

TECHNICAL APPENDIX 4.1 EIA SCOPING REPORT



Scottish & Southern
Electricity Networks

TRANSMISSION

Environmental Impact Assessment

Scoping Report

LT14 Lewis Substation and Converter Hub

August 2024



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GLOSSARY AND ABBREVIATIONS

Term	Definition
132 kV	132 kilovolt (132,000 volt) capacity of an electricity power line.
AC	Alternating Current
Air Insulated Switchgear (AIS)	An AIS substation is constructed with switchgear which relies on open air components, which can require large clearance areas for operation and safety, which takes up a larger area of land than Gas Insulated Switchgear (GIS).
Alignment	The centre line of an overhead line route, along with the location of key angle structures.
Amenity	The natural environment, cultural heritage, landscape and visual quality. Also includes the impact of SSEN Transmission's works on communities, such as the effects of noise and disturbance from construction activities.
Ancient Woodland	Ancient Woodland is defined as land that is currently wooded and has been continually wooded, at least since 1750.
AOD	Above Ordnance Datum
Biodiversity Net Gain (BNG)	A way to contribute to the recovery of nature while developing land. It is making sure the habitat for wildlife is in a better state than it was before development.
British Geological Survey (BGS)	The UK's main provider of objective and authoritative scientific data, information and knowledge to help society understand the Earth
CnES	Comhairle nan Eilean Siar – the Local Planning Authority
Consultation	The dynamic process of dialogue between individuals or groups, based on a genuine exchange of views and, normally, with the objective of influencing decisions, policies or programmes of action.
ECU	Energy Consents Unit, the department of the Scottish Government responsible for processing applications for consent under the Electricity Act 1989 on behalf of Scottish Ministers
Environmental Impact Assessment (EIA)	A formal process set down in Town & Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 used to systematically identify, predict and assess the likely significant environmental impacts of a proposed project or development
Gardens and Designed Landscapes (GDLs)	The Inventory of Gardens and Designed Landscapes lists those gardens or designed landscapes which are considered by a panel of experts to be of national importance.
Groundwater Dependent Terrestrial Ecosystem (GWDTE)	Groundwater Dependent Terrestrial Ecosystems (GWDTE) are wetlands which critically depend on groundwater flows or chemistries. They are safeguarded by the Water Framework Directive (WFD) and are sensitive to hydrological and ecological changes caused by developments.
High Voltage Direct Current (HVDC)	A direct current source with a voltage greater than 1000 V.
Historic Environment Scotland (HES)	Organisation responsible for investigating, caring for and promoting Scotland's historic environment.
IBA	Important Bird Areas are designated by Birdlife as places of international significance for the conservation of birds and other biodiversity. They are a non-statutory, international designation.

Term	Definition
Landscape Character Type (LCT)	A landscape type that is characterised by its distinct, recognisable and consistent pattern of elements that makes one landscape different from another.
Mitigation	Term used to indicate avoidance, remediation, or alleviation of adverse impacts.
National Planning Framework 4 (NPF4)	The national spatial strategy for Scotland. It sets out the spatial principles, regional priorities, national developments and national planning policy. It replaces NPF3 and Scottish Planning Policy.
NatureScot (NS)	Formerly known as Scottish Natural Heritage, is the public body responsible for Scotland's natural heritage, especially its natural, genetic and scenic diversity. It advises the Scottish Government and acts as a government agent in the delivery of conservation designations, i.e. national nature reserves, local nature reserves, national parks, Sites of Special Scientific Interest (SSSIs), Special Areas of Conservation, Special Protection Areas and the national scenic areas.
NETS SQSS	National Electricity Transmission System Security and Quality of Supply
Overhead Line (OHL)	An electric line installed above ground, usually supported by lattice steel towers or wooden poles.
Planning application	An application for planning permission under the Town and Country Planning (Scotland) Act 1997, as amended.
Proposed Development	Refers collectively to all elements required to construct and operate the proposed Lewis Hub COnvertor Station and Substation.
Scottish Hydro Electric (SHE) Transmission plc	SHE Transmission plc is the Applicant, who, operating and known as Scottish and Southern Electricity Networks Transmission (SSEN Transmission), owns, operates and develops the high voltage electricity transmission system in the north of Scotland and remote islands
Section 37 (s37) application	An application for development consent under section 37 of the Electricity Act 1989
Scottish Environment Protection Agency (SEPA)	Scotland's principal environmental regulator, protecting and improving Scotland's environment.
Special Area of Conservation (SAC)	An area designated under the EC Habitats Directive to ensure that rare, endangered or vulnerable habitats or species of community interest are either maintained at or restored to a favourable conservation status.
SSEN Transmission	Scottish & Southern Electricity Networks (SSEN) Transmission plc – part of Scottish and Southern Electricity Networks, and the transmission license holder for the transmission of electricity in the north of Scotland
SLVIA	Seascape/landscape and visual assessment
Special Protection Area (SPA)	An area designated under the Wild Birds Directive (Directive 79/409/EEC) to protect important bird habitats. Implemented under the Wildlife and Countryside Act 1981.
Site of Special Scientific Interest (SSSI)	A statutory designation made by NatureScot under the Nature Conservation (Scotland) Act 2004. Areas of land and water that are considered to best represent natural heritage in terms of their flora (i.e. plants), fauna (i.e. animals), and geology (i.e. rocks) and geomorphology (i.e. landform).
Stakeholders	Organisations and individuals who can affect or are affected by SSEN Transmission works.

Term	Definition
Study Area	A defined study area for the consideration of effects (including direct, indirect and cumulative) on each factor defined under Regulation 4(3) of the EIA regulations
Substation	A node on the network to allow safe control of the electricity network. This could include convergence of multiple circuits, transformation of voltage or other functions to maintain and operate the electricity network.
Visual Receptors	Visual receptors are individuals or defined groups of people whose visual amenity or viewing experience may be affected by development.
VP	Vantage Point
Volts	The international unit of electric potential and electromotive force
Water Framework Directive (WFD)	The main aims of the Water Framework Directive (WFD) are to: prevent deterioration and enhance status of aquatic ecosystems, including groundwater, promote sustainable water use, reduce pollution, and contribute to the mitigation of floods and droughts.
Wild Land Areas (WLA)	Those areas comprising the greatest and most extensive areas of wild characteristics within Scotland, as classified by SNH (2014).
ZTV	Zone of Theoretical Visibility - the computer generated theoretical visibility of an object in the landscape

1. INTRODUCTION

1.1 Overview

- 1.1.1 This Scoping Report has been prepared by Ramboll UK Ltd on behalf of Scottish Hydro Electric (SHE) 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. In this Scoping Report, the Applicant and SSEN Transmission are used interchangeably unless the context requires otherwise.
- 1.1.2 This Scoping Report is provided to support a formal request by the Applicant under the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 (‘the EIA Regulations’) for a Scoping Opinion to determine the information to be provided within the EIA Report.
- 1.1.3 The Applicant is proposing to submit an application for Planning Permission in Principle to Comhairle nan Eilean Siar (CnES) under the Town and Country Planning (Scotland) Act 1997 (as amended) for permission to construct and operate a High Voltage Direct Current (HVDC) Converter station and associated 132 kV and 400 kV AC substation works (the ‘Proposed Development’) on land located approximately 2 km southwest of Stornoway on the Isle of Lewis (the ‘Site’). The location of the Site is shown in **Figure 1.1: Site Location, Appendix A**.
- 1.1.4 The Proposed Development is part of SSEN Transmission’s Pathway to 2030 projects. These projects are part of a proposed major upgrade of the electricity transmission network across Great Britain to help deliver United Kingdom (UK) and Scottish Government climate change and energy security targets. They would connect UK based low carbon renewable electricity generation to areas of demand across the country, with the aim of building a cleaner, more secure and affordable energy system for homes and businesses across Great Britain. Further details on the Pathway to 2030 projects is provided at <https://www.nationalgrideso.com/future-energy/pathway-2030-holistic-network-design>.
- 1.1.5 The Proposed Development is key to supporting the Western Isles Connection. The Western Isles Connection will provide a connection from the Western Isles to the mainland of Scotland, allowing renewable energy generation to connect to the existing transmission network on the mainland.
- 1.1.6 The scope of this application is limited to construction and operation of the Proposed Development. The Proposed Development would not have a fixed operational life. It is assumed that the Proposed Development will be operational for 40 years or more. The effects associated with the construction phase can be considered to be representative of worst case decommissioning effects, and therefore no separate decommissioning assessment is proposed as part of the Environmental Impact Assessment Report (EIA Report).

1.2 Site Selection

- 1.2.1 Initial consultation on potential site options was undertaken during March 2023 at Stage 1 (Initial Site Screening). Feedback was gathered on 5 potential site options from a variety of stakeholders including the public and statutory stakeholders. The feedback received was considered as part of the site selection process and where appropriate will be carried through to consideration in the EIA.
- 1.2.2 Following the completion of Stage 1 a short list of three site options was taken forward to Stage 2 (Detailed Site Selection) where they were assessed to identify the most technically feasible, economically viable and environmentally acceptable option within the defined area. During November and December 2023, consultation was undertaken to seek comments from stakeholders and members of the public on the site option studies undertaken, and the rationale for, and approach to, the selection of the preferred site.
- 1.2.3 To address consultation feedback and in conjunction with the Site Selection Guidance, particularly that relating to earthworks and potential peat disturbance, a further three site options were identified for analysis at Stage 2.
- 1.2.4 The consultation process and feedback received has been documented in a Report on Consultation and a consultation register remains a live document and will be updated on receipt of any further consultation comments.

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

1.3 The Regulations

1.3.1 The EIA Regulations contain two schedules: Schedule 1 lists projects where EIA is mandatory, while Schedule 2 lists projects where EIA may be required 'where proposed development is considered likely to give rise to significant effects on the environment by virtue of factors such as its nature, size or location'.

1.3.2 The Proposed Development is not of a type listed within Schedule 1 of the EIA Regulations. The Proposed Development is also not directly identified within Schedule 2 of the EIA Regulations; however the Applicant has decided to undertake an EIA for the Proposed Development given its size and nature and its close association with other SSEN Transmission 400kV network projects.

1.3.3 The Proposed Development would be a National Development under the Town and Country Planning (Hierarchy of Developments) Regulations 2009 (as amended) as the Site is greater than 2 ha and the development is of a type that would fall within National Development 3 – Strategic Renewable Energy Generation and Transmission Infrastructure, in National Planning Framework 4 (NPF4¹).

1.4 Purpose of the Scoping Report

1.4.1 The purpose of this EIA Scoping Report is to ensure that the subsequent EIA is focused on the impacts likely to give rise to significant environmental effects. As well as identifying aspects to be considered in the EIA, this document also identifies those aspects that are not considered necessary to assess further.

1.4.2 In accordance with the EIA Regulations, this EIA Scoping Report contains:

- a plan sufficient to identify the location of the Proposed Development;
- a brief description of the nature and purpose of the Proposed Development and its possible effects on the environment; and
- information and representations from the Applicant on the aspects of the Proposed Development or environment including those that are not considered necessary to assess further in the EIA Report.

