Chapter 2: EIA Process and Methodology

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2 EIA Process and Methodology

2.1 Introduction

2.1.1 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 planning decision making processes.

2.1.2 This Chapter sets out the regulatory context for undertaking EIA and the assessment methodology applied in the evaluation of effects, approach to mitigation and assessment of significance. The Chapter also outlines the structure of the ES.

2.2 EIA Regulations

2.2.1 In June 1985 the Council of the European Economic Community (EEC) determined that an Environmental Assessment should be prepared by the promoters of certain categories of major infrastructure developments and that these should be published prior to statutory consent being given for the developments. This determination was enacted by EEC Directive 85/337/EEC, as amended.

2.2.2 In Scotland the requirements of the Directive have been transposed via the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2011 which consolidate, update and replace Part II of the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 1999, as amended.

2.2.3 In relation to applications for consent to construct, extend or operate an electricity generating station or to install and keep installed an overhead electricity line under sections 36 and 37 of the Electricity Act 1989 respectively, the EIA Directive is implemented by The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2000 (Scottish Statutory Instrument 2000 No 320), as amended. For simplicity, these Regulations are referred to throughout this Environmental Statement (ES) as 'The EIA Regulations'.

2.2.4 The EIA Regulations define:

- developments which require to be subject to EIA;
- the information to be presented in an ES; and
- the procedures to be adopted by applicants and competent authorities when submitting and determining EIA applications.

2.2.5 The EIA Regulations require the information specified in Table 2.1 to be included within an ES. A reference is provided in Table 2.1 stating where this information is presented within this ES.

2.2.6 In the preparation of this ES, reference has also been made to Planning Circular 3/2011 'The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2011 and Planning Advice Note 1/2013 (Environmental Impact Assessment).

Table 2.1: Requirements of The EIA Regulations

Requirements of The EIA Regulations	ES Reference
A description of the development	Volume 2 - Chapter 4: Description of Development
An outline of alternatives considered, and reasons for the choice	Volume 2 - Chapter 3: Site Selection, Design Evolution and Consideration of Alternatives
A description of the aspects of the environment likely to be significantly affected	Volume 2 - Chapters 7 – 15 (Environmental Assessment Topics)
A description of the likely significant effects of the development (direct effects and any indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative effects)	Volume 2 - Chapters 7 – 15 (Environmental Assessment Topics)
A description of the measures designed to prevent, reduce and where possible offset any significant adverse effects on the environment	Volume 4 - Appendix 4.3: Schedule of Mitigation
A non-technical summary	Volume 1 – Non Technical Summary
An indication of the difficulties encountered	Volume 2 - Chapters 7 -15 (Environmental Assessment Topics)

2.3 EIA Methodology

Assessment Methodology

2.3.1 The EIA Regulations require 'a description of the environmental features of the proposed development site and a description of the likely significant effects of the Development on the features, which should cover the direct effects and any indirect, secondary, cumulative, short, medium and long term, permanent and temporary, positive and negative effects of the development'.

2.3.2 Assessment criteria are required in order to evaluate environmental effects. Although individual chapters (7 to 15) have been prepared taking account of the professional guidance and good practice relevant to that particular discipline, the assessments share common stages and characteristics, including:

- preliminary assessment and scoping including the identification of the area of study relevant to the subject of the assessment;
- establishment of the baseline conditions within the study area;
- evaluation of the potential impacts anticipated to result from the introduction of the Development into the baseline context;
- assessment of the effects of the anticipated impacts based on magnitude and sensitivity to change;
- identification of appropriate mitigation measures if required; and
- assessment of significance of residual effects taking account of any mitigation measures.

2.3.3 Detailed assessment methodology for each technical discipline within this ES is provided in the appropriate chapter (7 to 15).

Baseline Data

2.3.4 The evaluation of impacts and assessment of effects is dependent on a clear understanding of the existing environmental conditions within, and associated with, the Development area (defined as the baseline data). Baseline data therefore has been gathered in order to characterise the existing environment and identify potentially affected receptors.

