

Volume 1: Non-Technical Summary

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Appendices (Volume 4 of this EIAR)

There are no appendices associated with this NTS.

Figures (Volume 3 of this EIAR)

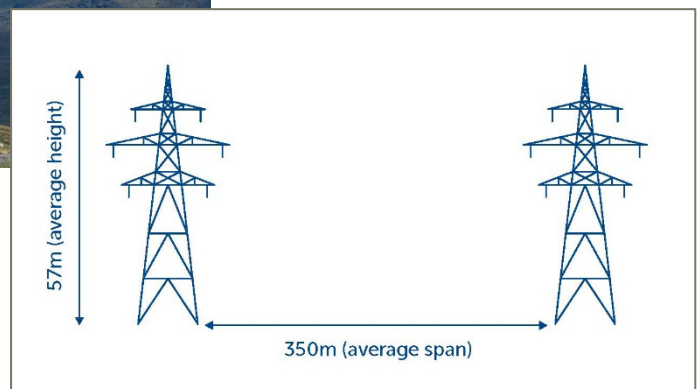
There are no figures associated with this NTS.

1. INTRODUCTION AND BACKGROUND

1.1 Overview

- 1.1.1 The Non-Technical Summary (NTS) summarises the Environmental Impact Assessment Report (EIAR). It has been prepared on behalf of Scottish Hydro Electric Transmission plc ('the Applicant') who operating and known as Scottish and Southern Electricity Networks Transmission ('SSEN Transmission'), own, operate and develop the electricity transmission network in the north of Scotland and remote islands. SSEN Transmission has a licence for the transmission of electricity in the north of Scotland and is closely regulated by Ofgem¹.
- 1.1.2 SSEN Transmission is seeking consent under Section 37 of the *Electricity Act 1989* ("the 1989 Act") to install, operate and keep installed a diversion of a short sections of the Alyth to Tealing Overhead Line (OHL) and Tealing to Westfield 275 kilovolt (kV) OHL, which currently connect with the existing Tealing 275 kV Substation, to connect with the proposed Emmock 400 kV substation; and for the installation of two short sections of parallel 275 kV OHL 'tiebacks' (TT), the East TT and West TT, between the proposed Emmock and existing Tealing substations. The proposals are referred to in the EIAR and this NTS as the 'Proposed Development'. The Location of the Proposed Development is presented in **Figure A: Overview of the Proposed Development** set out at the end of this **Section 1: Introduction and Background**.
- 1.1.3 **Figure A: Overview of the Proposed Development** shows the existing Alyth to Tealing OHL in the top portion of the figure, and the Tealing to Westfield OHL is shown in the bottom portion of the figure.

Representative Steel Lattice Tower Design



¹ Ofgem is the UK energy regulator. [Online] Available at: <https://www.ofgem.gov.uk/>.

- 1.1.4 The Proposed Development is part of the wider network upgrades required to support and ensure the connection of the new 400 kV OHL between Kintore and Tealing, submitted under a separate Section 37 application. This also requires the following project related developments subject to separate planning applications or Section 37 Consent:
- A new 400 kV substation to be constructed at Tealing (approximately 5 km to the north of Dundee, known as the proposed Emmock substation, planning reference 24/00699/FULN²); and
 - A new 400 kV substation to be constructed at Fetteresso Forest (approximately 7 km west of Stonehaven, known as the proposed Hurlie substation, planning reference APP/2024/1951³).
- 1.1.5 These substations are required to enable future connections to the electricity transmission network and export routes to areas of demand.
- 1.1.6 In addition, two existing 275 kV OHLs require upgrades. These upgrades are to enable operation at 400 kV and to allow them to be connected to the proposed new Emmock 400 kV substation and are also subject to separate applications for consent:
- The Alyth to Tealing OHL (Energy Consents Unit (ECU) reference number ECU00005167)⁴; and
 - Tealing to Westfield OHL (ECU reference number ECU00005168)⁵.
- 1.1.7 These project related developments do not form part of the Proposed Development and are therefore not assessed as such in this EIAR, although their potential for cumulative effects with the Proposed Development has been considered.
- 1.1.8 An Environmental Impact Assessment (EIA) has been undertaken for the Proposed Development in accordance with The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (the 'EIA Regulations') to assess the likely significant effects of the Proposed Development on the environment. The findings of the EIA are presented in the EIAR including the measures which will be taken to avoid, reduce, and, wherever possible, offset predicted likely significant adverse effects (known as mitigation measures). The EIAR should be referred to for full details of the Proposed Development, the predicted significant environmental effects of the proposals and the mitigation measures.
- 1.1.9 A Screening Report⁶ was also produced to address tie-ins and tie-backs between the Emmock and Tealing substations and the Proposed Development (ECU reference number ECU00005204).
- 1.1.10 The Section 37 Application will be submitted to the Scottish Government ECU. During this process SSEN Transmission will carry out the required⁷ notifications which will take the form of advertisements placed in a national newspaper, the Edinburgh Gazette, as well as in local newspapers to inform local communities and the general public that the application has been made to the Scottish Ministers. All stakeholders including members of the general public may make representations on the application and these will be published on the ECU's web portal. The Scottish Ministers will consider all relevant material available to them before making any decision on the application.
- 1.1.11 Separate to the EIAR, the following documents will also be submitted as part of the Section 37 application:
- Planning Statement;
 - Marine Directorate Science Evidence Data and Digital Checklist; and

² SSEN Transmission (November 2024) Emmock Substation Planning Application 24/00699/FULN. Available at: <https://planning.angus.gov.uk/online-applications/applicationDetails.do?activeTab=summary&keyVal=SN6VOFCFMUA00>.

³ SSEN Transmission (December 2024) Hurlie Substation Planning Application APP/2024/1951. Available at: <https://upa.aberdeenshire.gov.uk/online-applications/applicationDetails.do?activeTab=documents&keyVal=SNUVKWCAJ2G00>.

⁴ SSEN Transmission (June 2024) Alyth to Tealing OHL 400kV Upgrade (Reconductoring) Planning Application. Available at: <https://www.energyconsents.scot/ApplicationDetails.aspx?cr=ECU00005167>.

⁵ SSEN Transmission (July 2024) Tealing to Westfield OHL 400kV Upgrade (Reconductoring) Project Planning Application. Available at: <https://www.energyconsents.scot/ApplicationDetails.aspx?cr=ECU00005168>.

⁶ SSEN Transmission (August 2024) LT455 Proposed Emmock and Tealing Overhead Line Tie-ins – Screening Request. Available at: <https://www.energyconsents.scot/ApplicationDetails.aspx?cr=ECU00005204>.

⁷ Scottish Government, 2022. *Good Practice Guidance for Applications under Section 36 and 37 of the Electricity Act 1989*. [Online] Available at: <https://www.gov.scot/isbn/9781804351185>.

- Pre-Application Consultation (PAC) Report.

1.1.12 Notice of the Section 37 application, including this NTS and the EIAR and associated documents and figures, will be available for viewing at the following public locations during normal opening hours:

- Forfar Library, 50-56 W High St, Forfar DD8 1BA;

1.1.13 A copy of the Non Technical Summary will be made available in the Angus Mobile Library.

1.1.14 An electronic version is available online at: <https://www.ssen-transmission.co.uk/projects/project-map/kintore-tealing-400kv-ohl-connection/>.

