VOLUME 2: CHAPTER 4 – EIA PROCESS AND METHODOLOGY

4.	**EIA PROCESS AND METHODOLOGY**	**4-1**
4.1	Introduction	4-1
4.2	EIA Regulations	4-1
4.3	Baseline	4-1
4.4	Assessment of Likely Significant Environmental Effects	4-1
4.5	Cumulative Effects	4-3
4.6	Approach to Mitigation	4-4
4.7	EIA Quality	4-5
4.8	Structure of the EIA Report	4-6
4.9	Supporting Documents	4-7

Figures and Visualisations (Volume 3a and 3b of this EIA Report)

Figure 4.1: Cumulative Developments

Appendices (Volume 4 of this EIA Report)

Appendix 4.1: EIA Team

4. EIA PROCESS AND METHODOLOGY

4.1 Introduction

EIA is a process that considers how a development is predicted to change existing environmental conditions and what the consequences of such changes will be. It therefore informs both the design and the decision-making processes related to the granting of development consents.

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 environmental effects. The chapter also outlines the structure of the EIA Report.

4.2 EIA Regulations

This EIA Report has been prepared in accordance with the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 (the "EIA Regulations").

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].

An overview of the guidance and methodology adopted for each technical study is provided within the respective technical chapters of this EIA Report. **Volume 2** of this EIA Report contains the selected methodologies for the assessment of likely significant effects for each topic area. The methodologies have been the subject of consultation with statutory and non-statutory consultees through the publication of, and consultation on, the "Loch Buidhe 400 kV Substation Project Environmental Impact Assessment: Scoping Report", published in February 2024 (**Volume 4 Appendix 1.1** Scoping Report).

4.3 Baseline

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.

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

- desk-based studies;
- review of existing information;
- site visits and surveys;
- modelling;
- review of relevant national and local planning policies;
- consultation with the relevant statutory consultees and where appropriate, non-statutory consultees; and,
- identification of sensitive receptors.

4.4 Assessment of Likely Significant Environmental Effects

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

- 'Impact' is specific and defined as the action being taken, for example, cutting down trees.
- 'Effect' is defined as the change resulting from that action.
- Temporary – where the effect occurs for a limited period of time and the change for a defined receptor can be reversed;

[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.

- Permanent – where the effect represents a long-lasting change for a defined receptor;
- Direct – where the effect is a direct result (or primary effect) of the Proposed Development;
- Indirect – a knock-on effect which occurs within or between environmental components, including effects on the environment which are not a direct result of the Proposed Development, often occurring away from the location of the development 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: (i) 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 (an 'inter project cumulative effect'); or (ii) as a result of a combination different elements of the Proposed Development itself (an 'intra project cumulative effect') (**Section 4.5**);
- Beneficial – an effect beneficial to one or more environmental receptors; and
- Adverse – a detrimental, or adverse, effect on one or more environmental receptors.

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

The result of the assessment is the determination of whether the likely effect of the Proposed Development on the receptors 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 (i.e. the factors what 'receive' those significant affects). Examples include cultural heritage, landscapes, populations, animal and plant species, and the water environment.

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.

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), and 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.

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 uses high, medium, low, and negligible criteria, as outlined in **Table 4.1** below and defined within each of the technical chapters of this EIA Report.

The sensitivity of the receptor / receiving environment to change has been determined using professional judgement, consideration of existing designations (such as SSSIs) and quantifiable data, where possible. The scale generally used high, medium, low, and negligible criteria, as outlined in **Table 4.1** below and defined within each of the technical chapters of this EIA Report.

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** and defined within each of the technical chapters of this EIA Report to determine an overall significance of effect.

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

Major and moderate effects are considered to be significant in the context of the EIA Regulations. Minor and negligible effects are not considered significant.

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 Cumulative Effects

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 circumstances in which a number of potential and / or predicted effects either from the project itself, or from separate existing or future developments, could combine to cause a significant effect on a particular receptor. Cumulative effects have been assessed within each technical chapter of this EIA Report.

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 future 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 in combination than they would in isolation. 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.

