughout the section. Areas of load bearing surface are required on the northern and southern verges of the carriageway.
		One utility pole should be removed from the northern verge.
		Road widening to 4.5m minimum is required throughout.
		The vertical profile of the road at this location is pronounced and should be reviewed during the test run stage to ascertain if tar wedges will be required to prevent grounding.
		Swept path assessment SK28 is included in Annex B.
60	B738 Shepherd's Hill	Loads will proceed northbound on the B738. A swept path assessment has been undertaken and indicates that loads will oversail both verges through this location where vegetation should be trimmed. Two utility poles should be removed on the western verge following the first bend. Swept path assessment SK29 is included in Annex B.

Revised Larbrax Wind Farm Annex B: Abnormal Indivisible Load Route Survey Report

POI	Key Constraint	Details
61	B738 Portslogan Bridge	Loads will proceed northbound on the B738.
		A review of overhead utility line clearances should be undertaken at this location. A 5m clear head height, plus flashover protection, should be provided and consultation with the utility operator should be undertaken prior to loads passing underneath.
62	B738 Portslogan	Loads will proceed northbound on the B738.
	* the	A review of overhead utility line clearances should be undertaken at this location. A 5m clear head height, plus flashover protection, should be provided and consultation with the utility operator should be undertaken prior to loads passing underneath.
	Contraction of the second seco	Road deterioration was noted at this location.
63	B738 north of Portslogan	Loads will proceed northbound on the B738.
		A swept path assessment has been undertaken and indicates that load bearing surfaces should be laid on both verges throughout this section.
		The ditch should be culverted on the eastern verge of the left-hand bend.
		Vegetation should be cleared on both verges throughout the section. Third party land is required on the eastern verge through both bends and the fence should be removed.
	State - Care	The vertical profile of the road at this location is pronounced and should be reviewed during the test run stage to ascertain if tar wedges will be required to prevent grounding.
		A review of overhead utility line clearances should be undertaken at this location. A 5m clear head height, plus flashover protection, should be provided and consultation with the utility operator should be undertaken prior to loads passing underneath.
		A topographical survey is recommended to confirm the mitigation.
		Swept path assessment SK30 is included in Annex B.
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POI	Key Constraint	Details
64	B738 north of Portslogan	Loads will proceed northbound on the B738.
		Load will oversail both verges of the carriageway where vegetation should be trimmed.
		One road sign and one utility pole should be removed on the western verge through the first left bend.
	and the second of the second	One utility pole should be removed from the eastern verge through the final bend.
		The vertical profile of the road at this location is pronounced and should be reviewed during the test run stage to ascertain if tar wedges will be required to prevent grounding.
	Swept path assessment SK31 is included in Annex B.	
65	B738 Linden	Trees require trimming to provide a 5m clear head height through this section.




POI	Key Constraint	Details
69	Proposed Site Access	Loads will proceed northbound on the B738 to the proposed Site access junction.
		A swept path assessment has been undertaken and indicates that loads will oversail both verges of the carriageway through this location.
		Third party land is required on both verges throughout this location.
		Trees and vegetation will require trimming or clearing on both verges throughout the section.
		Road widening to 4.5m minimum is required throughout.
		Swept path assessment 108060_SK_0002 is included in Annex B, which shows the proposed Site access junction arrangement, providing access into the Proposed Development for all AIL traffic and general construction vehicles.

3.4 Swept Path Assessment Results and Summary

The detailed swept path drawings for the locations assessed are provided in Annex B for review. The drawings illustrate tracking undertaken for the worse case-loads at each location. The colours illustrated on the swept paths are:

- Grey / Black OS / Topographical Base Mapping;
- Green Vehicle body outline (body swept path);
- > Red Tracked pathway of the wheels (wheel swept path); and
- > Purple The oversail tracked path of the load where it encroaches outwith the trailer (load swept path).

