

Glenvernoch Wind Farm

Environmental Impact Assessment Report Volume I Chapter 2: Approach to the Environmental Impact Assessment

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2 APPROACH TO THE ENVIRONMENTAL IMPACT ASSESSMENT

Introduction

2.1 This chapter of the Environmental Impact Assessment Report (EIA Report) provides a detailed account of the Environmental Impact Assessment (EIA) methodology. The following key information is included:

- Description of the EIA process;
- Approach taken to the assessment of the Proposed Development and the technical studies undertaken;
- Approach to determining scale and significance of effects, and the basis upon which predictions were made (e.g. professional knowledge and judgment, initial studies, desktop exercises, preliminary survey work); and
- Guidelines, methods and techniques used in the process of determining significance of effects.

2.2 Subject specific methodology is outlined in each of the technical chapters; Chapters 6 through to 14.

EIA Process

2.3 The purpose of the EIA is to report on the assessments undertaken to identify the potential significant environmental effects of the Proposed Development that may occur during the complete development lifecycle. This, in turn, provides the determining authority, in this case the Energy Consents Unit (ECU), with the information it requires to determine the application.

2.4 The main activities in the EIA process can be summarised as follows:

- definition of the project to be assessed;
- description of the 'baseline' environment (i.e. the conditions that are likely to prevail at the commencement of the project);
- definition of the scope of the assessment;
- scoping and consultation with interested parties;
- optimisation of the Proposed Development based on the consultation process;
- prediction of the likely environmental effects of the Proposed Development;
- evaluation of these effects in terms of their likely significance;
- description of the nature and effectiveness of measures / design evolution which could be adopted in order to mitigate likely significant adverse effects;
- identification of residual effects;
- submission of EIA Report and publicity;

- review of adequacy of environmental information by the ECU, the Local Planning Authority and statutory consultees; and
- determination of application based on the EIA Report content.

2.5 The information which is required to be submitted in the EIA process is presented in this EIA Report. The preparation and production of this EIA Report has been conducted in accordance with the latest Government Regulations and published good practice guidance including:

- Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017;
- Planning Circular 1/2017: Environmental Impact Assessment Regulations 2017;
- Environmental Impact Assessment Guide to Delivering Quality Development (Institute of Environmental Management and Assessment, 2016);
- A handbook on environmental impact assessment, Guidance for Competent Authorities, Consultees and others involved in the Environmental Impact Assessment Process in Scotland (Scottish Natural Heritage, 2013); and
- PAN 1/2013: Environmental Impact Assessment.

Approach to Technical Studies Undertaken

- 2.6 The EIA studies commenced at an early stage in the evolution of the Proposed Development. At the outset, with the objective of avoiding or minimising potential environmental effects, the findings of these baseline environmental studies played an important role in the design evolution of the Proposed Development (further details are contained within Chapter 3: Project Description and Construction Methods). These studies defined the environmental sensitivities and constraints associated with the Proposed Development, the Site, and its surroundings.
- 2.7 The technical EIA studies have been undertaken in accordance with relevant guidelines and procedures. The majority of this guidance is specific to various key EIA issues and is, therefore, referenced within the individual assessment chapters.
- 2.8 The majority of assessments involved consultations with statutory and non-statutory bodies, desk-based research, site inspections and surveys, impact prediction and input of mitigation to the design, where appropriate.
- 2.9 The content and conclusions of the EIA Report, which includes a clear, reasoned description of any likely adverse or beneficial effects of the Proposed Development, are based on a comprehensive assessment undertaken with all information available at the time of writing. Further details of the structure and content of the EIA Report chapters is presented below.

Structure of EIA Report Technical Chapters

- 2.10 Each technical EIA Report chapter follows the sub-heading structure set out below where possible to ensure that the final document is transparent, consistent and accessible:
- Introduction and overview;

- Legislation (where relevant), Policy and Guidance;
- Stakeholder Consultation (where relevant);
- Assessment Methodology and Significance Criteria;
- Baseline Conditions;
- Identification and Evaluation of Key Effects;
- Cumulative Effects and Interaction of Effects;
- Mitigation Measures;
- Residual Effects; and
- Summary.

2.11 Each chapter sub-heading is explained in further detail below.

Introduction and Overview

2.12 This will introduce the assessment discipline and explain its purpose in the context of the Proposed Development, the nature of receptors to be considered, and how the Proposed Development might cause changes to baseline conditions.

2.13 The introduction will include a statement of competence from the author of the chapter.

Legislation, Policy and Guidance

2.14 This section includes a brief summary of policies of relevance to the environmental discipline and assessment. Where applicable, relevant legislation is summarised.

Stakeholder Consultation

2.15 Where required, a consultation exercise has been undertaken to inform the design of the Proposed Development and to seek agreement on the likely significant environmental effects that result from the Proposed Development as well as the scope of any assessment work required as part of this EIA.