1.4.3 The Applicant invites consultees to comment on the following:

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

1.4.4 This report is structured to provide information on the individual factors which require consideration under Regulation 4(3) the EIA regulations. The Scoping Report presents the findings of an initial appraisal of the likely significant environmental effects of the Proposed Development on the receiving environment. It provides an overview of the baseline conditions, as understood at the time of writing and the likely potential effects as a result of the Proposed Development. Where site survey and further assessment are deemed necessary, the

¹ [https://www.gov.scot/publications/national-planning-framework-](https://www.gov.scot/publications/national-planning-framework-4/#:-:text=National%20Planning%20Framework%204%20%28NPF4%29%20is%20our%20national,regional%20priorities%2C%20national%20developments%20and%20national%20planning%20policy.)

[4/#:-:text=National%20Planning%20Framework%204%20%28NPF4%29%20is%20our%20national,regional%20priorities%2C%20national%20developments%20and%20national%20planning%20policy.](https://www.gov.scot/publications/national-planning-framework-4/#:-:text=National%20Planning%20Framework%204%20%28NPF4%29%20is%20our%20national,regional%20priorities%2C%20national%20developments%20and%20national%20planning%20policy.)

approach and methodologies are outlined. Environmental topics considered with an initial assessment in this EIA Scoping Report are:

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

1.4.5 The Applicant invites consultees to comment on the following:

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

2. DESCRIPTION OF THE PROPOSED DEVELOPMENT

2.1 Introduction

2.1.1 This chapter describes provides a description of the main elements of that constitute the Proposed Development. The detailed design of the Proposed Development is currently in progress and, for the purposes of EIA scoping, the preliminary layout has been assumed as per Figure 1.1 (See Appendix A). It provides a description of the key components and information regarding the construction, operation, and maintenance of the Proposed Development.

2.2 Proposed Development Components

2.2.1 The Proposed Development would be located on land approximately 2 km southwest of Stornoway on the Isle of Lewis (the 'Site'). The Site covers an area of approximately 60 hectares (ha). The Proposed Development would comprise a new High Voltage Direct Current (HVDC) Converter station and associated 132 kV and 400 kV AC substation and would consist of the following.

The High Voltage Direct Current (HVDC) Converter Station

2.2.2 A HVDC converter station is required to enable a proposed 2 GW HVDC link from Arnish Point, Isle of Lewis to Loch Broom on the Scottish mainland. This would enable the efficient high volume power transmission from generators on and around Lewis to the mainland transmission network. The HVDC converter station is composed of a series of buildings enclosing all apparatus and providing office, welfare and spare storage (see conceptual design shown on Plate 2-1).

2.2.3 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 the following:

- the two main converter buildings housing transformers, converters, dynamic brake system and DC hall;
- service and control building between the converter buildings;
- two AC Hall and Filter Equipment buildings; and
- a number of smaller auxiliary buildings (diesel generator, spares building, etc).

132 kV and 400 kV Substation

2.2.4 The 132/400 kV substation will have an overall platform footprint of around 260 m by 250 m and comprise three 132/400 kV Super Grid Transformer (SGTs), indoor gas-insulated high-voltage switchgear (GIS) and associated air insulated isolators/earth switches. The SGTs will each have an overall footprint of around 45 m by 78 m and a maximum height of 27.5 m. They will be enclosed to protect from the weather and reduce the noise impact and will consist of:

- 400 kV GIS substation building and associated control building;
- 132 kV GIS substation building and associated control building; and
- Three transformer buildings.

Ancillary Works

2.2.5 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;
- the diversion and/or culverting of an unnamed watercourse (a tributary of the River Creed);
- extraction of rock from borrow pits or quarries;
- establishment of temporary and permanent access for the construction and maintenance of the Proposed Development; and

- establishment and reinstatement of temporary site compounds.

2.2.6 The Proposed Development, as illustrated in Figure 2.1, Appendix A, has been determined based on the environmental assessments, engineering and cost analysis and stakeholder consultation undertaken to date.

2.3 Transmission / Distribution Line Connections

2.3.1 Connections will be required from the Proposed Development to the existing electricity transmission network on Lewis, as well as to the consented landfall point at Arnish. The connections to the existing network would comprise a number of overhead wood pole lines carrying voltages of up to 132 kV, as well as connections of lower voltages (33 kV, probably placed underground). The HVDC cable connection to the consented landfall point would also be placed underground; underground cables would comprise Permitted Development in accordance with Class 40 of the Town and Country Planning (General Permitted Development) (Scotland) Order 1992 (as amended), while overhead lines would be the subject of separate consent application to Scottish Ministers, under the Electricity Act 1989.

Road Improvements and Access during Construction

2.3.2 To construct the Proposed Development, existing tracks would be used where possible. However, some road improvements will also be required for the construction of the Proposed Development and some utility diversions may also be required. This would be determined as the project develops in more detail.

2.3.3 Full details of construction traffic and related analysis of transportation routes will be provided in a Construction Traffic Management Plan. Any temporary tracks would be restored as closely as possible to their pre-existing condition using natural regeneration techniques on completion of the works.

Construction Compounds

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

Landscape Proposals

2.3.5 The Applicant would consider landscape mitigation measures in order to provide partial visual screening and help assimilate the Proposed Development into the surrounding landscape. Such measures would also seek to provide habitat biodiversity and opportunities for enhancement.

2.3.6 Further details on landscape mitigation measures would be provided in the EIA Report.

Peat Reuse Proposals

2.3.7 Some of the excavated peat on-site would be re-used within the Site boundary for examples to dress verges and reinstate areas of degraded peat within the Site boundary, while the remainder would be transported off-site. A separate planning application for reuse of peat from the Site in a different part of the Isle of Lewis will be made, during the detailed design stage once peat volumes are confirmed.

2.4 Construction Programme and Hours of Working

2.4.1 It is anticipated that construction would commence in 2026 (subject to consents and approvals being granted), and completed in August 2030, with full energisation of the project scheduled for late 2030.

2.4.2 The detailed construction phasing and programme could be subject to change as the design progresses. Further information will be provided in the EIA Report on the indicative construction programme.

2.4.3 Construction working is likely to be during daytime periods only. Working hours are currently anticipated between approximately 07.00 to 19.00 Monday to Friday and 07.00 to 17.00 on Saturdays. Working hour assumptions would be set out within the EIA Report and agreed with CnES.

2.5 Construction Practices and Phasing

Construction Environmental Management Plan

2.5.1 A Construction Environmental Management Plan (CEMP) will be prepared by the Contractor to ensure that all construction activities are undertaken as per the Applicant's standard practices. It will include reference to and adhere to applicable General Environmental Management Plans (GEMPs) and Species Protection Plans (SPPs), as appropriate.

Stage 1 – Enabling Works and Civils Construction

2.5.2 This stage is anticipated to take approximately 12 months, and is expected to comprise the following:

- Enabling Works
 - road upgrade (should it be required) and Site access;
 - construction of site compounds;
 - installation of services (telecoms, water & drainage, and low voltage electrical supply);
 - installation of temporary drainage for construction;
- Civils Construction;
 - Site setup including installation of temporary offices, and welfare facilities;
 - undertake cut and fill to create the construction platforms;
 - installation of permanent site drainage; and
 - installation of access within the Site,

Stage 2 – Construction of Converter Station and Substation

2.5.3 The construction of the converter station and substation would follow a similar pattern to any building works:

- Creation of a level platform;
- Installation of security fencing;
- Laying of foundations, including construction of site drainage;
- Erection of control buildings;
- Installation of electrical plant; and
- Construction of SuDS and plantation of screening/ BNG vegetation.

Stage 3 – Commissioning

2.5.4 The Proposed Development would be subject to an inspection and snagging process. This allows the Principal Contractor and the Applicant to check that the works have been built to specification and are fit to energise. The Proposed Development would also go through a commissioning procedure for the switchgear, communications, and protection controls through the substation. The circuits would then be energised from the Proposed Development.

Stage 4 – Reinstatement

2.5.5 Following commissioning of the Proposed Development, the construction site will be reinstated. Reinstatement will form part of the contract obligations for the Principal Contractor and will include all temporary works, such as access tracks, temporary compounds and laydown areas.

2.5.6 Following removal of the temporary works, best practise techniques will be used to ensure soils are replaced in the order they were removed with any turves replaced on top. Where required, reseedling of these areas will also be undertaken with an appropriate seed mix. Peat will be reused at suitable locations both on and off-site, with any off-site locations to be agreed as part a separate planning application.

2.6 Operation and Management of the Proposed Development

Lifetime of the Proposed Development

- 2.6.1 It is anticipated that the Proposed Development will be operational for 40 years or more. At the end of this period, the Proposed Development could potentially be decommissioned, or the infrastructure upgraded to continue operation..

Maintenance Programme

- 2.6.2 Once operational, it is likely that monthly site visits would be made to the Proposed Development by maintenance personnel to undertake routine checks and operational switching. More specialist works, such as maintenance repairs or environmental management, will be required sporadically.

2.7 Residues and Emissions

- 2.7.1 The EIA Regulations require that the EIA Report provides an estimate, by type and quantity, of expected residues and emissions (such as water, air and soil and subsoil pollution, noise, vibration, light, heat, radiation and quantities and types of waste produced) resulting from the construction and operation of the Proposed Development.
- 2.7.2 Table 2.1 provides a summary of the anticipated residues and emissions for the purpose of informing the scope of the EIA.

Topic	Potential residue/emission
Water	<p>Construction:</p> <p>Surface water runoff and discharge is likely during construction. In addition, occasional discharges may arise from pumping, or over-pumping in order to dewater foundation excavations. Pollution sources may arise as a result of soil erosion or from oil/ fuel or chemical storage and use.</p> <p>Operation:</p> <p>No water emissions or pollution sources have been identified for the operational phase.</p>
Air	<p>Construction:</p> <p>The construction phase would require the transport of people and materials by road and ferry, with associated emissions to the atmosphere. There are no air quality management areas within the vicinity of the Proposed Development. No significant air emissions are anticipated.</p> <p>Operation:</p> <p>Due to the nature of the Proposed Development no significant point source or diffuse air emissions would be produced during its operation.</p>
Soil and subsoil	<p>Construction:</p> <p>Soil and subsoil excavation, handling and storage would be required during construction. All soil and subsoil would be stored temporarily for use in reinstatement. An outline Peat Management Plan will be included as an appendix to the EIAR, which will detail the proposed management techniques for handling, storing and depositing peat for reinstatement.</p> <p>Operation:</p> <p>No requirement for soil or subsoil excavation or handling during the operation phase has been identified. No pollution sources have been identified for the operational phase.</p>
Noise and Vibration	<p>Construction:</p> <p>Increased traffic flows and noise from construction activities. Liaison with landowners and local residents will be carried out to ensure minimal disturbance. Appropriate working hours will also be agreed with the local planning authority.</p> <p>Operation:</p> <p>The substation would generate noise during operation. The location of residential receptors in relation to the proposed development was a consideration in the design development process</p>

Table 2.1: Residues and Emissions

	<p>and the predicted noise levels are within acceptable limits without the requirement for mitigation.</p> <p>No significant sources of vibration have been identified for the operation of the Proposed Development.</p>
Light	<p>Construction:</p> <p>The temporary construction compounds are likely to be equipped with lighting installations for use during low light conditions and security lighting. All temporary lighting installations would be downward facing and all lights would be switched off during daylight hours and out with working hours. Any effect would be temporary and not expected to be significant.</p> <p>Operation:</p> <p>Substations are not generally illuminated during operation. Floodlights would be installed at the Proposed Substation but would only be used in the event of a fault or when essential maintenance needs to be carried out during the hours of darkness.</p>
Heat and radiation	<p>Construction:</p> <p>No heat or radiation sources have been identified during the construction phase.</p> <p>Operation:</p> <p>No significant heat or radiation sources have been identified during the operational phase.</p>
Waste	<p>Construction:</p> <p>Construction will generate general waste in the form of domestic wastes and other materials, for example, wood, metals, plastics and stone.</p> <p>The Outline CEMP, to be included in the EIAR, will provide details on pollution prevention control and site waste management that would be implemented during construction.</p> <p>Operation:</p> <p>The general maintenance of the proposed development has the potential to produce a small amount of waste. This is likely to be restricted to waste associated with employees and visiting contractors. All waste arising on site would be managed in accordance with the appropriate waste regulations.</p>
Electric and Magnetic Fields (EMFs)	<p>Construction:</p> <p>There is no potential for public or occupational exposure EMFs above appropriate thresholds as a result of the construction of the Proposed Development. Further detail is provided in Table 11.1.</p> <p>Operation:</p> <p>There is no potential for public or occupational exposure EMFs above appropriate thresholds as a result of the Operation of the Proposed Development. Further detail is provided in Table 11.1.</p>

3. EIA METHODOLOGY

3.1 Introduction

- 3.1.1 This Chapter sets out the approach that will be taken to complete the EIA of the Proposed Development, including reference to legal requirements, best practice and the assessment of parameters.
- 3.1.2 The EIA Report would be prepared to meet the requirements of Schedule 4 of the EIA regulations and the Institute of Environmental Management and Assessment (IEMA) Quality Mark criteria.
- 3.1.3 A detailed overview of the guidance and methodology adopted for each technical study is provided within the respective technical chapters of this Scoping Report (Chapters 4-14). All figures are located in Appendix A.

