

Eastern Green Link 4: Scottish Onshore Scheme

Volume 2: Main Report

*Chapter 5: Environmental Impact Assessment
Methodology*

December 2025



Prepared for:

SP Energy Networks
320 St Vincent St
Glasgow, G2 5AD

Prepared by:

AECOM Limited
1 Tanfield
Edinburgh EH3 5DA
United Kingdom

Table of Contents

5. Environmental Impact Assessment Methodology	1
5.1 Introduction	1
5.2 About Environmental Impact Assessment	1
5.3 Legislative Requirements	1
5.4 Scope of the EIA	5
5.5 Approach to EIA	12
5.6 Level of Design Information	22
5.7 EIA Quality	23
5.8 Supporting Documents	23
5.9 References	23

Tables

Table 5-1 EIA Regulations – Schedule 4 Requirements.....	2
Table 5-2 Summary of Responses in Scoping Opinion	5
Table 5-3 Matters Scoped Out of EIA	8
Table 5-4 Cumulative Developments.....	15
Table 5-5 Sensitivity or Value Criteria.....	18
Table 5-6 Impact Magnitude Criteria.....	19
Table 5-7 Approach to the Assessment of Significance.....	20
Table 5-8 Significance Classifications	20

05.

**Environmental
Impact Assessment
Methodology**

5. Environmental Impact Assessment Methodology

5.1 Introduction

This chapter describes the general approach to and scope of the Environmental Impact Assessment (EIA) of the Scottish Onshore Scheme. It provides general information about the EIA process including the key steps taken in the approach to EIA and the terminology used. For a detailed description of topic-specific assessment methods reference should be made to the relevant chapter and/or appendix. For example, for a description of the approach to landscape and visual assessment of the Scottish Onshore Scheme, see **Chapter 6: Landscape and Visual Amenity (Volume 2: Main Report)** and **Appendix 6.1: LVIA Methodology**.

5.2 About Environmental Impact Assessment

EIA is the process of identifying, evaluating and mitigating the likely significant environmental effects of a proposed development such as the Scottish Onshore Scheme. Through the early identification and evaluation of the likely significant environmental effects of a proposed development, EIA enables appropriate mitigation to be identified and incorporated into the proposed development's design to mitigate its permanent or operational effects, or commitments to be made to environmentally sensitive construction methods and practices. Where appropriate it also enables the identification of monitoring during construction and/or operation to ensure that corrective actions can be taken to ensure the effectiveness of mitigation.

The EIA of the Scottish Onshore Scheme has been undertaken in parallel with the design process thereby maximising opportunities to mitigate likely significant effects as they have been identified. This approach ensures mitigation is embedded in the design of the Scottish Onshore Scheme and forms an integral component of it.

The results of the EIA also ensure that decision-makers, in this case Fife Council and statutory consultees as well as other interested parties, are aware of a Scottish Onshore Scheme's potential environmental effects and whether these are likely to be significant or not. The results of the EIA should be taken into account by the decision-makers as part of the determination of the applications.

5.3 Legislative Requirements

Need for EIA

The relevant EIA legislation with regard to applications for planning permission under the Town and Country Planning (Scotland) Act 1997 is the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 (the EIA Regulations). The EIA Regulations include two schedules of development: Schedule 1 lists development for which EIA is mandatory, and Schedule 2 lists development for which EIA may be required if it

is likely to have significant effects on the environment by virtue of factors such as its nature, size or location.

None of the elements which make up the Scottish Onshore Scheme or the wider Project (i.e. converter stations, underground cables and subsea cables) are identified in Schedule 1 or 2 of the EIA Regulations. As the Scottish Onshore Scheme is not classed as ‘Schedule 1 Development’, EIA is not mandatory. With regard to Schedule 2, while none of the elements which make up the Scottish Onshore Scheme fall under the descriptions of development in Category 3 Energy Industry, converter stations could broadly be interpreted as an industrial estate development under Category 10 Infrastructure Projects with them having some similar characteristics. EIA may be required for ‘Schedule 2 Development’ subject to certain thresholds being met or exceeded, and having regard to the criteria in Schedule 3 of the EIA Regulations. In such instances the requirement for EIA can be determined through submission of a screening opinion request to the relevant authorities (in this case Fife Council). Planning Circular 1: The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 makes clear that the basic test of the need for EIA in this particular case is the likelihood of significant effects on the environment. Therefore, development outside the criteria set out in Schedule 1 or 2 does not preclude significant effects arising, particularly where the development is in an environmentally sensitive location.

Considering both SP Transmission’s statutory duties as a transmission licence holder under the Electricity Act 1989 and the guidance contained in Circular 1/2017, SPEN considered it appropriate to undertake a proportionate level of environmental assessment and have therefore undertaken this EIA on a voluntary basis.

Content of an EIA Report

Regulation 5 and Schedule 4 of the EIA Regulations set out the information which an EIA Report must include. **Table 5-1: EIA Regulations – Schedule 4 Requirements** provides an overview of the requirements set out in Schedule 4 and where they are addressed within this EIAR.

Table 5-1 EIA Regulations – Schedule 4 Requirements

Legislative Requirement	Where it is contained within the EIAR
1. A description of the development, including in particular: <ul style="list-style-type: none"> (a) a description of the location of the development; (b) a description of the physical characteristics of the whole development, including, where relevant, requisite demolition works, and the land-use requirements during the construction and operational phases; (c) a description of the main characteristics of the operational phase of the development (in particular any production process), for instance, energy demand and energy used, nature and quantity of the materials and natural resources (including water, land, soil and biodiversity) used; 	A description of the Scottish Onshore Scheme is contained in Chapter 2: Project Description of the EIAR.