Where mitigation works are required, the extents of over-run and oversail areas are illustrated on the swept path drawings as hatched red or blue. Additional land areas to those indicated in the swept path assessment drawings may be required to facilitate the construction of the proposed physical mitigation measures depending on the site conditions and topography. The extent of any additional areas required to construct mitigation works highlighted within this study and the detailed design of said mitigation works is outwith the scope of this study and should be confirmed on detailed topographical survey data.

Please note that where assessments have been undertaken using Ordnance Survey (OS) base mapping, CAD based aerial mapping and historic topographical data, there can be errors in these data sources.

Where provided by the client, topographical data has been utilised. Please note that PF cannot accept liability for errors on the data source, be that OS base mapping, aerial mapping, historic topographical surveys or client supplied data.

Please note that turbine supplier guidance suggests that the minimum road width for the safe transport of AIL components is 4.5m. All public roads and onsite access tracks should comply with this standard unless a relaxation has been agreed with suppliers.

The need to widen public roads will require engagement with the relevant road authority and may constitute permanent or temporary surfacing.

3.5 Land Ownership

A review of third party land should be undertaken by the client to ensure that no additional land rights are required to enable deliveries or mitigation works. PF accepts no responsibility for the accuracy of land ownership assumptions, all of which should be confirmed across the entire access route by a qualified land agent.

The limits of road adoption can vary depending upon the location of the site and the history of the road agencies involved. The adopted area is generally defined as land contained within a defined boundary where the road agency holds the maintenance rights for the land. In urban areas, this usually defined as the area from the edge of the footway across the road to the opposing footway back edge.

In rural areas the area of adoption can be open to greater interpretation as defined boundaries may not be readily visible. In these locations, the general rule is that the area of adoption is between established fence / hedge lines or a maximum 2m from the road edge. This can vary between areas and location.

3.6 Weight Review

A weight review has been undertaken via the ESDAL (Electronic Service Delivery for Abnormal Loads) contacts database using the National Highways website <u>www.esdal.com</u>. All of the relevant ESDAL contacts are noted in Table 3-4, and all have been contacted to ascertain if there are any relevant constraints that should be noted.

Organisation	Email Address
Glasgow City Council	abnormalloads@glasgow.gov.uk
Cumbria Constabulary	AbnormalLoads@cumbria.pnn.police.uk
Transport Scotland	AbnormalLoads@transport.gov.scot
National Highways North West Region	nwabnormalloadsenquiries@nationalhighways.co.uk
Police Scotland	OSDAbnormalLoadsScotland@scotland.pnn.police.uk
Renfrewshire Council	stephen.heron@renfrewshire.gov.uk
Network Rail	AbLoadsESDAL@networkrail.co.uk / abnormalloadsenquiries@networkrail.co.uk
Scottish Canals	SCAbnormal.Loads@scottishcanals.co.uk
Scotland Transerv	abnormalloadrouting@scotlandtranserv.co.uk
Dumfries and Galloway Council	esdal@dumgal.gov.uk
M8 DBFO	m8dbfo.abloads@amey.co.uk
Amey (South West Scotland)	swabloads@amey.co.uk
Autolink M6 ROM	abnormal.loads@m6dbfo.co.uk

Table 3-2: ESDAL Consultees

Where responses from the ESDAL have been received, these are contained in Annex C. Where no response has been received, it is assumed that no constraints are in place at this time.

3.7 Access Junction Considerations

The access junction into the Site will need to be built to accommodate the proposed physical size of loads and the number of trips predicted during the construction phase.

The design and form of the junction will need to be discussed with the local road authority. The design of the junction should take into account the requirement for provision of visibility splays which should be confirmed with the road authority.

The junction will also need to be built in accordance with the turbine supplier design criteria.

