Lewis Hub (AC Substation & HVDC Converter Station)

Environmental Impact Assessment Report: Volume 1: Non-Technical Summary

February 2025

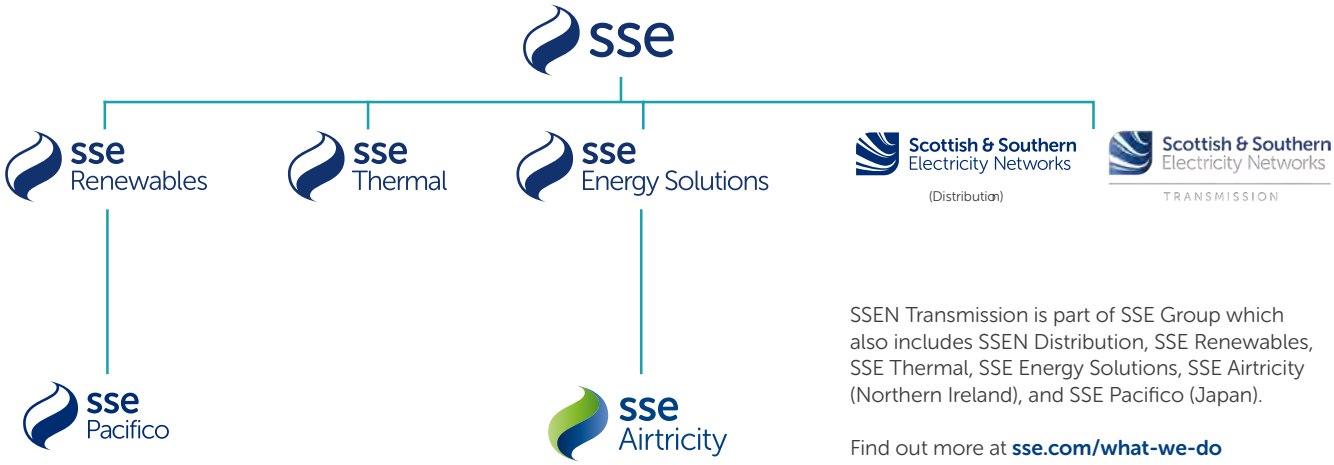
RAMBOLL

Scottish & Southern Electricity Networks

TRANSMISSION

Who we are

We are SSEN Transmission, the trading name for Scottish Hydro Electric Transmission. We are responsible for the electricity transmission network in the north of Scotland, maintaining and investing in the high voltage 132kV, 220kV, 275kV and 400kV electricity transmission network.



SSEN Transmission is part of SSE Group which also includes SSEN Distribution, SSE Renewables, SSE Thermal, SSE Energy Solutions, SSE Airtricity (Northern Ireland), and SSE Pacifico (Japan).

Find out more at **sse.com/what-we-do**

Our network consists of underground and subsea cables, overhead lines on wooden poles or steel towers, and electricity substations. It extends over a quarter of the UK's land mass, crossing some of its most challenging terrain.

Our first priority is to provide a safe and reliable supply of electricity to our communities. We do this by taking the electricity from generators and transporting it at high voltages over long distances through our transmission network for onwards distribution to homes and businesses in villages, towns and cities.

Our operating area is home to vast renewable energy resources and this is being harnessed by wind, hydro and marine generation. Working closely with National Grid, the GB transmission System Operator, we also enable these electricity generators to connect to the transmission system by providing their connections and allowing the electricity generated by them to be transported to areas of demand across the country.

Scotland's transmission network has a strategic role to play in supporting delivery of the UK and Scotland's Net Zero targets. We're already a mass exporter of renewable energy, with around two thirds of power generated in our network area exported to demand centres further south. By 2050, the north of Scotland is expected to need 40GW of low carbon energy capacity to support net zero delivery. For context, we currently have around 8GW of renewable generation connected in the north of Scotland.

As a natural monopoly, we are closely regulated by the GB energy regulator, Ofgem, who determines how much revenue we are allowed to earn for constructing, maintaining and renovating our transmission network in the north of Scotland. These costs are shared between all those using the transmission system, including generation developers and electricity consumers. Following a minority stake sale which completed in November 2022, we are now owned 75% by SSE plc and 25% by Ontario Teachers' Pension Plan Board.

As a stakeholder-led business, SSEN Transmission is committed to inclusive stakeholder engagement, and we conduct this at an 'Advanced' level as assessed by AccountAbility, the international consulting and standards firm.

Introduction

Overview

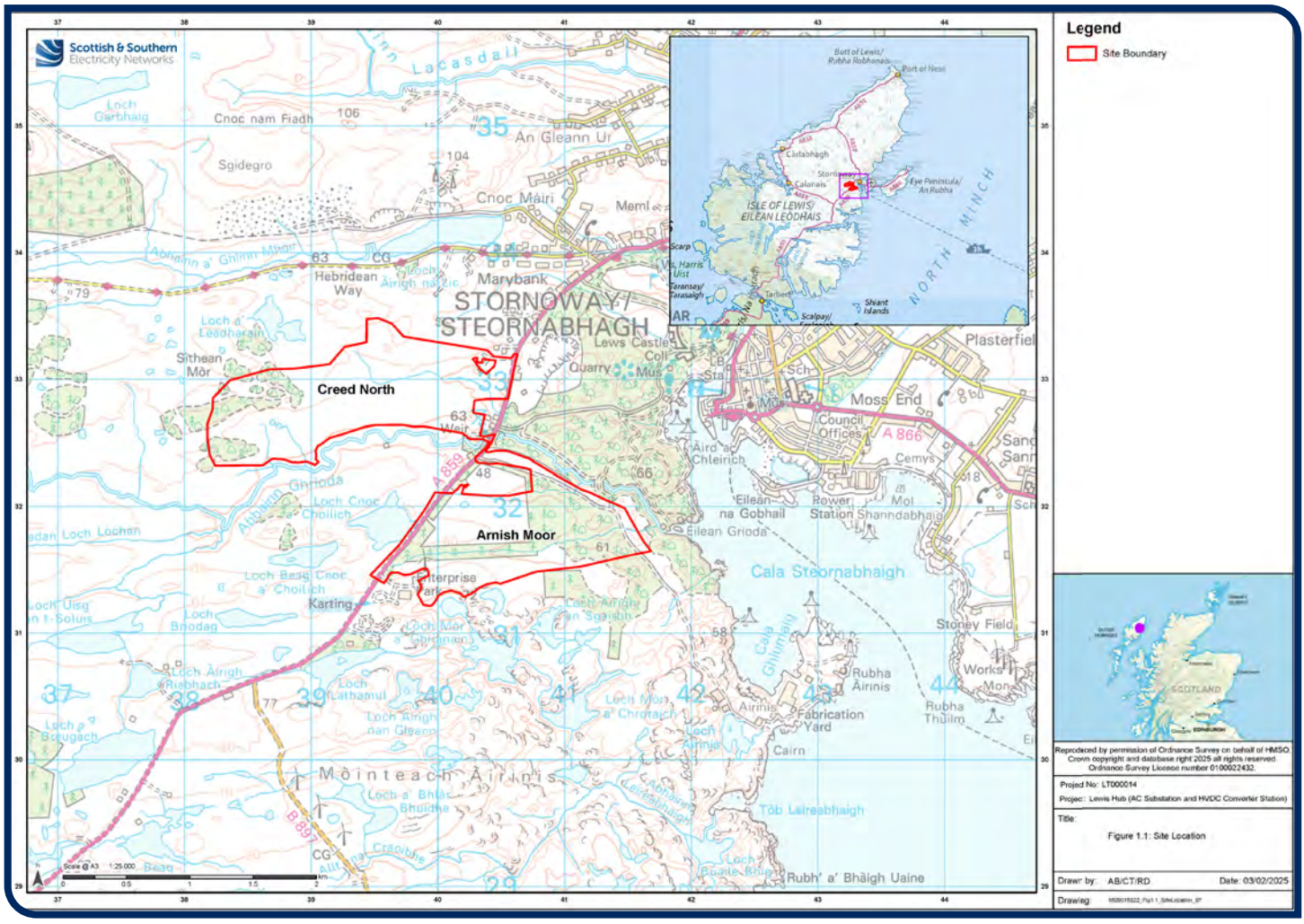
This Non-Technical Summary ("NTS") forms part of the Environmental Impact Assessment Report ("EIA Report") prepared on behalf of Scottish Hydro Electric Transmission plc ("the Applicant") who, operating and known as Scottish and Southern Electricity Networks Transmission ("SSEN Transmission"), own, operate and develop the high voltage electricity transmission system in the north of Scotland and remote islands.

