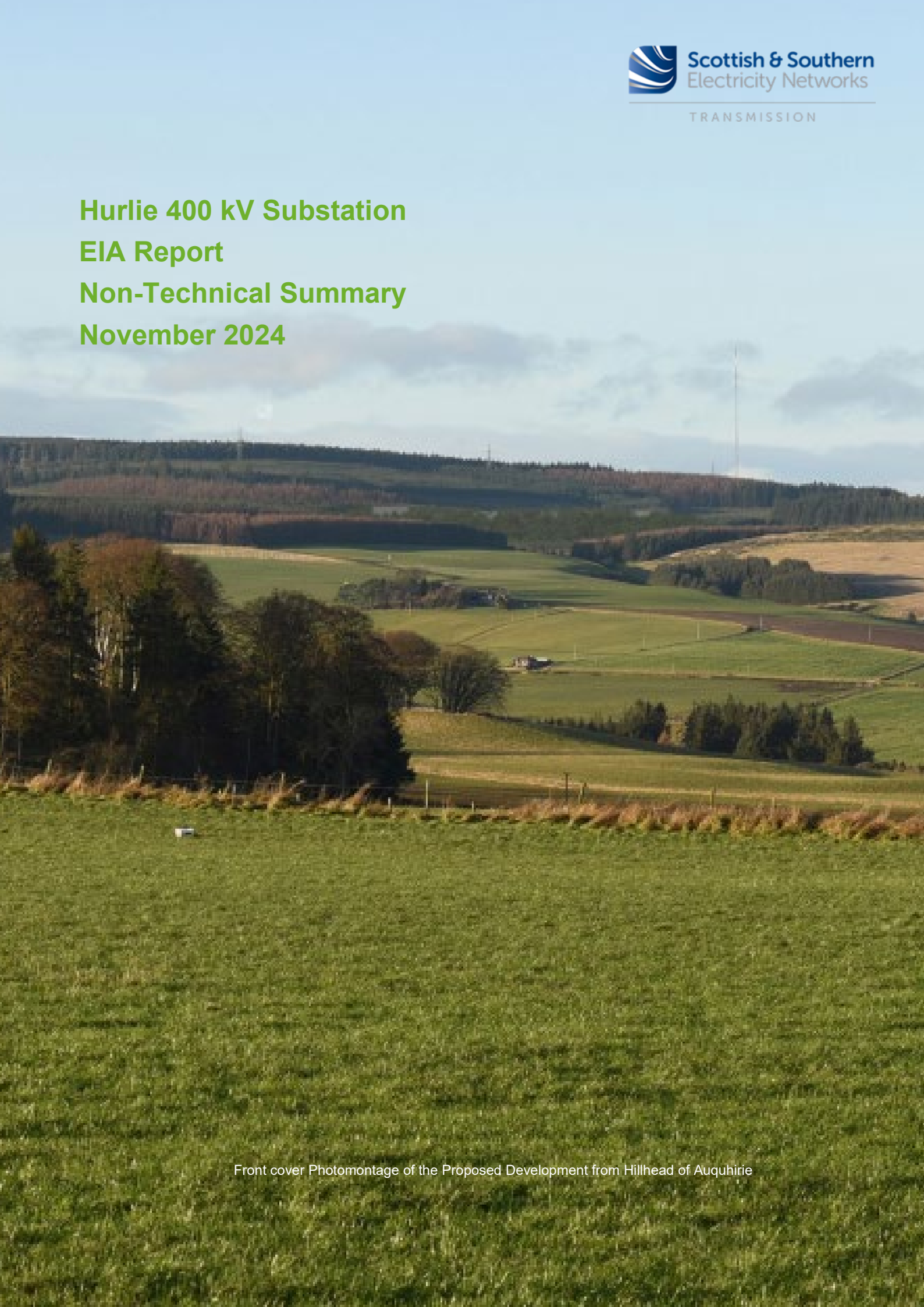
Scottish & Southern Electricity Networks

TRANSMISSION

Hurlie 400 kV Substation
EIA Report
Non-Technical Summary
November 2024



Front cover Photomontage of the Proposed Development from Hillhead of Auquhirie

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Image 1 Photomontage of the Proposed Development from Viewpoint 5: Hill of Swanley

1. Introduction & Overview

Overview

1.1 Scottish Hydro Electric Transmission plc ('the Applicant') is a wholly owned subsidiary of the SSE plc group of companies. Operating and known as Scottish and Southern Electricity Networks Transmission ('SSEN Transmission'), it owns and maintains the electricity transmission network across the north of Scotland and remote islands.

1.2 SSEN Transmission has a statutory duty under section 9 of the Electricity Act 1989[1] to develop and maintain an efficient, co-ordinated and economical electrical transmission system in its licence area. Where there is a requirement to extend, upgrade or reinforce its transmission network, SSEN Transmission's aim is to provide an environmentally aware, technically feasible and economically viable solution which would cause the least disturbance to the environment and to people who use it.

Background

1.3 In July 2022, National Grid, the Electricity System Operator (ESO)[1], published the Pathway to 2030 Holistic Network Design (HND[2]), setting out the blueprint for the onshore and offshore electricity transmission network infrastructure required to enable the forecasted growth in renewable electricity across Great Britain, including the UK and Scottish Government's 2030 offshore wind targets of 50 GW and 11 GW respectively.

1.4 The extensive studies completed to inform the ESO's Pathway to 2030 HND confirmed the requirement to increase the power transfer capacity of the onshore corridor from Kintore to Tealing. This requires a new 400 kV connection between these locations to enable the significant power transfer capability needed to take power from onshore and large scale offshore renewable generation which is proposed to connect at onshore locations on the East Coast of Scotland and transport it to areas of demand.

1.5 To achieve this, SSEN Transmission is proposing a new 400 kilovolt (kV) overhead transmission line (OHL) between Kintore and Tealing. This new connection also requires two new 400 kV substations to be constructed near Tealing in Angus and in Fetteresso Forest in Aberdeenshire to enable future connections and export routes to areas of demand. In addition, two of the existing 275kV OHLs from the existing substation at Tealing, and Alyth and Westfield substations require to be upgraded to 400kV and connected to the new 400kV substation near Tealing. Additional short 275kV connections between the new 400kV and existing Tealing substation are also required.

The Planning Application

1.6 The Applicant is applying to Aberdeenshire Council for full planning permission under the Town and Country Planning Act (Scotland) 1997, to install and operate this new 400 kV substation in Fetteresso Forest, with associated earthworks, the formation of platforms, landscaping, means of access, means of enclosure, site drainage, and temporary construction compounds (referred to hereafter as "Proposed Development").

1.7 The Proposed Development is located on land at Fetteresso Forest, approximately 5 km west of Stonehaven, approximately 292 ha in area and hereinafter referred to as 'the Site'. The location of the Site is shown in Figure 1.1.

1.8 In accordance with the requirements of the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017, (the EIA Regulations) an Environmental Impact Assessment Report has been prepared by Land Use Consultants (LUC) on behalf of the Applicant to assess the likely significant effects of the Proposed Development on the environment. The findings of the EIA are presented in an EIA Report, including the measures which would be taken to prevent, reduce and, where possible, offset predicted likely significant adverse effects.

[1] The ESO was replaced by the National Energy System Operator in 2024.

[2] Pathway to 2030 – Holistic Network Design – July 2022 (National Grid ESO)