3.8 Summary Issues

It is strongly suggested that following a review of the RSR, Ørsted should undertake the following prior to the delivery of the first abnormal loads, to ensure load and road user safety:

A review of axle loading on structures along the entire access route with the various road agencies is undertaken immediately prior to the loads being transported in case of last minute changes to structures;

- A review of clear heights with utility providers and the transport agencies along the route to ensure that there is sufficient space to allow for loads plus sufficient flashover protection (to electrical installations);
- > That any verge vegetation and tree canopies which may foul loads is trimmed prior to loads moving;
- That a review of potential roadworks and or closures is undertaken once the delivery schedule is established in draft form;
- > That a test run is completed to confirm the route and review any vertical clearance issues; and
- That a condition survey is undertaken to ascertain the extents of road defects prior to loads commencing to protect the developer from spurious damage claims.

4 Summary

4.1 Summary of Access Review

Pell Frischmann has been commissioned by Ørsted to prepare a Route Survey Report (RSR) to examine the issues associated with the transport of AIL turbine components to the Revised Larbrax Wind Farm Site.

This report identifies the key points and issues associated with the proposed route and outlines the issues that will need to be considered for successful delivery of components.

The report is presented for consideration to Ørsted. Various road modifications, structural reviews, and interventions are required to successfully access the Site. If these are undertaken following agreement and permissions from the relevant stakeholders, access to the proposed wind farm Site is considered feasible.

4.2 Further Actions

The following actions are recommended to pursue the transport and access issues further:

- > Prepare detailed mitigation design proposals to help inform the land option / consultee discussions;
- Obtain the necessary land options;
- > Undertake discussion with the affected utility providers and roads agencies;
- > Obtain the necessary statutory licences to enable the mitigation measures; and
- Develop a detailed operational Abnormal Load Transport Management Plan to assist in transporting the proposed loads. Further details in this regard are included in Chapter 11: Access, Traffic and Transport of EIA Report Volume 2 and Technical Appendix 11.1 Transport Assessment.

Annex A Points of Interest

An electronic version of the POI plans can be found here: https://www.google.com/maps/d/edit?mid=1_6GxrITfSD6fKZXfr9jeUpFu64z3X1I&usp=sharing



Revised Larbrax Wind Farm Annex B: Abnormal Indivisible Load Route Survey Report







Annex B Swept Path Assessments

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Mast (Telecommunication)

-One road sign and one lighting column to be removed.

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www.pellfrischmann.com		Checked
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	Existing overrun area to be utilised. One set of lit chevron signs to be removed.	
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Pell Frischmann 93 GEORGE STREET, EDINBURGH, EH2 3ES Tel: +44 (0)131 240 1270	Larbrax Wind Farm	NameDateScale1:500 @ A3DrawnJS28/11/2023File No.231128 Larbrax SPA N133.dwa
Email: pfedinburgh@pellfrischmann.com www.pellfrischmann.com Client Orsted	Drawing Title	Checked SCM 28/11/2023 Point of Interest 12
Key	SPA Location A75 / A780 Roundabout	Drawing No. SK10A Notes: 1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.

Blade	Tower	
	Project	
Pell Frischmann 93 GEORGE STREET, EDINBURGH, EH2 3ES Telt +44 (01131 240 1270	Larbrax Wind Farm	Drawn
Email: pfedinburgh@pellfischmann.com www.pellfischmann.com		Checked
Client Orsted	Nordex N133 Blade and Tower	Point of Inter Drawing No.
Key Wheel SPA Body SPA Load SPA Indicative Over-run Over-sail	SPA Location A75 / Garroch Roundabout	SK11

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Blade		Tower
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Pell Frischmann Secord Street, EDINBURGH. EH2 385 Tei: +44 (0)131 240 1270 Email: pfedinburghi@pellfitschmann.com	Project Larbrax Wind Farm	Drawn Design
Pell Frischmann Sterrer, EDINBURGH, EH2 385 Der Hann Berger, EDINBURGH, EH2 385 Der Hann Berg	Project Larbrax Wind Farm	Drawn Design Check Point

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	Existing overrun area to be	
	utilised. Two lit chevron signs to be removed	
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93 GEORGE STREET, EDINBURGH. EH2 3ES Tei: +44 (0)131 240 1270 Email: pfedinburgh@pellifischmann.com WWW.pellifischmann.com Client	Drawing Title Nordex N133 Blade and Tower	Drawn Designed Checked Point of Inter Drawing No.
Key Wheel SPA Body SPA Load SPA Indicative Over-run	Over-sail A75 / Drummore Roundabout	SK12A

