

A15. ROADS AND TRAFFIC

A15.1 INTRODUCTION

The design of the proposed Viking Wind Farm has changed since the Section 36 application, and its associated Environmental Statement, were submitted in May 2009. This chapter describes how these changes would affect road and traffic interests.

Before reading this chapter, please first read Addendum Chapter A1, the Introduction, and Chapter A4, the Development Description. Failure to read these two chapters carefully may lead to a misunderstanding of the assessment work described in this chapter. Furthermore, because this addendum chapter is not intended to provide a complete new assessment of the issues, but instead provides a discussion of the effects of the work which has taken place since the 2009 ES was submitted, it must be read in conjunction with the roads and traffic chapter of the 2009 Environmental Statement.

For full details of the proposed design changes please refer to Addendum Chapter A4.

A15.2 CONSULTATION RESPONSES

For a full list of all comments from consultees please refer to Appendix A1.1. One objection was received on the grounds of issues connected with roads and traffic, as described in Table A15.1 below.

No objections to the proposed wind farm were based on adverse effects on the roads themselves or on traffic movement in Shetland.

Table A15.1: Objections from Statutory Consultees

Ref	Summary of objection	Response
SNH - Designated sites, birds, landscape character and visual impact		
SNH 2.1	Inadequate consideration of likely adverse effects on Sand Water SSSI and lack of proposed mitigation regarding works outwith development boundary.	<p>SNH have indicated that three conditions would remove their concerns regarding Sand Water. VEP is happy to agree to all these conditions which are described in paragraph A15.7.3 below.</p> <p>A number of works may be required outwith the development boundary, in particular improvements to road structures and junctions to enable the movement of abnormal loads, and a commitment is given to the effect that all such works will be carried out in full consultation with the Highway Authority and in accordance with normal standards, including the Design Manual for Roads and Bridges (DMRB). All such works would be relatively minor, and comparable with normal maintenance activities on the public road network. Please see paragraph A15.7.3.</p>

In addition to this formal objection, the following comments are also addressed in this chapter:

Table A15.2: Other consultation responses

Consultee	Comment Summary	Response
SEPA/Shetland Islands Council Marine Management	<ul style="list-style-type: none"> Impacts on water bodies of public highway upgrades and alterations not assessed. Where upgrade/replacement affects water bodies further clarification of impacts and mitigation required. 	These impacts were, in fact, assessed in 2009. A summary is provided in paragraph A15.7.4 below
Shetland Islands Council Environmental Health Service/Roads	<ul style="list-style-type: none"> Cumulative effects from Total development at Sullom Voe should be considered. Some site accesses not suitable for construction traffic (stretches of B9075, B9071, A970, and A971). Consider use of Sullom Voe/Sella Ness and Greenhead/Dales Voe ports for material importation to reduce impacts on village of Voe. Preferred route for non-abnormal load traffic not stated. Designated routes required and to be agreed. Account for car pooling facilities at B9075/A970 junction. 	<p>Total development: Please see A15.8.2 below.</p> <p>Site accesses: Please see A15.6.1 and Table A15.3 below.</p> <p>Other ports: Please see paragraph A15.7.6 below.</p> <p>Preferred routes: Please see A15.7.2 below.</p> <p>Car pooling: Please see A15.7.5 below.</p>

A15.3 CHANGES IN THE POLICY CONTEXT

Section 15.3.2 of the 2009 Environmental Statement stated that national advice on transportation impacts relating to the proposed development is detailed in guidance and policies within Scottish Planning Policy 17 (SPP 17). SPP 17 has subsequently been amalgamated into the consolidated Scottish Planning Policy (SPP) document. There have been no substantive changes to freight policy as originally documented.

A15.4 CHANGES IN METHODOLOGY

There have been no changes to the methodology originally detailed.

A15.5 CHANGES IN BASELINE CONDITIONS

A15.5.1 Committed Developments

Section 15.5.12 of the 2009 ES stated that there were no committed developments in the general area which would alter traffic volumes. Since publication, however, Total's Gas Processing Plant at Sullom Voe has received planning consent and it is possible that some overlap in construction times could occur for a period of one year in the worst case.

A15.6 CHANGES IN THE PROPOSED WIND FARM

Revisions to the Viking project since issue of the 2009 ES have resulted in a reduced number of proposed turbines, with a consequent reduction in the quantity of components and construction material requiring transportation:

- The number of turbines would be reduced from 150 to 127. Each turbine would be delivered on several trucks, respectively carrying the foundation ring, sections of the tower, one or more turbine blades, the nacelle and its machinery, the rotor hub and electrical connection apparatus. The number of truck movements required for component delivery is therefore reduced by about 15%, from about 1,500 to about 1,270.
- Each turbine would be mounted on a concrete foundation pad. Almost all of the concrete used in the wind farm is used in turbine foundations, and therefore the amount of concrete used would likewise reduce by about 15%, from about 74,252 m³ to about 62,897 m³. In turn this would reduce the number of truck movements required to deliver sand, cement and aggregate from about 7,793 to about 6,596.
- Two anemometer masts have been deleted from the 2009 proposals, with a consequent small reduction in the amount of construction traffic associated with them.
- A number of borrow pit areas of search have been deleted from the 2009 proposals, including two which were assessed in detail in Appendix 14.2. This would probably have little impact on the amount of road traffic since all had been positioned so that associated traffic would have been mainly within the development area, rather than on public roads. However, some traffic reduction is likely as a consequence of the deletion of these borrow pit sites.