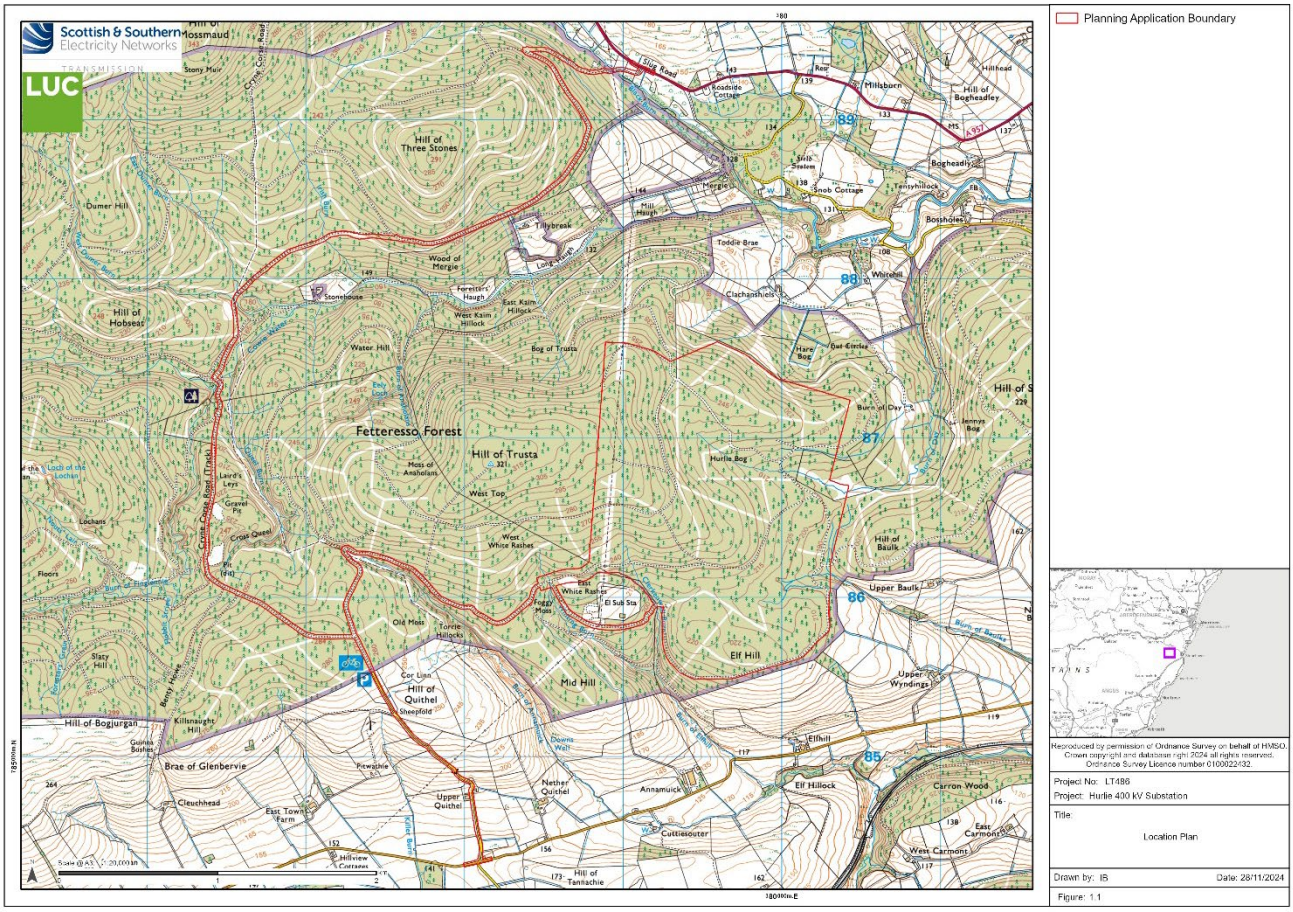

Figure 1.1 - Site Location

1.9 This Non-Technical Summary (NTS) forms part of the Environmental Impact Assessment Report ("EIA Report") as required in Paragraph 2(e) of Part 5 of the EIA Regulations.

Associated SSEN Transmission Projects

1.10 In addition to the Proposed Development, the Applicant is bringing forward separate consent applications for the associated infrastructure (referred to as Associated SSEN Transmission Projects) detailed as follows:

- Kintore to Tealing 400 kV OHL – application for consent to be submitted to the Scottish Ministers under Section 37 of the Electricity Act 1989, for a new 400 kV OHL from the existing Kintore substation in Aberdeenshire to Emmock substation, via a new substation (Hurlie substation (below)) along with a request for a direction that planning permission be deemed to be granted under Section 57 (2) of the Town and Country Planning (Scotland) Act 1997 (as amended); and

EIA Report Structure

1.11 The EIA Report is structured as follows.:

- Volume 1: Non-Technical summary;
- Volume 2: Main Report;
- Volume 3: Figures and Visualisations; and
- Volume 4: Appendices

1.12 A Planning Statement, Design and Access Statement, Pre-Application Consultation Report, Socio-Economic Assessment and specific plans and drawings are also submitted as part of the planning application, but none forms part of this EIAR.

Notifications

1.13 In accordance with the EIA Regulations, the submission of this EIA Report will be publicised in a newspaper circulating in the locality of the Proposed Development, and in the Edinburgh Gazette.

1.14 Notice of this planning consent application, including this EIA Report and associated documents and figures, will be available for viewing at the following public locations during normal opening hours:

- Stonehaven Library, Evan Street, Stonehaven, AB39 2ET

1.15 An electronic version is available online at Hurlie 400kV substation - SSEN Transmission.

Image 2 Current view from Viewpoint 3: Rickarton

2. Project Description

Project Overview

2.1 The Proposed Development comprises the construction and operation of a 400 kV substation and the formation of associated earthworks, access, drainage, landscaping, and security. (Figure 2.1)

2.2 The construction of the Proposed Development would involve woodland felling and cut and fill earthworks to create a level platform of approximate dimensions 685 m x 300 m along a north-west south east orientation in the centre of the Site, to accommodate the electrical infrastructure. The platform has been located to maximise the degree of screening provided by the existing landform, which would be increased by cutting the platform into the higher ground to the west. Landscape planting around the platform would screen the electrical infrastructure. Access would be provided by upgrades and extensions to the existing forestry roads with the principal access from the A957.

2.3 The substation would use new 400 kV Air Insulated Switchgear (AIS) equipment with an approximate height of 15 m above platform level, including, transformers, connection bays and gantries. No new transmission towers are included within the scope of the Proposed Development. The terminal towers which will connect the new Associated Project will be included as part of the separate consent application as described in Section 1.10.

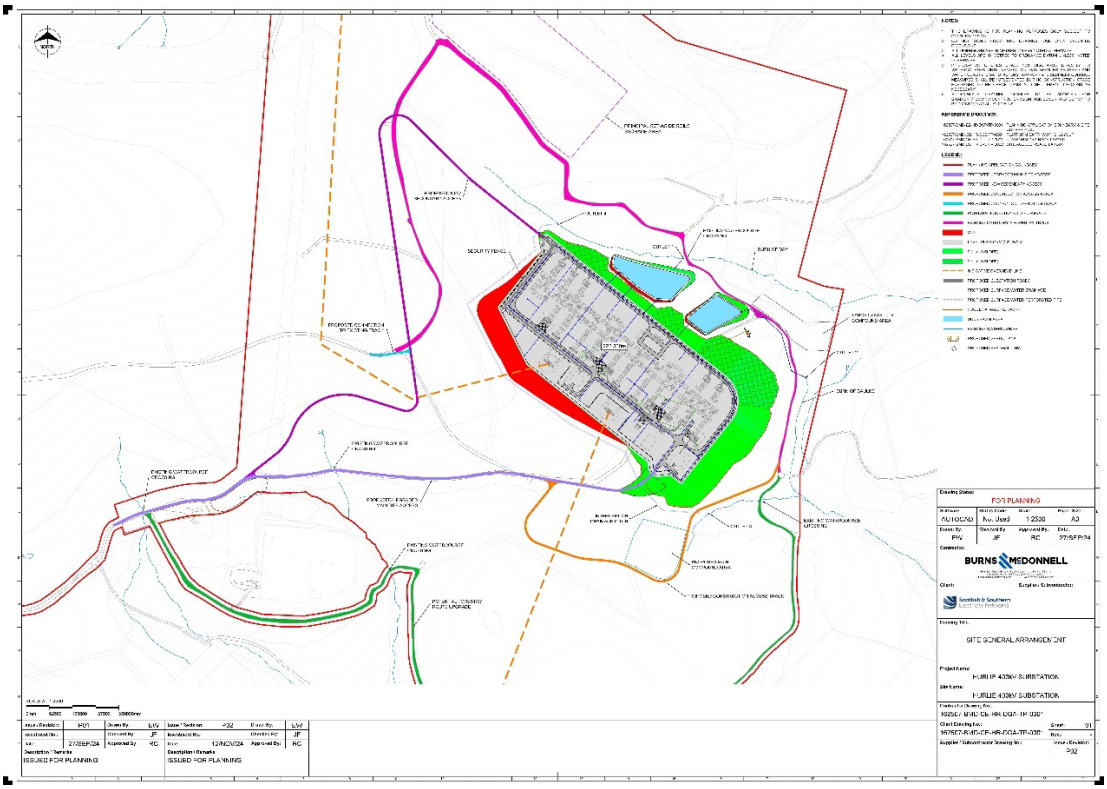

Figure 2.1 - General Arrangement of the Proposed Development

Location of the Proposed Development

2.4 The Site comprises an area of relatively elevated land with an approximate centroid red line boundary National Grid Reference (NGR) at NO 79597 86586, excluding access tracks, which lies within the eastern extent of the Highland Boundary Fault, a major fault zone which runs from Arran on the west coast to Stonehaven in the east. The site is afforested and comprises a conifer plantation forming part of an active commercial enterprise. The Site is dominated by two bluffs (a steep slope overlooking a watercourse) with a steep valley between them containing the upper reaches of the Burn of Day. The bluffs have relatively level upper elevations, where the Proposed Development will be sited, however to the west the landform rises steeply. To the east and south-east the elevation drops sharply with the landform shaped by the Burn of Day and Burn of Baulks. There is little built infrastructure in the wider environment with exception of the existing Fetteresso Substation and its associated OHL.

2.5 The wider site setting is similar in character to the Site, comprising steeply undulating, elevated land given over to commercial forestry plantation, interspersed with associated infrastructure. The Site and its surrounds form part of the eastern extent of the Highland Boundary Fault. This geographic feature separates two different geological terrains, the Highlands and the Lowlands. The land to the south, out with Fetteresso Forest's extent, comprises an area of lowland given over to arable farming. This is broadly mirrored to the east where the land descends into a coastal plain. The land to the west, forms the southern range of the south Deeside Grampians, eventually rising to the elevations that comprise the Cairngorm mountain range.

Description of the Proposed Development

Substation Design

2.6 The design of the Proposed Development has been progressed through an iterative process integrating electrical and civil engineering and environmental considerations. The design process has sought to reduce the potential for significant environmental effects at the outset taking account of site topography, slope, drainage existing land uses and vegetation.

2.7 The principal iterations have focused on optimising the cut and fill works and reducing the footprint of the substation platform from approximately 45 ha to just under 24.5 ha, which has allowed an increase in new planting by an equivalent extent.

2.8 The main platform length has been reduced from 760 m to 685 m, narrowing the western edge, and rounding the north-east corner. The reduction of the platform has allowed the SuDS ponds to be repositioned to the north of the platform allowing areas of new planting eastwards. Work to optimise the alignment of the site access road west of the platform has enabled areas of new woodland block and shrub/scrub planting. The shrub/scrub planting extends further south and along the southern edge of the substation. The western, north and eastern edges of the platform are wrapped in woodland block planting, comprising a mix of deciduous and evergreen species, which will add both biodiversity and strengthen visual screening to what is already a well-screened platform as a result of the topography of the site.