The Proposed Lewis Hub - a new strategic transmission hub, comprising a High Voltage Direct Current (HVDC) Converter Station, 132 kV and 400 kV AC substation and associated works ('the Proposed Development') is located approximately 2 km southwest of Stornoway on the Isle of Lewis (the "Site").

The location of the Site is shown on Figure 1.

The full results of the EIA (baseline information, survey findings and technical assessments) of the Proposed Development are presented in the main EIA Report (Volume 2). The findings of these studies are summarised and presented in this NTS in non-technical language.

The aim of this NTS is to summarise the content and the main findings of the EIA Report in a clear and concise manner to assist the public in understanding what the environmental effects of the Proposed Development are likely to be. The full EIA Report (Volume 2: Main Report; Volume 3a: Figures; Volume 3b: Visualisations and Volume 4: Technical Appendices) provides a more detailed description of the Proposed Development, and the findings of the EIA.



Site Location

Introduction

Notifications

Notice will be served for this application to the relevant planning authority, in this case Comhairle nan Eilean Siar ('CnES'), of the application for planning permission in principle under the Town and Country Planning (Scotland) Act 1997 ('the 1997 Act').

In accordance with Regulation 21 of the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 ('the EIA Regulations'), this application and EIA Report will be advertised on the application website (https://www.ssen-transmission.co.uk/projects/project-map/western-isles/), in the Edinburgh Gazette and in the Stornoway Gazette

The full EIA Report and supporting Technical Appendices can be viewed at the following locations:

- Comhairle nan Eilean Siar, Council Offices, Sandwick Road, Stornoway, HS1 2BW
- Stornoway Library, 6 Kenneth Street, Stornoway HS1 2DP

Electronic versions of the consent application, including the EIA Report will be available to download from the Applicant's website.

The EIAR can also be viewed via the CnES planning portal:https://www.cne-siar.gov.uk/planning-and-building-standards/planning/planning-applications/view-planning-applications/national-major-andor-eia-development-applications/determining-authority/majoreia-applications-pending

Any representations should be made via the CnES online planning portal.

This EIAR is available in other formats if required. For details, including costs, please contact:

Post: Mairi Rigby
Senior Consents and Environment Manager
SSEN Transmission, 10 Henderson Road, Inverness, IV1 1SN

Email: LT14Lewishub@sse.com

Project Need

The Applicant owns and maintains the electricity transmission network across the north of Scotland and holds a transmission licence under Section 6(1)(b) of the Electricity Act 1989 ("the 1989 Act")[1]. The Applicant has a statutory duty under Section 9(2) of the 1989 Act to develop and maintain an efficient, co-ordinated, and economical system of electrical transmission, and a separate duty to facilitate competition between current and new generators of electricity. Where there is a requirement to extend, upgrade or reinforce its transmission network, the Applicant's aim is to achieve an environmentally aware, technically feasible and economically viable option which would cause the least disturbance to the environment and the people who use the area.

By 2030, both the UK and Scottish governments are targeting a big expansion in offshore wind generation of 50 GW and 11 GW respectively. The Scottish Government has also set ambitious targets for an additional 12 GW of onshore wind by 2030. Across Great Britain, including the north of Scotland, there needs to be a significant increase in the capacity of the onshore electricity transmission infrastructure to deliver these 2030 targets and a pathway to net zero. The need for these reinforcements is also underlined within the British Energy Security Strategy[2], which recognises the significant impact on the cost of living from rising gas prices and sets out a plan to increase the supply of electricity from zero-carbon British sources to deliver affordable, clean and secure power in the long term

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The National Grid published the Holistic Network Design (HND) Report in July 2022[3] providing detail on a recommended approach for connecting offshore wind farms, including the associated offshore and onshore transmission network requirements. A strategic hub on the Isle of Lewis is required for the purpose of establishing a common and co-ordinated approach to development for the future network reinforcements as identified in the HND. The Lewis Hub development will substantially strengthen the local transmission network and support new onshore and offshore connections. The Proposed Development will further help facilitate the export of future renewable generation from the North of Scotland to demand centres throughout the UK.

The Accelerated Strategic Transmission Investment (ASTI)[4] projects including the Proposed Development are National Developments that are explicitly supported by national policy, the electricity system operator, and the energy regulator. The Proposed Development would contribute significantly towards the delivery of the UK and Scottish Government's Net Zero Targets and help reduce the UK's dependence on imported oil and gas

The Proposed Development forms a key part of the Western Isles Connection Project, which will connect the Western Isles to the mainland of Scotland, allowing renewable energy generation to connect to the existing transmission network on the mainland. A further need for the project is to meet the requirements of the existing demand on Lewis and Harris, effectively via renewable energy generation.

