



TECHNICAL APPENDIX 6.1: SCOPING REPORT

Netherton Hub

Environmental Impact Assessment

Scoping Report

October 2023



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CONTENTS

GLOSSARY	4
EXECUTIVE SUMMARY	7
1 OVERVIEW	9
1.1 Introduction.....	9
1.2 Overview of the Proposed Development	9
1.3 The Regulations	9
1.4 Purpose of the EIA Scoping Report.....	10
1.5 Scoping Report Methodology.....	10
1.6 Consultation	11
2 DESCRIPTION OF THE PROPOSED DEVELOPMENT	13
2.1 Introduction.....	13
2.2 Description of the Proposed Development	13
2.3 Proposed Development Components	13
2.4 Access during Construction	15
3 EIA APPROACH AND METHODOLOGY	17
3.1 Introduction.....	17
3.2 Structure of the EIA Report	17
3.3 Mitigation	18
3.4 Supporting Documents.....	18
3.5 Scoping Methodology.....	18
4 PLANNING POLICY	19
4.1 National Policy.....	19
4.2 Local Planning Policy	21
5 LANDSCAPE AND VISUAL IMPACT	23
5.1 Introduction.....	23
5.2 Baseline Conditions	23
5.3 Potentially Significant Effects	24
5.4 Mitigation	25
5.5 Proposed Scope of Assessment.....	25
5.6 Issues to be Scoped Out	27
5.7 Summary	28
6 ECOLOGY, NATURE CONSERVATION AND ORNITHOLOGY	29
6.1 Introduction.....	29
6.2 Baseline Conditions	29
6.3 Potentially Significant Effects	32
6.4 Mitigation	33
6.5 Proposed Scope of Assessment.....	34
6.6 Issues Scoped Out	34

6.7	Summary	36
7	CULTURAL HERITAGE	37
7.1	Introduction.....	37
7.2	Baseline Conditions	37
7.3	Potentially Significant Effects	38
7.4	Mitigation	38
7.5	Proposed Scope of Assessment.....	38
7.6	Issues Scoped Out	40
7.7	Summary	40
8	TRAFFIC AND TRANSPORT.....	41
8.1	Introduction.....	41
8.2	Baseline Conditions	41
8.3	Potentially Significant Effects	41
8.4	Mitigation	42
8.5	Proposed Scope of Assessment.....	42
8.6	Issues Scoped Out	43
9	HYDROLOGY, HYDROGEOLOGY, GEOLOGY AND SOILS	44
9.1	Introduction.....	44
9.2	Baseline	44
9.3	Potentially Significant Effects	46
9.4	Mitigation	46
9.5	Proposed Scope of Assessment.....	46
9.6	Issues Scoped Out	48
9.7	Summary	48
10	NOISE AND VIBRATION	49
10.1	Introduction.....	49
10.2	Baseline Conditions	49
10.3	Potentially Significant Effects	51
10.4	Mitigation	52
10.5	Proposed Scope of Assessment.....	53
10.6	Issues Scoped Out	55
10.7	Summary	55
11	LAND USE AND AGRICULTURE	56
11.1	Introduction.....	56
11.2	Baseline	56
11.3	Potential Effects	56
11.4	Mitigation	57
11.5	Proposed Scope of Assessment.....	57
11.6	Issues Scoped Out	58
11.7	Summary	58
12	TOPICS “SCOPED OUT”	59

13 NEXT STEPS 64

FIGURES

Figure 1.1 – Site Location Plan

Figure 1.2 – Environmental Constraints Plan

Figure 5.1 – Zone of Theoretical Visibility

Figure 5.2 – Viewpoint Locations Plan

Figure 6.1 – Habitats

Figure 11.1 – Land Capability for Agriculture

APPENDICES

Appendix 1.1 – SSEN Transmission’s Pathway to 2030 Projects

Glossary

Term	Definition
Ambient Noise	The all-encompassing noise level measured in LAeq,T (total equivalent noise level over measurement period). The Ambient Noise Level incorporates background sounds as well as the industrial source noise under consideration.
Amenity	The natural environment, cultural heritage, landscape and visual quality. Also includes the impact of SSEN Transmission's works on communities, such as the effects of noise and disturbance from construction activities.
Ancient Woodland Inventory (AWI)	A database of land that is currently wooded and has been continually wooded, at least since 1750.
Applicant	A person who makes a formal application for something, in this case, SSEN Transmission.
Biodiversity Net Gain (BNG)	A way to contribute to the recovery of nature while developing land. It is making sure the habitat for wildlife is in a better state than it was before development.
Biodiversity Units (BU)	A unit of account. Metrics assign all habitats a unit value according to their relative biodiversity value. The scores assigned to habitats vary between the different metrics.
British Geological Survey (BGS)	UK's main provider of objective and authoritative scientific data, information and knowledge to help society understand the Earth.
Consultation	The dynamic process of dialogue between individuals or groups, based on a genuine exchange of views and, normally, with the objective of influencing decisions, policies or programmes of action.
Direct Current (DC)	A form of electricity with a one directional flow of current.
Direct Current Switching Station (DCSS)	A site which allows the connection and routing of multiple DC circuits and operates at a single voltage.
Distribution Network Operator (DNO)	A licensed company that owns and operates the network of cables, transformers and towers that provide electricity.
Drinking Water Protected Area (DWPA)	DWPA's are where water is abstracted to provide water for human consumption and includes surface water (from rivers or reservoirs) and groundwater.
Engagement	The establishment of effective relationships with individuals or groups.
Environmental Impact Assessment (EIA)	A formal process set down in Town & Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 used to systematically identify, predict and assess the likely significant environmental impacts of a proposed project or development.
European Protected Species (EPS)	Species of plants and animals (other than birds) protected by law throughout the European Union.
Flood Risk Assessment (FRA)	Document that reviews the risk of flooding from a development.
Gas-insulated High-voltage Switchgear (GIS)	A switchgear device containing electrical devices immersed in gas to provide insulation.
Groundwater Dependant Terrestrial Ecosystem (GWDTE)	Groundwater Dependent Terrestrial Ecosystems (GWDTE) are wetlands which critically depend on groundwater flows or chemistries. They are safeguarded by the Water Framework Directive (WFD) and are sensitive to hydrological and ecological changes caused by developments.
High Voltage Direct Current (HVDC)	A direct current source with a voltage greater than 1000V.
Historic Environment Record (HER)	Sources of, and signposts to, information relating to landscapes, buildings, monuments, sites, places, areas and archaeological finds spanning more than 700,000

Term	Definition
	years. Based in mainly local authorities, they are used for planning and development control but also fulfil an educational role.
Historic Environment Scotland (HES)	Organisation responsible for investigating, caring for and promoting Scotland's historic environment.
Important Bird Area (IBA)	An area identified using an internationally agreed set of criteria as being globally important for the conservation of bird populations.
Land Capable of Agriculture (LCA)	The classification of land and its associated capability to support types of crops based on environmental and soil characteristics.
Landscape Character Type (LCT)	A landscape type that is characterised by its distinct, recognisable and consistent pattern of elements that makes one landscape different from another.
Local Development Plan (LDP)	LDP's are usually prepared by the Local Planning Authority and set out the proposals for future development and use of land in their area.
Marine Protection Area (MPA)	MPAs are areas of the ocean established to protect habitats, species, and processes essential for healthy, functioning marine ecosystems.
National Planning Framework 4 (NPF4)	The national spatial strategy for Scotland. It sets out the spatial principles, regional priorities, national developments and national planning policy. It replaces NPF3 and Scottish Planning Policy.
National Vegetation Classification (NVC)	A detailed classification, which assesses the full suite of vascular plant, bryophyte and macro-lichen species within a certain vegetation type.
Noise Sensitive Receptors (NSR)	Noise sensitive receptors are defined as receptors which are potentially sensitive to noise and vibration. Examples include dwellings, hospitals, schools, community facilities.
Ordnance Survey (OS)	Great Britain's national mapping agency.
Overhead line (OHL)	An electric line installed above ground, usually supported by lattice steel structures or poles.
Preferred Site Option	The Site Option that is the preferred choice during Stage 2 – Detailed Site Selection based on environmental, engineering and cost perspectives.
Prime agricultural land	Agricultural land identified as being Class 1, 2 or 3.1 in the land capability classification for agriculture developed by Macaulay Land Use Research Institute (now the James Hutton Institute).
Private Water Supply (PWS)	A supply of water which does not come from a licensed water supplier.
Proposed Development	Refers collectively to all elements required to construct and operate the proposed Netherton Hub.
Public Road Improvement (PRI)	Works required to improve public roads to enable appropriate access.
Ramsar	A wetland site designated to be of international importance under the Ramsar Convention.
Scottish Environment Protection Agency (SEPA)	Scotland's principal environmental regulator, protecting and improving Scotland's environment.
Site of Special Scientific Interest (SSSI)	A statutory designation made by NatureScot under the Nature Conservation (Scotland) Act 2004. Areas of land and water that are considered to best represent natural heritage in terms of their flora (i.e. plants), fauna (i.e. animals), and geology (i.e. rocks) and geomorphology (i.e. landform).
Site Options	Collective term for Sites identified for consideration in the site selection process.
Sound Reduction Index (SRI)	The SRI is used to measure the level of sound insulation provided by a structure such as a wall, window, door etc.

Term	Definition
Sound Working Level (SWL)	The maximum working noise level of the apparatus [db(A)].
Special Area of Conservation (SAC)	An area designated under the EC Habitats Directive to ensure that rare, endangered or vulnerable habitats or species of community interest are either maintained at or restored to a favourable conservation status.
Special Landscape Areas (SLA)	Regionally valuable landscapes identified to protect and enhance landscape qualities and promote their enjoyment.
Special Protection Area (SPA)	An area designated under the Wild Birds Directive (Directive 79/409/EEC) to protect important bird habitats. Implemented under the Wildlife and Countryside Act 1981.
SSEN Transmission	Scottish and Southern Electricity Networks Transmission.
Stakeholders	Organisations and individuals who can affect or are affected by SSEN Transmission works.
Substation	A node on the network to allow safe control of the electricity network. This could include convergence of multiple circuits, transformation of voltage or other functions to maintain and operate the electricity network.
Super Grid Transformer (SGT)	A transformer which steps the voltage between different levels on the transmission network.
Tree Preservation Order (TPO)	A legal procedure used by the local authority to protect individual trees, groups of trees or woodland areas which are considered to have significant ecological, recreational, historical, shelter or landscape value.
UK Biodiversity Action Plan (UKBAP)	The UKBAP describes the biological resources of the UK and provides detailed plans for the conservation of these resources.
UK Habitat Classification (UKHab)	Unified and comprehensive approach to classifying habitats.
Water Framework Directive (WFD)	The main aims of the Water Framework Directive (WFD) are to: prevent deterioration and enhance status of aquatic ecosystems, including groundwater, promote sustainable water use, reduce pollution, and contribute to the mitigation of floods and droughts.
Works	Constructing new transmission infrastructure such as substations, overhead lines, underground cables; major refurbishment of these; the dismantling and removal of any parts of the system; and ancillary works, which may include formation of access tracks, bridge and road improvements, tree cutting, drainage etc.

Executive Summary

Scottish and Southern Electricity Networks Transmission (hereafter referred to as ‘SSEN Transmission’), operating under licence as Scottish Hydro Electric Transmission plc (SHE Transmission plc), is a wholly owned subsidiary of the SSE plc group of companies. SSEN Transmission owns and maintains the electricity transmission network across the north of Scotland and holds a license under the Electricity Act 1989 to develop and maintain an efficient, co-ordinated and economical system of electricity transmission.

SSEN Transmission, hereafter referred to as ‘the Applicant’ is proposing to submit an application for planning permission in principle under the Town and Country Planning (Scotland) Act 1997 (as amended)¹ for consent to construct and operate a new strategic transmission hub, hereafter referred to as ‘the Proposed Development’.

The Proposed Development would be located in Aberdeenshire, approximately 7.5km to the west of Peterhead, 1km to the south-east of Longside, and adjacent to Flushing on the A950 road (National Grid Reference NK052460).

The Proposed Development would cover an area of approximately 220 hectares (ha) and involve the installation of the following new elements: 400kV Substation, 132kV Substation, High Voltage Direct Current (HVDC) Switching Station, Spittal to Netherton HVDC Link Converter Station, Eastern HVDC Green Link 3 (EGL3) Converter Station, an Operations Depot and Store and supporting infrastructure, including temporary space for construction.

The Proposed Development is part of SSEN Transmission’s Pathway to 2030 projects. These projects are part of a proposed major upgrade of the electricity transmission network across Great Britain to help deliver United Kingdom (UK) and Scottish Government climate change and energy security targets. They would connect UK based low carbon renewable electricity generation to areas of demand across the country, with the aim of building a cleaner, more secure and affordable energy system for homes and businesses across Great Britain.

Applications made under the Town and Country Planning (Scotland) Act 1997 (as amended) are subject to The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017². Although not listed under the developments within Schedule 1 or Schedule 2 of The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017, the Applicant has decided to undertake an Environmental Impact Assessment (EIA) for the Proposed Development given the size and nature of the Proposed Development, and its close association with other SSEN Transmission network projects, including the Beauly to Peterhead Overhead Line, New Deer Overhead Line Diversion, Spittal to Peterhead Cable and Eastern Green Link 3 Cable. The EIA will be supported by appropriately scoped surveys and specialist assessments, the results of which will be presented within an EIA Report. This will form part of an application to Aberdeenshire Council as a National Development under the Town and Country Planning (Hierarchy of Developments) Regulations 2009³ (as amended).

This Scoping Report is provided to support a formal request under the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 by the Applicant for a Scoping Opinion to determine the information to be provided within the EIA Report.

The Applicant invites consultees to comment on the following:

- What environmental information do you hold or are aware of that will assist in the EIA described here?
- Do you agree with the proposed approach for baseline collection, and that the range of surveys across particular topics is sufficient and appropriate to inform the assessment of environmental effects?
- Is there any other relevant existing baseline data that should be taken into account?
- Are there any key issues or possible effects which have been omitted?

¹ Town and Country Planning (Scotland) Act 1997. Available at: <https://www.legislation.gov.uk/ukpga/1997/8/section/46> [Accessed: August 2023].

² Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 Available at: <https://www.legislation.gov.uk/ssi/2017/102/contents/made> [Accessed : August 2023].

³ Town and Country Planning (Hierarchy of Developments) Regulations 2009. Available at: <https://www.legislation.gov.uk/sdsi/2009/9780111001714/contents> [Accessed: September 2023].

- Do you agree with the list of issues to be scoped out, and the rationale behind the decision?

Responses to this Scoping Report should be directed to Aberdeenshire Council.

When submitting a response to the Scoping Report, the Applicant would be grateful if you could also send a copy of your response to the address below:

Email to: murray.agnew@sse.com

OR

For the Attention of Murray Agnew

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1 Overview

1.1 Introduction

- 1.1.1 Scottish and Southern Electricity Networks Transmission (herein hereafter referred to as ‘SSEN Transmission’) operating under licence as Scottish Hydro Electric Transmission plc (SHE Transmission plc), is a wholly owned subsidiary of the SSE plc group of companies. SSEN Transmission, hereafter referred to as ‘the Applicant’, owns and maintains the electricity transmission network across the north of Scotland and holds a license under the Electricity Act 1989 to develop and maintain an efficient, co-ordinated and economical system of electricity transmission.
- 1.1.2 The Applicant is proposing to submit an application for planning permission in principle under the Town and Country Planning (Scotland) Act 1997⁴ (as amended) for consent to construct and operate a new strategic transmission hub approximately 7.5km to the west of Peterhead in Aberdeenshire, Scotland, hereafter referred to as ‘the Proposed Development’. An overview of the Proposed Development is shown on Figure 1.1 Site Location Plan. An overview of environmental features and designations in relation to the Proposed Development site is shown on Figure 1.2 Environmental Constraints Plan.
- 1.1.3 The Proposed Development is part of SSEN Transmission’s Pathway to 2030 projects. These projects are part of a proposed major upgrade of the electricity transmission network across Great Britain to help deliver United Kingdom (UK) and Scottish Government climate change and energy security targets. They would connect UK based low carbon renewable electricity generation to areas of demand across the country, with the aim of building a cleaner, more secure and affordable energy system for homes and businesses across Great Britain. Further details on the Pathway to 2030 projects is provided in Appendix 1.1.

1.2 Overview of the Proposed Development

- 1.2.1 The key elements of the Proposed Development subject to consent under the Town and Country Planning (Scotland) Act 1997 (as amended) would comprise the following:
- 400kV Substation;
 - 132kV Substation;
 - High Voltage Direct Current (HVDC) Switching Station;
 - Spittal to Netherton HVDC Link Converter Station;
 - Eastern HVDC Green Link 3 (EGL3) Converter Station; and
 - Operations Depot and Store.
- 1.2.2 In addition, the Proposed Development would require lighting, permanent access, access roads, drainage, earthworks, landscaping/screening mitigation and biodiversity enhancement. Sufficient space for temporary construction activities will also be required.

1.3 The Regulations

- 1.3.1 The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017⁵, hereafter referred to as the “EIA Regulations”, contain two schedules. Schedule 1 lists projects where Environmental Impact Assessment (EIA) is mandatory. Schedule 2 lists projects where EIA may be required ‘where proposed development is considered likely to give rise to significant effects on the environment by virtue of factors such as its nature, size or location’.

⁴ Town and Country Planning (Scotland Act) 1997. Available at: <https://www.legislation.gov.uk/ukpga/1997/8/contents> [Accessed: August 2023].

⁵ Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017. Available at: <https://www.legislation.gov.uk/ssi/2017/102/contents/made> [Accessed: August 2023].

- 1.3.2 The Proposed Development is not covered under the developments listed within Schedule 1 of the EIA Regulations. The Proposed Development is also not directly identified within Schedule 2 of the relevant EIA Regulations; however, the Applicant has decided to undertake an EIA for the Proposed Development given its size and nature, and its close association with other SSEN Transmission network projects, including the Beauly to Peterhead Overhead Line, New Deer Overhead Line Diversion, Spittal to Peterhead Cable and Eastern Green Link 3 Cable.
- 1.3.3 The Proposed Development would be a National Development under the Town and Country Planning (Hierarchy of Developments) Regulations 2009 (as amended)⁶ as the proposed site is greater than 2 ha and the development is of a type that would fall within National Development 3 – Strategic Renewable Electricity Generation and Transmission Infrastructure, in National Planning Framework 4 (NPF4)⁷.

1.4 Purpose of the EIA Scoping Report

- 1.4.1 The purpose of this EIA Scoping Report is to ensure that the subsequent EIA is focused on the key impacts likely to give rise to significant adverse effects. As well as identifying aspects to be considered in the EIA this document also identifies those aspects that are not considered necessary to assess further.
- 1.4.2 In accordance with the EIA Regulations, this EIA Scoping Report contains:
- A plan sufficient to identify the location of the Proposed Development;
 - A brief description of the nature and purpose of the Proposed Development and its possible effects on the environment; and
 - Information and representations from the Applicant on the aspects of the Proposed Development or environment including those that are not considered necessary to assess further in the EIA Report.

1.5 Scoping Report Methodology

- 1.5.1 This report provides information on the individual factors that require consideration under Regulation 4(3) of the EIA Regulations. This EIA Scoping Report presents the findings of an initial appraisal of the likely significant environmental effects of the Proposed Development on the receiving environment. It provides a basic overview of the baseline conditions as understood at the time of writing and the likely potential effects as a result of the Proposed Development. Where site survey and further assessment are deemed necessary, the approach and methodologies are outlined. Environmental topics considered with an initial assessment in this EIA Scoping Report are:
- Landscape and Visual Impact;
 - Ecology, Nature Conservation and Ornithology;
 - Cultural Heritage;
 - Traffic and Transport;
 - Hydrology, Hydrogeology, Geology and Soils;
 - Noise and Vibration; and
 - Land Use and Agriculture.
- 1.5.2 For each topic, an overall description of the baseline environment is provided relevant to that topic, broken down on a section by section basis where relevant. This is followed by a summary of the potential effects associated with each environmental topic listed above, and the proposed scope of survey and assessment work

⁶ Town and Country Planning (Hierarchy of Developments) Regulations 2009. Available at: <https://www.legislation.gov.uk/sdsi/2009/9780111001714/contents> [Accessed: September 2023].

⁷ The Scottish Government (2023). National Planning Framework 4. Available at: <https://www.gov.scot/publications/national-planning-framework-4/> [Accessed: August 2023].

relevant to that topic to determine effects and identify appropriate mitigation measures. Issues to be scoped out of the assessment are also provided.

1.5.3 The environmental topics and issues scoped out of the EIA are listed below and the justification for scoping out is summarised in Chapter 12:

- Population and Human Health⁸;
- Major Accidents and Disasters;
- Air Quality and Climate;
- Material Assets and Waste; and
- Forestry.

1.6 Consultation

Site Selection

1.6.1 Initial consultation on potential site options was undertaken at Stage 1 (Initial Site Screening) to gather feedback on 13 potential site options from a variety of stakeholders including the public and statutory stakeholders during January and February 2023. The feedback received was considered as part of the site selection process and where appropriate will be carried through to consideration in the EIA.

1.6.2 Following the completion of Stage 1 a short list of four site options was taken forward to Stage 2 (Detailed Site Selection) where they were assessed to identify the most technically feasible, economically viable and environmentally acceptable option within the defined area. During April and May 2023, consultation was undertaken to seek comments from stakeholders and members of the public on the site option studies undertaken, and the rationale for, and approach to, the selection of the preferred site.

1.6.3 A summary of the consultation undertaken to date is provided below:

- Two public consultation events (January and April 2023) provided face-to-face public engagement (including a mail drop advertising the events);
- Stage 1 (January 2023) and Stage 2 (April 2023) Consultation Booklets for the public consultation events, providing a summary of the site selection process;
- A Stage 2 Consultation Document was prepared for the statutory consultees (April 2023);
- A Digital Consultation Document presented the key information alongside interactive maps and images, which was presented to statutory consultees during Teams meetings in April and May 2023;
- Press adverts; and
- Social media streams.

1.6.4 The consultation process and feedback received is being documented in a Report on Consultation and a consultation register remains a live document and will be updated on receipt of any further consultation comments.

1.6.5 Members of the public and other interested stakeholders will be invited to attend an information event during the EIA and Consenting phase of the Proposed Development, and the local community, community councils, elected representatives, statutory and non-statutory stakeholders will continue to be engaged as the project progresses.

⁸ Socioeconomics, Tourism and Recreation are covered by this topic heading.

Pre-Application Consultation with Aberdeenshire Council

- 1.6.6 A pre-application exercise was undertaken with Aberdeenshire Council, providing the Applicant an opportunity to present the proposals to the Council, and seek advice on the acceptability of the Proposed Development, and likely requirements and expectations for a future application. Following this meeting, Aberdeenshire Council provided a formal pre-application response, detailing their understanding of the Proposed Development, and setting out relevant planning policy and environmental considerations that would need to be addressed as part of the application supporting documents.

Proposal of Application Notice

- 1.6.7 A Proposal of Application Notice (PAN) will be submitted to notify Aberdeenshire Council of the Applicant's intention to submit a national application. It will describe the development and propose further consultation, likely to be public information events scheduled for early 2024.

2 Description of the Proposed Development

2.1 Introduction

2.1.1 This chapter describes the elements that constitute the Proposed Development. It provides a description of the key components and information regarding the construction, operation, and maintenance of the Proposed Development.

2.2 Description of the Proposed Development

2.2.1 The Proposed Development would be located in Aberdeenshire, approximately 7.5km to the west of Peterhead, 1km to the south-east of Longside, and adjacent to Flushing on the A950 road (National Grid Reference NK052460). The Proposed Development site covers an area of approximately 220 hectares (ha) and has an elevation ranging from approximately 30m Above Ordnance Datum (AOD) at its lowest point in the northern end of the site, rising to 65m in the southern area of the site.

2.2.2 The site is located on agricultural land with residential areas to the north and north-west. The site has good access to the existing overhead lines between New Deer and Boddam and has good access for future connections. It also has a favourable topography with a reasonably flat site and good accessibility from the A950.

2.2.3 The objective of the Proposed Development is to collocate several key infrastructure projects to avoid a dispersed pattern of development and minimise the landscape impact.

2.3 Proposed Development Components

2.3.1 It is proposed that the equipment associated with the substations, converter stations and switching station will be housed indoors. The buildings would likely comprise a steel portal frame with metal cladding and roof and be designed in order to reduce visual and noise impact and increase security of supply.

2.3.2 The elements described below are to be included as part of the Proposed Development (see Figure 1.1 for the indicative locations within the site boundary).

400kV Substation

2.3.3 The 400kV substation will comprise two 400/132kV Super Grid Transformer (SGTs), indoor gas-insulated high-voltage switchgear (GIS) and associated air insulated isolators/earth switches. The SGTs will be enclosed to protect from the weather and reduce the noise impact. The standard layout is composed of a series of buildings enclosing all apparatus and providing office, welfare and spare storage and roads, with a platform footprint of approximately 320m width, by 378m length. The building is likely to be an 'L' shape design, with the following indicative dimensions: 16m height, 180m width at its widest point and 175m length.

2.3.4 Within a GIS substation, live electrical equipment uses a dense gas as the insulating medium, usually Sulphur Hexa-Fluoride (SF₆); however, SSEN Transmission would, where available, use an alternative SF₆ free technology solution in support of their commitments and responsibilities to the decarbonisation of the electricity network. GIS typically allows safe clearance distances between live conductors to be reduced. This results in a smaller footprint compared to the more traditional substations comprising Air Insulated Switchgear (AIS).