Legislative Requirement	Where it is contained within the EIAR
<p>(d) an estimate, by type and quantity, of expected residues and emissions (such as water, air, soil and subsoil pollution, noise, vibration, light, heat, radiation) and quantities and types of waste produced during the construction and operation phases.</p>	
<p>2. A description of the reasonable alternatives (for example in terms of development design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.</p>	<p>A description of the alternative sites considered as well as the reasons for selecting the proposed site with reference to environmental, technical and economic factors is set out in Chapters 2: Project Description and 3: Site Selection and Routeing of the EIAR.</p>
<p>3. A description of the relevant aspects of the current state of the environment (the “baseline scenario”) and an outline of the likely evolution thereof without implementation of the development as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of relevant information and scientific knowledge.</p>	<p>A description of the current baseline as well as the ‘future baseline’ in the absence of the Scottish Onshore Scheme is contained in the technical assessments in Chapters 6-13 of the EIAR.</p>
<p>4. A description of the factors specified in regulation 4(3) likely to be significantly affected by the development: population, human health, biodiversity (for example fauna and flora), land (for example land take), soil (for example organic matter, erosion, compaction, sealing), water (for example hydromorphological changes, quantity and quality), air, climate (for example greenhouse gas emissions, impacts relevant to adaptation), material assets, cultural heritage, including architectural and archaeological aspects, and landscape.</p>	<p>The results of baseline studies and the environmental factors likely to be significantly affected by the Scottish Onshore Scheme (referred to as receptors) have been identified and are reported in Chapters 6-13 of the EIAR.</p>
<p>5. A description of the likely significant effects of the development on the environment resulting from, inter alia:</p> <ul style="list-style-type: none"> (a) the construction and existence of the development, including, where relevant, demolition works; (b) the use of natural resources, in particular land, soil, water and biodiversity, considering as far as possible the sustainable availability of these resources; (c) the emission of pollutants, noise, vibration, light, heat and radiation, the creation of nuisances, and the disposal and recovery of waste; (d) the risks to human health, cultural heritage or the environment (for example due to accidents or disasters); 	<p>The likely significant effects resulting from the Scottish Onshore Scheme are assessed and reported in Chapters 6-13 of the EIAR.</p>

Legislative Requirement	Where it is contained within the EIAR
<p>(e) the cumulation of effects with other existing and / or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources;</p> <p>(f) the impact of the project on climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the project to climate change;</p> <p>(g) the technologies and the substances used.</p> <p>The description of the likely significant effects on the factors specified in regulation 4(3) should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the development. This description should take into account the environmental protection objectives established at Union level (as they had effect immediately before IP completion day) or United Kingdom level which are relevant to the project including in particular those established under the law of the United Kingdom that implemented Council Directive 92/43/EEC and Directive 2009/147/EC.</p>	
<p>6. A description of the forecasting methods or evidence, used to identify and assess the significant effects on the environment, including details of difficulties (for example technical deficiencies or lack of knowledge) encountered compiling the required information and the main uncertainties involved.</p>	<p>Relevant assessment methods as well as any assumptions or limitations are set out in in Chapters 6-13 of the EIAR.</p>
<p>7. A description of the measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment and, where appropriate, of any proposed monitoring arrangements (for example the preparation of a post-project analysis). That description should explain the extent to which significant adverse effects on the environment are avoided, prevented, reduced or offset, and should cover both the construction and operational phases.</p>	<p>Embedded mitigation measures are outlined in Chapter 2: Project Description of the EIAR which contains a description of the Scottish Onshore Scheme. Additional mitigation measures are identified in Chapters 6-13 of the EIAR. The mitigation measures are also summarised in Chapter 15: Summary and Conclusions.</p>
<p>8. A description of the expected significant adverse effects of the development on the environment deriving from the vulnerability of the development to risks of major accidents and / or disasters which are relevant to the project concerned. Relevant information available and obtained through risk assessments pursuant to assimilated law such as any law that</p>	<p>The Scottish Onshore Scheme is not expected to result in significant adverse effects as a result of vulnerability to major accidents or disasters.</p>

Legislative Requirement	Where it is contained within the EIAR
<p>implemented Directive 2012/18/EU of the European Parliament and of the Council or Council Directive 2009/71/Euratom or relevant assessments may be used for this purpose provided that the requirements of any law that implemented the Directive are met. Where appropriate, this description should include measures envisaged to prevent or mitigate the significant adverse effects of such events on the environment and details of the preparedness for and proposed response to such emergencies.</p>	
<p>9. A non-technical summary of the information provided under paragraphs 1 to 8.</p>	<p>A separate non-technical summary (NTS) that sets out the key findings of the EIA is available as Volume 1 of this EIAR.</p>
<p>10. A reference list detailing the sources used for the descriptions and assessments included in the EIA report.</p>	<p>Where relevant, reference lists are provided at the end of each EIAR chapter.</p>

5.4 Scope of the EIA

A scoping opinion was requested from Fife Council in December 2024 and received February 2025. In reaching its opinion Fife Council is required to consult with the relevant consultees. The scoping opinion request set out the proposed scope of the EIA, in particular those aspects of the environment in which likely significant environmental effects would potentially occur, and which were therefore proposed to be scoped into the EIA. It also set out those aspects of the environment in which significant environmental effects were considered unlikely and therefore proposed to be scoped out of the EIA.