1.1.15 This NTS and EIAR are available in other formats if required. For details, including costs, contact:

Via email to: tkup@sse.com

OR

By writing to:

For the Attention of Jamie Watt
SSEN Transmission
Grampian House
200 Dunkeld Road
Perth
PH1 3AQ

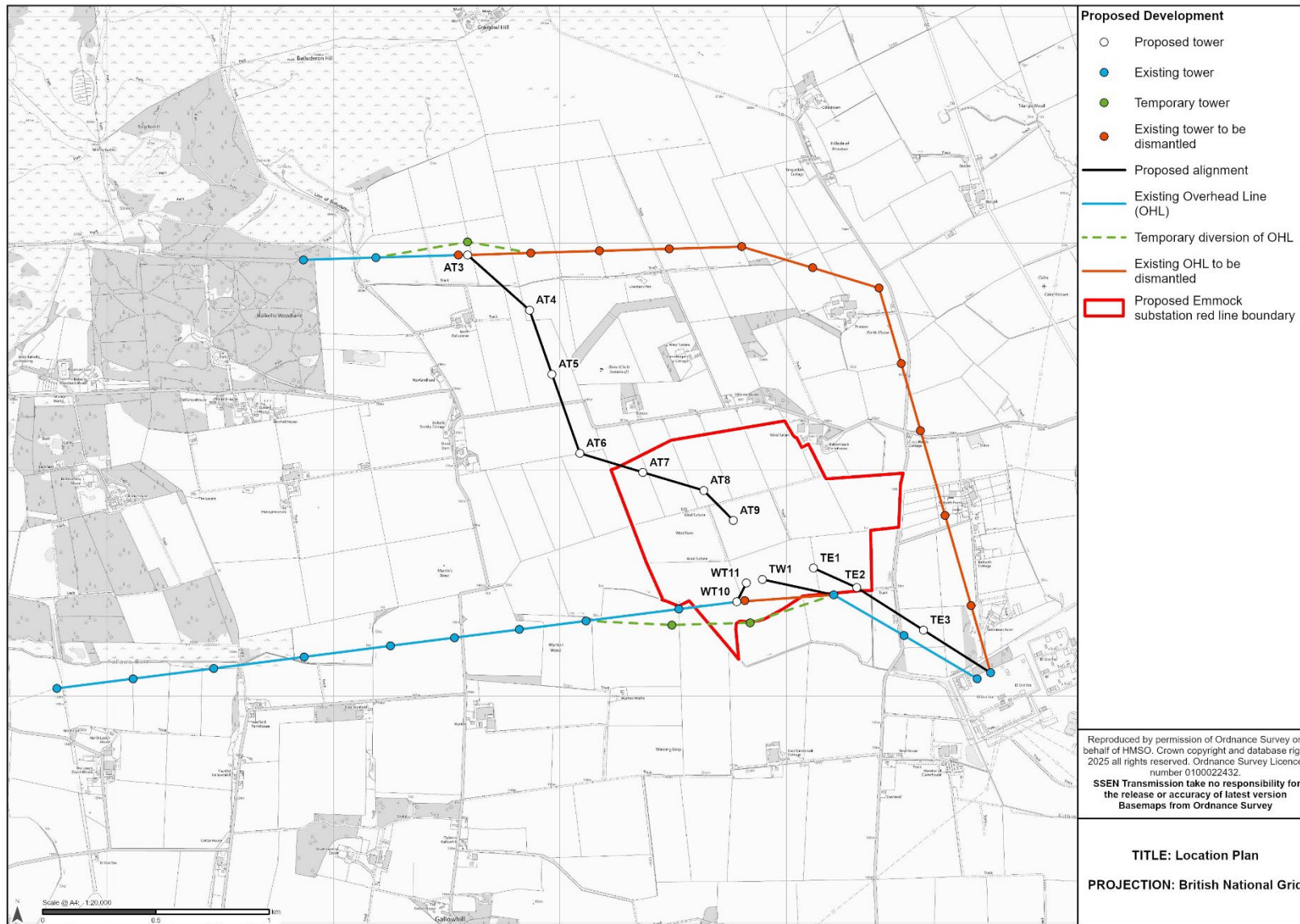


Figure A: Overview of the Proposed Development

2. NEED FOR THE PROPOSED DEVELOPMENT

2.1 Background

- 2.1.1 The need for the Proposed Development has been established by national planning policy and technical and economic requirements

2.2 National Planning Policy

- 2.2.1 The Proposed Development is supported by Scottish national planning policy through the Scottish Government's *National Planning Framework 4* (NPF4)⁸, which emphasises the need for strategic reinforcement of the transmission grid to connect and transmit from renewable energy development. NPF4 is Scotland's long-term spatial strategy that guides development and infrastructure planning to 2045, it outlines Scotland's spatial planning policies and priorities. NPF4 identifies 18 National Developments including the Proposed Development.



2.3 Technical and Economic Need

- 2.3.1 There is an established technical and economic need for the Proposed Development, as shown from:
- a transmission system planning exercise encompassing the entire National Grid (considering the upgrades necessary to accommodate the UK generation and demand requirements); and
 - the regulatory approval from Ofgem as part of its ongoing assessment process.
- 2.3.2 The need for the Proposed Development has been carefully assessed and established as part of those regimes as outlined below.

Transmission System Planning

- 2.3.3 In July 2022, National Grid ESO (as of 1 October 2024 now known as the National Energy System Operator (NESO)) published the Pathway to 2023 HND, setting out the electricity transmission network infrastructure required. It was clear that further reinforcement of the electricity transmission network is needed to connect the new, large-scale, renewable sources of energy in Scotland.
- 2.3.4 The NESO's Pathway to 2023 HND, NOA Refresh and associated Pathway to 2023 HND Follow Up Exercise set out the required onshore and offshore transmission works (including the Proposed Development as new onshore transmission works) that support the large-scale delivery of electricity generated from offshore wind, taking electricity from where it is generated to where it is needed across Great Britain.

Ofgem: Regulatory Approval Process

- 2.3.5 To enable the delivery of the required transmission infrastructure for 2030, Ofgem established a new regulatory framework for Transmission Operators, including SSEN Transmission, to obtain regulatory approval of the economic case for delivery (and funding) of qualifying infrastructure projects identified as part of the 'Pathway to 2030' exercise. This process is known as the Accelerated Strategic Transmission Investment (ASTI) framework.
- 2.3.6 The Proposed Development is within the scope of the ASTI Framework. Ofgem noted in the ASTI Framework Decision that: "By including projects within the list of ASTI projects, we are accepting the needs case for these projects..."

⁸ Scottish Government, 2023. *National Planning Framework 4*. [Online] Available at: <https://www.gov.scot/binaries/content/documents/govscot/publications/strategy-plan/2023/02/national-planning-framework-4/documents/national-planning-framework-4-revised-draft/national-planning-framework-4-revised-draft/govscot%3Adocument/national-planning-framework-4.pdf>.

- 2.3.7 Support and endorsement for this has been noted from Ofgem and the Department for Energy Security and Net Zero through NESO's Pathway to 2023 HND Publication⁹.

⁹ NESO, 2022. *Holistic Network Design*. [Online] Available at: www.neso.energy/document/262681/download

3. PROJECT DESCRIPTION

3.1 Introduction

- 3.1.1 The various elements required to construct and operate the Proposed Development are described here including the location, the aspects for which Section 37 Consent is being sought (including ancillary works, the Limit of Deviation (LOD) and micrositing¹⁰ requirements), as well as the typical construction activities.
- 3.1.2 The Proposed Development is located in the Local Authority area of Angus, approximately 5 km north of the city of Dundee, in a predominantly agricultural area interspersed, particularly to the north of the Site¹¹, by a few small woodland plantations and farm shelterbelts. The land uses mainly comprise areas used for arable production and some grazing land on the fields higher up the slope in the north of the Site. The area around the Site is also characterised by existing utility infrastructure, in particular the OHLs for the existing Alyth to Tealing 275 kV OHL and Tealing to Westfield 275 kV OHL which cross the Site in a broadly west to east direction before terminating at Tealing Substation to the southeast of the Site. A number of other OHLs also radiate out from the existing Tealing Substation. There are two wind turbines in the fields located to the south of Balkemback (just north of the Alyth to Tealing 275 kV OHL) and a large telecommunications tower at the summit of Craigowl Hill, approximately 1 km north of the Alyth to Tealing 275 kV OHL.
- 3.1.3 The Proposed Development includes the following works which can be seen in **Figure B: Proposed Development** and have been assessed and reported in the EIAR:
- installation of a new section of Alyth to Tealing 400 kV OHL including seven new towers from the location of Tower AT2 southwards for a distance of approximately 2.2 km to connect with the northern side of the platform of the proposed Emmock substation;
 - dismantling of 11 towers and the removal of tower foundations over a distance of approximately 3.5 km from Tower AT2 to the current connection at Tealing Substation;
 - construction of a temporary tower diversion, consisting of a temporary tower AT1 to maintain transmission on the Alyth to Tealing OHL ;
 - installation of a new section of Tealing to Westfield OHL, comprising two new towers, WT10 and WT11, northwards for a distance of approximately 150 m to connect with the southern side of the platform of the proposed Emmock substation;
 - construction of a temporary tower diversion, consisting of two new towers, WTT1 and WTT2, to maintain transmission on the Tealing to Westfield OHL.
 - installation of two new tie-back connections between Emmock and Tealing substations, the East TT and West TT, with the East-TT requiring installation of four new towers, TE1, TE2, TE3, and TEG1, and upgrading of existing end point tower TE4 currently connected to Tealing Substation; and the West TT requiring installation of towers TW1 and TWG1 and upgrading of existing towers WT9, TW2, TW3 and TW4.
- 3.1.4 A number of ancillary works are proposed including new and upgraded tracks, temporary working areas, vegetation clearance, public road improvement works, and site reinstatement.
- 3.1.5 **Figure B Proposed Development** shows the existing Alyth to Tealing OHL in the top portion of the figure, and the Tealing to Westfield OHL is shown in the bottom portion of the figure.