132kV Substation

2.3.5 A 132kV substation is required and will provide a 132kV connection for existing and future third-party connection applications. Like the proposed 400kV substation, the 132kV will be a GIS substation and will connect directly into the proposed 400kV substation. Indicative building dimensions are as follows: 15m height,

24m width and 52m length. The site will therefore need to accommodate a substation platform of approximately 34m width and 62m length.

High Voltage Direct Current (HVDC) Switching Station

- 2.3.6 System studies have informed the need for a Direct Current (DC) switching station. The Proposed Development aims to deliver a fully flexible 525kV DC switching station (DCSS) which is required to facilitate the co-ordinated connection of offshore links and wind farms. The DCSS would reduce the required footprint for future DC connections and is expected to deliver a wider material net benefit to the community, environment, and consumers. Indicative building dimensions are as follows: height of up to 24m, 245m width, 355m length. The footprint of the platform to support the buildings is expected to be approximately 395m width by 370m length.

Spittal to Netherton HVDC Link Converter Station

- 2.3.7 A HVDC converter station is required at the Proposed Development site to enable a proposed 2GW 525kV HVDC link to Spital, Caithness, in the far north of Scotland. This would enable the efficient high volume power transmission from generators at Spittal to the network at Netherton for further transmission to demand centres as appropriate. The station is composed of a series of buildings enclosing all apparatus and providing office, welfare and spare storage (see a conceptual design shown on Plate 2-1). The u-shaped buildings indicative dimensions are as follows: height of 29m, width 200m and length 200m, the alternating current halls would sit separate to, but aligned with, the arms of the u-shaped building and have indicative building dimensions as follows: height of 29m, width 60m and length 80m. The footprint of the platform to support the buildings is expected to be approximately 288m width by 358m length.

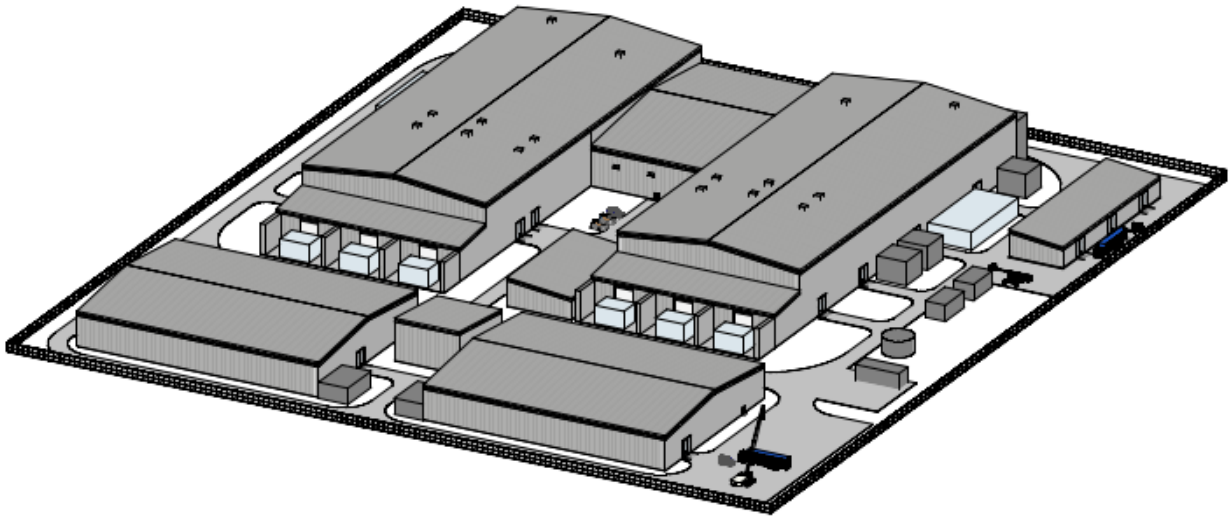


Plate 2-1 Indicative conceptual design for 2GW 525kV converter station

Eastern HVDC Green Link 3 (EGL3) Converter Station

- 2.3.8 A HVDC converter station would be required at the Proposed Development site to enable a proposed 2GW, 525kV HVDC link to South Humber, England. This would enable the efficient high volume power transmission from generators in the north-east of Scotland to demand centres in the south of England. The station is composed of a series of buildings enclosing all apparatus and providing office, welfare and spare storage (see a conceptual design shown on Plate 2-1). The u-shaped buildings indicative dimensions are as follows: height of 29m, width 200m and length 200m, the alternating current halls would sit separate to, but aligned with, the arms of the u-shaped building with indicative building dimensions: height of 29m, width 60m and length 80m. The footprint of the platform to support the buildings is expected to be approximately 288m width by 358m length.

Operational Infrastructure

2.3.9 Given the scale of the developments, a need for permanent operational facilities has been identified to support operational requirements.

- Operations depot and store – this would consist of buildings for offices, training facilities, car parking and storage facilities for strategic spares. Approximate dimensions are a height of 24m, width of 60m and 124m length;
- Lighting – floodlights would be installed but would only be used in the event of a fault during the hours of darkness; during the over-run of planned works; or when sensor activated as security lighting for night-time access. The access roads would not be lit under normal operation. The perimeter fence would use infra-red lighting (this would only switch to white light if the fence alarm were activated to allow night-time cameras to work better). A light would also be provided permanently at access gates;
- Permanent access – it is anticipated that a new permanent access would be formed from the A950, as well as permanent access roads on site to provide access to the proposed infrastructure. A secondary site entrance/exit to the south is also proposed, primarily from a health and safety perspective to ensure the site is not limited to a single access point;
- Security fencing – a 4.1m high palisade fence would be installed around platforms, in addition a standard post and wire perimeter fence would be installed around the site boundary;
- Earthworks – a cut-fill exercise would be undertaken to achieve a level area to construct infrastructure;
- Site drainage and water management;
- Underground connectors to the buildings;
- Possible demolition of existing buildings on the site; and
- Landscaping mitigation and biodiversity enhancement.

2.4 Access during Construction

It is anticipated that an access for construction of the Proposed Development would principally be formed from the A950. This would then become the permanent access to the site following completion of construction. A secondary site entrance/exit to the south is also proposed.

Construction Compounds

2.4.1 Temporary site compounds would be required during construction, located within the site boundary. These would provide office and welfare facilities for site staff, parking, laydown areas and holding and servicing space for construction plant.

Delivery of Structures and Materials

2.4.2 All materials would be delivered to the construction compounds. Concrete would be delivered to site pre-mixed or would be batched onsite. Hardcore and earthworks materials for the construction of the Proposed Development would be a combination between site won, through cutting of the existing surface to construct the platforms and locally imported materials. Site won materials would be prioritised over imported materials to reduce the impact on the local roads and the environment.

Programme and Hours of Working

2.4.3 It is anticipated that construction of the project would take approximately 7 years, although detailed programming of the works would be the responsibility of the Principal Contractor in agreement with SSEN Transmission.

2.4.4 Construction activities would in general be undertaken during daytime periods. Working hours are currently anticipated between approximately 07.00 to 19.00 in the summer and 07.30 to 17.30 (or within daylight hours)

in the winter, Monday to Friday. Weekend working would also be proposed with slightly reduced working hours. Working hour assumptions would be set out within the EIA Report and agreed with Aberdeenshire Council.

- 2.4.5 During the commissioning phase of the Proposed Development, there may be a requirement for 24 hours a day, seven days a week working hours. If required, this would be agreed in advance with Aberdeenshire Council.

Construction Environmental Management

- 2.4.6 The initial scoping appraisal and the assessment in the EIA Report will be carried out on the basis that standard mitigation measures will be implemented during the construction work, including compliance with both project wide and site-specific environmental management procedures, with reference to SSEN Transmission General Environmental Management Plans (GEMPs) and Species Protection Plans (SPPs).
- 2.4.7 A Construction Environment Management Plan (CEMP) would be developed for the Proposed Development and adopted by the successful Principal Contractor during the construction phase. The principal objective of this document is to provide information on the proposed infrastructure and to aid in avoiding, minimising, and controlling adverse environmental impacts associated with the Proposed Development. Furthermore, this document will aim to define good practice as well as specific actions required to implement mitigation identified in the EIA Report, the planning process and / or other licencing or consenting processes. The CEMP would be updated during the pre-construction phase and would form part of the contractor documents between the Applicant and the appointed construction contractor. It is not proposed to submit an Outline CEMP alongside the EIA Report, instead the mitigation measures and management procedures outlined in the SSEN Transmission GEMPs and SPPs will be referred to, with a specific mitigation detailed within the EIA Report Schedule of Mitigation.

Reinstatement

- 2.4.8 Following commissioning of the Proposed Development, all temporary construction areas would be reinstated. Reinstatement will form part of the contract obligations for the Principal Contractor and will include the removal of all temporary access tracks and work sites.

Landscape Mitigation Measures and Biodiversity Enhancement

- 2.4.9 Landscape mitigation measures would be considered to provide partial visual screening and help assimilate the Proposed Development into the surrounding landscape. Such measures would also seek to provide habitat biodiversity and opportunities for enhancement.
- 2.4.10 Further details on landscape mitigation measures would be provided in the EIA Report.

Future Maintenance

- 2.4.11 Regular inspections of equipment will be undertaken to identify any deterioration of components, and these parts will be replaced or repaired where needed.

Decommissioning

- 2.4.12 Should the Proposed Development be decommissioned the site would be restored as follows:

- The Proposed Development infrastructure would be removed;
- Where removal of infrastructure such as foundations would result in more damage than leaving them in place, they would be left in-situ; and
- Disturbed ground would be reinstated.

- 2.4.13 Full details of the decommissioning plan would be agreed with the appropriate authorities and the landowners prior to any decommissioning works commencing.

3 EIA APPROACH AND METHODOLOGY

3.1 Introduction

- 3.1.1 The EIA Report will be prepared in accordance with the EIA Regulations, and the Good Practice Guidance published by the Scottish Government’s Energy Consents Unit in January 2013 and updated in July 2022⁹. Consideration will also be given to advice contained in Planning Circular 1/2013¹⁰ and 1/2017¹¹ (Environmental Impact Assessment), and other good practice guidance documents where relevant.
- 3.1.2 The EIA work will comprise a series of specialist environmental studies which will be targeted to assess the potential significant effects which the Proposed Development is likely to have on the environment. Each topic included in the EIA Report will be incorporated as a separate chapter in the main body of the EIA Report (pertaining to a particular ‘section’ as required, see sub-section 3.2 of this Chapter), or included as an appendix if the assessment of the subject matter requires to be more detailed.
- 3.1.3 On receipt and consideration of this Scoping Report, Aberdeenshire Council, following input by statutory and non-statutory consultees, will issue their Scoping Opinion confirming the scope of the EIA Report. Throughout the EIA Report, where an issue raised in the Scoping Opinion is addressed, this will be clearly referenced in the relevant chapter. A scoping matrix will also be included in the EIA Report which will detail all consultation responses received during the scoping and EIA process, with a reference to where these responses have been addressed in the EIA Report. A schedule of mitigation measures will also be included as an appendix and cross-referenced in the relevant assessment work.

3.2 Structure of the EIA Report

- 3.2.1 It is proposed to structure the EIA Report as follows:
- Volume 1 – Main Report. Describing the project, the alternatives considered, the EIA process, and including an assessment undertaken for each of the environmental topics scoped into the EIA;
 - Volume 2 – Figures. This volume would provide supporting figures (primarily A3 size) to the assessments carried out as part of Volume 1. This would include visualisations of the Proposed Development undertaken from agreed viewpoint locations;
 - Volume 3 – Technical Appendices. This volume would provide supporting technical appendices to the assessments carried out as part of Volume 1; and
 - A Non-Technical Summary would form part of the EIA Report, summarising the project and its likely significant effects.
- 3.2.2 The description of the likely significant effects will cover direct effects and indirect (including secondary) effects. The description of effects will identify the effect duration (short-term, medium-term and long-term), whether effects are permanent or temporary, and if effects can be categorised as adverse or beneficial.
- 3.2.3 Consideration would also be given to the potential for cumulative effects, where the assessment would describe the additional effect associated with the Proposed Development, when considered in combination with other reasonably foreseeable projects of a similar type (defined as those which are the subject of a valid consent or application for consent). The basis for this is that only these developments have the potential to result in significant cumulative effects in combination with those arising from the Proposed Development. The

⁹ Scottish Government’s Energy Consents (Updated July 2022). Good Practice Guidance for Applications under Section 36 and 37 of the Electricity Act 1989. Available at: <https://www.gov.scot/publications/good-practice-guidance-applications-under-sections-36-37-electricity-act-1989/documents/> [Accessed: August 2023].

¹⁰ Scottish Government (2013). Planning Advice Note: Environmental Impact Assessment. Available at: <https://www.gov.scot/publications/planning-advice-note-1-2013-environmental-impact-assessment/documents/> [Accessed: August 2023].

¹¹ Scottish Government (2017). Planning Circular: The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017. Available at: <https://www.gov.scot/publications/planning-circular-1-2017-environmental-impact-assessment-regulations-2017/documents/> [Accessed: August 2023].

final list of developments to be considered in the cumulative effects assessment would be finalised three months prior to publication to allow sufficient time to compile the EIA Report.

- 3.2.4 The report will also consider the potential for intra-project effects of combined or synergistic 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.
- 3.2.5 It is considered that there would be no potential for transboundary effects associated with the Proposed Development, and therefore no further assessment of transboundary effects is proposed.
- 3.2.6 A more detailed overview of the guidance and methodology adopted for each technical study is provided in Chapters 5 to 11 of this EIA Scoping Report.

3.3 Mitigation

- 3.3.1 The EIA will identify and assess potentially significant effects prior to mitigation, and, where mitigation measures are proposed, their likely effectiveness will be examined, and the significance of the 'residual' effect then assessed. The Applicant will be committed to implementing all the mitigation measures identified in the EIA Report and where appropriate, the mitigation measures implemented will be monitored for effectiveness.
- 3.3.2 Where there are opportunities for offsetting and/or positively enhancing effects, these will be identified through the EIA process.

3.4 Supporting Documents

- 3.4.1 It is anticipated that the following documents would also be provided as part of the application:
- Design and Access Statement;
 - Habitat Regulations Appraisal (HRA) Report;
 - Pre-Application Consultation Report; and
 - Planning Statement.

3.5 Scoping Methodology

- 3.5.1 The following chapters of this Scoping Report aim to provide sufficient detail to characterise the potential interactions between the Proposed Development and the environmental receptors identified. In presenting a rationale for the proposed scope of environmental assessment, this report has taken the sensitivity of the current state of the environment into account, based on an understanding of the baseline conditions. The Scoping Report considers the typical construction and operational activities, physical characteristics and potential emissions/residues associated with the Proposed Development.
- 3.5.2 Where there is sufficient evidence to support scoping a topic out of the EIA process, this is presented. Otherwise, where it is considered that there is the potential for likely significant effects, the EIA Scoping Report provides details of the proposed scope or detailed impact assessment, including the approach to further baseline data collection and brief details of the proposed methodology for impact assessment that would be employed for each topic.

4 Planning Policy

4.1 National Policy

4.1.1 National Planning Framework 4¹² (NPF4) was adopted by the Scottish Government in February 2023 and is a long-term plan looking to 2045 that guides spatial development, sets out national planning policies, designates national developments and highlights national and regional spatial priorities.

4.1.2 In contrast to previous National Planning Frameworks, NPF4 places national policy at the heart of planning decision making as it is part of the statutory Development Plan along with Local Development Plans. Following the adoption of NPF4 in February 2023, NPF3, Scottish Planning Policy and all Strategic Development Plans ceased to have any relevance to planning decision making in Scotland. NPF4 combines the National Planning Framework, and National Planning Policy in the same document for the first time.

4.1.3 NPF4 identifies a number of National Developments which are significant developments of national importance that will help to deliver the spatial strategy. Statements of need are set out in NPF4 that describe the development to be considered as a national development for consent handling purposes. Amongst the national developments identified is National Development 3: Strategic Renewable Electricity Generation and Transmission Infrastructure which includes:

b) New and/or replacement upgraded on and offshore high voltage electricity transmission lines, cables and interconnectors of 132kv or more; and

c) New and/or upgraded Infrastructure directly supporting on and offshore high voltage electricity lines, cables and interconnectors including converter stations, switching stations and substations.

4.1.4 As stated above, NPF4 contains National Planning Policies and these policy positions are to be taken into account in land use planning decision making. The NPF4 policies that are of the most relevance to the Proposed Development are:

- Policy 1 – Tackling the Climate and Nature Crises. The intent is to encourage, promote and facilitate development that addresses the global climate emergency and nature crisis.
- Policy 2 – Climate Mitigation and Adaptation. Development proposals will be sited and designed to minimise lifecycle greenhouse gas emissions as far as possible and adapt to current and future risks from climate change.
- Policy 3 – Biodiversity. Development proposals need to contribute to the enhancement of biodiversity and integrate nature based solutions. Proposals requiring an EIA will only be supported where it can be demonstrated that the proposal will conserve, restore and enhance biodiversity.
- Policy 4 – Natural Places. Development proposals which by virtue of type, location or scale will have an unacceptable impact on the natural environment will not be supported. Development Proposals that are likely to have a significant effect on an existing or proposed European Site and are not directly connected with or necessary to their conservation management, are required to be subject to an appropriate assessment of the implications to conservation objectives. Development proposals will only be supported where they will not compromise the designation status/overall integrity of a National Park, National Scenic Area, Site of Special Scientific Interest (SSSI), Natural Nature Reserve, local conservation site or local landscape area. Development proposals that are likely to have an adverse effect on species protected by legislation will only be supported where the proposal meets the relevant statutory tests. If there is reasonable evidence to suggest that a protected species is present on a site or may be affected by a proposed development, steps must be taken to establish its presence.

¹² The Scottish Government (2023). National Planning Framework 4. Available at: National Planning Framework 4 - gov.scot (www.gov.scot).

- Policy 5 – Soils. Development will only be supported if designed and constructed in accordance with mitigation hierarchy, and in a manner that protects soil from damage. Development proposals on prime agricultural land, or land of lesser quality that is culturally or locally important for primary use (as identified by the LDP), peatland, carbon-rich soils, and priority peatland habitat, will only be supported where it is for essential infrastructure and there is a specific locational need and no other suitable site. Where development on peatland, carbon-rich soils or priority peatland habitat is proposed, a detailed site specific assessment will be required.
- Policy 6 – Forestry, Woodland and Trees. Development proposals that enhance, expand and improve woodland and tree cover will be supported. Development proposals will not be supported where they will result in any loss of ancient woodlands, ancient and veteran trees, or adverse impact on their ecological condition, native woodlands, hedgerows, individual trees of high diversity value, or identified for protection. Fragmenting or severing woodland habitat without appropriate mitigation will also not be supported. Development proposals involving woodland removal will only be supported where they will achieve significant and clearly defined additional public benefits in accordance with relevant Scottish Government policy on woodland removal. Where woodland is removed, compensatory planting will most likely be expected to be delivered. Development proposals on sites which include an area of existing woodland or land identified in the Forestry and Woodland Strategy as being suitable for woodland creation will only be supported where the enhancement and improvement of woodlands and the planting of new trees on the site (in accordance with the Forestry and Woodland Strategy) are integrated into the design.
- Policy 7 – Historic Assets and Places. Development proposals with a potentially significant impact on historic assets or places will be accompanied by an assessment which is based on an understanding of the cultural significance of the historic asset and/or place. Development proposals in or affecting conservation areas will only be supported where the character and appearance of the conservation area and its setting is preserved or enhanced. Development affecting Scheduled Monuments will only be supported where direct and significant adverse impacts on the integrity of the setting are avoided, or exceptional circumstances have been demonstrated to justify the impact. Development proposals affecting nationally important Gardens and Designed Landscapes will be supported where they protect, preserve or enhance their cultural significance, character and integrity and where proposals will not significantly impact on important views to, from and within the site, or its setting. Development proposals which sensitively repair, enhance and bring historic buildings, as identified as being at risk locally or on the national Buildings at Risk Register, back into beneficial use will be supported. Non-designated historic environment assets, places and their setting should be protected and preserved in situ wherever feasible. Where there is potential for non-designated buried archaeological remains to exist below a site, developers will provide an evaluation of the archaeological resource at an early stage so that planning authorities can assess impacts. Historic buildings may also have archaeological significance which is not understood and may require assessment.
- Policy 11 – Energy. To encourage, promote and facilitate all forms of renewable energy development onshore and offshore.
- Policy 12 – Zero Waste. Development proposals will seek to reduce, reuse, or recycle materials in line with the waste hierarchy.
- Policy 14 – Design, quality and place. Development proposals will be designed to improve the quality of an area whether in urban or rural locations and regardless of scale. Development proposals will be supported where they are consistent with the six qualities of successful places and development proposals that are poorly designed, detrimental to the amenity of the surrounding area or inconsistent with the six qualities of successful places, will not be supported.
- Policy 20 – Blue and green Infrastructure. Development proposals that result in fragmentation or net loss of existing blue and green infrastructure will only be supported where it can be demonstrated that the proposal would not result in or exacerbate a deficit in blue or green infrastructure provision, and the

overall integrity of the network will be maintained. Development proposals for or incorporating new or enhanced blue and/or green infrastructure will be supported.

- Policy 22 – Flood Risk and Water Management. Development at risk of flooding or in a flood risk area will only be supported if they are for essential infrastructure. Developments will not increase the risk of surface water flooding, manage rain and surface water through SUDS, and seek to minimise the area of impermeable surface. Development proposals will be supported if they can be connected to the public water mains. Development proposals which create, expand or enhance opportunities for natural flood risk management, including blue and green infrastructure, will be supported.
- Policy 29 – Rural Development. Development proposals in rural areas should be suitably scaled, sited and designed to be in keeping with the character of the area. They should also consider how the development will contribute towards local living and take into account the transport needs of the development as appropriate for the rural location. Development proposals in remote rural areas, where new development can often help to sustain fragile communities, will be supported where the proposal can lead to local employment, and is suitable in terms of location, access, siting, design and environmental impact.

4.2 Local Planning Policy

4.2.1 Local Development Plans cover all planning authority areas and provide detailed and site-specific planning policy for an area. The current development plan for the Aberdeenshire administrative area is the Aberdeenshire Local Development Plan, January 2023¹³ (referred to as the LDP hereafter). The LDP lays out detailed policies which are used as a basis for determining planning applications on a local scale. As indicated above, NPF4 now forms a part of the Development Plan and has replaced a number of predecessor planning policy documents at various levels. This includes Strategic Development Plans. Although a relatively recently adopted LDP, the Aberdeenshire LDP 2023 predates the adoption of NPF4 and has been formulated to interpret and implement the policy positions stated in the now superseded Aberdeen City and Shire Strategic Development Plan and as such some policy positions stated may be inconsistent with those contained in NPF4. The Town and Country Planning (Scotland) Act 1997 (as amended) makes it clear that where policy positions differ in this circumstance NPF4 policy positions will take priority. There are several policies that may be relevant in consideration of this proposal. These include:

- R2 Development Proposals Elsewhere in the Countryside – Permits development at appropriate locations in the countryside where there is a national requirement, and no suitable alternative site is available. Prefers brownfield redevelopment over greenfield development.
- P2 Open Space and Access in New Development – All new developments must be accompanied by adequate public open space appropriate to the standards shown in the Aberdeenshire Parks and Open Spaces Strategy and should facilitate public access as appropriate. However, is not appropriate in relation to the Proposed Development as public access will not be granted due to Health and Safety concerns.
- P4 Hazardous and Potentially Polluting Developments and Contaminated Land – In determining planning applications for development within the consultation zones for hazardous installations (including oil and gas pipelines), the council will consult with, and take full account of advice from the Health and Safety Executive (HSE), the Competent Authority (in the case of Control of Major Accident Hazardous sites) and the facility's owners and operators, and will seek to ensure that any risk to public safety is not increased.
- E1 Natural Heritage - Generally protective towards sites designated for nature conservation interests at European, National, and local levels. Will not permit development where integrity of a protected site will be compromised.

¹³ Aberdeenshire Council (2023). Aberdeenshire Local Development Plan. Available at: <https://www.aberdeenshire.gov.uk/planning/plans-and-policies/ldp-2023/> [Accessed: September 2023].

- E2 Landscape – states presumption against development that causes unacceptable effects through its scale, location or design on key characteristics, natural landscape elements, features or the composition or quality of the landscape character as defined in the Landscape Character Assessments produced by NatureScot whether impacts are alone or cumulatively with other recent developments.
- E3 Forestry and Woodland – Generally protective towards woodland and the protection and enhancement of trees and woodlands in the planning and construction of built development.
- HE1 – Protected Listed Buildings, Scheduled Monuments and Archaeological Sites (including other historic buildings) - resistant to development that would have an adverse impact on the character, integrity or setting of listed buildings, or scheduled monuments, or other archaeological sites.
- PR1 – Protecting Important Resources - presumes against developments that have a negative effect on important environmental resources associated with air quality, the water environment, important mineral deposits, prime agricultural land, peat and other carbon rich soils, open space, and important trees and woodland.
- C4 Flooding – Requires Flood Risk Appraisals (FRAs) to be undertaken in appropriate circumstances, requires climate change to be taken into account and presumes against development that increases flood risk vulnerability although does permit essential infrastructure in vulnerable locations if required to be located there for operational reasons where no alternatives are available.
- RD1 Providing Suitable Services – Outlines developer responsibilities in relation to location and design of development that takes advantage of services that will support it. Covers transport, water/wastewater management and supply etc.

5 Landscape and Visual Impact

5.1 Introduction

5.1.1 This chapter considers the potential landscape and visual effects of the Proposed Development. It provides a brief overview of the baseline conditions, highlights the potentially significant effects and sets out the scope and methodology of the assessment to be undertaken.