Substation Platform

2.9 The platform dimensions are 685 m x 300 m and at an elevation of 220.35 m AOD. The substation platform would be formed by excavating into the slope of the Site. Excavated material would be used to from the platform where the Site slopes away. The platform would comprise a flat, rectangular area accommodating the electrical and built infrastructure. A number of concrete foundations will be installed to support the electrical equipment, with a stoned finish to the compound. Kerbed tarmac surfaced roads will be installed within the substation boundary.

2.10 A network of surface water drains running through and around the perimeter of the platform will carry run off from the hard-surfaced areas of the platform, and discharge into four major outfalls: to the northwest into Burn of Day; to the southeast into Burn of Baulks, to SuDS Basin 1 to the north into the Burn of Day, and to SuDS Basin 2 to the east into Burn of Baulks.

Control Building

2.11 A steel framed and cladded control building would be required to house equipment to monitor, control and protect electrical systems. The control building would have a footprint no greater than 53 m x 23 m with an elevation no higher than 7m. The building, which SSEN Transmission would use to manage the maintenance and operation of the substation, would be bottle green in colour and contain office and storage space as well as operational staff welfare facilities. The substation would be controlled remotely and not permanently staffed.

Switchgear Building

2.12 A steel framed and cladded switchgear building would be required to house disconnectors and circuit breakers that control, protect and isolate electrical equipment. The building would be bottle green in colour and have a footprint no greater than 18 m x 9 m with an elevation no higher than 7 m.

Synchronous Condenser Buildings

2.13 Two steel framed and cladded synchronous condenser buildings would be required to house equipment to manage and control system voltage levels across the network. The buildings would be bottle green in colour and have an

approximate footprint of 30 m x 30 m with an elevation no higher than 15 m.

Solar Plant Pot

2.14 A solar plant plot consisting of building to accommodate a photovoltaic system of one or more panels, an inverter that converts DC electricity to alternating current (AC) electricity, and other components such as controllers, meters, and trackers would be located on the substation platform for provision of auxiliary power. The building would measure 40 m x 25 m with an approximate height of 7 m.

Operational On-site Parking

2.15 Eleven car parking places (including three Electric Vehicle charging spaces) would be provided in association with the Control Building, with a further six spaces provided adjacent to each Synchronous Condenser building, to provide on-site parking for control and maintenance personnel.

Landscape Design

2.16 The platform is located below the crest of the hills thereby ensuring the platform infrastructure is predominately screened from local receptors by the local landform. New planting of a variety of habitat types would provide complementary and additional visual screening with improved opportunities for biodiversity.

2.17 The planting schedule comprises woodland block, shrub and scrub, grass and wildflower, and wetland planting. Evergreen conifers would be replanted on the proposed temporary set-aside soils storage area to the north of the platform, which is currently forested and would be cleared. Low-lying native shrubs and scrub would be planted along the main access roads to the Site inside the planning application boundary. Native broadleaved woodland would be planted on the lowland slope to the south and east of the platform, including tree and shrub planting on the fill slope adjacent to the platform. To the north-east of the platform native species would be planted around the SuDS basins transitioning into native grass and a mix of wildflower species in the immediate vicinity with shrub and scrub planting to the southeast of the existing access road.

2.18 The proposed satellite compound area adjacent to and north of the access road would be replanted with native broadleaf woodland to enhance woodland resilience. Tributaries of the Burn of Baulks would be buffered with native species marginal planting transitioning to native grass and wildflower species. The cut slope to the west would be reinstated and wrapped in woodland block planting, comprising a mix of deciduous and evergreen species, which will add both biodiversity and strengthen visual screening. See Figure 2.2: Landscape Design below.

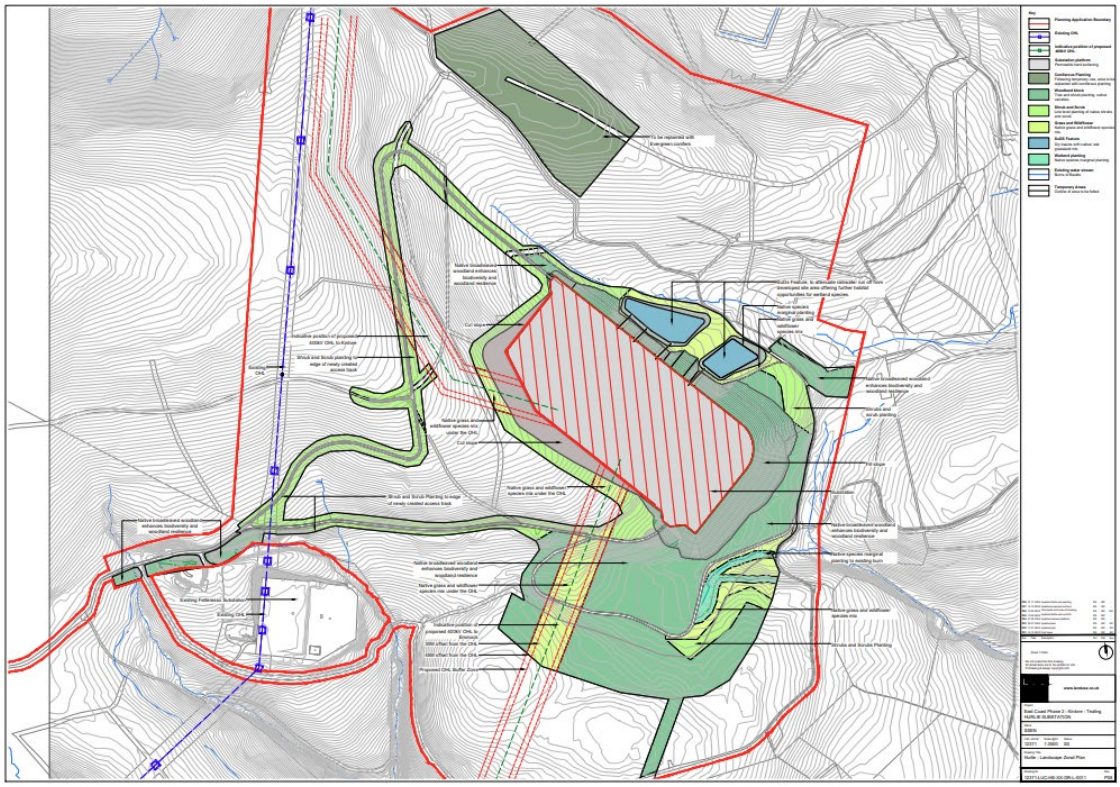

Figure 2.2- Landscape design

Security Fencing and Lighting

2.19 The platform will be secured with the provision of a potentially 4 m high perimeter fence. Access will be via a security gate mid-way along the eastern edge of the platform. Individual light clusters will be low-level, barrow beam, and directed downwards to minimise glare and light split; different lighting configurations and designs will be adopted for different parts of the Site. Lighting would only be provided during emergency operations at night-time. No lighting would be used under normal operation.

Construction Programme

2.20 Construction hours, including construction deliveries, are proposed to be as follows unless otherwise agreed with Aberdeenshire Council: Monday to Sunday - 07:00 to 19:00

2.21 Construction of the Proposed Development is scheduled to take three and a half years from spring 2026 until autumn 2029. Following testing and commissioning it is expected that the Proposed Development will be fully operational by the end of 2029.

Construction Employment

2.22 Employment of construction staff would be the responsibility of the Principal Contractor but SSEN Transmission encourages the use of suitable labour and resources from areas local to the location of the works, where available. At the peak of construction it is expected that the Proposed Development will employ 278 people.

Construction Traffic

2.23 The main types of construction traffic to the Site include vehicle movements of low-loaders with one-time delivery associated with mobilization, site set-up and bringing earthworks plant, and accommodating units to Site. HGVs would bring equipment and supplies, make up stone, and steel, while Abnormal loads would include crane, transformers, and other large equipment and structures.

2.24 The proposed principal route, from both north and south would be the A90 Aberdeen Western Peripheral Route (AWPR), exiting at the Peterculter Junction, and joining either the A93 and/or the B9077, then joining the A957 (Slug Road) at Crathes, and arriving at the principal access to the Site from the north. Abnormal Indivisible Loads (AILs) are proposed to use the A93 from the A90 to its junction with the A957 at Crathes.

2.25 Some traffic construction may access the Site from the south of Slug Road, via west Stonehaven, but these would be limited to smaller deliveries and construction personnel. In addition, some smaller deliveries and personnel may traffic access from the unclassified Auchenblae Road to the south of the Site.

2.26 From Slug Road, access to the Site would be along the existing forest tracks which are used currently for commercial forest operations. Some widening of the bellmouth as the track joins the Slug Road may be necessary. Existing forest tracks would be surveyed and assessed for plant and large load equipment delivery vehicle swept paths and loads, and upgraded, widened or realigned where necessary.

2.27 Some of the existing forest tracks are used for recreation. Where temporary closure or diversions of tracks are necessary, these will be notified to the community in advance and clearly communicated, in the same way as currently to accommodate logging activities.

2.28 The Applicant would prepare a Construction Traffic Management Plan (CTMP) for approval by Aberdeenshire Council, secured through a suitably worded planning condition to any planning permission. The CTMP would confirm the proposed construction traffic volumes and routes and identify any upgrades, surface finishing, or improvements required to adopted roads, which Aberdeenshire Council deems to be required.

