

2. Environmental Impact Assessment Approach

2.1 The Environmental Impact Assessment Process

- 2.1.1 The preparation of the EIA Report is one of the key stages in the EIA process, as it presents the assessment of likely significant environmental effects, which the Scottish Ministers in this instance, will use to inform their decision about whether consent should be granted for the Proposed Development.

2.2 EIA Terminology

Impacts and Effects

- 2.2.1 In some EIA Reports, the terms 'impacts' and 'effects' are used interchangeably, whilst in others the terms are given different meanings. The convention used in this EIA Report is to use 'impacts' only within the context of the term EIA, which describes the process from scoping through EIA Report preparation to subsequent monitoring and other work. Otherwise, this document uses the word 'effects' when describing the environmental consequences of the Proposed Development, which may for example come about as a result of physical activities that would take place if the development were to proceed (e.g. vehicle movements during construction operations). The environmental changes that occur as a result of these activities (e.g. loss of vegetation prior to the start of construction work or an increase in noise levels) may in some cases cause another change, which in turn results in another environmental effect.
- 2.2.2 The predicted environmental effects are the consequences of the environmental changes for specific environmental receptors. For example, with respect to a species of bat, the loss of roosting sites or foraging areas (the change) could reduce the population size (the effect); with regard to people, an increase in noise levels (the change) could affect people's amenity, reducing their enjoyment of the local area (the effect).
- 2.2.3 This EIA Report is concerned with assessing the significance of the environmental effects of the Proposed Development, which requires the activities that will be undertaken to be understood and the resultant changes to be identified and quantified, often based on predictive assessment work, before reaching a conclusion on the significance of the environmental effect.

Spatial and Temporal Scope

- 2.2.4 Spatial scope is the area over which changes to the environment are predicted to occur as a result of a proposed development. In practice, an EIA should focus on those areas within which any identified effects are likely to be significant.
- 2.2.5 In this EIA Report, the spatial scope varies between environmental topics and is therefore described in each of the topic chapters. For example, the spatial effects of a wind farm development on landscape and visual amenity will probably cover a much greater area to that affected by noise.

- 2.2.6 The temporal scope covers the time period over which changes to the environment and the resultant effects are predicted to occur. As the Proposed Development nears the end of its operational life, a decision will be taken as to whether or not a life extension, repowering or decommissioning will be required. However, for assessment purposes, the EIA Report assumes that the project will be decommissioned at the end of its operational life. Therefore, the focus of the assessments is on the potential effects during construction, operation & maintenance and decommissioning. Should the assessment of an individual technical topic deviate from this general approach, it will be clarified within the technical chapter. For example, traffic and transport assessments for wind farm developments typically focus on the construction period as this is when there is greatest potential for significant effects to occur because of the increase in the volume of Heavy Goods Vehicles. During operation however, traffic is generally restricted to occasional monitoring and maintenance visits which is unlikely to result in significant effects. The potential effect on users of the road network as a result of operational is therefore typically scoped out of detailed assessment. Changes as a result of the Proposed Development that occur during construction, operation and decommissioning may result in effects that persist beyond these phases. The effects are typically defined as either being temporary or permanent.

2.3 EIA Scoping

- 2.3.1 The EIA scoping process aims to identify the scope and level of detail of information to be provided in the EIA Report. In particular, the process involves identifying the following:
- The people and environmental resources (collectively known as 'receptors') that could be significantly affected by the Proposed Development;
 - The methodology for the assessment of those effects identified as being potentially significant;
 - Environmental effects which have the potential of being significant, and therefore are required to be considered further within an Environmental Statement; and
 - Environmental effects which are not anticipated to be significant, and therefore are not required to be considered further within an Environmental Statement.
- 2.3.2 The preparation of a scoping report is informed by the legislative and policy context that will influence the scheme as well as the environmental information relevant to the Development Site and its surroundings. It is also informed by the simple rule that, to be significant, an effect must be of sufficient importance that it should influence the process of decision-making about whether or not consent should be granted for a proposed development or an element of it.
- 2.3.3 A precautionary approach is taken such that if the information that is available at scoping report stage does not enable a robust conclusion to be reached that an effect is not likely to be significant, the effect is taken forward for further assessment.
- 2.3.4 The EIA Scoping Report for the Proposed Development was initially submitted, as a request for a Scoping Opinion, to the Scottish Ministers in June 2020. This was followed by a further request on 24th June 2022 as a result of the consideration of larger turbines. The most recent EIA Scoping Report (June 2022) is included as **Appendix 2B** This superseded the 2020 Scoping Report in its entirety.