The scoping opinion provided by Fife Council, as well as advice provided by those bodies with whom they consulted, are summarised below in **Table 5-2 Summary of Responses in Scoping Opinion**. This also sets out where the points raised have been addressed within the EIAR or, where relevant, in other reports accompanying the planning application. A copy of the Scoping Opinion is provided in **Volume 4: Appendices, Appendix 4.1: Scoping Opinion**

Table 5-2 Summary of Responses in Scoping Opinion

Consultee	Summary of Response	How it has been addressed
<p>Fife Council</p>	<p>Set out the aspects which should be scoped into the EIA and those which could be scoped out. Fife Council also provided comments with regard to a range of topic specific matters including:</p> <ul style="list-style-type: none"> Requested that the EIAR contain high level narrative on the likely impacts of decommissioning should it be required. 	<ul style="list-style-type: none"> Chapter 2: Project Description sets out the approach to decommissioning Chapter 6: Landscape and Visual Amenity and Chapter 9:

Consultee	Summary of Response	How it has been addressed
	<ul style="list-style-type: none"> The Landscape and Visual chapter should be prepared in line with the recommended guidelines, key viewpoints for ZTV mapping should be agreed with Fife Council, photomontages are to be provided for all viewpoints, the Design and Access Statement (DAS) should be discussed with planning officers prior to submission and any Built Heritage assets potentially affected should be included in the assessment. Natural Heritage Specialist noted that the overall approach to ecological assessment is deemed appropriately considered. Where suitable habitats for red squirrel etc are unavoidable a pre-works survey should be conducted. Regarding Water Environment and Flood Risk, the Flood Risk Assessment should consider future impact of climate change, reflect national policy change on 'flood risk areas' and accord with NPF4 (Policy 22). The planning application should comply with Fife Council's Design Criteria Guidance on Flooding and Surface Water Management Plan Requirements (2022), adequate space on site for SuDs should be considered if necessary, as should pollution of watercourses during construction and operation. Run-off from high pollution areas should be minimised. Built Heritage Specialist notes that potential built non-designated historic environment assets (NDHEAs) and their setting have been overlooked in the scoping and proposed methodology – it is expected that these would be included in the EIAR. Assessments should follow the HES guidance on setting, and attention is drawn to NPF4 Policy 33 which requires the safeguarding of minerals which are workable and of conservation value e.g. sands, limestones and other finite materials. Fife Council Archaeologist requests that the scope of the cultural heritage impact assessment is widened to include buried archaeology in the development corridor and a strategy to mitigate impact on unrecorded archaeological deposits. Recommends liaising with the council prior to starting noise impact assessment, that a noise report accompanies the planning application, 	<p>Cultural Heritage and associated appendices set out the methods, approach and assessment for the EIAR. A DAS has been submitted as part of the Application.</p> <ul style="list-style-type: none"> Chapter 7: Ecology and Nature Conservation sets out the scope, methods, assessment and mitigation in relation to habitats and species. Chapter 8: Water Environment and Flood Risk sets out the scope, methods, assessment and mitigation in relation to the water environment and flood risk. Chapter 9: Cultural Heritage sets out the scope, methods, assessment and mitigation in relation to built historic environment assets and their setting. Chapter 11: Noise sets out the scope, methods, assessment and mitigation in relation to noise, with the locations of the noise monitoring agreed with Fife Council Environmental Health Officer prior to surveys being undertaken. Chapter 12: Geology and Ground Conditions sets out the scope, methods, assessment and mitigation in relation to

Consultee	Summary of Response	How it has been addressed
	<p>the Association of Noise Consultants is contacted to inform the noise survey and that cumulative effects are considered alongside neighbouring existing land uses.</p> <ul style="list-style-type: none"> Land and Air Quality (LAQ) team requests that contamination issues are scoped into the Geology and Ground Conditions chapter. Reports should be prepared in accordance with CLR11 and PAN 33 or subsequent revisions. A draft Schedule of Mitigation and contaminated land site specific risk assessment should be produced where required. Requests that the list of cumulative developments is as up to date as possible when the relevant EIAR chapter is written. 	<p>geology and ground conditions. Appendix 15.1: Mitigation Register includes mitigation identified for the Scottish Onshore Scheme.</p> <ul style="list-style-type: none"> Table 5-4 Cumulative Developments within Section 5.5 Approach to EIA, includes the list of cumulative developments considered as part of the EIA with the search finalised 31st July 2025. Chapter 14: Cumulative and In-Combination Effects includes the cumulative assessments.
<p>NatureScot (NS)</p>	<p>Indicated that NS has provided advice to the Marine Directorate for the Marine Scheme.</p> <p>Provided further comment relating to Statutory Designated Sites including:</p> <ul style="list-style-type: none"> NS supports the intention to undertake a Habitats Regulations Appraisal (HRA) to establish potential impacts on adjacent Special Protection Areas (SPA). Suggests construction works take place outwith wintering season to mitigate impacts on SPAs. Notes that if non-destructive techniques are used during construction or maintenance then impacts to geological features are unlikely. Supports the intention to incorporate an Ecological Impact Assessment (EclA) with the EIA to consider potential impacts on Camilla Loch, Loch Leven and Holl Meadows SSSIs. Notes proximity of seal haul-out site at Kinghorn Rocks which may require seasonal working restrictions. Agrees with the list of excluded surveys. Supports development of a Construction Environment Management Plan (CEMP). 	<ul style="list-style-type: none"> Appendix 7.6: Habitat Regulations Assessment includes the HRA on SPAs. Chapter 7: Ecology and Nature Conservation sets out the scope, methods, assessment and mitigation in relation to habitats and species.

Consultee	Summary of Response	How it has been addressed
Scottish Environment Protection Agency (SEPA)	Indicated that the EIAR should include scale drawings of sensitivities (e.g. peat depth, peat condition, Groundwater Dependent Terrestrial Ecosystems (GWDTE), proximity to watercourses, overlain with the Scottish Onshore Scheme).	<ul style="list-style-type: none"> Chapter 8: Water Environment and Flood Risk, Chapter 12: Geology and Ground Conditions and Chapter 7: Ecology and Nature Conservation include information on peat, GWDTE and watercourses relevant to the EIAR.
Historic Environment Scotland (HES)	Noted that HES is content with the proposed scope of assessment. No further comments than recommending referring to its EIA Handbook for best practice.	<ul style="list-style-type: none"> Chapter 9: Cultural Heritage sets out the scope, methods, assessment and mitigation in relation to built historic environment assets and their setting.