Environmental Management during Construction

2.29 All construction works would be carried out in accordance with the Applicant's General Environmental Management Plans (GEMPs) and Species Protection Plans (SPPs), which have been developed by the Applicant to ensure best practice working methods are adapted to mitigate potential environmental effects.

2.30 A contractual requirement of the Principal Contract would be the development and implementation of a Construction Environmental Management Plan (CEMP). This document would detail how the Principal Contractor would manage the construction process in accordance with all commitments and mitigation detailed in the EIA Report, statutory consents and authorisations, and industry best practice and guidance.

2.31 The CEMP will include measures to address, but will not be limited to, the following:

- Water management, including how to manage surface water runoff and how to ensure the protection of watercourses from construction processes;
- Air quality management, including processes to manage and mitigate dust emissions;
- Soil pollution and management, including ensuring the return of construction areas to agricultural use;
- Noise and vibration management from both the construction of the Proposed Development and from transport to and from Site;
- Lighting, including proposals for safe construction during low light conditions; and
- Waste management, including proposals for managing, segregating and recycling construction materials as appropriate.

2.32 The Principal Contractor will be required to appoint an Environmental Clerk of Works (ECoW) whose role is to ensure

that the construction of the Proposed Development is undertaken in accordance with the CEMP and all other relevant legal and planning obligations.

Operation and Maintenance

2.33 The Proposed Development would be unmanned, with operations largely being controlled remotely from SSEN Transmission's control centre, with routine inspection and maintenance performed at regular intervals. Most substations have a monthly inspection, whilst varying degrees of maintenance would be undertaken annually. There would be other visits as required for operational duties and occasional repairs, as necessary.

Mitigation

2.34 The Applicant is committed to protecting and enhancing the environment by ensuring that the design and the construction of the Proposed Development is undertaken in adherence to all the mitigation measures that are identified through the EIA process. A three-tiered mitigation hierarchy has been adopted in the EIA Report as follows:

- Embedded Mitigation: design stage mitigation where SSEN Transmission has sought to reduce impacts on the environment through the design of the Proposed Development and which has been delivered through the design process.
- Applied Mitigation: standard/best practice environmental discipline/construction industry mitigation including GEMPs and SPPs prepared by SSEN Transmission that specify working practices that the Principal Contractor is obliged to follow under the conditions of contract.
- Additional Mitigation: Site-specific bespoke mitigation that is required to mitigate a particular impact that has been identified through the EIA process and which the Principal Contractor will be obliged to follow. These are expected to form planning conditions attached to any planning permission granted for the Proposed Development and which would be required to be approved by Aberdeenshire Council before any development begins.

Biodiversity Net Gain

2.35 Biodiversity Net Gain (BNG) is an approach to development that aims to leave the natural environment in a measurably better state than it was pre-development. SSEN Transmission has developed a BNG toolkit which quantifies biodiversity based upon the value of habitats for nature. It is an efficient and effective method for demonstrating whether development projects have been able to maintain or increase the biodiversity value of a development site after construction works.

2.36 The BNG toolkit has been applied to quantify the overall biodiversity impacts for the Proposed Development, this includes a biodiversity baseline assessment, analysis of habitat losses due to temporary works and permanent structures during construction works, and analysis of biodiversity gains following reinstatement of habitats in areas of temporary construction work. A BNG report for the Proposed Development is included as a supplement to this EIAR.

2.37 It is not always feasible or possible to deliver BNG within a proposed development site and in such circumstances, the developer can use opportunities outwith the Site to achieve the remaining enhancement measures required. Using SSEN Transmission's BNG toolkit, the planting proposals on Site deliver a net gain of 4% for area habitats. SSEN Transmission will therefore enter into an agreement with other landowners and biodiversity project developers to deliver the remaining 6% required in order to achieve the 10% gain that is required by their own corporate targets

Image 3 Photomontage of the Proposed Development and Associated SSEN Transmission Development from Viewpoint 4: Minor road west of Kirktown of Fetteresso

3. Site Selection and Consideration of Alternatives

Introduction

3.1 The location of the Proposed Development was adopted following a rigorous site selection exercise that was subject to consultation in the spring of 2023 and 2024.

3.2 Fourteen candidate sites were considered initially (see Figure 3.1) with all but three were rejected due to a combination of technical and environmental reasons; Site 5B: Land to the north of Nether Craighill and Site 8B: Land to the north of Gobbs Farm.

Site Appraisal

3.3 The three short listed sites were subject to further appraisal of; cost, engineering feasibility and environmental constraints.

3.4 Despite Site 8B being the highest cost in comparative terms, Site 5A was least preferred based on flood risk and the required diversion of the Bridgend Burn. In comparing Sites 5B and 8B, 8B was least preferred on cost and its potential to impact cultural heritage assets. On balance, Site 5B was determined to be the least constrained of the three candidate sites.

Further Site Identification and Appraisal

3.5 Following a review of technical requirements and environmental constraints, particularly in relation to cultural heritage, the area of search was extended to explore whether an alternative site might be identified.

3.6 A further 23 candidate sites (in addition to the initial sites described and assessed above) were identified (Figure 3.2) based on the extent of unobstructed or usable land, absence of nearby properties and settlements, topography, and absence of existing infrastructure.

3.7 Following further appraisal, fourteen were discounted on the basis of size, proximity to properties, presence of existing infrastructure and connectivity to existing and new OHL infrastructure. The remaining 10 were further appraised for environmental, engineering, and cost constraints, resulting in the identification of two options, land at Banff Hill (west of Inverbervie) and at Hurlie Bog, in Fetteresso Forest. These sites were further appraised as follows:

- an environmental and technical assessment of different connection options for 400 kV OHL, as part of the route selection process;
- an assessment of land ownerships and initial enquiries to landowners regarding willingness to grant;
- the possible presence of peat at the land at Fetteresso, warranting a peat probe investigation; and
- a comparative assessment of the two locations, Banff Hill and Fetteresso against the least constrained options from the initial site assessment, Sites 5B and 8B.

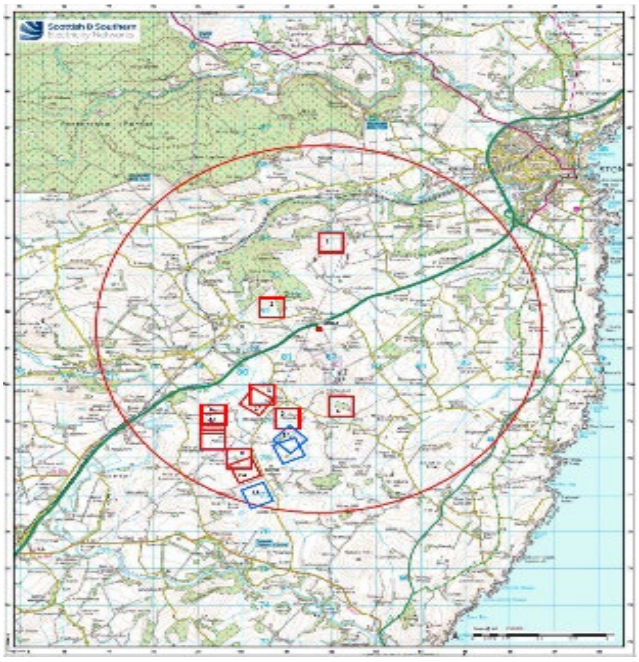

Figure 3.1 - Site Options

3.8 While most costly in comparative terms, and marginally more complicated in engineering terms, Hurlie was selected on the basis of least environmental constraint, with respect to cultural heritage, landscape, including the proximity to residential properties, and the absence of prime agricultural land. As a result, the site at Hurlie was taken forward into the subsequent land use planning and engineering design stages, with the rationale for the selection set out in subsequent consultation materials published as part of the pre-application consultation process.

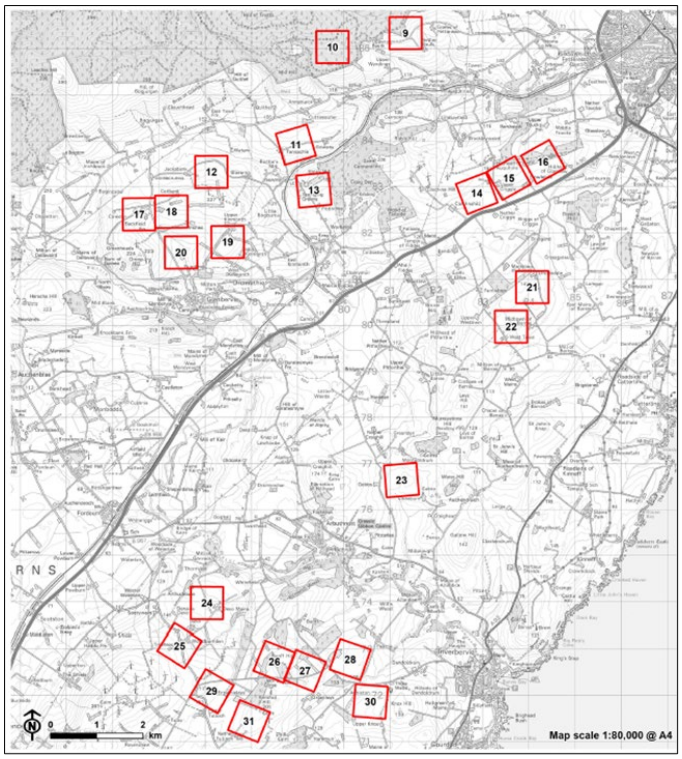

Figure 3.2 Site selection alternatives
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Image 4 Photomontage of the Proposed Development with Associated SSEN Development from Viewpoint 5: Hill of Swanley

4. EIA Approach, Scope and Consultation

Introduction

4.1 Environmental Impact Assessment (EIA) is a process that considers how a proposed development is predicted to change existing environmental conditions and what the consequences of such changes will be. It therefore informs both the project design and the decision-making processes related to the grant of planning permission and assists the Local Planning Authority (in this case Aberdeenshire Council), statutory consultees and the wider public in considering an application.

