ScottishPower Renewables

Hare Hill Windfarm

Repowering and Extension

Environmental Impact Assessment Report

Volume 1

Chapter 3: EIA Process and Methodology

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Abbreviations

Abbreviation	Description
EIA	Environmental Impact Assessment
EIA Report	Environmental Impact Assessment Report
ISEP	Institute of Sustainability and Environmental Professionals (formerly IEMA)
IEMA	Institute of Environmental Management and Assessment

3. EIA Process and Methodology

3.1. Introduction

1. This Chapter of the Environmental Impact Assessment (EIA) Report outlines the process and methodology regarding the application of EIA used during the preparation of this EIA Report to guide the specific elements of site assessment and design of the proposed Development.

3.2. Requirement for EIA

2. This EIA is prepared in compliance with the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (the EIA Regulations). The EIA Regulations outline the process of an EIA and the criteria that would determine if an EIA were necessary or not, the relevant environmental studies and statements, how the information is evaluated by the Scottish Ministers, Planning Authority and consultative bodies, and how this evaluation is implemented through consent under Section 36 of the Electricity Act 1989. Under the EIA Regulations, Hare Hill Windfarm Repowering and Extension (the 'proposed Development') is classed as a Schedule 2 development and ScottishPower Renewables (UK) Limited (the Applicant) determined that an EIA was required, following an internal screening process.

3. Schedule 3 of the EIA Regulations lists the criteria which must be considered by Scottish Ministers in a determining whether a Schedule 2 development requires an EIA. The criteria relates to the nature, scale and location of the proposed Development and consequently whether the project is likely to have significant effects on the environment.

4. For developments that are listed under Schedule 2, the requirements for an EIA can be determined via a screening request made to Scottish Ministers. A screening request was not sought for the proposed Development as it was considered from the outset to be of a size and nature that may have potentially significant environmental effects.

5. The key stages of the EIA process and methodology, following site selection and the definition of the development characteristics, are explained in more detail in the following sections of this Chapter.

3.3. Scope of the EIA Report

6. The nature of environmental and social effects of the proposed Development can be divided into a number of categories. Primarily, there are categories of environmental and human receptors that may be affected such as:

    - Landscape and Visual;
    - Ecological Habitats and species;
    - Breeding Birds;

- Migrating Birds;
- Hydrology, Geology and Hydrogeology;
- Cultural and archaeological sites and artefacts;
- Human Settlements; and
- Noise sensitive properties.

7. Secondly, given the proposed Development will be implemented over two distinct phases, there are various stages of construction and delivery of components which may have differing characteristics relating to potential impacts on the environment (e.g. the methodologies of construction/operation/decommissioning and/or delivery relating to the turbines, tracks and power cables). For more details on these characteristics, see **Chapter 5: Development Description**.

8. A scoping exercise was undertaken in order to identify the environmental effects that may result from the proposed Developments characteristics. The scoping was defined during the early stages of the development process. An essential step in this process is identifying the sensitive environmental receptors of the proposed Development and its surrounding. The Scoping Report is provided as **Technical Appendix 3.1: Scoping Report**.

9. In defining types of environmental effects, the lead consultant, Natural Power Consultants Ltd (Natural Power), and its technical associates, have extensive experience in carrying out the EIA process for onshore renewable energy proposals. A list of the consultants involved, and the topics assessed by each is set out in **Chapter 1: Introduction**, of the EIA Report. In addition, reference was made to guidance documents issued by government agencies and non-government organisations. Specific guidance documents which have been referred to for individual elements of the EIA are detailed in the relevant chapters within the EIA Report. This EIA Report is based on the Scoping Opinion adopted by the Scottish Ministers. The Scoping Opinion received from the Scottish Government is also included in **Technical Appendix 3.2: Scoping Opinion** of this EIA Report.

10. The full consultee responses are available within the Scoping Opinion and are summarised in **Technical Appendix 3.3**: **Gate Check Report** of this EIA Report.

3.4. Approach & Methods

3.4.1. Identification of the Baseline Environment

11. A number of existing data sources, including data from the previous windfarm applications, were collected and reviewed. This exercise was carried out prior to the initial survey work commissioned to inform the EIA of the proposed Development. It was understood that existing data sources would, in most cases, be unlikely to provide sufficient data alone to use in the EIA but would provide a valuable initial stage with which to form methodologies for further survey.

12. Details of existing data sources and extent of these sources are presented within the relevant chapters of the EIA Report.

13. Baseline Surveys were carried out by specialist consultants in a number of different study areas. The purpose of these studies was to gather sufficient data to form a picture of the current status of the environmental and human elements on and within the close vicinity of the proposed Development. Baseline survey methodologies and coverage are described in detail within the relevant assessments and Chapters of the EIA Report.

3.4.2. Consultation

14. Consultation with statutory and non-statutory consultees is an integral part of the EIA process. This allows the collection of views on the proposed Development, collected baseline information survey assessment and methodology.

