Chapter 4: Description of Proposed Development

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4 Description of Proposed Development

4.1 Introduction

4.1.1 This Chapter describes the proposed B9075 Sandwater Road Realignment (the Proposed Development). It also provides an overview of the likely construction methods and the approximate timescales over which construction would take place. This Chapter is supported by a series of figures and appendices.

4.1.2 The Proposed Development would involve the realignment and widening of the B9075 between Burn of Weisdale and the junction with the A970 at Sand Water. The purpose of the Proposed Development is to facilitate construction access, including abnormal loads, for the consented Viking Wind Farm[1] (and proposed Section 36C variation in 2018[2]).

4.2 The Existing Road

4.2.1 The existing B9075 between Burn of Weisdale and Sand Water is approximately 2.26km long comprised of a mix of single track road with short sections of single carriageway. The road rises over Lamba Scord, with an elevation change of around 42m, from Setter in the west to Pettadale in the east, connecting communities in Weisdale and Kergord valleys with the main A970 road which runs north/south through Shetland Mainland.

4.2.2 Beyond Setter, the B9075 continues southwards for a further 2.5km to Heglibister where it joins the A971. No works are proposed to this section of the road.

4.3 The Proposed Development

4.3.1 It is proposed that the B9075 (Sandwater Road) is realigned between the junction with the A970 at Sand Water, westwards to the junction with the C class road to Upper Kergord (see Figure 4.1). Upon completion of the wind farm construction, the track would be upgraded to public road standard, tied back into the existing B9075 to the east of the existing Burn of Weisdale crossing and the new road would be adopted by Shetland Island Council (SIC). In addition to this a new single span bridge structure over the Pettawater Burn and two further new junctions (one to the Mid Kame Ridge, and the other to the proposed new Kergord Access track), would also be adopted by SIC.

4.3.2 The section of track to be adopted as the new B9075 would require a two stage design comprising a temporary track for the wind farm construction, followed by a permanent road built in accordance with SIC specification. The works to achieve adoption by SIC would include re-profiling to achieve the permanent alignment, surfacing, and instalment of permanent road features such as signage.

4.3.3 A Recreational Management Plan will be prepared in discussion with SIC that will set out the principles for promoting access in the area, including retaining access to Sandwater Loch, and access to the wind farm. The plan will also allow for potential reinstatement of the existing road (in part), if this is considered to be desirable. It is anticipated that the

[1] Consented in 2012 for 103 turbines with a maximum tip height of 145m (ECU Case Reference EC00005244)

[2] Proposed Section 36C Application to vary the maximum tip height from 145m to 155m (including increase in rotor diameter) (ECU Case Reference ECU00000723)

Recreational Management Plan will be covered by a Condition of Consent thereby ensuring that SIC have an input into the design and are content with what is developed.

4.3.4 An overview of the proposed realignment is shown on Figure 4.1.

4.3.5 The Proposed Development would comprise two lanes of 2.8m width in each direction, with a further 200mm provided either side of the edge lines to give a 6m running surface. Provision for a 1.5m verge at either side would also be required. The realigned road would generally run in parallel and to the north of the existing B9075, with separation distances varying from immediately adjacent to up to approximately 85m. The horizontal and vertical alignment of the realigned road has been developed in discussion with SIC Roads Department to ensure that the realigned road meets SIC's requirements for adoption once the construction is fully completed.

Earthworks

4.3.6 With some peat deposits present in excess of 4-5m, the design of the Proposed Development has required careful consideration. The earthworks design philosophy that has been adopted negates significant peat excavation, disturbance to the existing B9075, and limits environmental impact, with a mix of floating and founded sections of road proposed.

Floated Sections

4.3.7 The design of the Proposed Development involves the proposal to float sections of the new road over deep peat (where peat was greater than 1m and ground slopes are a maximum of 5%), in accordance with Scottish Natural Heritage report dated 2010 'Floating Roads on Peat'. There are three main sections of road identified as suitable for floating, as follows:

- Area 1 between Chainage 50 and 298;
- Area 2 between Chainage 390-720; and
- Area 3 between Chainage 1270-1430.

