

CHAPTER 5 – EIA PROCESS AND METHODOLOGY

5	EIA PROCESS AND METHODOLOGY.....	5-2
5.1	Introduction	5-2
5.2	EIA Regulations and Guidance.....	5-2
5.3	Identification of Baseline	5-3
5.4	Assessment of Likely Significant Environmental Effects	5-3
5.5	Cumulative Effects	5-5
5.6	Approach to Mitigation	5-6
5.7	EIA Quality	5-7
5.8	Assumptions and Limitations.....	5-9

Figures (Volume 3 of this EIA Report)

Figure 5.1: Cumulative Developments

Visualisations (Volume 4 of this EIA Report)

There are no visualisations associated with this Chapter.

Appendices (Volume 5 of this EIA Report)

Appendix 5.1: Cumulative Developments

Appendix 5.2: IEMA Quality Mark

5 EIA PROCESS AND METHODOLOGY

5.1 Introduction

- 5.1.1 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 the decision-making processes related to the granting of development consents.
- 5.1.2 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 environmental effects. The Chapter also outlines the structure of the EIA Report.

5.2 EIA Regulations and Guidance

- 5.2.1 This EIA Report contains the information specified in Schedule 4 of the EIA Regulations. The approach to the assessment has been informed by current best practice guidance, including the following:
- Planning Advice Note 1/2013: Environmental Impact Assessment (Revision 1.0)¹;
 - Planning Circular 1 2017: The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017²;
 - Historic Environment Scotland and Scottish Natural Heritage's 'Environmental Impact Assessment Handbook' 2018³; and
 - The Institute of Environmental Management and Assessment's⁴ (IEMA) guidance documents on EIA practice including Delivering Proportionate EIA⁵; Environmental Impact Assessment Guide to Shaping Quality Development⁶ and Environmental Impact Assessment Guide to: Delivering Quality Development⁷; and
 - Nationally Significant Infrastructure Projects (NSIPs): Advice on Cumulative Effects Assessment⁸.
- 5.2.2 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 (**Chapters 7-15**) has been the subject of consultation with statutory and non-statutory consultees through the publication of, and consultation on, the 'Beaully to Blackhillock to New Deer to Peterhead 400 kV Connection Environmental Impact Assessment: Scoping Report', published in June 2024 (see **Appendix 6.1: Scoping Report**).
- 5.2.3 The scope of the EIA Report has been informed by the Scoping Opinion, discussed further in **Chapter 6: Scope and Consultation**.

¹ Scottish Government (2013). Planning Advice Note 1/2013: Environmental Impact Assessment. Available at: <https://www.gov.scot/publications/planning-advice-note-1-2013-environmental-impact-assessment/>

² Scottish Government (2017). Planning Circular 1 2017. Available at: <https://www.gov.scot/publications/planning-circular-1-2017-environmental-impact-assessment-regulations-2017>

³ Historic Environment Scotland and Scottish Natural Heritage (2018). Environmental Impact Assessment Handbook. Available at: <https://app-hes-pubs-prod-neu-01.azurewebsites.net/api/file/a205a9f7-8d3e-4e4f-b8a4-a8e800a6c81f>

⁴ IEMA have rebranded as ISEP (Institute of Sustainability and Environmental Professionals) on the 17 July 2025. As this rebranding process is ongoing, 'IEMA' will be continue to be used throughout this EIA report.

⁵ IEMA (2017). Delivering Proportionate EIA.

⁶ IEMA (2015). Environmental Impact Assessment Guide to Shaping Quality Development.

⁷ IEMA (2016). Environmental Impact Assessment Guide to: Delivering Quality Development.

⁸ UK Government (2024). Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment. Available at <https://www.gov.uk/guidance/nationally-significant-infrastructure-projects-advice-on-cumulative-effects-assessment> (Accessed: 14 August 2025).

5.3 Identification of Baseline

5.3.1 The baseline scenario was established through a combination of 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 the relevant statutory consultees and where appropriate, non-statutory consultees; and
- identification of sensitive receptors.

5.4 Assessment of Likely Significant Environmental Effects

5.4.1 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, for example, loss of habitat;
- 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;
- Residual – where the effect remains following the implementation of mitigation measures;
- 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.

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

5.4.3 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 is defined as the factors of the natural and built environment, including people and communities, that may be affected by the Proposed Development. Examples include cultural heritage, landscapes, populations, animal and plant species, and the water environment.

5.4.4 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.