4.2 An essential element of EIA is collating suitable information on the baseline environment to determine the character of an area prior to the implementation of a project. The area that is considered varies by technical discipline. The EIA Report has been prepared using up to date technical information that has been gathered from a variety of desk based sources as well as from specific site surveys.

4.3 Once the environmental baseline has been determined, and the receptors identified and categorised, the potential for impacts on the baseline from the construction and operation of the Proposed Development are predicted and assessed using an appropriate methodology identified in each topic specific chapter.

4.4 The EIA Report subsequently presents the assessment of these likely significant effects using criteria specific to and detailed within each topic chapter with effects usually, unless defined otherwise on a case by case basis, as 'major', 'moderate', 'minor' or negligible. For the purposes of the EIA Regulations, impacts that are 'major' or 'moderate' are deemed to be significant.

4.5 The EIA process is an iterative one whereby the identification and assessment of effects can also inform the design of a project so that likely significant adverse effects can be avoided, reduced or, if possible, removed at an early stage. Following the adoption of mitigation measures the resulting 'residual' significant effects are presented within the EIA Report.

Scoping

4.6 Prior to the submission of the EIA Report to Aberdeenshire Council, the Applicant has sought the views of statutory consultees on the scope of the EIA through a formal process known as 'scoping'. This is a process through which the Applicant has agreed with Aberdeenshire Council the scope of the surveys and studies to be included in the EIA Report as well as any specific methodologies that should be followed. This scoping process is managed by Aberdeenshire Council and draws upon the feedback that has been received from, amongst others, NatureScot, Historic Environment Scotland, Scottish Environment Protection Agency as well as officers of Aberdeenshire Council with responsibility for environmental health, archaeology and transport.

Consultation with the Local Community

Figure 4.1: Consultation in Stonehaven (June 2024)

4.7 SSEN Transmission has sought to maintain an open dialogue with local communities in the vicinity of the Proposed Development throughout the evolution of the project. 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. The EIA Report details the consultation that has taken place, the feedback that has been received and how the Applicant has sought to address this feedback either within the EIA Report or through the design of the Proposed Development.

Cumulative effects

4.8 The assessment of cumulative effects is a key part of the EIA process and is concerned with identifying circumstances in which a number of potential and/or predicted effects associated with the Proposed Development, in combination with other existing or planned development projects, could combine to cause a significant effect on a particular receptor.

4.9 In the EIA Report, the following cumulative effects have been considered:

- In-combination effects - impacts from the Proposed Development with other reasonably foreseeable future developments.
- Interactive effects - combined or synergistic effects from different impact types of the Proposed Development where a sensitive receptor experiences significant effects from more than one topic area (for example a significant visual impact as well as a significant noise impact).

4.10 “In combination effects” have been considered with reference to three groups of reasonably foreseeable future developments; (a) the Kintore to Tealing 400 kV OHL , referred to in section 1 as the Associated SSEN Transmission project, (b) other projects which fall into one or more of the following categories: other SSEN Transmission projects, projects of national importance within 3 km, local developments within 2km where an EIA is required, developments where undetermined planning/consent applications or scoping requests have been submitted, or (c) developments where consents have been granted but construction has not yet commenced at the time of preparation of this EIAR.

Image 5 Photomontage of the Proposed Development from Viewpoint 5: Hill of Swanley

5. Forestry

Introduction

5.1 The forestry assessment has considered the potential effects of the Proposed Development, in isolation and cumulatively with other developments, on the implications of the loss of forest resource, the loss of broadleaf woodland and effects on forest management.

Overview of Methodology

5.2 The assessment was carried out in accordance with current legislation, policy and guidance; and is structured around the consideration of potential effects, including cumulative effects, of construction and operation of the Proposed Development upon those forestry receptors identified during survey work.

5.3 Desk-based studies and a field survey were carried out in and around the Proposed Development to establish baseline conditions, including information on species, planting year and felling and restocking plans.

5.4 It was possible to 'scope out' the effects of a number of issues, as these could be adequately addressed by landowners or are outwith the control of the Applicant.

Overview of Baseline Conditions

5.5 The main species are commercial conifers, with small areas of broadleaves and open ground. The species composition reflects the practice and guidance which prevailed at the time the woodlands were established. None of the woodlands within the Site are recorded in the Ancient Woodland Inventory (AWI) Scotland.

Overview of effects

5.6 Woodland loss and fragmentation arising from the construction of the Proposed Development is unlikely to result in adverse effects upon forestry. Any effects are likely to be negligible and not significant.

5.7 The contribution of adverse effects accrued by the Proposed Development to forestry would be unlikely to have a significant effect in isolation; but cumulatively the effects of the Proposed Development and existing and planned developments may, depending on their size and distribution. Overall, it is concluded that construction and operation of the Proposed Development would not have a significant effect on forestry.

Mitigation

5.8 Mitigation will be in place through legislation, policy and BNG measures to ensure that the effects of the Proposed Development on forestry will not be significant. Legislation and policy mitigate for the permanent loss of woodland on Site and BNG measures mitigate against biodiversity loss due the construction and operation of the Proposed Development.

Overview of effects

5.9 The construction of the Proposed Development will not have significant effects upon forestry due to the mitigation measures that are in place and secured through legislation and policy.

Cumulative effects

5.10 No likely significant effects have been identified as any other development that results in the loss of forestry will similarly be required by legislation to ensure that effects will not be significant.

Image 6 Photomontage of the Proposed Development from Cultural Heritage Viewpoint 1: Raedykes Roman Camp

6. Landscape and Visual Impact

Introduction

6.1 The landscape and visual impact assessment (LVIA) has considered the potential effects of the Proposed Development, in isolation and cumulatively with other developments, on landscape and views of the Site from key viewpoints, surrounding routes, residential properties and settlements during construction and operation, in accordance with best practice guidance.

Overview of Methodology

6.2 The assessment in the EIA Report has been undertaken by chartered landscape architects experienced in the assessment of renewable energy and electricity transmission projects in accordance with accepted guidance published by both NatureScot and the Landscape Institute.

6.3 The assessment has considered the baseline environment in the vicinity of the Proposed Development drawing upon field work and aerial photography. Suitable viewpoint locations that are representative of views into and of the Proposed Development from sensitive receptors (including residences and public rights of way) were agreed with Aberdeenshire Council. Photographs of representative views from these locations were subsequently taken in accordance with the industry standard guidance published by the Landscape Institute.

6.4 Using a 3D model of the Proposed Development and computer software, photomontages - computer generated, location and scale specific representations of the Proposed Development within a photographed view and prepared in accordance with an agreed method - have been produced that show the existing view, the visibility of Proposed Development immediately following construction and ten years later to demonstrate how maturing vegetation will aid the screening proposals. The photomontages also include the Associated SSEN Transmission Development visible in the view, to show a representation of how the cumulative effect of these developments in combination with the Proposed Development may appear.

6.5 Five viewpoints within the 5 km study area were selected which represent the maximum visibility of the Proposed Development from different viewing directions and distances.

Overview of Baseline Conditions

6.6 The Site is located within Landscape Character Type (LCT) 29: Summits and Plateaux - Aberdeenshire, an area of upland, heather-covered plateaux and forested hills and slopes, with broad pastoral valleys in the east approaching the coastline. LCT 24: Coastal Farmed Ridges and Hills – Aberdeenshire lies within the study area to the south of the Site.

6.7 The Site is not within any designated landscapes and there are no landscape designations within the study area, but it is recognised as being the region where the Highland Boundary Fault zone marks the transition between the Highlands and Lowlands of Scotland.

6.8 Settlement pattern across the study area is sparse, with small settlements and more isolated properties scattered along the minor road network. The small community of Rickarton is located within the study area, to the north of the Site and has theoretical visibility of the Proposed Development.

6.9 There are no Core Paths or national recreational routes, such as long-distance walking trails or National Cycle Network routes within the study area however there are a number of unclassified routes, including within Fetteresso Forest and around Garrison Hill near Raedykes Roman Camp. The road network is concentrated to the north and south of the Proposed Development and largely comprises minor roads and the A957 (Slug Road).

Mitigation

6.10 A Landscape Design, as illustrated in Figure 2.2: Landscape Design, has been prepared for the Proposed Development. Proposed mitigation planting in the form of shrubs and woodland would be planted on the engineering slopes of the substation platform and in areas where felling has been required to facilitate construction. This mitigation planting would help better integrate the Proposed Substation into the landscape and provide screening.

Overview of Effects

Landscape

6.11 Major (Significant) landscape and visual effects will occur for the Site during the construction of the Proposed Development due to changes to topography through ground excavation and large-scale earthworks, and the presence and movement of plant and machinery. During operation, effects are likely to continue due to the introduction of the Proposed Development and new cut and fill slopes in the landscape. After 10 years, once mitigation planting has matured, effects are expected to remain as Major (Significant) as the introduction of the Proposed Development, earthworks and new planting would still notably change the physical nature of the Site.

6.12 In terms of LCTs, Moderate (Significant) effects are predicted for LCT 29: Summits and Plateaux - Aberdeenshire, within 1.5 km of the Proposed Development during both construction and operation, reducing to Minor (Not Significant) elsewhere during both construction and operation. Effects on LCT 24: Coastal Farmed Ridges and Hills – Aberdeenshire are predicted to be Moderate (Significant) within 4 km during both construction and operation.