- 2.3.5 Subsequent to the issuing of the 2022 EIA Scoping Report, the scope of the assessment was progressively refined in response to the Scottish Minister's Scoping Opinion and comments from consultees (see **Section 2.4**), together with environmental information that has been obtained from work carried out as part of the EIA and the evolution of the project proposals. A summary of further consultation undertaken is provided in **Table 2.1**.
- 2.3.6 The technical **Chapters 6 to 16** of the EIA Report detail the final scope of the assessment in relation to effects that were assessed as potentially significant; and therefore, needed to be subject to more detailed assessment. All other effects (i.e., those that are not referred to in the technical chapters) are not likely to be significant (as detailed in the Scoping Report, available in **Appendix 2B**).

2.4 Consultation

EIA Scoping Opinion

- 2.4.1 The Scottish Ministers issued the Scoping Opinion in response to the 2022 EIA Scoping Report on 20th September 2022. At the time of publishing the Scoping Opinion, the consultation response from Argyll and Bute Council had not been available to the ECU. A Scoping Opinion Addendum providing Argyll and Bute Council's consultation response was therefore subsequently issued by the ECU on 31st May 2023. The Scoping Opinion and Addendum is presented in full in **Appendix 2A**.
- 2.4.2 Details of consultation undertaken following receipt of the 2020 and 2022 EIA Scoping Opinion are summarised in **Table 2.1**.

Table 2.1 Summary of Consultation Following Issue of the EIA Scoping Opinion

Consultee(s)	Response	Chapter where considered in this EIA Report
SEPA	Further liaison undertaken with SEPA is underway, with a meeting on 27th October 2023 to discuss the approach employed to date to refine the design to achieve peat and watercourse buffer avoidance. A proposed design mitigation table outlining the process was presented and issued to SEPA for comment. SEPA responded with their comments in writing in January 2024.	Chapter 6: Renewable Energy, Carbon Balance and Peat, Chapter 12: Geology, Hydrology and Hydrogeology

2.5 Overview of Assessment Methodology

Introduction

- 2.5.1 All the topic assessments presented in the EIA Report have been undertaken on the Proposed Development, as described in **Chapter 4: Description of the Proposed Development** of the EIA Report.
- 2.5.2 The assessment of effects has been undertaken by competent experts with relevant specialist skills, drawing on their experience of working on other development projects, good practice in EIA and on relevant published information. A list of these experts, their qualifications and competencies has been provided in **Appendix 1A**.
- 2.5.3 For some topics, use has been made of modelling or other methodologies, as appropriate.

2.5.4 For each topic considered in this EIA Report, where appropriate the chapters use the following format:

- Introduction;
- Limitations of this Assessment;
- Policy and Legislation;
- Data Gathering Methodology;
- Overall Baseline;
- Consultation;
- Scope of the Assessment;
- Embedded Measures;
- Assessment Methodology;
- Assessment of Effects;
- Assessment of Cumulative Effects;
- Residual Effects;
- Conclusions of Significance Evaluation;
- Implementation of Environmental Measures; and
- References

2.6 Identification of Baseline Conditions

2.6.1 To determine the baseline conditions that should be used for the assessment of the likely significant effects of the Proposed Development, it is necessary to define the current baseline conditions and then to decide whether these conditions are likely to change by the 'assessment years' that are selected for the construction, operation and maintenance and decommissioning of the Proposed Development. If this future baseline is more likely to occur than the current baseline, the future baseline is used for the assessment of effects. However, if the current baseline is just as likely, or even more likely, to occur in the assessment years, the current baseline is used for the assessment.

2.6.2 As the various elements of the Proposed Development would be built over a period of approximately 24 months, from a start date yet to be determined, and then operated for 35 years, it cannot be assumed that the baseline conditions would be the same as the current baseline at the time of construction or during operation and maintenance or decommissioning. Where relevant, technical chapters therefore provide a description of the likely changes to the baseline in the absence of the Proposed Development. The baseline is determined for the 'Study Area' for each environmental topic by a combination of desk-based research, including consultation with the relevant statutory and non-statutory consultees, together with field survey work (where required). The Study Area encompasses the Development Site but may also include land outside this, where effects are likely to extend beyond such geographical limits. Zones of influence (ZoIs), where the Proposed Development could affect off-site areas, are therefore considered where relevant for each technical topic considered in the EIA.