Matters Scoped Out of EIA

With regard to the technical assessments, a summary of the elements that have been scoped out of the EIAR are listed in **Table 5-3 Matters Scoped Out of EIA**.

Table 5-3 Matters Scoped Out of EIA

Environmental Topic	Element Scoped Out	Reasoning
Landscape and Visual Amenity	<p>Landscape receptors: Lomond Hills Local Landscape Area, Raith Park And Beveridge Park Garden and Designed Landscapes (GDL), LCT 184 - Foothills Fife</p> <p>Operational phase effects associated with the underground HVDC / AC cable corridors</p>	<p>Unlikely for significant adverse effects on the qualities/ key characteristics</p> <p>Effects are temporary and reversible for the cable corridors</p> <p>Full details within Table 6-4: Landscape Assessment Scope within Chapter 6: Landscape and Visual Amenity</p>
Ecology and Nature Conservation	Inchkeith and Inchmickery and Cow & Calves Seal Haul-out Sites, Camilla Loch SSSI, Local Wildlife Sites, Non-	Unlikely for significant adverse effects due to distance/embedded mitigation/lack of connectivity/lack of suitable habitat/presence unlikely.

Environmental Topic	Element Scoped Out	Reasoning
	<p>groundwater dependent ‘Important’ habitats outside of the Site or that would be crossed by underground horizontal direct drilling (HDD), common habitats, watercourses, and the following species: Beaver, water vole, pine marten, red squirrel, brown hare, hedgehog, wildcat, mountain hare, breeding birds, non-breeding birds not associated with designated sites, great crested newt, common reptiles and amphibians, terrestrial invertebrates, grey squirrel, American mink, orange-tipped sea squirt and non-native plants Signal crayfish.</p>	<p>Full details within Table 7-10: Ecological and ornithological Features scoped out of further assessment within Chapter 7: Ecology and Nature Conservation.</p>
<p>Water Environment and Flood Risk</p>	<p>Camilla Loch, Loch Gelly and Unnamed Lochs and Lochty Burn</p> <p>Coastal Flooding</p>	<p>Ustream of the proposed works/no direct flow pathways to the water feature. Full details can be found within Table 8-14: Scoping Decisions of Water Features within Chapter 8: Water Environment and Flood Risk.</p> <p>The proposed cable route, haul road and Converter Station fall outside of the coastal flood extent in both the present day and future climate change (2080’s) scenarios.</p>
<p>Cultural Heritage</p>	<p>Scheduled Monument of Inchkeith Fort (SM3838), various heritage assets, Kinghorn Conservation Area and various listed buildings.</p>	<p>Distance from the Scottish Onshore Scheme/assets not visible/any above ground remains, should they exist, obscured from sight by dense vegetation and modern development/no capacity to result in an impact to the asset’s heritage value/no intervisibility between the Scottish Onshore Scheme and conservation area or listed buildings</p> <p>Full details are within Chapter 9: Cultural Heritage.</p>
<p>Access, Traffic & Transport</p>	<p>Hazardous loads and operational assessment</p>	<p>Of the categories included in the 2023 IEMA Guidelines it is proposed only Hazardous Loads are scoped out. It is considered unlikely there will be material construction traffic generated whose loads</p>

Environmental Topic	Element Scoped Out	Reasoning
		<p>would fall within the current classifications for carriage of dangerous goods (Class 1-9). An operational assessment is also scoped out due to the limited traffic associated with operation of the Scottish Onshore Scheme.</p>
<p>Noise and Vibration</p>	<p>Baseline vibration survey Non-residential sensitive receptors Operational noise and vibration of the AC and DC cable routes</p>	<p>It is assumed that there are no existing sources of vibration and therefore a baseline vibration survey is scoped out.</p> <p>The operational noise assessment will be limited to the converter station, given no likely adverse noise from the AC or DC cable routes. No non-residential sensitive receptors have been identified that would be significantly affected by construction or operational activities within the Application boundary of the Scottish Onshore Scheme. Therefore, non-residential sensitive receptors are scoped out of the assessment on this basis.</p>
<p>Geology & Ground Conditions</p>	<p>Radon Invertiel Quarry SSSI & GCR</p>	<p>The Scottish Onshore Scheme is located within an area where less than 1% of homes are above the action level for radon gas. As a result, no radon protection measures are required.</p> <p>Invertiel Quarry SSSI & GCR is approximately 1 km north/northeast of the Scottish Onshore Scheme (proposed underground DC cable route). Due to the distance from the Scottish Onshore Scheme this site would not be significantly affected.</p>
<p>Climate</p>	<p>Climate change resilience (CCRA) and in-combination climate change impact (ICCI)</p>	<p>The climate assessment has scoped out climate change resilience (CCRA) and in-combination climate change impact (ICCI) as there are no climate change parameters included given the construction period is in the short term (4-5 years), climate change is not expected to result in significant changes. These risks have been considered by the Applicant in its Climate Resilience Strategy 20 which will apply to the design of the Scottish Onshore Scheme.</p>