Visual

6.13 Significant effects on views are predicted at two of the five representative viewpoints. Moderate (Significant) effects are predicted at viewpoints 1: Hillhead of Auquhirie and 5: Hill of Swanley during operation, both at Year 0 when mitigation planting is yet to establish, and Year 10 when larger elements of the substation's electrical infrastructure would still be visible above the semi-matured planting. Both of these viewpoints are also expected to experience Moderate (Significant) effects during construction where construction activity would be partially visible, including the use of lighting.

6.14 The settlement of Rickarton to the north of the Site is not expected to experience significant effects during both construction and operation due to the of intervening vegetation and landform. Similarly, effects on the minor road network south of the Site, as well as Slug Road / A957 to the north are not expected to have significant effects during construction or operation due to intervening vegetation and landform that will filter views of the substation's electrical infrastructure. Due to the closer proximity of some parts of the minor road network east and southeast of the Site and sections of recreational routes within Fetteresso Forest around Upper Baulk, Hill of Trusta and Hill of Swanley Moderate (Significant) effects are expected from these routes during both construction and operation where views towards the Proposed Development are more open and elevated. At Year 10, the Moderate (Significant) effects would remain as larger elements of the Proposed Substation would still be visible above the semi-matured planting. Similar effects are predicted from recreational routes near Garrison Hill, where Moderate (Significant) effects are expected during both construction and operation (both at Year 0 and Year 10) due to the elevated open nature of views towards the Proposed Development.

Cumulative Effects

6.15 During both the construction and operational phase of the Proposed Development it is expected that there will be significant cumulative landscape and visual effects when combined with the Associated SSEN Transmission Development. This is due to the scale of the Proposed Development along with the vertical prominence of the new towers associated with the new OHL lines.

6.16 The Proposed Development is also likely to have significant cumulative landscape and visual effects when combined with other third party developments although there is a higher level of uncertainty with the level of information that is presently available on some of these projects.

Image 7 Photomontage of the Proposed Development from Viewpoint 1: Hillhead of Auquhirie

7. Cultural Heritage and Archaeology

Introduction

7.1 The assessment of impacts upon cultural heritage and archaeology has considered the potential effects of the Proposed Development, both in isolation and cumulatively with other developments, upon buried archaeological remains and the setting of designated assets (i.e. listed buildings and scheduled monuments).

Overview of methodology

7.2 The assessment in the EIA Report has been undertaken by experienced cultural heritage professionals with considerable experience in the assessment of renewable energy and electricity transmission projects in accordance with accepted guidance published by the Chartered Institute for Archaeologists.

7.3 The assessment has considered the baseline environment in the vicinity of the Proposed Development through a desk based study of the known heritage assets that are present, using data derived from Historic Environment Scotland Spatial Warehouse and from the Aberdeenshire Historic Environment Record (HER), and a site based survey to establish the setting of these assets.

7.4 A suitable viewpoint location has been identified that is representative of the views of the Proposed Development from Raedykes Roman Camp. Similarly to those photographs and photomontages prepared for the assessment of landscape and visual impact, a photomontage have been produced that shows the existing view, the Proposed Development immediately following construction and ten years later to demonstrate how maturing vegetation will aid the screening proposals.

Overview of baseline conditions

7.5 One scheduled monument, the Cowie Line pillbox and earthworks (SM 6437) lies partly within the Site, on the route of the proposed access track. As a Scheduled Monument, the Cowie Line pillbox and earthworks are of heritage value at the national level and of high sensitivity.

7.6 There are no other designated heritage assets (World Heritage Sites, listed buildings, inventory gardens and designed landscapes, inventory historic battlefields, or conservation areas) within the Inner Study Area.

7.7 A total of 20 non-designated heritage assets have been recorded within or partly within the Inner Study Area: 19 listed on the Aberdeenshire HER, and one identified from historic Ordnance Survey maps consulted as part of this assessment. These include:

- The route of a medieval drove road, assessed to be of regional significance and medium sensitivity;
- The remains of medieval or later settlement, including the remains of farmsteads and other buildings, an enclosure, and a lade, assessed to be of local heritage value and low sensitivity; and
- A range of miscellaneous features including former boundary stones and two wells, which no longer survive, and several sections of former trackways, all assessed to be of little intrinsic heritage value and of negligible sensitivity.

7.8 In addition to the heritage assets identified above, there is some potential that the site of a Second World War military aircraft crash site may survive within the Site, and any surviving remains would be of high sensitivity. Given previous ground disturbance through ploughing and drainage works as well as planting, the potential for any remains of the military aircraft crash site to survive within the Site is assessed as being negligible.

7.9 The current land-use (commercial forestry plantation) suggests that the potential for hitherto undiscovered buried archaeological remains to survive in the Site is low to negligible. In afforested areas, ploughing and drainage works, as well as planting and subsequent tree root growth and the effect of wind-throw, is likely to have disturbed or destroyed the integrity of any surviving buried archaeological deposits that might formerly have been, or may still be, present.

Mitigation

7.10 A Landscape Design, as illustrated in Figure 2.2: Landscape Design, has been prepared for the Proposed Development. Proposed mitigation planting in the form of shrubs and woodland would be planted to provide screening from Raedykes Roman Camp.

7.11 A Written Scheme of Investigation (WSI) would be prepared and approved by Aberdeenshire Council in advance of any construction works. The WSI will detail the methodology to be followed to identify any archaeology that is present within the Site and how the remains will be investigated and preserved in record.

7.12 The WSI will have particular regard to the possible presence of a military aircraft crash site, a former drove road and former settlements within the forest.

Overview of Effects

7.13 During the construction phase of the Proposed Development, there would be major and significant effects upon heritage in the event that a military crash site was discovered. However, given the ground disturbance that has taken place previously within the Site the potential for any military aircraft crash site to survive is assessed as being of negligible likelihood.

7.14 All other impacts during the construction phase of the Proposed Development, with construction undertaken in accordance with the WSI, will result in an effect no greater than minor (Not Significant) on archaeological assets as, should any unforeseen assets be discovered, their preservation by record will be secured and documented accordingly.

7.15 During the operational phase of the Proposed Development, impacts upon the setting of the designated heritage assets assessed will be negligible (Not Significant).

Cumulative Effects

7.16 The Proposed Development in combination with Associated SSEN Transmission Developments, other SSEN Transmission Developments and third-party developments will not have significant effects upon buried archaeological remains with the adoption of appropriate mitigation measures including working to an agreed WSI.

7.17 The assessment of cumulative effects during the operational phase of the Proposed Development with the Associated SSEN Developments, other SSEN Transmission Developments and third party developments will not lead to a significant cumulative effect.

Image 8 Photomontage of the Proposed Development and Associated SSEN Transmission Development from Viewpoint 2 Nether Wyndings

8. Ecology

Introduction

8.1 The assessment of impacts upon ecology has considered the potential effects of the Proposed Development, both in isolation and cumulatively with other developments, upon protected designated sites, habitats, bats, otter, wildcat, badger, red squirrel and pine marten.

Overview of Methodology

8.2 The assessment in the EIA Report has been undertaken by experienced ecologists experienced in the assessment of renewable energy and transmission projects in accordance with the accepted guidance published by the Chartered Institute of Ecology and Environmental Management (CIEEM).

8.3 The assessment has considered the baseline environment in the vicinity of the Proposed Development through a desk based study of designated sites and records of protected species held by NatureScot and the National Biodiversity Network as well as site based surveys to identify the habitats and species likely to be present.

8.4 An Ecological Impact Assessment was undertaken following guidelines issued by the CIEEM having regard to relevant legislation, policy and guidance on the protection, management and assessment of ecological assets/habitats and species.

Overview of baseline conditions

8.5 There are three Special Areas of Conservation (SACs) and four Sites of Special Scientific Interest (SSSIs) within 10 km of the Site. The closest of these statutory designated sites, located approximately 5.5 km northwest of the Site is the River Dee SAC which is designated for its Atlantic salmon, otter and freshwater pearl mussel. Fifty-six woodlands listed on the Ancient Woodland Inventory are within 5 km of the Site, of which one is listed on historical maps, ten are of semi-natural origin ancient woodland and the rest are classed as long-established woodlands of plantation origin (LEPO). The closest of these woodlands is a LEPO woodland immediately south of the existing forest road which joins the A957. Three Local Nature Conservation Sites (LNCS) were identified within 5 km of the Site, with the closest of these being Mergie LNCS located approximately 400 m north of the Site. Mergie LNCS is designated for its assemblage of neutral and acid grassland, broadleaved and coniferous woodland, wet heath, scrub, bracken, bog, pond, rivers and rush pasture alongside the Cowie Water, and locally important species such as lesser twayblade and bog myrtle.

8.6 Mergie LNCS is hydrologically connected to the Site via the Cowie Water which flows under the Access Track, and Burn of Day which is a tributary of the Cowie Water and which surfaces within the Proposed Development.

8.7 Habitats within the Site are predominantly coniferous plantation woodland with small areas of Annex 1 habitats (which are protected through the Habitats Directive).

Mitigation

8.8 A Landscape Design, as illustrated in Figure 2.2: Landscape Design, has been prepared for the Proposed Development. The Landscape Design proposes planting in the form of grassland, shrubs and woodland that will provide suitable habitat for a range of species.

8.9 The construction works will be undertaken in accordance with the GEMPs and SPPs that specify working practices that the Principal Contractor is obliged to follow under the conditions of contract. The Principal Contractor is also obliged to prepare an Ecological and Ornithological Management Plan that will specify how the construction works will implement the requirements of the GEMPs and SPPs.