1 Electricity Act 1989. [Online] Available at: https://www.legislation.gov.uk/ukpga/1989/29/contents

2 British energy security strategy - GOV.UK

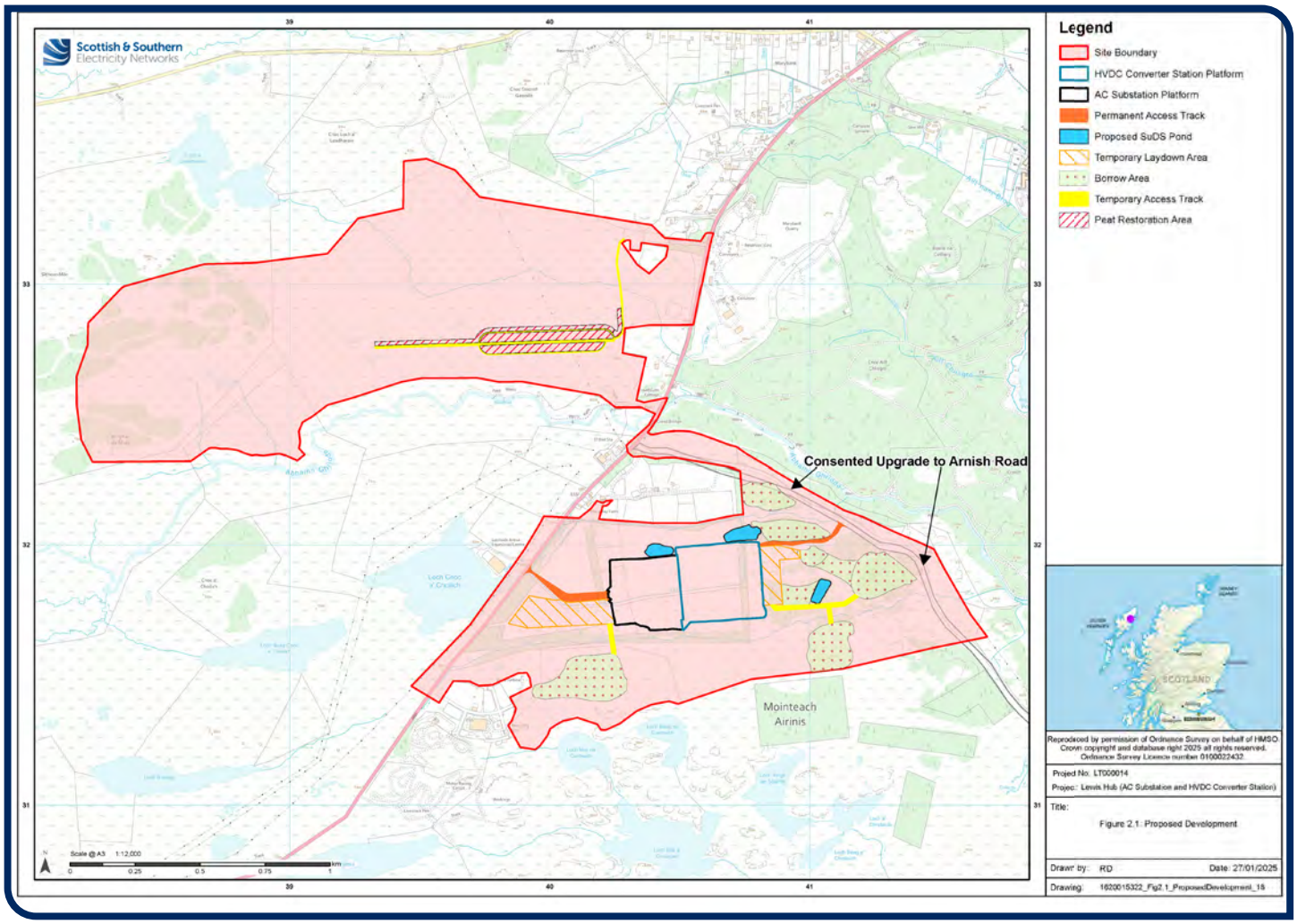
3 National Grid Electrical System Operator (ESO), 2022. Pathway to 2030 – A holistic network design to support offshore wind deployment for net zero. [Online] Available at: https://www.nationalgrideso.com/document/262676/download.

4 Ofgem, (December 2022). Decision on accelerating onshore electricity transmission investment. [Online] Available at: https://www.ofgem.gov.uk/sites/default/files/2022-12/ASTI%20decision%20doc%20-%20Final_Published.pdf.

Project Description

The Proposed Development would comprise of a series of buildings, up to a maximum height of 27.5 m, with the following key components:

- High Voltage Direct Current (HVDC) Convertor Station;
- 132 kV and 400 kV AC Substation;
- Cable and overhead line connections to the HVDC Converter Station and AC Substation;
- Internal roads for access and maintenance;
- Temporary access tracks;
- Sustainable drainage systems and foul drainage;
- Mounding for the purposes of visual screening;
- Earthworks required to enable the Proposed Development;
- Temporary construction compounds and material storage areas;
- Peat reuse and reinstatement;
- Drainage; and
- Security fencing.



Proposed Development

Project Description

HVDC Converter Station

The HVDC Converter station would have an overall platform footprint of around 320 m by 310 m and a maximum height of 27.5 m and would consist of two main converter buildings and associated control buildings and equipment auxiliary buildings.

132 kV and 400 kV Substation

A series of buildings would make up the proposed 400 kV/132 kV Substation. The footprint would be approximately 260 m by 250 m. The buildings that would be situated on the platform would comprise of three separate transformer buildings along with the 132 kV and 400 kV substation buildings and a control building. These would be fully enclosed to protect from the weather and to reduce the noise impact.

Ancillary Works

Ancillary works would be required to facilitate construction and operation of the Proposed Development and would include:

- Vegetation clearance;
- Upgrade existing or establishment of new junction bellmouths;
- Diversion and/or culverting of existing land drainage channel as part of the peat removal/site clearance;
- Establishment and reinstatement of borrow pit areas for peat management;
- Extraction of rock from borrow pits;
- Establishment of temporary and permanent access for the construction and maintenance of the Proposed Development;
- Establishment of new drainage channels and attenuation ponds for site drainage; and
- Establishment and reinstatement of temporary site compounds.

Transmission / Distribution Line Connections

A number of cable connections to the Proposed Development would be required including a connection to the existing electricity network at Stornoway Substation. There would also be a cable connection to Arnish Point, where the subsea cable from mainland Scotland would make landfall, and there would be a number of connections to proposed renewable energy developments,.

Peat Reuse Proposals

The excavated peat on-Site is intended be re-used within the Site boundary, for example to infill borrow pit areas and potentially to reinstate areas of degraded peat within the northern part of the Site, west of the A859.

Security Fencing

A palisade fence would be installed around the perimeter of the platform. An internal palisade fence would also be installed separating the AC and HVDC parts of the platform.

In addition, stock proof fencing would be installed around elements of the infrastructure outside of the palisade fencing (i.e. drainage, access roads, landscaped areas). This would be a stock/deer proof fence to exclude grazing animals from impacting and damaging access and infrastructureand to allow establishment of landscaping and screen planting.

Drainage

A surface and foul water drainage strategy has been prepared for the Proposed Development and includes drainage and sustainable drainage system (SuDS). SuDS mimic natural drainage processes to reduce the impact on the quality and quantity of runoff from developments and provide benefits to amenity and biodiversity. The SuDS have been integrated within the landscape proposals to enhance amenity, biodiversity, and habitat, whilst protecting and/or enhancing water quality.

The platforms will have a drainage system that lets water seep through layers of material and flow through underground pipes. Water from the platforms and buildings will be collected and directed by shallow ditches and ponds. These ditches and ponds will help clean and slow down the surface water before it flows into nearby streams within the site (see Figure 2.1, EIAR Volume 3a).