- 5.4.5 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 avoid or reduce adverse effects. In addition, further considerations such as those listed below have been factored into the assessment using professional judgement as appropriate:
- likelihood of occurrence;
 - geographical extent;
 - the value of the affected resource;
 - the compatibility of the Proposed Development with the provisions of legislation; and
 - reversibility and duration of the likely effect.
- 5.4.6 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 5.1** below and defined within each of the technical chapters of this EIA Report. As the Proposed Development concerns construction of permanent infrastructure required for the continuing safe supply of electricity to the wider community, with a view to maintain, repair for perpetuity, or upgrade if required, decommissioning of the Proposed Development is not considered applicable and is scoped out of the EIA.
- 5.4.7 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) 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 of this EIA Report.
- 5.4.8 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. The assessment includes consideration of the availability and impact of mitigation measures.
- 5.4.9 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 EIA Report 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

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

5.5 Cumulative Effects

- 5.5.1 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 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.
- 5.5.2 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 future developments whether another development ("inter" project) or other aspects of the same development ("intra" project) (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.

In-combination Effects

- 5.5.3 **Appendix 5.1: Cumulative Developments** lists the developments that have been considered with respect to in-combination cumulative effects within this EIA Report (see also **Figure 5.1: Cumulative Developments**). 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.
- 5.5.4 The scale of the developments for inclusion is based on the likelihood for significant cumulative impacts with the Proposed Development. As such, our criteria for inclusion comprises EIA scale development; larger energy industry developments such as windfarms, battery storage facilities, substations, overhead lines (OHLs), underground cables or quarries that are not EIA development but which have the potential for significant cumulative impacts.
- 5.5.5 In general, a study area of 5 km distance from the Proposed Development has been used to identify cumulative developments for all environmental topics, as the majority of the study areas for each of the individual environmental topic assessments is 5 km or less. The exceptions being Landscape and Visual and Ornithology cumulative effects, where a distance of 10 km has been used specifically to include windfarm developments, due to the increased likelihood of these types of developments having a wider zone of theoretical visibility and being within ranging distance of scoped in ornithological species.
- 5.5.6 The final list of developments to be considered in the cumulative effects assessment was frozen in mid-May 2025 to allow sufficient time to compile the EIA Report. Highland, Moray and Aberdeenshire Councils were consulted regarding the list of cumulative developments. A response was received from all three local authorities, which helped to develop the scope of cumulative developments included in **Appendix 5.1: Cumulative Developments** for all three council areas.
- 5.5.7 The individual topic based technical chapters of this EIA Report consider the cumulative effects of 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. The developments listed in **Table 5.2** below are those which form part of the wider network transmission upgrade project as discussed in **Chapter 2: Project Need and Strategy** and are therefore linked to the Proposed Development. Within each technical chapter (**Chapters 7-15**) the following staged approach has therefore been taken:

- Stage 1: the Proposed Development has been assessed cumulatively with the associated Scottish and Southern Electricity Networks (SSEN) Transmission developments listed in **Table 5.2** to understand the likely significant effects of the wider network transmission upgrade as a whole on that topic; and
- Stage 2: an in combination cumulative assessment has been undertaken with the remaining cumulative developments listed in **Appendix 5.1: Cumulative Developments** to determine the overall potential for in-combination cumulative effects.

5.5.8 In **Appendix 5.1: Cumulative Developments**, some of the applications for the SSEN Transmission projects have not yet been submitted as they are at an earlier stage than would normally be included within an EIA cumulative assessment. The limitations of including these SSEN Transmission Cumulative Developments within the assessment is that the detailed environmental assessments have not yet been finalised, and as a result the likely significant effects and any proposed mitigation have not been fully identified at this stage, to inform this cumulative assessment. Therefore, the cumulative assessment has been based on the available information known at this stage for these developments.

Table 5.2: Stage 1 Associated SSEN Transmission Developments⁹

ID	Name	Description	Application Status	Local Authority Area
01	Fanellan substation	A new 400 kV substation and converter station located in the Beaulieu area.	Awaiting Decision	The Highland Council
02	Greens 400 kV substation	A new 400 kV substation located 2.5 km southeast of Cuminestown.	Awaiting Decision	Aberdeenshire Council
03	Netherton Hub	A new strategic development near Flushing and Longside that consists of a 400 kV substation, 132 kV substation, a HVDC switching station, two HVDC converter stations and a spares warehouse and operations base.	Awaiting Decision	Aberdeenshire Council

5.5.9 Planning applications for smaller scale developments have been identified throughout the OHL site selection process. Where these will result in the addition of new future receptors (i.e. new residential properties or holiday accommodation) these receptors have been considered within the assessment where appropriate.

Effect Interactions

5.5.10 An assessment of cumulative effect interactions is presented in **Chapter 16: Cumulative Assessment**. This uses the significance of effects from the Stage 1 assessment for each technical topic, rather than effects from the Proposed Development alone, to ensure that all elements of the wider network transmission upgrade project are included where relevant to a particular sensitive receptor.

5.6 Approach to Mitigation

5.6.1 Embedded mitigation that can be reasonably assumed to be implemented is defined in **Chapter 3: Project Description** and includes measures such as a Construction Environment Management Plan and the Applicant's General Environmental Management Plans and Species Protection Plans (see **Appendix 3.5: General Environmental Management Plans (GEMPs)** and **Appendix 3.6: Species Protection Plans (SPPs)**). These are assumed to be in place prior to environmental assessment.

⁹ The status of these schemes is accurate as of May 2025.

- 5.6.2 Following the initial assessment, further mitigation measures are identified to, avoid, minimise, restore or offset any potentially significant adverse environmental effects identified. Such measures will be implemented during detailed design, construction and / or operation of the Proposed Development and are referred to as 'additional mitigation'. 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 **Chapter 18: Schedule of Mitigation**.
- 5.6.3 The following additional mitigation codes are used in the respective chapters and in **Chapter 18: Schedule of Mitigation**:
- LV – Landscape and Visual;
 - EC – Ecology;
 - OR - Ornithology;
 - CH – Cultural Heritage;
 - WG – Water and Geological Environment;
 - NV – Noise and Vibration;
 - FR – Forestry;
 - TT – Transport, and
 - CD – Construction and Design
- 5.6.4 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.

5.7 EIA Quality

- 5.7.1 In accordance with Regulation 5(5) of the EIA Regulations, by appointing WSP UK Limited to coordinate the EIA Report for the Proposed Development, SSEN Transmission has ensured that the EIA Report has been prepared by competent experts. The EIA Report has been compiled and approved by professional EIA practitioners, holding relevant undergraduate and post-graduate degrees and memberships to professional bodies, where appropriate. 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. **Appendix 5.2: IEMA Quality Mark** reproduces the IEMA Quality Mark EIA Report Review Criteria, along with a description of how these indicators have been met by this EIA Report.
- 5.7.2 A statement outlining the relevant expertise / qualifications for the discipline leads is provided in **Table 5.3**.

Table 5.3: Technical Competence of EIA Team

Technical Team	Grade / Organisation	Competence
EIA Management and Co-ordination	Associate, WSP	MSc, Full Member of IEMA, Chartered Environmentalist, Member of the Institute of Environmental Sciences, APM Project Management Qualification and over 19 years' working predominantly in the electricity transmission and renewable energy sector. Experienced in project management and co-ordination of technical specialists, stakeholder engagement, the production of EIA Reports and management of documents to support applications for consent.

Technical Team	Grade / Organisation	Competence
	Technical Director, WSP	MSc, Full Member of IEMA and Chartered Environmentalist with over 19 years of experience in environmental assessment and management on major infrastructure schemes in the UK and overseas.
	Principal, WSP	MSc (Hons), Associate Member of IEMA with over seven years' experience working as an environmental consultant coordinating EIA reports and project management of large infrastructure projects.
Landscape and Visual	Associate Director, WSP	BA, PGDipLA, MA, CMLI - Chartered Member of the Landscape Institute, ILM Level 4 Introductory Diploma in Management and 24 years' experience.
	Principal, WSP	BA (Hons), Dip LA with 25 years of experience in the industry.
	Consultant, WSP	MA, BA (Hons) with five years of experience.
Ecology	Technical Director, WSP	BSc (Hons), PhD, Chartered Biologist and Member of the Royal Society of Biology, the Chartered Institute for Ecology and Environmental Management's (CIEEM) Vice President for Scotland, and a Chartered Environmentalist with 21 years' ecological and environment consultancy experience including Ecological Impact Assessment, Habitats Regulations Appraisal and protected species surveys.
	Senior, WSP	BSc (Hons), MSc, Full Member of CIEEM with over seven years' experience in consultancy.
Ornithology	Technical Director, Avian Ecology	BSc, MRes, Associate member of CIEEM and 15 years' experience.
	Senior, WSP	BSc (Hons), MSc, Qualifying Member of CIEEM working as a professional ecologist for six years.
Water and Geological Environment	Principal, WSP	BSc, MSc with over 15 years' experience of EIAs for a wide range of development types across the UK, including electricity transmission infrastructure.
	Technical Director, WSP	BSc (Hons), MSc, PIEMA, CWEM, Chartered Environmentalist with over 25 years' experience in the Water Environment sector.
Peat	Director, Fluid	MSc, BSc, Chartered Scientist and a member of the Chartered Institute of Water and Environmental Management with over 25 years of consulting experience in hydrogeology and water resources.
	Director (Terrain), OWC	PhD, MSc, BSc, fellow of the Geological Society of London, Chartered Geologist and Peat Slide Specialist with over 20 years' experience of mapping and interpreting peat geomorphology and landslides in the UK and Ireland.
Carbon Peatland	Lead Advisor and Team Lead, WSP	MSc qualified with over eight years' of proven knowledge in EIA, Ecosystem Services assessments and environmental management.
Cultural Heritage	Principal, WSP	MA (Hons) Archaeology with 17 years of experience as a heritage professional, managing the production of cultural heritage assessments for projects throughout the UK and Ireland, focussing on the production of EIA report chapters for large linear infrastructure projects.
	Senior, WSP	MA (Hons), MSc with 13 years of experience as a heritage professional, formerly as a team lead and osteology specialist, and now as a consultant undertaking cultural heritage assessments for a variety of project types including large linear infrastructure schemes.
Forestry	Partner, Bidwells	MICFor and Chartered Forester with 18 years of experience in the forestry industry, with a strong focus on EIAs for major infrastructure developments.