3.2 Possible Additional Works

- 3.2.1 Other works may be required that are not included in the Section 37 application and are not part of the Proposed Development and have not been considered in the EIAR. Appropriate consents would be sought for those works by the Principal Contractors or SSEN Transmission as appropriate. These include:

¹⁰ Micrositing is the process of finalising the design and position of project features to optimise the site location, features are permitted to be micrositied within the LOD once consented.

¹¹ The Site is the area of land on which the Proposed Development takes place.

- borrow pits and quarries to source stone for the construction of access tracks;
- temporary construction compounds;
- modification of the existing electricity distribution network.

3.3 Limits of Deviation

- 3.3.1 The Proposed Development would incorporate a Limit of Deviation (LOD) which is an area around the proposed infrastructure within which the position of towers and access tracks can be moved to avoid constraints identified from detailed design and surveys following consent. The EIAR considered the potential for variation in predicted environmental effects of the Proposed Development in the event that infrastructure would need to be repositioned within the LOD. Where there were areas of particular constraint, and in order to avoid or reduce the effects of moving towers or access tracks within the LOD, the width of the LOD was reduced in some areas. In order to move the towers and access tracks within the LOD, the Principal Contractors would be required to adhere to a change control process. This would ensure that there was no unacceptable increase in adverse effects from the repositioned infrastructure compared with those assessed in the EIAR.

3.4 Description of Overhead Line Infrastructure

- 3.4.1 Three basic types of towers are proposed as follows:

- suspension towers: these are used for straight sections of OHL;
- angle/tension towers: generally where there is a need to change the direction; and
- terminal towers: proposed at the substations, from which the termination of the OHL to the substation is made.

Conductors and Span Length

- 3.4.2 The proposed steel towers would support six conductor bundles on six horizontal cross-arms. The conductor bundles would be supported from insulator sets (also known as suspension or tension sets) attached to each of the cross arms. The current average span length would be 351 m with a maximum span of 501 m along the OHL alignment. Some conductors will include bird diverters where identified as necessary for mitigation for certain bird species.
- 3.4.3 An earth wire conductor with a fibre optic core (referred to as Optical Ground Wire or OPGW) will be suspended between tower peaks, above the phase conductors. For some tension towers where the conductor arms are of unequal lengths, the earthwire would be off-set to one side of the tower peak to maintain its position equidistant from the conductors on each side. Phase conductors will have a diameter of 37.3 mm and earthwire will have a diameter of 23.9 mm.
- 3.4.4 The conductors will achieve a minimum clearance to ground of 9 m under normal operating conditions in all areas. There may be locations along the routes that call for additional clearance requirements.

Access Tracks

- 3.4.5 Safe construction access would be required to each tower construction site for delivery of materials, plant, fittings, fixtures, working platforms and operatives. Access requirements to each tower depend on the tower type and the construction operations required at that tower. Many individual tower sites would be accessible from public roads and existing farm/forestry tracks and where possible, existing accesses would be utilised, however access spurs from these existing tracks to the location of tower construction sites are required in some areas. Existing road junctions would be utilised where possible however, new or upgraded access junctions (bellmouths) would require formation in agreement with AC to safely connect access tracks with the public road network.

3.5 Typical Construction Activities for Overhead Line Infrastructure

3.5.1 High voltage OHL construction typically follows a standard sequence of events as follows:

- enabling works: this includes work to existing distribution and transmission lines, constructing new and upgrading existing access tracks, changes to the public road to facilitate safe access, new watercourse crossings, forestry clearance and vegetation management, formation of site compounds, and realignment of existing OHL infrastructure;
- construction works; this includes the construction of tower foundations, the steel lattice towers, and conductor stringing;
- commissioning; this includes the inspection and snagging process, after which the circuits would be energised from the substations in a phased sequence;
- dismantling existing OHLs; removal of sections of any redundant existing OHLs would occur once the Proposed Development has been commissioned. The Operational Corridor (OC) would be returned to the landowners; and
- reinstatement; this includes reinstatement of tower access tracks, tower construction sites and construction compounds.



Representative Tower Construction

3.6 Operational Corridor

3.6.1 The Operational Corridor is the designated area around the Proposed Development that is maintained to ensure safe and reliable operation of the overhead line. The Operational Corridor would typically be 45 m either side of the OHL centreline. Trees are generally removed from the Operational Corridor to facilitate construction and to ensure continued safe operation of the OHL. Off-site compensatory woodland planting will be required.

3.7 Construction: Programme, Employment, Hours of Work and Traffic

3.7.1 It is anticipated that construction of the Proposed Development would take place over a four-year period. The detailed programming of works will be the responsibility of the Principal Contractors in agreement with the Applicant. It is anticipated that construction will commence in 2026 (subject to consents and approvals being granted) with a proposed energisation date of late 2030. The construction programme would closely align with the Kintore to Tealing 400 kV OHL project. The construction phasing and programme is subject to change based upon progress with the necessary statutory consents being granted, the discharge of any pre-commencement conditions, and voluntary wayleaves being agreed or granted through the necessary wayleave process. The final decisions in relation to construction methods and phasing would be made by the appointed Principal Contractors, having regard to any conditions attached to the statutory consents.



Representative Tower Foundation Construction

- 3.7.2 SSEN Transmission encourages their Principal Contractors to, where possible, employ suitable labour and resources from the areas local to the works.
- 3.7.3 Working hours are currently anticipated to be between approximately 07:00 to 19:00 during British Summer Time (BST) and 07:00 to 18:00 during Greenwich Mean Time (GMT), seven days a week. Special measures and arrangements would be made for works in proximity to sensitive receptors. Any out of hours working would be agreed in advance with the relevant local authority.
- 3.7.4 Construction of the Proposed Development would give rise to regular numbers of staff transport movements, with small work crews travelling to and from work site areas. Plant and materials would be delivered to site, requiring movements of heavy goods vehicles (HGVs). Temporary traffic control measures may be required at some locations. A Construction Traffic Management Plan (CTMP) will be prepared in agreement with AC prior to construction works commencing.