5.2 Baseline Conditions

5.2.1 The following section sets out the baseline conditions for the area potentially affected by the Proposed Development, briefly describing the landscape and landscape-related designations, the landscape character and key visual receptors present. Reference should be made to Figures 5.1 Zone of Theoretical Visibility and Figure 5.2 Viewpoint Locations Plan.

5.2.2 Consideration of the baseline conditions to inform this scoping process has been informed by site visits in November 2022 and May 2023 as part of the site selection process and early stages of design to develop embedded mitigation.

Designated Landscapes

5.2.3 There are no landscape or landscape-related designations covering the area of the Proposed Development, and there are no Tree Preservation Orders (TPOs) covering any part of the area.

5.2.4 The nearest designated landscape is the Northeast Aberdeenshire Special Landscape Area (SLA), which covers the coast and its immediate hinterland north and south of Peterhead, 6km to 9km east of the Proposed Development.

5.2.5 Gardens and Designed Landscapes (GDLs) on the Historic Environment Scotland inventory are addressed in the Cultural Heritage chapter.

Landscape Character

5.2.6 The Proposed Development is located in the low-lying, gently rolling and very open landscape of the Aberdeenshire coastal plain, described as 'Coastal Agricultural Plain – Aberdeenshire, Landscape Character Type 17' (LCT17) in the NatureScot National Landscape Character Assessment.¹⁴

5.2.7 This is a very extensive character type, covering the area from Dyce in the south to Fraserburgh in the north and running inland an average of 10 km from the coastal strip. The NatureScot assessment¹⁵ finds that *"it is characterised by its gently undulating landform, relatively large scale, extensive mosses and the influence of development including transmission masts, electricity transmission lines, the A90 and A953, and the gas terminal at St Fergus on its eastern edge."*

5.2.8 The Landscape and Visual Impact Assessment (LVIA) will consider the effect of the Proposed Development on LCT17. However, because of the scale of the landscape character type and the subtle differences within it, the assessment will also consider landscape character at a finer and more local grain in a series of Local Landscape Character Areas, to be defined as part of the assessment.

¹⁴ NatureScot (2019). Scottish Landscape Character Types Map and Descriptions. Available at <https://www.nature.scot/professional-advice/landscape/landscape-character-assessment/scottish-landscape-character-types-map-and-descriptions> [Accessed: August 2023].

¹⁵ NatureScot. SNH National Landscape Character Assessment, Landscape Character Type 17 Coastal Agricultural Plain - Aberdeenshire. Available at: <https://www.nature.scot/sites/default/files/LCA/LCT%20017%20-%20Coastal%20Agricultural%20Plain%20-%20Aberdeenshire%20-%20Final%20pdf.pdf> [Accessed: August 2023].

Visual Impact

5.2.9 The area immediately around the Proposed Development is sparsely settled, with a number of widely spaced farms and farmsteads, with the hamlet of Flushing immediately north of the A950 on the northern edge of the site boundary. The small town of Longside lies approximately 1km north-west of the Proposed Development.

5.2.10 Potential visual receptors to be considered in the LVIA include:

Residential

- Residential properties on the edge of the settlements of Flushing and Longside; and
- Residential properties and farmsteads to the north, east, south and west (distances vary).

Recreational

- Users of the Formartine and Buchan Way which follows the old railway line running east-west slightly over 1km north of the Proposed Development, and users of Aberdeenshire Council Core Path 208.01 at Longside.

Transport

- Users of the A950 which runs along the northern boundary of the Proposed Development; and
- Users of the minor roads in the area around the Proposed Development (distances vary).

5.3 Potentially Significant Effects

5.3.1 The Proposed Development would introduce four groups of large buildings, the highest of which would be approximately 29m, two smaller buildings of 24m and 15m, surrounding transmission infrastructure up to approximately 15m in height, access roads, security fencing, sustainable drainage features and external lighting (please see Chapter 2 Description of the Proposed Development, for further detail on the proposed infrastructure). This would be partially screened by regraded landform and new woodland plantations.

5.3.2 Construction works would require large scale earthmoving operation, with introduction of machinery and equipment with changes to the local drainage pattern. This would alter the local character of the landscape, giving rise to temporary significant effects to the local landscape and visual amenity.

5.3.3 The Proposed Development is unlikely to significantly affect the character of the landscape when considered at the scale of the NatureScot LCT17. However, the Proposed Development would affect the local landscape character. There are other existing large sheds present in the locality, used for storage and agriculture at local farmsteads and on land to the east towards the urban fringe of Peterhead and to the north at Longside airfield. However, the Proposed Development would lie on agricultural land used for mixed farming of crop production and grazing, a rural setting and initiate a major change in the local landscape character.

5.3.4 The buildings and structures would be located on elevated land with wide ranging views in all directions and would potentially have significant visual effects. Potential visual receptors affected by the change in view are described in Section 5.2 Visual Impact.

5.3.5 The assessment of cumulative effects would consider other developments within the study area. At the time of preparing this EIA Scoping Report, this is anticipated to include the following electricity transmission projects:

- Eastern Green Link 3 Underground Cable;
- Spittal to Peterhead Underground Cable;
- Overhead line diversion of the existing North Eastern 400kV Overhead Line located to the south, into and out of the Netherpton Hub with demolition of the existing section of line; and

- Beauly to Peterhead Overhead Line. All overhead lines entering this Proposed Development would have terminal towers and potentially sealing end compounds.

5.4 Mitigation

- 5.4.1 Landscape and visual amenity issues formed a key input into the site selection process and, recognising the scale of development proposed, an important element in the decision-making process was the potential for large-scale landscape mitigation at the selected site.
- 5.4.2 The design for the site is being developed with input from the landscape team such that the design to be assessed will include a considerable degree of embedded landscape and visual mitigation. This includes landform design to site the buildings relatively low in the landscape and provide immediate partial screening of the Proposed Development in views from the surrounding area, along with extensive native woodland planting to assist in the long-term integration of the development into the landscape and provide fuller screening, as well as providing new and improved habitat for biodiversity net gain.
- 5.4.3 Through the EIA process, the LVIA will seek to inform any further refinements to the Proposed Development and to consider how and where the landscape mitigation measures may be developed to further reduce potential landscape and visual effects.

5.5 Proposed Scope of Assessment

- 5.5.1 The landscape and visual assessment will be undertaken in accordance with best practice guidance, in particular the Landscape Institute and Institute of Environmental Management and Assessment (IEMA) Guidelines for Landscape and Visual Impact Assessment¹⁶ and Landscape Institute guidance on assessing landscape value¹⁷.
- 5.5.2 The landscape and visual impact assessment will include:
- An illustrated statement on the impact of the Proposed Development on the landscape character and value of the area. The statement will include a description of the methodology used to assess character and the criteria to determine value; and
 - An illustrated description of the visual impact of the Proposed Development on properties and locations to which the public have access.
- 5.5.3 The following references would be used to inform the landscape and visual assessment:
- NatureScot Landscape Character Assessment: Aberdeenshire - Landscape Evolution and Influences¹⁸; and
 - Aberdeenshire Council Local Planning Advice¹³.
- 5.5.4 Figure 5.1 shows the Zone of Theoretical Visibility (ZTV), the area from which the Proposed Development is anticipated to be visible, in the absence of mitigation.
- 5.5.5 From experience of other developments involving large buildings in a low-lying open rural landscape¹⁹ it is anticipated that significant effects are unlikely beyond 2km from the Proposed Development. An initial study area limit of 3km from the site boundary is therefore proposed, to be tested in the early stages of the assessment and reduced if appropriate to ensure a focus on potentially significant effects. The initial study area

¹⁶ Landscape Institute and IEMA (Third edition, 2013). Guidelines for Landscape and Visual Impact Assessment.

¹⁷ Landscape Institute (2021). Technical Guidance Note TGN 02-21 Assessing landscape value outside national designations.

¹⁸ NatureScot. Landscape Character Assessment: Aberdeenshire - Landscape Evolution and Influences. Available at: <https://www.nature.scot/doc/landscape-character-assessment-aberdeenshire-landscape-evolution-and-influences>.

¹⁹ For example, Spittal Converter Station, Caithness, Noss Head Switching Station, Caithness.

for the visual assessment will be the area covered by the ZTV, cut off at 3km, whilst the initial study area for the landscape assessment will be the entirety of the area within 3km.

- 5.5.6 The initial stage of the process is the identification of the existing landscape and visual conditions of the study area (the baseline conditions). This would be informed by desktop research and field survey. The field work will consider both potential impacts on landscape character and potential impacts on the visual amenity of receptors within the study area, - the latter considering both static locations and the view from routes when travelling. Visits will also be made to the agreed representative viewpoint locations.
- 5.5.7 The landscape character baseline will be informed by the NatureScot National Landscape Character Assessment, LCT17: Coastal Agricultural Plain.
- 5.5.8 As the Aberdeenshire Council LCT17 Coastal Agricultural Plain covers a wide area, a finer scale of local landscape character assessment of the study area will be completed. The key features of the existing landscape character will be identified to establish the immediate and wider context of the development. A level of sensitivity to the type of development proposed within LCT17 and the local landscape character assessment will be derived.
- 5.5.9 Baseline reporting in the LVIA chapter will include the identification of relevant landscape planning policy at a national and regional level. Reference will be made to the following documentation:
- National Planning Framework 4 (NPF4, 2023); and
 - Aberdeenshire Council, Aberdeenshire Local Development Plan (2023).
- 5.5.10 As part of the design of the landscape mitigation, consideration will be given to the following:
- Aberdeenshire Council, Aberdeenshire Local Development Plan, Appendix 8, Successful Placemaking Design Guidance;
 - Scottish and Southern Electricity Network, Approach to Substation Site Selection, (July 2022); and
 - National Grid, Horlock Rules for Design of Substations.
- 5.5.11 Following the initial site surveys and assessment of potential impacts on sensitive receptors during the construction and operation phases, a landscape analysis of the Proposed Development would be completed and a Landscape Strategy derived to mitigate potential impacts in order to reduce the likelihood of potential significant effects. Consideration will be given in the landscape design process to geotechnical, flood risk, sustainable drainage design, acoustics, ecology and Biodiversity Net Gain (BNG). This process aligns with SSEN Transmission's responsibilities under Section 38 and Schedule 9 of the Electricity Act relating to the preservation of amenity.
- 5.5.12 The assessment of residual effects to Landscape Character and Visual Amenity during the construction phase and operation phases at Year 1 and Year 15 would be completed. The potential level of significance will then be finalised. The magnitude of change for each identified landscape and visual receptor will be quantified. Combined with the established sensitivity to change for each receptor, the effects will be rated in terms of significance based on the methodology illustrated in **Chapter 3** of this EIA Scoping Report. The assessment of cumulative effects with nearby development projects will also be completed.

Visualisation Methodology

- 5.5.13 To assist in illustrating the potential level of impact magnitude to visual receptors, visualisations will be prepared for each of the eleven representative viewpoints identified on Figures 5.1 and 5.2. The method for the production for the visualisations and the locations of the eleven viewpoints has been agreed with Aberdeenshire County Council (October 2023). The visualisations will be prepared in accordance with

Landscape Institute Guidance²⁰. Five of the representative viewpoints will be illustrated by photomontages (Type 3) and six as 3D wirelines (Type 2). The camera location would be surveyed on site using a handheld Global Positioning System (GPS).

- 5.5.14 It is proposed that visualisations will consist of A3 single frame views with two sheets per viewpoint. The first will show the current view, and the second will show the proposed view at Years 1 and 15 using the 3D model of the Proposed Development. It is assumed that photography will be completed in the winter months of 2023/2024.
- 5.5.15 Within the study area, it is anticipated the potential key visual receptors are likely to be individual residential properties, edge of settlements, the road and cycle networks and popular walking routes used by local residents and visitors. Reference would be made to the Aberdeenshire Council Core Paths network.
- 5.5.16 The representative viewpoints will be used to illustrate the assessment of visual effects on the receptors identified above. The location of the agreed eleven representative viewpoints are shown on Figure 5.1 and 5.2 and listed in Table 5-1.

Table 5-1 Proposed Representative Viewpoints

Viewpoint	Description	Distance/Direction (approximate) from Proposed Development
1	Flushing, on A950 looking south	0m/north
2	Formantine & Buchan Way	1.7km/north-east
3	A950 travelling west	1.25km/north east
4	Bridge of Faichfield looking south west	500m/north-east
5	Cross roads at Parkhill	300m/south-east
6	Minor Lane, east of Netherton Farm	0m/south-east
7	Minor lane at Nether Kinmundy	1.1km/south
8	Castlepark of Ludquharn Farm, looking north east	1.1km/south-west
9	Minor Lane, cross roads with Green Lane at entrance to Drums Farm	900m/west
10	South west edge of Longside, looking south east, Core Path	1.1km/north-west
11	A950 travelling east	400m/north-west

5.6 Issues to be Scoped Out

- 5.6.1 Effects on receptors outwith areas of visibility (as shown by the ZTV study and verified via site visits) for the final design are scoped out of the assessment due to the lack of likely significant effects. Table 5-2 describes the elements of landscape character and visual amenity to be scoped out of the landscape and visual assessment.

Table 5-2 Issues Scoped Out

Issues Scoped out of Assessment	Justification
Landscape Character: National Scenic Areas, Wild Land Areas	Due to distance from the Proposed Development (approximately 80km to the south-east) the effect on these designated landscapes is unlikely to be significant.
Landscape Character: Aberdeenshire Special Landscape Area	The SLA lies on the coast at distance from the study area. Significant effects on local character and visual amenity would be unlikely to occur due to the distance, intervening topography, built form and vegetation.

²⁰ Landscape Institute (2019). Technical Guidance Note 06/19 Visual Representation of Development Proposals. Available at: https://landscapewpstorage01.blob.core.windows.net/www-landscapeinstitute-org/2019/09/LI_TGN-06-19_Visual_Representation.pdf [Accessed: August 2023].

Issues Scoped out of Assessment	Justification
Visual Receptors	<ul style="list-style-type: none"> • Properties: Netherton Farm and Inverveddie House – these are properties involved in the Proposed Development. Netherton Farm is semi-derelict and unoccupied. • Derelict Farmsteads – at the time of this report preparation, several properties within the Study Area are derelict. Their future use and function is unknown in terms of potential redevelopment, therefore these properties are excluded from the scope of this report.

5.7 Summary

- 5.7.1 The proposed approach to the assessment is the identification and evaluation of potential impacts on the landscape character and potential visual receptors present within 3km of the Proposed Development. A desk top assessment will be supported by a detailed field survey with the findings represented by photography using current professional guidance and recommendations. The potential impacts on the landscape character and visual amenity will be identified, the sensitivity and level of magnitude for each type of receptor described.
- 5.7.2 The effects of the Proposed Development on landscape and visual assets will be assessed and mitigation measures proposed to prevent, reduce, or offset any likely significant adverse effects on the landscape or on visual amenity. Cumulative effects from the Proposed Development in combination with other developments will also be considered.

6 Ecology, Nature Conservation and Ornithology

6.1 Introduction

6.1.1 This chapter considers ecological baseline conditions, the potential effects associated with construction and operation of the Proposed Development and the proposed scope of assessment methodology to be considered in the EIA Report.

6.2 Baseline Conditions

6.2.1 A desk-based study to identify designated sites within and surrounding the Proposed Development was undertaken during the site selection stage. The following statutory designated sites at European or International level were identified within a provisional search area of 10km beyond the Proposed Development site boundary. The search was extended to 20km to account for the increased range of certain goose species (greylag goose and pink-footed goose). Figure 1.2 shows the location of designated sites.

- Buchan Ness to Collieston Coast Special Protection Area (SPA) (6.2km south-east) – designated for breeding fulmar, guillemot, herring gull, kittiwake, shag and seabird assemblage;
- Buchan Ness to Collieston Special Area of Conservation (SAC) (7.7km south-east) – designated for vegetated sea cliffs;
- Loch of Strathbeg SPA and Ramsar (11.2km north) – designated for breeding sandwich tern, and non-breeding/overwintering goldeneye, teal, greylag goose, pink-footed goose, Svalbard barnacle goose, whooper swan and waterfowl assemblage – as well as eutrophic loch habitat under the Ramsar citation; and
- Ythan Estuary, Sands of Forvie and Meikle Loch SPA (14.2km south) – designated for breeding common tern, Sandwich and little tern, and non-breeding/overwintering eider, lapwing, redshank, pink-footed goose and waterfowl assemblage.

6.2.2 There are no statutory designated sites at National or Local level within 2km of the Proposed Development site. There are no non-statutory designations or nature conservation sites which overlap with the Proposed Development site or are otherwise connected to the site.

6.2.3 Field surveys of the Proposed Development site and surrounding area which have been completed to date include:

- UK Habitat Classification (UKHab) survey²¹, and Habitat Condition Assessment following Natural England Biodiversity Metric V3.1²² (current at the time of survey) – December 2022;
- Preliminary bat roost assessment²³ of trees and buildings within the Proposed Development site and wider 30m area – July 2023;
- Bat roost activity surveys of trees and buildings with potential roost features within the Proposed Development site and wider 30m area – August and September 2023;
- Potential bat roost features in trees have been inspected using endoscopes and torches – September 2023;

²¹ UK Habitat Classification (2020). The UK Habitat Classification User Manual. Version 1.1.

²² Natural England (2022). Biodiversity Metric 3.1. Natural England Joint Publication JP039. Available at: (now archived) <https://publications.naturalengland.org.uk/publication/5850908674228224> [Accessed: August 2023].

²³ Collins, J. (ed.) (2016). Bat Surveys for Professional Ecologists, Good Practice Guidelines (3rd Edition). The Bat Conservation Trust, London.

- Badger survey^{24,25} within the site and surrounding 100m²⁶ area in July 2023, and extended badger survey covering gaps within the site and up to 1km from the site in September 2023;
- Pine marten survey²⁵ of woodlands and boundary features within the site and up to 250²¹ away – July 2023;
- Red squirrel survey²⁵ of woodlands within the site and up to 50m²⁶ away – July 2023;
- Breeding bird survey within the site and up to 100m²⁷ away – four visits April to July 2023; and
- Scarce breeding bird survey extending to 2km beyond the site²⁸ – four visits April to July 2023.

6.2.4 The UKHab survey was completed during a suboptimal botanical season, but it was possible to map the broad habitat types and much of the site is modified/improved. Habitat data collected to date are sufficient for the purposes of assessment and no further habitat surveys are proposed. Figure 6.1 Habitats shows the primary habitats at the site. The majority of the site comprises modified grassland (approximately 60% cover) or cropland (approximately 33% cover). The modified grassland (habitat of low distinctiveness) was broadly in moderate condition. Neutral grassland occurs in the centre of the site and towards the south-east (approximately 4% cover). The examples of this habitat on site (habitat of relatively high distinctiveness) were found to be typically dominated by Yorkshire fog and soft rush, on more waterlogged soils (central area extends either side of a field drain). A few broadleaved and mixed woodlands occur within the site, mapped along the A950 road and around properties (approximately 0.7% cover). The woodland condition ranged from moderate to poor. Managed hedgerows and treelines were mapped along field boundaries at the site. The hedgerows and treelines were in poor or moderate condition. A watercourse occurs along the western boundary of the site and field drains extend through the site (of low distinctiveness).

6.2.5 Japanese knotweed, an invasive and non-native species, has been identified in relatively small quantities at the site – by properties and boundary walls. A specific survey was undertaken in June 2023 to confirm and map the presence of Japanese knotweed. The three locations where Japanese knotweed has been confirmed are highlighted on Figure 6.1. Specialist contractors have been appointed to propose mitigation or removal measures.

6.2.6 Surveys undertaken in July 2023 for pine marten and red squirrel did not reveal any conclusive evidence of these species. A tree cavity feature that could be used as a pine marten den site with possible prey remains was identified along the northern boundary, but other suitable habitat for these species is relatively scarce.

6.2.7 Badgers are active in the area. Further information has not been disclosed due to their sensitivity to persecution but can be shared directly on request.

6.2.8 The preliminary bat roost assessment identified potential roost features within all buildings at the site (including at Inverveddie House, Netherton, and Langfield House), and a property just beyond the west of the site at Tiffery. Generally, the features were assessed to be of moderate suitability for roosting bats during the active season. A review of building suitability to support hibernating bats was undertaken concurrently, with preliminary findings ranging between negligible to moderate suitability depending on the characteristics of the features within each structure and surrounding habitat. No high-suitability features within buildings were recorded. Trees along the northern boundary and around properties at the site were also recorded to have potential roost features.

²⁴ Scottish Badgers (2018). Surveying for Badgers: Good Practice Guidelines. Version 1.

²⁵ NatureScot. Standing advice for planning consultations – protected species. Available at : <https://www.nature.scot/professional-advice/planning-and-development/planning-and-development-advice/planning-and-development-standing-advice-and-guidance-documents>.

²⁶ Access to the full Proposed Development site was restricted because of aggressive livestock and genetically modified crops. Access was not taken north of the A950 road. Repeat surveys will be undertaken where access becomes available, or an assessment of limitations will be included in the EIA for any deviations from standard practices and precautionary principle applied.

²⁷ Based on the Common Bird Census. Gilbert G., Gibbons DW, and Evans J. (1998). Bird Monitoring Methods. RSPB, Sandy.

²⁸ SNH (2017). Recommended bird survey methods to inform impact assessment of onshore windfarms. SNH Guidance. SNH, Battleby.

- 6.2.9 Breeding bird surveys to date have found that the arable and grazing-dominated habitat within the site and the wider area is of low value for ornithological interests. Species recorded have included a range of typical farmland passerines (songbirds) in addition to grey partridge and oystercatcher. An active sand martin colony has been identified within the disused quarry in the east of the site.
- 6.2.10 In the absence of field surveys, a review of the suitability of the site habitats for other protected species identified limited habitat for otter, water vole, invertebrates, amphibians, reptiles and fish. Amphibians may use drainage ditches for breeding. Hedgerows may provide some refuge for reptile and amphibian species. However, the habitats surrounding these are heavily managed and therefore the site is unlikely to represent a key area for these species. Similarly, ditches at the site are unlikely to represent key habitat for otter, water vole and salmonids. The areas of damp semi-natural neutral grassland at the site and field margins may support common and widespread species of invertebrates.
- 6.2.11 Based on the data collected from the desk-based study, together with a review of relevant data already obtained on the site, the following additional surveys have been undertaken or are ongoing between August and December 2023. All surveys will be undertaken with reference to NatureScot standing advice for protected species²⁵ and industry-recognised species-specific best practice, with justification for deviations noted below.

Otter and Water Vole

6.2.12 The following surveys will be undertaken:

- Otter survey along watercourses within the site and up to 200m – October 2023; and
- Water vole survey along watercourses within the site and up to 100m – October 2023.

Badger

- 6.2.13 An extended badger survey covering the site and up to 1km from the site has been completed in September 2023.
- 6.2.14 Badger bait marking surveys will be undertaken during October 2023 to map the territorial boundaries of the badger social group(s) within the site boundary and surrounding 1km area, where access is permitted. NatureScot has been consulted via letter/email on the proposed approach and responded on 4 October 2023 via email to agree that it is appropriate.

Bats

- 6.2.15 Bat roost presence/absence surveys of buildings and trees with potential roost features that may be at risk of being affected by the Proposed Development e.g. located within 30m of proposed construction activities have been undertaken. Bat roost activity surveys of buildings with low suitability have been undertaken once and bat roost activity surveys of buildings of moderate suitability have been undertaken twice, where safe access has been possible (noting health and safety has been prioritised).
- 6.2.16 The surveys commenced on the 14 August 2023, however, the first survey visit was aborted whilst surveyors were on site due to health and safety concerns relating to access. It was not possible to secure suitable access and resume surveys until 12 September 2023. Therefore, the first survey of the majority of buildings has been undertaken week commencing 11 September 2023 and the second survey has been undertaken week commencing 25 September 2023. These surveys were undertaken during favourable weather conditions to record general bat roosting activity and foraging behaviour. Data from completed surveys is being analysed at the time of writing this report.
- 6.2.17 Additionally, it was not possible to secure safe means of access to undertake dusk or dawn surveys at some of the buildings during the survey window due to restricted access, health and safety concerns and livestock presence. Including at one farmyard where it is understood that the cattle have been hefted for many years and would become distressed by the presence of strangers, particularly at dusk/dawn. Alternative solutions for

securing safe access were explored (e.g. exclusion fencing for cattle), but no suitable outcome was feasible within the survey window timescales.

- 6.2.18 Potential roost features in trees have been inspected using endoscopes and torches. Features at height were accessed via ladders and aerial rope access methods. Trees were surveyed throughout September 2023 by bat-licensed ecologists, to gain a better understanding of the features' suitability for roosting bats and search for evidence. The tree inspections have replaced activity surveys where access was safe to do so. The number of inspections followed the proportionate recommendations for activity surveys based on their suitability (e.g. trees of moderate suitability were inspected twice). During close inspections at height, no evidence of roosting bats was recorded, but details on the feature location/aspect/type have been recorded to infer their suitability and type of use. The suitability of potential roost features was reclassified from the initial preliminary roost assessment: many of the trees were reduced to negligible or low activity roost suitability; approximately 13 trees have moderate suitability for activity roosts and one tree has high suitability. The majority of trees have negligible or low hibernation roost suitability.
- 6.2.19 Bat hibernation surveys of structures which have been categorised as suitable for hibernation purposes will be undertaken over winter 2023-24.
- 6.2.20 It is acknowledged that the timings for activity surveys and tree climbing inspections have deviated from Bat Conservation Trust guidelines²³ (for the reasons outlined above) which state at least one survey of a moderately suitable building/tree should be undertaken between May to August to capture the maternity period. Additionally, it has not been possible to undertake activity surveys at all of the buildings. However, preliminary roost assessment data are available, buildings will be inspected closely again for signs indicating bat presence as part of the hibernation surveys and a precautionary approach to EIA will be applied, whereby potential roost features suitable to support maternity roosts will be assumed as such for the purposes of impact assessment and mitigation design.
- 6.2.21 No further bat roost activity surveys (e.g. dusk emergence/dawn re-entry) are proposed for the EIA, however, there will be a commitment to re-survey buildings that could potentially be impacted by the Proposed Development during the optimal window for detecting maternity roosts prior to construction to inform licensing requirements.