3.2 Structure of EIA Report

- 3.2.1 It is proposed to structure the EIA Report as follows:
- Volume 1 – Non-Technical Summary (NTS). Summarising the project and its likely significant effects.
 - Volume 2 - Main Report. Describing the project, the alternatives considered, and including an assessment undertaken for each of the environmental topics scoped into the EIA which will identify the likely significant effects from the development and recommend suitable mitigation measures to reduce such effects;
 - Volume 3a – Figures. This volume would provide supporting figures to the assessments carried out as part of Volume 2.
 - Volume 3b – Visualisations. This would include visualisations of the Proposed Development undertaken from agreed viewpoint locations; and
 - Volume 4 – Technical Appendices. This volume would provide supporting technical appendices to the assessments carried out as part of Volume 2.
- 3.2.2 The description of the likely significant effects will cover direct effects and indirect (including secondary) effects. The description of effects will identify the effect duration (short-term, medium-term and long-term), whether effects are permanent or temporary, and if effects can be categorised as adverse or beneficial.

Cumulative Developments

- 3.2.3 The EIA Regulations require that, in assessing the effects of a particular development proposal, consideration is also given to the cumulative effects which might arise from the proposal in conjunction with other reasonably foreseeable projects of a similar type (defined as those which are the subject of a valid consent or application for consent). The basis for this is that only these developments have the potential to result in significant cumulative effects in combination with those arising from the Proposed Development.
- 3.2.4 The report will also consider the potential for intra-project effects of combined synergistic effects² on a particular receptor.
- 3.2.5 It is currently anticipated that the following projects will be included in the cumulative assessment:
- Stornoway Wind Farm;
 - Harris – Stornoway 132 kV OHL Replacement;
 - The proposed upgrade to the minor Arnish Road;
 - Stornoway Wind Farm Grid Connection; and
 - Creed Quarry Extension.
- 3.2.6 As the cumulative baseline is constantly evolving, the schedule of cumulative schemes to be included in the assessment will be finalised following consultation with the relevant consultees and at the point that a finalised design is reached (approximately four months prior to submission).

² A synergistic effect is the result of two or more processes interacting together to produce an effect that is greater than the cumulative effect that those processes produce when used individually.

3.2.7 There are no likely significant transboundary effects anticipated as the Proposed Development is greater than 200 km from the nearest boundary.

3.3 Scoping Methodology

3.3.1 The following chapters of this Scoping Report aim to provide sufficient detail to characterise the potential interactions between the Proposed Development and the environmental receptors identified. In presenting a rationale for the proposed scope of environmental assessment, this report has taken the sensitivity of the current state of the environment into account, based on an understanding of the baseline conditions. The Scoping Report considers the typical construction and operational activities, physical characteristics and potential emissions/residues associated with the Proposed Development.

3.3.2 Where there is sufficient evidence to support scoping a topic out of the EIA process, this is presented. Otherwise, where it is considered that there is the potential for likely significant effects, the EIA Scoping Report provides details of the proposed scope or detailed impact assessment, including the approach to further baseline data collection and brief details of the proposed methodology for impact assessment that would be employed for each topic.

3.4 Identification of Baseline

3.4.1 To identify the scale of likely significant effects as a result of the Proposed Development, it is necessary to establish the existing baseline environmental conditions.

3.4.2 The baseline scenario will be established through the following methods, where relevant:

- Desk-based studies, including review of existing information;
- Site visits and surveys;
- Modelling;
- Review of relevant national and local planning policies;
- Consultation with the relevant statutory consultees;
- Identification of Sensitive Receptors; and
- Protected species and habitat surveys.

3.4.3 Consistent with Part 1 of Schedule 4 to the EIA Regulations, an identification of the aspects of the environment likely to be significantly affected by the Proposed Development has been undertaken to inform this Scoping Report. In particular; this has focused on potential impacts upon population, fauna, flora, soil, material assets including the architectural and archaeological heritage, landscape and inter-relationship between those factors.

3.5 Assessment of Likely Significant Effects

3.5.1 For the purposes of this EIA Scoping Report the terms used in the assessment of effects are generally defined as follows:

- 'Impact' is specific and defined as the action being taken, for example, cutting down trees.
- 'Effect' is defined as the change resulting from that action.

3.5.2 Where a more appropriate effect, duration, scale or definition of the above terms is applicable to a technical discipline this will clearly be outlined within the technical chapters.

3.5.3 When identifying likely significant effects, all types of effect, such as beneficial and adverse, will be included. As stated in Institute of Environmental Management and Assessment (IEMA) 'Guidelines for Landscape and Visual Impact Assessment 3 (GLVIA3)', 'identifying significant effects stresses the need for an approach that is in proportion to the scale of the project that is being assessed and the nature of its likely effects. Judgement needs to be exercised at all stages in terms of the scale of the investigation that is appropriate and proportional.'

3.5.4 The result of the assessment is the determination of whether the likely effect of the Proposed Development on the receptor in the study area would be significant or not significant, and adverse or beneficial.

3.5.5 Several criteria will be used to determine whether the likely environmental effects of the Proposed Development will be deemed 'significant'. The effects will be assessed quantitatively where possible. Generally, the significance of effects will be assessed using one of more of the following criteria:

- International, national and local standards;
- Sensitivity of receiving environment;
- Extent and magnitude of the effect; and
- Reversibility and duration of the effect.

3.5.6 Where no published standards exist, the assessments presented in the technical chapters will describe the professional judgements (assumptions and value systems) that underpin the attribution of significance. For certain technical topics, such as ecology, widely recognised published significance criteria and associated terminology will be applied and these are presented in the technical chapters and associated appendices where relevant.

3.5.7 The assessment of significance will consider the magnitude of change (from the baseline conditions), the sensitivity of the affected environment/receptors and (in terms of determining residual effects) the extent to which mitigation and enhancement will reduce or reverse adverse effects. In general, effects of major or moderate significance are considered significant in terms of the EIA Regulations, while effects of minor or negligible significance are considered not significant.

3.6 Assumptions and Limitations

3.6.1 The key assumptions and limitations applied to the preparation of this EIA Scoping Report are set out below. Assumptions and limitations specific to certain topics are identified in the appropriate technical chapter.

- Baseline conditions have been established from a variety of sources, including historical data but, due to the dynamic nature of certain aspects of the environment, conditions would change during the construction and operation of the Proposed Development;
- Information received by third parties is complete and up to date; and
- The design, construction and completed stages of the Proposed Development will satisfy minimum environmental standards, consistent with contemporary legislation, practice and knowledge.

4. LANDSCAPE AND VISUAL AMENITY

4.1 Introduction

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

4.2 Baseline Conditions

4.2.1 The following section sets out the baseline conditions for the area potentially affected by the Proposed Development, briefly describing the landscape and landscape-related designations, the landscape character, and key visual receptors present.

Study Area

4.2.2 The EIA Report will identify likely significant effects on landscape and visual receptors within a core study area of 10 km radius from the edge of the Operational Footprint Area. A wider, 25 km study area has been identified in order to cover the following designations:

- South Lewis, Harris and North Uist National Scenic Area (NSA)
- Wild Land Area 30 Harris – Uig Hills (WLA 30); and
- Wild Land Area 31 Eishken (WLA 31).

4.2.3 The receptors set out in the remainder of this section are considered to be sensitive to the Proposed Development and will be taken forward for assessment in the EIAR.

Desk Study

Landscape Character

4.2.4 There are six Landscape Character Types (LCTs) within the core study area, the locations of which are shown on Figure 4.1. The EIA Report will detail the key characteristics of these LCTs, where required, to support an assessment of likely significant effects.

4.2.5 By far the most widespread of these is the Boggy Moorland LCT which occupies approximately 52.74% of the land-based part of the core study area. There are two incidences of this LCT; one occupying the central, northern and western parts of the study area; and one small area on Eye Peninsula near Knock.

4.2.6 There are four incidences of the Gently Sloping Crofting LCT lying to the north and east of Stornoway and covering approximately 8.18% of the land-based part of the core study area.

4.2.7 There are two incidences of the Rocky Moorland LCT, occupying approximately 8.01% of the land-based part of the core study area, which lie to the south and southwest of the Site.

4.2.8 Three incidences of the Linear Crofting LCT occupy approximately 1.53% of the land-based part of the core study area and these lie to the south and southwest of the Site.

4.2.9 There are also three incidences of both the Cnoc and Lochan LCT and four instances of the Dispersed Crofting LCTs which lie to the south of the Site and occupy approximately 2.84% and 0.80% of the land-based part of the core study area respectively.