4.3.8 The sections of floated road would minimise peat excavations, reduce excavated peat volumes and leave vegetation and soils intact. Where necessary, floating road embankments would be reinforced with basal reinforcement at the underside.

Founded Sections

4.3.9 Due to the nature of the topography, there will be a requirement for some founded sections of road. These will generally occur in areas where peat depth is less than 1m, and slopes of the existing ground are greater than 5%, or in areas of cutting.

4.3.10 The design of the transition lengths to or from peat would adopt current good practice that permits a gradual change in subgrade flexibility and thereby limits potential differential settlements.

Cuttings and Embankments

4.3.11 Where cutting or embankment slopes are necessary, the cut and built-up slopes would be at a suitable gradient to allow the replacement of peat and soils to enable revegetation and the re-establishment of habitats as far as possible (see Appendix 10.4: Peat

Management Plan). The exception would be areas of cut within stable bedrock where steeper rock cuttings would be established to minimise the footprint of the Proposed Development and volume of excavated materials (see Appendix 4.5).

Peat

4.3.12 The peat volumes for the Proposed Development have been calculated utilising the excavated areas identified along the route and modelling the cut volume of peat based on peat probing data. The total excavated peat volume along the route (with an overall length of 2090 m), has been estimated to give rise to the temporary displacement of 31,150m³ of peat. The temporarily displaced peat is estimated to comprise approximately 28,450m³ of acrotelmic peat and 2,700m³ of catotelmic peat. The Proposed Development is expected to achieve an overall peat balance. All excavated material will be required for reuse as part of the works and no surplus peat is anticipated. Further detail on volumes and reuse of excavated peat is provided in Appendix 10.4: Peat Management Plan.

New Junctions

4.3.13 Four new road junctions would be required:

- Access to the realigned B9075 from the A970 at Sandwater;
- Access to the unclassified road to Upper Kergord from the realigned B9075;
- The new Viking Wind Farm Mid Kame southern access track from the realigned B9075 at Lamba Scord; and
- Existing B9075 road.

4.3.14 The design of these junctions provides the axle load configurations associated with the wind turbine component delivery vehicles or other relevant loadings.

Drainage and Watercourse Crossings

Drainage

4.3.15 Pre-earthworks drainage consisting of shallow filter drains or lined ditches would be used to collect run-off from adjacent land and field drains. Such cross drains would discharge diverted greenfield run-off into an area of vegetation for dispersion or infiltration as close as possible to the location of interception to ensure that there is no effect on soil moisture regimes downstream of the construction works.

4.3.16 Permanent drainage is designed and constructed in accordance with good practice guidance.

Watercourse Crossings

4.3.17 Where watercourses and ditches are to be crossed, new culverts would be required. Culverts would be designed in accordance with industry good practice to accommodate the design axle loads of construction traffic and necessary capacity of the watercourses. Culverts would be subject to suitable provision being made for flood flows and ecological and geomorphological mitigation, and compliance with the environmental commitments detailed within this EIA Report.

4.3.18 A new bridge would be required over the Burn of Pettawater. This would be designed in accordance with current best practice and Scottish Environment Protection Agency (SEPA) guidelines with bridge abutments set back from the river bank. The proposed bridge structure is shown in Appendix 4.4.

4.3.19 All proposed watercourse crossings would require authorisation under the Water Environment (Controlled Activities) (Scotland) Regulations 2011.

Cabling Works

4.3.20 It is anticipated that electrical cables associated with Viking Wind Farm would be laid within close proximity of the proposed new road. All cabling works will require similar drainage mitigation, materials handling and pollution prevention measures as detailed within the Outline Draft CEMP (see Appendix 4.2).

Temporary Construction Compound

4.3.21 A temporary construction compound would be required and is proposed to be located adjacent to the junction of the B9075 and the Upper Kergord Road.

4.3.22 The temporary construction compound would be jointly used for the proposed Upper Kergord access track as well as the Proposed Development. Given its inclusion in the Upper Kergord access track application (Planning Application Reference 2018/096/PPF), the temporary construction compound is not included in this application.

4.3.23 Once construction of developments has been completed, the construction compound would be removed and the site reinstated and returned to its current use.