Sensitive Receptors

- 6.2.22 Based on the information available to date, sensitive receptors are likely to include:
- Bats; and
 - Badgers.
- 6.2.23 As additional surveys are progressed, it is possible that other species (e.g. otter, water vole) will be identified as sensitive receptors. The EIA Report chapter will include a full review of the baseline data and conservation status of each receptor to identify the Important Ecological Features.

6.3 Potentially Significant Effects

- 6.3.1 As badgers are active in the area, it is likely that the Proposed Development will result in loss of supporting habitat and potentially 'squeeze' the territory size(s) of the social group(s) present. Extended surveys to search for badger setts up to 1km from the Proposed Development site have been undertaken to understand the significance of this loss for the social group(s) which use the site and availability of habitat in the wider area. The mitigation hierarchy will be applied through the ongoing design phase to retain badger setts and supporting habitat where possible. However, the loss of certain setts is likely to be unavoidable. Again, the significance of this would be assessed through surveying a wider area to provide context. In the absence of further survey data, the collective impacts of habitat and sett loss have potential to result in significant negative effects on badgers using the site.

- 6.3.2 There is potential for construction related injury to or incidental killing of badgers – although good construction practices (e.g., securing work areas, safely storing materials, restricting vehicle speed limits) would suitably reduce this risk such that it would not have a significant effect.
- 6.3.3 It is not anticipated that the operational phase of the Proposed Development would significantly increase the mortality rate of badgers. The area is already bound by roads and vehicle movements within the site will likely be restricted to reduced speed limits.
- 6.3.4 The Proposed Development may affect bats through roost loss and/or disturbance, if bats are identified to be using the potential roost features within buildings and trees within 30m of proposed construction works. At this stage, no further activity surveys are proposed. Where roosts have been identified, the mitigation hierarchy will be applied to retain these where possible. At this stage, whilst data are still being analysed, it is possible that the loss of roosts may have a significant effect on the local bat population – depending on the characteristics (type/use, species, numbers, etc.) of the roost. In the absence of surveys within the optimal maternity window, a worst-case precautionary approach will be taken.
- 6.3.5 Where buildings are retained and buffered from proposed construction works through design, potential disturbance is unlikely to result in a significant effect. The local bat population is unlikely to rely exclusively on habitats at the site and these features and their function are well represented across the wider landscape. The loss of habitats from the Site is therefore unlikely to have a significant effect on the local bat population.
- 6.3.6 Effects arising from artificial lighting on both badgers and bats from construction and operational phases of the Proposed Development will be considered. It is anticipated that sensitive/sympathetic lighting schemes will be embedded and light spill outside of the site will be reduced as far as possible.
- 6.3.7 All works affecting badger setts and bat roosts will be subject to licensing. The unavoidable loss of any resting sites may require compensation. All mitigation and compensation will be described in the EIA Report.

6.4 Mitigation

- 6.4.1 The mitigation hierarchy will be applied throughout the assessment, including from the design stage. The consideration of potential significant effects on habitats and species, informed by further survey data, will be used to influence the siting of infrastructure and construction access, where technically feasible, to avoid or minimise effects.
- 6.4.2 In addition, the Applicant has established best practice construction techniques and procedures that have been agreed with statutory consultees, including Scottish Environment Protection Agency (SEPA) and NatureScot. These are set out within the SSEN Transmission GEMPs and Species Protection Plans (SPP). The Proposed Development would be constructed in accordance with these plans.
- 6.4.3 A contractual management requirement of the successful Principal Contractor would be the development and implementation of a comprehensive and site-specific robust CEMP. This document would detail how the successful Principal Contractor would manage the works in accordance with all commitments and mitigation detailed in the EIA Report, the SSEN Transmission GEMPs, SPPs, statutory consents and authorisations, and industry best practice and guidance, including pollution prevention guidance.
- 6.4.4 Additional mitigation measures to remove or suitably reduce potential significant effects will be identified through the EIA. This may include ecological compensation. The EIA Report chapter will fully detail any additional measures including responsibilities, timescales, and any follow-on monitoring requirements.
- 6.4.5 Where bat surveys have been undertaken outside of the optimal window for detecting maternity roosts, a precautionary approach to assessment and the design of mitigation measures will be applied. The close inspections of potential roost features in trees will allow a better understanding of how potential roost features may be used and the number of bats they may support, to support the assessment. The mitigation hierarchy will be applied in the first instance to retain as many potential roost features as possible. Other

measures are likely to include additional surveys before specific works which may affect potential roost features.

6.5 Proposed Scope of Assessment

- 6.5.1 Field surveys to inform the assessment are ongoing – as described in Paragraphs 6.2.12, 6.2.14 and 6.2.19-6.2.20 on the proposed scope of surveys for bats, badgers, otter and water vole to be completed between October and December 2023.
- 6.5.2 The ecological impact assessment will be completed in accordance with the Chartered Institute of Ecological and Environmental Management (CIEEM) Guidelines for Ecological Impact Assessment. The assessment will use the ecological baseline to identify the Important Ecological Features (IEF) that could be affected by the construction or operation of the Proposed Development, by assigning a geographic level of importance to each receptor based on its conservation status, population/assemblage trends and other relevant criteria (including size, naturalness, rarity and diversity). Details of the Proposed Development will then be used to assess what level of effect each IEF is likely to receive and whether or not that effect will be beneficial or adverse, significant or negligible, and temporary or permanent.
- 6.5.3 Where appropriate, mitigation measures will be recommended within the EIA to remedy any adverse effects and measures to enhance the local ecology will also be incorporated within the assessment. An assessment of residual effects will then be undertaken and reported within the EIA Report.
- 6.5.4 A BNG Report will also be produced, setting out the pre- and post-development Biodiversity Units. This will aim to demonstrate a measurable net gain will be delivered through habitat enhancement and creation. A target of 10% net gain has been proposed.

6.6 Issues Scoped Out

Designated sites

- 6.6.1 There are no perceived effect pathways for impacts on qualifying interests of Buchan Ness to Collieston Coast SPA and SAC. These sites are scoped out, as they are designated for coastal species and habitat types, and the site does not represent supporting or functionally linked habitat at a distance of 6-7km.
- 6.6.2 Modified grassland and crop habitats are typically suitable for foraging and roosting geese and swans, and the site is located within the range of qualifying goose and swan species of Loch of Strathbeg SPA and Ramsar site, and Ythan Estuary, Sands of Forvie and Meikle Loch SPA²⁹. However, the wider landscape offers an abundance of this habitat type. The loss of habitat at the site is therefore unlikely to have significant effects on these SPA populations and as such they are scoped out of the EIA. A Habitats Regulations Appraisal (HRA) Screening Report will be prepared as a standalone document separate to the EIA to consider the potential for likely significant effects on these designated sites fully.

Habitats

- 6.6.3 It is proposed that impacts to improved and semi-natural habitats at the site, when considered solely as habitat interests (i.e., not as supporting species), are scoped out of further assessment. This is based on their relatively low ecological value, the fact they are comprised of commonly occurring or widespread species, current modified/land use condition, and being well represented in the wider landscape. It is anticipated that woodlands surrounding properties and treelines at the Proposed Development will be retained as far as reasonably possible through the design. A BNG assessment will be undertaken in parallel with the EIA to inform landscape designs. The BNG assessment will be documented within a standalone BNG report and associated

²⁹ SNH (2016). Assessing Connectivity with Special Protection Areas (SPAs). Version 3 – June 2016.

toolkit. The Proposed Development will have a target to achieve a 10% net gain in Biodiversity Units. Habitat loss of semi-natural areas will therefore be accounted for through the BNG process.

Pollution

- 6.6.4 All issues arising from pollution during the construction and operational phases are scoped out. If any, these would be short-term and likely to be localised events. Effective, industry-standard mitigation measures will be embedded within the project (detailed within the Principal Contractor's CEMP and the SSEN Transmission GEMPs).

Invasive Non-Native Species

- 6.6.5 The spread of Japanese knotweed and subsequent effects of habitat degradation have been scoped out. This is on the assumption that all stands have been mapped and a specialist contractor has been appointed to progress measures to manage or remove the plant material prior to construction.

Protected Species (Non-Avian)

- 6.6.6 Based on the baseline information available, the follow species are scoped out of further assessment through EIA: red squirrel, pine marten, amphibians, reptiles, invertebrates, and fish. The site offers low suitability habitat and is unlikely to represent a key area for these species/groups. The same habitat types are well represented in the wider landscape. Preliminary surveys of woodlands at the site for red squirrel and pine marten did not identify any definitive evidence of their presence. Any new evidence of these species, or other protected and conservation priority species, which may be recorded during subsequent bat surveys and other visits to the site will be reconsidered as part of the EIA.

Ornithology

- 6.6.7 The effects from the Proposed Development to populations of geese and swans potentially linked to the relevant designated sites will be reviewed through HRA Screening as discussed above. Ongoing flight activity survey effort for an overhead line diversion related to the Proposed Development will be used to collect baseline data relating to the distribution of foraging geese to inform the HRA.
- 6.6.8 Aside from this, all other ornithological interests are scoped out of further assessment through EIA. Breeding bird surveys to date have found that the arable and grazing-dominated habitat within the site and the wider area is of low value for ornithological interests. Species recorded have included a range of typical farmland passerines (songbirds) in addition to grey partridge and oystercatcher. Grey partridge is a declining Red List species within Birds of Conservation Concern 5³⁰ (BoCC5) and has a UK population estimate of 37,000 pairs³¹. Oystercatcher is an Amber List BoCC5 species. However, taking account of the relatively localised nature of the Proposed Development in comparison to the extensive suitable habitat (arable farmland) present in the wider area, no significant effects to the species are predicted. In addition, these species are expected to be habituated to a degree of disturbance from farming operations.
- 6.6.9 A colony of sand martins was found to be nesting at the disused quarry to the east of the site. Sand martin is a Green List BoCC5 species. It is anticipated that the ongoing design work will seek to retain the sand martin nesting habitat and/or provide compensatory nesting habitat within the landscape designs. This will be committed to as a good practice measure because sand martins are colonial nesters with localised breeding sites and as an interest feature in the landscape.

³⁰ Stanbury, A., Eaton, M., Aebischer, N., Balmer, D., Brown, A., Douse, A., Lindley, P., McCulloch, N., Noble, D., and Win I. (2021). The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain. *British Birds* 114: 723-747.

³¹ Woodward, I., Aebischer, N., Burnell, D., Eaton, M., Frost, T., Hall, C., Stroud, S. & Noble, D. (2020). APEP 4 - Population estimates of birds in Great Britain and the United Kingdom. *British Birds* Volume: 113.

- 6.6.10 Effective, industry-standard mitigation measures and sensitive timings of works will be embedded within the project for the protection of all active bird nests, to ensure compliance with the Wildlife and Countryside Act (1981, as amended).

6.7 Summary

- 6.7.1 Baseline studies for ecology are ongoing, but initial data suggests bats and badgers to be the main sensitivities at the Proposed Development site. The EIA Report chapter will focus on these species and review additional data obtained through future surveys to assess fully the significance of any impacts to these species and their supporting habitat. The mitigation hierarchy will be applied from early design stage. However, where there will be unavoidable impacts on resting sites (e.g., badger setts, bat roosts), it is likely that species-specific mitigation, compensation and licensing will be required.
- 6.7.2 Effects on habitats and other species have been scoped out at this stage (pending further surveys). Notwithstanding, a BNG Assessment will be undertaken. This will account for the loss of semi-natural habitat and seek to deliver habitat enhancements, in collaboration with development of landscape designs that would also benefit wildlife.

7 Cultural Heritage

7.1 Introduction

7.1.1 This Chapter of the Scoping Report provides a brief overview of the cultural heritage baseline conditions, the potential effects associated with construction and operation of the Proposed Development and the proposed scope of assessment methodology to be considered in the EIA Report.

7.1.2 The cultural heritage EIA Report chapter will assess the potential for significant effects on heritage assets resulting from the Proposed Development. It will also form the basis for further consultation with Historic Environment Scotland (HES) and the Aberdeenshire Council Archaeology Service (ACAS).

7.1.3 The specific objectives of the chapter will be to:

- Identify the cultural heritage baseline within the Proposed Development;
- Assess the Proposed Development in terms of its archaeological potential;
- Identify designated heritage assets within 1km of the Proposed Development where there is the potential for impacts arising through change within the setting of heritage assets;
- Consider the potential direct, indirect, and cumulative effects of the Proposed Development on heritage assets;
- Identify measures, where appropriate, to mitigate any predicted physical impacts on heritage assets, or any significant adverse effects from impacts arising through change within the setting of heritage assets; and
- To assess residual effects taking this mitigation into account.

7.2 Baseline Conditions

7.2.1 There are no designated heritage assets within the Proposed Development boundary. The designated assets within a 1km study area surrounding the Proposed Development are listed in Table 7-1 and illustrated on Figure 1.2. The 1km boundary allows for consideration of those heritage assets that have the potential to receive significant effects. The listed buildings within Longside approximately 1.1km and 1.5km to the north-west of the Proposed Development (including the Category A Old Parish Church of Longside (LB9410)) have been scoped out as adjacent properties will screen the majority, if not all, views towards the Proposed Development. Intervening topography and vegetation would also screen or block more distant views between the buildings, further reducing the potential for visibility of the Proposed Development. Therefore, there would be no potential for significant effects.

7.2.2 An initial assessment and walkover survey during the site selection stage has identified five non-designated heritage assets within the Proposed Development site. These comprise four extant farmsteads recorded within the Scottish National Record of the Historic Environment (SNRHE), and the ruin of a house discovered during the walkover survey that matches the location of a structure labelled as Redlums on the Ordnance Survey 1st edition map. There are also 10 non-designated heritage assets within 250m of the Proposed Development. These include a range of heritage assets dating from the prehistoric to the post-medieval period.

Table 7-1 Heritage assets

Heritage Asset Designation	Heritage Asset Names and Reference Numbers
Listed buildings	The following listed buildings have been identified within 1km of the Proposed Development: <ul style="list-style-type: none"> • Saint John's Church and Chapel Well, Longside (LB9419) – Category B (approximately 800m to the north-west); and

Heritage Asset Designation	Heritage Asset Names and Reference Numbers
	<ul style="list-style-type: none"> House and Garden Walls, Cairngall House (LB9420) – Category C (approximately 650m to the north-west).
Non-designated	<p>The following non-designated heritage assets have been identified within the boundary of the Proposed Development:</p> <ul style="list-style-type: none"> Longleys (Historic Environment Record (HER) NK04NE0096); Inverveddie, farmhouse (Canmore 20998); Tiffery (HER NK04NW0118); Netherton (HER NK04NE0085); and Redlum House ruin – identified during walkover survey.

7.3 Potentially Significant Effects

- 7.3.1 The Proposed Development is located approximately 750m at its closest point from the Category B Saint John’s Church and Chapel Well, Longside (LB9419) and 800m from the Category C House and Garden Walls, Cairngall House (LB9420). There is the potential for impacts arising through change within the setting of these structures due to the proximity of the Proposed Development. There is also the potential for cumulative impacts from other anticipated developments within 1km of the listed buildings. As such, the effect of the Proposed Development on the setting of these will be a key consideration in the EIA.
- 7.3.2 The five identified non-designated heritage assets within the Proposed Development area (see Table 7-1) have the potential to be physically impacted by the Proposed Development, resulting in probable significant adverse effects if they cannot be avoided.

7.4 Mitigation

- 7.4.1 Mitigation measures to minimise adverse effects on cultural heritage will be developed through the EIA stage.
- 7.4.2 Where practical, potential direct physical impacts will be mitigated through design modifications and the use of micro-siting to avoid non-designated heritage assets and preserve them in-situ.
- 7.4.3 Where avoidance cannot be achieved, mitigation will aim to reduce the effects through the implementation of archaeological works to record any heritage assets, providing preservation by record. A focussed programme of supporting archaeological work, such as archaeological monitoring during construction, as well as excavation and recording of any discovered archaeological remains, will help to further mitigate any potential impacts, if required. The details and scope of such a programme of mitigation would need to be agreed through consultation with ACAS.

7.5 Proposed Scope of Assessment

- 7.5.1 The assessment of potential effects on heritage assets within the baseline will be carried out in accordance with the standards set by the Chartered Institute for Archaeologists (CIfA), and in agreement with HES and ACAS.
- 7.5.2 A detailed desk study will be undertaken to inform the cultural heritage baseline and will include consultation with HES and ACAS. The assessment will be informed by a review of all available archaeological records, historical documentary evidence, cartographic evidence, and photographic material. This will involve consultation of the following sources:
- Geographic Information System (GIS) data on scheduled monuments, listed buildings, and GDLs obtained from HES;
 - GIS data on other heritage assets will be obtained from the SNRHE, which is maintained by HES, and from the Aberdeenshire HER, which is maintained by ACAS;

- Readily accessible primary and secondary historical sources for information relating to the area's historical past, including past land use;
- Pre-Ordnance Survey maps of the Proposed Development area, available online from the National Library of Scotland (NLS);
- First and subsequent editions of the Ordnance Survey (OS) maps of the Proposed Development area, examined via the NLS;
- LIDAR datasets of the general area through NLS;
- The solid and drift geology for the Proposed Development area based on that recorded by the British Geological Survey/Geological Survey of Great Britain maps; and
- A detailed walkover survey of the Proposed Development area.

- 7.5.3 A walkover survey of the Proposed Development boundary was conducted during the site selection stage and the ruin of a former house labelled as Redlums on the Ordnance Survey 1st edition map was discovered.
- 7.5.4 The study area for the assessment will be set at 1km for designated heritage assets and 250m for non-designated heritage assets. A 1km study area would take into consideration the potential for impacts arising through change within the setting of heritage assets. A 250m study area would provide a wider baseline understanding of the archaeological potential within the Proposed Development area.
- 7.5.5 Effects on the cultural heritage resource will be determined by identifying the value of the heritage assets within the baseline and assessing the magnitude of any potential impacts. The effects will be assessed by taking account of the predicted magnitude of impact and the value of the receptor. Mitigation measures will be recommended to minimise the impact of the Proposed Development on cultural heritage, and a residual effect will be determined.
- 7.5.6 The determination of the value of heritage assets is based on statutory designation and/or professional judgement against the characteristics and criteria expressed in HES Designation Policy and Selection Guidance³² and the Historic Environment Policy for Scotland³³. The determination of setting has been undertaken in accordance with guidance provided within the Managing Change Guidance³⁴, and the ZTV (see Chapter 5 Landscape and Visual Amenity) to be produced will aid in determining impacts arising through change within the setting of heritage assets.
- 7.5.7 Five ratings will be adopted for ascertaining the value of heritage assets: very high, high, medium, low, and negligible, in line with International Council on Monuments and Sites (ICOMOS) guidance (2010)³⁵. The magnitude of impact will be determined on a five point scale as well, from No Change to Major, with beneficial as well as adverse impacts noted.
- 7.5.8 The significance of the effect of change on an attribute of a heritage asset is a function of the importance of the attribute and the scale of change. For this assessment, impacts of **Moderate** or greater significance are potentially significant in the context of the EIA regulations and are highlighted in bold in Table 7-2.

³² Historic Environment Scotland (2019). Designation Policy and Selection Guidance.

³³ Historic Environment Scotland (2019). Historic Environment Policy for Scotland.

³⁴ Historic Environment Scotland (2020). Managing Change in the Historic Environment: Setting.

³⁵ ICOMOS (2010). Guidance on Heritage Impact Assessment for Cultural World Heritage Properties.

Table 7-2 Significance of Effect

		Magnitude of Impact				
		Major	Moderate	Minor	Negligible	No Change
Value	Very high	Very Large	Large or Very Large	Moderate or Large	Slight	Neutral
	High	Large or Very Large	Moderate or Large	Moderate or Slight	Slight	Neutral
	Medium	Moderate or Large	Moderate	Slight	Neutral or Slight	Neutral
	Low	Slight or Moderate	Slight	Neutral or Slight	Neutral or Slight	Neutral
	Negligible	Slight	Neutral or Slight	Neutral or Slight	Neutral	Neutral

7.6 Issues Scoped Out

- 7.6.1 The direct impacts during construction and operation of the Proposed Development on World Heritage Sites, Scheduled Monuments, Marine Protected Areas, GDLs, Historic Battlefields and Conservation Areas will be scoped out of the cultural heritage assessment as there are none present within the Proposed Development area or within the 1km study area.
- 7.6.2 Once construction is complete, the potential for direct impacts upon known and unknown non-designated heritage assets will be removed, so this element will be scoped out of the cultural heritage assessment.
- 7.6.3 It is not anticipated that there will be any indirect impacts from the construction or operation of the Proposed Development, therefore the assessment of indirect impacts on heritage assets has been scoped out.

7.7 Summary

- 7.7.1 The proposed approach to the assessment has been designed to identify and evaluate any heritage assets present within the Proposed Development area, through examination of desk-based sources and detailed field survey, and to identify heritage assets outside the Proposed Development that may experience significant effects from impacts arising through change within their setting. Direct physical impacts on known and potential heritage assets within the Proposed Development, as well as direct impacts arising through change in the setting of designated heritage assets within 1km of the Proposed Development, will be considered within the assessment.
- 7.7.2 The effects of the Proposed Development on heritage assets will be assessed and mitigation measures, where appropriate, will be proposed to prevent, reduce, or offset any direct physical impacts on heritage assets, or any likely significant adverse effects arising from change within the setting of heritage assets. Cumulative effects from the Proposed Development in combination with other developments would also be considered, where appropriate.

8 Traffic and Transport

8.1 Introduction

8.1.1 This chapter provides a brief overview of the methodology proposed to support the preparation of the Traffic and Transport chapter of the EIA Report. It sets out the baseline conditions and identifies the potential effects associated with the Proposed Development's construction and operation.

8.2 Baseline Conditions

8.2.1 The Proposed Development will be accessed from the A950 which forms the northern site boundary. It is anticipated that the majority of construction and operational traffic will access the A950 from the A90 which is located approximately 5km to the east, with the A90 forming part of the strategic road network, in addition to supporting access to the port of Peterhead.

8.2.2 To establish baseline traffic flows, data will be obtained from the Department for Transport (DfT) and Transport Scotland (TS) for the most recently available period. Annual Average Daily Flow (AADF) information will be obtained for the agreed study network, which will confirm the traffic levels, including Heavy Goods Vehicles (HGVs), currently using the key access route.

8.3 Potentially Significant Effects

8.3.1 It is intended that potential effects of the Proposed Development will be reviewed in accordance with the Institute of Environmental Management and Assessment (IEMA) Guidelines for the Environmental Assessment of Road Traffic³⁶ which confirms that an assessment should be undertaken in accordance with the following two rules:

- Rule 1: On road links where traffic flows are predicted to increase by more than 30% (or where the number of heavy goods vehicles is predicted to increase by more than 30%); and
- Rule 2: On road links of high sensitivity where traffic flows have increased by 10% or more.

8.3.2 Where the predicted growth in traffic flow is below the thresholds, the IEMA guidelines suggest the significance of the effects can be stated to be negligible and further detailed assessment is not warranted.

8.3.3 The following groups and special interests will also be considered for each link on the agreed study network in line with the IEMA guidance, to determine the sensitivity of receptors:

- People at home;
- People at work;
- Sensitive locations – including hospitals, schools, places of worship and historical buildings;
- People walking;
- People cycling;
- Recreational and shopping areas;
- Ecological/nature conservation sites; and
- Tourist/visitor attractions.

³⁶ IEMA (2023) Institute of Environmental Management and Assessment (IEMA) Guidelines: Environment Assessment of Traffic and Movement. Available online: <https://www.iema.net/resources/blog/2023/07/12/new-iema-guidance-environmental-assessment-of-traffic-and-movement>.

8.4 Mitigation

- 8.4.1 The Proposed Development's construction will be supported by the implementation of a Construction Traffic Management Plan (CTMP) which will set out the mitigation measures to be implemented during the construction phase. The measures will manage the impact of all construction traffic, including abnormal loads, on the operation of the local road network.
- 8.4.2 The CTMP will be developed by the Principal Contractor and agreed with Aberdeenshire Council prior to the commencement of construction activities.