2.3.5 Baseline data collection has involved a review of existing maps, records, information and reports, site visits, field surveys and liaison with statutory and non-statutory consultees.

Potential Environmental Effects

2.3.6 Effects have been predicted using appropriate techniques, and described in terms of relevant characteristics. Table 2.2 identifies typical characteristics and effect descriptors, but it should be noted that terminology specific to individual topics has been developed as part of commonly used best practice assessment methods developed by professional institutions.

Table 2.2: Generic Impact Characteristics

Characteristic	Typical Descriptors
Nature	Adverse / Beneficial
Duration	Short / Medium / Long Term
Permanence	Temporary / Reversible / Permanent
Extent	Very Localised / Localised / Widespread
Geographic Scale	International / National / Regional / County / District / Local
Certainty	Unknown / Unlikely / Possible / Probable / Certain
Frequency	Occasional / Frequent / Continuous

2.3.7 Normal good practice in the implementation of measures to minimise environmental effects through design, construction and operation methods have been taken into account in making initial predictions of effects.

Sensitivity/Importance of Receptors

2.3.8 The sensitivity of the baseline conditions was defined according to the relative importance of existing environmental features within or in the vicinity of the site, or by the sensitivity of receptors which would potentially be affected by the Development.

2.3.9 Criteria for the determination of sensitivity (e.g. high, medium, or low) or of importance (e.g. international, national, regional or authority area) were established based on prescribed guidance, legislation, statutory designation and/or professional judgement. The criteria for each environmental parameter are provided in the relevant chapter of the ES.

Magnitude of Change

2.3.10 The magnitude of change to environmental baseline conditions was identified through detailed consideration of the Development, taking due cognisance of any legislative or policy standards or guidelines, and/or the following factors:

- the degree to which the environment is affected, e.g. whether the quality is enhanced or impaired;

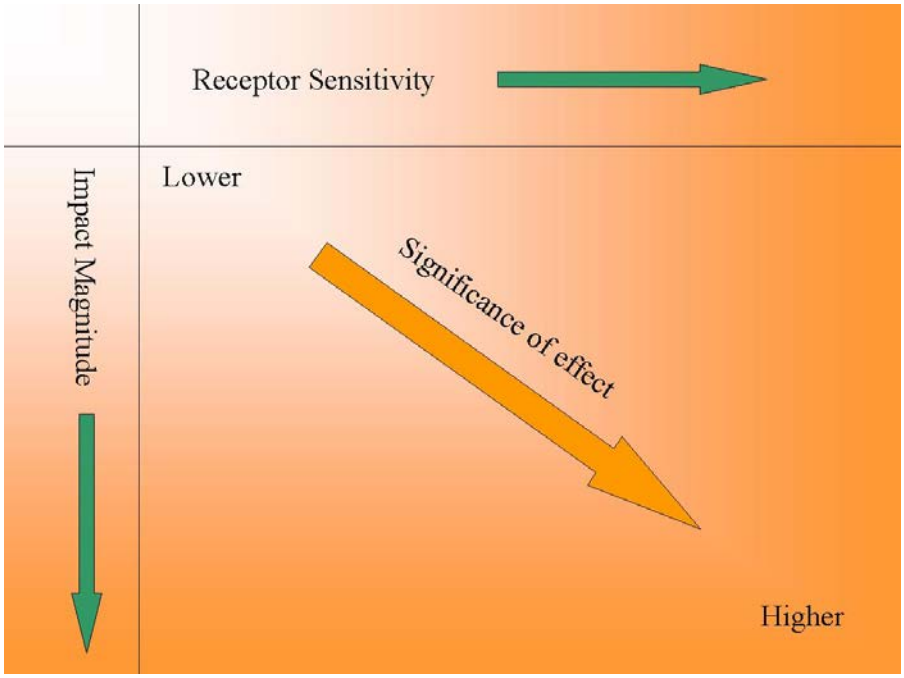
- the scale or degree of change from the existing situation;
- whether the effect is temporary or permanent, indirect or direct, short term, medium term or long term;
- any in-combination effects; and
- potential cumulative effects.