In addition three site access points have been deleted, between Gonfirth and Setter on the B9071 (Kergord quadrant), Newing on the B9075 (Nesting quadrant), and north of Garth of Susetter (Collafirth quadrant, Access Point 3).

A15.6.1 Access Point Clarification

In response to comments received during consultation, Table A15.3 provides clarification regarding site access points.

Table A15.3 Access Points and Purpose

Quadrant	Location	Purpose/Comment
Delting	B9076 Houb of Scatsta	Abnormal Indivisible Load (AIL) and non-AIL access.
	A968 Hill of Swinister	Non-AIL access.
	A970 Wethersta-Sparl	Non-AIL access.
Collafirth	A968 Garth of Susetter	<i>Deleted from revised layout.</i>
Kergord	A970 Hamarigrind Scord	AIL and non-AIL access. Will be a staggered junction.
	B9075 Setter House	AIL and non-AIL access.
	B9071 Gonfirth-Setter	<i>Deleted from revised layout.</i>
	B9075 Lamba Scord	Non-AIL access.
	A971 Scord of Sound	Non-AIL access. Construction traffic using this access will approach and depart via the A971 past Tingwall, and will therefore not use the B9075 through Weisdale.
Nesting	A970 East of Hamarigrind Scord	AIL and non-AIL access. Will be a staggered junction.
	A970 East of Sand Water	AIL and non-AIL access.
	B9075 Newing	<i>Deleted from revised layout.</i>

A15.7 CHANGES IN AGREED MITIGATION

A15.7.1 Committed Developments

To mitigate potential cumulative effects arising from traffic congestion and junction improvements connected with the Laggan-Tormore development, Viking will work closely with Zetrans and Total to ensure any issues are incorporated into the traffic management plan.

A15.7.2 Non-Abnormal Construction Traffic Routes

Preferred routes for non-abnormal load construction traffic will be agreed with Shetland Islands Council and included in the construction/traffic management plan, prior to construction starting.

A15.7.3 Sand Water SSSI

Commenting on the 2009 ES, SNH objected due to potential impacts on the Sand Water SSSI. They acknowledged that '*although not directly affected by the windfarm itself or associated infrastructure within the development boundary, the Sand Water SSSI is likely to be adversely affected by other associated works outwith the development boundary*'. The potential impacts relate to changes at the A970/B9075 junction, to upgrades to the B9075 and its bridge, and to the location of a construction compound. In particular, releases of sediment and polluting materials, nutrient enrichment and possible changes to the flow reaching the Sand Water SSSI were issues of concern.

SNH suggested three changes to the plan that would address these concerns. These changes are (i) road alterations must take place on the north side of the existing B9075, so that the works do not encroach into the SSSI; (ii) construction methods, pollution prevention measures and details of water crossings and culverting to be fully agreed with SEPA, and ultimately implemented and controlled by the Ecological Clerk of Works; (iii)

toilet, washroom and kitchen facilities for workers at the construction compound, near to Sand Water, to be in the form of sealed units which are regularly maintained and emptied to ensure no waste water spills from them.

VEP is happy to commit to all of these measures. Therefore, no significant impacts will occur on the breeding wildfowl of the Sand Water SSSI.

A15.7.4 Mitigation in relation to watercourse crossings on public roads

Full details of assumed mitigation relevant to stream crossings and applicable to public road alterations were presented in the 2009 ES Section 14.6.1(b). The following is a summary of pertinent information:

- Selection of type and design of stream crossing to be finalised at detailed design stage and be informed by morphology, peak flow, local topography and ecological requirements;
- Consultation with SEPA to agree design and construction methodologies in support of CAR applications;
- All structures will be designed and constructed using best practice techniques with sufficient storm flow capacity and climate change allowance;
- Crossing structures will be designed and constructed following design guidance given by Scottish Executive (2000) and SEPA (2008) relating to river crossings and migratory fish; and
- Mitigation will be ensured through a Framework Site Environmental Management Plan (SEMP) / Pollution Prevention Planning (PPP) document.
- Where appropriate, guidance in the Design Manual for Roads and Bridges (DMRB) will be followed.

A15.7.5 Car Pooling (B9075/A970 Junction)

The B9075/A970 junction is currently used as an informal car park by people car-pooling to commute to Sullom Voe. An opportunity exists to incorporate improved parking arrangements for these people at or near the junction, either by making use of road widening at the junction itself or by making use of parts of the proposed construction compound and access track (on the A970 about 680 m south of the junction) after wind farm construction is complete. Viking Energy Partnership (VEP) will work with Shetland Islands Council to provide such facilities.

