Chapter 4: EIA Process and Methodology - Contents

List of Figures (Volume 2)

There are no Figures associated with this Chapter, but it does reference the following figure:

Figure 1.2: Site Context

List of Appendices (Volume 4)

Appendix 4.1: EIA Team

4. EIA Process and Methodology

4.1 Introduction

4.1.1 Environmental Impact Assessment (EIA) is a process that considers how a proposed development is predicted to change existing environmental conditions and what the consequences of such changes will be. It therefore informs both the project design and decision-making processes related to the grant of development consents.

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

4.2 EIA Regulations

4.2.1 As discussed in **Chapter 1: Introduction** of this Volume, the EIA Report has been prepared in accordance with the EIA Regulations.

4.2.2 This EIA Report contains the information specified in Regulation 5 of, and Schedule 4 to, the EIA Regulations. The approach to the assessment has been informed by current best practice guidance, including the following:

- Scottish Government Planning Advice Note (PAN) 1/2013 (revision 1.0)[1]; and
- Planning Circular 1/2017[2].

4.2.3 An overview of the guidance and methodology adopted for each technical study is provided within the respective technical chapters of this EIA Report. The proposed methodologies for the assessment of likely significant effects for each topic area covered in the technical chapters have been the subject of consultation with statutory and non-statutory consultees through the publication of, and consultation on, the "Kemp Pumped Storage Scheme Environmental Scoping Report", published in December 2021.

4.2.4 The scope of the EIA Report has been informed by the Scoping Opinion, discussed further within **Chapter 5: Scoping and Consultation** of this EIA Report and associated appendices.

[1] Scottish Government (2013, revised 2017) Planning Advice Note 1/2013 (revision 1.0): Environmental Impact Assessment.

[2] Scottish Government (2017) Planning Circular 1/2017: Environmental Impact Assessment Regulations 2017.

4.3 Baseline

4.3.1 To identify the scale of likely significant effects as a result of the Proposed Development, it is necessary to establish the existing baseline environmental conditions.

4.3.2 The baseline scenario was established through the following methods, where relevant:

- Site visits and surveys;
- Desk-based studies;
- Review of existing information;
- Modelling;
- Review of relevant national and local planning policies;
- Consultation with relevant statutory consultees; and
- Identification of sensitive receptors.

4.3.3 The environmental baseline of the Site is described within the respective technical chapters of this EIA Report.

4.4 Assessment of Likely Significant Effects

4.4.1 For the purposes of this EIA Report the terms used in the assessment of effects are generally defined as follows:

- **Temporary** – where the effect occurs for a limited period of time and the change at a defined receptor can be reversed;
- **Permanent** – where the effect represents a long-lasting change at a defined receptor;
- **Direct** – where the effect is a direct result (or primary effect) of the Proposed Development;
- **Indirect** – a knock-on effect on the environment which is not a direct result of the Proposed Development, often occurring away from the proposals or as a result of a complex biological or chemical pathway;
- **Secondary** – an induced effect arising from the actions or presence of a project, such as changes to the pattern of future land use or improvements to local road networks;
- **Cumulative** – these effects may arise when more than one development of a similar scale and nature combine to create a potentially greater impact than would result from the Proposed Development alone;
- **Beneficial** – a positive, or beneficial effect, on one or more environmental receptors; and
- **Adverse** – a detrimental, or adverse, effect on one or more environmental receptors.

4.4.2 Where a more appropriate definition of the above terms is applicable to a technical discipline this is clearly outlined with the respective technical chapters of this EIA Report.

4.4.3 The result of the assessment is the determination of whether the likely effect of the Proposed Development on the receptor in the study area would be significant or not significant, and adverse

or beneficial. Receptor should be defined as meaning the factors of the natural and built environment, including people and communities, that may be significantly affected by the Proposed Development. Examples include cultural heritage, landscapes, populations, animal and plant species, and the water environment.

4.4.4 Where no published standards exist, the assessments presented in the technical chapters describe the professional judgements (assumptions and value systems) that underpin the attribution of significance. For certain technical topics, such as ecology, widely recognised published significance criteria and associated terminology have been applied and these are presented in the technical chapters and associated appendices where relevant.