8.5 Proposed Scope of Assessment

- 8.5.1 The EIA Traffic and Transport chapter will be prepared in accordance with relevant guidance and policy including the IEMA Guidelines for the Environmental Assessment of Road Traffic, and include the following:
- A review of the Proposed Development's impact on the operation of the following roads which constitute the proposed Study Area:
 - A950 between the Proposed Development and A90;
 - A90 Peterhead Bypass to the north of the A950;
 - A90 Peterhead Bypass to the south of the A950; and
 - A90 to the south of Peterhead.
 - Where either of the two IEMA thresholds are exceeded, the impact of construction traffic will be assessed in terms of the following effects:
 - Severance;
 - Driver delay;
 - Pedestrian delay;
 - Pedestrian amenity;
 - Fear and intimidation; and
 - Accidents and safety.
 - It is not intended to undertake a detailed assessment where neither of the two IEMA thresholds are exceeded;
 - A cumulative assessment taking cognisance of consented developments which may have an impact on the operation of the study area's road network;
 - Baseline traffic flow data will be obtained from the DfT and TS for the most recently available period. Annual Average Daily Flow (AADF) information will be obtained for the agreed study network, which will confirm the traffic levels including Heavy Goods Vehicles (HGVs) using each of the road links contained within the study area; and
 - The most recently available five year period of personal injury accident data will be obtained from the online Crashmap database³⁷ for the study area.
- 8.5.2 The nature of the Proposed Development is expected to require the transportation of certain components to the site as abnormal loads. It is therefore intended to undertake an Abnormal Load Route Assessment (ALRA) to review the ability of the route between the assumed port of entry (Peterhead) and the site to accommodate the largest component which is required to be delivered to the site. The ALRA will be supported by a swept-path analysis of identified pinch points to be undertaken using AutoTrack.

³⁷ Crashmap (2020). Providing access to maps and information about crashes on roads near you. Available at: <https://www.crashmap.co.uk/> [Accessed: August 2023].

8.6 Issues Scoped Out

- 8.6.1 As vehicles travel away from the Proposed Development during the construction phase, they will disperse across the wider road network, thus diluting any potential effects. It is therefore expected that the effects relating to Traffic and Transport are unlikely to be significant beyond the identified Study Area, and as such no further routes are proposed to be included.
- 8.6.2 The traffic impacts associated with the operational phase are anticipated to be of low volume, being limited to movements associated with maintenance activities and low numbers of staff commuting to the site. Therefore, further assessment of the traffic impacts of the Proposed Development during the operational phase is not considered necessary.

9 Hydrology, Hydrogeology, Geology and Soils

9.1 Introduction

9.1.1 This chapter provides a brief overview of the Hydrology, Hydrogeology, Geology and Soils baseline conditions, the potential effects associated with construction and operation of the Proposed Development and the proposed scope of assessment methodology to be considered in the EIA Report.

9.2 Baseline

River Catchment

9.2.1 The Proposed Development would be located in Aberdeenshire, in the north-east of Scotland, approximately 7.5km west of the coastal town of Peterhead. The Proposed Development is approximately 750m south of the River Ugie, within the River Ugie Catchment. The River Ugie flows in an easterly direction before discharging into the Ugie Estuary coastal water body.

9.2.2 The Proposed Development is located approximately 415m east of the Burn of Cairngall, 500m west of the Burn of Faichfield, both tributaries of the Ugie Water. The 'South Ugie - Stuartfield to Longside' (SEPA Water Body name) (ID: 23224) has been classified by SEPA under the Water Framework Directive (WFD) as having moderate overall status (2020) on account of ecology. The 'North Ugie - North/South confl to tidal limit' (ID: 23215) is classified as having poor overall status (2020). 'Faichfield Burn' (ID: 23217) is classified as a heavily modified water body with moderate overall status on account of bad overall ecology status. The 'Burn of Ludquharn' (ID: 23225) (Burn of Cairngall) has been classified as a heavily modified water body with moderate overall status on account of poor overall ecology status²⁴.

9.2.3 The Proposed Development does not require any crossings or culverting of existing watercourse channels, shown on OS 1:50,000 mapping that would be subject to Controlled Activities Regulations licensing. It would be reasonable to anticipate a combination of smaller or ephemeral surface channels and sub-surface field drainage in this area, which may be more apparent during wet conditions.

9.2.4 OS 1:10,000 scale mapping and aerial imagery indicate several small unnamed watercourses and drainage channels, crossed by the Proposed Development; the closest of which being located immediately adjacent to the Proposed Development.

Statutory Designated Sites

9.2.5 No SSSI, SAC, SPA, Ramsar sites or Marine Protection Areas have been identified within 1km of the Proposed Development.

Private Water Supplies

9.2.6 Aberdeenshire Council has confirmed there are 35 private water supplies (PWS) located within 1km of the Proposed Development. Of these, three are located within the site boundary:

- Longleys, Lonside (supply type: B³⁸);
- Netherton, Nether Kinmundy (supply type: B); and
- Inverveddie, Nether Kinmundy (supply type: B).

³⁸ Type B Supplies – supplies serving 'only' domestic premises with less than 50 persons in total supplied (These are regulated by the Private Water Supplies (Scotland) Regulations 2006).

- 9.2.7 There are also two PWS located adjacent to the site boundary at Inverveddie Cottage, Nether Kinmundy (supply type: B) and Tiffery, Longside (supply type: B).
- 9.2.8 Scottish Water has confirmed that they have assets within 1km of the Proposed Development; these are anticipated to include trunk mains and local distribution networks to local properties. SEPA was contacted regarding authorised abstractions and provided records of five Controlled Activity Regulations (CAR) Licences, which were reviewed based on the site addresses and none are within 1km of Proposed Development.

Geology

- 9.2.9 According to the British Geological Survey (BGS) Geoindex Onshore Bedrock³⁹ and Superficial Deposits geology mapping³⁹, superficial deposits underlying the Proposed Development include glacial sand and gravel, and till (diamicton).
- 9.2.10 According to the National Soil Map of Scotland⁴⁰, the Proposed Development is underlain by noncareous gleys, brown earths and humus-iron podzols.
- 9.2.11 According to the NatureScot Carbon and Peatland map⁴¹ the Proposed Development is underlain by Class 0 (mineral soils – peatland soils are not typically found on these soils) and Class 4 (unlikely to be associated with peatland and carbon rich soils) which are not classified as priority peatland habitats and indicates that peat is not present within the site boundary. A small area of Class 1 peat (nationally important carbon-rich soils, deep peat and priority peatland habitat) likely to be of high conservation value is located approximately 850m south of the site boundary.

Flood Risk

- 9.2.12 SEPA's indicative flood risk mapping⁴² suggests that there is no areas of high, medium or low risk of river flooding within the site boundary. There is a high risk associated with the Burn of Cairngall and Burn of Faichfield, approximately 350m west and 500m east of the Proposed Development respectively.
- 9.2.13 There are small, localised areas at high risk of surface water flooding within the site boundary, and at the northern extent of the site around the A950 road, adjacent to the settlement of Flushing. A pre-application consultation response from SEPA identifies a small watercourse running from south to north through the site towards Flushing that may be a straightened watercourse and contributing to the area of surface water flooding around Flushing.

Groundwater Dependent Terrestrial Ecosystems (GWDTE)

- 9.2.14 There is the potential for the presence of GWDTE in the area; however, the predominant sources of water in this location are anticipated to be rainfall and surface runoff.

Fisheries

- 9.2.15 The Proposed Development is in the area managed by the Ugie District Salmon Fishery Board. The Ugie Angling Association and the river management team are responsible for the operation of a hatchery, the commissioning of electro surveys of juvenile population, the repairing of riverbanks and improving the accessibility to the spawning beds of the returning adult salmon and trout⁴³.

³⁹ BGS Geoindex (interactive web map). Available at: https://mapapps2.bgs.ac.uk/geoindex/home.html?_ga=2.245552583.25395335.1617804149-924903878.1582883826 [Accessed: August 2023].

⁴⁰ National Soil Map of Scotland (interactive web map). Available at: https://map.environment.gov.scot/Soil_maps/?layer=1 [Accessed: August 2023].

⁴¹ NatureScot Carbon and Peatland (interactive web map). Available at: <https://soils.environment.gov.scot/maps/thematic-maps/carbon-and-peatland-2016-map/> [Accessed: August 2023].

⁴² Scottish Environment Protection Agency – Flood Maps: <https://map.sepa.org.uk/floodmap/map.htm> [Accessed: August 2023].

⁴³ Ugie District Salmon Fishery Board. Available at: <https://ugie.dsfb.org.uk/> [Accessed: August 2023].

9.2.16 Sensitive receptors are considered to be:

- GWDTE;
- Private Water Supplies; and
- Flood Risk.

9.3 Potentially Significant Effects

9.3.1 Potentially significant effects that may result from the construction, operation and decommissioning phases (including cumulative) of the Proposed Development include:

- Pollution of surface watercourses, groundwater, and private water supplies: including from suspended sediment in surface water bodies, hydrocarbon and oil pollution. Potential sources of suspended sediments on construction sites include excavations, exposed ground and stockpiles, plant and wheel washing, dust, and mud on site access roads. Sources of oils and hydrocarbons include leaks from access vehicles and powered hand tools;
- Increased flood risk; and
- Modifications to groundwater conditions, including levels and flows, which may cause alteration to receptors such as GWDTE or groundwater-fed water supplies.

9.4 Mitigation

9.4.1 The review and analysis of data gathered during the EIA process will ensure that the Proposed Development and associated construction access and requirements are carefully sited to ensure potential effects on the water environment are minimised where practicable through design.

9.4.2 In addition, the Applicant has established best practice construction techniques and procedures that have been agreed with statutory consultees, including SEPA and NatureScot. These are set out within the SSEN Transmission GEMPs. The Proposed Development would be constructed in accordance with these plans.

9.4.3 A contractual management requirement of the successful Principal Contractor would be the development and implementation of a comprehensive and site-specific CEMP. This document would detail how the successful Principal Contractor would manage the works in accordance with all commitments and mitigation detailed in the EIA Report, SSEN Transmission GEMPs, statutory consents and authorisations, and industry best practise and guidance, including pollution prevention guidance.

9.4.4 The CEMP will also outline measures to ensure that the works minimise the risk to soils, geology, groundwater and surface water, private water supplies and licensed water uses. A Construction Site Licence would also be required by the Controlled Activity Regulations and this will specify control and management procedures to ensure water resources, and GWDTE, are not impaired as a consequence of development.

9.5 Proposed Scope of Assessment

9.5.1 A desk study and data search will be undertaken to identify the baseline environment, including information on solid and drift geology, surface water and groundwater, flood risk and designated sites. Available information will be sought from the following sources:

- Ordnance Survey (OS) Map data at 1:10,000, 1:25,000 and 1:50,000 scales;
- Scottish Environment Protection Agency (SEPA) Water Classification Hub (River Basin Management Plan interactive web map)⁴⁴;

⁴⁴ Water Classification Hub (interactive web map), SEPA. Available at: <https://www.sepa.org.uk/data-visualisation/water-classification-hub/> [Accessed: August 2023].

- SEPA Flood Maps (2020) (interactive web map)⁴⁵;
- British Geological Survey (BGS) Geoindex Onshore Bedrock and Superficial Deposits geology 1:50,000 scale (interactive web map)⁴⁶;
- BGS Hydrogeological Map of Scotland 1:625,000 scale (interactive web map)⁴⁷;
- James Hutton Institute National Soil Map of Scotland 1:250,000 scale (interactive web map)⁴⁸;
- NatureScot Carbon and Peatland (interactive web map)⁴⁹; and
- NatureScot SiteLink⁵⁰ (interactive web map).

9.5.2 Consultation has been undertaken for Hydrology, Hydrogeology, Geology and Soils. The following consultees have been approached for information to inform the EIA:

- SEPA (regarding licensed abstractions and engineering activities in the water environment);
- Scottish Water (regarding public water supplies); and
- Aberdeenshire Council (regarding PWS).

9.5.3 The following tasks will be undertaken in the completion of the assessment:

- Review of data obtained from relevant stakeholders, including SEPA, Scottish Water and Aberdeenshire Council;
- Desk-based study to obtain baseline and historical data;
- Identification of the potential impacts of the Proposed Development and assessment of their significance based on the magnitude of the impact and the sensitivity of receptors;
- Identification of options for the mitigation of potential effects in accordance with applicable legislation, policies and guidance; and
- Identification of residual effects.

9.5.4 The significance of the impacts upon the baseline environment will be defined as a function of the sensitivity of receptors and the magnitude of change. The impact assessment will be undertaken in accordance with the EIA Regulations and follow the significance criteria provided in Chapter 3.

9.5.5 This assessment will also include the impacts of any works required along the access route upon the baseline environment. Particular attention will be paid to the potential hydrological and water quality impacts upon any water supplies within the vicinity of the Proposed Development and any aquatic ecological features identified within the Ecology chapter. The potential water quality impacts through enhanced erosion of disturbed soil will also be considered.

9.5.6 The Proposed Development will be assessed for flood risk in line with NPF4. A full flood risk assessment and drainage impact assessment would be carried out if required.

⁴⁵ SEPA Interactive Flood Risk (interactive web map). Available at: <http://map.sepa.org.uk/floodmap/map.htm> [Accessed: September 2023].

⁴⁶ British Geological Survey (2023) Geoindex (onshore). Available at: <https://www.bgs.ac.uk/map-viewers/geoindex-onshore/> [Accessed: September 2023].

⁴⁷ British Geological Survey (2023) Hydrogeological maps of Scotland. Available at: <https://www.bgs.ac.uk/datasets/hydrogeological-maps-of-scotland/> [Accessed: September 2023].

⁴⁸ The James Hutton Institute (2023) Soils Map of Scotland. Available at: <https://www.hutton.ac.uk/learning/natural-resource-datasets/soilshutton/soils-maps-scotland> [Accessed: September 2023].

⁴⁹ NatureScot (2020) Carbon and Peatland 2016 Map. Available at: <https://www.nature.scot/professional-advice/planning-and-development/planning-and-development-advice/soils/carbon-and-peatland-2016-map> [Accessed September 2023].

⁵⁰ NatureScot Sitelink (interactive web map). National Soil Map of Scotland interactive mapping. Available at: https://map.environment.gov.scot/Soil_maps/?layer=1 [Accessed: September 2023].

9.6 Issues Scoped Out

9.6.1 An initial review of BGS Superficial Deposits geology mapping, James Hutton Institute National Soil Map of Scotland, and NatureScot Carbon and Peatland mapping have not indicated the presence of peat within the Proposed Development site boundary. Issues relating to peat have therefore been scoped out.

9.6.2 It is considered that good design and embedded pollution prevention mitigation including the SSEN Transmission GEMPs will reduce the potential for pollutants or sediment to be released into water bodies as a result of the Proposed Development. As a result, operational impacts and the following construction impacts have been scoped out:

- Impact on hydrologically relevant designated sites from chemicals, fuels and sedimentation pollution to groundwater and surface water, changes on groundwater flows and levels and surface water drainage patterns; and
- Impact of pollution on fisheries: including from suspended sediment in surface water bodies, hydrocarbon and oil pollution.

9.7 Summary

9.7.1 The above section outlines the tasks to be undertaken during the EIA with regards to Hydrology, Hydrogeology, Geology and Soils. Any potential impacts likely to have a significant effect on the sensitive receptors, such as flood risk, GWDTE and private water supplies, will be evaluated within the EIA Report.

9.7.2 Mitigation measures will be proposed, where required, for likely significant effects. In this case, we would anticipate the main issues to be potential pollution impacts to unnamed water bodies resulting from construction activities and potential water quality impacts to private water supplies.

10 Noise and Vibration

10.1 Introduction

10.1.1 This chapter provides a brief overview of the noise and vibration baseline conditions, the potential effects associated with the construction and operation of the Proposed Development and the proposed scope of assessment methodology to be considered in the EIA Report.

10.2 Baseline Conditions

10.2.1 A survey of the background ($L_{A90,T}$) ambient noise ($L_{Aeq,T}$), and 1/3rd octave band spectrum levels were conducted to determine the existing noise level in the area and at any nearby noise sensitive receptors (NSRs) likely to be affected by the noise in accordance with BS 4142⁵¹. To ensure that values are reliable and representative of the outdoor amenity of NSRs, a minimum of 1-week continuous background monitoring were conducted. Measurements at four properties took place from 24 May 2023 to 19 June 2023.

10.2.2 The sound level meters were calibrated to traceable standards within the preceding two years and the portable calibrators within the preceding 12 months. The sound level meters were spot calibrated both prior to and upon completion of the survey. No significant drift was noted to have occurred during the measurement campaign.

10.2.3 As the survey is based on long-term unattended measurements, a meteorological station (Vantage Vue) was also set up in the area to monitor for appropriate weather conditions. Meteorological conditions such as wind and rain will affect background noise (BGN) conditions and have possible effects on noise propagation. Measurements were conducted every 15 minutes to coincide with the measured noise data.

10.2.4 Detailed ordinance survey maps and satellite imagery have been used to identify the potential NSRs. Identified relevant properties are detailed in Table 10-1, and their locations shown on Plate 10-1. Measurements were conducted at NSRs 1 to 5. Measurements were not conducted at NSR 6 (close to NSR 1⁵²), but it is still a receptor of interest. The area of the Proposed Development is rural, with land consisting of forestry and grassland.

10.2.5 Receptors chosen are representative of the closest properties surrounding the Proposed Development. The noise assessment conducted for these properties will have the highest noise impact from the Proposed Development, and therefore if the chosen properties meet noise criteria, then any property at greater distances will also pass the criteria.

Table 10-1 NSRs near the Proposed Development

NSR	Coordinate (X)	Coordinate (Y)
NSR 1 – Inverveddie	404504	845962
NSR 2 – Parkhill	406265	845980
NSR 3 – Longleys	405945	846299
NSR 4 – Flushing	405264	846849
NSR 5 – Tiffrey	404505	845962
NSR 6 – Netherton	405524	845462

⁵¹ British Standard 4142: Methods for rating and assessing industrial and commercial sound (BS 4142), BSI, 2014, Amended 2019

⁵² NSR 1 and NSR 6 are close enough to one another that they can be considered acoustically similar, therefore there would be no significant benefit to measuring at both locations.

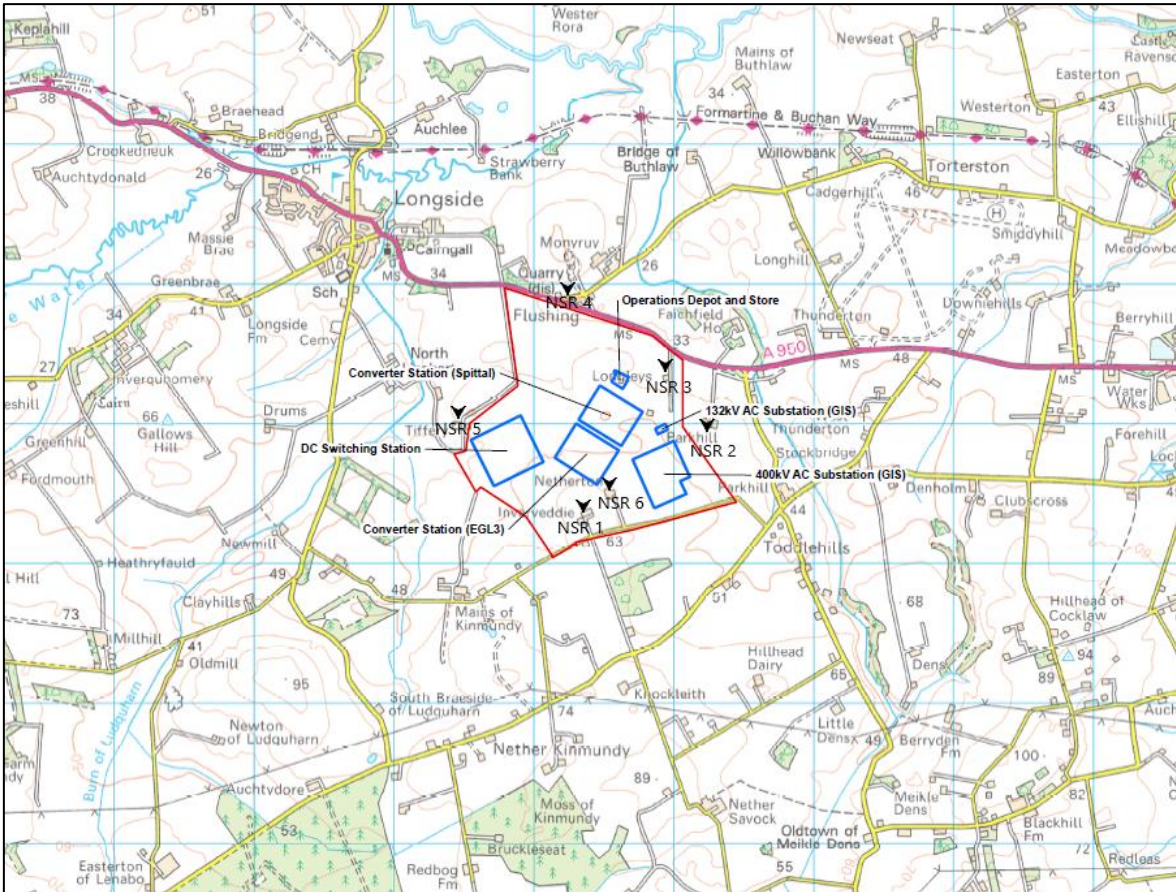


Plate 10-1 Noise Sensitive Receptor (NSR) locations

- 10.2.6 Baseline noise measurements were filtered for daytime and night-time conditions (night-time defined as between 23:00 and 07:00) where noise is shown to be at its lowest.
- 10.2.7 Periods of rain or windspeeds of 5 m/s or above are removed from the analysis as per BS 4142:2014. A statistical analysis of night-time noise levels was conducted of the histogram distribution of LA90 (15 minute) levels. This statistical analysis was conducted for all five long-term measured NSRs to define a representative background noise level at each location. NSR 6 will assume the same background noise level as NSR 1.
- 10.2.8 The modal value has been considered alongside the skew of the data set to select the appropriate representative level. Table 10-2 provides the night-time and daytime representative LA90 results of the baseline noise survey.

Table 10-2 Representative Background Noise Levels

NSR	LA90 (dB(A)) (Night-time)	LA90 (dB(A)) (Daytime)
NSR 1 – Inverveddie	25	32
NSR 2 – Parkhill	23	33
NSR 3 – Longleys	20	37
NSR 4 – Flushing	20	45
NSR 5 – Tiffrey	26	32
NSR 6 – Netherton	25	32

10.2.9 In general, the background noise levels in the area are relatively low. The results of baseline noise survey show that NSRs in the vicinity of the Proposed Development have a noise environment quantified between 20 – 26 dB LA90 during night periods and 32 – 45 dB during the day. Given the rural area, the acoustic environment is generally quiet. The noise environment is not dominated by any notable sources, with the exception of NSR 4 which is particularly high in the daytime due to the proximity of A950.

10.3 Potentially Significant Effects

10.3.1 At this preliminary stage, it is anticipated that possible effects associated with construction and operation of the Proposed Development include:

- Noise and vibration during the construction phase; and
- Operational effects of noise from the HVDC converter stations⁵³, substations, HVDC switching station (DCSS), and the operations depot and store.

10.3.2 The potential effects at this stage are conservative and are expected to reduce upon a more detailed assessment when design information is refined.

Construction Noise

10.3.3 There is the potential for construction noise impacts from static, quasi static and mobile plant items including;

- Crushing of rock;
- Rotary piling during the construction of foundations;
- Excavators, delivery of materials with lorries/dumper trucks, delivery and pumping of concrete; and
- Installation of electrical infrastructure equipment.

10.3.4 A preliminary construction noise impact assessment was conducted according to BS 5228⁵⁴. As a worst-case assumption at this stage, the sites⁵⁵ of the Proposed Development have been individually assessed where all the construction equipment is assumed to be operational at each platform. Excesses of up to 4dB above the Daytime and Saturdays limit of 65 dB are predicted at NSR 1, 2, 3, 5 and 6 from the platform works phase. This is due to the dominant source of the mobile crusher. Impacts on NSR 4 and receptors further afield are predicted to be at most Moderate and not significant.

Operational Noise

10.3.5 With respect to operational noise, the most significant sources of environmental noise in HVDC converter stations, switching station and substations are air handling units, valve coolers, reactors, transformers and associated cooling equipment.

10.3.6 Transformers and other electrical equipment associated with substation developments emit noise at frequencies of twice the normal operating current frequency due to magnetostriction of the transformer core. In the UK the supply current frequency is 50 Hertz (Hz), which results in 100 Hz and harmonics thereof being produced by the transformer. The nature of the noise generation mechanism results in tonal noise being emitted. The noise is continuous and consistent depending on the electrical load of the equipment, and therefore is not expected to have any impulsive characteristics.

⁵³ HVDC Converter stations contain similar equipment to substations.

⁵⁴ British Standard 5228: Code of practice for noise and vibration control on construction and open sites (BS 5228), BSI, 2009, amended 2014

⁵⁵ i.e. The 400kV Substation, 132kV Substation, DCSS, Spittal to Peterhead HVDC Link Converter Station, EGL3 HVDC Link Converter Station, and the Operations Depot and Store.

- 10.3.7 An initial noise propagation model was constructed for the Proposed Development, with equipment and noise emission levels assumed from similar projects. A BS 4142:2014⁵⁶ assessment was performed for the Proposed Development to indicate the potential noise impact. The assessment is worst-case assuming all equipment (including standby and backup plant) is running at full output. The worst-case assessment found there is potential for high noise impact at all NSRs from the Proposed Development. Detailed assessment and mitigation measures are required to reduce these impacts.
- 10.3.8 Noise limits are assumed to relate to BS4142, however due to the low night-time noise levels (below 30 dB(A) LA90), these measurements are outside the validity range of BS4142. Consideration will therefore be had for internal noise levels during night-time periods. Internal noise calculations have been conducted, and the results show that for the Proposed Development, the internal noise level at all NSRs meet the 30 dB NR20 limit. The maximum internal noise level is predicted to be 29 dB at NSR 3 - Longleys. The octave spectra also meet the NR20 rating level.