Environmental Topic	Element Scoped Out	Reasoning
Air Quality	Air quality assessment	Given the temporary nature of impacts at any one location due to the transient nature of the construction works, the fact that the limited number of receptors will only be affected when an active works area is within 250 m of their property, and the fact that the CEMP (Construction Environmental Management Plan) will include a comprehensive list of best practice dust control measures, it was determined that the air quality impacts can be scoped out.
Waste	Materials and Waste assessment	The quantity of waste generated by the installation and operation of the cable route (which constitute the majority of the route) are anticipated to be minimal. Construction of the converter station may generate some waste material however it is anticipated that this can be managed through a Site Waste Management Plan (SWMP) and any associated Waste Management Licences, where appropriate, to minimise and reduce the amount of waste needing treatment and disposal. Generation of wastes produced during the operational phase will also be scoped out of the assessment because waste generated through maintenance activities would unlikely generate large volumes of waste requiring treatment or disposal.
Health and Wellbeing	Human Health assessment	This is addressed through the following chapters and therefore a standalone chapter on health and wellbeing is not deemed necessary: <ul style="list-style-type: none"> • Chapter 6: Landscape and Visual Amenity • Chapter 8: Water Environment and Flood Risk; • Chapter 10: Access, Traffic and Transport; • Chapter 11: Noise • Chapter 13: Climate
Socio-economics,	Socio-economics, Recreation and Tourism assessment	Land take at the proposed converter station and landfall site will not lead to any

Environmental Topic	Element Scoped Out	Reasoning
Recreation and Tourism		potential impacts in terms of recreational routes and public rights of way or in terms of community severance and as such, these impacts have been scoped out. Land take at the proposed converter station and landfall sites will not lead to any potential impacts on development during operation, and as such, this issue has also been scoped out.
Decommissioning	Decommissioning Assessment	Decommissioning impacts are likely to be similar to or lesser than those of construction. In addition, given the approximated operational lifetime of 40 years a decision would be made in the future whether to refurbish the Scottish Onshore Scheme or to decommission. A Decommissioning Plan will be prepared and planning permission obtained, if required, in accordance with the relevant legislation in place at the time.

5.5 Approach to EIA

Key stages in EIA

The key stages in the EIA are:

- **Scoping studies:** Scoping was the first step in the EIA process. Regulation 17 allows developers to request a scoping opinion as to the content of an EIA Report. A scoping opinion was requested from Fife Council to ensure that the EIA addressed their and other consultees' requirements. Subsequent chapters set out comments received in scoping and how they have been addressed in undertaking the EIA.
- **Baseline studies and consultation:** For each environmental aspect, these have comprised a combination of desk-based studies and field surveys to establish an understanding of the existing environmental conditions ('the baseline') within a specific study area relevant to each discipline and therefore ensure an accurate assessment of the likely significant effects of the Scottish Onshore Scheme. The scope of baseline studies has been agreed with relevant consultees as part of scoping and, where appropriate, additional consultation.
- **Impact prediction and identification of mitigation:** The potential environmental impacts of the Scottish Onshore Scheme (both beneficial and adverse) have been predicted and evaluated using a range of specialist methods which are described in subsequent chapters. Through iterative assessment, potential impacts have been predicted and opportunities to mitigate them identified, with the aim of preventing or reducing impacts as much as possible. Where possible mitigation measures have been incorporated into the design of the Scottish Onshore Scheme (embedded mitigation) such that they inform

its detailed design and / or how it shall be constructed. Additional mitigation is incorporated where further mitigation beyond embedded mitigation is necessary.

- Identification of likely significant effects: As stated above, the purpose of the EIA is to determine the likely significant effects of the Scottish Onshore Scheme. A detailed description of the general approach to assessing impacts is contained in this chapter, with detailed approaches tailored to individual technical assessments following topic-specific guidance contained in subsequent chapters. The EIAR identifies the significance of the likely effects, identifies any additional mitigation and then the significance of the likely residual effects of the Scottish Onshore Scheme i.e. those which remain, taking into account mitigation.

Characterisation of the Baseline Environment

In order to assess the likely significant effects resulting from the Scottish Onshore Scheme it is necessary to first establish the environmental conditions that currently exist at or close to the Scottish Onshore Scheme (referred to as 'the baseline') as well as the likely evolution of the baseline without the Scottish Onshore Scheme (referred to as 'the future baseline').

An understanding of the baseline environment for each environmental topic has been established through a range of activities including field surveys to make observations and/or record data, desk-based studies including reviews of relevant documentation and literature as well as stakeholder consultation. Subsequent chapters of this EIAR set out the baseline studies which have been undertaken and the sources of information which have been consulted in undertaking the EIA.

Types of Effects

Direct Effects and Indirect Effects

Direct effects are those where there is a physical connection between the Scottish Onshore Scheme and the receptor (for example, direct impacts on a sensitive ecological receptor resulting from habitat removal), whereas indirect effects require some additional pathway for the effect to arise (for example, impacts on surface water quality on other watercourses within the catchment from spillage risk).

Temporary Effects

Temporary effects mainly occur during the construction phase only and are typically short term. This includes effects resulting from the construction of the Scottish Onshore Scheme such as construction traffic, noise and vibration from construction plant and machinery, dust generation and site runoff, as well as temporary effects resulting from requirements for temporary access tracks or construction compounds.

Longer Term, Operational and Permanent Effects

Longer term, operational and permanent effects are those which occur as a result of the Scottish Onshore Scheme, such as its land take or as a result of its operation. This includes effects which may begin during construction and endure for the lifetime of the Scottish Onshore Scheme, or effects which occur for a period of time following completion of construction or during operation only.

Decommissioning Effects

Decommissioning effects are those which occur as a result of the removal of the Scottish Onshore Scheme at the end of its operational life. Once operational EGL4 will form an integral part of the electricity transmission network. The anticipated operational life of the converter station is approximately 40 years. It is likely that after this period refurbishment and plant replacement will extend the life of the converter station rather than decommissioning. However, in the event that the Scottish Onshore Scheme ceases to be required then it could be decommissioned. The process of decommissioning will be similar to construction meaning the likely significant environmental effects will be comparable. Further detail can be found in **Chapter 2: Project Description (Volume 2: Main Report)**. As a result, decommissioning has not been assessed in the EIA Report.