Table 4.2 lists the developments that have broadly been considered with respect to cumulative effects within this EIA Report, these are also presented in **Volume 3a Figure 4.1**. Such developments include those for which consent has been granted, or future development for which it is reasonable to assume, at the date that the list of cumulative developments is frozen, that the developer will proceed with an application for consent. This approach to potential cumulative developments is considered conservative in light of the requirement[3] which focusses on "*…the project under consideration, together with any effects from existing or approved developments*".

The final list of development to be considered in the cumulative effects assessment has been frozen four months prior to publication of the EIA Report to allow sufficient time to compile the EIA Report.

Table 4.2 Cumulative Developments[4]

Development Name and Type	Application Status	Technical Topics of Relevance
Spittal to Loch Buidhe to Beauly 400 kV Overhead Line (OHL)	Pre-application	Ornithology, Ecology, Hydrology, LVIA, Cultural

[3] https://www.gov.scot/publications/planning-circular-1-2017-environmental-impact-assessment-regulations-2017/pages/4/ Accessed 02.10.2024

[4] Developments included in the list are within 20 km of the Carnaig 400 kV Substation. All information accurate at time of writing (31st May 2024).

		Heritage, Traffic and Transport.
Carnaig to Loch Buidhe Underground Cable (UGC) connection.	Pre-application	Ecology
Balblair Wind Farm	Scoping Opinion issued	Ornithology
Acheilidh Wind Farm	Pre-application	Ornithology
Installation of communications mast and access track.	Consented	Cultural Heritage, Ecology
Allt An Tuir Wind Farm	Scoping Opinion issued	Ornithology
Coire Na Cloiche Wind Farm	Granted	Ornithology
Achany Wind Farm	Scoping Opinion issued	Ornithology
Strathrory Wind Farm Re-Design	Consented	Ornithology
Chleansaid Wind Farm	Consented	Ornithology
Shinness Wind Farm	Scoping	Ornithology
Gordonbush Extension Wind Farm	Consented	Ornithology
Lairg Wind Farm	Consented	Ornithology
Meall Buidhe Wind Farm	Consented	Ornithology

The individual topic based technical chapters within this EIA Report consider the cumulative effects of the Proposed Development with other existing or future committed development that have the potential to result in significant cumulative effects in combination with those resulting from the Proposed Development.

4.6 Approach to Mitigation

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 for example, the CEMP). See, for example, the definition given at Section 29(5) of the EIA Regulations. Such measures would be implemented during detailed design, construction and / or operation of the Proposed Development. Each technical chapter of this EIA Report details the measures recommended to mitigate identified likely significant effects, and a summary of the recommended mitigation measures is provided in **Volume 2 Chapter 16** Schedule of Environmental Mitigation.

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 the assessment and a significance level identified.

4.7 EIA Quality

The EIA Quality Mark[5] is a scheme operated by the Institute of Environmental Management and Assessment (IEMA) that allows organisations that lead the co-ordination of statutory EIAs in the United Kingdom (UK) to make a commitment to excellence in their EIA activities and have this commitment independently reviewed. The EIA Quality Mark is a voluntary scheme, with organisations free to choose whether they are ready to operate to its seven EIA Commitments;

- **EIA Management**: Commitment to using effective project control and management processes to deliver quality in the EIAs co-ordinated and the Environmental Statements produced.
- **EIA Team Capabilities**: Commitment to ensuring that all EIA staff have the opportunity to undertake regular and relevant continuing professional development.
- **EIA Regulatory Compliance**: Commitment to delivering Environmental Statements that meet the requirements established within the appropriate UK EIA Regulations.
- **EIA Context & Influence**: Commitment to ensuring that all EIAs coordinated are effectively scoped and that they transparently indicate how the EIA process, and any consultation undertaken, influenced the development proposed and any alternatives considered.
- **EIA Content**: Commitment to undertaking assessments that include: a robust analysis of the relevant baseline; assessment and transparent evaluation of impact significance; and an effective description of measures designed to monitor and manage significant effects.
- **EIA Presentation**: Commitment to deliver Environmental Statements that set out environmental information in a transparent and understandable manner.
- **Improving EIA practice**: Commitment to enhance the profile of good quality EIA by working with IEMA to deliver a mutually agreed set of activities, on an annual basis, and by making appropriate examples available to the wider EIA community.

