VOLUME 2: CHAPTER 5 – EIA PROCESS AND METHODOLOGY

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

There are no figures or visualisations associated with this chapter.

Appendices (Volume 4 of this EIA Report)

There are no appendices associated with this chapter.

5. EIA PROCESS AND METHODOLOGY

5.1 Introduction

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 the decision-making processes related to the grant of planning consent.

This Chapter describes 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 describes the structure of the Environmental Impact Assessment Report (EIAR).

In general terms the main stages in the EIA are as follows:

- Screening – determining whether a proposed project falls within the remit of the EIA Regulations;
- Scoping – determining the nature and extent of likely significant environmental effects of the Proposed Development and identifies the issues to be considered in the assessment and reported in the EIAR. Scoping also gives the relevant stakeholders an opportunity to express their views on the scope of the EIA;
- Establishing Baseline – drawing together and reviewing existing available data and undertaking surveys to determine the existing and future baseline conditions;
- Assessment and Iteration – assess likely significant effects of development, evaluate alternatives, provide feedback to design team on potential adverse impacts, modify development or impose parameters, incorporate mitigation, assess effects of mitigated development; and
- Preparation of the EIAR.

5.2 EIA Regulations

As discussed in **Chapter 1** of this Volume, the EIAR has been prepared in accordance with the EIA Regulations.

This EIAR 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 (Chapters 8-14) of this EIAR. The methodologies for the assessment of likely significant effects for each topic area covered in the technical chapters within this EIAR have been the subject of consultation with statutory and non-statutory consultees through the publication of, and consultation on, the "Spittal Substation and HVDC converter station Environmental Impact Assessment: Scoping Report", published in December 2023 (see **Volume 4 Appendix 1.1**).

The scope of the EIAR is based on the Scoping Opinion (**Volume 4 Appendix 1.2**), discussed further within **Chapter 6 – Scope and Consultation** of this EIAR and associated appendices.

5.3 Baseline for the Assessment

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:

- site visits and surveys;
- desk-based studies;
- review of existing information;

[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.

- modelling;
- review of relevant national and local planning policies;
- further consultation with the relevant statutory consultees and where appropriate, non-statutory consultees; and
- identification of sensitive receptors.

5.4 Assessment of Likely Significant Environmental Effects

For the purposes of this EIAR 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 for a defined receptor can be reversed;
- 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, may include effects on the environment which are 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 (see also **Section 5.5** of this Chapter);
- 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 in **Volume 2** of this EIAR.

The result of the assessment is the determination of whether the likely effect of the Proposed Development on the receptors identified as part of the baseline conditions in the relevant 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.

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) 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 used high, medium, low, and negligible criteria, as outlined in **Table 5.1** and defined within each of the technical chapters in this EIAR.

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 5.1** below and defined within each of the technical chapters in this EIAR.

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

Table 5.1: 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.

5.5 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 from separate existing or future development projects could combine to cause a significant effect on a particular receptor.

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 of the Proposed Development 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 combination 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.

In- combination effects are assessed within each technical chapter, where relevant, and consider the potential for cumulative effects with other developments within that topic e.g. the cumulative effects of construction traffic between the Proposed Development and other developments in the local area of the Site.

Assessment of the in- combination effects is based on the following assumed dates for the Proposed Development:

- 1st September 2025- commencement of works on Site;
- 1st September 2028- completion of construction works on Site; and

- 1st September 2028- operational phase of the Proposed Development commences.

Table 5.2 lists the developments that have been considered with respect to cumulative effects within this EIAR. As proposed in the EIA Scoping Report, these include EIA development, for which an application has been submitted or approved, within the study area relevant to each particular topic. The exceptions are SSEN Transmission projects known to the Applicant. The list of developments included in the cumulative effects assessment has been frozen four months prior to publication of the EIAR to allow sufficient time to compile the EIAR. These developments are listed in tiers for clarity, with tier 1 representing developments that are being undertaken by SSEN as part of the Accelerated Strategic Transmission Investment (ASTI) programme, and tier 2 consisting of developments undertaken by non- SSEN 3rd parties.