The plans for dealing with wastewater, including water from offices, kitchens and bathrooms, are detailed in Technical Appendix 2.1, EIAR Volume 4. The current proposal is to send the wastewater through a series of pipes and eventually into the existing Scottish Water system. However, this might be difficult to achieve because of low flow and long distances. Other methods like a septic tank or a small sewage treatment plant might be considered, but they haven't been fully examined in the current assessment.

Construction Activities

The Proposed Development would be carried out in five phases which will overlap, as detailed below. It is anticipated that the construction would be completed in 2030.

Phase 1- Enabling Works

The first phase of construction would comprise the following:

- Formation of temporary and permanent access to Site;
- Excavation of peat from borrow areas (as detailed in Technical Appendix 10.2, EIAR Volume 4);
- Reinstatement of peat cuttings in peat restoration areas;
- Excavation of rock from borrow areas;
- Processing of site won rock;
- Formation of platforms, drainage areas and temporary compounds; and
- Reinstatement of temporary compounds and borrow areas 4, 5 and 6 with peat removed from platforms and drainage areas.

Phase 2 - HVDC and AC Building Works

It is anticipated that Phase 2 would overlap with Phase 1. Phase 2 would comprise the following:

- Construction of the HVDC and AC building and equipment foundations, drainage and electrical cable trenches/troughs;
- Construction of HVDC and AC building structures; and
- Construction of internal access roads and fencing.

Phase 3 - HVDC and AC Equipment Fit Out

Phase 3 would overlap with Phase 2. Phase 3 would comprise the following:

- Installation of HVDC and AC electrical equipment; and
- Installation of building ancillary supplies.

Phase 4 - Landscaping

The fourth phase of construction would comprise:

- Final site clearance;
- Reinstatement of temporary laydown areas;
- Access and drainage; and
- Installation of remaining landscape measures, including landscape bund in place of eastern laydown area.

Phase 5 – Testing and Commissioning

The fifth and final phase would comprise the testing and commissioning of the Proposed Development. This phase is likely to overlap with Phase 4.

Construction Activities

Construction Employment and Hours of Work

The Proposed Development would provide opportunities to support local communities. The Applicant would encourage the successful Principal Contractor to use suitable labour and resources from areas local to the Site.

The typical construction hours of work would be Monday to Saturday 07:00 to 19:00. No works would be undertaken Sundays. Any out-of-hours works would be subject to prior agreement with CnES.

Construction Traffic

Construction traffic comprises staff journeys and vehicle movements to build access tracks, delivery and collection of materials and transport of construction plant to the Site. A Construction Traffic Management Plan would be agreed in consultation with CnES and implemented by the Principal Contractor during construction. This would address the scheduling, routing and overall management of construction traffic on the road network.

Construction Environmental Management

A Construction Environmental Management Plan (CEMP) will be developed and implemented by the Principal Contractor(s). The CEMP will detail how the Principal Contractor(s) will manage the construction of the Proposed Development in accordance with all environmental commitments and mitigation detailed in the EIAR and will include information on statutory consents and authorisations, and industry best practice and guidance.

Operation Management and Maintenance

The expected operational life of the Proposed Development is 40 years or more from the date of commissioning.

The Proposed Development would require maintenance and inspection at regular intervals. It is anticipated there would be a number of operational and maintenance staff based at the Lewis Hub during normal operations. During unplanned emergency events and planned major maintenance works, these numbers will be supplemented depending on the nature of the emergency/maintenance works.

Site Selection and Alternatives

The EIA Regulations require reasonable alternatives, relevant to the Proposed Development, to be studied and the reasons for selecting the final option to be provided by the Applicant.

Stakeholder consultation and engagement has been undertaken throughout the development process, with advice from key consultees being sought early in the design stage to inform decisions about the Proposed Development.

Alternative Technical Options

Following Ofgem's approval of SSEN Transmission's Pathway to 2030 projects, including the Lewis Hub, the Applicant considered design solutions that could mitigate likely significant environmental effects and provide other benefits such as biodiversity net gain ("BNG").

To reduce the need for additional infrastructure, and ultimately to reduce the size and cost of the Proposed Development, it has been an objective to minimise the distance between the High Voltage Direct Current (HVDC) converters and the alternating current (AC) connection point at the 400 kV substation. The optimal distance was considered to be less than 1 km, which supported the co-located arrangement at the Proposed Development. The distance from the Proposed Development to the existing electricity network was also considered in order to minimise the amount of new overhead or underground cables required to connect the Proposed Development to the existing network.

The "Do Nothing" Scenario was discounted as it is not considered a sustainable development option. This is because it would compromise the project need and would be inconsistent with the Applicant's licence obligations to develop and maintain an efficient, coordinated, and economic electricity system. Consequently, this option has not been considered further.

Alternative Site Options

The project was first introduced in 2022. At this stage the Applicant shared the general project scope and identified search areas for a new substation and convertor station Site.

A site selection exercise was undertaken between April 2023 to September 2024, a process that aims to balance environmental, technical, and economic considerations throughout the site options appraisal process. The principal site selection stages were:

- Stage 1: Initial site screening; and
- Stage 2: Detailed site selection.