Residual Effects

Residual effects are those effects that remain having taken account of additional mitigation measures. As noted above, the approach taken to the EIA of the Scottish Onshore Scheme means that much of the mitigation is an inherent part of the design (design measures) and how it will be constructed (construction measures). As a result, the significance of some residual environmental effects may be the same as the significance of the likely environmental effects. It should be noted that this is not because they have not been mitigated, but rather that by incorporating mitigation into the design and construction of the Scottish Onshore Scheme from the outset, effects have been mitigated as far as possible. In subsequent chapters, this means that there may be more substantive reporting of the likely effects as opposed to the likely residual effects.

Cumulative Effects

For the purpose of the EIA, cumulative effects have been defined under two categories; intra-project effects and inter-project effects:

- **Intra-Project Effects:** The combined effects arising as a result of the Scottish Onshore Scheme upon a single receptor or resource. An example would be where a local resident is affected by dust, noise and a loss of visual amenity during the construction of the substation, with the result being a greater nuisance than each individual effect alone.
- **Inter-Project Effects:** The combined effects of the Scottish Onshore Scheme with other relevant developments which may not, on an individual basis result in likely significant effects but, together (i.e. cumulatively), have a likely significant effect. This includes effects at construction and operational phases. These developments are listed in **Table 5-4 Cumulative Developments**. The assessment of intra-project and inter-project effects arising from the Scottish Onshore Scheme is described in **Chapter 14: Cumulative and In-combination Effects (Volume 2: Main Report)**.

Table 5-4 Cumulative Developments

Development Name	Reference	Development Phase	Relationship to the Scottish Onshore Scheme
Glenniston Solar Project	23/02598/FU LL	Application (Approved)	Borders the Application Boundary at Powgild and Glenniston. Approximately 4.2 km south of the Converter Station.
Balbie Energy Crop and Landfill Restoration project	24/01380/EIA	Application (Pending)	Approximately 1 km southwest of the Application Boundary, south of Auchtertool. Approximately 9 km south of the Converter Station.
Westfield substation extension	24/01927/SC O	Pre-application (Scoping)	The existing 275kV Westfield Substation (which by separate application will be extended to 400kV) is located immediately to the west of the Scottish Onshore Scheme converter station. EGL4 will connect to the transmission network at the new 400 kV Westfield Substation via the AC cable from the converter station.
Mossmorran Substation	24/01928/SC O	Pre-application (Scoping)	Approximately 2 km west of the Application Boundary at Auchtertool and approximately 6 km south of the Converter Station.
The Avenue Residential development Lochgelly	24/01809/SC R	Pre-application (Screening – considered non-EIA)	Located approximately 1 km west of the Application Boundary at Lochgelly and approximately 4.5 km south of the Converter Station.
Glenniston Battery Storage Facility	22/02323/FU LL	Application (Approved)	Forms part of the Glenniston Solar Project, directly west of the Application Boundary. Approximately 4.2 km south of the Converter Station.
Solar Farm and Battery Storage Development at Land at Strathruddie, Kinglassie, Fife	21/03531/FU LL	Application (Approved)	Located approximately 800 m east of the Application Boundary, and approximately 1 km east of the Converter Station.

Development Name	Reference	Development Phase	Relationship to the Scottish Onshore Scheme
Erection of a house	24/01095/AR C	Application (Approved)	Located immediately next to the Application Boundary at Muirhead West Cottage. Approximately 4.3 km south of the Converter Station.
Kirklands Farm Battery Energy Storage System (BESS)	23/02776/CO N	Pre-application (Screening – considered non-EIA)	Approximately 1.4 km northwest of the Application Boundary and 1.5 km northwest of the Converter Station.
Mossmorran BESS	24/01866/CO N	Application (Approved)	Approximately 200 m southwest of the Application Boundary at Auchtertool. Approximately 6 km south of the Converter Station
Muirhead Cardenden overhead power line	23/01697/EP N	Application (Approved)	Located immediately south of the Application Boundary at Muirhead and approximately 4.3 km south of the Converter Station.
Former Fife Power Station BESS	25/00983/CO N	Pre-application (Consultation)	Approximately 230 m northwest of the Application Boundary to the east of Ballingry and approximately 430 m northwest of the Converter Station.
Glenniston BESS	25/00409/CO N ECU0000605 0	Pre-application (Screening)	Located immediately to the west of the Application Boundary at Little Glenniston Farm and approximately 5.4 km south of the Converter Station.
Glenniston 2 BESS	25/00615/CO N ECU0000608 1	Pre-application (Screening)	Located immediately to the west of the Application Boundary, approximately 300 m northwest of Powguld Farm. Approximately 4.2 km south of the Converter Station.
Erection of 4 no. dwellinghouses, and associated works	25/01221/FU LL	Application (Pending)	Located immediately south of the Application Boundary on the south side of the A92 and approximately 4.3 km south of the Converter Station

Development Name	Reference	Development Phase	Relationship to the Scottish Onshore Scheme
Data centre complex of data halls, cooling plant, electricity substations, emergency plant, gatehouse, access roads, parking, fencing, pond and associated landscaping and infrastructure	25/00552/PA N	Pre-application (Consultation)	Located immediately west of the Application Boundary at the access track between Camilla Loch to the north and Auchtertool to the south. Approximately 6.2 km south of the Converter Station.
Tealing to Kincardine upgrade project - three spans of overhead line supported by two temporary masts between existing towers	24/03346/NE A	Application (Approved)	Forms part of the Mossmorran Substation upgrade, approximately 200 m southwest of the Application Boundary at Auchtertool. Approximately 6 km south of the Converter Station.
Proposal of Application Notice for residential development including commercial, formation of accesses, landscaping, open space, drainage and other associated infrastructure	25/01519/PA N	Pre-application (Registered)	Located approximately 460 m to the east of the Application Boundary. Approximately 3.5 km southeast of the Converter Station.
Westfield BESS	ECU0000621 3	Pre-application (Screening)	Located approximately 400 m north of the Application Boundary and the Converter Station, on the other side of the B9097 road.
Residential development south of Hall Street, Lochgelly	25/01404/FU LL	Pre-application (Registered)	Located approximately 1.3 km west of the Application Boundary within Lochgelly.