15. Engagement with local communities was undertaken through Public Information Events, held in April & September 2024. Further details on this can be found in the Pre-Application Consultation Report submitted as part of the application for consent for the proposed Development.

16. Due to the phased nature of the proposed Development, further consultation was held with statutory consultees to seek agreement on the proposed chapter methodologies for establishing a base line and defining the worst-case scenario for each technical discipline. This included:

- A phasing discussion session held online between the proposed Development project team and statutory consultees; and
- Letters to the local authorities' relevant planning teams and their Environmental Health Officers for environmental disciplines.

3.4.3. Site Design and Identification of Effects

17. The consultation process, baseline studies and surveys identified technical constraints and any potentially more sensitive environmental receptors within the proposed Development. The overarching aim was to design a windfarm project within the boundaries of technical and economic constraints that would avoid any unacceptable effects on the natural and human environment.

18. In order to minimise significant adverse environmental effects, the assessment and design of the proposed Development followed an iterative approach. With this type of approach, potentially significant adverse effects are identified during the assessment process, and the design of the proposed Development is modified in order to avoid, reduce or mitigate these effects as far as is reasonably practical.

19. The following section provides the general methods of how this EIA Report has been approached, then each Chapter will explain its own specific methodology on how they assess potential effects.

3.4.4. Determining Significant Effects

20. The methodology for assessing significance was developed after consideration of relevant guidance and regulations including:

- The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017;
- Environment Impact Assessment Handbook: Guidance for competent authorities, consultation bodies, and others involved in the Environmental Impact Assessment process in Scotland (2018) published by Historic Environment Scotland and NatureScot;
- Guidelines for Landscape and Visual Impact Assessment 3rd Edition: E & FN Spon (2013) published by the Institute of Environmental Management and Assessment and the Landscape Institute; and
- Environmental Impact Assessment Guide to: Delivering Quality Development (2016), (Institute of Sustainability and Environmental Professionals (ISEP), formerly IEMA.

21. To determine the significance of potential residual effects, the magnitude of change arising from the proposed Development, is correlated with the 'sensitivity' of the particular environmental attribute under consideration. An effect is defined as the consequence of an impact of an EIA Report development. An impact is determined as a change resulting from an action. The Magnitude of change is evaluated in accordance with the definitions set out in **Table 3.1**.

Table 3.1: Example definitions of 'magnitude' of change

Magnitude	Definition of 'magnitude of change'
High	Result is a total loss or major alteration to key elements/features of the baseline (e.g. pre-development conditions).
Medium	Partial loss or alteration to one or more key elements/features of the baseline (e.g. pre-development conditions).
Low	Minor shift away from baseline (e.g. pre-development conditions).
Negligible	Very slight change from baseline (e.g. pre-existing conditions).

22. Where it is applicable, in carrying out individual assessments, a scale of increasing 'sensitivity' of the environmental or social receptor is defined. This may be defined in relevance to quality, value, rarity or importance to other elements, and can be classed as '**Low**', '**Medium**' or '**High**'. **Table 3.2** provides an example, illustrating this concept.

Table 3.2: Example definitions of 'sensitivity'

Sensitivity	Example of Sensitivity
High	Elements of the international/national importance generally designated for protection through national legislation and/or policy.
Medium	Elements of regional/local importance that are not designated but are generally protected by local policy.
Low	Elements of local value that can generally tolerate change.

23. For the assessment of certain areas, guidance can be taken from the value attributed to elements through designation under law (i.e. landscapes, cultural heritage or ecological

resources). Where assessment of this nature has taken place, the correlation of magnitude of change against 'sensitivity' determines a qualitative expression for the significance of the effect. This is shown in the example significance matrix in **Table 3.3**.

Table 3.3: Example definitions of 'sensitivity'

	Level of Significance			
Magnitude of Change	High	Moderate	Moderate/Major	Major
	Medium	Minor/Moderate	Moderate	Moderate/Major
	Low	Minor	Minor/Moderate	Moderate
	Negligible	Negligible/Minor	Minor	Minor/Moderate
		Low	Medium	High
		Sensitivity of Receptor		

24. Those effects highlighted in **Table 3.3** indicated as '**Major**' and '**Moderate/Major**' are regarded as being equivalent to 'significant effects' when discussed in terms of the EIA Regulations for the purposes of this EIA report. The landscape consultants may take a slightly different approach and consider that effects identified as 'moderate' may also be regarded as significant in EIA terms. This is a matter of professional judgement.

25. Following the iterative design process adopted during the design of the proposed Development, the significance of each effect would be confirmed or reassessed at each stage of the design process. This includes considering how the significance of an effect may also be affected by its duration (e.g. the length of the construction period) and by its reversibility (i.e. the degree to which a site could be returned to its baseline conditions following decommissioning).

26. Each of the impact assessments detailed in the relevant chapters of this EIA report have been generally formulated in a similar way, giving an evaluation of the baseline conditions, the magnitude, sensitivity, and significance of impacts. This is followed by the residual impacts, following the implementation of the stated mitigation measures.