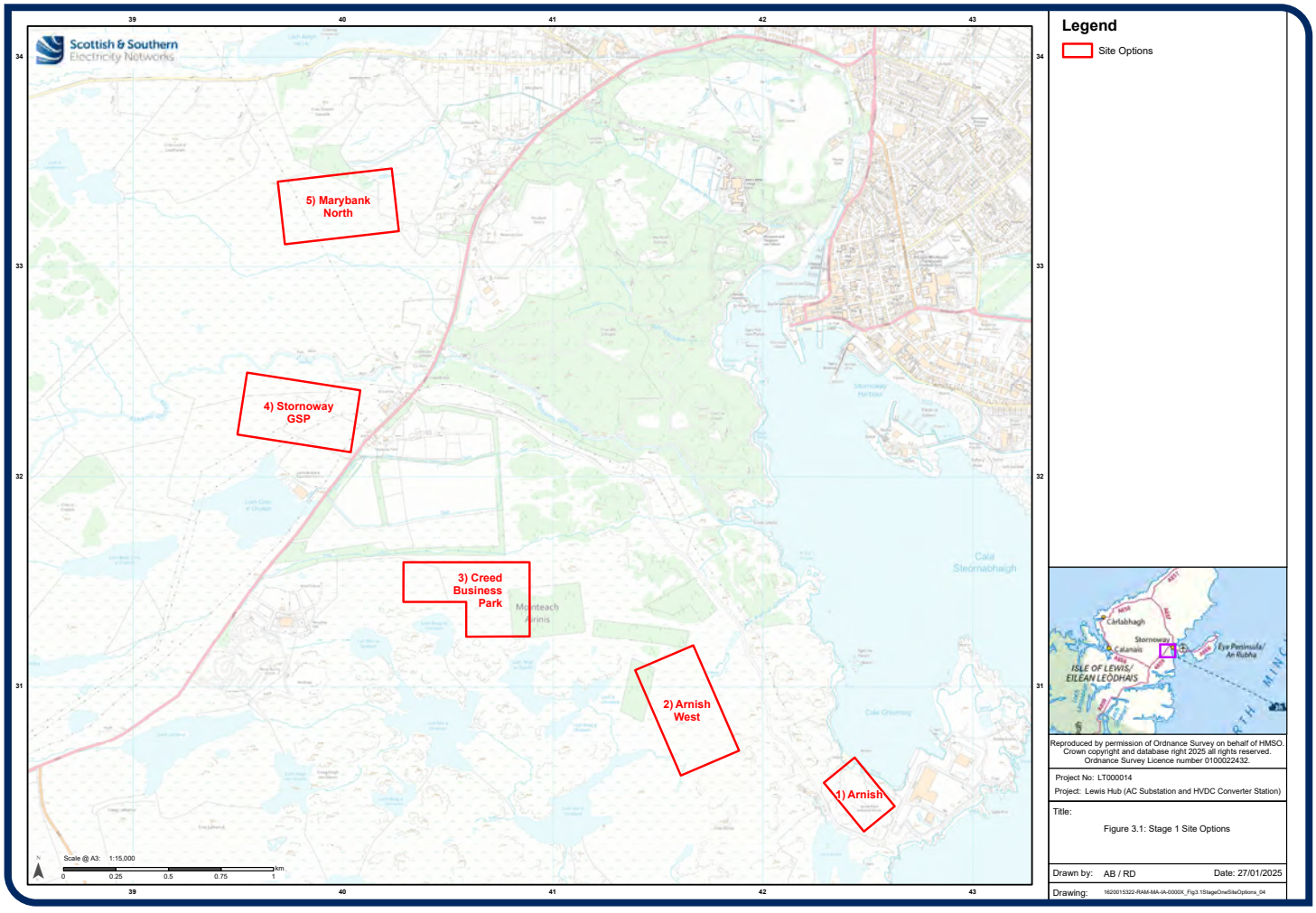
The method of identifying a Preferred Site involved the following four key tasks:

- Gaining an understanding of the existing environment within a study area of within a 5 km radius of the required connection point (Arnish point);
- Identification of alternative site options;
- Environmental, technical and economic analysis of site options; and
- Identification of a Preferred Site.

Site Selection and Alternatives

Stage 1: Initial Site Screening

At Stage 1 of the site selection process five initial Site Options were identified as shown below.



Stage 1 Site Options

The Site Options were presented at a public consultation event in April 2023.

Assessment of the five options was then undertaken, resulting in two of the five options being discounted for the following reasons:

- Site 1 was eliminated on the basis of limitations relating to its size and its topography. In addition, its relative remoteness from new sources of onshore generation would result in difficulties in siting the required number of onshore connections; and
- Site 4 was eliminated on the basis of its limited size, its proximity to the existing Stornoway GSP, and its proximity to the A859, with associated visual impact.

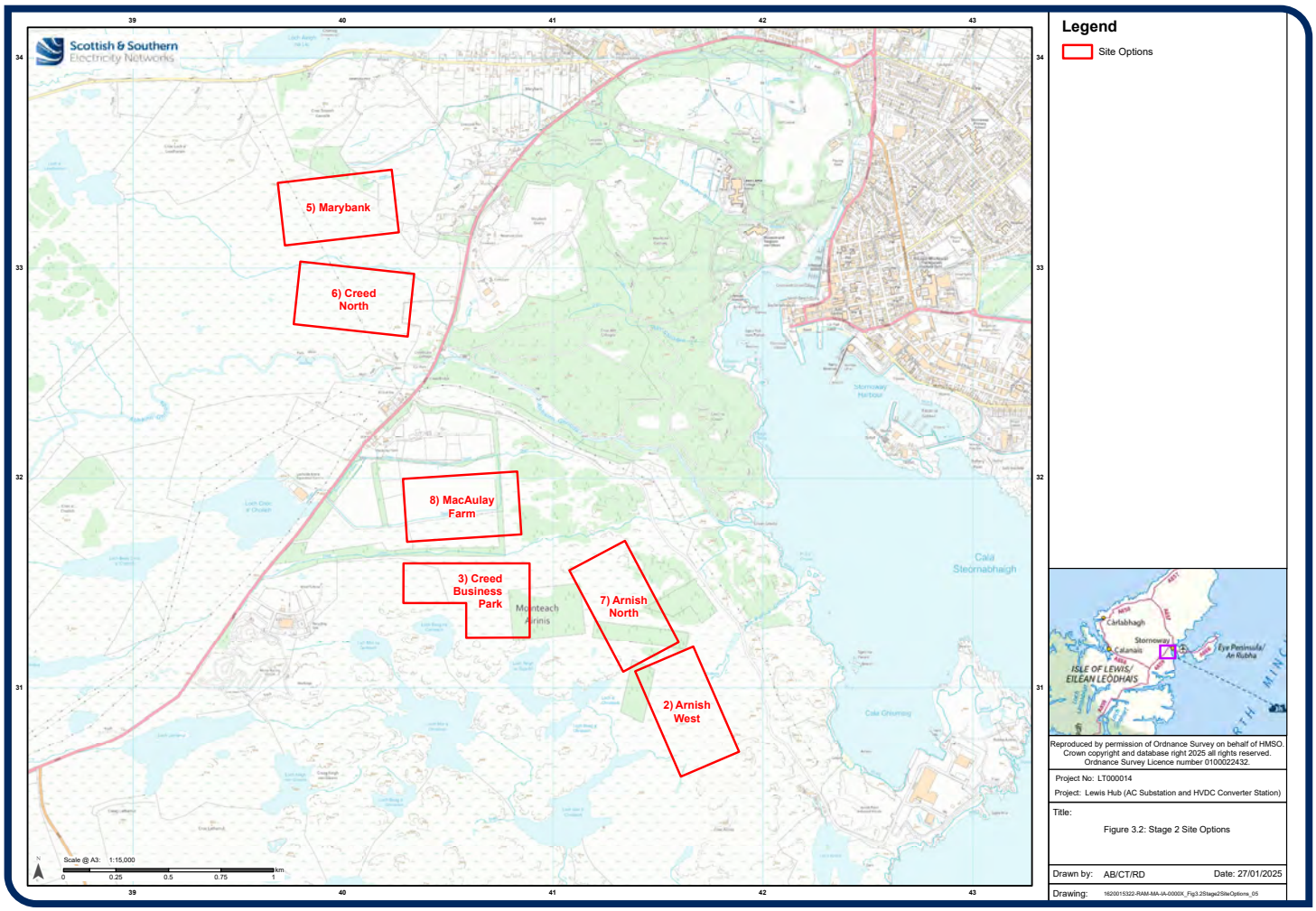
Site Selection and Alternatives

Stage 2: Detailed Site Selection

Following the completion of Stage 1, a shortlist of three site options (Site, 2, Site 3 and Site 5) was taken forward for further assessment at Stage 2.

