Scottish & Southern Electricity Networks
TRANSMISSION

CONTENTS

5. EIA PROCESS AND METHODOLOGY

5.1 Introduction

5.1.1 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 design and the decision-making processes related to the grant 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

5.2.1 As discussed in **Volume 2, Chapter 1 – Introduction and Background**, the EIA Report has been prepared in accordance with the EIA Regulations.

5.2.2 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].

5.2.3 An overview of the guidance and methodology adopted for the assessment of likely significant effects for each topic area is provided within the respective technical chapters of this EIA Report. The proposed methodologies have been the subject of consultation with statutory and non-statutory consultees through the publication of, and consultation on, the EIA Scoping Report (**see Volume 4, Appendix 6.3: Greens Substation Environmental Impact Assessment: Scoping Report**), published in June 2024.

5.2.4 The scope of the EIA Report has been informed by the Scoping Opinion, discussed further within **Volume 2, Chapter 6: Scope and Consultation** of this EIA Report and associated appendices.

5.3 Baseline

5.3.1 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.

5.3.2 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 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:

- 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, 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 5.6** 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 technical chapters in 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. "Receptors" are 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.

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 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.

5.4.6 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 the columns of **Table 5-1** below, and defined within each of the technical chapters.

5.4.7 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 the rows of **Table 5-1** below, and defined within each of the technical chapters within this EIA Report.

5.4.8 Determining the classification of effects 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

5.4.9 Major and moderate effects are considered to be significant in the context of the EIA Regulations. Minor and negligible effects are not considered significant. Therefore, unless otherwise stated in the technical chapters of this EIA Report, effects that are classified as moderate or above are considered to be significant. Effects classified as below moderate are considered to be not significant.

5.4.10 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.

5.4.11 In terms of the duration of an effect, short-term has been considered as 2 year(s) (or below), a medium-term effect has been considered to be between 2 and 10 years in duration and a long-term effect has been considered to be greater than 10 years in duration. Any variation to these definitions arising, for example, from differences in assessment methodology or guidance is explained in Technical Chapters 7 to 14.

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 (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 several 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 The future developments that have broadly been considered with respect to in-combination effects within this EIA Report are listed in **Table 5-2** (see also **Volume 3, Figure 5.1: Cumulative Developments**). Such developments (referred to as 'Cumulative 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, and where sufficient information is available to undertake an informed cumulative assessment. The final list of Cumulative Developments has been frozen three months prior to publication of the EIA Report to allow sufficient time to compile the EIA Report. Aberdeenshire Council was consulted in July 2024 regarding the list of Cumulative Developments contained in **Table 5-2**.

5.5.4 A study area of 5 km distance from the Proposed Development has been used to identify Cumulative Developments for all environmental topics. This 5 km study area has been adopted for the assessment as the majority of the study areas for each of the individual environmental topic assessments is 5 km or less, and therefore it is considered very unlikely that significant effects would occur to receptors beyond a 5 km distance from the Proposed Development in isolation or in-combination with other Cumulative Developments.

5.5.5 Each individual topic based technical chapter within **Volume 2** of this EIA Report (chapters 7 to 14) considers the in-combination effects of the Proposed Development with other Cumulative Developments. The development with an asterisk in **Table 5-2** is one which forms part of the wider network transmission upgrade project as discussed in **Volume 2, Chapter 2: Project Need and Strategy** and is therefore linked to the Proposed Development. Within each technical chapter the following staged approach will therefore be taken:

- Stage 1: the Proposed Development will be assessed cumulatively with the development noted with an asterisk to understand the likely significant effects of the wider transmission network upgrade as a whole on that topic; and
- Stage 2: an in combination cumulative assessment will then be undertaken with the remaining cumulative developments in **Table 5.2** to determine the potential for in-combination cumulative effects.