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Blade	Tower	
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Pell Frischmann 93 GEORGE STREET, EDINBURGH, EH2 3ES Tel: +44 (0)131 240 1270 Email: pfedinburgh@ellflischmann.com	Larbrax Wind Farm	Drawn Designed
Client Orsted	Drawing Title Nordex N133 Blade and Tower	Checked Point of Interes
Key Wheel SPA Body SPA Load SPA Indicative Over-run Over-sail	SPA Location A75 / A745 Roundabout	SK13

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	One lighting column to be removed.	
Pell Frischmann 93 George street, eDINBURGH, EH2 365	Project Larbrax Wind Farm	Drawn
Tei: +44 (0)131 240 1270 Email: pfedinburgh@pellfrischmann.com www.pellfrischmann.com		Designed Checked
Client Orsted	Nordex N133 Blade and Tower	Point of Intere Drawing No.
Wheel SPA Body SPA Load SPA Indicative Over-run Over-sail	SPA Location A75 / A745 Roundabout	SK13A

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	Existing overrun area to be extended. Two lit chevron signs to be removed.			
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Yell Fflscnmann 93 George street, edinburgh, eH2 3es	Larbray Wind Farm	Drawn	JS	28/11/2023
Tel: +44 (0)131 240 1270 Email: pfedinburgh®pellifischmann.com	Lardrax wina farm	Designed	SCM	28/11/2023 File No. 231128 Larbrax SPA N133.dwg
www.pellfrischmann.com		Checked	SCM	28/11/2023 Drawing Status
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	93 GEORGE STREET, EDINBURGH. EH2 3ES Tel: +44 (0)131 240 1270	Larbrax Wind Farm	Drawn Designed
	⊧mai: preainburgh@pellfinschmann.com www.pellfrischmann.com	Drawing Title	Checked
Client	Orsted	Nordex N133 Blade and Tower	Point of Inter Drawing No.
Key Wheel SPA Body SF	PA Load SPA Indicative Over-run	Over-sail A75 / A714 Roundabout	SK15

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	Bollards and safety barrier to be oversailed One chevron sign to be removed.	
	Project	© Pell Frischmann
PEII FIISCAMAAN 93 GEORGE STREET, EDINBURGH. EH2 3ES Tel: +44 (0)131 240 1270 Email: pfedinburgh@pellfischmann.com www.pellfischmann.com	Larbrax Wind Farm	Drawn JS 28/11/2023 1:500 @ A3 Designed SCM 28/11/2023 File No. 231128 Larbrax SPA N133.dwg
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Blade		Tower	
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	Project		
Pell Frischmann 93 GEORGE STREET. EDINBURGH. EH2 3ES			Drawn
Tel: +44 (0)131 240 1270 Email: pfedinburgh@pellfrischmann.com	Larbrax Wind Farm		Designed
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	Bollards to be oversailed Vegetation to be trimmed. Topographical survey required to confirm mitigation.	
Pell Frischmann 93 GEORGE STREET, EDINBURGH. EH2 3ES Tel: +44 (0)131 240 1270	Project Larbrax Wind Farm	Drawn Desianed
Client Orsted Key Mheel SPA Body SPA Load SPA Indicative Over-run Or	Drawing Title Nordex N133 Blade and Tower SPA Location A75 Ardachie	Checked Point of Ir Drawing N SK16,

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	One lighting column to be removed	9.0m
	One lighting column to be removed.	+
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One road sign to	be removed and two	
bolla	rds to be oversailed.	
	Two lighting colur and one road sign	nns, one lit road sign, to be removed.
	Vegetation to be t	rimmed.
Pell Frischmann	Project	Drawn
93 GEOKGE SIKELI, EDINBURGH, EH2 3ES Tel: +44 (0)131 240 1270 Email: pfedinburgh@pellfrischmann.com www.pellfrischmann.com	Larbrax Wind Farm	Designed
Client Orsted	Drawing Title Nordex N133 Rlade and Tower	Point of Intere
Key	SPA Location	Drawing No. SK17A
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Tel: +44 (0)131 240 1270 Email: pfedinburgh@pellfrischmann.com www.pellfrischmann.com		Designed
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Body SPA