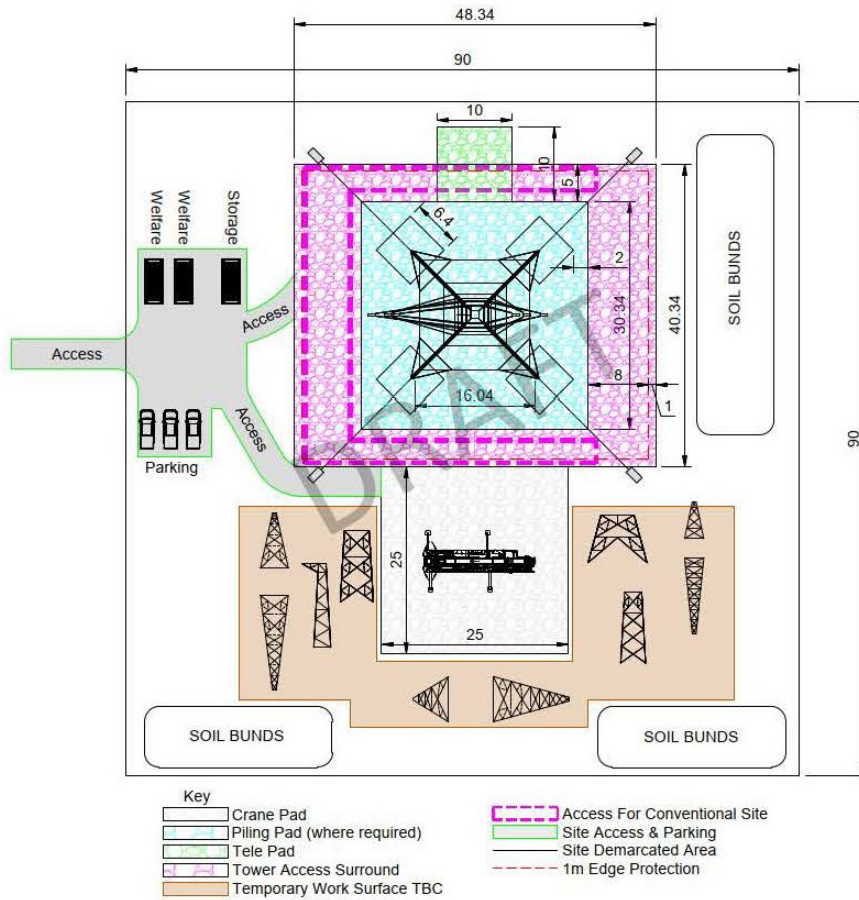


3.8 Environmental Management During Construction

- 3.8.1 General Environmental Management Plans (GEMPs) have been developed by SSEN Transmission to cover a wide range of topics, including oil storage and refuelling, soil management, working in or near water, working in sensitive habitats, working with concrete, watercourse crossings, waste management, contaminated land, private water supplies, forestry, dust management, biosecurity on land, restoration, and bad weather. Species Protection Plans (SPPs) have also been developed by SSEN Transmission in agreement with NatureScot to cover a range of species. The Principal Contractors will be required to comply with all of these.
- 3.8.2 The Principal Contractors will develop a Construction Environmental Management Plan (CEMP) to detail how the construction process will be managed in line with all commitments, mitigation, statutory consents, authorisations and industry best practice and guidance.
- 3.8.3 These environmental management plans, along with others that will be prepared, will cross reference to each other to ensure a cohesive approach to environmental management during construction.
- 3.8.4 The Principal Contractors will appoint an Environmental Manager and Advisory Environmental Clerks of Works (ECoWs) during construction of the Proposed Development to oversee and ensure implementation of key mitigation and management plans on site. Other specialist Clerks of Works will also be appointed in line with contract requirements.

Representative Construction Scaffolds

Illustrative Temporary Working Area Arrangement



3.9 Operation, Maintenance and Decommissioning

- 3.9.1 In general, OHLs require very little maintenance. Regular inspections are undertaken to identify any unacceptable deterioration of components, so that they can be replaced.
- 3.9.2 The Proposed Development would not have a fixed operational life, and decommissioning can be considered to have the same environmental effects as the construction phase. As such it is not discussed in detail in the EIAR.

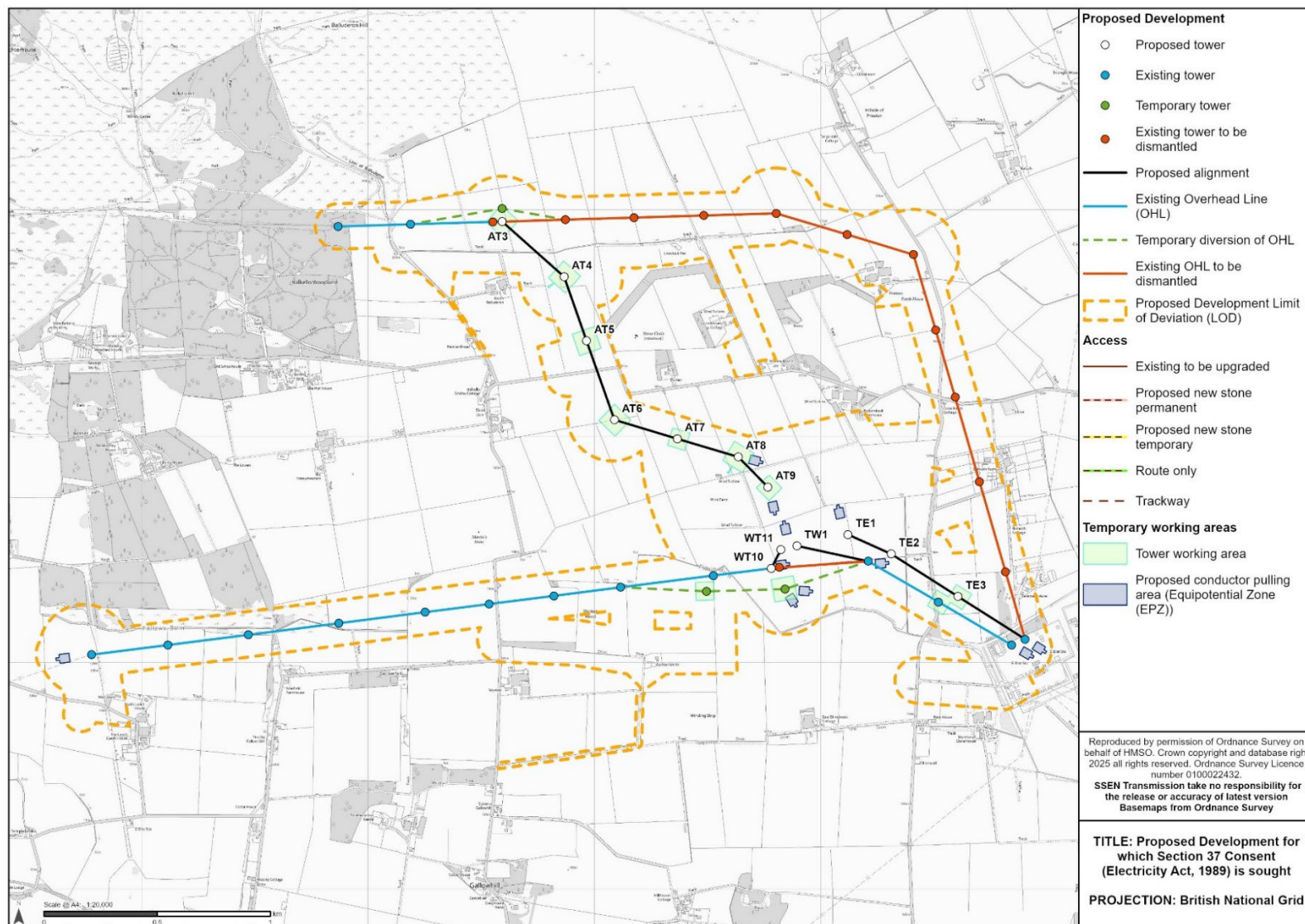


Figure B Proposed Development

4. CONSIDERATION OF ALTERNATIVES

4.1 Introduction

- 4.1.1 The *EIA Regulations* require SSEN Transmission to report upon the reasonable alternatives that were studied and the main reasons for the choice of the development, taking into account the environmental effects.
- 4.1.2 This section describes the reasonable alternatives studied by the Applicant which are relevant to the Proposed Development and sets out the main reasons for the options which have been selected, taking account of the potential effects on the environment of the alternatives considered.
- 4.1.3 A core factor in establishing the design of the Proposed Development is the locational requirements to connect existing and proposed OHL infrastructure with the proposed Emmock substation (24/00699/FULN) within a relatively limited geographical area. The remit within that is to achieve the most appropriate technical solution.
- 4.1.4 The Proposed Development has been informed through consideration of technical (engineering feasibility), economic and environmental criteria. It has also been informed by an ongoing process of consultation with statutory and non-statutory consultees, local communities and landowners.