Landscape Designations and Wild Land Areas

4.2.10 There is only one Landscape Designation within the core 10 km study area – The Lews Castle and Lady Lever Park Garden and Designed Landscape (GDL) which is shown on Figure 4.2. It is a prime example of a mid-late 19th century ornamental and estate landscape, rare on Lewis, laid out with coastal and riverside carriage drives and walks. The designed landscape comprises a series of distinctive wooded parklands contrasting dramatically with the prevailing openness of the island landscape. The GDL has an outstanding level of interest as a work of art and in terms of historical, horticultural, architectural and scenic interests and a high level of

interest in terms of archaeology and nature conservation. The citation notes that '*Lews Castle is situated on the north- west side of Stornoway Harbour overlooking the town. It commands panoramic views and is prominent on the sea approach to Lewis. The Castle is situated mid-way on the east-facing, heavily wooded hillside and dominates views from Stornoway. Views from Lews Castle and Lady Lever Park overlook Stornoway, the inner harbour and town. Extensive views are obtained from the summit of Cnoc Croich across to Lews Castle, the island's hinterland and Glumlaig Harbour.*'

- 4.2.11 The South Lewis, Harris and North Uist NSA and WLA 30 Harris and Uig Hills and WLA31 Eishken all lie partially within the wider 25 km study area as shown on Figure 4.3. There is no theoretical visibility from the small part of the NSA which is within 25 km; therefore, no further assessment of potential impacts from the Proposed Development on the NSA will be provided in the EIA Report.
- 4.2.12 WLA30 has theoretical visibility from very small, fragmented areas of high ground at more than 8 km distance (at Stèiseal and Cnoc Mòr Shòbhail) and from areas of high ground between approximately 18 – 22 km distance (at Ròineabhal, Heastabhal, Slèteachal Mhòr and Beinna' Charnain). The theoretical visibility extends to 0.60% of the area of WLA within the study areas and 0.16% of the total area of the WLA, and no significant effects are anticipated; therefore, no further assessment of potential impacts on this receptor will be provided in the EIA Report.
- 4.2.13 WLA33 has theoretical visibility from areas of high ground on its northern edge (at Sidhean an Airgid, Guainemol, Cadha Cleit, Mòr-Mhonadh, Beinn na h_Uamha, and areas of north facing slopes and summits south of Loch Sealg. Theoretical visibility is from 21.70% of the area of WLA within the study areas and a total of 6.39% of the total area of WLA at distances in excess of 21 km and no significant effects are anticipated; therefore, no further assessment of potential impacts on this receptor will be provided in the EIA Report.

Visual Amenity

- 4.2.14 The visual amenity of the study area relates to the landscape resource characteristics, that being those elements and characteristics of the landscape resource which comprise the view.
- 4.2.15 A Zone of Theoretical Visibility map ('ZTV') was generated for the Proposed Development to assist in the identification of visual receptors. The extends to a 10 km radius from the site boundary and ZTV takes no account of the screening effects of buildings or vegetation and a combination of desk study and site visits were undertaken to verify the selection of viewpoints for the visual assessment.

Settlements

- 4.2.16 Stornoway is the main centre of population in the core study area with settlement at Maryhill and Marybank to the immediate west, Newmarket to the north and Sandwick to the east. There are further areas of settlement to the north and east at Tunga, Plasterfiled, Sandwick, Mealabost and An Cnoc and to the south at Lurbost and Rainis.

Transportation Routes

- 4.2.17 There are four A class roads and two B class roads within the core study area. However, only users of the following road would experience views of the Proposed Development:
- A859 from Stornoway heading southwest towards Lacasaigh;
- 4.2.18 In addition, views of the Proposed Development would be experienced by users of the Stornoway – Ullapool Ferry as it enters the southeast section of the core study area on the approach to the ferry terminal.

Recreational Routes and Summits

- 4.2.19 The Hebridean Way (Cycle Route) follows the line of the A858 from A859 heading north west towards Gearraidh na h-Aibhne and the Hebridean Way (Walking Route) bisects the core Study Area from the southwest to the north east, passing to the north of the Site. There are also a number of Core Paths within the grounds of Lews Castle.
- 4.2.20 There are no notable hill summits within the core Study Area.

Cultural Locations

4.2.21 Cultural Locations within the core Study Area include the War Memorial at Cnoc nan Uan, the Iolaire Memorial at Rubha Thuilm, the Bonnie Prince Charlie Monument at Arnish and Lews Castle Grounds.

Proposed LVIA Viewpoints

4.2.22 Examination of a preliminary Zone of Theoretical Visibility Map (ZTV) identified candidate viewpoints as described in Table 4.1. The locations of these are shown on Figure 4. 4.,

Viewpoint Number and Name	Approximate grid co-ordinate	Direction to Proposed Development	Approximate Distance from Proposed Development	Visual Receptors at Viewpoint	Landscape Receptors at Viewpoint
1 Residential Area at Marybank	NB 40411, 33980	Southwest	0.7km	Residents, walkers	Gently Sloping Crofting LCT
2 Lewis War Memorial	NB 41734, 34357	Southwest	1.7km	Visitors	Gently Sloping Crofting LCT
3 Residential Area at Plasterfield	NB 44189, 32995	West	3.6km	Residents	Gently Sloping Crofting LCT
4 Iolaire Memorial	NB 44468 30543	Northwest	4.5km	Visitors	Gently Sloping Crofting LCT
5 Rhubha Airnish	NB 4320130834	NorthWest	3.3km	Visitors	Rocky Moorland LCT
6 A859 at the Arena	NB 39933, 31936	North	0.5km	Road users, recreation users	Boggy Moorland LCT
7 A859 South of Creed Bridge	NB 40127, 32186	West	0.3km	Road users	Boggy Moorland LCT
8 Cnoc na Croic	NB 41672, 32342	West	1.3km	Visitors, walkers	Boggy Moorland LCT

**Viewpoint coordinates are approximate only. Field work will determine the exact location of the proposed viewpoints to ensure that the view is as clear and as unobstructed as possible.*

4.3 Sensitive Receptors

4.3.1 The receptors set out in Section 4.2 above are considered to be sensitive to the Proposed Development where there would be potential for visibility or for direct physical impact on the landscape and will be taken forward for assessment in the LVIA. The following section describes the receptors that are scoped out of further assessment on this basis.

4.4 Potentially Significant Effects

4.4.1 Potentially significant landscape effects include the following:

- Direct effects and indirect effects on the Boggy Moorland LCT as a result of physical changes to topography and landcover and changes to views;
- Indirect effects on Cnoc and Lochan LCT, Gently Sloping Crofting LCT and Rocky Moorland LCT as a result of changes to views; and
- Indirect effects on the Lews Castle and Lady Lever Park GD as a result of changes to views.

4.4.2 Potentially significant visual effects as a result of changes to the existing visual amenity include those on:

- People at the eight candidate viewpoints listed in Table 4.1;
- Vehicle travellers heading south on the A857;
- People traveling in both directions on the A859;
- Road users heading west on the A866;
- Vehicle travellers heading south on the B895;
- Road users travelling north on the B897;
- Crew and passengers on the Stornoway – Ullapool Ferry in both directions;
- Walkers on the Hebridean Way (both directions); and
- People using core paths within the grounds of Lewis Castle.

4.4.3 Direct, indirect and cumulative effects of the Proposed Development will be assessed and, where appropriate and feasible, mitigation measures may be proposed to reduce any significant adverse effects. The assessment of cumulative effects would consider other developments within the study area, as listed in section 3.2 above, and would be completed in line with the approach described at section 3.2.

4.4.4 Note that residential visual amenity effects on private views from individual dwellings and groups of dwellings will be addressed in an Appendix to the EIA Report. This assessment will be undertaken in accordance with Technical Guidance Note 2/19 Residential Visual Amenity Assessment (RVAA), The Landscape Institute, 2019.

4.5 Assessment Methodology

Guidance

4.5.1 The LVIA would be undertaken in accordance with the following guidance and established standards:

- 'Guidance for Landscape and Visual Impact Assessment', The Landscape Institute and the Institute of Environmental Assessment third edition 2013;
- 'Environmental Impact Assessment Handbook', 4th Edition. Scottish Natural Heritage. 2005; and
- 'Landscape Character Assessment for England and Scotland', Scottish Natural Heritage (SNH) and The Countryside Agency, 2002.

Field Survey

Landscape Impacts

4.5.2 The assessment of landscape impacts will address:

- effects on landscape fabric;
- effects on landscape character types; and
- effects on landscape designations and classifications.

Visual Assessment

4.5.3 The LVIA will address effects on the visual amenity of people at key visual receptors, including:

- residents of settlements, scattered/ individual properties;
- users of key transportation routes; and
- users of recreational routes, including strategic trails, cycleways and core pathways.

4.5.4 Care will be taken to describe the extent of visibility of the Proposed Development, and effects on important connecting/ linking views, sequential views, vantage points and prominent focal points. The assessment will also discuss what factors form the basis of the local visual amenity.

Supporting Assessments and Graphics

4.5.5 The LVIA will be accompanied by a series of Technical Appendices (TAs) that will provide detailed assessment of residual effects on different aspects of the landscape and visual resource, including:

- Effects on Landscape Character Types;
- Effects on Landscape Designations;
- Effects on Visual Amenity;
- Sequential Visual Effects; and
- Cumulative landscape and visual effects.

4.5.6 Additionally, the LVIA will be accompanied by a series of illustrative figures and visualisations showing the operational development.

Significance of Landscape and Visual Effects

4.5.7 Table 4.2 below, illustrates how sensitivity of the receptor and the magnitude of effect are combined to define the environmental consequence of the effect. Residual effects will be determined by comparison of the sensitivity of receptors with the magnitude of impacts. For the purposes of the LVIA, significant landscape or visual effects will be defined as major or major/moderate and above. A clear explanation of how each judgement has been reached will be given, It is important to note that with regard to landscape and visual effects this matrix has been used as a guide only. The matrix is not used as a prescriptive tool, and the analysis of specific effects must make allowance for the exercise of professional judgement. Therefore, in some instances, a particular parameter may be considered as having a determining effect on the analysis at the expense of the matrix. It should also be noted that likelihood of effect is not considered a relevant parameter for landscape and visual effects and has not been included in the assessment.

Table 4.2: Residual Effects					
	Magnitude of Change				
Landscape and Visual Sensitivity	Major	Moderate	Minor	Negligible	None
High	Major	Major	Moderate	Minor	None
Medium	Major	Moderate	Minor	Negligible	None
Low	Moderate	Minor	Minor	Negligible	None
Negligible	Minor	Negligible	Negligible	Negligible	None

4.6 Issues Scoped Out

- 4.6.1 The Linear Crofting LCT has theoretical visibility from 0.20% of its area at distances in excess of 7 km and it is unlikely that significant effects would occur. This receptor has therefore been scoped out of the LVIA.
- 4.6.2 The dispersed Crofting LCT has theoretical visibility from 0.35% of its area at distances in excess of 8km and this LCT has been scoped out of the LVIA as it is unlikely that significant effects would occur.
- 4.6.3 The NSA lies almost entirely outwith the wider study area and there is no theoretical visibility from the small part of it which is within 25 km. It is therefore considered that none of its Special Qualities³ would be likely to be significantly affected by the Proposed Development and this receptor has therefore been scoped out of the LVIA.
- 4.6.4 WLA30 has theoretical visibility from very small, fragmented areas of high ground at more than 8 km distant (at Stèiseal and Cnoc Mòr Shòbhail) and from areas of high ground between approximately 18 – 22km distant (at Ròineabhal, Heastabhal, Slèteachal Mhòr and Beinna' Charnain). The theoretical visibility extends to 0.60% of

the area of WLA within the study areas and 0.16% of the total area of the WLA and significant effects are not anticipated to arise for any of its key characteristics. This receptor has therefore been scoped out of the LVIA..

- 4.6.5 WLA33 has theoretical visibility from areas of high ground on its northern edge (at Sidhean an Airgid, Guainemol, Cadha Cleit, Mòr-Mhonadh, Beinn na h_Uamha, and areas of north facing slopes and summits south of Loch Sealg. Theoretical visibility is from 21.70% of the area of WLA within the study areas and a total of 6.39% of the total area of WLA at distances in excess of 21 km and significant effects are therefore not anticipated to arise for any of its key characteristics. This receptor has therefore been scoped out of the LVIA.
- 4.6.6 North bound vehicle travellers on the A857 would be heading away from the Proposed Development and this direction of travel on this route has consequently been scoped out of the assessment.
- 4.6.7 There is no theoretical visibility from the A858 and this route has therefore been scoped out of the sequential assessment.
- 4.6.8 East bound road users on the A866 would either have no theoretical visibility or would be heading away from the Proposed Development and this direction of travel on this route has been scoped out of the assessment.
- 4.6.9 North bound vehicle travellers on the B895 would be heading away from the Proposed Development and this direction of travel on this route has been scoped out of the assessment.
- 4.6.10 Road users travelling south on the B897 would be heading away from the Proposed Development and this direction of travel on this route has been scoped out of the assessment.
- 4.6.11 There is no theoretical visibility from the Hebridean Way (Cycle Route) and this receptor has therefore also been scoped out of the assessment.