Table 5-2: Cumulative Developments

ID	Development Name and Type	Application Status (Application Reference)	Description and distance / direction to the Proposed Development
1	BBNP 400kV OHL*	Pre-Application (ECU00005165)	Section 37 application for the construction of a new double circuit steel structure 400 kV OHL between Beauly, Blackhillock, New Deer and Peterhead, approximately 194 km in length, including the diversion of an existing 400 kV OHL into a proposed new Coachford 400 kV substation near Blackhillock, removal of the existing 132 kV OHL from Beauly to Knocknagael substations, and rationalisation and crossings of the existing transmission network. The boundary for this development overlaps with the Site Boundary for the Proposed Development. The development boundary considered (and shown on **Volume 3, Figure 5.1: Cumulative Developments)** reflects the latest alignment options displayed at the SSEN Transmission alignment consultation events in Spring 2024. Only one of these alignment options will be taken forward to the application stage.
2	Electrical Transmission Infrastructure Comprising Transition Joint Bays, Underground Cable Circuits Within a Cable	Decided- PAC Agreed as Specified in Notice (ENQ/2023/0739)	National development application for electrical transmission infrastructure comprising transition joint bays, underground cable circuits within a cable corridor, substation and ancillary works. Landing at location between Portsoy and Banff, travelling south to substation location in the vicinity of New Deer. The boundary for this development overlaps with the Site Boundary for the Proposed Development.

ID	Development Name and Type	Application Status (Application Reference)	Description and distance / direction to the Proposed Development
	Corridor, Substation and Ancillary Works (Caledonia Offshore Wind Farm Connection)		
3	Installation of Underground Cable	Awaiting decision (ENQ/2022/1845)	Installation of Underground Cable at substation near New Deer, Peterhead, Aberdeenshire. This development is approximately 1.4 km south-east of the Proposed Development.
4	Formation of Onshore Landfall Point, Laying of Underground Cable and Erection of Substation	Approved (APP/2023/1454)	National development application for formation of onshore landfall point, laying of underground cable and erection of substation. This development is approximately 2.3 km south-east of the Proposed Development.
5	Erection of a Synchronous Compensator	PAC Agreed as Specified in Notice (ENQ/2021/1180)	Erection of a Synchronous Compensator to provide grid stability services and associated works. This development is approximately 1.6 km south of the Proposed Development.
6	Formation of Forestry Private Way	Decided - Prior Approval Required (APP/2023/2102)	Prior Notification is sought for a forestry private way formation at the land at Callies Wood, Fyvie. The site is located north of Lethenty settlement and is accessed from a local road. The proposal is for a new private forestry way for woodland maintenance, alteration and timber extraction. This development is approximately 4.9 km south-west of the Proposed Development.
7	Formation of Footpaths	Approved (APP/2022/2571)	Full planning permission is sought for the formation of a footpath around Lendrum, Turriff. Approximately 3 km of semi-bound finished path is proposed over an area of approximately 73 hectares centred on Lendrum Farm and its memorial to the Turra Coo. The path has three access points to the public road network, two onto the road between South Redbriggs and Birkenhill and one opposite Lendrum Farm, where parking next to the memorial is available for approximately 3 cars. This development is approximately 4.8 km south-west of the Proposed Development.
8	Formation of Footpath	Approved (APP/2021/2773)	A path circuit of approximately 982 m is proposed to run inside the perimeter of a triangular 6 ha field immediately north of Moss Side Farm, which lies on the single-track public road between Monquhitter School in Cuminestown and the B9170 public road. This development is approximately 1.3 km north of the Proposed Development.
9	Formation of Footpath	Approved (APP/2022/0034)	Approximately 1 km of path over an area of 2.9 ha would be formed at Hillhead of Teuchar, around the perimeter of the farm's northernmost field.