During November 2023, further public consultation events were held on both the preferred site option (Site 5) and on the preferred route of the underground cable connecting the preferred site with the landfall location at Arnish Point. To address consultation feedback and in conjunction with the Site Selection Guidance, a further three site options were identified for analysis at Stage 2, as follows:

- Site 6: Creed North – this was identified as an option within the initial Site 5 search area, further from the main settlement of Marybank although closer to a number of roadside dwellings.
- Site 7: Arnish North – this option was introduced in response to feedback from the April 2023 public consultation, which indicated a preference for the Arnish area from certain sections of the public, particularly those closest to Site 5. This site option was located between Site 3 - Creed Business Park and Site 2 - Arnish West.
- Site 8: Macaulay Farm – this option was introduced in response to feedback from the November 2023 public consultation.



Stage 2 Site Options

Site Selection and Alternatives

Conclusions from the Stage 2 site selection study are summarised as follows:

- Site Option 8 (in conjunction with Site 5) was identified as having least variation in elevation across the site. This would minimise disturbance to soils although peat volumes would be greater than for other site options.
- Site Option 8 had the third lowest peat volume estimate but contains no blanket bog habitat and therefore was preferred in terms of habitat loss.
- Site 8 had good access opportunities from both the main public road (A859) and Arnish Road
- No utilities have been identified on Site 8 that would require diversion prior to works being undertaken..

Therefore, the preferred site was identified as Site 8: MacAulay Farm.

Preferred Site Refinement

Following further design work and as a result of consultation feedback throughout the pre-application phase of the project, further adjustments to the design have been undertaken. These have included micro-siting, changes to the location of temporary laydowns and infrastructure, and the expansion of the site to include the Creed North area for the purposes of peat relocation and restoration. This refinement of the site has been designed to reduce environmental impacts, enable a safe and technically robust design and deliver the most cost-effective solution

EIA Process and Methodology

EIA is an process that considers how a proposed development is predicted to change existing environmental conditions and what the consequences of those changes will be. It therefore informs both the design and the decision-making processes related to the grant of development consents.

The EIAR has been prepared in accordance with the EIA Regulations and current best practice guidance. It comprises a number of volumes as outlined below:

- Volume 1 – Non-Technical Summary;
- Volume 2 – Main Report;
- Volume 3a – Figures
- Volume 3b - Visualisations; and
- Volume 4 – Technical Appendices.

The EIAR has examined potential effects of the Proposed Development on the following topics:

- Landscape and Visual Impact;
- Cultural Heritage
- Ecology;
- Ornithology;
- Hydrology;
- Geology and Soils;
- Noise and Vibration; and
- Traffic and Transport;

EIA best practice suggests that the significance is assessed in relation to magnitude and sensitivity. The magnitude (scale) of change / effect is identified and compared to the existing baseline conditions. The sensitivity of the receiving environment to change is determined using professional judgement, consideration of existing designations and quantifiable data where possible.

Each change / effect is assessed taking account of the predicted magnitude of change / effect and the sensitivity of the receptor as shown in the Table below to determine an overall significance.

Sensitivity of Receptor / Receiving Environment to Change/Effect	Magnitude of Change/Effect			
	High	**Medium**	**Low**	**Negligible**
High	Major	Major	Moderate	Negligible
Medium	Major	Moderate	Minor	Negligible
Low	Moderate	Minor	Minor	Negligible
Negligible	Negligible	Negligible	Negligible	Negligible

Unless otherwise stated within a technical chapter, major and moderate effects are considered to be significant in the context of the EIA Regulations. Minor and negligible effects are not considered significant.

The characteristics of an effect will vary depending on the duration of the activity causing the effect, the sensitivity of the receptor and the resultant change. It is therefore necessary to assess whether the effect is temporary or permanent; beneficial or adverse; and indirect or direct.

It should be noted that the above table shows the scale that is generally used in EIA to determine overall significance; however, the methodology used by each technical discipline is identified in each of the technical Chapters (5 to 12) of this EIA Report. Specific criteria have been adopted for certain technical assessments in accordance with widely recognised EIA guidelines published by professional bodies. Where applicable, these are provided in the respective technical chapters.

Consultation on the Scope of EIA

Stakeholder Consultation

Best practice in EIA encourages consultation and engagement with stakeholders early in the process, with advice and input from key consultees being sought at the early design stages of a project, to inform decisions about the Proposed Development. The following stakeholder consultation has been undertaken to date:

- A public consultation event to present the short list of Site Options was held in April 2023;
- An additional public consultation event on the Preferred Site Option was held in November 2023;
- A scoping request for the Preferred Alignment was submitted in August 2024; and
- Pre-application consultation events were held in September and in November 2024 to present the Proposed Development and to seek feedback.

EIA Scoping

A request for a Scoping Opinion was made to the Scottish Ministers under Regulation 12 of the EIA Regulations in August 2024. A Scoping Report was submitted to support the request (Technical Appendix 4.1, EIAR Volume 4), which sought input from CnES; and statutory and non-statutory consultees regarding the information to be included within this EIAR. A Scoping Opinion was provided by CnES on 26th November 2024. Pertinent points raised in the Scoping Opinion have been considered and are detailed within the appropriate technical chapters of Volume 2.

Potential Environmental Effects

The following environmental topics have been considered within the EIA:.

- Landscape and Visual Impact;
- Cultural Heritage;
- Ecology;
- Ornithology;
- Hydrology;
- Geology and Soils;
- Noise and Vibration; and
- Traffic and Transport

The conclusions of the EIA are that potential likely significant effects were identified for a number of topics; however, for the majority of these, application of mitigation measures would reduce these effects to a non-significant level. The only exceptions to this is certain effects on Landscape and Visual Amenity receptors, where some significant residual effects would remain. Potential Cumulative effects are summarised later in this report.

Potential Environmental Effects

Landscape and Visual Impact

Desk-based studies and field survey work have been carried out to establish the current landscape and visual baseline context of the Site and to identify key sensitive receptors.

The Landscape and Visual Impact Assessment (LVIA) considered:

- Effects during construction and operation of the Proposed Development on the landscape character of the Site and the surrounding Study Area, views, and visual amenity of the local environment;
- Effects during operation on views across the Study Area towards the Proposed Development, including views from key viewpoint locations agreed through consultation, from settlements, and as part of sequential experiences along routes, including those used by recreational receptors; and
- The implications of landscape and visual effects on the special qualities and integrity of designated landscapes.

Effects on landscape character were considered using Landscape Character Types (LCTs) identified by NatureScot as units of landscape character with consistency of character. Significant effects were identified for one landscape character receptor (Boggy Moorland), that which includes the Site itself. The effects on the LCT would be localised, with significant effects experienced in proximity to the Site.

A Zone of Theoretical Visibility (ZTV) map was used to identify receptors likely to be affected by views of the Proposed Development, including people at local settlements, on roads around the Study Area, and those using local paths.

Field work was undertaken by a Chartered Landscape Architect and Landscape Assistant in December 2022, March and November 2023, and March and September 2024. Baseline Photography was taken between September and November 2024.