10.4 Mitigation

Construction Noise

- 10.4.1 It was concluded that the activity of crushing should take place as far from the NSRs as possible, which will be near the middle of the overall site, to the north of the EGL3 HVDC converter station. The assessment was conservative in assuming activities will all take place at each individual site of the Proposed Development. If crushing can be managed and reduced to minimise impact, the 65 dB construction noise limit for Daytime and Saturdays will be met.
- 10.4.2 Best practice measures will be put in place during Construction to mitigate impacts from noise and vibration. The measures will be included in the CEMP, to be agreed with Aberdeenshire Council and secured by an appropriately worded planning condition and will include best practice measures as outline in BS 5228 such as:
- Avoiding undertaking noisy activities at the weekends or outside of daytime defined hours as necessary. In setting working hours, consideration is given to the fact that the level of noise through the normal working day is more easily tolerated than during the evening and night-time. Selecting quiet working methods, including the use of inherently quiet plant/equipment, reasonable working hours for noisy operations, and economy and speed of operations. Site work continuing throughout at 24-hour period should be programmed, where appropriate, including scheduling of haulage vehicles during the working day;
 - Avoidance of vehicles waiting or queuing, particularly on public highways or in residential areas with their engines running; and
 - Ensuring plant and equipment are regularly and properly maintained. All plant should be situated to sufficiently minimise noise impact at nearby properties.

Operational Noise

- 10.4.3 A detailed noise impact assessment is required to determine the extent of mitigation required for the site to reduce the impact on NSRs. The DCSS, 400 kV Substation, Spittal to Netherton Converter Station, and EGL3 Converter Station all share a major contribution to potential high noise impact at various NSRs. It is likely mitigation will be required around the externally housed equipment of the Proposed Development to curtail the noise impact on the critical receptors. This may come in the form of barriers within the site, bunds around the site, or building at lower platform heights, effectively “sinking” the site to reduce direct noise propagation to NSRs. Further modelling will be conducted to investigate the impact of bunding around the site, platform height reduction and acoustic barriers.

10.5 Proposed Scope of Assessment

10.5.1 The Proposed Development and methodology of assessment has not been discussed with the local authority environmental health officer (EHO), but the local EHO will be consulted to confirm that the following methodology of assessment is appropriate.

Construction Noise

10.5.2 The assessment of construction noise will comply with the following standards and guidance.

British Standard 5228-1:2009 +A1:2014 (BS5228), Code of Practice for Noise and Vibration Control on Construction and Open Sites

10.5.3 Guidance on the prediction and assessment of noise and vibration from construction sites is provided in British Standard (BS) 5228 2009 +A1:2014 Code of Practice for Noise and Vibration Control on Construction and Open Sites – Part 1: Noise. BS5228-1 provides recommended limits for noise from construction sites.

10.5.4 The construction noise impact assessment (CNIA) would be carried out according to the ABC method specified in Table E.1 of BS5228-1, in which noise sensitive receptors (NSRs) are classified in categories A, B or C according to their measured or estimated background noise level.

10.5.5 In line with best practice (BS 5228-1), a Construction Noise Management Plan (CNMP) will be developed by the principal contractor prior to starting construction works. The details of the CNMP will be agreed with Aberdeenshire Council and is expected to be secured by an appropriately worded planning condition.

Operational Noise

10.5.6 The assessment of operational noise will comply with the following standards and guidance.

Planning Advice Note (PAN) 1/2011: 'Planning and Noise'

10.5.7 Published in March 2011, this document provides advice on the role of the planning system in helping to prevent and limit adverse effects of noise (Scottish Government, 2011). Information and advice on noise assessment methods are provided in the accompanying Technical Advice Note (TAN): Assessment of Noise. Included within the PAN document and the accompanying TAN are details of the legislation, technical standards, and codes of practice for specific noise issues.

10.5.8 Neither PAN 1/2011 nor the associated TAN provides specific guidance on the assessment of noise from fixed plant, but the TAN includes an example assessment scenario for 'New noisy development (incl. commercial and recreation) affecting a noise sensitive building', which is based on BS 4142:1997: Method for rating industrial noise affecting mixed residential and industrial areas. This British Standard has been replaced with BS 4142:2014: Methods for rating and assessing industrial and commercial sound.

British Standard 4142:2014+A1:2019: Methods for rating and assessing industrial and commercial sound (BS 4142)

10.5.9 British Standard 4142 describes methods for rating and assessing the following:

- Sound from industrial and manufacturing processes.
- Sound from fixed installations which comprise mechanical and electrical plant and equipment.
- Sound from the loading and unloading of goods and materials at industrial and/or commercial premises.
- Sound from mobile plant and vehicles that is an intrinsic part of the overall sound emanating from premises or processes, such as that from forklift trucks, or that from train movements on or around an industrial and/or commercial site.

- 10.5.10 The methods use outdoor sound levels to assess the likely effects of sound on people who might be inside or outside a dwelling or premises used for residential purposes upon which sound is incident.
- 10.5.11 In accordance with the assessment methodology, the specific sound level (LAeq,T) of the noise source being assessed is corrected, by the application corrections for acoustic features, such as tonal qualities and/or distinct impulses, to give a "rating level" (LAR,Tr).The British Standard effectively compares and rates the difference between the rating level and the typical background sound level (LA90,T) in the absence of the noise source being assessed.
- 10.5.12 The British Standard advises that the time interval ('T') of the background sound measurement should be sufficient to obtain a representative or typical value of the background sound level at the time(s) when the noise source in question is likely to operate or is proposed to operate in the future.
- 10.5.13 Comparing the rating level with the background sound level, BS 4142 states:
- *"Typically, the greater this difference, the greater the magnitude of impact.*
 - *A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context.*
 - *A difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context.*
 - *The lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context."*

Noise Rating Curves and BS8233:2014

- 10.5.14 The Noise Rating - NR - curve is developed by the International Organization for Standardization (ISO 1973) to determine the acceptable indoor environment for hearing preservation, speech communication and annoyance.
- 10.5.15 The noise rating graphs for different sound pressure levels are plotted as acceptable sound pressure levels at different frequencies. Acceptable sound pressure level varies with the room and the use of it. Different curves are obtained for each type of use. Each curve is referenced by a NR number.

Table 10-3 Noise Rating

Noise Rating	Application
NR 20	Quite rural area (council defined) for protection of amenity
NR 25	Concert halls, broadcasting and recording studios, churches
NR 30	Private dwellings, hospitals, theatres, cinemas, conference rooms
NR 35	Libraries, museums, court rooms, schools, hospitals operating theatres and wards, flats, hotels, executive offices
NR 40	Halls, corridors, cloakrooms, restaurants, night clubs, offices, shops
NR 45	Department stores, supermarkets, canteens, general offices
NR 50	Typing pools, offices with business machines
NR 60	Light engineering works
NR 70	Foundries, heavy engineering works

- 10.5.16 British Standard 8233:2014: Guidance on sound insulation and noise reduction for buildings provides guidance for the control of noise in and around buildings. The guidance provided within the document is applicable to the design of new buildings, or refurbished buildings undergoing a change of use, but does not provide guidance on assessing the effects of changes in the external noise levels to occupants of an existing building.

- 10.5.17 The guidance provided includes appropriate internal and external noise level criteria which are applicable to dwellings exposed to steady-state external noise sources. It is stated in the British Standard that it is desirable for internal ambient noise level not to exceed the criteria set out in Table 10-4.

Table 10-4 Summary of internal ambient noise level criteria for dwellings from with BS 8233:2014

Activity	Location	Period	
		07:00 to 23:00 Hours, i.e. Daytime	23:00 to 07:00 Hours, i.e. Night-time
Resting	Living Room	35 dB LAeq,16 hour	-
Dining	Dining Room/Area	40 dB LAeq,16 hour	-
Sleeping (daytime resting)	Bedroom	35 dB LAeq,16 hour	30 dB LAeq,8 hour

10.6 Issues Scoped Out

- 10.6.1 There are no known vibrational noise issues associated with the operation of the Proposed Development at nearby NSRs. Therefore, it is proposed that vibration is scoped out of the EIA assessment.

10.7 Summary

- 10.7.1 The above section outlines the tasks to be undertaken during the EIA with regards to Noise and Vibration. Any potential impacts likely to have a significant effect on the NSRs with respect to operational noise and construction noise of the Proposed Development, will be evaluated within the EIA Report.
- 10.7.2 Mitigation measures will be proposed, where required, for likely significant effects.
- 10.7.3 Noise limits (in line with best practice guidance) will be agreed with Aberdeenshire Council. Appropriate mitigation measures will be implemented to ensure these limits will be met.

11 Land Use and Agriculture

11.1 Introduction

11.1.1 This chapter provides a brief overview of the land use and agriculture baseline conditions, the potential effects associated with the construction and operation of the Proposed Development, and the proposed scope of assessment methodology to be considered in the EIA Report.

11.2 Baseline

11.2.1 The area where the Proposed Development is located in an extensive, open, agricultural landscape bounded by post and wire fences with hedgerows and mature trees. Land use is predominantly farmland, with interspersed farmsteads and residential properties.

11.2.2 The Macaulay Land Use Research Institute's Land Use Capability system is the official agricultural classification system used in Scotland. According to the Macaulay Land Use Research Institute⁵⁷, and as shown on Figure 11.1 Land Capability for Agriculture, the Proposed Development consists of:

- Land Capability for Agriculture (LCA) Class 3.1 – capable of producing consistently high yields of a narrow range of crops and/or moderate yields of a wider range. Short grass leys are common within these areas; and
- LCA Class 3.2 – classification indicates land capable of average production (though high yields of barley, oats and grass can be obtained).

11.2.3 Prime agricultural land is identified as being LCA Class 1, 2 or 3.1 in the land capability classification system. As such, the LCA Class 3.1 land within the Proposed Development site is considered prime agricultural land.

11.2.4 There are no settlements within the Proposed Development Site Boundary, however there are dispersed buildings used as farmhouses and private residence. There is also an existing high-pressure gas main pipe that crosses the site.

11.3 Potential Effects

11.3.1 The construction of the Proposed Development has the potential to disturb or change existing land uses. Potential impacts include direct (physical) impacts to agricultural land, agricultural land holdings and private properties as a result of land take associated with construction works including disturbance associated with the construction of buildings and infrastructure, site access, temporary logistical compound areas and temporary storage areas.

11.3.2 Given that some of the Proposed Development is located on LCA Class 3.1 agricultural land, it is likely that it would affect prime agricultural land which may potentially result in significant effects. Potential effects include:

- Damage to soil structure through physical soil disturbance, compaction through use of heavy machinery and removal of existing vegetation;
- Deterioration in soil classification of agricultural land;
- Soil erosion from newly exposed areas of soil as a consequence of wind and water; and
- Increased soil run-off particularly in wet weather.

⁵⁷ The Macaulay Land Use Research Institute (2010), Land Capability for Agriculture in Scotland. Available at: <https://www.hutton.ac.uk/learning/exploringscotland/landcapability-agriculture-scotland> [Accessed: September 2023].

11.3.3 Potential impacts to existing farm holdings in the Proposed Development site may relate to the disruption of the physical structure of agricultural holdings and the operations taking place upon them and may potentially result in significant effects. Potential impacts include:

- Potential for transmission of agricultural pests and notifiable diseases;
- Temporary and permanent effect on agricultural accesses, reducing agricultural productivity;
- Temporary and permanent disruption and alteration of land-drainage systems;
- Temporary and permanent loss of agricultural land leading to reduced livestock movements or crop harvesting efficiency (season dependant);
- Temporary and permanent disruption to agricultural operations and a potential reduction in agricultural land that can be viably farmed; and
- Reduction in grant allowance for land management such as Agri-Environment schemes.

11.3.4 There may be adverse effects on private properties where demolition of private property or land-take is required for the Proposed Development. During the construction stage there are also likely to be adverse effects associated with disruption to access, particularly those in close proximity to the Proposed Development. During the operation of the Proposed Development, residents may experience reduced amenity due to visual and noise impacts, these effects would be considered further in the Noise and Vibration and Landscape and Visual Impact chapters.

11.3.5 There is also the potential for significant cumulative and intra-project effects in relation to Land Use and Agriculture receptors, with other proposed projects that may require land-take for development.

11.4 Mitigation

11.4.1 Mitigation measures will be considered throughout the design process of the Proposed Development. These measures will be included with the objective to reduce the potential for impacts upon Land Use and Agriculture. These include:

- Throughout the EIA process, the location of infrastructure will consider existing and future land uses, to limit land take and reduce the potential for disruption;
- Engagement with landowners throughout the EIA process as part of the evolution of the design process; and
- Following construction, agricultural land not required through the operational phase will be reinstated to ensure it can return to existing agricultural use.

11.4.2 Following the design process, where agricultural land cannot be avoided as a result of the Proposed Development, any necessary measures to reduce any adverse impacts on farm holdings would be identified. However, there is no universally applicable measure to mitigate against the direct loss of classified agricultural land.

11.5 Proposed Scope of Assessment

11.5.1 The study area for the assessment of impacts on land use and agriculture would comprise the Proposed Development Site Boundary.

11.5.2 The assessment will be undertaken largely by means of a desk study, utilising information from published sources and from specific liaison and consultation, including information that will be obtained from farmers and farm tenants, via consultations between them and the project team.

11.5.3 The assessment will consider the sensitivity (or value) of the receptor or resource, and the magnitude of the impact that is occurring. There are a number of factors which influence the value and sensitivity ascribed to various land use and agricultural receptors. These include the quality of agricultural land, soil type and land

under environmental stewardship schemes. The magnitude of any effect reflects the physical extent and duration of the identified impacts. The significance of the effects will be identified by considering the sensitivity to and magnitude of any impacts.

Agricultural land quality

- 11.5.4 The assessment will consider the potential for permanent or temporary land take in relation to classified agricultural land. The sensitivity of agricultural land will be determined according to its quality within the land classification system.

Agricultural land holdings

- 11.5.5 The number of agricultural land holdings that are likely to be affected by the Proposed Development, as registered under the Land Registry, will be established in the EIA Report. Information on the existing agricultural use and circumstances of the sites will be obtained primarily from the existing occupiers and owners. The information collected will include a description of the size and structure, location and use of farm holdings, the use of buildings and other fixed equipment (including irrigation and drainage) and the ability of farmers and landowners to achieve any existing commitments made under relevant environmental schemes such as the Agri-Environment Climate Scheme. By doing this an assessment can be made of potential impacts on farm viability and other farm businesses affected by the Proposed Development.

Private properties

- 11.5.6 The assessment will consider the potential for permanent or temporary land take in relation to private properties.

11.6 Issues Scoped Out

- 11.6.1 Apart from land take impacts which are assessed during the construction phase and are permanent, the effects during operation are expected to be limited to impacts associated only with regular maintenance activities. Therefore, impacts to land-use and agriculture are scoped out for the operation stage of the Proposed Development.

11.7 Summary

- 11.7.1 The above section outlines the tasks to be undertaken during the EIA with regards to agricultural land, agricultural land holdings and private properties. Any potential impacts likely to have a significant effect on the sensitive receptors, such as loss of agricultural land, farm holding viability and impacts to private properties, would be evaluated within the EIA Report.

12 Topics “Scoped Out”

12.1.1 As explained above, a number of topics are considered not to be significant and will be scoped out from further consideration within the EIA process. Table 12-1 below lists each topic and the elements scoped out from further assessment; with a summary of the justification for doing so.

Table 12-1 Issues Scoped Out

Topic	Scoped Out	Justification
Landscape and Visual Impact	Landscape Character: National Scenic Areas, Wild Land Areas.	Due to distance from the Proposed Development (approximately 80km to the south-east) the effect on these designated landscapes is unlikely to be significant.
	Landscape Character: Aberdeenshire Special Landscape Area.	The SLA lie on the coast 6km to 9km east of the Proposed Development. Significant effects on local character and visual amenity would be unlikely to occur due to the distance, intervening topography, built form and vegetation.
	Visual Impact: <ul style="list-style-type: none"> • Properties: Netherton Farm and Inverveddie House; and • Derelict Farmsteads. 	Netherton Farm and Inverveddie House – these are involved properties, one of which is unoccupied. Derelict Farmsteads – at the time of this report preparation, the properties are derelict, their future use and function is unknown in terms of potential redevelopment, therefore these properties are excluded from the scope of this report.
Ecology, Nature Conservation and Ornithology	Designated Sites.	There are no perceived effect pathways for impacts on qualifying interests of Buchan Ness to Collieston Coast SPA and SAC. These sites are designated for coastal species and habitat types, and the Site does not represent supporting or functionally linked habitat at a distance of 6-7km away. The Loch of Strathbeg SPA and Ramsar site, and Ythan Estuary, Sands of Forvie and Meikle Loch SPA have also been scoped out of further assessment in the EIA due to the wider landscape offering an abundance of modified grassland and crop habitats which are typically suitable habitats for foraging and roosting geese and swans. Therefore, the loss of these habitats due to the Proposed Development is unlikely to result in a significant effect. A HRA Screening Report will consider the potential for likely significant effects on these designated sites fully.
	Habitats.	It is proposed that impacts to improved and semi-natural habitats at the Proposed Development, when considered solely as habitat interests (i.e. not as supporting species), are scoped out of further assessment. This is based on their relatively low ecological value, the fact they are comprised of commonly occurring or widespread species, current modified/land use condition, and being well represented in the wider landscape.
	Pollution.	All issues arising from pollution during the construction and operational phases are scoped out. Effective, industry-standard mitigation measures will be embedded within the project.
	Invasive Non-Native Species.	The spread of Japanese knotweed and subsequent effects of habitat degradation have been scoped out. This is on the assumption that all stands have been mapped and a specialist contractor has been appointed to progress measures to manage or remove the plant material prior to construction.
	Protected Species (Non-Avian).	Based on the baseline information available, the follow species are scoped out of further assessment through EIA: red squirrel, pine marten, amphibians, reptiles, invertebrates, and fish. The

Topic	Scoped Out	Justification
		site offers low suitability habitat and is unlikely to represent a key area for these species/groups.
	Ornithology.	Aside from the population of geese and swans, which will be reviewed through HRA screening, all other ornithological interests are scoped out of further assessment through EIA. Breeding bird surveys to date have found that the arable and grazing-dominated habitat within the Proposed Development boundary and the wider area is of low value for ornithological interests.
Cultural Heritage	Direct impacts during construction and operation phase on designated assets.	The direct impacts during construction and operation of the Proposed Development on World Heritage Sites, Scheduled Monuments, Marine Protected Areas, GDLs, Historic Battlefields and Conservation Areas will be scoped out as there are none present within the Proposed Development boundary or within a 1km study area.
	Indirect impacts during construction and operation phase on cultural heritage assets.	It is not anticipated that there will be any indirect impacts from the construction or operation of the Proposed Development, therefore the assessment of indirect impacts on heritage assets has been scoped out.
	Direct impacts upon known and unknown non-designated heritage assets during the operation phase.	Direct impacts upon known and unknown non-designated heritage assets will be removed following construction, therefore this element has been scoped out of further assessment.
Traffic and Transport	Assessment of impact on road network outwith the Study Area.	The impact of construction traffic would be reduced as vehicles disperse onto the wider road network and the effects relating to Traffic and Transport are unlikely to be significant beyond the identified Study Area.
	Traffic impacts during operational phase.	The traffic impacts associated with the operational phase are anticipated to be of low volume being limited to movements associated with maintenance activities and staff commuting to the Proposed Development. Therefore, further assessment of the traffic impacts of the Proposed Development during the operational phase is not considered necessary.
Hydrology, Hydrogeology, Geology and Soils	Issues relating to peat.	An initial review of BGS Superficial Deposits geology mapping, James Hutton Institute National Soil Map of Scotland, and NatureScot Carbon and Peatland mapping have not indicated the presence of peat within the Proposed Development.
	Impact on hydrologically relevant designated sites from chemicals, fuels and sedimentation pollution to groundwater and surface water, changes on groundwater flows and levels and surface water drainage patterns.	It is considered that good design and embedded pollution prevention mitigation including the SSEN Transmission GEMPs will reduce the potential for pollutants or sediment to be released into water bodies as a result of the Proposed Development.
	Impact of pollution on fisheries: including from suspended sediment in surface water bodies,	

Topic	Scoped Out	Justification
	hydrocarbon and oil pollution.	
Noise and Vibration	Vibration.	There are no known vibrational noise issues associated with the operation of the Proposed Development at nearby NSRs. Therefore, it is proposed that vibration is scoped out of the EIA assessment.
Land Use and Agriculture	Land-use and agriculture during the operation phase.	Apart from land take impacts which are assessed during the construction phase and are permanent, the effects during operation are expected to be limited to impacts associated with regular maintenance activities. Therefore, impacts to Land Use and Agriculture are scoped out for the operation stage of the Proposed Development.
Forestry	Whole Topic.	<p>Forestry typically involves extended areas of trees, grown as a crop and in third party ownership and impacts are typically assessed against the following criteria:</p> <ul style="list-style-type: none"> • Affects commercial viability; • Comprises financial returns; or • Does not affect forestry. <p>Within the Proposed Development Site Boundary woodland accounts for a small area of land cover, with a few broadleaved and mixed woodlands which are mostly native species. Some of the field margins are planted with hedgerows and treelines.</p> <p>There are no forestry designations, Tree Preservation Orders (TPO) or commercially viable forestry within the Proposed Development Boundary. Therefore, due to the likely minimal impact on Forestry it has been scoped out of further assessment in the EIA.</p>
Population and Human Health	Whole Topic.	<p>The Proposed Development is located in a rural area with relatively few nearby sensitive receptors. The nearest settlement to the Proposed Development containing businesses is Longside approximately 1km to the north-west.</p> <p>A small number of businesses including local shops are located in Longside. Due to its location, nature, and scale, the Proposed Development is not anticipated to have any significant direct or indirect effects on residential properties or businesses within Longside. There may be short-term disruption to residents and businesses using the A950 during the construction period, however, this will be managed through the implementation of a CEMP and CTMP by the Principal Contractor, which will be agreed in advance with Aberdeenshire Council.</p> <p>There are no tourist businesses in the immediate area of the Proposed Development, and it is considered unlikely that any would be adversely affected by the Proposed Development.</p> <p>In relation to recreation, the closest Aberdeenshire Council Core Path is located approximately 1km north and forms part of The Formartine and Buchan Way long distance route. There are no core paths designated across the Proposed Development site or any records of rights of way, although the record of rights of way is not definitive. It is not known what level of informal use, if any, is made by residents local to the area. As such, as they are outwith the Proposed Development site it is not expected that any core paths would be directly affected by the Proposed</p>

Topic	Scoped Out	Justification
		<p>Development. Indirect visual effects to users of public roads and recreational routes will be considered within the Landscape and Visual Impact chapter and where there may be interactions with recreational users during the construction of the Proposed Development, an Outdoor Access Plan would be prepared as part of the Principal Contractor's CEMP, and signage would be erected at suitable locations to warn of construction traffic. Any disturbance during construction would be temporary and short term in nature.</p> <p>The impacts on human health for a development of this nature and scale are limited to increased exposure to noise and changes in amenity value of residential or recreational resources. These will be considered in the Landscape and Visual Impact and Noise and Vibration chapters of the EIA Report and therefore a specific Human Health assessment has been scoped out of the EIA.</p> <p>Based on the above, it is proposed that the Population and Human Health topic (including potential impacts to Socioeconomics, Tourism and Recreation) is scoped out of further assessment in the EIA.</p>
Major Accidents and Disasters	Whole Topic.	<p>The EIA Regulations require the consideration of the vulnerability of the Proposed Development to major accidents and disasters.</p> <p>Given the nature of the Proposed Development, the potential for effects related to the vulnerability to major accidents and disasters are likely to be limited to those associated with unplanned power outages, due to extreme weather or structural damage.</p> <p>Crisis management and continuity plans are in place across the SSE Group. These are tested regularly and are designed for the management of, and recovery from, significant energy infrastructure failure events. Where there are material changes in infrastructure (or the management of it) additional plans are developed.</p> <p>Potential significant effects on the vulnerability of the Proposed Development to Major Accidents and Disasters has therefore been scoped out of the EIA Report.</p>
Air Quality and Climate	Whole Topic.	<p>The Proposed Development is not located within an Air Quality Management area (AQMA), with the closest AQMA located approximately 34km south-west at Aberdeen and has been declared for exceedances of Nitrogen dioxide (NO₂) and Particulate Matter (PM₁₀) air quality standard limits.</p> <p>The Proposed Development has the potential to give rise to some localised and temporary construction related releases associated with dust (foundation construction, passage of vehicles along access tracks) and construction plant and traffic exhaust emissions. However, the nature of the construction activities is that these would be localised, short term for individual activities and intermittent. Any potential for nuisance effects on residential or recreational amenity during construction would be strictly controlled in accordance with a CEMP.</p> <p>In regard to climate, in the context of the EIA process, climate is assessed both in relation to the contribution of the Proposed Development to increasing or decreasing the nature and magnitude of greenhouse gas emissions, and the vulnerability of the Proposed Development to climate change.</p>

Topic	Scoped Out	Justification
		<p>The construction of the Proposed Development is anticipated to contribute to local greenhouse gas emissions (GHGs) due to the use of vehicles during construction and from the carbon footprint of the materials required to build the Proposed Development. The emissions directly associated with construction are likely to be temporary and short in duration from exhaust gases associated with vehicles and construction plant. Where practicable, the resources required to construct the Proposed Development will be locally sourced to minimise the generation of greenhouse gas emissions. Where possible, excavated material will also be reused on-site to prevent the need for disposal of material off-site.</p> <p>The amount of material and potential emissions required during construction and operation is not considered disproportionate for a development of this scale. Therefore, the GHGs emitted from the Proposed Development are unlikely to increase or decrease the concentration of GHGs, as annually, there will be projects of this scale that are required to ensure that infrastructure needs are met in Scotland.</p> <p>In relation to climate adaptation, the design and location of the Proposed Development has considered the potential risk posed by increased flood risk and ground instability (further details provided in Chapter 9). The intention is to reduce potential risks to the electricity assets so that repairs and upgrades are less frequent.</p> <p>Based on the above, it is therefore proposed that Air Quality and Climate can be scoped out of the EIA Report.</p>
Material Assets and Waste	Whole Topic.	<p>The materials and waste associated with construction activities will be captured and addressed within a Materials Management Plan and Site Waste Management Plan which will form part of the Principal Contractor's CEMP. This will include use of recycled material, efficient use of material to minimise waste, and other waste management measures.</p> <p>To minimise the generation of waste, material excavated to create the platforms for the proposed buildings as far as is practicable will be reused on-site to minimise the off-site deposition of material.</p> <p>Considering the nature and scale of the Proposed Development, significant effects on material assets and waste are not anticipated. It is therefore proposed that Materials and Waste can be scoped out of requiring a specific chapter within the EIA Report.</p>

13 Next Steps

13.1.1 SSEN Transmission invites consultees to comment on the following:

- What environmental information do you hold or are aware of that will assist in the EIA described here?
- Do you agree with the proposed approach for baseline collection, and that the range of surveys across particular topics is sufficient and appropriate to inform the assessment of environmental effects?
- Is there any other relevant existing baseline data that should be taken into account?
- Are there any key issues or possible effects which have been omitted?
- Do you agree with the list of issues to be scoped out, and the rationale behind the decision?