This search was conducted on the 31st of July 2025 via the Energy Consents Unit (ECU) and Fife Council Planning Portal. The list was frozen from this date to allow sufficient time to compile the EIAR. A 2 km study area was applied to the search, which considered other development where planning applications have been submitted but not yet determined, or where applications have been granted but construction has not yet commenced at the time the search was conducted

Identification and Assessment of Likely Significant Effects

There is no statutory definition of what constitutes a ‘significant’ effect within the EIA Regulations. However, the determination of the significance of effects is important to

informing the decision-making process. The process typically involves consideration of two aspects of a potential effect, namely the sensitivity and/or value of the receptor or resource being affected, and the magnitude of the impact occurring on the receptor/resource.

The significance of the residual effects (those that are predicted to remain after the mitigation measures have been implemented) can be determined by a range of factors including:

- Scale of impact
- Duration of impact (e.g. temporary or permanent)
- Nature of effect (e.g. direct or indirect, adverse or beneficial)
- Sensitivity of the receptor

The following subsections provide an overview of the general approach to EIA. However, for each environmental aspect a topic specific method has been used and is described in later chapters.

Describing the Sensitivity, Value or Importance of Receptors

The sensitivity of the baseline conditions is assessed according to the relative importance of existing environmental features on or near to the site of the Scottish Onshore Scheme, or by the sensitivity of receptors which could potentially be affected by it. Criteria for the determination of sensitivity or importance or value of receptors are established based on approved guidance, legislation, statutory designation and / or professional judgement.

The criteria in **Table 5-5 Sensitivity or Value Criteria** provide a general definition for determining the sensitivity, value or importance of receptors.

Table 5-5 Sensitivity or Value Criteria

Sensitivity or Value	Description
Very high	The receptor has little or no capacity to absorb change without fundamentally altering its present character, is of very high environmental value, or of international importance.
High	The receptor has low capacity to absorb change without fundamentally altering its present character, is of high environmental value, or of national importance.
Medium	The receptor has moderate capacity to absorb change without significantly altering its present character, has some environmental value, or is of regional importance.
Low	The receptor is tolerant of change without detriment to its character, is of low environmental value, or of local importance.
Negligible	The receptor is resistant to change and is of little environmental value or importance.

Describing the Magnitude of Impacts

The magnitude of potential impacts on environmental baseline conditions is identified through consideration of the Scottish Onshore Scheme, taking into account the scale or degree of change from the existing baseline as a result of the effect. Consideration is given to the duration and reversibility of the effect as well as consideration of relevant legislative or policy standards or guidelines.

General criteria for defining the magnitude of an impact are set out in **Table 5-6 Impact Magnitude Criteria**. Key factors influencing this include:

- The physical or geographical scale of the impact (note that this is relative to the scale of the receptor or resource affected).
- The duration of the impact – will it be short term, lasting for a few days or weeks, or long term, lasting for a number of years.
- The frequency of the impact – will it occur hourly, daily, monthly or will it be permanent, lasting for the duration of the development.
- The reversibility of the impact – can it be reversed following completion of construction or decommissioning of the development.

Table 5-6 Impact Magnitude Criteria

Magnitude	Description
High	<p>Adverse: Loss of resource and/or quality and integrity of resource; severe damage to key characteristics, features, or elements.</p> <p>Beneficial: Large scale or major improvement of resource, including extensive restoration or major improvement of attribute quality.</p>
Medium	<p>Adverse: Loss of resource, but not adversely affecting the integrity; partial loss of/damage to key characteristics, features or elements.</p> <p>Beneficial: Benefit to, or addition of, key characteristics, features or elements; improvement of attribute quality.</p>
Low	<p>Adverse: Some measurable change in attributes, quality or vulnerability; minor loss of, or alteration to, one (maybe more) key characteristics, features or elements.</p> <p>Beneficial: Minor benefit to, or in addition of, one (maybe more) key characteristics, features or elements; some beneficial impact on attribute or a reduced risk or negative impact occurring.</p>
Negligible	<p>Adverse: Very minor loss of detrimental alteration to one or more characteristics, features or elements.</p> <p>Beneficial: Very minor benefit to or positive addition of one or more characteristics, features or elements.</p>

Describing the Significance of Effects

The general approach adopted for evaluating the significance of effects is outlined in **Table 5-7 Approach to the Assessment of Significance**. A combination of the magnitude of the impact under consideration and the sensitivity of the receiving environment determines the significance of effect. For some specialist topics, additional categories have been added where a greater level of definition is required. It should be noted that this approach provides a general framework but should not be treated as a simple matrix; professional judgement is applied in all cases.

Table 5-7 Approach to the Assessment of Significance

Magnitude	Sensitivity or Value of Receptors				
	Very High	High	Medium	Low	Negligible
High	Major	Major	Moderate	Moderate	Minor
Medium	Major	Moderate	Moderate	Minor	Negligible
Low	Moderate	Moderate	Minor	Negligible	Negligible
Negligible	Minor	Minor	Negligible	Negligible	Negligible

The significance of the effects arising from the Scottish Onshore Scheme is reported using a seven-point scale, as set out in **Table 5-8 Significance Classifications**. Effects predicted as likely to be Negligible or Minor are considered to be 'Not Significant'. Effects assessed as Moderate or Major are considered to be 'Significant'.