- 2.6.3 Where relevant, details of the Zols are discussed in the baseline section of the environmental topic chapter considered and the basis for the Study Area explained. These chapters also explain the basis for defining the future baseline conditions, where this is appropriate. This is based on the following:
- Changes to the baseline that can be predicted based on reasonable assumptions and modelling calculations, e.g. the application of traffic growth factors based on relevant guidance;
 - Information relating to other likely and predictable changes, e.g. climate change, which could affect current prevailing environmental conditions; and
 - Information about other relevant developments, including the nature of the development proposals, their likely timing and their location relative to the Proposed Development.

2.7 Overview of Approach to Significance Evaluation Methodology

Introduction

- 2.7.1 One of the requirements of an EIA Report is to set out the conclusions that have been reached on the likely significant environmental effects arising from the Proposed Development. Reaching a conclusion about which effects, if any, are likely to be significant is the culmination of an iterative process that involves the following stages:
- Identifying those effects that could potentially be significant (see **Section 2.3** on scoping);
 - Assessing the effects of a proposed development against the baseline conditions; and
 - Concluding whether these are likely to be significant.
- 2.7.2 **Chapters 6 to 16** describe the approaches that have been used, in relation to the stages outlined in the bullet points above, for each of the environmental topics that are considered in this EIA Report.

Identification of Likely Significant Effects

- 2.7.3 The technical assessments have been carried out on the Proposed Development, as summarised in **Chapter 4: Description of the Proposed Development** of this EIA Report.
- 2.7.4 The technical assessments undertaken in **Chapters 6 to 16** of this EIA Report describe how environmental changes resulting from the Proposed Development are assessed to determine the significance of effects, together with the topic-specific approaches that have been used to identify the receptors that could be significantly affected by the Proposed Development.

Types of Effects

- 2.7.5 Paragraph 5 of Schedule 4 of the EIA Regulations states that *“The description of the likely significant effects on the factors specified in regulation 4(3) 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.”*

- 2.7.6 Where appropriate, this EIA Report considers these types of effects within the individual topic chapters as relevant. A description of the different types of effect is set out below with the exception of cumulative effects, which are dealt with separately in Section 2.8.

Direct Effects

- 2.7.7 Direct effects are those that result directly from a proposed development. For example, where a machine compresses an area of habitat, this physical activity results in a change to this receptor.

Indirect and Secondary Effects

- 2.7.8 Indirect and secondary effects are those that result from consequential change caused by a proposed development. As such they would normally occur on a different receptor, later in time or at locations farther away than direct effects. An example would be where an area of habitat disturbed by machinery results in loss of vegetation and soil compaction which increases silted run-off rates into nearby watercourses, smothering gravel beds downstream used by spawning salmon.

Local, Regional, National and Transboundary Effects

- 2.7.9 Transboundary effects are those that would affect the environment in another state within the European Economic Area (EEA).

Temporal Effects

- 2.7.10 As discussed in **Section 2.2**, temporal effects are typically defined as being permanent or temporary as follows:
- Permanent - these are effects that will remain even when a proposed development is complete, although these effects may be caused by environmental changes that are permanent or temporary. For example, an excavator that is driven over an area of valuable habitat could cause so much damage that the effect on this vegetation would be permanent; and
 - Temporary – these are effects that are related to environmental changes associated with a particular activity and that will cease when that activity finishes. For example, an increase in noise levels during construction may affect nearby residential receptors, but any effects would cease on completion of this phase of a proposed development. Where effects are temporary, they may be defined as short-, medium- or long-term, the duration of which may depend on the receptor in question and would therefore be defined in technical chapters as appropriate.

Significance Evaluation

Overview

- 2.7.11 The receptors that could be significantly affected by the Proposed Development are identified within each topic chapter. The approach that is adopted to determine whether the effects on these receptors are significant is to apply a combination of professional judgement and a topic-specific significance evaluation methodology that draws on the results of the assessment work that has been carried out.
- 2.7.12 There is a degree of flexibility within the EIA Report when reporting significance of effects in terms of the EIA Regulations. This is determined using professional judgement, with

reference to the project description, and available information about the magnitude and other characteristics of the potential changes that are expected to be caused by the Proposed Development, the receptors' sensitivity to these changes, and the effects of these changes on relevant receptors.