4.2 Strategic Alternatives

- 4.2.1 The *EIA Regulations* require SSEN Transmission to report upon the reasonable alternatives that were studied and the main reasons for the choice of the development, taking into account the environmental effects. The following alternatives have been considered during project development:

- the 'do-nothing' scenario; and
- alternative technology types.

Do Nothing Scenario

- 4.2.2 The do-nothing scenario specific to the Proposed Development would involve the Emmock and proposed Tealing substations remaining disconnected, and the required re-routeing of existing OHLs would not take place, with the Kintore to Tealing 400 kV OHL intersecting with the existing Alyth to Tealing 275 kV OHL.
- 4.2.3 The 'do-nothing' scenario considers the implications of not implementing the Proposed Development. The Proposed Development is of national importance, contributing significantly towards the delivery of UK and Scottish Government's Net Zero Targets and helping reduce the UK's dependence on imported oil and gas. In a 'do-nothing' scenario, the current electricity network would not have capacity to support the transfer of power from both onshore and offshore renewable generation to key centres of demand across the country, and therefore the UK Government's targets of 50 gigawatts (GW) of offshore wind generation by 2030 and delivery of Net Zero targets could not be met.

Primary solution: Overhead Line (OHL) or Underground Cable (UGC)

- 4.2.4 When undertaking the initial assessment of the technology options to reinforce the transmission network SSEN Transmission's System Planning and Network Investment team assessed the potential technical options against its statutory and licence framework. In this case, there was an initial strategic choice to make between overhead line (OHL) or underground cable (UGC) technology for the entire length of the route. At that time, the key factor distinguishing these two technology types was their relative cost although policy strongly favours OHL over UGC in the following.
- 4.2.1 With consideration of these factors, SSEN Transmission's submission to the National Energy System Operator (NESO) (previously National Grid ESO) set out that the use of UGC did not meet the requirements for an economical network when a suitable alternative comprising OHL was available to perform the required network function.
- 4.2.2 During project development the UK Government indicated a "strong starting presumption"¹² for OHL. In addition to the cost of UGC there were further technological challenges (as noted below).

¹² Department for Energy Security and Net Zero (2023) National Policy Statement for Electricity Networks Infrastructure (EN-5).

Combined Solutions: Partial Underground Cable Options

- 4.2.3 Through the development stages, where challenges to the consenting, construction or operation of an OHL were identified, the potential use of shorter sections of UGC was borne in mind by the project team. However, there were no challenges that could not be overcome through appropriate layouts for the OHLs to minimise impacts on sensitive areas such as those of national significance. This meant that, in turn, it was possible to avoid the technical engineering challenges and system limitations that would be inherent in the partial use of UGC on a 400 kV line.

Technical Challenges of Undergrounding

- 4.2.4 As part of the consultation phase during project development SSEN Transmission explained the technical challenges involved in undergrounding to consultees. These challenges were presented within a document prepared by SSEN Transmission titled “*The challenges with undergrounding at 400 kV*”¹³, which explains in general terms the rationale behind the decision to adopt OHL.
- 4.2.5 When comparing 400 kV UGC and 275 kV, it is acknowledged that 275 kV is not as technically challenging as 400 kV UGC, the same challenges exist, albeit at a lesser scale.

System Limitations of Short Sections of Underground Cable

- 4.2.6 A key technical consideration when assessing UGC sections is the impact on the wider transmission network. High voltage UGC causes the network to operate less efficiently and generates constraint issues. UGC does not transport electricity as efficiently as OHL and requires new or upgraded substation sites to house additional equipment. It would increase the size of existing substation footprints or require new sites to be constructed. Fundamental to the use of short sections of UGC is the availability of suitable sites to extend or build new substations whilst minimising technical challenges and environmental impacts. Due to the system limitations, environmental, technical and cost challenges, the practical application of 400 kV UGC was not considered to be a reasonable alternative technology.

Further Economic Considerations

- 4.2.7 A recent study by the IET¹⁴ released in 2025 provided a further source of guidance on the indicative costs of different transmission technologies, it found that OHL was the most economic form of electricity transmission in comparison to onshore UGC and subsea cables. Indicative costs per MW km are shown in **Table 4.1: Indicative Cost Comparison**.

Table 4.1: IET Indicative Cost Comparison

Technology	Cost - £/MW km
OHL	£1190/MW km
UGC	£5350/MW km
Subsea Cable	£6400/MW km

- 4.2.8 UGC is currently estimated to be at least 4.5 times more expensive than OHL, and therefore in line with SSEN Transmission’s electricity transmission licence obligation, cost is a key consideration directing the use of OHL technology. Balancing the potential benefits of UGC (whole or partial) against its significant disbenefits, SSEN Transmission is clear in its view that a continuous OHL solution is the most appropriate to meet the need for its new infrastructure.

4.3 Summary of Selection of Alternatives

- 4.3.1 Following establishment of the need for the project it was determined that a ‘do nothing’ approach would not meet the network requirements. Taking account of technical, cost and environmental requirements the practical application of 400 kV UGC was not considered to be a reasonable alternative technology for the Proposed Development for a

¹³ SSEN Transmission, n.d. *The challenges with undergrounding at 400 kV*. [Online] Available at: <https://www.ssen-transmission.co.uk/globalassets/projects/2030-projects/2030-project-documents/the-challenges-with-undergrounding-at-400kv.pdf>

¹⁴ 100110238_001-rev-j-electricity-transmission-costs-and-characteristics_final-full.pdf

range of cost, technical and environmental reasons. Therefore, the Proposed Development has been progressed as a high voltage OHL.

5. EIA METHODOLOGY

5.1 Introduction

- 5.1.1 Environmental Impact Assessment is a process culminating in the preparation of an EIAR that identifies, describes and assesses the likely significant effects of the Proposed Development on the environment.
- 5.1.2 When determining an application for consent (such as a Section 37 application or a planning application), the relevant decision maker (the Scottish Ministers or the Local Planning Authority) must examine the EIAR along with other submitted documentation and reach a reasoned conclusion on whether development consent or planning permission is to be granted and consider whether it is appropriate to impose conditions which may include mitigation and monitoring measures amongst other controls.
- 5.1.3 The EIAR and this NTS, has been prepared in accordance with the *EIA Regulations* and has been informed by current best practice guidance from the UK and Scottish Governments, local authorities, and industry professional bodies.

5.2 EIA Scope

- 5.2.1 Development of the assessments has been the subject of consultation with statutory and non-statutory consultees through the publication of, and consultation on, the “LT455 – Emmock and Tealing Overhead Line Tie-Ins Scoping and Screening Report”, published in April 2025. The scope of the EIA and focus of the resulting EIAR has been informed by the resulting Scoping Opinion issued by the Energy Consents Unit (ECU) on 28 May 2025 in response to the EIA Scoping Report. Both the Scoping Report and the Scoping Opinion are set out in the EIAR.

5.3 Approach to Establishing the EIA Baseline

- 5.3.1 To identify the scale of likely significant effects of the Proposed Development, it is necessary to establish the existing baseline character and sensitivity of an area prior to development. The study area considered for the purposes of establishing the existing baseline varies by technical discipline.
- 5.3.2 Once the initial environmental baseline character is determined and key receptors are identified and categorised, the potential for likely significant effects on this baseline, arising from the construction and operation of the Proposed Development, are assessed using an appropriate methodology for each technical discipline.
- 5.3.3 Consideration is also given to foreseeable future changes to the baseline.

