Scottish & Southern Electricity Networks

Fanellan Hub 400 kV Substation and Converter Station

Environmental Impact Assessment Report

Volume 2 | EIA Report

Chapter 5 – EIA Process and Methodology

February 2025

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OTHER VOLUMES

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 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];
- Planning Circular 1/2017[2]; and
- IEMA's guidance documents on environmental assessment practice including Environmental Impact Assessment Guide: Delivering Quality Development.

5.2.3 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 within **Volume 2** of this EIA Report, have been the subject of consultation with statutory and non-statutory consultees through the publication of, and consultation on, the "Fanellan 400 kV Substation and Converter Station Environmental Impact Assessment: Scoping Report", published in June 2024 (see **Volume 4**: **Appendix 6.3: Scoping Report**).

5.2.4 The scope of the EIA Report has been informed by and is based on the Scoping Opinion adopted by THC [https://wam.highland.gov.uk/wam/applicationDetails.do?keyVal=SFDNRGIH0FM00&activeTab=summary], 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;

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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;
- 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.
- temporary – where the effect occurs for a limited period of time (e.g. the construction period) 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 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 the Proposed Development, 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) where effects caused by the combination of a number of effects from the Proposed Development and the Beauly-Denny OHL Diversion on a particular receptor, may collectively cause a more significant effect than individually (an intra project cumulative effect)) (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 technical chapters in **Volume 2** 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 should be defined as meaning the factors of the natural and built environment, including people and communities, which 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) 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.

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 in **Volume 2** of this EIA Report.

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 (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 **Volume 2** of 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 Unless stated otherwise in the technical chapters in **Volume 2** of this EIA Report, the significance of effects has been categorised as Major, Moderate, Minor or 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. 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.

5.4.11 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.

5.4.12 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 specific assessment methodologies or guidance is explained in technical chapters 8 to 16.

5.5 Cumulative Effects

5.5.1 In accordance with the EIA Regulations, the assessment has considered "cumulative effects". Cumulative effects have been assessed within each technical topic chapter and are discussed in **Volume 2**, **Chapter 17: Cumulative Effects**, 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 within the study area (taking into consideration effects at the Site including 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 including 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.

5.6 In-combination effects

5.6.1 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 17.1: Cumulative Developments**)[3]. 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 (December 2024), 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 developments has been frozen three months prior to publication of the EIA Report to allow sufficient time to compile the EIA Report. Each individual topic based technical chapter within Volume 2 of this EIA Report (chapters 8 to 16) consider the in-combination effects of the Proposed Development.

5.6.2 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 where applicable, in so far as they relate to potential in-combination cumulative effects, and it is considered very unlikely that significant effects would occur outside of this Cumulative Study Area. The exception being Landscape and Visual cumulative effects, where a distance of 10 km has been used as defined and explained in **Volume 2, Chapter 8: Landscape and Visual Impact**. However, this has not resulted in any additional development outwith the 5 km Cumulative Study Area being included in the Landscape and Visual cumulative assessment.

5.6.3 It should be noted that the SSEN Transmission OHL and UGC cumulative developments included with the cumulative assessment (**Table 5-2, ID 1 to 4**) were at an earlier stage (at the time of freezing the list of cumulative developments) than would normally be included within an EIA cumulative assessment (i.e. they were still appraising options and have still not formally been submitted as an application for s37 / planning). However, as these proposed developments are linked with the Proposed Development (as outlined in **Volume**

[3] Technical chapters have selected the developments to evaluate cumulative effects on their respective disciplines based on the proximity of the development to their study area, key receptors identified and the scale of the developments. Technical specialists have used professional judgement to justify which developments to include in the assessments, as such there may be some variance in developments presented for evaluation in each chapter.

2, Chapter 2, Section 2.2 Project Need), and considered as reasonably foreseeable by the Applicant, they have been included within the in-combination cumulative assessment.

5.6.4 The limitations of including these SSEN Transmission cumulative developments within the assessment at an earlier stage are that the final proposed alignments for the OHLs and UGCs have not been confirmed. As such detailed environmental assessment has not yet been completed of the proposed alignments, and the likely significant effects and proposed mitigation are also not fully known. Therefore, this assessment has been based on the currently available information for these developments.