4.4.5 The assessment of significance has considered the magnitude of change (from the baseline conditions), the sensitivity of the affected environmental factors / receptors and (in terms of determining residual effects) the extent to which mitigation and enhancement can reduce or reverse adverse effects. In addition, further considerations such as those listed below have been factored into the assessment using professional judgement:

- likelihood of occurrence;
- geographical extent;
- the value of the affected resource;
- the compatibility of the Proposed Development with the provisions of legislation and planning policy; and
- reversibility and duration of the likely effect.

4.4.6 The magnitude (scale) of change for each effect has been identified and predicted as a deviation from the established baseline conditions, for the construction and operational phases of the Proposed Development. The scale generally used high, medium, low, and negligible criteria, as outlined in **Table 4.1: Matrix for Determining the Significance of Effects** below and defined within each of the technical chapters.

4.4.7 The sensitivity of the receptor / receiving environment to change has been determined using professional judgement, consideration of existing designations (such as Sites of Special Scientific Interest (SSSIs)) and quantifiable data, where possible. The scale generally used high, medium, low, and negligible criteria, as outlined in **Table 4.1: Matrix for Determining the Significance of Effects** below and defined within each of the technical chapters.

4.4.8 Each effect has been assessed taking account of the predicted magnitude of change and the sensitivity of the receptor / receiving environment as shown in **Table 4.1: Matrix for Determining the Significance of Effects** and defined within each of the technical chapters of this EIA Report to determine an overall significance of effect.

4.4.9 It does not follow that all high magnitude impacts will cause, or that high sensitivity receptors will always be subject to, significant effects. The converse is also true. Each of the technical chapters (7-20) defines the scale used for its methodology, where it differs from the above.

Table 4.1: Matrix for Determining the Significance of Effects

		Sensitivity of Receptor / Receiving Environment to Change / Effect			
		High	Medium	Low	Negligible
Magnitude of Change / Effect	High	Major	Major	Moderate	Negligible
	Medium	Major	Moderate	Minor	Negligible
	Low	Moderate	Minor	Minor	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible

4.4.10 Major and moderate effects are generally considered to be significant in the context of the EIA Regulations. Minor and negligible effects are not considered significant. Occasionally, where it assists in describing the level of impact, a "Not Significant" category is also used. These terms are generally used to define the level of impact arising for the environmental factors. Where different terms or levels of effect to the above are used, they are defined within the methodology section for the topic area as appropriate in Chapters 7 – 20.

4.4.11 The characteristics of an effect will vary depending on the duration of the activity causing the effect, the sensitivity of the receptor and the resultant change. It is therefore necessary to assess whether the effect is temporary or permanent; beneficial or adverse; and indirect or direct. Effects that are temporary are usually reversible and generally confined to the construction period.

4.5 Approach to Mitigation

4.5.1 Mitigation measures are identified to prevent, reduce or remedy any potentially significant adverse environmental effects identified, beyond that already taken into account as normal good practice (i.e. embedded mitigation) e.g. the Construction Environment Management Plan (CEMP) or the Construction Noise and Vibration management plan (CNVMP). An Outline CEMP and an Outline CNVMP can be found in **Volume 4, Appendix 3.3** and **Volume 4, Appendix 17.3** of this EIA Report respectively.

4.5.2 Such measures would be implemented during detailed design, construction and / or operation of the Proposed Development. Each technical chapter details the measures recommended to mitigate identified likely significant effects, and a summary of the recommended mitigation measures is provided in **Volume 4, Appendix 3.2: Schedule of Mitigation** of this EIA Report.

4.5.3 Any remaining predicted effects after taking into account available mitigation measures are known as 'residual effects'. This assessment takes into account the mitigation as specified in the EIA Report to identify the residual effects, based on the assumption that the identified mitigation is implemented. The residual predicted effects are discussed for each potential effect that has not been scoped out of assessment and a significance level identified.

4.6 Cumulative Effects

4.6.1 In accordance with the EIA Regulations, the assessment has considered 'cumulative effects'. The assessment of cumulative effects is a key part of the EIA process and is concerned with identifying situations in which a number of potential and / or predicted effects from separate existing or future development projects could combine to cause a significant effect on a particular receptor. Cumulative effects have been assessed within each chapter, at a scale appropriate to that subject.

4.6.2 There are two aspects to Cumulative Effects, defined as follows:

- In-combination effects: the combined effect of the Proposed Development together with other reasonably foreseeable developments (taking into consideration effects at the site preparation and earthworks, construction and operational phases); and
- Effects interactions: the combined or synergistic effects caused by the combination of a number of effects on a particular receptor (taking into consideration effects at the site preparation and earthworks, construction and operational phases), which may collectively cause a more significant effect than individually. A theoretical example is the culmination of disturbance from dust, noise, vibration, artificial light, human presence and visual intrusion on sensitive fauna (e.g. certain bat species) adjacent to a construction site.