Wheel SPA

Load SPA

Indicative

Over-run

Over-sail

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	Vegetation to be trimmed. Topographical survey required to confirm mitigation.	egetation to be cleared. O
		lity pole to be removed.
	Vegetation to be trimmed. Clearance of loads to embankment to be confirmed during test run. + Blade tip to oversail hedge. Three utility poles and one chevron sign to be removed. Third party land required.	
	Project	
Pell Frischmann 93 GEORGE STREET, EDINBURGH, EH2 3ES Tel: +44 (0)131 240 1270	Larbrax Wind Farm	Drawn
Email: pfedinburgh@pellfrischmann.com www.pellfrischmann.com		Checked
Client Orsted	Nordex N133 Blade and Tower	Point of Intere Drawing No.
Wheel SPA Body SPA Load SPA Indicative Over-run Over-sail	SPA Location A77 Millstone Hill	SK21A

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93 GEORGE STREET, EDINBURGH, EH2 3ES Tel: +44 (0)131 240 1270	Larbrax Wind Farm	Drawn Designed
Email: preainourgni@peiinscnmann.com www.pellfrischmann.com	Drawing Title	Checked
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Key Wheel SPA Body SPA Load SPA Indicative Over-run Over-sail	SPA Location A77 Marrbury Smokehouse & Spittal Croft	SK22

© Pell	Frischmann

Name	Date	Scale 1:2250 @ A3				
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Tower			
Pell Frischmann 93 GEORGE STREET, EDINBURGH. EH2 3ES Tel: +44 (0) 311 240 1270 Email: pfedinburgh/epulffischmann.com www.pellfischmann.com	Larbrax Wind Farm	Drawn Designed	
Client Orsted	Drawing Title Nordex N133 Blade and Tower	Point of In	eres
Key Wheel SPA Body SPA Load SPA Indicative Over-run Over-sail	SPA Location A77 Marrbury Smokehouse & Spittal Croft	SK23A	

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 This is not a construction drawing and is intended for illustration purposes only. 1

Blade tip to oversail bridge parapet and safety barrier. Vegetation and trees to be cleared. **Third party land** required.

Blade tip to oversail bollards and safety barrier. Vegetation and trees to be cleared.

Pell Frischmann 93 GEORGE STREET, EDINBURGH, EH2 3ES					n		Project	Project		
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Tel: +44 (0)131 240 1270 Email: pfedinburgh@pellfrischmann.com				270 2m			Larbrax wind Farm			
www.pellfrischmann.com					om					
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Technical Appendix 11.1: Transport Assessment Part 2



SPA Location								
	A77	north	of	High	Merrick	to	Merrick	

Over-sail

Key

Wheel SPA

Body SPA

Load SPA

Indicative

Over-run

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Email: pfedinburgh@pellfrischmann.com www.pellfrischmann.com		Checked	SCM 28/11	/2023
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	Vegetation and trees to be trimmed.		♥Pull Frischmann
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93 GEORGE STREET, EDINBURGH, EH2 3ES Tei: +44 (0)131 240 1270	Larbrax Wind Farm	Designed	SCM 28/11/2023 File No. 231128 Larbrax SPA N133.dwg
Email: ptedinburgh@pellfrischmann.com www.pellfrischmann.com		Checked	SCM 28/11/2023 Drawing Status
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93 GEORGE STREET, EDINBURGH. EH2 3ES Tel: +44 (0)131 240 1270 Email: pfedinburgh@pellifischmann.com www.pellifischmann.com	Larbrax Wind Farm	Drawn Designed	SCM 28/11/2	023 File No. 231128 Larbrax SPA N133.dwg
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	Tower					
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	Wheel SPA Body SPA Load SPA Indicative Over-run Over-sail	B738 Bridge End & Craigslave				