ID	Development Name and Type	Application Status (Application Reference)	Description and distance / direction to the Proposed Development
			This development is approximately 1.4 km north-west of the Proposed Development.
10	Installation of Footpath and Associated Post and Wire Fencing	Approved (APP/2022/0076)	This application seeks full planning permission for the formation of a 2 km foot/cycle path on land to the west of the Cuminestown to Crudie road, approximately 1 km north of Cuminestown. The path will run west along the line of an agricultural field, turn north along the eastern side of the Aultan Burn then head east along another field boundary finishing at the public road. This development is approximately 4.1 km north-west of the Proposed Development.
11	Smiddybank Battery Energy Storage System (BESS)	Pre-Application (ECU00005004)	The application comprises the construction and operation of an energy storage facility with a capacity greater than 50 MW. BESS schemes are designed to assist the national electricity network in terms of stabilising supply, effectively storing excess energy when not being used by the electricity grid and then sending this back to the grid when it is needed. This development is approximately 4.9 km east of the Proposed Development.
12	Monquhitter BESS	Pre-Application (ECU00005129)	The project involves the development of a 480 MW BESS site, on a parcel of land measuring 37 Ha within the vicinity of Cuminestown and New Deer, Aberdeenshire. This development is approximately 1.9 km north of the Proposed Development.
13	Greens Underground Cable Connection*	N/A (Permitted Development)	An SSEN Transmission underground cable connection from the Proposed Development to the existing New Deer Substation. This will be a 400 kV cable, 3 km in length, with an 80 m wide working corridor.

Effect interactions

5.5.6 An assessment of cumulative effect interactions is presented in **Volume 2, Chapter 14 – Cumulative Effects (Effect Interactions)**.

5.6 Approach to Mitigation

5.6.1 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 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 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**.

5.6.2 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 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 membership of the Institute of Environmental Management and Assessment (IEMA) (see **Volume 5, Appendix 5.1: EIA Team** for further EIA Team details).

5.7.2 The EIA Report meets the requirements of the IEMA EIA Quality Mark scheme (see **Volume 4, Appendix 5.2: IEMA Quality Mark**). 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, SSEN Transmission can confirm that each of the topic based impact assessment chapters has been prepared by competent experts, with the details being provided in the chapters of the relevant qualifications, any professional memberships of the authors and any applicable code of practice followed in their assessment work.

5.8 Structure of the EIA Report

5.8.1 An overview of the Proposed Development is shown on **Volume 3, Figure 1.2 - Proposed Development**.

5.8.2 This EIA Report contains the environmental information required by the EIA Regulations and comprises the following volumes:

- **Volume 1**: Non-Technical Summary;
- **Volume 2**: Main EIA Report;
- **Volume 3**: Figures;
- **Volume 4**: Technical Appendices; and
- **Volume 5**: Confidential Technical Appendices.

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

5.8.4 **Volume 2** of the EIA Report (this document) contains the following chapters, including 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. The consideration of cumulative effects is also discussed where relevant in each specialist topic within **Volume 2**:

- 1: Introduction and Background;
- 2: Project Need and Strategy;
- 3: Project Description;
- 4: Site Selection Process and Alternatives;
- 5: EIA Process and Methodology;
- 6: Scope and Consultation;
- 7: Forestry;
- 8: Landscape and Visual;
- 9: Ecology, Nature Conservation and Ornithology;
- 10: Cultural Heritage;
- 11: Traffic and Transport;
- 12: Hydrology, Hydrogeology, Geology and Soils;

- 13: Noise and Vibration;
- 14: Cumulative Effects;
- 15: Summary of Effects; and
- 16: Schedule of Environmental Mitigation.

5.8.5 **Volume 3** contains supporting figures referred to in **Volume 2** of the EIA Report. It also contains photomontage visualisations of the Proposed Development from a series of viewpoints that have been agreed with Aberdeenshire Council and NatureScot in accordance with the requirements of the Scoping Opinion, and prepared in accordance with relevant guidance from both Aberdeenshire Council and NatureScot.

5.8.6 **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 an Habitats Regulations Assessment (HRA) Screening Report where the Proposed Development crosses through, or within the vicinity of, sites of European nature conservation importance.

5.8.7 **Volume 5** comprises the confidential supporting appendices for **Volume 2** of the EIA Report.

5.9 Supporting Documents

5.9.1 A Planning Statement (including Design & Access Statement) is also included with the application as supporting information along with the Pre-Application Consultation (PAC) Report. 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 supporting documents include the Geo-Environmental Desk Study Report, Flood Risk Assessment and Construction Lighting Management Plan, as well as various other documents which are appended to this EIA Report.