13.1.2 All responses should be addressed to Aberdeenshire Council.

13.1.3 When submitting a response to the Scoping Report, the Applicant would be grateful if you could also send a copy of your response to the address below:

Email to: murray.agnew@sse.com

OR

For the Attention of Murray Agnew

Grampian House

200 Dunkeld Road

Perth

PH1 3AQ

13.1.4 The Scoping Opinion provided will be used to finalise the terms of the EIA and the specific approach to the individual assessments.

13.1.5 All comments received will be included in the EIA Report for reference, unless consultees request otherwise.

Appendix 1.1: SSEN Transmission's Pathway to 2030 Projects

SSEN Transmission's Pathway to 2030 projects:

Why are these projects needed and how has this need been assessed



Introduction

SSEN Transmission's Pathway to 2030 projects are part of a major upgrade of the electricity transmission network across Great Britain (GB) that are required to help deliver UK and Scottish Government climate change and energy security targets. In simple terms, these projects are required to connect homegrown, low carbon renewable electricity generation and transport that power to areas of demand across the country, building a cleaner, more secure and affordable energy system for homes and businesses across Great Britain.

This paper sets out some of the policies and targets that have been set by the UK and Scottish Government that are driving the need for investment in new clean power and the electricity transmission network that is required to enable this. It also explains the electricity network planning processes that have established the need for these Pathway to 2030 network reinforcements.

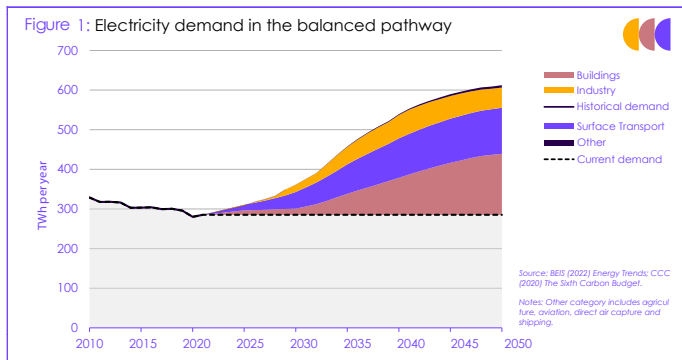


Net zero and renewable targets



The UK and Scottish Government have committed to deliver net zero emissions by 2050 and 2045 respectively.

To put into context the scale of the challenge in delivering these legally binding net zero targets, the Climate Change Committee - an independent, statutory body which advises the UK and devolved governments on their emissions reduction targets - forecast in its 'Delivering a reliable decarbonised power system'¹, that electricity demand will double by 2050.

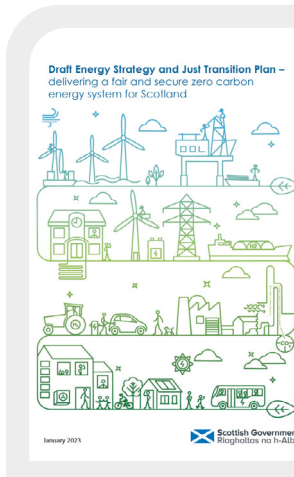


This is as a result of forecast changes in electricity use across the UK, for example, through the electrification of transport and heating.



Meeting these net zero targets and associated increases in electricity demand will require significant and unprecedented investment in new low carbon electricity generation and the enabling electricity network infrastructure across GB that is required to connect and transport this power from generation source to areas of demand across the country. Further investment is also required to replace the generation capacity lost due to the planned closure of fossil fuel powered electricity generation power stations.

To maintain progress towards delivering these net zero commitments, the UK and Scottish Government have also set a number of interim targets. This includes the UK Government's target of 50GW of offshore wind by 2030 and a target to fully decarbonise the electricity system by 2035.



The Scottish Government, in its Draft Energy Strategy and Just Transition Plan², has set a new target for an additional 20GW of new low carbon renewable electricity generation by 2030, including 12GW of new onshore wind. The Scottish Government has also consulted on increasing its current offshore wind target of 11GW by 2030, with its final Energy Strategy and Just Transition Plan expected by summer 2024.

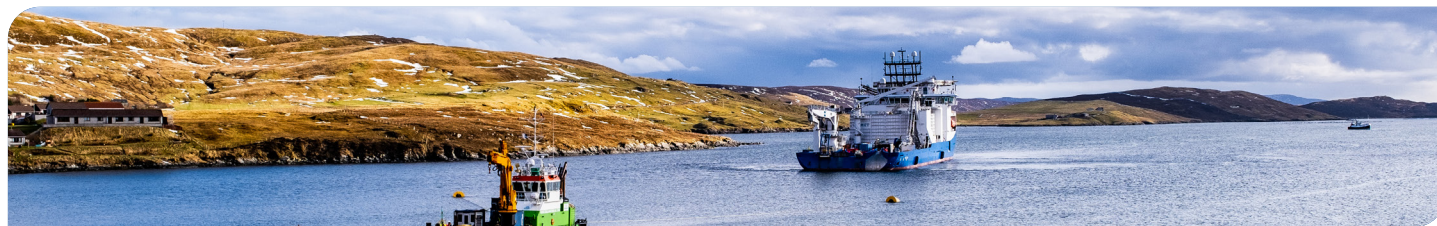
There is currently around 14GW of offshore wind across the UK and in Scotland, there is currently around 13GW of low carbon renewable generation. To meet the UK Government's 2030 offshore wind target, we need to more than treble what is currently connected and to meet the Scottish Government's 2030 renewable target, we need to more than double what is currently connected. With the current electricity transmission system already at full capacity in many places across GB, particularly throughout the north of Scotland, over £10bn in new electricity transmission network infrastructure, in the north of Scotland alone, is required to deliver these Government targets.

¹<https://www.theccc.org.uk/wp-content/uploads/2023/03/Delivering-a-reliable-decarbonised-power-system.pdf>

²<https://www.gov.scot/publications/draft-energy-strategy-transition-plan/>

SSEN Transmission's Pathway to 2030 projects:

Why are these projects needed and how has this need been assessed



Energy Security

As well as delivering net zero and renewable targets, there is also a requirement to secure the country's future security of supply and reduce our dependence on volatile and often expensive global wholesale energy markets.

The British Energy Security Strategy

In April 2022, the UK Government published its British Energy Security Strategy (BESS)³. This set out the UK Government's plans to secure the country's future energy independence by reducing dependence on, and price exposure to, volatile global wholesale gas markets.

This will be achieved by accelerating the deployment of homegrown and affordable low carbon electricity generation, together with accelerating the enabling electricity network infrastructure required to connect and transport this power.



**UK Government
British Energy Security
Strategy**
April 2022

"This plan comes in light of rising global energy prices, provoked by surging demand after the pandemic as well as Russia's invasion of Ukraine. This will be central to weaning Britain off expensive fossil fuels, which are subject to volatile gas prices set by international markets we are unable to control, and boosting our diverse sources of homegrown energy for greater energy security in the long-term.

Accelerating our domestic supply of clean and affordable electricity also requires accelerating the connecting network infrastructure to support it."

The BESS included the UK Government's increased ambition for offshore wind of 50GW by 2030, up from its previous 40GW target. Around 11GW of this target will be met from new offshore wind in Scottish waters granted seabed leases in January 2022 by Crown Estate Scotland through the ScotWind leasing round⁴.

Pathway to 2030 Holistic Network Design

To enable the connection of the UK Government's 50GW of offshore wind by 2030 target, the independent GB Electricity System Operator, National Grid ESO (the ESO) – which is responsible for balancing electricity supply and demand across GB and oversees the coordination of electricity transmission network system planning processes - was tasked by the UK Government with developing what is known as the 'Pathway to 2030 Holistic Network Design' (the HND)⁵.

The HND, which was developed in collaboration with the three GB Transmission Owners⁶, is a single, integrated coordinated plan that sets out the onshore and offshore electricity transmission infrastructure required, across GB, to deliver this UK Government target. The HND confirmed the requirement for all of SSEN Transmission's Pathway to 2030 projects.



**National Grid ESO
Pathway to 2030
Holistic Network
Design**
July 2022

"The Pathway to 2030 Holistic Network Design (HND) is a major step for Great Britain in delivering cheap, clean energy from offshore wind.

It sets out a single, integrated design that supports the large-scale delivery of electricity generated from offshore wind, taking power to where it's needed across Great Britain

The HND provides a recommended offshore and onshore design for a 2030 electricity network, that facilitates the Government's ambition for 50GW of offshore wind by 2030."

The ESO's assessment also considered the proposed technology choices, which includes a combination of overhead and subsea electricity network investments. Upon completion, the HND was then endorsed by both the UK and Scottish Government as meeting the Terms of Reference for the Offshore Transmission Network Review.

³<https://www.gov.uk/government/publications/british-energy-security-strategy/british-energy-security-strategy>

⁴<https://www.crownestatescotland.com/scotlands-property/offshore-wind/scotwind-leasing-round>

⁵<https://www.nationalgrideso.com/future-energy/the-pathway-2030-holistic-network-design/hnd>

⁶SSEN Transmission, SP Transmission and National Grid Electricity Transmission

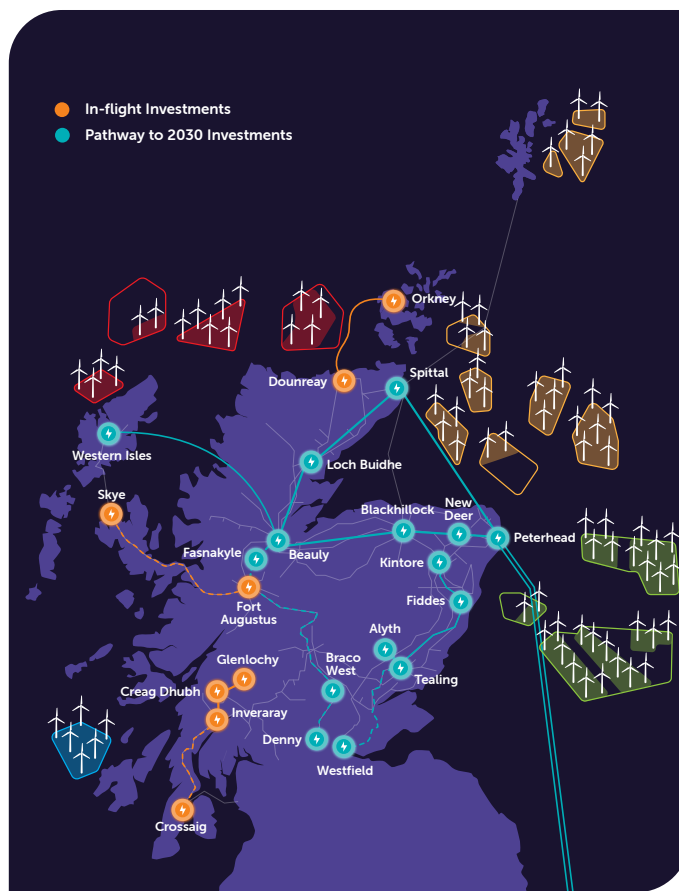
SSEN Transmission's Pathway to 2030 projects:

Why are these projects needed and how has this need been assessed



Accelerated Strategic Transmission Investment

Following the publication of the HND, in December 2022, the independent GB energy regulator, Ofgem, approved the need for these projects as part of its Accelerated Strategic Transmission Investment (ASTI)⁷ framework decision, again as a GB-wide programme of investments. Ofgem's decision included approval for all of SSEN Transmission's Pathway to 2030 projects. It also set out the regulatory framework under which these projects will be taken forward.



Ofgem
Decision on accelerating onshore electricity transmission investment

"The British Energy Security Strategy set out the Government's ambition to connect up to 50GW of offshore generation to the electricity network by 2030. Facilitating this ambition will require significant reinforcements to the onshore electricity transmission network and a change to the current regulatory framework in order to accelerate delivery of large projects.

In August 2022 we consulted on how Ofgem could support the accelerated delivery of the strategic electricity transmission network upgrades needed to meet the Government's 2030 renewable electricity generation ambitions.

This document contains our decision to introduce a new Accelerated Strategic Transmission Investment (ASTI) framework. We set out the initial list of ASTI projects, our decision on exempting strategic projects from competition, the new process for assessing and funding ASTI projects and the range of measures we are introducing to protect consumers against additional risks that changing the process brings."



⁷<https://www.ofgem.gov.uk/publications/decision-accelerating-onshore-electricity-transmission-investment>



Further background to GB electricity transmission network system planning processes

In this section, we further explain the system planning processes, overseen by the independent ESO, which establish the need for new electricity transmission network infrastructure. These processes involve extensive analysis and power system studies to establish both the drivers for network investments and the identification of which network upgrades should be taken forward.



Future Energy Scenarios

This considers future electricity trends, set out annually in the ESO's Future Energy Scenarios (FES)⁸ publication. The FES sets out scenarios for future electricity generation and demand, broken down regionally across GB, and considers all energy technologies.



Electricity Ten Year Statement

The outputs from the FES are then considered against the existing electricity network, including planned reinforcements, to identify both generation and demand constraints on pre-defined electricity transmission system boundaries. This process, the Electricity Ten Year Statement (ETYS)⁹, is important to identify where there are 'bottlenecks' on the transmission system that require intervention to address those constraints that would otherwise prevent the transportation of electricity generation to meet local and wider demands.

Where such a bottleneck exists, the ESO is required to intervene to balance the system by reducing generator output behind the bottleneck and increasing it on the other side. The costs incurred in doing this are ultimately passed to electricity consumers.



Networks Options Assessment

To address those bottlenecks, the three GB electricity Transmission Owners submit a range of potential network reinforcements designed to alleviate such constraints to the ESO. This involves multiple options, often to address the same network constraints, which are then analysed and assessed on a GB wide basis to establish which reinforcement investments are deemed economical and required. This process, known as the Networks Options Assessment (NOA)¹⁰, makes recommendations as to which investments Transmission Owners should take forward to alleviate current and forecast constraints across those pre-defined transmission system boundaries. This includes the proposed technology solution, for example, overhead line or subsea link. The outcome of the 2022 NOA refresh has informed the strategic network reinforcements set out in the ESO's Pathway to 2030 Holistic Network Design.

Conclusion

In conclusion, the need for SSEN Transmission's Pathway to 2030 electricity transmission network reinforcements, which form part of a major upgrade of the electricity transmission system across Great Britain, are underpinned by UK and Scottish Government energy policies and associated targets.

The independent ESO has assessed the need for these projects as required and made recommendations that they proceed, including the proposed technology choice, through its Pathway to 2030 Holistic Network Design. And the independent GB energy regulator, Ofgem, has approved the regulatory need for these projects through its Accelerated Strategic Transmission Investment (ASTI) framework.

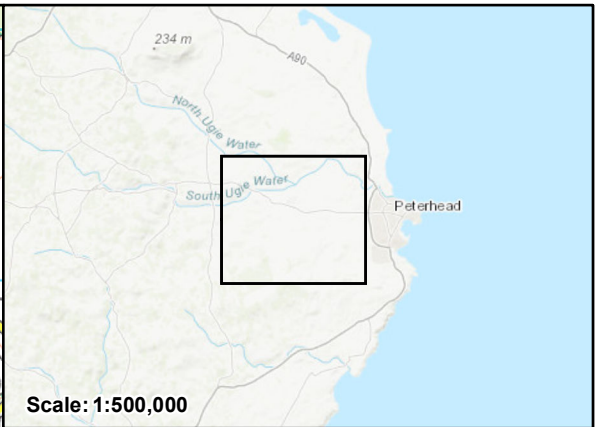
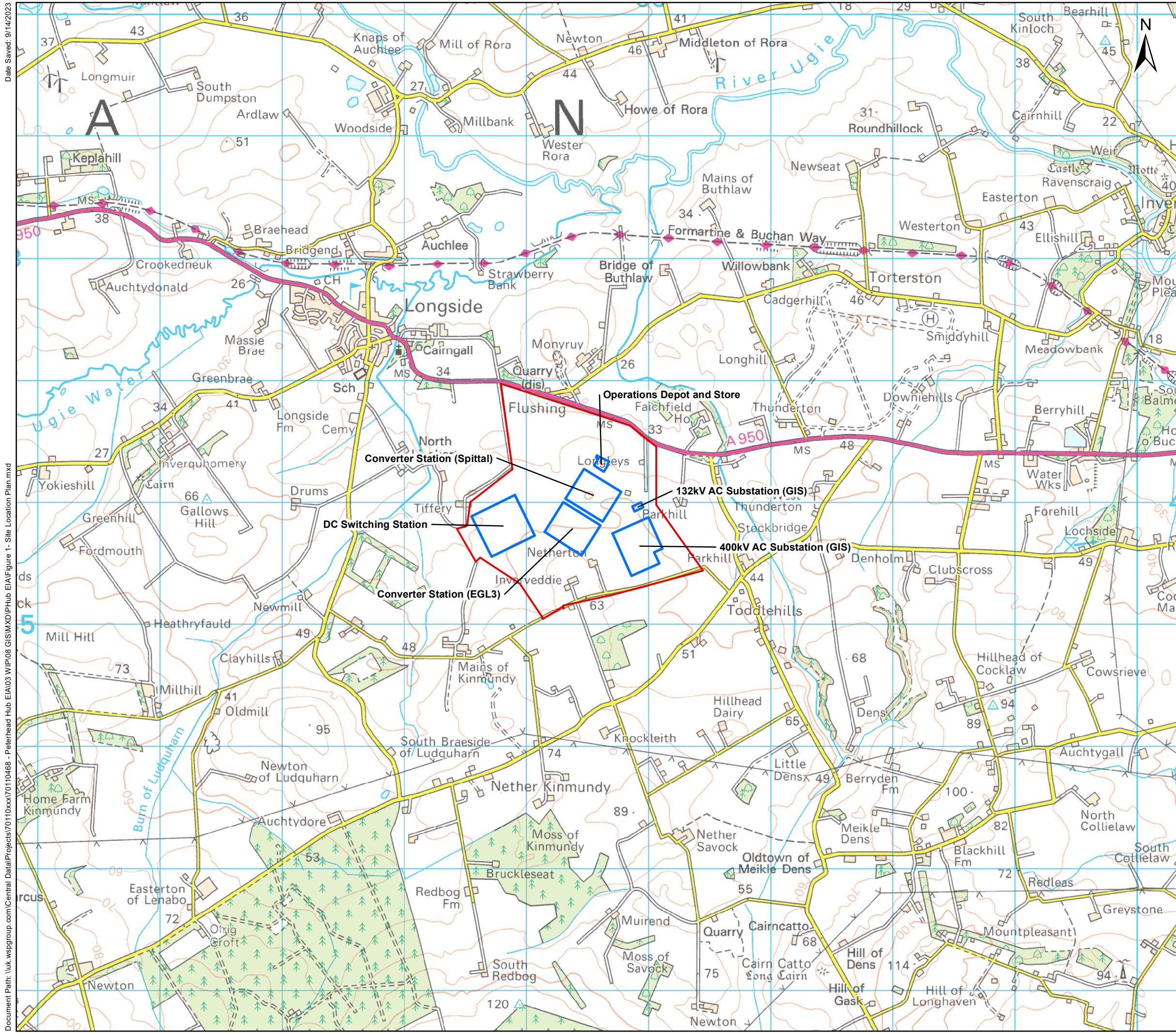
For SSEN Transmission, the need for these reinforcements is clear. What we need to do now is develop this critical national infrastructure as sensitively as possible, in a way which seeks to minimise and mitigate community and environmental impacts and maximise local and national economic opportunities and jobs.

⁸<https://www.nationalgrideso.com/future-energy/future-energy-scenarios>

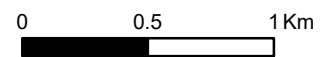
⁹<https://www.nationalgrideso.com/research-and-publications/electricity-ten-year-statement-etys>

¹⁰<https://www.nationalgrideso.com/research-and-publications/network-options-assessment-noa>





- Key**
- Scoping Site Boundary
 - Indicative Building Footprints

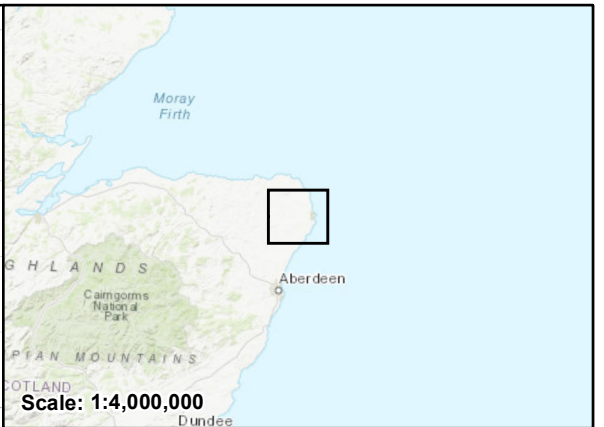
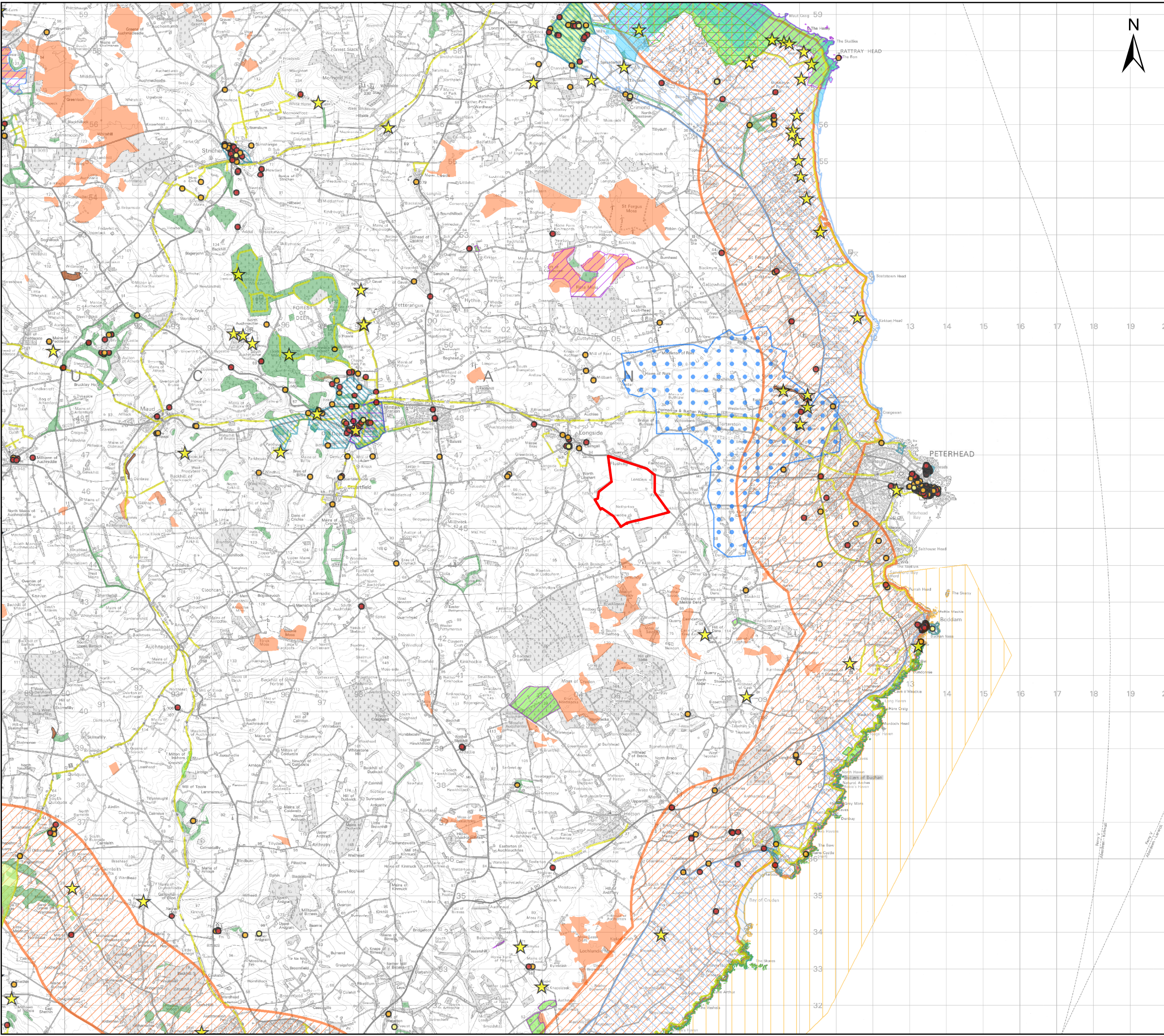