27. A view on the acceptability of the proposed Development in policy terms is provided in the accompanying Planning Statement to the Application. With regards to this, it must be noted that a significant effect does not mean a proposal should be found unacceptable in policy terms. In addition, significant effects can also be positive as well as negative. Each chapter within this EIA Report assesses impacts related to each stage of development were scoped in: thus the construction, operation and decommissioning stages have been considered.

3.4.5. Cumulative Assessment

28. The EIA Regulations require the likely cumulative impacts of the proposed Development to be assessed as part of an EIA Report. These can be broadly defined as impacts that

result from incremental change caused by other developments, plans, or projects together with the proposed Development. The EIA Regulations state that all likely significant cumulative effects resulting from the existence of the development, use of natural resources, the emission of the pollutants, the creation of nuisances, and the elimination of waste should be considered in the EIA Report.

29. The proposed methodology for assessing cumulative impact throughout the EIA Report follows the guiding principles outlined in the European Commission Guidelines for the Assessment of Indirect and Cumulative impacts and NatureScot's "Assessing the Cumulative Impact of Onshore Wind Energy Developments". The detailed approaches to cumulative assessment are varied according to each specific EIA Report chapter and are defined within these chapters. Appropriate spatial scales are also defined within these chapters following their particular methodologies, which follow current available guidance.

3.4.6. Mitigation by Design (Embedded Mitigation)

30. Measures envisaged to prevent or reduce any significant adverse effects were identified and incorporated into the design as environmental and visual assessments were developed. The design process continued until it was considered by the Applicant and consultants involved in the production of the EIA Report that the most appropriate design had been derived. In this way, the proposed Development presented here can be seen to have embedded measures, to prevent or reduce significant adverse effects directly into the design process (mitigation by design) and the findings and conclusions of the environmental assessment reflect the incorporation of those measures.

31. The EIA Regulations require a description of the likely significant effects of the development on the environment, which *"should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the development."*[1]

32. Unless qualified elsewhere, the following interpretation is applied with regard to effects. Short term effects are those which extend over a short period only and, in the context of a windfarm, are typically those associated with the construction or decommissioning periods or other limited period. Other temporary effects which persist for less than the life of the windfarm are described as medium term, with those extending to the full lifetime of the windfarm described as long term. Any effects which persist beyond the life of the windfarm are considered permanent. Effects with duration of up to long term are considered reversible, whereas permanent effects are considered irreversible. Where any effect is identified, its duration is described within the EIA Report chapters.

3.4.7. Impact Mitigation

33. Measures which are envisaged to prevent, reduce or offset significant adverse residual effects unavoidable through design were also identified in the EIA process. Residual effects are those impacts that remain following the implementation of mitigation measures. The process of assessment will therefore systematically identify the likely effects of the

[1] *Schedule 4, paragraph 5 of the EIA Regulations*

proposed Development. Measures to apply best practice and guidance recognised within the industry to reduce environmental effects will be applied as described in each relevant chapter.

34. Summary tables that outline the predicted effects associated with an environmental impact, the appropriate mitigation measures required to address these effects, and subsequent overall residual effects will be provided at the end of each technical chapter of the EIA Report. There will also be a table of conclusions within **Chapter 15: Summary of Residual Effects**, of the EIA Report summarising all significant effects identified mitigation measures, residual effects, and future requirements.

3.4.8. Assumptions, Limitations and Technical Difficulties

35. The EIA Process is designed to enable good decision-making based on the best possible available information about the environmental implications of a proposed Development. A number of assumptions have been made during preparation of the EIA Report, which are set out here. Assumptions specific to certain environmental aspects are discussed in the relevant chapters of the EIA Report. The following assumptions are noted:

- The Applicant and its appointed EIA team have also carried out its own site visits, surveys and investigations at or in the vicinity of the proposed Development to provide more information for the assessments and to fill data gaps. This has resulted in a more complete and up-to-date set of baseline data to use as the basis for the impact assessment. Although the data have been collected over a period of time, it is considered that the data is relevant and valid at the time of reporting. It should be noted that the surveys and investigations are conducted on a sampling basis, and this places a limit on the certainty of the data set.
- This EIA Report has been based on the best available information at the time of publication. However, further information may become available during the detailed design phase that will be used to inform the project if relevant.
- Assumptions adopted in the evaluation of impacts are reported in each of the relevant chapters. However, these assumptions are often implicit and rely on expert judgement. Any assumptions and known technical deficiencies have been documented.
- The EIA has been undertaken during the initial design phase of the project and therefore some of the technical aspects of the construction and operation have yet to be determined. Where an alternative option could cause additional impacts, these are discussed within the relevant sections. In addition, the EIA has taken a precautionary approach to adopt conservatism in the assumptions made and any scenarios assumed, so that a reasonable 'worst-case' scenario was assessed. Therefore, inherent uncertainties are accounted for and subsequent modifications to the project during the detailed design phase are less likely to fall outside of the assumed envelope of the assessment parameters.

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