5.4 Approach to Mitigation

- 5.4.1 In this EIAR, mitigation has been developed and organised in a three-tier mitigation hierarchy that is broadly in line with latest guidance from IEMA. The three tiers are as follows:
- **Embedded Mitigation:** is a process of mitigating impacts in the design stage of project development;
 - **Applied Mitigation:** is the use of standard/best practice environmental mitigation that Principal Contractors must adhere to, this is typically secured by a consent condition; and
 - **Additional Mitigation:** is site-specific bespoke mitigation designed to reduce the magnitude and/or significance of the residual impacts which the other mitigations could not eliminate.
- 5.4.2 All mitigation measures identified through the design and EIA processes are collated into a single schedule of mitigation commitments which is presented in the EIAR.

5.5 Assessment and Mitigation of Likely Significant Effects

- 5.5.1 The EIA process has been undertaken to identify potential likely significant effects from the construction and operation of the Proposed Development. Predicted impacts have been assessed by considering the following: the geographic extent or magnitude of change (from the existing baseline conditions);
- the sensitivity or value of the affected environmental factors/receptors;
 - the availability and likely effectiveness of measures to mitigate impacts;
 - the likelihood of occurrence; and

- reversibility and duration of the likely residual effects.

5.5.2 In the assessment, effects evaluated to be Major and Moderate are considered to be Significant in the context of the *EIA Regulations*. Minor and Negligible effects are considered to be Not Significant. Through the EIA and project design process, opportunities are taken to avoid and reduce significant environmental effects through a process called mitigation. In the EIAR mitigation has been developed and organised in a three-tier hierarchy:

1. **Embedded Mitigation:** measures which are incorporated and inherent within the project's design;
2. **Applied Mitigation:** standard/best practice environmental management during construction; and
3. **Additional Mitigation:** bespoke measures identified from the EIA.

5.5.3 Where environmental effects are predicted to be Significant taking account of embedded and applied mitigation, the requirement for further additional mitigation has been considered within each EIA discipline, and the predicted significance of the residual effect is then reported.

5.5.4 All mitigation measures identified through the design and EIA processes are collated into a single Schedule of Mitigation commitments which is presented in the EIAR. These measures will be incorporated within relevant contractual requirements to ensure they are implemented, should the proposals be consented.

5.5.5 The key mitigation measures for each technical topic assessed are summarised in **Sections 8 to 10** of this NTS.

5.6 Consultation

5.6.1 SSEN Transmission has sought to maintain an open dialogue with local communities in the vicinity of the Proposed Development. This has included carrying out consultation events, engaging with local elected members such as Ward Councillors and Community Councils and engaging with landowners, residents and businesses.

5.6.2 Stakeholder engagement has been ongoing throughout the different stages of the Proposed Development's design evolution. This has kept key consultees updated and allowed SSEN Transmission to agree important methodological issues for EIA related activities such as survey scopes, assessment methods, and approaches to mitigation.

5.6.3 Consultation in relation to the EIAR was undertaken with the local community and other stakeholders and consultees including:

- pre-consultation meetings for Ward Councillors and Community Councils;
- meetings with Community Councils;
- pre-application meetings with Local Authorities and Statutory Consultees, including NatureScot, Historic Environment Scotland (HES) and the Scottish Environment Protection Agency (SEPA); and
- briefings on Reports on Consultation.



One of the Consultation Events

6. SCOPE AND CONSULTATION

6.1 Introduction

- 6.1.1 Chapter 6 describes the EIA Scoping process, including consultation which was specifically undertaken to determine the scope of the EIAR, and the consultation activities that were undertaken to inform the local community and other stakeholders of the progress at each key stage of the project.

6.2 Consultation with the Local Community and Stakeholders

- 6.2.1 SSEN Transmission has sought to maintain an open dialogue with stakeholders and local communities in proximity to the Proposed Development. This has included carrying out in-person consultation events during the design process for the Proposed Development. Additionally, for those members of the public that could not attend the in-person events, the same information was presented within a virtual consultation room which could be accessed via the project website¹⁵. Consultation has involved engaging with statutory consultees, non-statutory consultees, community members and local organisations, as well as landowners and occupiers that may be impacted by the Proposed Development. These events have taken place at a formative stage of the proposals and the feedback has informed the further development of the proposals. Prior to these events, specific proposals have been published to allow consultees to provide a proper and informed response.
- 6.2.2 It is noted that the consultation events for the Proposed Development were combined with the Kintore to Tealing 400 kV Overhead Line (OHL) consultations. As a result, the Proposed Development was presented in a context of the wider development network upgrades, therefore providing a broader understanding of the wider project goals.
- 6.2.3 A first round of stakeholder and public consultation was undertaken between May and July 2023. The consultation presented information on the Kintore to Tealing 400kV OHL project, and included information for the Tie-Ins that form the Proposed Development. The consultation included information regarding site options, environmental and technical considerations, and the project development process, and explained the factors which were taken into consideration.
- 6.2.4 The consultation sought to capture views from:
- statutory consultees;
 - non-statutory consultees;
 - community members and local organisations, including local elected members; and
 - landowners and occupiers.
- 6.2.5 Project documents prepared to inform this consultation are available on the SSEN Transmission project website¹⁵. Statutory and non-statutory consultees were notified regarding the consultation and a number of these organisations provided written consultation responses to the Applicant. These responses have been taken into account in the preparation of this EIAR and where relevant to the different environmental technical assessments presented.

6.3 EIA Scoping

- 6.3.1 The EIA Scoping process enables the potential likely significant effects of the proposals to be identified at an early stage.
- 6.3.2 An EIA Scoping Report¹⁶ was issued to the Energy Consents Unit (ECU) of the Scottish Government on 11 April 2025. A Scoping Opinion¹⁶ was provided by the ECU on 28 May 2025.
- 6.3.3 The responses and requests contained within the Scoping Opinion were considered in detail during the EIA process.

6.4 Further Consultee Engagement

¹⁵ SSEN Transmission, n.d. Kintore to Tealing 400 kV Overhead Line Project webpage. [Online] Available at: <https://www.ssen-transmission.co.uk/projects/project-map/kintore-tealing-400kv-ohl-connection/>.

¹⁶ The Scottish Government, Energy Consents Unit, 2024. Scoping Opinion on behalf of Scottish Ministers under the Electricity Works. [Online] Available at <https://www.energyconsents.scot/ApplicationDetails.aspx?cr=ECU00005204>

- 6.4.1 Consultation engagement has been ongoing throughout the different stages of the project and continued throughout the Scoping and EIA process. This engagement kept key EIA consultees updated on the project and allowed SSEN Transmission to agree important methodological issues for EIA related activities such as survey scopes and approaches, assessment methods, and approaches to mitigation.

6.5 Issues Scoped into Assessment

- 6.5.1 Chapter 6 provides a breakdown of which specific elements of the main topics have been scoped into the EIA, including: Landscape and Visual Amenity; Cultural Heritage; Ornithology; Noise and Vibration; and Cumulative Effects. Within these topics, some specific aspects and potential effects have been scoped out of the EIA and this is detailed below and justified further in Chapter 6 of the EIAR.

6.6 Issues Scoped out of Assessment

- 6.6.1 During the Scoping process, it was identified that a number of environmental topics did not require detailed assessment within the EIAR as it was considered that they are not likely to give rise to significant effects. Generally, the Scoping Opinion¹⁶ supported the proposed scope of the EIA confirming in Section 3.5 that “*Scottish Ministers are satisfied with the scope of the EIA set out at Chapter 16 of the scoping report*”. These topics were therefore addressed in the EIA and discussed in the EIAR:

- Landscape and Visual Amenity;
- Cultural Heritage;
- Ornithology;
- Noise and Vibration; and
- Cumulative Effects.

- 6.6.2 The following topics were scoped out in full:

- Land use and recreation;
- Forestry;
- Ecology;
- Traffic and Transport;
- Hydrology, Hydrogeology, Geology and Soils;
- Population and human health;
- Air quality;
- Climate Change;
- Life cycle/embodied carbon and land use change carbon;
- Socio-economic considerations and assessment;
- Material assets and waste
- Major accidents and disasters; and
- Telecommunications and aviation.

