

1. INTRODUCTION

1.1 OVERVIEW

The Viking Energy Partnership has identified and evaluated a potential wind farm site in Shetland (Figure 1.1). This Environmental Statement (ES) presents the findings of the Environmental Impact Assessment process which has informed the project's planning and design, and supports an application for consent to construct and operate the wind farm, which will be known as Viking Wind Farm.

The proposed wind farm site is located on land under a number of ownerships in the north Mainland of Shetland. Where necessary in the ES the site is divided, for convenience, roughly into four quadrants centred on Voe and named as follows:

- Delting (between Voe and Scatsta) - 33 turbines
- Collafirth (between Voe and Lunna) - 8 turbines
- Nesting (between Voe and Skellister) - 62 turbines, and
- Kergord (between Voe and Weisdale) - 47 turbines.

The site is described in more detail in Chapter 3.

The wind farm will comprise 150 wind turbine generators, each with a tubular steel tower, three glass-fibre reinforced epoxy turbine blades, a fibreglass nacelle (which houses the generator, gearbox and yawing mechanism) and an enclosed, weatherproof electrical transformer. The choice of turbine model has not yet been finalised, but the hub height of the turbines would be up to a maximum of about 90m and the rotor diameter would be up to about 110m (i.e. each blade would be up to about 55m long). The maximum blade tip height would therefore be up to about 145m above ground level. Together, the 150 wind turbines would have a predicted installed generating capacity of up to 540 megawatts (MW).

More details of the proposed development are given in Chapter 4.

The proposal is made in response to the Renewables Obligation, which came into effect in April 2002 and has the objective of providing a market stimulus for increasing the proportion of renewable energy within the UK's energy mix. The Renewables Obligation, in turn, forms an important component of a wider strategy that aims to combat climate change.

1.2 LEGISLATIVE CONTEXT

The application to construct and operate the wind farm is being made under Section 36 of the *Electricity Act 1989*, and will be determined by The Scottish Ministers in consultation with Shetland Islands Council. The application is also subject to the *Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2000* (the EIA Regulations). The requirements of the EIA Regulations are described in Chapter 5.

The application is made under Section 36 of the Electricity Act 1989 and is not a “planning application”. Instead the application is made directly to Scottish Government at the Energy Consent Unit. Rather than the applicant having to apply separately to the Local Planning Authority for planning permission, Section 57 (2) of the Town and Country Planning (Scotland) Act 1997 states that the Secretary of State may direct that planning permission for the development and all ancillary development shall be deemed to be granted, subject to such conditions (if any) as may be specified in the direction.

Members of the public and other interested parties are given a minimum of 28 days from the date of the last published notice of the Section 36 Application and supporting environmental statement and they are encouraged to make comments directly to the Energy Consent Unit.

The relevant planning authority (Shetland Islands Council) is a statutory consultee and has a key role to play in the process since they represent the local community and are familiar with the planning requirements of the locality. The planning authority is given 4 months to inform the Secretary of State if it objects to the application.

1.3 THE APPLICANT

1.3.1 Viking Energy Partnership

The project is being brought forward by Viking Energy Partnership. Viking Energy Partnership is a joint venture between Viking Energy Limited and SSE Viking Limited. The two partners had previously been developing adjacent wind farm sites independently, but subsequently recognised the benefits of a joint project. Consequently a partnership has been formed to bring together the two original sites and developers as single entities. The Viking Energy Partnership is registered in Shetland.

1.3.2 Viking Energy Limited

Viking Energy Limited was formed in 2003 to represent Shetland Islands Council’s interests in large-scale wind energy development in Shetland. The company was tasked to investigate and develop the Viking Windfarm concept as a potential investment opportunity for the Shetland community, addressing the Council’s strategic objectives of sustainable development and economic diversification. That concept was originally a 300 MW development neighbouring Scottish and Southern Energy’s proposal, but it has matured into the collaborative 540 MW Viking Wind Farm proposal. In September 2007, it was agreed that Shetland Islands Council's majority ownership of Viking Energy Ltd should be sold to Shetland Charitable Trust. The Trust appoints the board of Viking Energy Ltd, three of whom sit on the Viking Energy Partnership board.