A15.7.6 Use of Dales Voe and Greenhead Ports

Use of Dales Voe and Greenhead ports for arrival of AILs and non-AILs to Shetland was considered during the initial project design stages, prior to submission of the 2009 application. The AIL study concluded that Sella Ness was the appropriate location for importing turbine blades, and Sullom Voe for other heavy components including nacelles. Current government policy is to use the closest port facilities and the selection of Sella Ness and Sullom Voe accords with this policy. However, the option exists to use other ports including Dales Voe and Greenhead, and all options will be reviewed when detailed construction plans are developed.

A15.7.7 Other Potentially Affected Water Bodies

OS 1:50,000 mapping shows that numerous junction and road alterations, required for the updated design, are in close proximity to waterbodies; these are the same as the 2009 design and are clarified here in response to comments received. Details are provided in Table A15.4.

At this stage potential impacts on these watercourses have not been assessed in detail. However, the proposed works are no different in character or scale to routine highway management, maintenance and minor improvement activities. Where improvements are proposed, and discussions with the chosen contractor confirm that they are required, they will be carried out in accordance with standard highway management practices and in full co-operation with Shetland Islands Council Highways Department.

Table A15.4 Structural Alterations in Proximity to Watercourses

Description	Details
Access Point 1, B9076 Houb of Scatsta	Located within 200m of several streams discharging to the Houb of Scatsta.
Sella Ness access junction upgrade B9076	Located within 300m of Houb of Scatsta.
B9076/A968 Junction at Mossbank; structural assessment	Culverting of watercourse required and bridge structure to be assessed for possible strengthening.
Access Point 4, A970 Hamarigrind Scord	Tributary of Wester Filla Burn passes within 50m of proposed eastern Nesting access point and under existing track.
B9075/A970 junction upgrade	Approximately 300m from Sand Water and Burn of Pettawater.
B9075 new carriageway	Approx 1.9km of improved carriageway crosses numerous small watercourses including Burn of Pettawater; and is in close proximity to Sand Water. Culverting required.
B9075 new site Access Point 6 (near Upper Kergord track entrance)	New track junction located at stream confluence feeding Burn of Weisdale.
A970 new Access Point 8 (east of Sand Water)	Located within 50m of tributary of Burn of Crookadale.
A970 near Girlsta	Structural assessment of bridge over small watercourse.
A971 near Olligarth	Structural assessment of bridge over Loch of Strom/Stromness Voe.

A15.8 CHANGES IN THE IMPACT ASSESSMENT

A15.8.1 Changes due to the revised design

Changes to the project design all result in reduced traffic flows and consequent reductions in impacts. Overall impact assessment scores, however, remain as recorded in the original ES for all categories. That is: There will be a moderately significant impact on the local highway network resulting from the construction traffic and movement of abnormal loads. However, traffic management measures to ensure the efficient transport of components and materials to the site have the potential to reduce this impact. There is likely to be a

low significance impact on the wear and tear of particular roads. However, this is likely to be covered by a wear and tear agreement to ensure the condition remains as before the scheme. On the beneficial side and as a result of the scheme, proposed junction improvements at the Sella Ness site access, A968/B9076 Junction south of Mossbank and A968/A970 Junction at Voe will result in larger junctions with increased capacity and potentially safer designs. Localised widening and route improvement at the side roads to Access Points 3 & 6 will upgrade routes and improve the safety and operation of the roads.

A15.8.2 Changes due to cumulative effects

The Total E&P UK Laggan – Tormore Onshore ES (2009) states that cumulative effects during the construction phase will be confined to the B9076 between Brae and Firth and the unclassified road from Quoys of Garth to Sullom Voe Terminal, although in practice HGVs will be virtually confined to a one kilometre stretch of the B9076 between Sullom Voe Harbour and Quoys of Garth. The worst case scenario predicts an increase of five additional HGV movements per hour in each direction.

The Viking wind farm will, in the worst case, add a single HGV movement per hour in each direction and there are no sensitive receptors identified along the jointly affected stretch. It is therefore not considered that cumulative effects will be significant. Proposed junction improvements planned along the B9076 in respect of the Viking project would however need to consider the Total development.

A15.9 SUMMARY AND CONCLUSIONS

This Addendum chapter has updated and clarified aspects of the roads and traffic baseline and identified mitigation as appropriate. Assessments relevant to ecological and hydrological issues raised are included within the relevant chapters of this Addendum. In terms of the receptors and impacts identified in the corresponding chapter of the 2009 ES, it is anticipated that a reduction in the volume of construction material requiring transportation will result in reduced impacts on sensitive receptors, although not to an extent that would alter the original assessment findings.

A15.10 REFERENCES

Scottish Environment Protection Agency (2008), *Engineering in the Water Environment Good Practice Guide, Construction of River Crossings* - [http:// www.sepa.org.uk/ water/water_regulation/ guidance/ engineering.aspx](http://www.sepa.org.uk/water/water_regulation/guidance/engineering.aspx). Published by SEPA.

Scottish Executive (2000), *River Crossings and Migratory Fish: Design Guidance*.