7. LANDSCAPE AND VISUAL AMENITY

7.1 Introduction

- 7.1.1 The landscape and visual impact assessment (LVIA) has considered the potential effects of the Proposed Development on landscape and visual amenity. The assessment has considered effects during construction and operation on landscape character and views experienced by receptors including residents in properties, settlements, recreational receptors and road users, with reference to Visual Receptor Areas (VRAs). A Residential Visual Amenity Assessment (RVAA) was undertaken specifically to consider the visual effects of the Proposed Development as seen from residential properties during operation.
- 7.1.2 The landscape designation for Sidlaw Local Landscape Area (LLA) lies to the north of the Proposed Development.

7.2 Overview of Effects and Mitigation

- 7.2.1 Mitigation has been embedded into the design of the Proposed Development, with the LVIA process informing refinements to the alignment of the Proposed Development to increase separation from residential properties, avoid hill summits and elevated ridgelines, and maximise the level of backclothing from distant landform.
- 7.2.2 Applied mitigation includes standard good practice measures which will be implemented during construction, including the application of SSEN Transmission's General Environmental Management Plans (GEMPs) and Species Protection Plans (SPPs). In addition, a Construction Environmental Management Plan (CEMP) will be produced which will include protection of landscape features, reinstatement of landscape features, soil management, ecological management and general construction practices.

Landscape

- 7.2.3 **Moderate (Significant)** landscape effects would occur within 1 km of the Proposed Development, in the area between Myreton of Claverhouse and Balkello within Landscape Character Type (LCT) 387, and across the southern slopes of Craigowl Hill within LCT 382, during construction. This would be due to disturbance to ground cover, and construction (or dismantling) of steel lattice towers and access tracks. Beyond 1 km of the construction works, effects on landscape character would reduce to **Minor (Not Significant)**.
- 7.2.4 During operation, **Moderate (Significant)** effects on the landscape character of LCT 382 and LCT 387 would be experienced between Balkello Woodland in the west, Wynton and Myreton of Claverhouse in the south, and Balnuith and Balkemback in the east within LCT 387, and across the southern slopes of the Sidlaw Hills (e.g., Balkello Hill and Craigowl Hill) within LCT 382. This would be due to the introduction of large scale vertical infrastructure which would result in loss of agricultural land and would alter the distinctive profile of the Sidlaw Hills. Beyond 1 km of the Proposed Development, effects on landscape character would reduce to **Minor (Not Significant)**.
- 7.2.5 In terms of impacts on the Sidlaw LLA, **Minor (Not Significant)** effects are expected during construction and operation, and overall, it is not expected that the Proposed Development would affect the integrity of the LLA. This is due to construction activity and the Proposed Development both appearing backclothed and in the context of existing OHL infrastructure outside the LLA.

Visual

- 7.2.6 During construction, **Moderate or Major (Significant)** effects are expected for some receptors in six of the nine Visual Receptor Areas (VRAs) considered in the assessment. These are (1 (Balkemback), 2 (Balnuith), 3 (Templeton, Gallowhill, Myreton of Claverhouse, and Inveraldie), 4 (Balluderon and Balkello), 5 (Ark Hill, Balkello, Craigowl and Gallow Hills), and 8 (Tealing and Kirkton of Tealing)).
- 7.2.7 During operation, **Moderate or Major (Significant)** effects are expected for some receptors in three of the nine VRAs (1 (Balkemback), 3 (Templeton, Gallowhill, Myreton of Claverhouse, and Inveraldie), and 4 (Balluderon and Balkello)). Whilst effects of the Proposed Development would be **Not Significant** from VRA 2 (Balnuith) and 8 (Tealing and Kirkton of Tealing), **Major (Significant) beneficial** effects would arise from the dismantling of the closer Alyth to Tealing 275 kV OHL.

7.3 Summary

- 7.3.1 The assessment predicted that landscape effects would be significant, both during construction and operation of the Proposed Development within 1 km of the Proposed Development. It also predicted that visual effects would be significant for six of the nine visual receptor areas during the construction phase, and three of the nine visual receptor areas would experience significant effects during the operational phase.

8. CULTURAL HERITAGE

8.1 Introduction

- 8.1.1 The cultural heritage assessment considered the potential effects of the Proposed Development's construction and operation on cultural heritage interests (eg historic environment sites and features, archaeology and built heritage), hereafter referred to as 'heritage assets'. It detailed the results of a desk-based assessment, the methods used to establish the sensitivity of heritage assets present, and the significance of any effects upon cultural heritage resulting from the Proposed Development.
- 8.1.2 The assessment has identified the potential for construction works to result in direct impacts on the following heritage assets of the Inner Study Area¹⁷:
- The Prieston farmstead (NO33NE0111): potential adverse effect of **negligible** significance (Not Significant in EIA terms);
 - Prieston Farm Souterrain (NO33NE0019) potential adverse effect of **negligible** significance (Not Significant in EIA terms). Applied mitigation would ensure that any archaeological remains that may be present are dealt with appropriately and to reduce and offset the predicted effects;
 - North Balluderon Enclosure Cropmarks (NO33NE0020): potential adverse effect of **minor** significance (Not Significant in EIA terms). Applied mitigation would ensure that any archaeological remains that may be present are dealt with appropriately and to reduce and offset the predicted effects;
 - Linn of Balluderon Quarry (HA 04): potential adverse effect of **negligible** significance (Not Significant in EIA terms);
 - Cross House, Building (HA08): potential adverse effect of **negligible** significance (Not Significant in EIA terms); and
 - The Dundee and Newtyle Railway Embankment (SM 6123): potential adverse effect of **major** significance (Significant in EIA terms).

8.2 Overview of operational effects

Embedded Mitigation

- 8.2.1 The Proposed Development has been designed to avoid any direct impacts on Scheduled Monuments. Where is a possibility that Scheduled Monuments may be directly impacted upon, the Scheduled Monument would be marked out with a suitable stand-off buffer to be agreed in advance with HES.

Applied Mitigation

- 8.2.2 Construction works would proceed in accordance with the CEMP, with construction machinery operating only within defined working areas. Upstanding cultural heritage remains will be retained, where possible. Where necessary, existing cultural heritage features may be fenced off or otherwise visibly marked out to signal their presence to construction workers. Archaeological evaluation (trial trenching) may be undertaken in archaeologically sensitive areas within the LOD and set piece excavation may be undertaken where heritage assets cannot be avoided through design or micro-siting. Should previously unidentified archaeological remains be encountered, they would be subject to a programme of archaeological works to be developed in consultation with Aberdeenshire Council Archaeology Service ("ACAS") and detailed in a Written Scheme of Investigation.
- 8.2.3 Assessment of the Proposed Development on the settings of designated heritage assets with theoretical visibility of the Proposed Development (both within and outside the Outer Study Area) has identified one effect of **moderate** significance (significant in EIA terms) to the setting of the Balkemback Cottages Stone Circle (SM 2868). In this regard, the assessment concluded that although the Proposed Development will introduce a notable change to the monument's setting, it would remain possible to experience, appreciate, and understand the cultural significance of

¹⁷ The Inner Study Area refers to the area of the Proposed Development, including its LOD (as described in **Chapter 3**), which has been used for the identification of heritage assets that could be directly affected by the Proposed Development, both during the construction and/or reconductoring of OHLs and during works required for Site access.

the stone circle. The key setting aspects of the Balkemback Cottages Stone Circle, and their capacity to inform and convey cultural significance, would be adequately retained such that the integrity of the setting would not be significantly compromised. All other operational effects on the settings of heritage assets within the Outer Study Area are assessed as being of no greater than **minor** significance (not significant in EIA terms).

8.3 Summary

- 8.3.1 No significant residual construction effects have been identified. The residual operational effect of the Proposed Development would be the same as the predicted operational impacts: comprising one effect of **moderate** significance to the setting of the Balkemback Cottages Stone Circle (SM 2868).