4.7 Summary

- 4.7.1 The LVIA will identify and evaluate the likely residual effects of the Proposed Development on landscape and visual receptors within 10 km of the Proposed Development. This will be undertaken via desk study and through field reconnaissance.
- 4.7.2 The effects of the Proposed Development on landscape character and on views and visual amenity would be assessed and mitigation measures, where appropriate, would be proposed to prevent, reduce, or offset any likely significant effects identified. Cumulative effects would also be assessed and mitigation measures, where appropriate, would be proposed.

5. CULTURAL HERITAGE

5.1 Introduction

5.1.1 This chapter of the Scoping Report provides an overview of the cultural heritage baseline along and in the vicinity of the Site, describes the potential effects associated with construction and operation of the Proposed Development, and presents the assessment methodology to be used in the Cultural Heritage Impact Assessment.

5.2 Baseline Conditions

5.2.1 The cultural heritage baseline summarised below was identified through a desktop study carried out during the substation selection stage of the project, drawing on data from the Comhairle nan Eilean Siar (CnES) Historic Environment Record (HER) and designation lists held by Historic Environment Scotland (HES). The data from HES was obtained in May 2024 and that from the HER was obtained in March 2022, it is considered that changes to the HER data are unlikely, but the data will be refreshed in advance of the EIAR.

Statutory Protected Sites

5.2.2 There are no Scheduled Monuments, or Listed Buildings within the Site, and no part of the Site lies within a World Heritage Site, Inventory Garden and Designed Landscape, Inventory Historic Battlefield, or Conservation Area, as illustrated on Figure 5.1.

5.2.3 One designated asset, the southern boundary of Lews Castle and Lady Lever Garden and Designed Landscape (GDL 00263), falls within 200 m of the Site (Figure 5.1).

5.2.4 Within 3 km of the Site there are four scheduled monuments,

- Arnish Point, gun emplacements (SM 5347)
- Loch Arnish, dun (SM 5397)
- Druim Dubh, stone circle (SM 5504) and
- Cnoc na Croich, chambered cairn (SM 6550)

5.2.5 There is one Conservation Area, Stornoway (CA 317) within 3 km of the Site.

5.2.6 There are 80 Listed buildings (three category A, 52 category B and 25 category C) within 3 km of the Site. These are concentrated within Stornoway Conservation Area (CA 317) and Lews Castle and Lady Lever Garden and Designed Landscape (GDL 00263). The settings of the Listed Buildings within the Conservation Area and the Conservation Area are largely constrained to, and defined by, their locations within the built environment and their relationships with surrounding buildings, the local township and the harbour.

5.2.7 There are no World Heritage Sites or Inventory Historic Battlefields within 3 km of the Site.

Non-Statutory Protected Sites

5.2.8 There are three HER assets recorded within the Site. The site of a group of five circular stone structures (MWE149909) at the southeast of the Site and an area of eight shieling huts (MWE290) in the northwest of the Site. These assets are the remains of medieval to post medieval shieling huts or farmsteads and represent the historic agrarian settlement of the area. To the northwest of the A859 the Site is largely within the area of the Lewis Chemical Works (MWE4325) which was operational in the late 19th century with the principle aim of producing paraffin from peat. None of the buildings of the works survive upstanding though areas of peat cuttings, and fragmentary sections of a canal and tramway survive. The Lewis Chemical Works is an example of Victorian experimental science and technology and is an important part in the development and history of Lewis..

5.2.9 Within 200 m of the Site boundary are two further non-designated heritage assets (Figure 5.1): a memorial fountain (Canmore ID 29332); and the findspot of an axe hammer (Canmore ID 293332). The findspot is no longer in situ although provides evidence of possible prehistoric activity in the area and the fountain is within the Lews Castle and Lady Lever Garden and Designed Landscape (GDL 00263).

5.3 Sensitive Receptors

5.3.1 Based on the characteristics of the Proposed Development, it is considered unlikely that it will have a significant effect on the setting of the surrounding designated heritage assets. The closest asset is the Lews Castle and Lady Lever Garden and Designed Landscape (GDL 00263) the southern boundary of which lies within 200 m of the Site. However, given the wooded nature of the GDL at this edge and the separation provided by the existing road and intervening topography, it is considered unlikely that the addition of the Proposed Development would have a significant effect on the setting of the GDL.

5.4 Potentially Significant Effects

5.4.1 Potential effects on cultural heritage associated with the construction and operation of the Proposed Development would include:

- Direct Physical effects: where the physical fabric of the asset is removed or damaged as a direct result of construction work associated with the Proposed Development;
- Indirect Physical effects: such as may occur as a result of vibration from piling operations or blasting for borrow pits or quarries, from the degradation of waterlogged deposits as a result of dewatering of peat deposits, or from changes in watercourse currents resulting in increased/decreased erosion;
- Setting effects: resulting from the Proposed Development causing change within the setting of a heritage asset that affects its cultural significance or the way in which it is understood, appreciated and experienced; and
- Cumulative effects: arising as a result of impact interactions, either of different impacts of the proposal itself or between the impacts of other projects, or additive impacts resulting from incremental changes caused by the proposal together with other projects.

5.5 Assessment Methodology

5.5.1 The assessment of potential effects on heritage assets within the baseline will be carried out in accordance with the standards set by the Chartered Institute for Archaeologists (CIfA), and in agreement with HES and CnES.

5.5.2 Direct effects on archaeological remains would be assessed, informed by the results of the desk-based study already undertaken and by further desk-based assessment of historic maps and aerial photography, and verified by field survey of the Site and proposed access requirements.

Further Baseline Assessment

Study Areas

5.5.3 The following study areas will be adopted for the cultural heritage assessment:

- Inner Study Area: the Site boundary and a 200 m buffer around it (Figure 5.1). This area will form the study area to identify any heritage assets, both those previously recorded in the HER and on designation lists, and those identified through detailed desk-based assessment, that could be directly affected by the Proposed Development.
- Outer Study Area: A wider study area, extending to 3 km from the Site boundary (Figure 5.1), will be used to identify heritage assets with statutory or non-statutory designations that could have their settings affected by the Proposed Development. No designations beyond that distance have been identified by initial appraisal as having settings likely to be sensitive to change arising from the Proposed Development.

Desk Based Assessment

5.5.4 Further desk-based assessment will be carried out covering the Inner Study Area and construction access routes. The following information sources will be consulted:

- HES Spatial Data Warehouse: for up-to-date data on the locations and extents of Scheduled Monuments, Listed Buildings, Conservation Areas, Inventory status Garden and Designed Landscapes and Inventory status Historic Battlefields;

- CnES Council's Historic Environment Record (HER): for up-to-date data for the Study Area;
- The National Record of the Historic Environment (NHRE) database (Canmore): for any information additional to that contained in the HER;
- Map Library of the National Library of Scotland: for Ordnance Survey maps and other historical map resources that may provide information of historic settlement and land-use;
- Aerial photography and satellite imagery (Google Earth, Bing maps, ESRI World Imagery): for the identification of sites and features potentially of historic environment value not recorded elsewhere or shown on historic maps;
- Historic Land-Use Assessment Data for Scotland (HLAMap): for information on the historic land use character of the Study Area; and
- Local resources including the Hebridean Connections (<https://hebrideanconnections.com>) will be reviewed for any information additional to that contained in the HER.

Field Surveys

5.5.5 A walk-over field survey will be carried out across the Inner Study Area in order to:

- locate and record the baseline character and condition of heritage assets identified through the desk-based assessment,
- identify any other heritage assets not revealed through the desk-based study, and
- assess the archaeological potential of the Site.

5.5.6 Site visits will be undertaken to designated cultural heritage receptors within the Outer Study Area, to assess their baseline settings and identify potential impacts from the Proposed Development. Assessment of Effects

Assessment Method

5.5.7 The effects of the Proposed Development on heritage assets will be assessed on the basis of their type (construction effects, impacts on setting, and cumulative impacts) and nature (adverse or beneficial). The assessment will take into account the value/sensitivity of the heritage asset and its setting and the magnitude of the predicted impact.

- Adverse effects are those that detract from or reduce cultural significance or special interest of heritage assets.
- Beneficial effects are those that preserve, enhance or better reveal the cultural significance or special interest of heritage assets.

Criteria for Assigning Sensitivity of Heritage Assets

5.5.8 Cultural heritage assets are assigned value/importance through the designation process. Designation ensures that sites and places are recognised by law through the planning system and other regulatory processes. The level of protection and how a site or place is managed varies depending on the type of designation and the laws and policies that apply to it (HES 2019)⁴.

Criteria for Assessing the Significance of Effects

5.5.9 The magnitude of impact (adverse or beneficial) will be assessed in the categories, high, medium, low, and negligible and, when combined with the sensitivity of the asset, inform an assessment of the significance of the effect (direct or indirect effects, or effect on setting).

5.5.10 Major and Moderate effects are considered to be 'significant' in the context of the EIA Regulations. Minor and Negligible effects are considered to be 'not significant'.

⁴ HES (2019) Designation Policy and Selection Guidance, Edinburgh. Available at: <https://www.historicenvironment.scot/archives-and-research/publications/publication/?publicationId=8d8bbaeb-ce5a-46c1-a558-aa2500ff7d3b>

Mitigation

- 5.5.11 Based on an initial assessment, there is one HER asset, the possible shieling huts (MWE149909), to the immediate south of the Site boundary. Mitigation to avoid direct construction impacts on this asset will be built into the design.
- 5.5.12 If required following further desk-based research and field survey, the layout of the Proposed Development would seek to avoid any newly identified constraints.
- 5.5.13 The details and scope of any further, construction phase, mitigation that may be warranted to offset any adverse effects arising from the Proposed Development would be agreed through consultation with the CnES Archaeologist.

Residual Effects

- 5.5.14 Residual effects will be assessed taking into account the effectiveness of proposed mitigation measures.

5.6 Issues Scoped Out

- 5.6.1 Assessment of the effect of the Proposed Development on the settings of World Heritage Sites and Inventory Historic Battlefields will be scoped out. There are no assets with those designations within 3 km of the Site.
- 5.6.2 Assessment of the effect of the Proposed Development on the settings of listed buildings within the Stornoway townscape will be scoped out. The settings of these buildings are characterised by their urban setting and their association with the built environment of the town and would not be affected by the Proposed Development.
- Assessment of the effect of the Proposed Development on the settings of designated heritage assets more than 3 km from the Site will be scoped out. None have been identified beyond that distance, through initial analysis, as having settings sensitive to change arising from the Proposed Development.

5.7 Summary

- 5.7.1 The baseline identified to date includes three non-designated heritage assets recorded in the CnES HER within the Site boundary: two areas of possible shielings and the area of the Lewis Chemical Works. There are four scheduled monuments, 80 listed buildings, one Conservation Area, and one Inventory Garden and Designed Landscape within 3 km of the Site boundary.
- 5.7.2 Study areas for the EIA have been set out and the assessment methodology presented for approval. A further scope of desk-based assessment and field survey will be carried out to fully inform the baseline reported in the EIA and to inform mitigation proposals.