Technical Team	Grade / Organisation	Competence
	Partner, Bidwells	MICFor and Chartered Forester with over 25 years of experience in the forestry industry, offering extensive expertise in woodland management, policy, and environmental regulation.
Transport	Technical Director, WSP	Beng (Hons), Chartered Engineer, CTPP with over 30 years' experience in leading Transport Assessments, Construction Traffic Management Plans, EIA Transport chapters, Abnormal Load Route Assessments for public and private sector clients in the UK and globally.
	Transport Planner, WSP	MTPS, MCIHT, MA (Hons) with four years' experience in a wide range of projects across the UK, with particular experience in energy projects.
	Assistant, WSP	BEng (Hons), MSc, MCIHT with four years' experience in assisting with carrying out Transport Assessments and supporting technical work for projects across the UK.
Recreation and Tourism	Associate, WSP	MSc, BSc, Member of IEMA and Chartered Environmentalist with 11 years' experience working in a number of sectors including energy, rail, highways and residential.
	Associate, WSP	MSc, BSc with 12 years' experience as a planner, specialising in Socioeconomics and Population and Human Health assessment.
Noise and Vibration	Noise and Vibration Lead, Wood	BEng Hons Manufacturing Engineering, Corporate Member Institute of Acoustics (IOA) and 26 years' experience in planning, EIA and project management. His experience is large and diverse covering industrial acoustics with a focus on renewable energy generation and electricity infrastructure. Eric has worked on over 500 wind farm projects globally together with the majority of electricity substations in Scotland.
	Noise and Vibration Senior Consultant, Wood	MEng Electrical and Mechanical Engineering Fergus has 4 years' experience in planning, EIA and project management and has worked on a variety of projects, including environmental noise, flow-induced noise and offshore noise in the UK, Greece, and Kazakhstan. His environmental noise projects have been focussed on electrical infrastructure such as OHLs and substations.
	Noise and Vibration Senior Consultant, Wood	MSc in Acoustics and Music Technology, BEng Hons in Chemical Engineering, Associate Member of the Institute of Acoustics (AMIOA) with over six years of experience in planning, Environmental Impact Assessment (EIA), and project management. Has contributed to a diverse range of projects across infrastructure, transportation, industrial, and construction noise sectors.
	Noise and Vibration Graduate Consultant, Wood	BSc Mathematics and Computer Science, Member of the Institute of Engineering and Technology (MIET), Toby has experience working on a variety of environmental noise projects including producing models, calculations, reports and EIAs. Electrical infrastructure project experience includes both OHLs and substations.

5.8 Assumptions and Limitations

5.8.1 The key assumptions and limitations that have been identified in undertaking the EIA Report are set out below:

- baseline conditions have been established from a variety of sources, including historical data, and site survey, but due to the dynamic nature of certain aspects of the environment, conditions will change during the construction and operation of the Proposed Development;
- information received by third parties is complete and up to date; and
- the design, construction and completed stages of the Proposed Development will satisfy minimum environmental standards, consistent with contemporary legislation, practice and knowledge.

5.8.2 Assumptions and limitations specific to certain topics are identified in the appropriate technical **Chapters 7-15**.