4.4 Construction and Programming

4.4.1 Key tasks during construction of the Proposed Development would relate to:

<u>Roadworks</u>

- Site establishment;
- Temporary and permanent fencing;
- Site clearance;
- Temporary and permanent surface water outfalls;
- Service diversions;
- Topsoil stripping and storage;
- Pre-earthworks drainage;
- Earthworks (cuttings and embankments);
- Environmental bunds and landscaping;
- Drainage, service ducts and chambers;
- Topsoil spreading, seeding and turfing;
- Roadwork finishes including safety barriers, signs, road markings; and
- Accommodation works.

Structures

- Construction of river crossings;
- Bridge construction; and
- Culvert construction.

Environmental

- Earthworks mitigation; and
- Landscape and ecological mitigation.

Temporary Works

- Temporary works to facilitate bridge construction;
- Establishment of turning areas to facilitate turning of dumper trucks;
- Temporary traffic management to maintain traffic flows where roads are affected by construction of the Proposed Development; and
- Temporary balancing ponds at drainage outfalls.

Maintenance

- Landscaping maintenance and defects repair works; and
- Winter maintenance.

Traffic Management

4.4.2 Construction traffic would be managed in accordance with the overall Traffic Management Plan (TMP) for Viking Wind Farm.

Programme

4.4.3 In order to minimise disruption to other road users, the programme for the Proposed Development would include the following phases:

- Phase 1: Construction of the new realigned road to the standard required for Viking Wind Farm access traffic;
- Phase 2: Use of the realigned road by construction traffic during the construction of Viking Wind Farm. The existing B9075 would remain in place during this period for use by public road users to maintain separation between Viking Wind Farm construction and members of the public;
- Phase 3: Construction works to complete and bring the new realigned road up to adoption standards;
- Phase 4: Transfer of public traffic to the newly realigned B9075; and
- Phase 5: Reinstatement of disturbed areas. Depending on the outcome of the Recreational Management Plan (prepared in discussion with SIC), this may include the reinstatement of the existing B9075 (in part), if this is considered to be desirable.

4.4.4 The initial construction programme is likely to take place over a 9-12 month period following the granting of consents. Liaison with landowners and local residents would be

carried out prior to, and during construction, to ensure there is minimum disruption to them. The final completion of the Proposed Development would not occur until the completion of the Viking Wind Farm works.

Reinstatement and Mitigation

4.4.5 Phase 1 of the Proposed Development would involve the establishment of the road construction and all cuttings and embankments, structures and drainage. As far as practicable, reinstatement of new slopes and areas disturbed during this initial construction phase would take place at the earliest opportunity to minimise the length of time that peat and soils would need to be stored, to give the best opportunity for habitat reinstatement and to minimise risks to the water environment from silt-laden runoff.

4.4.6 Further information on the excavation, storage and re-use of soils is included in Appendix 4.2: Outline Draft Construction Environmental Management Plan (CEMP) and Appendix 10.4: Peat Management Plan (PMP).

4.4.7 Specific mitigation for each subject area is detailed in relevant technical chapters in this EIA Report and summarised in a Schedule of Mitigation (Appendix 4.1.)

4.5 Environmental Management during Construction

4.5.1 It is proposed that construction method statements for the Proposed Development would include the requirements of the Outline Draft CEMP included in Appendix 4.2 which would apply to all construction activities required as part of the proposals. In particular, the CEMP would specify conditions relating to protection of habitats and species, pollution prevention and the means by which site monitoring would occur. The final site-specific CEMP would be drawn up by the Applicant, in consultation with SIC, SEPA, and Scottish Natural Heritage (SNH), once planning permission had been obtained and the contractor appointed.

4.6 Decommissioning

4.6.1 Due to the nature of the Proposed Development it is not envisaged that decommissioning would be required. However, in the event of this being required, it is assumed that this would involve the removal of any above ground structures and removal of the running surface of the road to enable re-growth of vegetation. Where removal of infrastructure would result in more damage than leaving in place, features would be left in-situ.

4.6.2 Full details of the decommissioning plan would be agreed with the appropriate authorities and landowners prior to any decommissioning works commencing.