5.6.5 It is expected that the Proposed Development will be considered as part of the cumulative in-combination assessments for these developments when final alignments have been established and submitted as part of their respective environmental assessments.

Table 5.2: Cumulative Developments

ID	Project Name	Ref No.	Planning Portal Link	Application Status	Distance / direction to the Fanellan Hub
SSENT projects (Inter Developments):					
1	**SSENT SLBB 400 kV OHL**	**24/04588/SCOP**	LINK	Status: unknown – submission in process	-
2	**SSENT BBNP 400 kV OHL**	**24/03064/SCOP**	LINK	Status: unknown – submission in process	-
3	**SSENT Western Isles HVDC UGC**	-	-	**Permitted Development**	-
4	**SSENT Aigas Substation - Construction of 132kV replacement substation**	**24/02830/FUL**	LINK	Status: under consideration	**GIS Substation – 1,591.7 m to the Southeast Converter Substation – 1,238.7 m to the Southeast**
5	**SSENT Erection of replacement Overhead Line –**	**22/03536/PNO**	LINK	Decision: Prior approval not required	**GIS Substation – 2,237.1 m to the Southwest Converter Substation – 1,807.7 m to the Southwest**
6	**Black Bridge replacement**	-	-	Subject to ongoing discussion with	**1.39km to the north east of the Proposed Development**

				The Highland Council	
3rd Party					
8	**Proposed energy storage facility**	**20/04849/PAN**	LINK	Decision: Case Closed	**GIS Substation – 2,061.3 m to the Southwest Converter Substation – 1,631.5 m to the Southwest**
9	**Erection and operation of battery energy storage system up to 49.9 MW, substations, switchgear and control buildings, landscaping, fencing and ancillary infrastructure –**	**24/01548/FUL (see also 23/03772/SCRE relating to the same project)**	LINK	Status: under consideration	**GIS Substation – 3,096.1 m to the Southwest Converter Substation – 2,742.1 m to the Southwest**
10	**Construction and operation of Battery Energy Storage System**	**24/02885/SCRE**	LINK	Decision: Screening Application – EIA not required	**GIS Substation – 4,102.5 m to the West Converter Substation – 3,790 m to the West**
Associated Development (Intra and Inter development):					
11	**Beauly-Denny OHL diversion and tie-ins**	**24/00834/SCRE**	LINK	Decision: Screening application - EIA not required. Voluntary EA being completed	**-**

5.7 Effect Interactions

5.7.1 The potential effect interactions as a result of the Proposed Development are considered within **Volume 2, Chapter 17** – **Cumulative Effects.** This Chapter considers effect interactions from the Proposed Development and the intra related development on common receptors.

5.7.2 Effects interactions are defined as the combined or synergistic effects caused by the combination of a number of effects from the Proposed Development and Intra developments on a particular receptor, or group of receptors, taking into consideration effects during construction (including the enabling works, site clearance,

demolitions and earthworks), and operational phases, which may collectively cause a more significant effect than individually. A theoretical example is the cumulative 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. This approach is taken to ensure that all elements of the project elements required to construct and operate the Proposed Development are evaluated together where relevant to a particular sensitive receptor.

5.8 Chapter 17 – Cumulative Effects

5.8.1 The following approach has been taken with respect to cumulative effects assessment within **Volume 2, Chapter 17: Cumulative Effects** of this EIA Report:

- A summary from each of the technical chapters of the combined effect of the Proposed Development in combination with relevant Cumulative projects (see Table 5-2) that are within the relevant study area[3] as explained in each of the technical chapters; and
- In addition, the Cumulative Effects Chapter 17 provides an assessment of the effects interactions for the Proposed Development and intra related development/Associated Development on common receptors.

5.9 Approach to Mitigation

5.9.1 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 (for example, the Construction Environment Management Plan (CEMP)) as well as incorporated into the initial design as embedded mitigation (e.g. landscaping has been considered in the design stages and will serve to mitigate impacts to the landscape and visual environment). 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 **Chapter 19: Schedule of Mitigation**.

5.9.2 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.