- 2.7.13 In some cases, use of the 'significance test' alone will enable a conclusion to be reached in the 'Scope of the assessment' section of the topic chapter, without the need for more detailed work to assess whether or not a potential effect is likely to be significant. For example, this could be because additional baseline data or detail on the Proposed Development description has been obtained which has allowed potential effect to be scoped out after the scoping stage. However, in other cases, effects identified in the 'Scope of the assessment' section are taken forward for further assessment in the subsequent section(s) of each topic chapter.
- 2.7.14 All topic-specific chapters, the methodology follows the approach detailed in this section. However, for some of the topics, there is published guidance available about significance evaluation. Where such guidance exists, it has been used to inform the development of the significance evaluation methodologies that are used in this EIA Report. For other topics, it has been necessary to develop methodologies without the benefit of guidance. This has involved technical specialists drawing on their previous experience of significance evaluation in EIA. Having applied the relevant topic-specific significance evaluation methodology, the topic specialists assess the conclusions against the significance evaluation matrix (**Table 2.2**).
- 2.7.15 While there may be variation depending on the technical topic being considered, significance evaluation generally involves combining information about the sensitivity, importance or value of a receptor, and the magnitude and other characteristics of the changes that affect the receptor. The approach to using this information for significance evaluation is outlined below.

Receptor Sensitivity, Importance, or Value

- 2.7.16 The sensitivity or value of a receptor is largely a product of its importance, as informed by legislation and policy, and as qualified by professional judgement. For example, receptors for landscape, biodiversity or the historic environment may be defined as being of international or national importance. Lower value receptors may be defined as being sensitive or important at a county or district level.
- 2.7.17 The use of a location or physical element that may be representative of receptors, e.g. people, would also play a part in its classification in terms of sensitivity, importance, or value. For example, when considering effects on the amenity of people, a location used for recreational purposes may be considered more sensitive to change or be valued more than a place of work.
- 2.7.18 The sensitivity, importance or value of receptor that may be affected by the Proposed Development would be identified on a scale from very low to very high. For each environmental topic, it is necessary to provide a detailed rationale that explains how the categories of sensitivity/importance/value detailed in **Table 2.2** have been used.

Magnitude of Change

- 2.7.19 The magnitude of change affecting a receptor as a result of the Proposed Development would be identified on a scale from very low to very high. As with receptor sensitivity and value, a rationale is provided in each topic chapter that explains how the categories of environmental change are defined. For certain topics, the magnitude of change would be related to guidance on what levels of change are acceptable (e.g. for noise) and be based

on numerical parameters. For other changes, it will be a matter of professional judgement to determine the magnitude of change detailed in **Table 2.2**, using descriptive terms.

Determination of Significance

- 2.7.20 The significance of effects is determined with reference to information about the nature of the development, the receptors that could be affected and their sensitivity, importance or value, together with the magnitudes of environmental change that are likely to occur.
- 2.7.21 Significance evaluation of the effects of the Proposed Development for many environmental topics can be guided by the use of matrices that combine sensitivity/importance/value and the magnitude of environmental changes as shown in the example in **Table 2.2**. In addition, professional judgement is applied because, for certain environmental topics, the lines between the sensitivities or magnitudes of change may not be clearly defined and the resulting assessment conclusions may need clarifying. It should be noted that as directed by topic-specific guidelines issued by institutions governing a particular discipline, some environmental topics avoid the use of matrices to assess significance.

Table 2.2 Significance Evaluation Matrix

		Magnitude of change				
		Very high	High	Medium	Low	Very low
Sensitivity/importance/value	Very high	Major (Significant)	Major (Significant)	Major (Significant)	Major (Significant)	Moderate (Probably significant)
	High	Major (Significant)	Major (Significant)	Major (Significant)	Moderate (Probably significant)	Minor (Not significant)
	Medium	Major (Significant)	Major (Significant)	Moderate (Probably significant)	Minor (Not significant)	Negligible (Not significant)
	Low	Major (Significant)	Moderate (Probably significant)	Minor (Not significant)	Negligible (Not significant)	Negligible (Not significant)
	Very Low	Moderate (Probably significant)	Minor (Not significant)	Negligible (Not significant)	Negligible (Not significant)	Negligible (Not significant)

- 2.7.22 Within this matrix that is used in most significance evaluation exercises, reference is made to:
- Major effects, which will always be determined as being significant in EIA terms;
 - Moderate effects, which are likely to be significant, although there may be circumstances where such effects are considered not significant based on professional judgement; and
 - Minor or negligible effects, which will always be determined as not significant.

- 2.7.23 Variations to this approach, which may be applicable to specific environmental topics, will be detailed in the relevant 'assessment methodology' sub-section contained in each environmental topic chapter.
- 2.7.24 Definitions of how the categories that are used in the matrix are derived for each topic are also set out in each environmental topic chapter, along with the relevant explanation and descriptions of receptor sensitivity, magnitude of change and levels of effect that are considered significant under the EIA Regulations.