8.10 The implementation of the Ecological and Ornithological Management Plan as well as adherence to all GEMPs and SPPs will be supervised by an Environmental Clerk of Works.

8.11 The planting proposals on Site deliver a net BNG gain of 4% for area habitats. The Applicant will therefore enter into an agreement with other landowners and biodiversity project developers to deliver the remaining 6% required in order to achieve the 10% gain that is required by their own corporate targets.

Overview of Effects

8.12 The construction of the Proposed Development has the potential to disturb protected species through direct habitat loss, habitat fragmentation and disturbance. However, these species have not been identified in significant numbers using

the Site. Furthermore, there is extensive woodland that will remain, and with mitigation in the form of the GEMPs and SPPs in place that will ensure that pre-construction surveys are undertaken prior to works starting on Site, these impacts are considered to be not significant in the context of this EIA.

8.13 The Proposed Development will not impact any designated sites due to their distance from the Site and a lack of connectivity and accordingly, there will be no significant effect.

Cumulative Effects

8.14 The Proposed Development in combination with the Associated SSEN Transmission Developments, other SSEN Transmission Developments and third party developments will not have significant effects upon designated sites, protected habitats, or protected species with mitigation in the form of GEMPs and SPPs in place.

Image 9 Photomontage of how the existing topography hides the view of the Proposed Development from Viewpoint 3: Rickarton

9. Ornithology

Introduction

9.1 The assessment of impacts upon ornithology has considered the potential effects of the Proposed Development, both in isolation and cumulatively with other developments, upon birds that may use the site either during the winter for roosting or during the summer for breeding.

Overview of Methodology

9.2 The assessment in the EIA Report has been undertaken by experienced ornithologists experienced in the assessment of renewable energy and electricity transmission projects in accordance with guidance published by the Chartered Institute of Ecology and Environmental Management (CIEEM).

9.3 The assessment has considered the baseline environment in the vicinity of the Proposed Development through a desk based study of sites designated for their ornithological interest using data from NatureScot, Forestry and Land Scotland (FLS) as well as site based surveys across the calendar year to identify how birds may use the site and what species and populations are present.

9.4 The importance of bird species has been defined by, amongst other aspects, whether they are protected through legislation and the numbers identified relative to the regional population.

9.5 Birds are considered of high importance where they are listed in the EU Birds Directive or in the Wildlife and Countryside Act of 1981, and of medium importance when they are present in regionally important numbers or on the 'Red List' of the Birds of Conservation Concern list which is jointly published by a number of conservation bodies including NatureScot and the Royal Society for the Protection of Birds.

Overview of Baseline Conditions

9.6 Bird species of high Nature Conservation Importance (NCI) were recorded as breeding within the Study Area. An active goshawk nest, together with other traditional nesting sites lie within potential disturbance distance of the Proposed Development. The Schedule 1 species (i.e. protected under the Wildlife and Countryside Act 1981) crossbill was also recorded during surveys. No herring gull (SPA qualifying feature) were recorded using the site with no breeding waders present.

9.7 The Fowlsheugh Special Protection Area (SPA) and Site of Special Scientific Interest (SSSI) is 7.8 km from the Site at its closest point. This SPA supports a range of seabirds, including herring gull which is known to forage at a range that includes the area of the Site. The existing plantation woodland, however, is unsuitable for herring gull and no requirement for an assessment of potential effects of the Proposed Development on the integrity of SPA is required.

9.8 Breeding birds of importance were recorded within and adjacent to the Site. These species are linked to habitats common in the Fetteresso area but require special protection while nesting

Mitigation

9.9 A Landscape Design, as illustrated in Figure 2.1, has been prepared for the Proposed Development. The Landscape Design proposes planting in the form of grassland, shrubs and woodland that will provide suitable habitat for a range of species.

9.10 The construction works will be undertaken in accordance with the GEMPs and SPPs that specify working practices that the Principal Contractor is obliged to follow under the conditions of contract. The Principal Contractor is also obliged to prepare an Ecological and Ornithological Management Plan that will specify how the construction works will implement the requirements of the GEMPs and SPPs.

9.11 The implementation of the Ecological and Ornithological Management Plan as well as adherence to all GEMPs and SPPs will be supervised by an Environmental Clerk of Works.

Overview of Effects

9.12 Construction of the Proposed Development is considered unlikely to result in significant adverse effects upon any bird species. Habitat loss and associated displacement effects are considered as producing a minimal effect given the presence of commercial forestry within the wider area. Disturbance effects

will be mitigated given the implementation of SSEN Transmission's Bird Species Protection Plan with population reductions considered minimal. Any effects are likely to be not significant for all bird species.

Cumulative Effects

9.13 The Proposed Development in combination with the Associated SSEN Transmission Developments, and other third party developments will not have significant cumulative effects upon ornithology.

Image 10 Photomontage of the Proposed Development with Associated SSEN Transmission Development from Viewpoint 5: Hill of Swanley

10. Hydrology, Hydrogeology, Geology and Soils

Introduction

10.1 The assessment of impacts upon hydrology, hydrogeology, geology and soils has considered the potential effects of the Proposed Development both in isolation and cumulatively upon water quality, flood risk, groundwater abstractions, Private Water Supplies (PWS), Ground Water Dependent Terrestrial Ecosystems (GWDTEs) and peat and carbon-rich soils.

Overview of Methodology

10.2 The assessment in the EIA Report has been undertaken by hydrologists experienced in the assessment of renewable energy and electricity transmission projects in accordance with published guidance.

10.3 The assessment has considered the baseline environment on the Site with information gathered through desk based studies drawn from information obtained through publicly available flood mapping, water classification and licensed abstraction data and private water supply (PWS) data from Aberdeenshire Council (supplemented by information obtained via PWS questionnaires issued to residents in the vicinity of the Site).

10.4 The assessment has been complemented by hydrology and topography field surveys to detail and categorise the hydrological baseline environment.

10.5 An assessment of hydrology and flood risk arising from the construction and operation of the Proposed Development has been undertaken.

Overview of Baseline Conditions

10.6 The Proposed Development is situated on steep, varied terrain carved out by the Cowie Water to the north and the Carron Water to the south and their tributaries, near the top of the drainage divide between the two rivers. The existing forest road, which will be utilised for access to the Proposed Development, initially follows the contours around the Hill of Three Stones before crossing the steep-sided valley of the Cowie Water and winding its way up the slopes.

10.7 The Proposed Development is within the catchment of the Burn of Day, which flows from west to east approximately 50 m northeast of the proposed substation platform, as well as the Burn of Baulks, which is located approximately 120 m southeast of the proposed substation platform.

10.8 The northern and western parts of the Site along the existing forest road are located in the Cowie Water catchment while the southern part drains south-east towards the Carron Water catchment. Both rivers drain directly into the North Sea at Stonehaven. The substation is located on a spur which straddles both catchments, draining via the Burn of Day (a tributary of the Cowie Water) and the Burn of Baulks (a tributary of the Carron Water). There are no surface water bodies, lochs or reservoirs within the Site.

10.9 The Proposed Development will use existing forest tracks to avoid the need for new watercourse crossings. No new watercourse crossings are proposed. A land drain may need a new temporary culvert to facilitate a temporary construction track. The Proposed Development will use 14 existing watercourse crossings on existing forest roads.

10.10 In 2022 the surface water quality of Cowie Water in Fetteresso Forest was classified by SEPA as High and the Carron Water was classified as Moderate.

10.11 Information from NatureScot, and surveys have identified that the majority of the Site is formed of mineral and soils (i.e. not carbon rich) but there is a small area of Class 5 soil to the east of the Site where no development is proposed. There are no Groundwater Dependent Terrestrial Ecosystems (GWDTE) within the Site.

10.12 There are a number of PWS within 1 km of the site. These are a mixture of groundwater and surface water sources.

10.13 The groundwater body underlying the Site was classified by SEPA as Good in 2022 and is classified by the British Geological Survey (BGS) as a low productivity aquifer.

Mitigation

10.14 The design of the Proposed Development has been carefully considered to avoid any development within areas that are likely to flood. All watercourses have been buffered by a

minimum of 15 m, where practicable, and SEPA's recommended riparian buffers have been adhered to for all watercourses, with the exception of track crossings.

10.15 Run-off from the Proposed Development will be managed so that it does not increase the risk of flooding downstream of the Site. This is achieved through a network of surface water drains that allow water to flow to two retention ponds (also known as SuDS ponds) which will slow the flow of the runoff to a rate that is no greater than is experienced at present.

10.16 The construction works will be undertaken in accordance with the GEMPs and SPPs that specify working practices that the Principal Contractor is obliged to follow under the conditions of contract. The Principal Contractor is also obliged to undertake all construction works in accordance with the Construction Environmental Management Plan (CEMP). The implementation of the CEMP will be supervised by an Environmental Clerk of Works.

10.17 In addition to the adherence to the CEMP, GEMPs and all relevant guidance published by SEPA and other bodies, additional pollution control measures as follows will be instigated

- Pollution control mitigation (e.g. silt fences, settlement ponds) will be installed at the 14 locations where there are existing watercourse crossings.
- Monitoring of PWSs before during and after construction. If the water quality deteriorates during construction an alternative water supply will be installed at the PWS property, such as portable bowsers, to ensure minimal disruption of supply during construction.
- No construction materials will be placed within known flood risk areas.
- The Principal Contractor will sign up to SEPA's flood warning service.
- An exclusion zone will be established to prevent works access to the area of known peat.

