

PREFACE

Viking Energy Wind Farm LLP (“the Applicant”) has applied for a variation¹ to the Description of the Development provided in Annex 1 of the consent for Viking Wind Farm, Shetland. The necessary statutory consents for the construction and operation of the Viking Wind Farm were granted in terms of the decision letter issued by the Scottish Ministers dated 4 April 2012. The Scottish Ministers granted consent under section 36 of the Electricity Act 1989 (“the relevant section 36 consent”), together with a direction under section 57(2) of the Town and Country Planning (Scotland) Act 1997 (“the 1997 Act”) granting deemed planning permission, for the proposed 103 turbine Viking Wind Farm. By letter dated 29 March 2017, the Scottish Ministers extended the period for commencement of development by three years thereby permitting commencement of development up to 4 April 2020 unless further extended by the Scottish Ministers.

The purpose of the application for variation of the relevant section 36 consent granted under the Electricity Act 1989 (“the 1989 Act”) arises from the proposed variation to the Description of the Development that would reflect a proposed change to the specification of the 103 turbines that would increase the maximum tip height of the turbines, from 145 metres (m) to a maximum of 155 m. It is proposed that the maximum rotor diameter would increase from 110 m previously assessed and consented, to a maximum of 120 m. It is important to note that no changes to the footprint of the development are proposed.

In addition the Applicant is seeking a direction under section 57(2) of the Town and Country Planning (Scotland) Act 1997 (“the 1997 Act”) that planning permission be deemed to be granted in respect of the varied Description of the Development, on the basis that the variation to Annex 1 Description of Development within the relevant section 36 consent is granted. It is proposed that the direction under section 57(2) would be subject to conditions in respect of which the Applicant will seek variations to certain of the conditions set out in Part 2 of Annex 2 to the relevant section 36 consent. These separate variations to conditions are proposed in order to take account of the variations to the Description of Development and, also, updated environmental information contained in the Environmental Impact Assessment Report prepared under the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017, (“the 2017 EIA Regulations”).

A copy of the variation application will be served on the Shetland Islands Council in accordance with Regulation 4(2)(b) of the Electricity Generating Stations (Applications for Variation of Consent) (Scotland) Regulations 2013, as amended, (“the 2013 Regulations”).

It is noted that the Viking Wind Farm ES (2009), “the ES”, reported likely significant effects associated with a 150 turbine layout. The Viking Wind Farm ES Addendum (2010), “the ES Addendum”, reported likely significant effects associated with a 127 turbine layout. The Applicant provides this Environmental Impact Assessment Report (“EIA Report”) under the 2017 EIA Regulations to accompany the application for variation of the consented Viking Wind Farm, which comprises 103 turbines. Professional judgement, based on a review of the ES, the ES Addendum, and updated baseline information (where required), has been used to establish the likely significant effects of the consented Viking Wind Farm for the purposes of comparison with the effects of the proposed varied development.

The EIA Report will comprise five volumes:

- Volume 1 - Non-Technical Summary (NTS);
- Volume 2 – Main Report;
- Volume 3a – Figures;

¹ Under Section 36C of the Electricity Act 1989 and the Electricity Generating Stations (Applications for Variation of Consent) (Scotland) Regulations 2013.

- Volume 3b - Visual Representations; and
- Volume 4 - Technical Appendices.

The EIA Report and other documents lodged in support of the variation application will be available for viewing on the Scottish Government portal at www.energyconsents.scot. An application website is available to view at <https://www.vikingenergy.co.uk/>.

The application and this EIA Report will be advertised in accordance with the relevant legislative requirements² as follows:

- on the application website;
- in The Herald on one occasion;
- in the Shetland Times for two successive weeks; and
- in the Edinburgh Gazette.

This EIA Report will be available for viewing at the following location:

Viking Energy Partnership	Shetland Islands Council	Shetland Library
The Gutters Hut	8 North Ness Business Park	Lower Hillhead
North Ness Business Park	Lerwick	Lerwick
Lerwick	Shetland	Shetland
Shetland	ZE1 0LZ	ZE1 0EL
ZE1 0LZ		

The EIA Report can also be viewed at the Scottish Government Library at Victoria Quay, Edinburgh, EH6 6QQ.

Any representations in respect of the application may be submitted via the Energy Consents Unit website at www.energyconsents.scot/Register.aspx; by email to The Scottish Government, Energy Consents Unit mailbox at representations@gov.scot or by post, to The Scottish Government, Energy Consents Unit, 4th Floor, 5 Atlantic Quay, 150 Broomielaw, Glasgow, G2 8LU, identifying the proposal and specifying the grounds of representation.

Written or emailed representations should be dated, clearly stating the name (in block capitals), full return email and postal address of those making representations. Only representations sent by email to representations@gov.scot will receive acknowledgement.

All representations should be received not later than the date falling 30 days from the date of the last published notice, although Ministers may consider representations received after this date. Any subsequent additional information which is submitted by the Applicant will be subject to further public notice in this manner, and representations to such information will be accepted as per this notice.

This EIA Report is available in other formats if required. For details, including costs, contact:

Viking Energy Partnership
The Gutters Hut
North Ness Business Park
Lerwick, Shetland
ZE1 0LZ

²The Electricity Generating Stations (Applications for Variation of Consent) (Scotland) Regulations 2013 and The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017

1. INTRODUCTION

1.1 Background and Introduction

- 1.1.1 Viking Energy Wind Farm LLP (“the Applicant”) has applied for a variation³ to the Description of the Development provided in Annex 1 of the consent for Viking Wind Farm, Shetland. In addition, the Applicant seeks variations to certain of the conditions set out in Part 1 and 2 of Annex 2 of the section 36 consent (and as required by direction under section 57(2) of the 1997 Act). The history of the consenting process has been set out in the Preface. The site location is identified in Figure 1.1 and the site layout that was consented in terms of the relevant section 36 consent is illustrated in Figure 1.2.
- 1.1.2 The project has gone through a number of iterations from the Applicant’s initial application for Section 36 consent and submission of an Environmental Statement (ES) in June 2009 for a 150 turbine wind farm (“the ES”). Following consultation responses, a 2010 Addendum to the ES (“the ES Addendum”) was submitted for a reduced 127 turbine scheme. As explained in the Preface, the necessary statutory consents, in terms of section 36 of the 1989 Act and deemed planning permission in terms of section 57(2) of the 1997 Act was granted in April 2012 for a revised 103 turbine scheme. Overall this resulted in the removal of turbines in both the Delting and Collafirth quadrants (see Figure 1.3) to take into account likely significant effects of the development on key ornithological species and aviation issues. The grant of the necessary statutory consents by the Scottish Ministers was challenged by Sustainable Shetland through Judicial Review to the Court of Session. Ultimately this challenge was dismissed by the United Kingdom Supreme Court in February 2015, thereby allowing the project to proceed. The Applicant requested an extension to the period for commencement of development in January 2017 as a consequence of the delays caused by the Judicial Review. This was granted by the Scottish Ministers by letter dated 29 March 2017. Commencement of Development must now commence no later than 4th April 2020, unless otherwise further varied by the Scottish Ministers.
- 1.1.3 The Applicant is proposing to vary the Description of Development in Annex 1 to the relevant section 36 consent by altering the maximum tip height of the turbines from 145 metres (m) to a maximum of 155 m and increasing the maximum rotor diameter of the turbines by 10 m to a maximum of 120 m. The development as a whole, is described in this EIA Report as the ‘proposed varied development’.
- 1.1.4 This EIA Report is provided under the 2017 EIA Regulations, with specific regard to the requirements of Regulation 28.
- 1.1.5 It should be noted that the site layout (Figure 1.2) remains unchanged from the layout of the consented Viking Wind Farm.

1.2 Purpose of Report

- 1.2.1 The proposed varied development is considered to fall under paragraph 3 of Schedule 2 to the 2017 EIA Regulations, as ‘a change to or extension of’ an EIA development which has already been authorised (the relevant section 36 consent for the Viking Wind Farm). As a result, this EIA Report is provided to present information on both the effects of the consented scheme, and the main respects in which it is considered that the likely significant effects on the environment of the proposed varied development would differ from those reported in the ES and Addendum that supported the relevant section 36 consent.

³ Under Section 36C of the Electricity Act 1989 and the Electricity Generating Stations (Applications for Variation of Consent) (Scotland) Regulations 2013.

1.3 Consultation

- 1.3.1 No formal EIA screening or scoping has been carried out as the scope of variation is limited; however the proposed variation has been discussed with The Energy Consents Unit (ECU), Scottish Government, Shetland Islands Council (SIC), Scottish Natural Heritage (SNH) and the Royal Society for the Protection of Birds (RSPB).
- 1.3.2 There is no statutory requirement for pre-application consultation on section 36C variation applications; however the Applicant held a drop-in public consultation event prior to the submission on the 2nd October 2018.

1.4 The Need for and Benefits of the Proposed Variation

- 1.4.1 Wind turbine technology is continually evolving with more productive and efficient designs coming on to the market place each year. A final turbine for the proposed wind farm has not yet been chosen, however suitable candidate machines which could be accommodated within the maximum tip height of 155 m are currently being considered. For the purposes of the environmental assessment, the Siemens SWT 4.3MW 120 WTG has been identified as a suitable candidate turbine. The increase in tip height and rotor diameter would substantially increase the Average Energy Production (AEP) and associated carbon dioxide (CO₂) emissions reduction from the site as shown in Table 1.1.

	Siemens SWT-3.6-107 (90 Hub Height) Candidate Turbine – Consented Viking Wind Farm	Siemens SWT 4.3MW 120 Candidate Turbine – Proposed Varied Development
Energy Yield (GWh/annum)	1,503.92	1,796.35
Homes Equivalent⁴	397,757	475,099
CO₂ Emissions Reduction⁵ (tonnes/annum)	422,421.14	504,558.58
Carbon Payback Time (years)	1.72	1.65

- 1.4.2 Both the Scottish Energy Strategy⁶ and the onshore wind policy statement⁷ recognise that wind projects on Scotland’s remote islands have the potential to play a vital role in decarbonising electricity, heat and transport systems; however, there is also recognition that island projects face some technical barriers that result in ‘significant and , indeed, occasionally prohibitive costs’. The UK Government recently confirmed⁸ that the next Contracts for Difference (CfD) auction will be held in May 2019. Projects on remote islands, such as Viking wind farm, will be eligible to participate in the auction. The aim of the proposed variation is to increase the energy generation potential and efficiency of the site in order to provide an economically competitive project with which to participate in the CfD auction.

⁴ Average home consumption base on 3.781 MWh. Available from URL: <http://www.renewableuk.com/page/UKWEExplained> (Accessed October 2018)

⁵ Based on comparison to carbon emissions associated with grid mix electricity (from Carbon Calculator v1.5, URL: <https://www2.gov.scot/WindFarmsAndCarbon>)

⁶ Scottish Government (2017a) Scottish Energy Strategy: The Future of Energy in Scotland. December 2017, URL: <http://www.gov.scot/Publications/2017/12/5661/0> (accessed 20/03/2018)

⁷ Scottish Government (2017b) Onshore Wind Policy Statement. Available from URL: <http://www.gov.scot/Publications/2017/01/7344> (accessed 20/03/2018)

⁸ Department for Business, Energy & Industrial Strategy (2018) Contracts for Difference Scheme for Renewable Electricity Generation, Government response to consultation on proposed amendments to the scheme, URL: <https://www.gov.uk/government/consultations/contracts-for-difference-cfd-proposed-amendments-to-the-scheme> (accessed 26/07/2018)

- 1.4.3 The Scottish Climate Change Plan 2018⁹ outlines a new target of reducing greenhouse gas emissions by 66% by 2032. The Scottish Energy Strategy also includes a new 2030 'whole system' target for the equivalent of 50% of Scotland's heat, transport and electricity consumption to be supplied by renewable sources.
- 1.4.4 Taking account of the policy context, there are a number of benefits associated with the proposed increase in turbine tip height, as follows:
- The larger turbine dimensions would improve the viability of the project in commercial terms by increasing the energy yield and alternative turbines available to the Applicant and would thereby support the Applicant in pursuing a route to market through the forthcoming CfD auction.
 - The proposals would make a valuable contribution to the achievement of the UK and Scottish Government 'whole system' targets to decarbonise energy consumption by increasing the zero-carbon energy yield by 19%.
 - The increase in energy production would lead to an equivalent increase in homes supplied with clean, renewable energy and an equivalent increase in CO₂ reduction, making a valuable contribution to the Scottish Climate Change Plan targets.
 - The project would bring a wealth of socio-economic benefits to the Shetland Islands community, including the creation of jobs and opportunities for local businesses and suppliers during the construction phase and for the lifetime of the project. The project is jointly owned with the Shetland Charitable Trust and the community share represents approximately 200 MW in generation capacity making it by far the largest community owned energy project in the UK.
 - The contribution to public finances through non-domestic rates would increase in line with the increased installed capacity, thus increasing the total contribution to funding for public services in Scotland.
- 1.4.5 This application therefore not only complies with Scottish Government planning and energy policy but would also lead to increased benefits both in respect of climate change, as well as local economic benefits.

1.5 Scope of the EIA Report

Description of the Development

- 1.5.1 Table 1.2 summarises the key changes proposed to the consented Viking Wind Farm. A complete description is provided in Chapter 2: Description of the Proposed Development. The site layout is illustrated in Figure 1.2.

Characteristic	Consented Viking Wind Farm (2012)	Proposed Development (2018)
Number of Wind Turbines	103	103
Turbine Capacity (MW)	3 – 3.6	4.2 – 4.5
Tip Height (m)	145	155
Rotor Diameter (m)	110	120

⁹ Scottish Government (2018) Climate Change Plan - the Third Report on Policies and Proposals 2017-2032 URL: <http://www.gov.scot/Publications/2018/02/8867> (accessed 20/03/2018)

Reasonable Alternatives

- 1.5.2 A detailed description of the consideration of reasonable alternatives studied is provided in the Viking Wind Farm Environmental Statement (ES) (2009) and in the ES Addendum (2010). The only reasonable alternatives considered in the context of the proposed variation is the 'do nothing' alternative and the variation to increase tip height and rotor diameter. No alternative site layouts have been considered. In the 'do nothing' alternative scenario, the consent for Viking Wind Farm would remain unchanged. The main reasons for deciding to proceed with the proposed variation are to secure the benefits set out in section 1.4. A comparison of the environmental effects between the the consented Viking Wind Farm and the proposed varied development is set out in Chapter 3: Comparative Environmental Assessment. On balance, the Applicant considers that the benefits of the proposed varied development outweigh any additional adverse effects associated with the proposed tip height increase and rotor diameter.

Baseline Conditions for Impact Assessment

- 1.5.3 Regulation 28 of the 2017 EIA Regulations requires that this EIA Report includes a description of "the main respects in which the developer considers that the likely significant effects on the environment of the proposed varied development would differ from those described in any EIA report or environmental statement, as the case may be, that was prepared in connection with the relevant section 36 consent." As such, the first step is to provide a summary of the likely significant effects of the consented Viking Wind Farm (a 103 turbine layout) against the baseline conditions at the site. This EIA Report has been prepared with reference to baseline information collected and presented as part of the ES and the ES Addendum, subject to updates where this was deemed to be necessary and proportionate. The EIA Report then provides an assessment of the effects of the proposed varied development in the context of the same baseline or updated baseline where appropriate. Finally the EIA Report provides a description of the main respects in which the effects of the proposed varied development differ from those identified for the consented Viking Wind Farm. In doing so, the EIA Report provides an assessment of the proposed development as a whole and describes any additional effects associated with the proposed variation when compared to a baseline including the consented Viking Wind Farm.
- 1.5.4 Without implementation of the proposed development, with respect to 'natural changes', no significant changes to the baseline are anticipated. The existing land use, condition and management would be expected to continue largely unaltered. As such, no future baselines, with the exception of considering climate change scenarios in the design (e.g. with respect to ensuring water course crossings and drainage management measures are designed to accommodate 1:200 year flood events plus extra allowing for climate change scenarios which envisage an increase in the intensity and volume of precipitation), are factored into this assessment. See Chapter 3 for further consideration of climate change effects.

1.6 Factors Affected by the Development

- 1.6.1 The EIA Report provides impact assessment chapters for the relevant factors specified in regulation 4(3) and schedule 4 of the 2017 EIA Regulations where they are likely to be significantly affected, taking account of the description of the proposed development and the mitigation by design. Each assessment chapter describes the assessment methodology used and the criteria by which a significant effect is defined. This EIA Report has been prepared to include the information specified in regulation 5(2) of the 2017 EIA Regulations.

1.7 EIA Quality

- 1.7.1 In accordance with regulation 5(5) of the 2017 EIA Regulations, by appointing Ramboll Environment and Health UK Limited (Ramboll), the Applicant has ensured that the EIA Report has been prepared by 'competent experts'. The EIA Report has been compiled and approved by professional EIA

practitioners at Ramboll, holding relevant undergraduate and post-graduate degrees, full membership of IEMA (MIEMA) and Chartered Environmentalist (CEnv) status with the Society for the Environment. The EIA Report meets the requirements of the Institute of Environmental Management and Assessment (IEMA) EIA Quality Mark scheme. This is a voluntary scheme operated by IEMA that allows organisations to be make a commitment to excellence in EIA and to have this commitment independently reviewed on an annual basis.

- 1.7.2 Each of the impact assessment chapters provides details of the relevant professional memberships of the authors and code of practice followed in order to confirm relevant competence. The chapters also include details of the assessment methodology used, including the specific criteria for defining the sensitivity of the baseline environment, quantifying the magnitude of change and for assessing whether the effects are deemed significant or not significant under the terms of the EIA Regulations.

1.8 Structure of the EIA Report

- 1.8.1 Overall the EIA Report is provided in five volumes:

- Volume 1: Non-Technical Summary;
- Volume 2: EIA Report;
- Volume 3a: Figures;
- Volume 3b: Visualisations; and
- Volume 4: Technical Appendices.

- 1.8.2 Specialist consultants, considered to be competent experts in their field, have been appointed by the Applicant, to consider the following:

- Landscape and visual amenity and night time lighting effects – ASH design + assessment;
- Noise – TNEI;
- Ornithology – Atlantic Ecology; and
- Cultural Heritage - Headland Archaeology.

- 1.8.3 A glossary of terms is also included at the front of this EIA Report.

List of Figures

Figure 1.1: Site Location

Figure 1.2: Site Layout

Figure 1.3: Quadrant Plan