2.8 Assessment of Cumulative Effects

- 2.8.1 For each environmental topic that is dealt with in this EIA Report, an assessment is undertaken within each technical chapter of how the environmental effects resulting from the Proposed Development, could combine with the same topic-related effects generated by other developments to affect a common receptor. To do this, it is important to first identify which other developments need to be included in the cumulative effects assessment ('CEA') under each environmental topic assessment undertaken. The starting point for this is to determine for each environmental topic considered the Zols of the Proposed Development for each receptor that could be significantly affected.
- 2.8.2 Identifying the other developments that should be considered in the CEA involves first acknowledging that the availability of information necessary to conduct this will partly depend on the prevailing status of the other relevant developments.
- 2.8.3 In the context of the Proposed Development, paragraph 5 of Schedule 4 of the EIA Regulations states "*the cumulation of effects with other existing and/or approved projects [...]*". In addition, the relevant NatureScot (formerly SNH) guidance states that the CEA should be undertaken for operational and consented wind energy development and other planning applications for wind energy development. Therefore, such developments, where they are located within the Zol for a given environmental topic, have been subject to CEA. These developments are discussed, as appropriate, in the sub-section of each environmental topic chapter that deals with the assessment of cumulative effects. Types of development other than wind farms have been considered, but none were identified that needed to be included in the CEA.
- 2.8.4 In particular, the cumulative landscape and visual impact assessment (CLVIA), provided in **Chapter 8: Landscape and Visual** of this EIA Report, includes the identification of wind energy developments within a 35km Search Area from the Development Site. In line with NatureScot (formerly SNH) guidance (Assessing the Cumulative Landscape and Visual Impacts of Onshore Wind Energy (March 2021)), the CLVIA considers the potential for cumulative effects with other operational, consented and planning application stage wind farm developments, as detailed in **Table 8.4** of **Chapter 8: Landscape and Visual** of this EIA Report.
- 2.8.5 The baseline of other wind energy development within the LVIA Study Area has been revised to accord with ABC's wind farm database (Argyll and Bute Renewables Web Map App) and other wind energy developer sources, up until a 'cut off' date of 30 April 2024. The sites considered for inclusion in the CEA are listed in **Table 2.3** below. Within the individual technical chapters, only schemes which are within the Zol relevant to that topic are included.

Table 2.3 Cumulative Wind Energy Developments (as of 30 April 2024)

Ref.	Name	Distance from Proposed Development (m)	Number of turbines	Height to blade tip (m)	Consented
E01	An Suidhe	704	23	77.6 / 79.6	Operational
E02	A'Chruach	5,143	21	126.5	Operational
E03	Blarghour Farm	6,229	2	27.1	Operational
E04	Carraig Gheal	12,655	20	110 / 125	Operational
E05	Cruach Mhor	15,143	35	71	Operational
E06	Clachan Flats (Ardkinglass)	17,270	9	93	Operational
E07	Beinn Ghlas	18,228	14	54.1	Operational
E08	Barran Caltunn	25,832	2	67	Operational
E09	Sròndoire	29,529	3	100 / 120	Operational
E10	Allt Dearg	29,759	12	81	Operational
C01	A'Chruach Phase 2	5,987	2	135	Consented
C02	Blarghour	6,311	17	136.5	Consented
C03	Creag Dhubh	11,202	9	114.9 / 124.3 / 130.6 / 144.4	Consented
A01	An Càrr Dubh	3,867	13	180	Application
A02	Glasvaar	5,811	8	149.9	Application
A03	Blarghour Variation	6,306	14	180	Application
A04	Ladyfield	11,870	14	180	Application

*Micro generation turbine (25-50m) within 10km

**The reference number in the above table relates to that used in the figures.

2.9 Mitigation Measures

2.9.1 As specified in Schedule 4, paragraph 7 of the EIA Regulations, appropriate mitigation measures will be identified to avoid, prevent, reduce, or if possible offset identified potential significant environmental effects.

2.9.2 The following will be considered:

- Embedded mitigation –which is built-in to the Proposed Development during the design process;

- Any additional mitigation – aimed to avoid, prevent, reduce, or if possible offset significant effects; and
- Enhancement measures.

2.9.3 A key feature of the EIA approach will be to ensure a robust assessment which will address significant issues and provide workable mitigation.

2.10 Residual Effects

2.10.1 Following the identification of mitigation and monitoring measures to address significant adverse effects, an assessment of the significance of any residual impacts (i.e., those remaining after the implementation of additional mitigation) will be completed.

2.11 References

Assessing the Cumulative Impact of Onshore Wind Energy Developments, SNH (2021)