6. ECOLOGY AND NATURE CONSERVATION

6.1 Introduction

6.1.1 The EIA will consider the potential effects of the Proposed Development on ecological features (non-avian) on the Site and within the ecological zones of influence for species identified as important ecological features. Evaluation of the existing baseline environment will be made through a combination of desk-based study, field surveys and consultation.

6.1.2 The EIA chapter will assess the potential effects on ecological features resulting from the construction and operation phase of the Proposed Development. This section does not discuss ornithology, which is discussed in section 7 of this report.

6.1.3 This section:

- describes the baseline conditions within the study area;
- describes the key ecological issues associated with construction and operation of the Proposed Development;
- presents the proposed survey methods that will be used to generate additional ecological baseline information;
- outlines the proposed approach to the Ecological Impact Assessment (EclA; as part of the wider EIA); and
- Includes details of any consultation undertaken to date to inform the scoping.

6.2 Baseline Conditions

6.2.1 The following information has been gathered from field visits and desk based analysis to inform the baseline ecological conditions of the Site.

Desk Study

Site Name	Designation	Qualifying Feature	Distance and Direction from Site ⁵
Lewis Peatlands	Special Area of Conservation (SAC)	This SAC is designated for: <ul style="list-style-type: none"> • Acid peat-stained lakes and ponds; • Blanket bog; • Clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels; • Depressions on peat substrates; • Otter <i>Lutra lutra</i>; and Wet heathland with cross-leaved heath <i>Erica tetralix</i> .	The Site lies 6 km east of the Lewis Peatlands SAC. No connectivity with Proposed Development exists.
Tong Saltings	Site of Special Scientific Interest (SSSI)	This SSSI is notified for habitats including mudflats, saltmarsh and sand dunes.	The Site lies 3 km southwest of Tong Saltings SSSI. No connectivity with Proposed Development exists.

6.2.2 The locations of surrounding designated sites are shown on **Figure 6.1: Ecology Desk Study**.

⁵ Measured from the closest point

Non-statutory Designations

- 6.2.3 There are no non-statutory designations identified with potential connectivity to the Proposed Development.

Biological records

- 6.2.4 No biological records for ecological features were identified.

Field Survey*Habitats*

- 6.2.5 Field surveys were undertaken by Ramboll in January and August 2023. The surveys included an extended UK Habitat Classification (UKHab) survey and protected species surveys. The UKHab survey consisted of classifying and mapping habitats in accordance with UKHab Guidance⁶ and was 'extended' to include consideration of the likely presence of protected or otherwise notable species in line with the Chartered Institute of Ecology and Environmental Management (CIEEM)⁷. The results from the habitat surveys are shown on Figure 6.2: UK Habitat Survey. Further habitat surveys are due to be undertaken by Ramboll Ecologists in July 2024 to provide National Vegetation Classification (NVC) coverage of the Site..
- 6.2.6 For each area of habitats mapped during the UKHab survey, a Habitat Condition Assessment (HCA) was undertaken. The HCA followed SSEN Transmission guidance⁸ and involved scoring each habitat area using established criteria. If a habitat passes all criteria it is considered to be in good condition, if it fails one criterion it is considered to be of moderate condition and if it fails two or more criteria it is considered to be of poor condition. The condition of each habitat is used in the Biodiversity Net Gain analysis.
- 6.2.7 The NVC surveys will be completed in line with NVC survey guidelines⁹, classifying communities in accordance with the NVC system¹⁰. The purpose of these surveys is to identify sensitive habitats, consisting of potential Groundwater Dependent Terrestrial Ecosystems (GWDTES), Annex 1 habitats under the EU Habitats Directive¹¹ and those with protection under the Scottish Biodiversity List (SBL)¹².
- 6.2.8 The dominant habitats within the Site are modified grassland and wet heath. Within this area there are also areas of planted coniferous woodland. The modified grassland is present as rough grazing pasture bordered to the east and south by wet heath habitats. Wet heath has the potential to be an Annex 1 habitat where it is recorded in good condition.

Protected Species

- 6.2.9 The protected species surveys will consist of a detailed search for field signs in suitable habitat and in accordance with standard survey guidance for otter¹³. The survey area will comprise the Operational Footprint Area as well as a buffer extending up to a 250 m beyond the Operational Footprint Area. There are no other terrestrial protected faunal species present on Lewis.
- 6.2.10 Aquatic ecology surveys of the River Creed are proposed to establish the baseline condition of this habitat. These surveys would include River Habitat and Freshwater Pearl Mussel Surveys and include Electrofishing surveys if this is considered necessary. These surveys are to be undertaken during summer 2024. The River Creed connects the Proposed Development to the Lewis Peatlands SAC, although the Proposed Development is downstream of the SAC so no impact pathway exists.

⁶ UKHab Ltd (2023) UK Habitat Classification Version 2.0 (at <https://www.ukhab.org>)

⁷ CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.1. Chartered Institute of Ecology and Environmental Management, Winchester

⁸ SHE Transmission, Biodiversity Net Gain Toolkit User Guide - TG-NET-ENG-526, October 2020

⁹ Rodwell, J. S. (2006). NVC Users' Handbook. ISBN 978 1 86107 574 1.

¹⁰ Rodwell, J. S. (Ed), et al. (1991 – 2000). British Plant Communities (5 volumes). Cambridge University Press.

¹¹ https://ec.europa.eu/environment/nature/legislation/habitatsdirective/index_en.htm

¹² <https://www.nature.scot/scotlands-biodiversity/scottish-biodiversity-strategy-and-cop15/scottish-biodiversity-list?msclkid=1ad92c2aaf6411ecb1b489e38efae9db>

¹³ Chanin, P. (2003), Monitoring the otter *Lutra lutra*, Conserving Natura 2000 Rivers Monitoring Series No 10, Peterborough: English Nature.

- 6.2.11 No records of any protected species were identified during the initial field surveys, although suitable habitat for otter is considered to be present.
- 6.2.12 The Creed is well known as a fishing river, with salmonid species present. Mitigation will be employed to avoid any potential significant impacts on the Creed.

6.3 Potential Significant Effects

- 6.3.1 The assessment will consider the potential for significant effects associated with:
- Direct impacts such as habitat loss or direct injury or killing of protected animals (otters);
 - Indirect impacts including disturbance, pollution or otherwise impacting habitats or protected species; and
- 6.3.2 Cumulative effects from other developments, either built or proposed, within the zone of influence for ecological features identified as sensitive receptors of the Proposed Development. Cumulative developments to be considered are listed in section 3.2 above.

6.4 Sensitive Receptors

- 6.4.1 The main features that could be impacted by the Proposed Development include modified grassland, wet heath, otters and the aquatic environment of the River Creed, including fish species.
- 6.4.2 The importance or sensitivity of an ecological feature will be ascertained via consultation with NS, local groups, review of literature and guidance, field survey data, legal protection/conservation status and professional judgement.

6.5 Assessment Methodology

- 6.5.1 The EclA will be completed in accordance with CIEEM Guidelines for Ecological Impact Assessment. The assessment will use the ecological baseline to identify the important ecological features that could be affected by construction and operation of the Proposed Development. Important ecological features will be assigned a geographic level of importance based on their conservation status and population/assembly trends and other relevant criteria (including size, naturalness, rarity and diversity). Details of the Proposed Development will then be used to assess what level of effect each feature is likely to receive and whether or not that impact will be beneficial or adverse, significant or negligible, and temporary or permanent.

Mitigation

- 6.5.2 Where appropriate, mitigation measures will be recommended within the EclA to remedy any significant effects and good practice measures to enhance the local ecology will also be incorporated. An assessment of residual effects will then be undertaken and reported within the EIA Report. The mitigation hierarchy will be followed when deciding on the appropriate mitigation method to use. This sets out that the preferred options are, in order: avoid, reduce, replace and compensate. This process has been used during the design phase to avoid potential impacts on sensitive features, e.g. avoiding area of blanket bog. SSEN General Environmental Management Plans (GEMPs) and Species Protection Plans (SPPs) would be adopted as well as a project specific Construction Environmental Management Plan (CEMP).

Cumulative Assessment

- 6.5.3 The cumulative assessment will consider the Proposed Development in combination with the anticipated effects of other developments proposed within the study area. Cumulative developments are listed in Section 3.2.

Biodiversity Net Gain (BNG)

- 6.5.4 A BNG assessment shall be undertaken for the Proposed Development. BNG is a process whereby development leaves biodiversity in a measurably better state than before. The HCA data is combined with habitat distinctiveness, connectivity and strategic significance to determine biodiversity units per habitat polygon. The relative biodiversity value per polygon is indicated by calculating the biodiversity units per hectare (BU/ha). Any irreplaceable habitats identified, including good/moderate condition blanket bog, will not be

entered into the optioneering toolkit. This is a requirement of the BNG process as it is not possible to compensate for losses to irreplaceable habitat and they are therefore not quantified. SSEN Transmission have a corporate commitment to achieve a 10% net gain in biodiversity on their developments, which aligns with the requirements of NPF4, specifically policy 3.

6.6 Issues Scoped Out

General

- 6.6.1 It is considered that all ecological features identified within this report could be affected by inappropriate lighting, noise, dust and visual disturbance caused by construction activities; however it is considered reasonable to expect that these potential effects are managed through best practice construction methods and guidance. In addition, a Construction Environmental Management Plan (CEMP) will be produced, which will capture all mitigation measures required in respect of ecological features, both as a result of the outcome of the Ecological Impact Assessment (EcIA) and in order to comply with relevant legislation mentioned above, to be implemented on Site. The implementation and audit of these measures will be overseen by an Environmental Clerk of Works (ECoW). With the adherence to a CEMP, as overseen by an ECoW, it is not considered that there is potential for significant impacts. Therefore no further assessment is proposed.

Designated sites

- 6.6.2 The closest designated sites, Lewis Peatlands SAC and Tong Saltings SSSI, to the Proposed Development are designated for terrestrial features, predominantly associated with flora. No pathway has been identified for impacts to these features due to the distance they are separated from the Proposed Development and no hydrological connectivity between the Proposed Development and the designated sites exists. Otters using the habitats within the Proposed Development would not be the same animals that are present within the SAC. Therefore, it is not considered that the Proposed Development will result in a likely significant effect upon the SAC and a Habitats Regulations Appraisal (HRA) is not required.

Species

- 6.6.3 Reptiles and amphibians are likely to be present in open moorland and rough grassland. Reptiles and amphibians may be negatively affected by vegetation clearance works associated with the Proposed Development. However, the impacts are considered to be small in scale relative to the extensive habitat that will still remain available for these species. Pre-construction surveys will confirm the presence of sensitive features used for shelter and hibernation and will inform micro-siting of the design. Where this is not possible, surveys will inform non-licensed precautionary methods of working under the supervision of the ECoW.
- 6.6.4 Surveys for terrestrial invertebrates are considered unnecessary as the EcIA will adopt a precautionary approach and include appropriate mitigation, where required, to avoid significant effects.
- 6.6.5 It is recommended that the mitigation measures required to avoid the spread of invasive species are included within the CEMP. It is therefore considered that no significant effects will occur from the spread of rhododendron as a result of the Proposed Development.