Potential Effects

During construction, the LVIA has established that there would be significant adverse effects for people who may be present:

- Within the Boggy Moorland landscape character type;
- Within Lews Castle and Lady Lever Park Garden & Design Landscape;
- At Lower Sandwick and Olivers Brae/Sandwick Cemetery;
- At recreational locations located below Cnoc na Croic, at Marybank picnic benches, at Lewis War Memorial, and at Iolaire Memorial Car Park and at Rhubha Airinis; and
- Travelling on the A859, either north or south-bound

There would be significant adverse effects during operation for people who may be present:

- Within the Boggy Moorland landscape character type;
- Within Lews Castle and Lady Lever Park GDL;
- At either Lower Sandwick orand Olivers Brae/ Sandwick Cemetery;
- At recreational locations located below Cnoc na Croic, at Marybank picnic benches, at Lewis War Memorial, and at Iolaire Memorial Car Park; and
- Travelling on the A859, either north or south-bound.

Potential Environmental Effects

Viewpoint 8: Recreation Receptor Rec 2 Iolaire Memorial Car Park

Cultural Heritage

A desk-based assessment and field survey was undertaken to establish the cultural heritage baseline within the Site boundary (Inner Study Area) and in the wider landscape (Outer Study Area). The assessment has been informed by scoping responses provided by Historic Environment Scotland (HES) and the CnES archaeologist.

A total of 10 non-designated heritage assets have been identified in the Inner Study Area. The majority of these are associated with medieval or later shieling huts. The sheilings all survive as turf mounds or turf footings, with the exception of one that is recorded as the ruined remains of a modern timber shieling. Also related to the agricultural use of the landscape, is an area of possible strip cultivation to the west of the A859, assessed to be of heritage value at the local level and of low sensitivity. The largest heritage asset within the Inner Study Area is the site of the Lewis Chemical Works, covering much of the area west of the A859. This is considered to be of heritage value at a regional level and of medium sensitivity.

Potential Effects

The layout of the Proposed Development has been designed as far as possible to avoid direct effects on the identified heritage assets within the Site. However, during construction potential direct impacts on two heritage assets would occur, namely on a shieling mound and on the remains of the Lewis Chemical Works. These effects would be offset through a programme of mitigation to recover any archaeological information that may be present at the affected locations. Following mitigation, no significant residual effects on the shieling mound and the Lewis Chemical Works are predicted.

The potential for operational effects on the setting of assets within 3 km of the Proposed Development has been considered and no significant residual effects were identified.

Potential Environmental Effects

Drum Duibh Stone Circle

Ecology

The EIA has considered potential impacts and their associated effects on ecological features, such as designated nature conservation sites, sensitive habitats, and protected species Baseline conditions have been collected through desk-based review of existing information, including the locations of statutory and non-statutory designated nature conservation sites, other natural features of potential ecological importance, and protected and/or notable species records. Field surveys were originally conducted between January to August 2023. These surveys included an extended UK Habitat Classification (UKHab) survey and protected species surveys for Otter, Further habitat surveys were undertaken in July 2024 to provide National Vegetation Classification (NVC) coverage of the Site.

Baseline studies identified the dominant habitats within the Site as being blanket bog (most extensive), wet heath, and modified grassland. Coniferous plantation woodland is also present. The Site lies in a zone with high potential for groundwater dependent terrestrial ecosystems (GWDTE), mainly characterized by rush pasture and wet heath. Aquatic surveys of the River Creed, the only significant water channel for fish, identified several salmonid spawning points as well as suitable habitat to support species like Atlantic salmon, sea trout, and potentially European eel and lamprey. No protected species were recorded, though suitable habitats for otters exist. No incidental records of reptiles or amphibians were noted, but they are likely present in open moorland and rough grassland areas.

Embedded mitigation and pre-construction works would enable the protection of protected habitats and species during construction works associated with the Proposed Development. Further mitigation activities would involve habitat reinstatement and restoration, especially for blanket bog habitats

Potential Effects

Following the completion of the Proposed Development, most habitats would be reinstated, which would result in temporary adverse effects for about five to ten years until these habitats re-establish. Permanent habitat loss would occur in peatlands within the footprint of the Proposed Development, but this is considered low impact and not significant. Compensatory habitat management and peat re-use would offset the permanent loss of blanket bog habitat, ensuring no significant residual effects once restoration areas are established. The implementation of the Construction Environmental Management Plan (CEMP) will prevent adverse effects on habitats from pollution events.

Potential Environmental Effects

Blanket Bog

Ornithology

The ornithology assessment considered the ways in which birds could be affected (both directly and/or indirectly) by the construction and operation of the Proposed Development. Ornithological interests include protected sites designated for ornithological species, and bird species and populations in and around the Proposed Development at all times of year.

Baseline conditions to inform the design and assessment of the Proposed Development have been established through desk study, ornithological field surveys undertaken between 2023 and 2025 and consultation with nature conservation bodies and specialist species recording groups.

No statutory designated sites were identified with potential connectivity to the Proposed Development. Black-throated diver, hen harrier, merlin, great skua, red throated diver, white tailed eagle and whooper swan flights were recorded within the survey area. One of the key ornithological constraints identified is the presence of hen harrier territories, with several nest locations identified within disturbance distance from the Site.

Embedded mitigation and pre-construction works would enable the protection of protected habitats and species during construction works associated with the Proposed Development.

Potential Effects

Although a number of qualifying features of the Lewis Peatlands Special Protection Area (SPA) were recorded in the area, no significant effects on the species or the SPA are anticipated. Potential significant effects could include disturbance to vulnerable raptor territories and nesting locations in proximity to the Site. Pre-construction surveys to identify territory locations, and the presence an Ecological Clerk of Works to enforce protection measures during construction are considered sufficient to mitigate the likely disturbance effects on the raptor territories identified. Residual effects on important ornithological features are predicted to be not significant.

Potential Environmental Effects

Hydrology

The hydrology assessment considered the likely significant effects on the water environment, associated with the construction and operation of the Proposed Development. Baseline conditions were established through desk-based review of existing information, in consultation with the Scottish Environment Protection Agency (SEPA), Scottish Water and CnES. A site reconnaissance field survey was carried out in October 2024. The assessment was also informed by the ecological surveying undertaken on the Site in July 2024.

The Site lies within the catchment of the River Creed and there is a surface water land drainage channel feeding into the River Creed, which crosses the Site. A Private Water Supply (PWS) is located approximately 250 m northeast of the Site, serving the Iron Well at Lews Castle. No areas within the Site are at elevated risk of flooding. An area of high potential for Groundwater Dependant Terrestrial Ecosystems (GWDTE) is located in the centre of the Site.

Potential Effects

Based on the design of the Site, the implementation of best practice measures during construction and operational phases of the development and the implementation of mitigation measures, no significant effects to the water environment are anticipated. These measures include the implementation of the CEMP during the construction phase and the management of surface water runoff during operation through the installation of Sustainable Drainage Strategy (SuDS) measures.