4.6.3 Of note within the assessment of cumulative effects are other pumped storage hydro developments within the vicinity of the Proposed Development. These include Red John pumped storage (consented but not built) proposed to be constructed at a location approximately 20 km northeast of the Proposed Development, near Dores, and the existing Foyers Pumped Storage power station located approximately 7 km northeast of the Proposed Development, at Foyers. Both of these schemes use (in the case of Foyers) or would use (in the case of Red John) Loch Ness as their lower reservoir. The consented Coire Glas Pumped Storage Scheme is also proposed at a location approximately 20 km southwest of the Proposed Development. This scheme would use Loch Lochy as its lower reservoir rather than Loch Ness, however Loch Lochy and Loch Ness are connected via the River Oich and the Caledonian Canal.

4.6.4 **Table 4.2: Other Energy Developments Referred to in the EIA Report** lists other energy related or large scale infrastructure developments that have broadly been considered with the EIA Report in the wider context of the Proposed Development, including, where relevant, with respect to cumulative effects (see also **Volume 2, Figure 1.2: Site Context**).

Table 4.2: Other Energy Developments Referred to in the EIA Report

Development Name and Type	Application Status	Planning Reference
Pumped Storage Schemes		
Foyers Pumped Storage Scheme	Operational	N/A
Red John Pumped Storage Scheme	Consented	18/00760/FUL
Coire Glas Pumped Storage Scheme	Consented	Original Scheme: ECU0003164 Revised Scheme: ECU00000577

Other Hydro Schemes		
Glendoe Hydro Scheme	Operational	03/00459/S36INJ
Levishie Hydro Scheme	Operational	N/A
Onshore Wind		
Bhlaraidh Wind Farm	Operational	12/02556/S36
Bhlaraidh Wind Farm Extension	Consented	ECU00001900
Stronelairg Wind Farm	Operational	EC00005242
Corriegarth Wind Farm	Operational	EC00003115
Corriegarth 2 Wind Farm	Appeal	ECU00002175
Dell 2 Wind Farm	Scoping	ECU00003440
Cloiche Wind Farm	Application	ECU00002054
Loch Laith Wind Farm	Application	ECU00002182
Grid Infrastructure		
Foyers Substation	Operational	N/A
Loch Kemp Storage 275 kV Switching Station and Cable Works	Pre-Application	N/A

4.6.5 Where relevant, the individual topic based technical chapters within this EIA Report consider the cumulative effects the Proposed Development with other existing or future committed developments that have the potential to result in significant cumulative effects in combination with those resulting from the Proposed Development and notes the cumulative developments considered as appropriate to that particular Chapter.

4.7 EIA Quality

4.7.1 In accordance with Regulation 5(5) of the EIA Regulations, by appointing ASH design+assessment Ltd. (ASH) to coordinate the EIA Report for the Proposed Development the Applicant has ensured that the EIA Report has been prepared by competent experts.

4.7.2 The EIA Report has been compiled and approved by professional EIA practitioners at ASH, holding relevant undergraduate and post-graduate degrees, and membership of the Institute of Environmental Management and Assessment (IEMA). The EIA Report meets the requirements of the IEMA EIA Quality Mark scheme. This is a voluntary scheme operated by IEMA that allows organisations to make a commitment to excellence in EIA and to have this commitment independently reviewed on an annual basis. In addition, the Applicant confirms that each of the impact assessment chapters has been prepared by competent experts, with the chapter providing

details of the relevant professional memberships of the authors and any applicable code of practice followed.