2.3.11 In some cases the likelihood of effect occurrence may also be relevant, and where this is a determining feature of the assessment this is clearly stated.

Evaluation of Effects

2.3.12 The potential effects have been evaluated taking into account the sensitivity of the affected receptor and the magnitude of the impact. The principle is illustrated in Plate 2.1 and where practical this approach has been adapted for application to all environmental effects to provide a consistent approach to evaluation.

Plate 2.1: Relationship between receptor sensitivity, impact magnitude, and effect significance



2.3.13 Thus, it does not follow that all high magnitude impacts will cause, or that high sensitivity receptors will always be subject to, large effects. The converse is also true. An assessment has been made as to whether or not effects are significant.

Significance of Effects

2.3.14 In identifying the likely significant effects, an attempt is made to reduce the scope of the assessment process to the most important potential effects. There is no general definition of what constitutes significance. Any consideration of the significance of environmental effects must recognise that environmental assessment is inherently a human concept

which is centred on the effects of human activities and the importance that man places upon them. Accordingly, the assessment of significance or the importance of effects ultimately involves a judgement based on values which reflect environmental, social and economic criteria.

2.3.15 For obvious reasons, the question of significance of effect varies according to the environmental factor under consideration and the context in which the assessment is made. It depends on the availability of data relating to existing environmental conditions (which is unlikely ever to be complete) and the value placed on those conditions. Any limitations identified when compiling each technical discipline are identified in the appropriate chapter.

2.3.16 In the assessment of all environmental effects which are likely to be significant, the following factors require consideration:

- the relative importance of the environment i.e. whether of international, national, regional, county, district or local importance;
- the degree to which the environment is affected e.g. is its quality enhanced or impaired;
- the scale of the change e.g. the land area, number of people affected and degree of change from the existing situation;
- the scale of change resulting from cumulative effects;
- whether the effect is temporary or permanent and, if temporary, its duration; and
- The degree of mitigation that can be achieved.

2.3.17 Against this background, the environmental assessment for the Development has been progressed through the identification of four levels of impact as appropriate:

- Major;
- Moderate;
- Minor; and
- Negligible

2.3.18 Any impact or effect assessed as “Major” or "Moderate" is considered as "significant" within the terms of the EIA Regulations. Any impact described as "Minor” or “Negligible” is not considered as "significant" within the terms of The EIA Regulations. Occasionally, where it assists in describing the level of impact, a "Not Significant" category is also used. These terms are generally used to define the level of impact arising for the environmental factors. Where different terms to the above are used, they are defined within the methodology section for the topic area as appropriate.

2.3.19 It is noted that for certain chapters it was considered more appropriate to contain the majority of the assessment in the description of potential effects section and include a short residual effects section, but in all cases a full and robust assessment is presented.

Mitigation

2.3.20 Adverse effects which were identified as significant have been considered to determine whether they could be mitigated by measures to avoid, reduce or remedy the impact, beyond that already taken into account as normal good practice (e.g. the construction environment management plan (CEMP) included in Appendix 4.1 of this ES). 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 undertaken as part of the iterative EIA project design process prior to finalising the design (see Chapter 3: Site Selection, Design Evolution and Consideration of Alternatives). The EIA has evaluated effects post-mitigation to determine the residual effects that are reported upon in the ES.

Assessment of Residual Effects

2.3.21 Any remaining effects following implementation of available mitigation measures are known as 'residual effects'. This assessment takes into account the mitigation as specified in the ES to identify the remaining (residual) effects with this mitigation implemented. The residual effects are discussed for each potential effect and a significance level identified.