1.3.3 SSE Viking Limited

SSE Viking Limited is a subsidiary of Scottish and Southern Energy plc (“SSE”). SSE is a FTSE-100 company, formed in 1998 from the merger of Scottish Hydro-Electric plc and Southern Electric plc. The company is headquartered in Perth, and employs more than 16,000 people in the group. Core activities include the generation and supply, and transmission and distribution of electricity. Other activities include gas storage, operation

of a telecoms network, the supply of gas, retail shops and utility contracting. The company has a market capitalisation of around €19 billion, and supplies approximately 8.9 million energy customers from Shetland to the Isle of Wight under the Scottish Hydro-Electric, Southern Electric, Swalec and Atlantic supply brands. The Company is co-owner of Scotia Gas Networks, which owns and operates the ‘Scotland’ and ‘South of England’ regional gas distribution networks. The gas network business employs around a further 5,000 staff.

In January 2008 SSE completed the purchase of Airtricity, a world leading renewable energy company developing and operating wind farms across Europe. The company is both a generator and supplier of electricity and currently over 20 wind farms in operation throughout the Republic of Ireland, Northern Ireland and Scotland producing a total of over 600MW. A further 15 wind farms totalling over 700MW are under construction, with a global pipeline of over 10,000MW.

Scottish and Southern Energy’s power generation assets total around 10,500MW. The generation portfolio comprises renewables (hydro, wind and biomass) and thermal power stations (gas, coal and oil). Scottish and Southern Energy owns and operates Lerwick power station, and the electricity distribution network on Shetland.

Scottish and Southern Energy is the UK’s leading generator and supplier of renewable energy. Recent new renewable projects include hydro schemes at Cuileig, near Ullapool, Kingairloch, west of Fort William, and Glendoe, near Fort Augustus; and windfarms at Tangy, in Kintyre, Spurness, in Orkney, Hadyard Hill, in South Ayrshire, Artfield Fell, in Dumfriesshire, and Drumderg, in Perthshire. The Company has invested in emerging renewable energy technology and now has interests in companies developing and promoting tidal energy devices and domestic scale wind turbines and solar energy. SSE also worked with Talisman, a substantial Canadian oil company, on the development of the first deep-water off-shore wind farm located north-east of the Beatrice oilfield in the Moray Firth, and is now looking to take the project forward with a new partner.

1.4 THE ENVIRONMENTAL STATEMENT (ES)

1.4.1 Context

The Section 36 Application will include a letter requesting consent and deemed planning permission, a map showing the land to which the application relates, the environmental statement and the appropriate Section 36 Application fee. The planning statement considering the proposed development in the context of national, regional and local planning policies will be submitted separately.

The purpose of the ES is to report on the environmental studies which have informed the project design. The studies have included evaluating the environmental baseline (that is, the existing environment); identifying ways in which the proposed wind farm might affect the environment (both for better and for worse); deciding how best to remove or reduce any adverse environmental effects and how to maximise the environmental benefits; and quantifying the likely residual environmental effects of the wind farm. Throughout the process our specialist consultants have maintained a dialogue with the relevant authorities. Information which has arisen from the environmental studies has been continually fed back into the developing project design so as to avoid, where possible, any adverse environmental effects at source.

1.4.2 The Habitat Management Plan

A Habitat Management Plan (HMP) has been developed in parallel with the ES. The purpose of the HMP is to define the ways in which habitats which might be affected by the development will be managed during the operational phase of the project. In the view of the Viking Energy Partnership there are significant opportunities for environmental enhancement stemming from the project, including measures addressing peat conservation, upland watercourse improvement, blanket bog regeneration, red-throated diver breeding site creation and other benefits. The HMP will be submitted with the Section 36 application and will form a binding element of any resulting consent.