4.7.3 The following provides a summary of specialist consultants appointed by the Applicant for this EIA Report (for further details refer to **Appendix 4.1: EIA Team**):

- EIA Co-ordination: ASH design+assessment Ltd.
- Water Management: Gilkes Energy Ltd.
- Landscape and Visual: ASH design+assessment Ltd.
- Land Use and Recreation: ASH design+assessment Ltd.
- Terrestrial Ecology: SLR Consulting Ltd, supported by:
  - Blairbeg Ecology Ltd (Habitats and Protected Species);
  - Orrin Ecology (Habitats and Protected Species);
  - Nick Hodgetts (Bryophytes)
  - Andy Acton (Terrestrial Lichens), and
  - John Douglass (Aquatic Lichens)
- Ornithology: Blairbeg Ecology Ltd & Mike Coleman Ecology.
- Aquatic Ecology: Gavia Environmental Ltd
- Fish: Gavia Environmental Ltd
- Geology, Soils and Water: SLR Consulting Ltd.
- Cultural Heritage: Catherine Dagg
- Traffic, Access and Transport: Pell Frischmann Ltd.
- Noise and Vibration: Spectrum Acoustic Consultants Ltd.
- Air Quality: SLR Consulting Ltd.
- Forestry: Crosscut Forestry Ltd.
- Socioeconomics and Tourism: MKA Economics Ltd.

4.8 Structure of EIA Report

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

Volume 1: Main Report

4.8.2 The Main Report (this document) describes the project and the legal and policy framework within which the application will be determined. Details of how the design has evolved, is also included. The Main Report includes the individual assessment undertaken under each of the specialist environmental topics identified, a description of the proposed mitigation measures relevant to those assessments, and confirmation of the predicted residual effects.

4.8.3 Volume 1 of the EIA Report includes the following Chapters:

- Chapter 1: Introduction
- Chapter 2: Design Evolution and Alternatives
- Chapter 3: Description of Development
- Chapter 4: EIA Process and Methodology
- Chapter 5: Scoping and Consultation
- Chapter 6: Planning
- Chapter 7: Water Management
- Chapter 8: Landscape and Visual Impact Assessment
- Chapter 9: Land Use and Recreation
- Chapter 10: Terrestrial Ecology
- Chapter 11: Ornithology
- Chapter 12: Aquatic Ecology
- Chapter 13: Fish
- Chapter 14: Geology, Soils and Water
- Chapter 15: Cultural Heritage
- Chapter 16: Traffic, Access and Transport
- Chapter 17: Noise and Vibration
- Chapter 18: Air Quality
- Chapter 19: Forestry
- Chapter 20: Socio-economics and Tourism

Volumes 2: Figures

4.8.4 This volume includes all accompanying figures referred to in Volume 1, with figure numbering corresponding to the chapter numbers e.g. Figure 1.1, 2.1 etc.

Volumes 3A and 3B: Visualisations

4.8.5 Volumes 3A and 3B comprises photomontage visualisations of the Proposed Development from a number of viewpoints that have been agreed with The Highland Council and NatureScot. In accordance with the requirements of the Scoping Opinion and subsequent consultation, these have

been prepared in accordance with the relevant guidance from both NatureScot[3] (Volume 3A) and The Highland Council[4] (Volume 3B).

Volume 4: Technical Appendices

4.8.6 Volume 4 comprises supporting appendices for Volume 1 of the EIA Report. Appendices include a schedule of mitigation (**Appendix 3.2**), an Outline CEMP (**Appendix 3.3**) and further detailed reporting or information to support the EIA Report and technical assessments contained therein.

Non Technical Summary

4.8.7 A standalone Non-Technical Summary is also provided which describes the project and the likely significant effects predicted in a concise, non-technical manner.

4.9 Supporting Documents

4.9.1 A Planning Statement is included with the application as supporting information. The Planning Statement considers the acceptability of the Proposed Development in the context of existing and emerging planning policies.

4.9.2 A Shadow Habitats Regulation Appraisal (HRA) has been undertaken for the Ness Woods SAC and other internationally designated sites in the vicinity of the Proposed Development and is included with the application. This Shadow HRA has been included to assist the competent authority's appropriate assessment of the likely significant effects of the Proposed Development on these designated sites.

4.9.3 The Shadow HRA determines that adverse effects on the integrity of the Ness Woods SAC cannot be ruled out, with residual effects likely to result in undermining conservation objectives for the SAC's two woodland qualifying features. Therefore, a Derogation Report, which includes a Compensatory Measures Package for the Ness Woods SAC, is included with the application, to assist the competent authority in their decision on whether the Proposed Development can be justified for IROPI, and whether compensatory measures can be secured.

[3] Scottish Natural Heritage (2017) Visual Representations of Wind Farms. Version 2.2. Available at: https://www.nature.scot/doc/visual-representation-wind-farm-guidance

[4] The Highland Council (2016) Visualisation Standards for Wind Energy Developments. Available at: https://www.highland.gov.uk/downloads/file/12880/visualisation_standards_for_wind_energy_developments