ERM has held the Quality Mark (Q Mark) since 2020 and IEMA has renewed the Q Mark registration for our statutory EIAs in the UK. This is in recognition of ERM's commitment to excellence in EIA activities and our corporate pledge to take action to improve environmental practices.

4.7.1 ERM's EIA delivery team

With reference to EIA Regulation 5(5), ERM's EIA delivery team responsible for the content of this EIAR can be found below;

Keith Grant – Project Director

Stephen Clark MSc MCIEEM CEnv – Project Manager

Kenneth Reid – Technical Advisor

Niall Olds – LVIA Consulting Technical Director

Chris Friel - Photography and Visualisation Consultant

Callum Gilhooley ACIEEM – Ecology Managing Technical Consultant

Kate O'Connor – BNG Managing Technical Consultant

Peter Wright – Ornithology Technical Director

Duncan Priddle MCIEEM CMI – Ornithology Managing Technical Consultant

[5] https://www.iema.net/corporate-programmes/eia-quality-mark

Leo Thomas – Cultural Heritage Managing Technical Consultant

Lauren Reid - Cultural Heritage Consulting Senior Associate

Nick Walker - Hydrology Principal Technical Consultant

Reagan Duff - Hydrology Managing Technical Consultant

Tomos Ap Tomos – Engineering Technical Director

Gregor Hirst – Senior Engineer

Frank Ocran – Principal Transport Planner

Neil McKay MICFor – Forestry Consultant

Eleanor Barton – Climate and Carbon Balance Consultant

James Lumsden - Climate and Carbon Balance Consultant

Daniel Nixon - GIS and Digital Visualisation Managing Technical Consultant

For further detail on the EIA delivery team refer to **Volume 4 Appendix 4.1**.

4.8 Structure of the EIA Report

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

- Volume 1: Non-technical Summary
- Volume 2: Main Report
- Volume 3a: Figures excluding Visuals
- Volume 3b: Visuals
- Volume 4: Technical Appendices

Volume 1 is a standalone Non-Technical Summary is also provided which describes the Proposed Development and the likely significant effects predicted in a concise, non-technical manner.

Volume 2 of the EIA Report (this document) contains the following chapters:

- 1: Introduction and Background;
- 2: Project Description;
- 3: The Site Selection Process and Alternatives;
- 4: EIA Process and Methodology;

The technical topic-based reports each include an assessment of the likely significant effects of the Proposed Development on the particular receptors of relevance to each of the topic-based assessments. A description of the proposed mitigation measures relevant to those assessments, and confirmation of the predicted residual effects. The consideration of cumulative effects is discussed where relevant in each technical topic.

The EIA Report contains the following technical chapters:

- 5: Landscape and Visual
- 6: Climate Change and Carbon Balance
- 7: Ecology and Nature Conservation
- 8: Ornithology
- 9: Forestry
- 10: Geology and Soils
- 11: Hydrology and Hydrogeology

- 12: Traffic and Transport
- 13: Cultural Heritage
- 14: Noise and Vibration
- 15: Socioeconomic
- 16: Schedule of Environmental Mitigation

Volume 3a and 3b contains supporting figures and visualisations referred to in **Volume 2** of the EIA Report.

Volume 4 comprises supporting appendices for **Volume 2** of the EIA Report. Appendices include further detailed reporting or information to support the EIA Report and technical assessments contained therein. Other notable appendices include shadow Habitats Regulations Appraisal (HRA) where the Proposed Development crosses through, or within the vicinity of, sites of European nature conservation importance.

4.9 Supporting Documents

A Planning Statement is also included with the application as supporting information and in accordance with the request of THC in its scoping response. The Planning Statement considers the compatibility of the Proposed Development in the context of existing and emerging development plan and national energy and planning policies. Other planning documents including the Pre-Application Consultation Report (PAC Report), the Design and Access Statement and the Sustainability Statement will be included with the application as supporting information.