1.4.3 Development proposals considered

The Environmental Statement considers the key elements of the proposed development (which is described in detail in Chapter 4), including:

- Wind turbines
- Foundations
- Tracks
- Crane hardstandings
- Cables (above and below ground)
- Anemometers and their infrastructure
- Control and operational maintenance buildings
- Borrow pits
- Any necessary modifications to the public roads
- Temporary construction facilities
- Dock facilities for importing components and materials
- Construction activities including concrete batching and lorry movements
- Operational activities
- Decommissioning
- Electrical sub-stations

The wind farm will be connected to the mainland Scotland grid system by means of a sub-sea high voltage direct current (HVDC) cable. Although preliminary details of the likely routing of the grid connection are provided, its environmental effects, and those of the converter station which will connect the Viking Windfarm to the HVDC cable, are the subject of a separate planning application and Environmental Impact Assessment which is reported elsewhere.

The physical process of decommissioning would be of a similar nature to construction, but on a smaller scale and over a shorter time period. However, the process and results of the decommissioning process (e.g. reinstatement) have been taken into account where appropriate in this Environmental Statement.

1.4.4 Structure of the ES

The Environmental Statement comprises four separately bound documents:

- Volume 1 - Non Technical Summary
- Volume 2 - Environmental Statement (Written Statement)
- Volume 3 - Figures (plans, illustrations and photographs)
- Volume 4 - Appendices

The remainder of this Volume 2, the Written Statement, is structured as follows:

Chapter 2 outlines the background to the development in terms of renewable energy policy, and explains why wind energy (along with others) has been selected from alternative technologies.

Chapter 3 outlines why the Viking Wind Farm sites have been selected from a number of potential wind farm sites identified during consideration of a wider range of alternative sites.

Chapter 4 describes the principal elements involved in the construction, operation and de-commissioning of the preferred proposal for the Viking Wind Farm. It also describes alternative planning and design approaches considered during the development of the specific proposals.

Chapter 5 outlines the requirements of the EIA Regulations, and explains the process undertaken in this case.

Chapter 6 provides an overview of the existing locational and environmental context of the site.

Chapter 7 outlines the relevant development planning framework and national planning policy relevant to the proposed development and site.

Chapters 8 to 19 report the assessment of environmental effects under the following headings:

- Landscape Character
- Visual Impact
- Ecology
- Ornithology
- Noise
- Cultural Heritage
- Soil and Water
- Roads and Traffic
- Air and Climate
- Socio-economic
- Telecommunications and Aviation
- Recreation and Tourism

Chapter 20 summarises the findings of the Environmental Impact Assessment.

1.4.5 The EIA team

The Environmental Statement has been compiled by the Viking Energy Partnership with advice and assistance from environmental consultants, BMT Cordah. The team identified in Table 1.1 undertook specialist assessments.

Table 1.1 The EIA project team

Planning	Jones Lang LaSalle
Landscape Character	Ash Design and Assessment
Visual Impact	Ash Design and Assessment
Ecology	EnviroCentre with BMT Cordah, Highland Ecology and Waterside Ecology
Ornithology	Natural Research (Projects) Limited
Noise	BMT Cordah
Cultural Heritage	AOC Archaeology Ltd
Soil and Water	Mouchel
Roads and Traffic	Halcrow
Air and Climate	BMT Cordah
Telecommunications and Aviation	Scottish and Southern Energy
Recreation and Tourism	BMT Cordah
Social and Economic	Avayl Engineering and Andrew Blackadder Associates

1.4.6 Consultation

The EIA process for the Viking Wind Farm has involved extended consultation with stakeholders and the public. Although studies have been proceeding for some years, the combination of the two original projects into one led to the production of a consolidated environmental Scoping Report which was submitted to Scottish Ministers and Shetland Islands Council in January 2008. Responses to the Scoping Report have informed the environmental studies. Public meetings, exhibitions, press releases and consultations with planning and other officials have all contributed to the development of the project and have led in many cases to design modifications including a significant reduction in the number of turbines proposed. Details of consultations are provided in the relevant chapters of the ES.