Cumulative Effects

2.3.22 In accordance with the EIA Regulations, the assessment has considered 'cumulative effects'. Cumulative impact assessment is therefore a key part of the EIA process and is concerned with identifying situations where a number of potential effects from separate projects could combine to cause a significant impact on a particular resource. Cumulative effects have been assessed within each chapter, at a scale appropriate to that subject and in line with best practice guidance currently available.

2.3.23 The identification and assessment of cumulative effects in respect of the landscape and visual impact assessment (LVIA) in ES Chapter 7 (Landscape and Visual) considers other built or consented wind farms and wind farms subject to an application with a likelihood of intervisibility. The projects considered for this LVIA were identified in consultation with The Highland Council (THC) and Scottish Natural Heritage (SNH).

2.4 Structure of the ES

2.4.1 This ES contains the environmental information required by the EIA Regulations and comprises a number of volumes as detailed below.

Volume 1: Non-Technical Summary

2.4.2 The Non-Technical Summary (NTS) summarises in non-technical language the findings of the EIA as reported in the ES.

Volume 2: Written Statement

2.4.3 The Written Statement (this document) describes the project and the legal and policy framework within which the application will be determined. Details of site selection and how the design and layout of the wind farm has evolved is also included. The Written Statement includes the individual assessments undertaken under each of the specialist

environmental topics identified, providing an assessment of the likely significant effects of the Development.

2.4.4 Volume 2 of the ES contains the following chapters:

- 1: Introduction
- 2: EIA Process and Methodology
- 3: Site Selection, Design Evolution and Consideration of Alternatives
- 4: Description of Development
- 5: Planning Policy Context
- 6: Scoping and Consultation
- 7: Landscape and Visual Impact Assessment
- 8: Ecology and Nature Conservation
- 9: Hydrology, Hydrogeology and Geology
- 10: Ornithology
- 11: Cultural Heritage
- 12: Access, Traffic and Transport
- 13: Noise
- 14: Land Use, Socio-economics and Tourism
- 15: Other Issues

Volume 3: Figures

2.4.5 This volume includes all accompanying figures referred to in the assessments in Volume 2, with figure numbering corresponding to the chapter numbers e.g. Figure 1.1, 2.1 etc.

Volume 3A: Landscape and Visual Wirelines and Photomontages (SNH Methodology)

2.4.6 Wirelines and photomontages produced from a series of viewpoints to accompany the LVIA (Chapter 7 of Volume 2). All wirelines and photomontages in this volume have been produced in accordance with SNH Methodology (Visual Representation of Wind Farms, Version 2.1, December 2014). All viewpoint locations have been agreed in consultation with THC and SNH.

Volume 3B: Landscape and Visual Wirelines and Photomontages (THC Methodology)

2.4.7 Wirelines and photomontages produced from a series of viewpoints to accompany the LVIA (Chapter 7 of Volume 2). All wirelines and photomontages in this volume have been produced in accordance with THC Methodology (The Highland Council's Visualisation Standards for Wind Energy Developments (May 2013 and March 2015). Viewpoint locations are as included in Volume 3A (SNH Methodology).

Volume 4: Technical Appendices

2.4.8 This volume includes all accompanying technical appendices referred to in the assessments in Volume 2, with appendix numbering corresponding to the chapter numbers e.g. Appendix 1.1, 2.1 etc.

Supporting Documents

2.4.9 In addition, a Planning Statement is included with the application as supporting information. The Planning Statement considers the acceptability of the proposed development in the context of existing and emerging planning policies.

2.5 References

European Commission (1999) Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions

The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2000 (Scottish Statutory Instrument 2000 No 320)

The Highland Council (2013) Visualisation Standards for Wind Energy Developments (updated March 2015)

The Scottish Government, Planning Circular 3/2011 'The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2011'

The Scottish Government, Planning Advice Note 1/2013 'Environmental Impact Assessment'

SNH (2014) Visual Representation of Wind Farms (Version 2.1)