River Creed

Potential Environmental Effects

Geology and Soils

This assessment considered the likely effects from the construction and operation of the Proposed Development on geology and soils, particularly impacts on peat and carbon rich soils. Baseline conditions were informed by desk studies, using baseline geological and existing peatland data, and field studies including peat depth surveys and peat core sampling, in line with the SEPA's Peatland Survey Guidance (2017).

The Proposed Development is located on gently undulating lowland peatland. The majority of the Site is underlain by Class 1 peatland soils, which are defined as nationally important carbon-rich soil, deep peat and priority peatland likely to be of high conservation value. The peat depth surveys confirm that the Site is situated on a nationally significant peatland area.

No evidence of peat instability within the Site was noted, though bog bursts have been documented in the surrounding area. Extensive areas of peat cuttings were noted particularly in the northern part of the Site.

Potential Effects

Potential adverse effects on peat and carbon rich soils could occur during the construction phase of the Proposed Development due to:

- Compaction of soils/peat;
- Increased erosion of peat soils through disturbance, either directly or through localised drying caused by infrastructure;
- Potential for peat slide caused by the construction of infrastructure which could affect human and environmental receptors; and
- The loss of peatland habitat and carbon rich soils through excavations.

Mitigation has been embedded into the design of the Proposed Development, in the form of siting of the Proposed Development to avoid the deepest areas of peat, where practicable, and further mitigation would be applied via implementation of the design strategy detailed within the Outline Peat Management Plan. No significant residual effects are predicted.

Noise and Vibration

The assessment considered the potential noise impacts at nearby noise sensitive receptors during the construction and operational phases of the Proposed Development.

Nearby noise sensitive receptors were identified in desk-based studies using address data, detailed maps, and aerial photographs. Baseline noise monitoring was conducted between April and May 2023 at four locations representative of properties close to the Site, to establish the existing noise environment. The high sensitivity receptor locations considered include Creed Lodge, Macaulay Farm, Lochside Arena, recreational paths within Lews Castle, Moor Cottages and Riverside.

Potential Effects

The following potential effects were identified and assessed:

- Effects of construction noise on the surrounding area and on noise sensitive receptors;
- Effects of construction vibration on the surrounding area and on noise sensitive receptors, including traffic (heavy goods vehicles) passing by and vibration due to piling for the foundation works; and
- Operational effects of noise from the Proposed Development on noise sensitive receptors, including noise from cooling equipment and ventilation and transformer noise on noise sensitive receptors.

The implementation of a robust construction noise management plan, prioritising particularly noisy work during daytime hours and ensuring careful consideration of the timing of blasting activities, would ensure that residual effects from construction noise would be minor and not significant at all nearby noise sensitive receptors.

The operational noise assessment predicted that noise levels would be within applicable noise limits and no significant residual effects during operation were predicted.

Potential Environmental Effects

Traffic and Transport

The EIA has considered the potential traffic and transport effects associated with the construction and operation of the Proposed Development on the surrounding public road network and sensitive receptors. The traffic and transport study area was determined by desk-based review of existing information, field survey and consultation with relevant statutory and non-statutory bodies, including Transport Scotland.

The main transport routes which would be impacted by the Proposed Development are the A859 which is a single carriageway that connects Stornoway, in the north-east, to Rodel, in the south, and the Arnish Road which is a a single-track private road approximately 3.4 km in length which runs between the A859 and Arnish Point Industrial Estate. Construction traffic would comprise construction staff in private cars, and HGVs / LGVs carrying construction materials, personnel, and plant equipment.

The peak traffic generating months of the four year construction programme are anticipated to cover a 10 month period from months 13 to 22.

Potential Effects

There are 18 abnormal loads deliveries proposed which would route to Site directly from the new Deep Water Terminal or Arnish Port. This would equate to no more than five trips per month.

It is anticipated that that HGVs will increase by 291% on Arnish Road and 20% on the A859 at the peak point in the construction programme. The large percentage increase in total and HGV traffic on Arnish Road and the A858 is amplified due to very low baseline levels of total and HGV traffic using the road links.

The Applicant would implement a Construction Traffic Management Plan (CTMP) to ensure the impact of the Proposed Development, and of other developments acting cumulatively, on the public road network are minimised as far as practicable. The CTMP would identify the programme of works, the agreed routes to site, details of a Site Liaison Officer who would have responsibilities for managing traffic and transport impacts and effects and would also identify measures to manage / reduce construction staff travel by private car, particularly single occupancy trips, thus reducing the level of impact to be not significant.

A859 road

Cumulative Effects

There are two aspects to Cumulative Effects, defined as follows:

- In-combination effects: the combined effect of the Proposed Development together with other reasonably foreseeable development (both during construction and operation); and
- Effect interactions: the combined or synergistic effects caused by the combination of a number of effects on a particular receptor which may collectively cause a more significant effect than individually. A theoretical example is the culmination of disturbance from dust, noise, vibration, artificial light, human presence and visual intrusion on sensitive fauna (e.g. certain bat species) adjacent to a construction site.

In-Combination Effects

The cumulative assessment considers developments recorded as consented (under construction or not yet constructed), those awaiting planning determination and those deemed reasonably foreseeable. The following cumulative developments were identified and assessed within the individual technical assessments (Chapter 5-12, EIAR Volume 2):

- Stornoway Wind Farm;
- Harris – Stornoway 132 kV OHL Replacement;
- Arnish Road Upgrade;
- Deep Water South Project; and
- Marybank Quarry Extension.

Given the nature of and location of the cumulative schemes, significant in-combination effects would be likely to arise for the following:

- Landscape and visual amenity: there would be potential significant cumulative effects from the addition of the Proposed Development to Stornoway Wind Farm and any of the other developments in isolation or combination, at the receptor locations of Lower Sandwick, Newton Street, below Cnoc na Croic and Marybank picnic benches;
- Ecology: there would be potential significant cumulative effects on blanket bog and heathland habitats from the Proposed Development in combination with Stornoway wind farm, which would reduce to not significant once the peatland restoration areas have established.
- Ornithology: there would be potential for disturbance to hen harrier from the Proposed Development in combination with Stornoway Wind Farm, Creed Quarry Extension and the Arnish Road upgrade.

Effect Interactions

During construction of the Proposed Development, potential effect interactions would be likely for the following receptors / receptor groups:

- Sensitive habitats, including GWDTE and peatland;
- Recreational receptors;
- Residents and settlements; and
- Traffic receptors.

The potential effects interactions have been assessed as being not significant.

During operation of the Proposed Development, no potential effect interactions have been identified.

Summary

As a result of a combination of design-led mitigation and additional construction mitigation measures, the EIA Report concludes that the likely significant effects associated with the Proposed Development, alone and in addition to other cumulative developments, are limited to landscape and visual effects (in localised areas) during construction and operation.

With the implementation of mitigation measures, no significant effects are identified on Cultural Heritage, Ecology, Ornithology, Hydrology, Geology and Soils, Noise and Vibration and Traffic and Transport.

Scottish & Southern Electricity Networks

TRANSMISSION