Overview of Effects

10.18 Taking into account the mitigation measures summarised above, the assessment has concluded that the Proposed Development will give rise to no significant effects on hydrological, hydrogeological, geological and soil receptors. The Proposed Development avoids areas likely to flood as well as areas known to contain peat and there will be no impact on the likelihood or extent of flooding downstream of the Site.

Cumulative Effects

10.19 The Proposed Development in combination with the Associated SSEN Transmission Developments, and other third party developments will not have significant cumulative effects upon hydrology or hydrogeology.

10.20 The Associated SSEN Transmission Development has extremely limited footprints compared to the Proposed Development, and it follows that no cumulative effects are likely. With the information that is available on other third party projects considered as part of the cumulative assessment it is not considered that there would be significant cumulative effects with the Proposed Development.

Image 11 Photomontage of the Proposed Development from Viewpoint 1: Hillhead of Auquhirie

11. Transport and Access

Introduction

11.1 The assessment of impacts upon transport and access has considered the potential effects of the Proposed Development, both in isolation and cumulatively with other developments, of construction traffic on the surrounding road network.

Overview of Methodology

11.2 The assessment in the EIA Report has been undertaken by chartered engineers and transport planners experienced in the assessment of renewable energy and electricity transmission projects in accordance with accepted guidance published by the Institute of Environmental Management and Assessment (IEMA).

11.3 The assessment has considered the baseline environment in the vicinity of the Proposed Development drawing upon desk based records to identify traffic volumes and field based traffic count surveys for minor roads where existing records are not available.

11.4 The assessment has also considered highway safety drawing upon historic accident data in the vicinity of the Site.

11.5 The assessment has subsequently considered the acceptability of the existing highway network to safely accommodate the number of heavy goods vehicle (HGV) numbers that are anticipated to access the Site during the construction phase of the Proposed Development, and made recommendations on what mitigation measures are required.

11.6 No assessment of the operational phase of the Proposed Development was necessary given the low level of traffic associated with the operation of the Site. Decommissioning effects have also been scoped out as the construction phase will result in the greatest number of trips on the road network.

Overview of Baseline Conditions

11.7 The Site is accessed from the public road network at the A957, (Slug Road) to the north. Traffic surveys have provided information on how traffic uses the highway network in the vicinity of the Site.

11.8 A review of accidents on the highway network within the vicinity of the Site has not identified any trends that would be exacerbated by the construction traffic associated with the Proposed Development.

Mitigation

11.9 Construction traffic will be primarily from the north via the A93 and the B9077; this will therefore avoid Stonehaven and Auchenblae Road.

11.10 A Construction Traffic Management Plan (CTMP) would be prepared by the Principal Contractor, in consultation with SSEN Transmission, Aberdeenshire Council and Transport Scotland. The CTMP will detail how traffic impacts will be managed during the construction of the Proposed Development. The CTMP will include and specify measures to protect the public highway which will include the following:

- Signage at the Site access junction that directs HGV traffic;
- Adoption by the Principal Contractor of a staff Travel Plan to reduce the use of single occupancy travel to and from the Site.
- Public information obligations including how information on Abnormal Indivisible Loads (AIL) will be provided to the public
- Tool-box talks for all HGV drivers accessing the site on the importance of adhering to speed limits. A voluntary 20 mph speed limit for all construction vehicles travelling through rural villages and towns will also be adopted.

11.11 The Principal Contractor will also prepare an Abnormal Load Management Plan that could help reduce the effects of the abnormal loads that will access the Site during the construction phase. The Abnormal Load Management Plan will be approved by both Aberdeenshire Council and the Police prior to the movement of any abnormal loads on the highway network.

Overview of Effects

11.12 The peak of construction activities is predicted to occur in February 2028 and will result in daily traffic flows of 208 (two

way) traffic flows. Of these, 56 are HGV movements, the remaining 152 being car or LGV movements.

11.13 Following the IEMA guidance, it has been concluded that there are no significant effects as a result of the construction of the Proposed Development.

Cumulative Effects

11.14 The Proposed Development in combination with the Associated SSEN Transmission Development will have no significant cumulative effects as the nature of these other projects is that they are unlikely to generate significant additional baseline flows.

11.15 There is no significant cumulative effect between the Proposed Development and other developments due to the construction schedules of the projects not overlapping and/or due to the limited movements and the limited shared access routes that are proposed to be used.

Image 12 Photomontage of the Proposed Development and Associated SSEN Transmission Development from Cultural Heritage Viewpoint 1: Raedykes Roman Camp

12. Noise and Vibration

Introduction

12.1 The assessment of impacts upon noise and vibration has considered the potential effects of the Proposed Development both in isolation and cumulatively upon noise sensitive receptors (NSRs) in the vicinity of the Site and the proposed construction route.

Overview of Methodology

12.2 The assessment in the EIA Report has been undertaken by acousticians experienced in the assessment of renewable energy and transmission projects in accordance with published guidance.

12.3 The assessment has considered the baseline noise conditions on and around the Site through undertaking noise measurement surveys at locations that are representative of the NSRs that are closest to the Site.

12.4 The assessment has considered both the construction and the operational phase of the Proposed Development and quantified how noise emissions will be controlled to ensure that there is no significant effect upon the NSRs.

12.5 The assessment of noise impacts during the construction phase of the Proposed Development has been modelled using worst case noise emissions from construction equipment such as excavators and lorries, using the established methodology for the assessment of construction noise within British Standard 5228.

12.6 A detailed model of the Proposed Development in the operational phases has been constructed using noise modelling software which considers topography, screening, weather and information on noise generated by equipment and plant on Site using the established methodology for the assessment of noise within British Standard 4142.

12.7 These noise models allow an assessment of the noise associated with both the construction and the operation of the Proposed Development upon NSRs in the vicinity of the Site with the mitigation measures in place.

12.8 A construction vibration assessment has focused on the vibration from piling the foundations to the substation platform. No vibration likely to lead to significant effects is predicted once the Proposed Development is operational.

Overview of baseline conditions

12.9 Noise measurements were taken at eight NSRs surrounding the Site. Three of these were long term unattended measurements that were undertaken for several days that allow the assessment to be undertaken using a representative average of the background noise level. The unattended measurements were complemented with attended monitoring measurements at five further locations at nighttime.

12.10 Noise levels were generally low at night with distant traffic being the dominant noise source along with noise of wind rustling the trees.

Mitigation

12.11 A contractual requirement of the Principal Contract would be the development and implementation of a Construction Noise Management Plan (CNMP). This document would detail how the Principal Contractor would manage the construction process in accordance with all commitments and mitigation detailed in the EIA Report, statutory consents and authorisations, and industry best practice and guidance.

12.12 The CNMP will identify when construction operations that are likely to generate significant noise will occur and implement, among others, the following procedures:

- minimising the noise as much as is reasonably practicable at source;
- providing acoustic shielding and barriers where necessary and appropriate;
- ensure plant and equipment are regularly and properly maintained;
- use electrically powered plant rather than diesel or petrol driven, where this is practicable;

- carrying out high noise level activities at a time when they are least likely to cause a nuisance to residents; and
- providing advance notice of unavoidable periods of high noise levels to Aberdeenshire Council and residents likely to be impacted.

12.13 The CNMP will be established to ensure that noise levels at NSRs that have been identified through the assessment are not exceeded with a noise monitoring programme established to ensure that these levels are maintained.

12.14 The CNMP will be agreed with Aberdeenshire Council.

12.15 The electrical infrastructure will be specified to ensure that the noise levels that they generate during operation of the Proposed Development do not breach the limits at the NSRs that are specified in the assessment.

Overview of Effects

12.16 During the construction phase of the Proposed Development, there will be no significant effect upon NSRs with the implementation of a CTMP and noise monitoring to ensure that these levels are maintained.

12.17 The vibration assessment has concluded that piling operations during the construction phase will not result in a significant effect as, in the worst-case scenario, the levels of vibration generated will negligible.

12.18 By specifying that all electrical equipment is designed, constructed and installed to meet defined sound power level limits, SSEN Transmission will ensure that there are no significant effects on NSRs and on the residential properties the NSRs represent.

Cumulative Effects

12.19 The Proposed Development in combination with Associated SSEN Transmission Developments and other SSEN Transmission Developments will have no significant cumulative effects.

12.20 There is no likely significant potential significant cumulative effect between the Proposed Development and other third party developments due to the construction schedules of the projects overlapping.

Image 13 Photomontage of the Proposed Development from Viewpoint 4: Minor road west of Kirktown of Fetteresso

13. Summary of the Assessment

Summary

12.21 The EIA for the Proposed Development has been undertaken in accordance with regulatory requirements, guidance, good practice and the feedback received from statutory and non-statutory consultees and members of the community through the consultation and scoping process.

12.22 The Applicant is committed to a programme of mitigation measures that it will ensure are delivered through conditions of contract with the Principal Contractor. The construction of the Proposed Development will also be undertaken in accordance with a series of GEMPs and SPPs that have been developed and agreed previously with statutory consultees.

12.23 The EIA Report has considered the effects of the Proposed Development upon the following environmental factors, both in isolation and cumulatively:

- Forestry;
- Landscape and Visual Impact;
- Cultural Heritage;
- Ecology;
- Ornithology;
- Hydrology and Hydrogeology;
- Traffic and Access; and
- Noise and Vibration.

12.24 With the application of mitigation measures, it has been concluded that significant effects upon the environment are limited to the following;

- during construction, effects within the Site, on two landscape character types, and on views from five locations surrounding the Site.
- Once operational, significant effects (on views) are predicted at the same locations both in the first year of operation and once vegetation has matured 10 years after planting.

12.25 No other impacts that have been considered in the EIA Report are significant in terms of the EIA Regulations.