Assessment Methodology & Significance Criteria

2.16 This section provides an explanation of the methods used in undertaking the assessment with reference to published standards, guidance and best practice.

2.17 The “application of significance” criteria used is discussed within this section.

Baseline Conditions

2.18 This section will include the following:

- i) a description of the environment as it currently is and as it is expected to change if the Proposed Development were not to proceed (i.e. 'do-nothing' scenario);
- ii) the method(s) used to obtain this information are clearly identified; and

- iii) baseline conditions will be set in context and that of the surroundings of the particular subject area to be affected, so the effects of the Proposed Development can be predicted.

Identification and the Evaluation of Key Effects

2.19 The EIA Regulations require consideration, throughout assessments, of all likely significant environmental effects on: direct / indirect; secondary; cumulative; positive / negative; short / medium / long-term; or permanent / temporary. In terms of how likely these potential significant environmental effects arise, the following will need to be considered:

- Direct effects are readily identified because of the physical connection between some element of the Proposed Development and an affected receptor;
- Indirect effects require some additional pathway for the effect to arise, for example, a listed building may not be directly affected by any elements of a development, but, if a proposed development changed the setting of the listed building there would be an indirect effect;
- Secondary effects would typically require pathway connections, for example, an effect on receptor population A could have a secondary effect on receptor population B, if B was itself dependant on A in some way, as, for example, a food source; and
- Cumulative effects arise when the receptors affected by a proposed development are also affected by other developments resulting in the aggregation of environmental effects or the interaction of effects.

2.20 Likely significant environmental effects will be considered in terms of their character – either beneficial (representing environmental gain) or adverse. There may also be cases where it is appropriate to identify the occurrence of change, but to note that the potential change is either neutral – and neither specifically beneficial nor adverse – or, is a matter of personal opinion. The likelihood of the effect occurring will also be considered, being unlikely, uncertain or likely to occur.

2.21 Likely significant environmental effects will also be considered in terms of their duration. Effects can typically be:

- Temporary – these effects are likely to last for a period of a few days to a few months, they will be related to a particular activity and will cease immediately or soon after the activity ceases;
- Short-term – this would normally be considered to be between a period of a few months to a few years depending on the effect being discussed and the environment's ability to recover from an effect;
- Long-term – this would typically be a period of between a few years and the life of the Proposed Development; and
- Permanent – this would typically mean an effect resulting in an irreversible change in the environment.

- 2.22 It is important that levels of effect and significance are clearly defined on the basis on which effects are considered significant or not. The approach taken in this EIA Report emphasises the use of professional judgement within a structure that combines receptor sensitivity (or importance) with magnitude of change arising from the Proposed Development to define level of effect.
- 2.23 The EIA Regulations recognise that developments will affect environmental elements to differing degrees and not all of these are of sufficient concern to warrant detailed investigation or assessment through the EIA process. The EIA Regulations identify those environmental resources that warrant investigation as those that have 'potential to be significantly affected by the development.'
- 2.24 The EIA Regulations do not define significance and it is, therefore, necessary to state how this will be defined for the Proposed Development. In certain circumstances it is possible for disciplines to use quantitative assessment methodology to predict effects / values that can be compared against published thresholds or indicative criteria. However, it is not always possible to use quantitative measurements/values and such assessments rely on professional judgement and past experience. This could be reference to the development description, available information about potential changes that are expected to be caused by the Proposed Development, and the receptors that may be affected.
- 2.25 Professional judgement (in combination with any published guidance) is used to assess the interaction of a receptor's sensitivity to change, and the magnitude of potential changes caused by the development to identify a level of effect. The Assessment methodology and Significance Criteria section within each Chapter provides an overview of how this assessment has been conducted for each discipline. Table 2.1 provides a general example of how the level of effect is categorised from the interaction of a receptor's importance / sensitivity and the magnitude of change.

Table 2.1: Significance Matrix

		Magnitude of change			
Sensitivity		Substantial	Moderate	Slight	Negligible
	High	Major	Major/ Moderate	Moderate	Moderate/ Minor
	Medium	Major/ Moderate	Moderate	Moderate/ Minor	Minor
	Low	Moderate	Moderate/ Minor	Minor	Minor/ Negligible

- 2.26 Of course, in many cases, the divisions between categories of receptor sensitivity and magnitude of change may not be as clearly delineated as shown in Table 2.1 and professional judgement is therefore applied. In certain cases a different matrix may be considered appropriate by the discipline. If this is the case it will be detailed within the chapter.