Table 5.2: Cumulative Developments

Tier	Development Name and Type	Details	Application Status
1	Spittal – Loch Buidhe – Beauly 400 kV Overhead Line (OHL)	SSEN plan the construction of a new 400 kV OHL between Spittal, Loch Buidhe and Beauly. Construction is expected to commence in spring 2026, with construction completion and commissioning in Autumn 2030.	EIA scoping submitted and awaiting response
	Banniskirk – Spittal (existing substation) Underground Cable (UGC) connection	SSEN will be constructing a UGC cable between the existing substation and the Proposed Development within the construction timeframe of the Proposed Development.	To be progressed as permitted development
	Banniskirk – Sinclair's Bay High Voltage Direct Current HVDC UGC	Construction of a 2GW bi-pole, 525kV HVDC link between Spittal in Caithness and Peterhead in Aberdeenshire for the transmission of power from the north of Scotland to the network at Peterhead, where other infrastructure will facilitate further transmission to demand centres. Construction is anticipated to commence in 2026, with energisation starting in 2028 and full operation in 2030.	Route alignment optioneering in progress
2	West of Orkney wind farm Connection Substation (adjacent to existing Spittal substation)	Planned to be up to 125 turbines on fixed foundations 30km off the west coast of Orkney. The wind farm is proposed to connect from a landfall site at Crosskirk to the Proposed Development via UGC, with a proposed substation sited southwest of the Proposed Development. Anticipated dates are construction commencement in 2025, with completion and delivery of first power in 2029.	Planning approved in principle
	Ayre wind farm Connection (location TBC)	A proposed wind farm of 40- 60 turbines on floating foundations, east of Orkney and north of Caithness. Anticipated to connect from a landfall location at Sinclair's Bay to a Grid Connection Point (GCP) at Banniskirk, which is yet to be confirmed. Timescales are not yet confirmed but construction anticipated to start after the Proposed Development enters operational phase.	EIA scoping decision issued
	Watten Wind Farm – 5km to south-east of the Proposed Development	Erection and operation of a wind farm for a period of 35 years, comprising of 7 wind turbines with a maximum blade tip height of 220m, access tracks, borrow pits, substation, control building, battery storage and ancillary infrastructure.	Application submitted to ECU and awaiting response

5.6 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 Construction Environment Management Plan (CEMP)). Such measures would be implemented during detailed design, construction and / or operation of the Proposed Development. Each technical chapter of this EIAR details the measures recommended to mitigate identified likely significant effects, and a summary of the recommended mitigation measures is provided in **Chapter 16 - Schedule of Mitigation Measures**.

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 EIAR 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.

5.7 EIA Quality

The EIA Quality Mark[3] is a scheme operated by IEMA that allows organisations that lead the co-ordination of statutory EIAs in the 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.

ERM's EIA delivery team responsible for the content of this EIAR can be found in **Volume 4 Appendix 1.3**.

5.8 Structure of the EIAR

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

- Volume 1: Non-Technical (NTS);
- Volume 2: Main Report including topic-based;

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

- Volume 3: Figures;
- Volume 4: Appendices to support each of the Chapters in the EIAR where required;

Volume 1 includes a standalone Non-Technical Summary which describes the project and the likely significant effects predicted in a concise, non-technical manner.

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

1: Introduction and Background;

2: Project Need and Strategy;

3: Description of the Proposed Development;

4: The Site Selection Process and Alternatives;

5: EIA Process and Methodology;

6: Scope and Consultation;

7: Planning and Energy Policy Context;

8: Landscape Character and Visual Amenity;

9: Ecology, Ornithology and Nature Conservation;

10: Archaeology and Cultural Heritage;

11: Traffic and Transport;

12: Hydrology, Hydrogeology, Geology and Soils;

13: Noise and Vibration;

14: Land Use, Amenity and Socio-Economics;

15: Summary of Effects; and

16: Schedule of Environmental Mitigation.

Volume 2 includes a series of technical topic-based chapters that 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.

Volume 3 contains supporting figures referred to in **Volume 2** of the EIAR.

Volume 4 comprises supporting appendices for **Volume 2** of the EIAR.