Client: **Scottish & Southern Electricity Networks**
TRANSMISSION

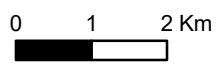
Project: **Netherton Hub EIA Scoping**

Title: **Figure 1.1: Site Location Plan**

Date: 14/09/23 Scale: 30,000 @ A3
 Drawn: MAL Checked: AS Approved: SM
 Drawing Number: PETERHEADHUB-EIA-WSP-01



- Key**
- Scoping Site Boundary
 - Country Park
 - Public Core Paths
 - ★ Scheduled Monument
 - Listed Building Grade A
 - Listed Building Grade B
 - Listed Building Grade C
 - Special Protection Area (SPA)
 - Special Area of Conservation (SAC)
 - Sites of Special Scientific Interest (SSSI)
 - Important Bird Area
 - Ramsar
 - Special Landscape Area
 - Conservation Area
 - Garden and Designed Landscape
 - RSPB Reserve
 - Ancient Woodland (of semi-natural origin)
 - Drinking Water Protected Areas (Surface Water)
 - Geological Conservation Review Sites
 - NatureScot Priority Peatland Habitat - Class 1
 - Buglife B-Lines Network



Client:

TRANSMISSION

Project:

Netherton Hub EIA Scoping

Title:

Figure 1.2: Environmental Constraints Plan

Date: 15/09/23

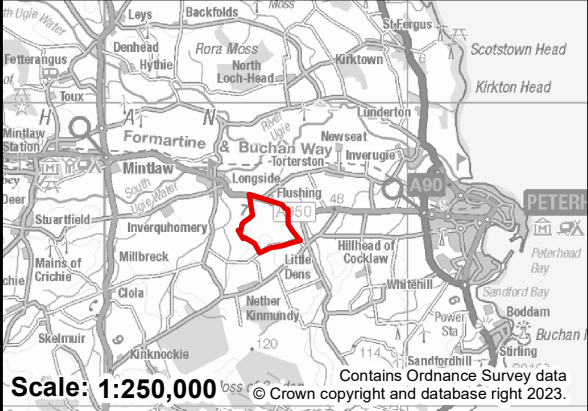
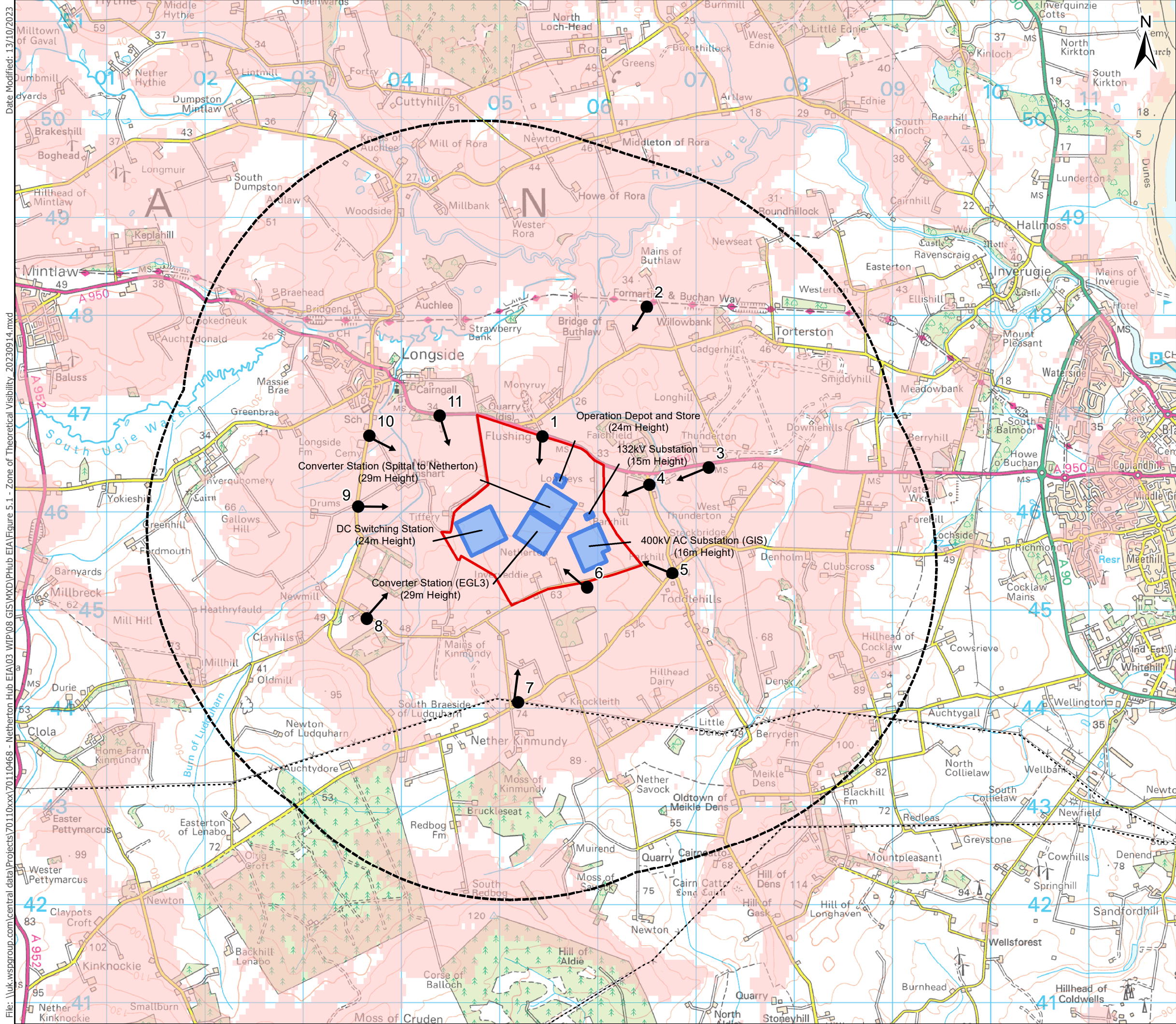
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Checked: AS

Approved: TT

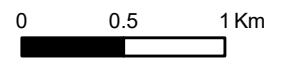
Drawing Number: PETERHEADHUB-EIA-WSP-02



Scale: 1:250,000
 Contains Ordnance Survey data © Crown copyright and database right 2023.

- Key**
- Red Line Boundary
 - 3km Study Area
 - Representative Viewpoint Locations
 - Existing 400 kV
 - Indicative Building Locations
 - Zone of Theoretical Visibility

Note:
 The Zone of Theoretical Visibility has been based on 5m Terrain data, using the Proposed Building arrangement (marked in blue). Buildings heights are indicative.



Client: **Scottish & Southern Electricity Networks**
 TRANSMISSION

Project: **Netherton Hub EIA Scoping**

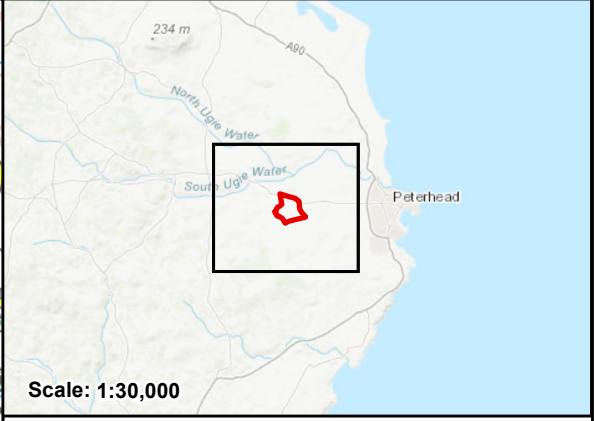
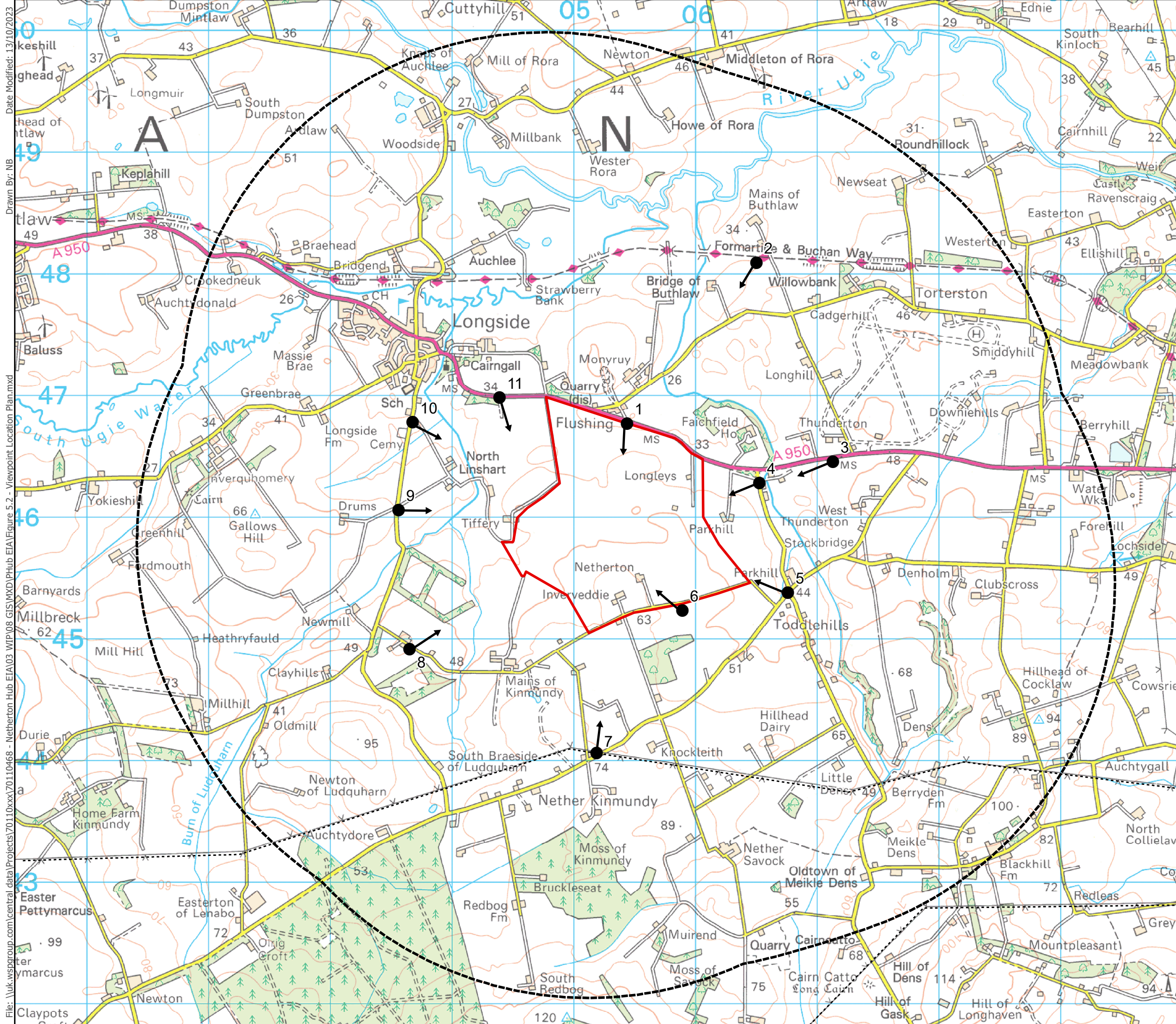
Title: **Figure 5.1 : Zone of Theoretical Visibility**

Date: 13/10/23
 Drawn: NB
 Drawing Number: PETERHEADHUB-WSP-5.1

Scale: 37,181 @ A3
 Checked: IM
 Approved: TT

Date Modified: 13/10/2023

File: \\uk.wspgroup.com\central\data\Projects\70110xxx\70110468 - Netherton Hub EIA\03_WIP\08 GIS\MXD\PHub EIA\Figure 5.1 - Zone of Theoretical Visibility_20230914.mxd



Scale: 1:30,000

Key

- Scoping Site Boundary
- 3 km Study Area
- Representative Viewpoint Locations
- Existing 400kV North East OHL

Viewpoint No	Location	Receptors
1	Flushing, on A950 looking south	Residential/Highway user on A road
2	Formantine & Buchan Way	Recreational
3	A950 travelling west	Highway user on A road
4	Bridge of Faichfield looking south west	Residential/Minor highway
5	Cross roads at Parkhill	Residential/Minor highway
6	Minor Lane, east of Netherton Farm	Minor highway
7	Minor lane at Nether Kinmundy	Residential/Minor highway
8	Castlepark of Ludquharn Farm, looking north east	Residential
9	Minor Lane, cross roads with Green Lane at entrance to Drums Farm	Recreational/Minor highway
10	South west edge of Longside, looking south east, Core Path	Residential/recreational
11	A950 travelling east	Highway user on A road

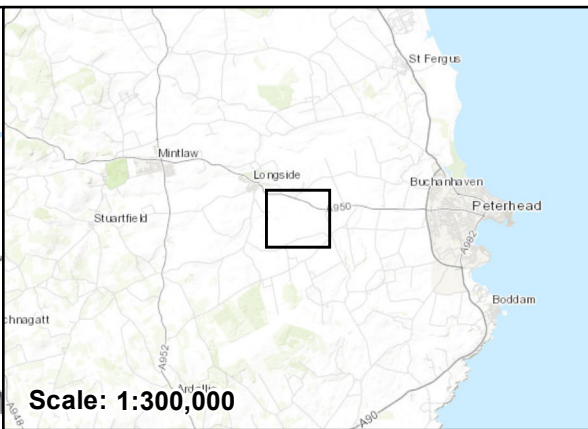
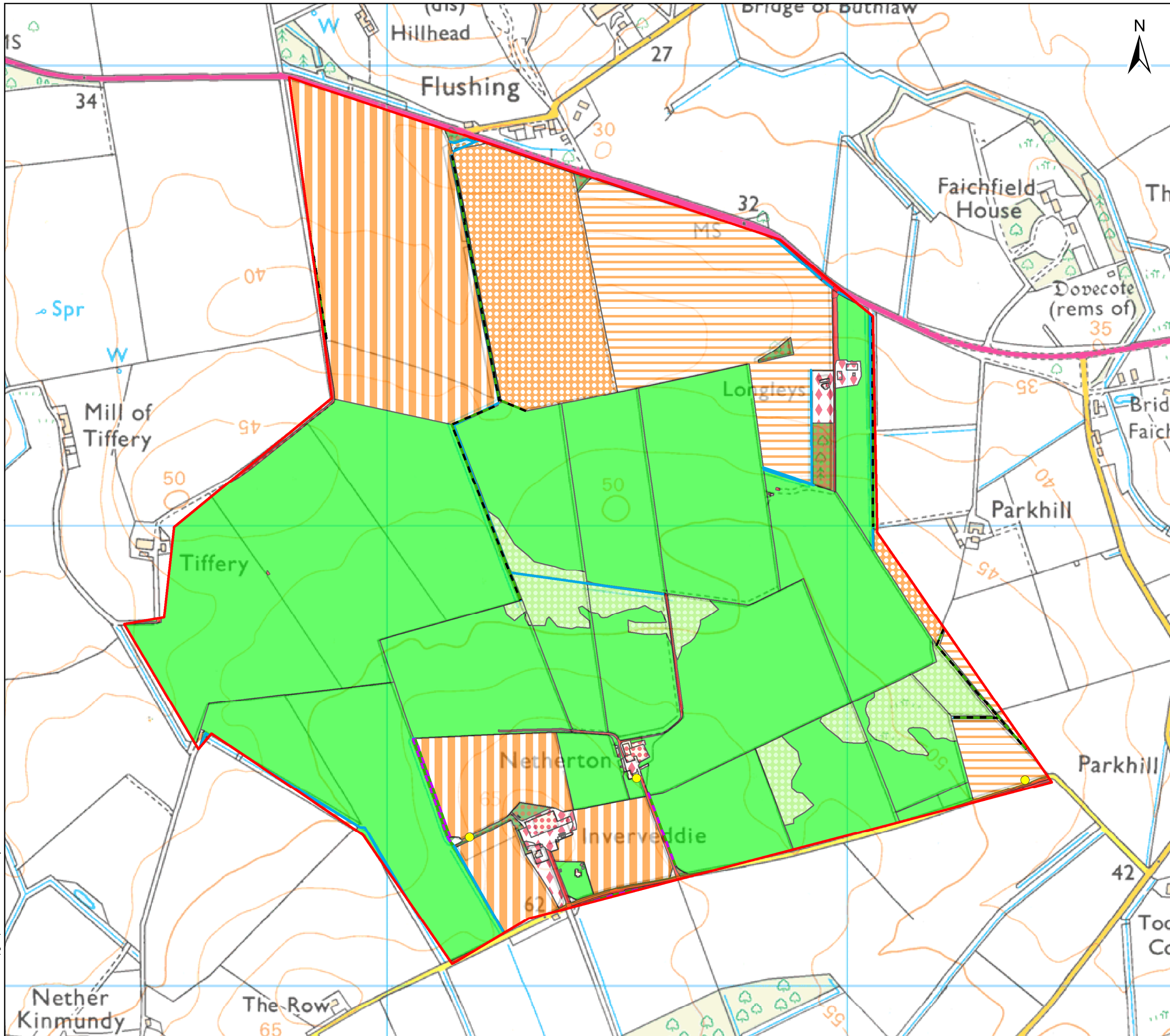
Client: **Scottish & Southern Electricity Networks**
TRANSMISSION

Project: **Nethernton Hub EIA Scoping**

Title: **Figure 5.2: Viewpoint Locations**

Date: 13/10/23 Scale: 30,000 @ A3
 Drawn: MAL Checked: AS Approved: TT
 Drawing Number: PETERHEADHUB-WSP-5.4

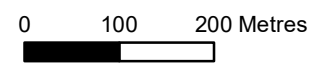
Date Modified: 13/10/2023
 Drawn By: NB
 File: \\uk.wspgroup.com\central\data\Projects\70110xxx\70110468 - Nethernton Hub EIA\03_WIP\08_GIS\MXD\PHub EIA\Figure 5.2 - Viewpoint Location Plan.mxd



Scale: 1:300,000

Key

- Scoping Site Boundary
- Japanese knotweed
- UKHab Primary Habitat (Linear)**
- h2b - other hedgerows
- r2b - other rivers and streams
- w1g6 - line of trees
- UKHab Primary Habitat (Area)**
- c1 - arable and horticulture
- c1a - arable field margins
- c1b - temporary grass and clover leys
- c1c5 - winter stubble
- c1d - non-cereal crops
- g3c8 - Holcus-Juncus neutral grassland
- g4 - modified grassland
- u1b5 - buildings
- u1b6 - other developed land
- u1d - suburban mosaic of developed/natural surfaces
- u1e - built linear features
- w1 - broadleaved, mixed and yew woodland
- w1g - other woodland, broadleaved
- w1h - other woodland, mixed

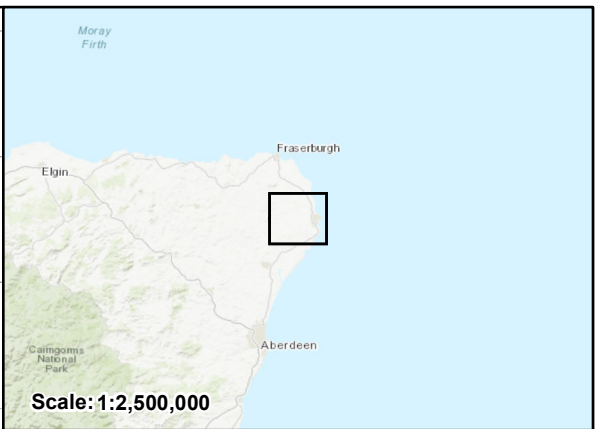
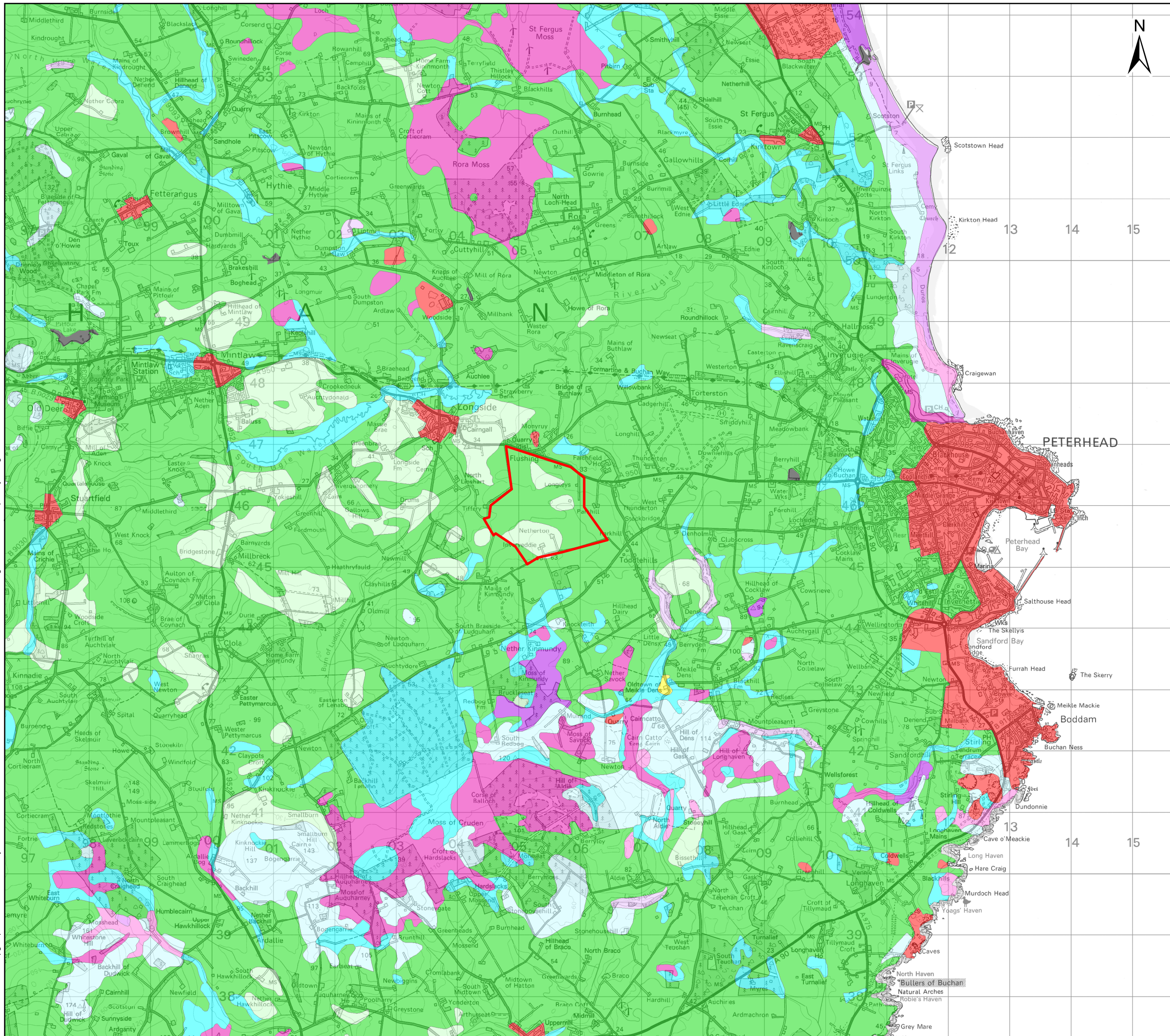


Client: **Scottish & Southern Electricity Networks**
TRANSMISSION

Project: **Netherton Hub EIA Scoping**

Title: **Figure 6.1: Habitats**

Date: 15/09/23 Scale: 8,000 @ A3
 Drawn: MAL Checked: AS Approved: TT
 Drawing Number: PETERHEADHUB-EIA-WSP-05



Key

- Scoping Site Boundary
- Land Capability for Agriculture (partial cover - 1:50,000)**
- Class 2 - Land capable of producing a wide range of crops
- Class 3.1 - Land capable of producing consistently high yields of a narrow range of crops and/ or moderate yields of a wider range. Short grass leys are common
- Class 3.2 - Land capable of average production though high yields of barley, oats and grass can be obtained. Grass leys are common
- Class 4.1 - Land capable of producing a narrow range of crops, primarily grassland with short arable breaks of forage crops and cereal
- Class 4.2 - Land capable of producing a narrow range of crops, primarily on grassland with short arable breaks of forage crops
- Class 5.2 - Land capable of use as improved grassland. Few problems with pasture establishment but may be difficult to maintain
- Class 5.3 - Land capable of use as improved grassland. Pasture deteriorates quickly
- Class 6.1 - Land capable of use as rough grazings with a high proportion of palatable plants
- Class 6.2 - Land capable of use as rough grazings with moderate quality plants
- Class 6.3 - Land capable of use as rough grazings with low quality plants
- Class 7 - Land of very limited agricultural value
- Built-up area
- Inland water

0 1 2 Km

Client: **Scottish & Southern Electricity Networks**

TRANSMISSION

Project: **Netherton Hub EIA Scoping**

Title: **Figure 11.1: Land Capability for Agriculture**

Date: 15/09/23 Scale: 60,000 @ A3
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 Drawing Number: PETERHEADHUB-EIA-WSP-04