

5. ENVIRONMENTAL IMPACT ASSESSMENT

5.1 INTRODUCTION

Environmental Impact Assessment (EIA) is a process that considers how a proposed development will change existing environmental conditions, and what the consequences of such changes will be. It therefore informs both the project design and the planning decision-making processes. The product of most EIAs is a report known as an Environmental Statement (ES). The document you are reading is the ES for the Viking Wind Farm.

For the purpose of the current assessment, three key terms are used, as defined below:

- Receptor – an element of the environment which is affected by the development;
- impact – a change experienced by a receptor, due to an interaction with the development; and
- effect – the consequences for the receptor of the impact

This Chapter describes:

- The requirements of the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2000 (the EIA Regulations);
- the EIA process; and
- the scope of the Viking Wind Farm EIA.

5.2 THE EIA REGULATIONS

The EIA regulations define:

- Which developments need to be subjected to EIA;
- the information to be presented in an Environmental Statement; and
- the procedures to be adopted by applicants and competent authorities when submitting and determining EIA applications.

The EIA Regulations require the information specified in Table 5.1 to be included within an ES. Table 5.1 also indicates where this information is to be found in the Viking Wind Farm Environmental Statement.

Table 5.1 The EIA Regulations requirements

Regulation requirement	Location in the Viking Wind Farm ES
A description of the development	Chapter 4
An outline of alternatives considered, and reasons for the choice	Chapters 2, 3 and 4
A description of the aspects of the environment likely to be significantly affected	Chapters 8 – 19
A description of the likely significant effects of the development	Chapters 8 – 19
A description of the measures designed to prevent, reduce and where possible offset any significant adverse effects on the environment	Chapters 8 – 19 Appendix 20.1
A non-technical summary	Volume 1 – Non-technical Summary
An indication of the difficulties encountered	Chapters 8 - 19

The EIA Regulations define the aspects of the environment to be considered. These are identified in Table 5.2, which also identifies how the aspects relate to the structure of this Environmental Statement.

Table 5.2 EIA Regulations environmental aspects

EIA Regulation Aspect	Location in the Viking Wind Farm ES
Population	Landscape Character and Visual Impact Noise Roads and Traffic Socio-economic Recreation and Tourism
Fauna	Non-avian Ecology Ornithology
Flora	Non-avian Ecology
Soil	Soil and Water
Water	Soil and Water
Air	Air and Climate
Climatic factors	Air and Climate
Material assets (including archaeological and architectural heritage)	Cultural Heritage Roads and Traffic
Landscape	Landscape Character and Visual Impact
The inter-relationship of the above	As appropriate

5.3 THE EIA PROCESS

5.3.1 Introduction

The EIA process comprises several linked elements. They are set within a formal assessment framework which informs the design process and identifies the anticipated impacts and effects of the resultant development proposals. The following paragraphs describe this process.

5.3.2 Methods used

Individual assessment chapters have been prepared according to the professional guidance and practice appropriate to particular disciplines, and these methods are described in detail in the relevant chapters of the Environmental Statement. However, the assessment chapters share common characteristics which help the reader to follow the logic of the assessment throughout the study.

In some cases the assessments have been subject to limitations in terms of the available data or the validity of calculations which can be made. In these cases the limitations have been clearly described.

5.3.3 Scoping

The EIA Regulations require the *likely significant* environmental effects to be identified and reported, and they are identified by means of a scoping study. The underlying aim of the scoping study is to identify the *likely significant* environmental issues associated with the development, and agree them with the competent planning authority and other statutory and non-statutory bodies to determine those issues which should be assessed by the EIA. The scoping study defines the scope of the various assessments identified, and determines appropriate assessment methodologies for undertaking the work.

To facilitate this a preliminary scoping report for the Viking Wind Farm¹ was prepared and submitted to the Scottish Executive in February 2008 along with a request for a Scoping Opinion, as provided for by the EIA Regulations. The preliminary scoping report identified potential impacts, and made an initial evaluation of their likely significance based on available information in order to indicate the need or otherwise for formal assessment of the potential issues. It acknowledged that some effects may not be apparent at the scoping stage, and accordingly recognised the need to keep the scope under review.

¹ Prior to the formation of the Viking Energy Partnership, Scottish and Southern Energy submitted a request for a Scoping Opinion to the Scottish Executive in relation to the eastern part of the Viking Wind Farm site. Following the formation of the Partnership a further scoping report and request for a scoping opinion was submitted relating to the whole site.

5.3.4 Consultation

During scoping, a broader consultation exercise was undertaken with the aim of gathering information and views on aspects of the development and its potential impacts and effects from interested parties in addition to those included as part of the formal Scoping Opinion.

A summary of the scoping and consultee responses is presented in Appendix 5.1.

5.3.5 Baseline data

The evaluation of impacts and assessment of effects is dependant on a clear understanding of the existing environmental conditions (the “environmental baseline”) within, and associated with, the proposed development area. Baseline data have therefore been gathered in order to characterise the existing environment and identify potentially affected receptors. Data collection has involved:

- Review of existing published and unpublished data;
- desk top surveys;
- contact with relevant agencies and organisations; and
- field surveys.

Where appropriate and indicated during initial data collection, further more detailed surveys have been undertaken.

Receptors have been described, mapped (where appropriate) and characterised in terms of their sensitivity, which may be a function of:

- Value;
- vulnerability to change; and/or
- designation.

The criteria used to determine these factors are described in each chapter.

5.3.6 Impacts

Impacts are predicted using appropriate techniques, and described in terms of relevant characteristics. Table 5.3 identifies typical characteristics and impact descriptors, but it should be noted that topic-specific terminology has been developed as part of commonly used best practice assessment methods developed by professional institutions. These methods and terms are described in the appropriate chapters.

Table 5.3 Generic impact characteristics

Characteristic	Typical Descriptors
Nature or direction of change	Adverse
	Beneficial
Duration	Short term
	Medium term
	Long term
Permanence	Temporary

Characteristic	Typical Descriptors
	Reversible
	Irreversible
Extent	Very localised
	Localised
	Widespread
	Total
Scale	Small
	Medium
	Large
Certainty	Unknown
	Unlikely
	Possible
	Probable
	Certain
Frequency	Occasional
	Frequent
	Continuous

The EIA has assumed that the design, construction and operation methods to be used have been adopted in accordance with relevant good practice. Where any relevant construction details have still to be finalised the assumptions made in the assessment are specified in the relevant chapter of the ES. .

By considering the characteristics of the impact, an assessment is made of its overall magnitude.

5.3.7 Mitigation

Impacts which are identified as having the potential to be significant have been considered to determine whether they can be mitigated by measures to avoid, reduce or remedy the impact, beyond that already taken into account as normal good practice. In such cases, the EIA has considered site specific measures to mitigate the magnitude of the impact. Where such measures include redesign, this has been or will be undertaken as part of the iterative EIA project design process prior to finalising the design. In some cases, residual significant effects may remain after mitigation, and consideration has been given to whether these may be offset by provision of improvements elsewhere, for example by means of the Habitat Management Plan. The EIA has evaluated post-mitigation effects to determine the residual effects and these are reported in the Environmental Statement. Only committed mitigation measures are taken into account in making the assessments.

5.3.8 Evaluation of effects

The effects are evaluated taking into account the sensitivity of the affected receptor and the magnitude of the impact. Where practical this approach is adapted for application to all environmental effects to provide a consistent approach to evaluation, within the constraints imposed by individual topic methods.

It does not follow that all high magnitude impacts will cause significant effects. This is because a large magnitude impact affecting a receptor of low sensitivity may not cause a significant effect; and conversely a highly sensitive receptor may not be significantly

affected by an impact of low magnitude. An assessment will be made as to whether or not effects are significant.

5.4 THE SCOPE OF THE EIA

5.4.1 Construction and operational effects

Appendix 5.2 identifies the potential construction and ongoing effects identified in the scoping report and as amended by the Scoping Opinion and consultation.

5.4.2 Secondary effects

Appendix 5.3 identifies the secondary effects within the scope of the EIA, which if appropriate have been assessed.

5.4.3 Cumulative effects

Potential cumulative effects will be identified as part of the assessment process and discussed within their relevant chapters.

5.4.4 Effects scoped out

The physical process of decommissioning *per se* has been excluded from the scope of the assessment on the basis that this would be of a similar nature to construction, but on a smaller scale and over a shorter time period. However, the results of the decommissioning process (e.g. reinstatement) have been taken into account.

Appendix 5.2 identifies those construction and ongoing effects that have been scoped out of the EIA.