9. ORNITHOLOGY

9.1 Introduction

- 9.1.1 This assessment considers the potential effects of the Proposed Development on ornithology (birds). It details methods used to establish the bird species and populations present, together with the process used to determine their Nature Conservation Importance (NCI). The ways in which birds might be affected by construction and operation of the Proposed Development are explained, and an assessment is made with regards the significance of these effects.
- 9.1.2 Target Species including species from Designated Sites such as Special Protection Areas (SPAs) were identified during baseline surveys.
- 9.1.3 The assessment is structured around the consideration of potential effects of construction and operation of the Proposed Development upon those ornithological receptors identified, including on Designated Sites. It was possible to 'scope out' effects on species due to ecology, absence, distance from the Proposed Development, and/or low levels of activity. With consideration of Embedded Mitigation, species included in the assessment were limited to Pink-footed goose.

9.2 Overview of Effects and Mitigation

Embedded Mitigation

- 9.2.1 Line marking, which involves the installation of devices to the OHL to divert birds, and reduce bird strike, was implemented by design.

Applied Mitigation

- 9.2.2 During construction of the Proposed Development the Bird Species Protection Plan ("BSPP") will be implemented to mitigate the potential impacts of the Proposed Development. The BSPP will be implemented as part of a suite of other relevant measures, which will form a contractual requirement for the construction works.
- 9.2.3 The construction phase of the Proposed Development is not predicted to result in significant adverse effects upon bird species following implementation of the Bird Species Protection Plan (BSPP). Population reductions due to displacement and/or collision mortality of the operational phase are also likely to be minimal, with Embedded mitigation included in the Proposed Development's design. Effects arising from construction and operation of the Proposed Development are therefore considered not Significant for all bird species.
- 9.2.4 The contribution of adverse effects accrued by the Proposed Development to regional populations are undetectable and the cumulative effects together with existing and planned infrastructure developments have been judged as unlikely to have a significant effect.
- 9.2.5 Information is presented on the potential effects of the Proposed Development on the integrity of a number of SPAs. This information demonstrates that the Proposed Development would not have a likely significant effect on any SPA.

9.3 Summary

- 9.3.1 No likely Significant residual effects on ornithological receptors have been predicted from the construction, operation or decommissioning of the Proposed Development.

10. NOISE AND VIBRATION

10.1 Introduction

- 10.1.1 The noise and vibration assessment considered the potential effects of the Proposed Development on noise and vibration during construction and operation. The methodology focused on the assessment of effects on permanent Noise Sensitive Receptors (NSRs) in the Study Area. A NSR is any building where the presence of noise could significantly impact the occupants' well-being, activities, or health e.g. residences, schools, hospitals, offices and other commercial properties. Where likely significant effects are predicted, appropriate mitigation measures were proposed.

10.2 Overview of Effects and Mitigation

- 10.2.1 Topic specific embedded mitigation is proposed namely, permanent towers and conductors being kept outwith 170 m of NSRs and avoiding the selection of components that produce high aeolian noise.
- 10.2.2 Regarding applied mitigation, a Construction Noise Management Plan will need to be produced, and will be contained within the CEMP.
- 10.2.3 There is potential for Significant effects during construction due to noise and Chapter 10 of the EIAR provides a breakdown of each activity that could lead to Significant effects. These activities have been broken down into six phases of the development; vegetation clearance and felling, access and enabling, piling, foundations, tower erection, stringing and dismantling. However, with the adoption of mitigation, the residual effect of construction noise would be **Minor**, and therefore **Not Significant**.
- 10.2.4 When considering predicted operational effects, including wet and dry conditions, internal noise, and operational vibration, the assessment concludes either **Negligible** or **Low** magnitude of impact that is **Not Significant**. No additional mitigation is required, and no residual operational effects are predicted.
- 10.2.5 The noise and vibration impacts of decommissioning a tower of the Proposed Development will be comparable to the dismantling works phase and is not likely to be any more significant.

10.3 Summary

- 10.3.1 Subject to the implementation of a Construction Noise Management Plan, no significant effects are anticipated during the construction phase, operational phase, and no significant cumulative effects are anticipated.

11. CUMULATIVE EFFECTS ASSESSMENT

11.1 Introduction

- 11.1.1 The cumulative effects assessment considered the potential significant cumulative effects predicted for the Proposed Development when considered alongside other future developments (known as 'in-combination effects'), significant in-combination effects may occur when a number of future development projects are consented and then constructed within the same timeframe as the Proposed Development. Reasonably foreseeable future developments were considered. There are a number of developments relating to electricity infrastructure in the area and these have been notable additions in the cumulative assessment.
- 11.1.2 In addition, the assessment considered the potential for effects to arise from the interaction of different impact types of the Proposed Development on common receptor groups ('interactive effects').
- 11.1.3 The in-combination effects assessment principally drew from the predicted residual effects for each topic. The interactive effects assessment used information from each of the **Volume 2, Chapters 7-10** relating to baseline receptors and their sensitivity, together with the predicted likely effects of the Proposed Development, to determine a series of key receptor groups which formed the focus of the assessment.

11.2 Overview of Effects and Mitigation

In-combination Effects

Associated Developments

- 11.2.1 Landscape and visual in-combination effects were predicted when the Proposed Development was considered alongside the construction and operation of the associated development, ie Emmock 400 kV substation, which is being developed by SSEN Transmission and which is associated with the Proposed Development.

Other Developments

- 11.2.2 The effects of the Proposed Development were considered alongside other known developments (including future developments proposed by SSEN Transmission and third parties):
- Landscape and Visual Amenity: During both the construction and operational phase of the Proposed Development there would be **Significant** cumulative landscape and visual effects when combined with other developments. **Significant** cumulative effects on the landscape character of LCT 382 and 387 would be experienced between Tealing and Seagreen Substations and the lower slopes of Craigowl Hill. **Significant** cumulative effects on views during construction and operation would affect some receptors in VRAs 1 (Balkemback), 2 (Balnuith), 3 (Templeton, Gallowhill, Myreton of Claverhouse, and Inveraldie), and 4 (Balluderon and Balkello). However, there is a higher level of uncertainty with the level of information that is presently available on some of these third-party projects that have been considered.
 - Cultural Heritage: One cumulative operational effect of moderate significance (significant in EIA terms) to the setting of the Balkemback Cottages Stone Circle (SM 2868) has been identified to result from the Proposed Development in combination with other SSEN Transmission Developments. No other cumulative significant effects have been identified.
 - Ornithology: No significant cumulative effects were predicted in the assessment.
 - Noise and Vibration: No significant cumulative effects were predicted in the assessment.

Interactive Effects

- 11.2.3 The assessment identified key receptor groups and the residual (significant and non-significant) environmental effects predicted in each of the cumulative assessments in the EIAR chapters. The chapter then sets out the potential for those groups to experience interactive effects. It also took into account in-combination effects where these were potentially relevant.
- 11.2.4 The assessment concludes that the significant effects and non significant effects are spread across receptor groups and sub groups. Therefore, no significant interactive effects have been identified.

11.3 Summary

- 11.3.1 Significant in-combination landscape and visual effects are predicted during construction, and significant in-combination landscape and visual effects, as well as setting effects on a scheduled monument are predicted.
- 11.3.2 Interactive cumulative effects are predicted to be non-significant during both construction and operation.

12. SUMMARY

12.1.1 Each technical Chapter in the EIAR identified if Significant environmental effects were predicted from the construction or operation of the Proposed Development. The following types of Mitigation Measures have been identified and have either already been delivered during the design development work undertaken to date, or will be applied to the Proposed Development's future detailed design, construction and operation phases:

1. **Embedded Mitigation:** measures which are incorporated and inherent within the project's design;
2. **Applied Mitigation:** standard/best practice environmental management during construction; and
3. **Additional Mitigation:** bespoke measures identified from the EIA.

12.1.2 This NTS summarises the mitigation measures for each topic, the EIAR includes further details and a Schedule of Mitigation setting out details of the project stage the measures are relevant to and who will be responsible for delivering them.

12.1.3 Following the application of Embedded, Applied and Additional Mitigation measures residual adverse Significant effects remain from the Proposed Development for the following topics:

- Landscape and Visual Amenity;
- Cultural Heritage; and
- Cumulative Effects.

12.1.4 The Proposed Development would have no Significant effects on the following topics:

- Ornithology; and
- Noise and Vibration.