- 2.27 As noted, the EIA Regulations guide the assessor to focus on effects that are likely to be significant and, in its simplest form, the outcome of the assessment of a given effect on a particular receptor would be that it is significant or not significant. However, there may be instances where it is appropriate to further sub-divide the category of 'not significant', regarding the level of effect, by use of the category terms 'slight' and 'negligible'. For example, the use of the category term 'slight' could be used to acknowledge instances whereby there may be an effect, albeit, an effect not likely to be significant - and this approach may better facilitate assessment of cumulative effects, where cumulatively, several slight effects could be significant.
- 2.28 While in general, effects are categorised as – major, moderate, minor and negligible (or no effect), specific technical assessments, such as Landscape and Visual as noted, may deviate from this. However, details of any variation in assessment methodology and definitions of how the terms are derived for each topic (e.g. using relevant guidance) will be set out in the methodology and definitions of that particular chapter.
- 2.29 Having identified the level of effect, those environmental effects considered to be significant in terms of the EIA Regulations are then determined using professional judgement in combination with any published guidance on significance evaluation.
- 2.30 For some of the topics that are assessed in this EIA Report there is published guidance about significance evaluation. Where such topic-specific guidance exists (even in draft) it will be used to inform the development of the significance evaluation methodologies used. For other topics, a major level of effect is generally of most importance to the decision-maker and these effects are considered significant in terms of the EIA Regulations. Where the level of effect is moderate or less, these are generally not significant in terms of the EIA Regulations. Moreover, depending on the receptor being considered, it is possible that some potentially moderate effects could be judged as significant in terms of the EIA Regulations, and where this is judged to be the case, the rationale for this conclusion will be provided in the technical assessments.
- 2.31 The temporal scope of the EIA will cover the period from commencement of the first phase of development (construction), through to operational phase (operation), up to the completion of operations and restoration of the Site (decommissioning). For ease of reporting the temporal scope will generally be considered in relation to the following key stages of the development:
- Construction – effects may arise from the construction activities themselves or from the temporary occupation of land. The effects are often temporary and of limited duration, although, there is the potential for construction activities to create permanent change;
 - Operation – effects are typically long-term (subject to any future decommissioning), though may also be related to operational emissions or effects that will stop if the operation stops; and
 - Decommissioning – effects may arise from the decommission activities themselves or from the temporary occupation of land. The effects would often be temporary and of limited duration and additional permanent change (unless associated with restoration) would normally be unlikely.

- 2.32 In its broadest sense, the spatial scope of an EIA is the area over which changes to the environment may occur as a consequence of the development. In practice, the EIA focuses on those areas where these changes may result in likely significant effects on the environment.
- 2.33 The spatial scope varies between the environmental topics assessed. For example, effects upon the landscape resource and visual effects are assessed within a much larger zone from the site boundary when compared to ecological related effects.

Cumulative Effects and Interaction of Effects

- 2.34 This section of the EIA Report assesses the effects of the development cumulatively with other proposed and committed developments (i.e. those that have submitted a planning application, those that have already begun, those constructed, or those that have not commenced, but have a valid planning permission), where there exists the potential for significant effects as a result of the Proposed Development.
- 2.35 The list of cumulative sites was agreed with consultees during the consultation process. Where relevant the approach to the cumulative impact assessments varies across technical disciplines and a rationale as to the scope of this assessment is provided in each chapter.

Mitigation Measures

- 2.36 There is much debate amongst practitioners and legal reviewers regarding pre- and post-mitigation assessments of effects. One crucial point of discussion is whether changes in design constitute mitigation or not. The approach taken here is that the pre-mitigation assessment of effects takes account of scheme design changes that relate to the number / location and scale of scheme elements and it also takes account of the adoption of standard guidelines. The post-mitigation assessment takes further account of specific / unusual controls on the method of construction or operation – in most cases these should only relate to circumstances where a potentially significant effect is being reduced.
- 2.37 The development of mitigation measures to avoid, reduce or compensate for significant adverse environmental effects of a project is an intrinsic part of the EIA process. These measures can relate to site construction or the completed development i.e. measures to be undertaken during the operation of the development through appropriate site management or through the introduction of specific design elements.
- 2.38 This section of the EIA Report chapter describes the measures which would be implemented to avoid or ameliorate likely adverse effects and enhance the likely beneficial effects of the Proposed Development.
- 2.39 In many cases mitigation measures are inherent within the Proposed Development (either through design or operation), whereby likely significant adverse effects are avoided. Although, not all effects can be avoided and there are mitigation measures to reduce these. In such instances, these are proposed within the relevant technical chapter.

Residual Effects

- 2.40 This section describes the remaining effects of the Proposed Development assuming implementation of the proposed mitigation measures have been adopted. The methods used to make these estimates are clearly described and the methods for treatment of any residual effects are identified where appropriate. It may be the case that in particular circumstances it is not considered that there are any likely significant residual effects as these have been 'designed out'. In such instances, this is explained within the relevant technical chapter.

Summary

- 2.41 Provides a summary of the findings of the Chapter.