6.7 Summary

- 6.7.1 The scoping exercise has reviewed the ecological features that could be impacted by the Proposed Development and has identified those that have the potential to be impacted. These include habitats including wet heath, otters and the aquatic environment of the River Creed. The likelihood of any direct and indirect potential impacts of the Proposed Development on these features would be assessed and mitigation measures, where appropriate, would be proposed to prevent, reduce or offset any likely significant adverse effects identified. Cumulative effects from other developments would also be considered in relation to the Proposed Development. No pathway has been identified for impacts to Designated Sites due to the distance they are separated from the Proposed Development and no hydrological connectivity between the Proposed Development and the designated sites exists, therefore no HRA is considered to be required.

7. ORNITHOLOGY

7.1 Introduction

7.2 Introduction

7.2.1 The EIA chapter will assess the potential effects on ornithological interests resulting from the construction and operation phase of the Proposed Development. The specific objectives of the assessment would be to:

- Identify where there is potential for significant effects on designated sites (for birds);
- Detail the presence/possible presence of protected bird species and other species of particular conservation value;
- Describe the mitigation measures that have been committed to in order to avoid or reduce impacts; and
- Assess the significance of residual effects that are likely to remain following implementation of mitigation and restoration measures and describe if any result in a significant impact on ornithological features.

7.3 Baseline Conditions

7.3.1 The following information has been gathered to inform the baseline ecological conditions of the Proposed Development.

Desk Study

7.3.2 A desk study has been undertaken using the NS SiteLink website to identify designated nature conservation sites (within 10 km for sites of international importance and within 2 km for those of national importance). In addition, a search for publicly available biological records was undertaken within 2 km of the Operational Footprint Area using the following sources:

- NS Sitelink¹⁴; and
- The Multi-Agency Geographic Information for the Countryside (MAGIC)¹⁵.

7.3.3 Data from Lewis and Harris Raptor Study Group (LHRSG), such as hen harrier *Circus cyaneus* nesting data, has been purchased and will be used as part of the analysis for the EIA.

Consultation

7.3.4 Consultation is currently being undertaken with statutory and non-statutory consultees comprising the following:

- NS;
- British Trust for Ornithology Scotland (BTO);
- LHRSG; and
- RSPB Scotland.

Statutory Designated Sites

7.3.5 Two statutory designated sites of international and national importance were identified within 10 km of the Site. Details of these sites, including the qualifying species associated with them, are provided in Table 7.1.

Site Name	Designation	Qualifying Feature	Distance and Direction from Site ¹⁶
Lewis Peatlands	Special Protection Area (SPA) and Ramsar	This SPA is classified for: <ul style="list-style-type: none"> • Breeding black-throated diver <i>Gavia arctica</i>; 	The Site lies 4 km east of the Lewis Peatlands SPA and Ramsar.

¹⁴ <https://sitelink.nature.scot/home>

¹⁵ <https://magic.defra.gov.uk/>

¹⁶ Measured from the closest point

		<ul style="list-style-type: none"> Breeding dunlin <i>Calidris alpina schinzii</i>; Breeding golden eagle <i>Aquila chrysaetos</i>; Breeding golden plover <i>Pluvialis apricaria</i>; Breeding greenshank <i>Tringa nebularia</i>; Breeding merlin <i>Falco columbarius</i>; and Breeding red-throated diver <i>Gavia stellata</i>. <p>The Ramsar is notified under Criterion 2 for breeding:</p> <ul style="list-style-type: none"> Black-throated diver; Golden plover; Greenshank; and Red-throated diver. <p>The Ramsar is also notified under Criterion 6 for breeding dunlin.</p>	
Tong Saltings	Site of Special Scientific Interest (SSSI)	This SSSI is notified for its breeding bird assemblage.	The Site lies 3 km southwest of Tong Saltings SSSI.

7.3.6 The locations of surrounding designated sites are shown on **Figure 7.1: Ornithology Desk Study**.

Non-statutory Designations

7.3.7 There are no non-statutory designations identified with potential connectivity to the Proposed Development.

Biological records

7.3.8 Data purchased from the LHRSG shows three hen harrier territories within a 2 km¹⁷ buffer of the Site, two used in 2020 and one used in 2021. The closest of these lies at approximately 600 m distance from the nearest proposed infrastructure, with landform and vegetation preventing any direct line of sight.

Field Survey

7.3.9 Field surveys are ongoing, having commenced in March 2023 and are being undertaken by Stagfire¹⁸ ornithologists. The surveys have included a flight activity survey and breeding bird surveys (moorland birds, nesting divers and raptors). These surveys were designed to cover the Proposed Development and a grid connection from Stornoway Wind Farm. As the Proposed Development has evolved, surveys have been adapted to provide coverage.

7.3.10 The flight activity survey consisted of undertaking watches during the breeding and non-breeding seasons between March 2024 and due to be completed in February 2025 at one vantage point (VP) location. The VP location was designed to provide the optimal coverage possible, especially of open areas that have the potential to be used by raptor species, such as golden eagles, when hunting or displaying, or commuting routes.

¹⁷ 2 km is used as potential disturbance impacts are not predicted outside this distance.

¹⁸ While surveys were being undertaken Stagfire have changed their operational name to Redwing Ecological Surveys.

7.4 Sensitive Receptors

7.4.1 As a result of the information provided by the desk-based study and field surveys, the following ornithological features are considered to be of sufficient sensitivity to warrant inclusion in the EIA:

- Designated sites where qualifying species have potential connectivity with the Proposed Development and where surveys recorded flights of qualifying species within the Proposed Development, i.e. Lewis Peatlands SPA;
- Golden eagle, white-tailed eagle, merlin, hen harrier and peregrine (all included on Schedule 1 of the Wildlife and Countryside Act 1981)¹⁹;
- Several species that are red-listed as birds of conservation concern²⁰ (curlew *Numenius arquata*, dunlin, lapwing *Vanellus vanellus* and scaup *Aythya marila*) and several are amber-listed (pink-footed goose *A. brachyrhynchus*, whooper swan *Cygnus cygnus*, oystercatcher *Haematopus ostralegus*, snipe *Gallinago gallinago*, greenshank, redshank *Tringa totanus*, wood sandpiper *T. glareola* and red-breasted merganser);
- Black-throated diver, great northern diver and red-throated diver (all Schedule 1 species); and
- Arctic skua and great skua *Stercorarius skua*, which are a red and amber-listed species of conservation concern, respectively.

7.5 Potential Significant Effects

7.5.1 The assessment will consider the potential for significant effects associated with:

- Direct and indirect effects on designated sites (in particular Lewis Peatlands SPA);
- The killing, injury or temporary disturbance (or displacement) of nationally and internationally protected species of bird during construction or through collision with the proposed development (including hen harrier, merlin, red-throated diver and black-throated diver; and
- Cumulative effects from other developments, either built or proposed, on Lewis and Harris. Cumulative developments are listed in Section 3.2.

7.6 Assessment Methodology

7.6.1 The ornithological impact assessment will be completed in accordance with CIEEM EclA Guidance. The assessment will use the ornithological baseline to identify the ornithological features that could be affected by the construction of the Proposed Development. Features will be assigned a geographic level of importance based on their conservation status and population/assemblage trends and other relevant criteria (including population size and rarity). Details of the Proposed Development will then be used to assess what level of effect each feature is likely to receive and whether or not that impact will be beneficial or adverse, significant or negligible, and temporary or permanent. Where appropriate, mitigation measures will be recommended to remedy any adverse impacts. An assessment of residual effects and cumulative effects will then be undertaken and reported within the EIA Report.

Collision Risk Methodology

7.6.2 As per the SSEN Transmission Ornithology Methods for Transmission Developments Guidance, the requirement for and the method of Collision Risk Modelling will be agreed with NatureScot.

Methodology for Provision of Information for Appropriate Assessment

7.6.3 Where the Proposed Development is considered likely to have a significant effect on an SPA, there is a requirement for Competent Authority (in consultation with NS) to complete an Appropriate Assessment as part of the HRA process. It is noted that the threshold for likely significant effects under the HRA process is distinct

¹⁹ <https://www.rspb.org.uk/birds-and-wildlife/advice/wildlife-and-the-law/wildlife-and-countryside-act/schedules/?msclid=39ea3716b02711ecba2f22aaf45a120f>

²⁰ https://britishbirds.co.uk/sites/default/files/BB_Dec21-BoCC5-IUCN2.pdf

from the EIA process and the requirement for Appropriate Assessment is generally where there is any level of connectivity identified between the Proposed Development and the European Site.

- 7.6.4 Based on the data collected from the consultation and desk-based study, together with a review of relevant data already obtained on the Site, an HRA of the Proposed Development in relation to the potential for likely significant effects on Lewis Peatlands SPA, North Harris Mountains SPA and West Coast of the Outer Hebrides SPA will be required. A study to inform the HRA and Appropriate Assessment will be included in the EIA Report and will utilise data pertaining to the qualifying species presented in this report as well as external data sources, such as confidential territory reports provided by NS.

Mitigation

- 7.6.5 Significant effects on birds will be avoided/ minimised where possible during the design process, based on the locations of known ornithological features and application of the mitigation hierarchy in order to decide on the appropriate mitigation method to use. The Applicant has established best practice construction techniques and procedures that have been agreed with statutory consultees, including Scottish Environment Protection Agency (SEPA) and NatureScot. These are set out within the SSEN Transmission GEMPs and SPPs. The Proposed Development would be constructed in accordance with these plans.
- 7.6.6 A contractual management requirement of the successful Principal Contractor would be the development and implementation of a comprehensive and site-specific robust CEMP. This document would detail how the successful Principal Contractor would manage the works in accordance with all commitments and mitigation detailed in the EIA Report, the SSEN Transmission GEMPs, SPPs, statutory consents and authorisations, and industry best practice and guidance, including pollution prevention guidance.

7.7 Issues Scoped Out

Habitat Loss (Construction and Operational Phase)

- 7.7.1 Both permanent and temporary habitat loss and habitat modification due to vegetation management or hydrological change would be assessed in the chapter dealing with non-avian ecology. The levels of habitat loss and/or modification associated with construction and operation are low and are not considered to represent a likely significant loss and/or modification of bird habitat.

Disturbance (Operational Phase)

- 7.7.2 When operational, the Proposed Development would require occasional visits by site personnel both on foot and in vehicles for maintenance activities. While the Proposed Development may also result in disturbance arising from noise, the magnitude of this potential impact is considered too low to represent a likely significant effect.

7.8 Summary

- 7.8.1 The scoping exercise has reviewed the ornithological features within the zone of influence of the Proposed Development and has identified those that have the potential to be impacted. These include Lewis Peatlands SPA, Schedule 1 species, such as golden and white-tailed eagles, and birds of conservation concern, such as dunlin and oystercatcher. The likely direct and indirect potential impacts of the Proposed Development on these features will be assessed and mitigation measures, where appropriate, will be proposed to prevent, reduce or offset any likely significant adverse effects identified. Cumulative effects will also be considered.

8. HYDROLOGY, HYDROGEOLOGY, GEOLOGY AND SOILS

8.1 Introduction

8.1.1 This EIA chapter would assess the potential effects relating to Hydrology, Hydrogeology, Geology, and Soils relation to the construction and operation of the Proposed Development. This chapter is supported by Figures **8.1: Hydrological Constraints** and **Figure 8.2: Geology and Hydrogeology**.