	Load bearing surface to be laid. One road sign and one wooden trail sign to be removed. Vegetation to be cleared. Third party land required to construct widening. Vegetation Vegetation	to be med.	
			Vegetation to be trimmed and- one utility pole to be removed.
	Pell Frischmann	Project	Narr
	93 GEORGE STREET, EDINBURGH, EH2 3ES Tel: +44 (0)131 240 1270	Larbrax Wind Farm	Drawn JS
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Wheel SPA	Body SPA Load SPA Indicative Over-run Over-sa	i i i i i i i i i i i i i i i i i i i	

Load bearing surface to be laid. Vegetation to be trimmed. Topographical survey required to confirm mitigation.

✓One road sign to be removed.

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- Vegetation to be trimmed. One road sign and one utility pole to be removed. Topographical survey required to confirm mitigation and clearances.

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Annex C ESDAL Responses Hi Jordan,

Thanks for the additional information.

We have no objections, in relation to the proposed movements as detailed, with regards height & weight but it is up to the haulier to ensure the route is surveyed, in advance, in relation to Swept Path Analysis.

However, in order to ensure that you are fully aware of planned road works on our network please provide a contact email address of the haulier to allow our Network Manager (david.morton@m6dbfo.co.uk) to include them in the distribution of our Programme of Intent which will detail where and when planned road works are taking place. The Programme of Intent is issued on a Thursday for the following Monday in advance of planned road works and is subject to review. It should be noted that we will be undertaking major, routine and cyclical maintenance works which will require single lane running at various times throughout the year. As part of these works it is possible that single lane running may be used during the daytime for specialist activities such as principal bridge inspections. Please ensure that lines of communication are maintained by yourselves and our Network Manager when planning these movements.

Lastly, please provide in advance your proposed schedule of planned movements along with any other relevant information in order for us to ensure that no conflicts will arise on our network.

Should you require any further information please do not hesitate in contacting our Project Office on 01576 205200 to discuss any queries you may have.

Thanks

Fiona

Hi Jordan

Thank you for your enquiry.

For the vehicle details you have provided, the route you propose will not present any issues for the National Highways network as it currently stands.

Obviously, should the project proceed then there will need to be a full assessment of the entire route using detailed vehicle configuration data so that a Special Order can be issued.

regards

Gordon Beattie MILT Network Planner- Occupancy North West Region

Mobile : 07714 846615

On behalt of Scottish Roads Partnership

In relation to the section of your route on the M74 between J3A and just prior to J6 I would comment as follows;

When crossing Raith Bridge 0.25 miles south of J5 of the M74 any vehicle over 100te but not exceeding 150te MUST straddle lanes 1 and 2. No other traffic should be on the bridge at the same time. No load over 150 tonnes can be accommodated over this structure.

Regards

Iain Franklin CEng MICE MCIHT Principal Engineer | Consulting

Good afternoon Jordan,

Just a reply to inform you that as the proposed route (Option 1) out of KGV Dock (G51 4SE) on to Kings Inch Drive, is outside the Glasgow City Council operational boundary, therefore GCC have no owned structures that could present an issue along the assessed route.

Regards

Brian

Jordan

Good to speak on the phone today. As discussed we do not look at the structural elements of a movement in detail as this falls to the other authorities. However movements of wind farm components of this size do require a police escort when in the Cumbria police area. This can however, with prior agreement, be undertaken by police Scotland if they are already escorting the loads

David Pett

Abnormal Loads and Vehicle Recovery Administrator Cumbria Constabulary

T: 101, option 2, ext 44691

- E: Abnormalloads@cumbria.police.uk
- E: VehicleRecoveryScheme@cumbria.police.uk
- W: www.cumbria.police.uk

Cumbria Constabulary

Police Headquarters, Carleton hall, Penrith, Cumbria. CA102AU

Good morning,

No Scottish Canals structures affected.

Thanks, Brian.