Table 5-8 Significance Classifications

Classification	Description	Significant
Major (adverse or beneficial)	<p>A large and/or detrimental change to a valuable/sensitive receptor; likely or apparent exceeding of accepted (often legal) threshold or a major departure from national targets.</p> <p>A large and beneficial change, resulting in improvements to baseline conditions whereby previously poor conditions are replaced by compliance with accepted (often legal) thresholds or a major contribution is made to national targets.</p> <p>These are effects which may represent key factors in the decision-making process. Potentially associated with sites and features of national importance or likely to be important considerations at a regional or local scale. Major effects may relate to impacts on resources or</p>	Yes

Classification	Description	Significant
	features which are rare and cannot be relocated, or if lost, cannot be replaced.	
Moderate (adverse or beneficial)	<p>A medium scale change which, although not beyond an accepted (often legal) threshold, may still be considered to be generally unacceptable, unless balanced out by other significant positive benefits of the development. Likely to relate to a departure from relevant planning policy, rather than legal compliance.</p> <p>A positive moderate effect is a medium scale change that is significant in that the baseline conditions are improved to the extent that guideline targets are contributed to.</p> <p>These effects, if adverse, are likely to be important at a local or district scale and on their own could have a material influence on decision-making.</p>	Yes
Minor (adverse or beneficial)	<p>A small change that, whilst adverse, does not exceed accepted thresholds, legal or guideline standards. Unlikely to be a departure from planning policy.</p> <p>A small positive change, but not one that is likely to be a key factor in the overall balance of issues.</p> <p>These effects may be raised as local issues but are typically unlikely to be critical in the decision-making process.</p>	No
Negligible	<p>A very small change that is so small and/or unimportant that it is not a key factor in the overall balance of issues</p> <p>Effects which are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error, these effects are unlikely to influence decision making, irrespective of other effects.</p>	No

A significant adverse effect is not necessarily one that would make the Scottish Onshore Scheme unacceptable, nor is a significant beneficial effect necessarily one that would make it acceptable. The purpose of identifying the significant effects (adverse and beneficial) is to ensure that all parties, in particular decision makers, are aware of the likely environmental impacts (in particular those which are likely to be significant) of the Scottish Onshore Scheme and consider these alongside other material considerations in determining the application for planning permission.

In subsequent chapters of this EIAR the general criteria described above have been made more specific for each aspect of the environment based on relevant standards or guidelines.

A detailed explanation of the approach to assessing impacts and the specific criteria to be used for each aspect is set out in later chapters.

Approach to Mitigation

Some mitigation measures are embedded within the design of the Scottish Onshore Scheme, whilst others may require adherence to particular constraints on construction methods or mode of operation. The final assessment of residual significance will take into account the mitigation measures and constraints that have been incorporated into the Scottish Onshore Scheme. The likely effects taking account of mitigation are referred to as the likely residual effects.

A standard hierarchical approach to the development of mitigation measures has been followed with the aim of ‘designing out’ adverse effects as much as possible (avoiding, preventing or reducing adverse effects) as well as seeking opportunities to maximise or enhance beneficial effects. The EIA has largely been undertaken in parallel with the design of the Scottish Onshore Scheme providing opportunities to incorporate mitigation measures into its design or how it will be constructed.

The following approach has been used for developing and categorising mitigation:

- **Embedded measures:** These are measures which have been incorporated into the design of the Scottish Onshore Scheme such that they inform its detailed design and / or how it shall be constructed in order to reduce its environmental effects.
- **Control and Management measures:** These are measures typically relating to standard good practice and included within control and management plans such as the Construction Environmental Management Plan.
- **Additional measures:** These are additional topic and site-specific measures, over and above embedded measures, that have been applied to mitigate or offset any likely significant effects.
- **Compensation measures:** These are measures to be implemented in the event that a residual effect cannot be sufficiently mitigated. These measures are not considered within the assessment rather, where appropriate, identified after it.

The EIAR also identifies where it is considered appropriate to undertake monitoring as part of construction and/or operation of the Scottish Onshore Scheme. Monitoring provides a mechanism to take remedial action in the event that unforeseen significant effects occur, or mitigation is not effective.

5.6 Level of Design Information

An outline design for the Scottish Onshore Scheme has been developed for the planning application. It forms the basis of the description in Chapter 2 and the basis of assessment in **Chapters 6-13**. The design described in this EIAR is considered to present a realistic worst case scenario and thereby ensures that the assessment considers the realistic worst case in terms of likely significant environmental effects. Where appropriate, assessments set out specific parameters or assumptions related to the Scottish Onshore Scheme which have informed their assessment.

For the purposes of the assessment and with the design information available at the time of preparing this EIAR, the assessment includes areas of HDD however the construction method statement will confirm the exact trenchless crossing method and approach based on the detailed design.

5.7 EIA Quality

Regulation 5(5) of the TCP EIA Regulations requires developers to ensure that EIAR's are prepared by competent experts and accompanied by a statement outlining the relevant expertise or qualifications of such experts.

As noted in **Chapter 1 Introduction, Section 1.1 Introduction**, this EIAR has been prepared by AECOM. AECOM is a founding member of the Institute of Environmental Management and Assessment's (IEMA) Quality Mark scheme. This is a voluntary scheme, operated by IEMA, through which AECOM's EIA activity is reviewed including an annual independent review of EIAs undertaken. The Quality Mark demonstrates that AECOM's EIAs and wider EIA-related practices are independently rated and regularly monitored to high standards.

5.8 Supporting Documents

In addition to the to the EIAR, the planning application is accompanied by the other supporting reports including:

- Planning Statement;
- Design and Access Statement (DAS);
- Pre-Application Consultation Report (PAC); and
- Planning application drawings.

5.9 References

Scottish Government. (1997). Town and Country Planning Act (Scotland) 1997. Online. Available at: <https://www.legislation.gov.uk/ukpga/1997/8/contents>.

Scottish Government, 2017a. Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017. Online. Available at: <https://www.legislation.gov.uk/ssi/2017/102/contents>

Scottish Government, 2017b. Planning Circular 1: The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017. Online. Available at: