

2. The Environmental Impact Assessment Process

2.1 Environmental Impact Assessment

Overview

2.1.1 Environmental Impact Assessment (EIA) is a systematic procedure that must be followed for certain categories of project (see Section 2.1.5 and 2.1.6) before they can be determined for planning permission. It aims to assess a project's likely significant environmental effects. This helps to ensure that the importance of the predicted effects and the scope for reducing effects are properly understood by the public and the relevant determining authority before it makes its decision.

2.1.2 The information on the development and its environmental effects are presented in an Environmental Impact Assessment Report (EIA Report). The EIA process that culminates in the submission of the EIA Report has a number of key characteristics:

- It should be systematic, comprising a sequence of tasks defined both by regulation and by practice;
- It should be analytical, requiring the application of specialist skills from the environmental sciences;
- It should be impartial, its objective being to inform decision-making rather than to promote the project;
- It should be consultative, with provision being made for obtaining information and feedback from interested parties including local authorities, members of the public and statutory and non-statutory agencies; and
- It should be iterative, allowing opportunities for environmental concerns to be addressed during the planning and design of a project.

2.1.3 Typically, a number of design iterations take place in response to environmental constraints identified during the EIA process (in effect, incorporating mitigation measures to avoid, reduce or compensate for identified adverse effects). Further details of such measures in this case are presented in the corresponding environmental topic chapters. A summary of design iterations is included at the end of **Chapter 3: Description of the Proposed Development**.

EIA regulations

2.1.4 The Town & Country Planning Act (Environmental Impact Assessment) (Scotland) Regulations 2017 will apply to the Proposed Development.

2.1.5 Schedule 1 of the EIA Regulations lists those developments for which an EIA will always be required. Schedule 2 of the EIA Regulations lists developments for which the need for an EIA is determined on a case-by-case basis (i.e. if significant environmental effects are likely), whilst Schedule 3 describes indicative thresholds to be used to determine if a Schedule 2 development is an "*EIA development*". Where an EIA is required, environmental information must be provided by the applicant in an EIA Report. Schedule 4 specifies the information that must be provided in the EIA Report.

- 2.1.6 Most wind energy developments fall within Schedule 2 and where the need for EIA is not certain the developer can apply to the determining authority for a screening opinion. It is clear that the potential size of the proposed Lochluichart Wind Farm Extension II (hereafter referred to as 'the Proposed Development') means that an EIA would be needed. It is recognised that the EIA process can play an important role in developing the design of proposals to minimise adverse environmental effects and to realise environmental benefits.
- 2.1.7 While it has been determined that the proposal has the potential for significant environmental effects, this does not mean that a significant effect is the ultimate conclusion of the EIA. The EIA process identifies the potential for adverse effects and then encourages environmental measures (mitigation) to be incorporated into the design of the development, or the method of construction and operation that may reduce or eliminate any negative effects or further enhance positive effects.

Topics to be addressed

- 2.1.8 Schedule 4 of the Regulations specifies that the EIA Report should describe those "...aspects of the environment likely to be significantly affected by the development, including, in particular population, fauna, flora, soil, water, air, climatic factors, material assets, including the architectural and archaeological heritage, landscape and the inter relationship between the above factors."
- 2.1.9 Establishing which aspects of the environment and associated issues are relevant for a particular project is captured in an EIA scoping process. For the Proposed Development this is described in more detail in Sections 2.1.10 and 2.1.11.

The Environmental Impact Assessment Scoping process

- 2.1.10 Scoping is the process of identifying those aspects of the environment and associated issues that need to be considered when assessing the potential effects of a particular development proposal. This recognises that there may be some environmental elements where there will be no significant issues or likely effects resulting from the development and hence where there is no need for further investigation to be undertaken.
- 2.1.11 Scoping is undertaken through consulting organisations and individuals with an interest in and knowledge of the site, combined with the professional judgement and experience of an EIA team. Scoping takes account of published guidance, the effects of the kind of development under consideration and the nature and importance of the environmental resources that could be affected.

Spatial scope

- 2.1.12 In its broadest sense, the spatial scope is the area over which changes to the environment would occur as a consequence of the development. In practice, an EIA should focus on those areas where these effects are likely to be significant.
- 2.1.13 The spatial scope varies between environmental topic areas. For example, the effect of a proposed wind energy development on the landscape resource and visual amenity is generally assessed within a zone of up to 35km from the centre of the site (70km for cumulative effects), whilst noise effects are assessed within a much smaller area encompassing the worst affected properties close to the site.

2.2 Assessment methodology

2.2.1 Following the identification of the scope of the EIA, individual environmental topics are subject to survey, investigation and assessment, and individual topic chapters are prepared for the EIA Report. The assessment methodologies are based on recognised good practice and guidelines specific to each topic area, and details are provided in the appropriate chapter.

2.2.2 In general terms, the technical studies undertaken for each topic area and chapter include:

- Collection and collation of existing baseline information about the receiving environment and original surveys to fill any gaps in knowledge or to update any historic information, along with identification of any relevant trends in, or evolution of, the baseline;
- Consultation with experts and relevant consultees to define the scope of the assessment and study area and subsequent consultation in response to emerging study findings;
- Consideration of the potential effects of the development on the baseline, followed by identification of design changes to seek to avoid or reduce any predicted adverse effects;
- Engagement with other technical topic specialists and engineers / designers in a design iteration process seeking to optimise the scheme for the differing environmental effects and identify any appropriate mitigation measures;
- Assessment of the final scheme design and evaluation of significant effects, together with an evaluation of any residual significant effects after mitigation measures have been implemented; and
- Compilation of the EIA Report chapter.

2.2.3 In reality, many of the effects are relevant to more than one environmental topic area, and careful attention has been paid to interrelationships to avoid overlap or duplication between topic chapters. For example, the assessment of effects on cultural heritage features will be aided by the assessment in the landscape and visual chapter. Similarly, secondary effects on ecological resources arising from hydrological change would be considered in the ecology chapter with a cross-reference to the relevant direct effect in the hydrology and hydrogeology chapter.

2.2.4 The following format has been adopted for the presentation of information within the EIA Report. In some cases, technical data and analysis has been moved to a Technical Appendix that is bound separately from the main EIA Report in **Volume 3**:

- Summary – A short summary of each technical chapter is included at the outset, this text also forms the basis of that included in the Non-Technical Summary that accompanies the EIA Report;
- Introduction and overview – setting the scene for the topic, the nature of the receptors to be considered, and how the proposals might cause change;

- Methodology – describing how receptors were identified through a scoping process, along with the specific methods used for data gathering, predicting levels of effects and evaluating significance of effects;
- Baseline information – describing the current state and circumstances of the receptors and changes that might be expected to arise in advance of the development being implemented as well as those that might arise regardless of the development;
- Topic specific design evolution – identifying where there was potential for an effect and how the scheme (in terms of the location of elements and their scale) has been developed to address that potential;
- Predicted effects of the scheme – the effects predicted to arise as a result of implementing the final design of the project;
- Mitigation and enhancement measures – identification of non-embedded ‘design’ measures which may be necessary to control or manage identified potentially significant effects or provide enhancements;
- Assessment of residual effects – an assessment of any effects remaining after non-embedded mitigation measures have been employed; and
- References.

2.3 Defining significance of effects

- 2.3.1 Development proposals affect different environmental elements to differing degrees and not all of these are of sufficient concern to warrant detailed investigation or assessment within the EIA process. The EIA Regulations identify those that warrant investigation as those that are “*likely to be significantly affected by the development*”. These are identified through a scoping process as described in Section 2.4.
- 2.3.2 Conclusions about significance are derived with reference to available information about the project description and the environmental receptors (or ‘receiving environment’), and to predictions about the potential changes that the proposed development would cause to the affected receptors.
- 2.3.3 In each of the environmental topic chapters, professional judgement is used in combination with relevant guidance to assess the interaction of the receptor’s sensitivity (this may be defined in terms of importance, value, rarity, quality) against the predicted magnitude of change to identify a level of effect. In general terms, and in order to assist consistent interpretation of the final results of the EIA, receptor sensitivity, magnitude of change and level of effect for each environmental topic are categorised as shown in Table 2.0.
- 2.3.4 The type of categorisation illustrated in Table 2.0 provides a guide only, and may be moderated by the professional that undertakes the assessment in accordance with judgement and experience. In particular, the divisions between categories of receptor sensitivity, magnitude of change, and level of effect should not be interpreted as definitive (and indeed different definitions for each category may be applied by different professionals), and the lines that represent the boundaries between categories should in many cases be considered as ‘blurred’. In some cases, the judgement can be guided by quantitative values, whilst in other cases qualitative

descriptions are used. The significance of the effect may also need to be qualified with respect to the scale over which it may apply (e.g. local, regional, national, international).

Table 2.0 Establishing the level of effect

	Sensitivity of receptor				
		HIGH	MEDIUM	LOW	NEGLIGIBLE / NONE
Magnitude of change	LARGE	VERY SUBSTANTIAL	SUBSTANTIAL	SLIGHT / MODERATE	NEGLIGIBLE
	MEDIUM	SUBSTANTIAL	MODERATE	SLIGHT	NEGLIGIBLE
	SMALL	MODERATE	SLIGHT	NEGLIGIBLE / SLIGHT	NEGLIGIBLE
	NEGLIGIBLE / NONE	NO EFFECT	NO EFFECT	NO EFFECT	NO EFFECT

2.3.5 Having defined a level of effect, professional judgement in combination with guidance and standards are then applied to identify which of those levels of effect are then considered to be equivalent to significant effects when discussed in terms of the EIA Regulations.

2.3.6 A definition of how the terms are derived for each topic is set out in the corresponding chapter along with the relevant explanation and descriptions of receptor sensitivity, magnitude of change and levels of effect that are considered significant in terms of the EIA Regulations.

Type of effect

2.3.7 The EIA Regulations (Schedule 4, Part 1) require consideration of a variety of types of effect, namely direct/indirect, secondary, cumulative, positive/negative, short/medium/long-term, and permanent/temporary. In this EIA Report, effects are considered in terms of how they arise, their valency (i.e. whether they are positive or negative) and duration. Each will have a source originating from the development, a pathway and a receptor.

2.3.8 Most predicted effects will be obviously positive or negative, and will be described as such. However, in some cases it is appropriate to identify that the interpretation of a change is a matter of personal opinion, and such effects will be described as 'subjective'.

2.3.9 The temporal scope of environmental effects is stated where known. Effects are typically described as:

- Temporary – these are likely to be related to a particular activity and will cease when the activity finishes. The terms 'short-term' and 'long-term' may also be used to provide a further indication of how long the effect will be experienced; and

- Permanent – this typically means an unrecoverable change.

2.3.10 Effects are generally 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. Effects are often of limited duration although there is potential for permanent effects. Where construction activities create permanent change, the effects will obviously continue into the operational period;
- Operation – effects may be permanent, or (as is typical with wind power developments) they may be temporary, intermittent, or limited to the life of the development until decommissioning; and
- Decommissioning - effects may arise from the decommissioning activities themselves, or from the temporary occupation of land. The effects would generally be temporary and of limited duration and additional permanent change would normally be unlikely unless associated with restoration.

2.4 The scope of the Environmental Impact Assessment for the Proposed Development

Screening

2.4.1 Formal screening was not undertaken, as it was recognised at an early stage that due to the size of the Proposed Development an EIA would be required.

The scoping request and scoping opinion

2.4.2 The content of the EIA Report and the identification of receptors requiring assessment for the proposed development were determined through the advice provided to the Applicant through a Scoping process. A Scoping Report (Appendix 2.A) was submitted on 14th October 2020 to the Highland Council to define the information to be provided in the EIA Report. The environmental disciplines included in the Scoping Report are listed below:

- Ecology and Nature Conservation;
- Ornithology;
- Landscape and Visual Impact
- Hydrology, Hydrogeology Geology & Peat;
- The Historic Environment;
- Traffic and Transport;
- Noise;
- Climate Change;
- Air Quality;
- Infrastructure;
- Shadow Flicker & Safety;

- Socio-Economic; and,
- Forestry.

2.4.3 Formal responses to the Scoping Report were issued by consultees, and the THC scoping response to the Proposed Development is presented in **Appendix 2.B**. The scoping responses and where they are addressed in the EIA Report are summarised in Table 2.1 below.

Table 2.1 Scoping responses

Consultee	Summary of Main Issues	How Addressed in EIA Report
The Highland Council	<p><u>Planning</u> – the EIAR should recognise existing land uses affected by development, particular regard for THC’s Development Plan inclusive of all statutorily adopted Supplementary Guidance. Particular attention paid to provisions of Onshore Wind Energy SG inclusive of any Landscape Sensitivity Appraisal. Planning Statement should explore compliance with Development Plan and Scottish Planning Policy, Planning Advice Notes and other relevant guidance.</p> <p><u>Transport</u> – THC content Abnormal Route Assessment undertaken for the Consented Development adequately takes account of the larger turbine dimensions to be employed for the currently proposed development. As such, the Council are content for traffic and transport to be scoped out of further assessment.</p> <p><u>Noise</u> – Consideration should also be given to any health and safety risks associated with the proposed increased operational wind farm period from 25 to 40 years, and draw upon technical evidence that demonstrates that the turbine specification and any manufacturer’s warranty which demonstrates the safe operational life of the turbines and that the increased duration would not giving rise to additional environmental effects, such as increased operational noise associated with wear and tear.</p> <p><u>Private Water Supplies</u> – the Applicant will need to identify any private water supplies which may be adversely affected by the development and include mitigation where applicable.</p>	<p>Chapter 4 Planning Policy</p> <p>Chapter 7 Noise</p> <p>Chapter 12 Hydrology</p>
NatureScot	<p>Key Issues –</p> <p>Ornithology: The data previously collected is now too old to be used to assess the bird impacts. Our bird survey guidance (see below) sets out that all survey data should be collected within 5 years of the application date, the data collected previously is now older than this. Therefore, a full suite of new bird surveys should be undertaken. Our bird survey guidance should be followed and due to the species previously present two years of surveys are likely to be required. We would be happy to review the need for a second years survey after the results of the first year are available.</p> <p>Bats: note the bat surveys are also very old and well out of date. The survey methodology has also changed since the last surveys were carried out, the new approach should be followed.</p> <p>LVIA: Request Am Faochagach, closest Munro within WLA 29, is included as a viewpoint. Comparative wirelines to allow comparison between consented site and proposed site.</p>	Chapter 8 LVIA
SEPA	SEPA made site specific comments, outside standard requests, relating to location of turbines and access tracks on deep peat. SEPA support proposals to carry out compensatory peatland restoration on site. Clarification was sought over location of turbines on blanket bog habitat, borrow pit/s, sub-station,	Chapter 12 Hydrology
Historic Environment Scotland (HES)	Cultural Heritage – is accepted that the scope of the EIAR for the proposed development can rely on the EIAR and SI undertaken for the Consented Development, with the exception of undertaking a re-	Chapter 9 Cultural Heritage

Consultee	Summary of Main Issues	How Addressed in EIA Report
	assessment of the development's potential effects on the setting of designated heritage assets within the outer study area, including an assessment of cumulative impacts.	
Scottish Forestry	Request forestry baseline, clear distinction of felling required to accommodate wind farm infrastructure, area of permanent woodland loss and compensatory planting requirement, information on timing of felling required and restocking.	Chapter 15 Forestry
Marine Scotland	Address aquatic interests within local watercourse, including downstream, increases in silt, sediment, pollution risk/incidents during construction, obstruction to upstream/downstream migration, disturbance of spawning beds/timing of works, consultation with local fisheries board.	Chapter 10 Ecology
The Crown Estate	No response.	n/a
Defence Infrastructure Organisation (MoD)	MoD have concerns about this proposed development based on impacts on Military Low Flying Training. Will require perimeter turbines be fitted with 25 candela omni-directional red lighting or infrared lighting with an optimised flash pattern of 60 flashes per minute of 200ms to 500ms duration at the highest practicable point.	Await submission of planning application.
Mountaineering Council of Scotland (MCS)	No response.	Chapter 8 LVIA
NATS Safeguarding	The proposed development has been examined from a safeguarding aspect and does not conflict with our safeguarding criteria, therefore no safeguarding objection.	n/a
Transport Scotland	No longer comments to EIA consultations in a statutory capacity	n/a
Cromarty Firth Fishery Board	Will comment at application/addendum stage only.	Chapter 10 Ecology
Civil Aviation Authority	No response.	n/a
Highland and Islands Airports Limited	Development could impact the safeguarding criteria for Inverness Airport, request further impact assessment from Applicant.	Chapter 14 Infrastructure
Scottish Water	No objection to the application.	n/a
The Joint Radio Company (JRC)	No objection to the Application.	n/a
Visit Scotland	No response	Chapter 6 Socio Economic
ScotWays	There may be affected route of interest in the vicinity of the project, worthwhile consulting Core Path Plans.	n/a
RSPB	Disappointment that no further bird surveys are planned. Collision risk modelling required, as a result of the increase in blade length. Impacts on the NHZ (red-throated diver) population required. Revisions to impact on peatland are required, to take into account turbine dimensions, and updated carbon assessment and carbon payback. Request post construction monitoring	Chapter 11 Ornithology

Further evolution in the scope

2.4.4 The process of completing topic specific investigations inherently involves further discussions with consultees. Any topic specific refinements to scope and the detailed assessment methods employed are provided within each of the relevant chapters of the EIA Report.

2.5 Consideration of alternatives

2.5.1 The Proposed Development is based on the Consented Development, consideration of alternatives can be found in the EIA Report (Infinergy, 2019).

2.6 Selection of the site

2.6.1 The Proposed Development is based on the Consented Development, a description of the process for selection of the site can be found in the EIA Report (Infinergy, 2019).

2.7 Selection of the strategic access route

2.7.1 The Proposed Development is based on the Consented Development, a description of the process for selection of the strategic access route can be found in the EIA Report (Infinergy, 2019).

2.8 Selection of the access track route

2.8.1 The Proposed Development is based on the Consented Development, a description of the process for selection of the access track route can be found in the EIA Report (Infinergy, 2019).

2.9 Selection of the borrow working area locations

2.9.1 The Proposed Development is based on the Consented Development, a description of the process for selection of the borrow pit working area locations can be found in the EIA Report (Infinergy, 2019).

2.10 Selection of the construction compound locations

2.10.1 The Proposed Development is based on the Consented Development, a description of the process for selection of the construction compound locations can be found in the EIA Report (Infinergy, 2019).

2.11 Selection of the substation and control maintenance site

2.11.1 The Proposed Development is based on the Consented Development, a description of the process for selection of the substation and control maintenance locations can be found in the EIA Report (Infinergy, 2019).

2.12 The evolution and design of the wind farm

2.12.1 The Design Evolution of the Proposed Development is outlined in **Chapter 8: LVIA** of the EIA Report.

Design Evolution

The Proposed Development is based on the Consented Development, a description of the Design Evolution process can be found in the EIA Report (Infinergy, 2019).

The Proposed Development

2.12.2 The Proposed Development is based on the Consented Development, as outlined in **Chapter 1: Introduction**, the only changes between the two schemes relate to changes in the turbine on which the application is modelled on.

2.12.3 The current EIA, of which this LVIA forms a part, is based on the same five turbine layout that was consented in 2020, albeit proposing a 16.9m increase in the blade tip height of the turbines, taking them from 133m to 149.9m. This variation ensures

that the capacity and efficiencies of the Proposed Development are being optimised, whilst avoiding the encroachment towards the A835 that had raised concerns from NatureScot in respect of the previous nine turbine layout.

- 2.12.4 The final design of the original proposal that arose through the design evolution process described above is the wind farm design that has been adopted for the proposed development described in this EIA Report.

2.13 Consultation with local residents

- 2.13.1 Community consultation is at the centre of Infinergy's approach to development, not only in the pre-application stage, but also throughout the life of the project. This is delivered through an online consultation website (www.lxxwindfarm.co.uk), a freephone telephone number, newsletters, virtual community liaison, virtual Community Open Days (vCODs) and advertisements in local newspapers.
- 2.13.2 In November 2020 Infinergy distributed 178 newsletters to the local community, including residents, community, businesses and local authority councillors. The newsletter provided an overview of the proposed development and invited recipients to two community open days. The vCOD was also advertised in the two local newspapers.
- 2.13.3 A new online consultation page was developed for the website which was live from Tuesday 1st December until 4th January 2021. This gave stakeholders the flexibility to view the information presented and give feedback over a longer period than the standard public community open days.
- 2.13.4 Two virtual community engagement events (vCODs) were held on 2nd December at 2pm and at 7pm via Zoom. Timings and platform for these events had been discussed and agreed with the Community Council in order to ensure as many stakeholders as possible had the opportunity to engage. One person attended the first virtual session and was able to discuss issues relating to the proposal and wider climate emergency with the Managing Director of Infinergy, who was able to join due to the nature of the event. The evening session attracted five residents, all of whom had engaged in previous consultation exercises.
- 2.13.5 As well as being able to discuss the development alongside the wider issues of climate change, energy security, government support etc, members of the development team were able to demonstrate the difference in landscape impact between the consented tip height turbines and the proposed tip height turbines via photomontages.
- 2.13.6 vCOD opinion forms were completed by three attendees, all of whom live within 5km of the project. Of those responses, 2 were supportive of the project and 1 was undecided.
- 2.13.7 A Pre-Application Consultation Report has been provided to support the planning application for the Proposed Development.