8.2 Baseline Conditions

Surface Water Features

- 8.2.1 The Abhainn Ghrioda (River Creed) is situated approximately 100 m northeast of the Operational Site area at its nearest point, flowing in a generally easterly direction and eventually discharging to Stornoway Harbour 300 m east of the Site.
- 8.2.2 Drains serving agricultural land are present in the north and west of the Site that convey surface water to the northeast of the eastern Site and on to the Abhainn Ghrioda watercourse, one of these drains crosses the proposed Operational Footprint area. A further drain is present in the south of the Site, at the southern boundary of the Operational Footprint area. The course of the southern drain suggests a more naturalised channel in the east of the Site, downstream from the proposed Operational Footprint area.
- 8.2.3 Loch Airigh an Sgairbh and two other unnamed lochans project slightly onto the south of the Site, the nearest of which is approximately 300 m south of the Operational Footprint area. Loch Cnoc Choilich lies immediately west of the Site, to the west of the A859.
- 8.2.4 The Abhainn Ghrioda (River Creed) is adjacent to the south of the western land parcel at its nearest point and several tributaries of the River Creed are within this area. Areas of forestry plantation are present in the west of this area and cut drains are present within the forestry area
- 8.2.5 Drainage across the Site is generally from west to east and the Site is wholly within the catchment of Abhainn Ghrioda, which discharges to Stornoway Bay to the east. The site is therefore not in hydrological connection with the Lewis Peatlands (SAC/SPA) which is situated to the west. The Site is also not in hydrological connection to the Tong Saltings SSSI, which is situated outside of the Abhainn Ghrioda catchment.

Surface Water Resources

- 8.2.6 According to SEPA mapping²¹, the Abhainn Ghrioda watercourse is approximately 18.6 km in length and is assessed as being of High overall condition under the Water Framework Directive (WFD) classification system. Stornoway Harbour, a coastal waterbody, is assessed by SEPA to be of Good overall status under the WFD classification system. The smaller drains on the Site are not assessed under the WFD due to their small catchment size.
- 8.2.7 According to Scottish Water mapping²² there are no Drinking Water Protected Areas (DWPA) for surface water within 2 km of the Site. The nearest DWPA is approximately 3.8 km south and is not within hydrological connection to the Site.
- 8.2.8 A Private Water Supply is present approximately 250 m northeast of the Site, for Iron Well Lews Castle. The abstraction is recorded as from groundwater. The PWS location is to the northeast of the Abhainn Ghrioda watercourse. A second PWS is present 1 km south west of the Site, which provides a supply of surface water from Loch Lathamul.

²¹ <https://www.sepa.org.uk/data-visualisation/water-classification-hub/> [Last accessed December 2023]

²² <https://www.gov.scot/publications/drinking-water-protected-areas-scotland-river-basin-district-maps/> [Last accessed December 2023]

Flood Risk

- 8.2.9 According to SEPA flood maps²³ no areas of the Proposed Development are at risk of flooding from rivers, the sea or from surface water. The Site is elevated to at least 40 m Above Ordnance Datum (AOD). A small area in the southwest of the Site, adjacent to the unnamed drain and outside of the area of the Proposed Development, is assessed by SEPA to be at High risk of surface water flooding.
- 8.2.10 According to SEPA's 'Future Flood Maps' the Site is not within an area assessed to be at risk of flooding from a medium probability fluvial or tidal flood (a 1 in 200 or 0.5% annual probability flood event) by the 2080s.

Hydrogeology

- 8.2.11 The underlying geology is assessed by the BGS to comprise a Low productivity aquifer which may yield small amounts of groundwater.

Geology and Soils

- 8.2.12 According to BGS 1:50,000 geological mapping²⁴ the Site is directly underlain by superficial deposits of peat. The west of the Site (approximately 25% of the Site area) is further underlain by bedrock geology of the Outer Hebrides Thrust Zone Mylonites Complex (protocataclastite). The remainder of the Site in the east is underlain by bedrock of the Lewisian Complex (gneiss).
- 8.2.13 According to the Carbon and Peatland Map (2016)²⁵ the site is underlain by Class 1 peatland soils which comprise nationally important carbon-rich soils, deep peat and priority peatland habitat likely to be of high conservation value.
- 8.2.14 A Stage 1 peat probing survey was undertaken in March 2024 in order to inform the site selection process. The results of the peat survey show that peat depths across the Site range from 'No Peat' to 3.01-4.0 m, with peat depths generally between 0.5 and 3.0 m.

8.3 Sensitive Receptors

- 8.3.1 The sensitive receptors considered in the EIA include:
- The Abhainn Ghrioda watercourse is assessed to be of High overall condition under the WFD classification system. Stornoway Harbour, a coastal waterbody which is assessed to be of Good overall condition.
 - The Site is recorded as being underlain by Class 1 peat ('nationally important carbon rich soils, deep peat and priority peatland habitat') and initial peat survey has confirmed that deep peat (>0.5m in depth) is present.

8.4 Assessment Methodology

Hydrology and Hydrogeology

- 8.4.1 The EIAR will consist of a baseline assessment (both desk-based and from fieldwork), the development of hydrological constraints, associated guidance and mitigation and an assessment of the impacts.
- 8.4.2 The assessment of the significance of hydrological and hydrogeological impacts will be undertaken by determining the sensitivity of the specific attribute and the magnitude of the impact upon the attribute. Impacts will be assessed for all phases of the Proposed Development. Following the determination of impacts, mitigation measures will be identified, and residual impacts identified.
- 8.4.3 In describing a potential effect, consideration will also be given to its geographical scale and duration, which have been defined as follows:

²³ <https://www.sepa.org.uk/environment/water/flooding/flood-maps/> [Last accessed December 2023]

²⁴ <https://www.bgs.ac.uk/map-viewers/geoindex-onshore/> [Last accessed December 2023]

²⁵ <https://soils.environment.gov.scot/maps/thematic-maps/carbon-and-peatland-2016-map/> [Last accessed December 2023]

- The geographical scale of an impact refers to the zone of influence, and can be described as: localised, site-wide, a specific distance / range from a source, regional, national, global; and
- The duration of an impact can be described as: short to long term, permanent or temporary for the duration of the construction / operational period.

8.4.4 The significance of residual effects will be defined as a function of the sensitivity of receptors and the magnitude of change, taking account of any mitigation proposed. Differentiations between categories, and thus the final significance ratings, are based upon professional judgement.

8.4.5 Major and moderate impacts are deemed significant in the context of the EIA Regulations. Minor and negligible impacts will not be considered significant in EIA terms.

Mitigation

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

8.4.7 An outline CEMP will be included as a technical appendix to the EIAR which will include mitigation measures, environmental management requirements, outline method statements and environmental monitoring requirements.

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

Cumulative Impacts

8.4.9 Potential cumulative environmental impacts to water, soils and geology resources will be assessed where concurrent proposed wind farm sites or construction activity may be in hydrological connection with the Proposed Development, or water resource receptors. Where potential cumulative impacts are identified, the same criteria as used for assessment of the Proposed Development will be employed. Cumulative developments are listed in Section 3.2

Residual Effects

8.4.10 It is anticipated that as the assessment of potential impacts would inform the design of the Proposed Development and best practice measures would be implemented during the construction, operation and decommissioning of the Proposed Development, that significant residual effects to the water and geological environment would be avoided. However, if potential significant residual effects to the water and geological environment are identified through the assessment process described above, suitable mitigation measures will be set out in the EIAR.

Geology and Soils

8.4.11 An Outline Peat Management Plan (OPMP) will be produced in accordance with SEPA guidance²⁶²⁷ which will include information on the peat characteristics, extent, details of proposed excavation, surplus and re-use options based on peat probing data and desk-based baseline data. This will include an estimation of peat volumes and will outline measures necessary to minimise peat and habitat disturbance and provide a clear description of mitigation measures to minimise potential adverse impacts on peat and peatland functioning, and ensure best practice and effective excavating, moving and re-using / reinstating of peat. This may include integration of peat reuse measures with habitat management proposals. The OPMP will be developed using the peat mitigation hierarchy.

²⁶ SEPA (2012) Guidance on the Assessment of Peat Volumes, Reuse of Excavated Peat and Minimisation of Waste.

²⁷ Scottish Government, SNH, SEPA (2017) Peatland Guidance on Development on Peatland, on-line-version-only.

- 8.4.12 A Peat Landslide Hazard Risk Assessment (PLHRA) will be undertaken (if required, subject to the design) in accordance with the Scottish Government guidance²⁸ and included as a Technical Appendix to the EIAR. The assessment will assess the potential stability risks associated with the Proposed Development and will incorporate:
- desk study information supplemented by site reconnaissance information;
 - review of peat depth survey data including peat characteristics, identification of areas of potential or past instability, flow pathways for potential peat slide events and identification of down gradient environmental receptors;
 - preliminary stability analysis and hazard ranking; and
 - reporting to include the assessment, identification of hazards, mitigation measures and recommendations for further assessment to be included during post-consent detailed design and construction phases.
- 8.4.13 A Groundsure report will be obtained in order to identify any potential sources of ground contamination within the Proposed Development. This report will be reviewed and the findings summarised within the EIA Report chapter.

8.5 Issues Scoped Out

- 8.5.1 Flood Risk Assessment: As the Site is not located within an area assessed to be at risk of flooding from any sources of flooding identified on SEPA regulatory mapping, it is not anticipated that a detailed Flood Risk Assessment (FRA) would form part of the scope for assessment, although it is understood that a FRA would be completed as part of the detailed design. However, if assets are found to be at significant flood risk, or should the Proposed Development be found to have a potential impact on flood risk in the surrounding area, a detailed FRA would be prepared as part of the assessment. A surface water drainage strategy (including proposals for re-routing of the watercourse in the north of the site) shall be prepared in consultation with SEPA and submitted as an appendix to the EIAR.
- 8.5.2 Private Water Supplies: Based on initial review of PWS locations provided by CnES the Site is not in hydrological connection to any PWS or drinking water protected area (surface). the Site is not located within an area assessed to be at risk of flooding from any sources of flooding identified on SEPA regulatory mapping. If any PWS are identified, based on further assessment or surveying, a risk assessment of the PWS will be incorporated into the hydrology assessment within the EIAR.
- 8.5.3 GWDTE: According to the BGS digital map and Hydrogeological and Groundwater Vulnerability Maps of Scotland (1:625,000), the Site overlies a Low productivity aquifer. If it is identified that potentially groundwater dependent vegetation communities (as identified by ecological surveying and classification of NVC communities) are not supported by groundwater supplies, in consultation with SEPA, it would be sought to scope out this assessment from the EIAR. The EIAR will provide a detailed assessment of potential effects of the Proposed Development on surface water conditions that support sensitive, non-groundwater dependent habitats.
- 8.5.4 Watercourse Crossings: It is anticipated that access to the Site will be taken from the A859 to the west and/or from the minor road to Arnish Point, without the need for new watercourse crossings. Therefore, it is not anticipated that a watercourse crossing schedule or detailed assessment of potential impacts on watercourses at crossing locations shall be required. Should re-alignment of drains on the site be required as a result of the Proposed Development, potential impact on aquatic habitats would be assessed in Chapter 6 Ecology. Plans for any proposed drain realignment or culverting would be agreed in consultation with SEPA and would be set out in surface water management plans as part of a drainage strategy.

Potentially Significant Effects

²⁸ The Scottish Government (2017) Peat Landslide Hazard and Risk Assessments – Best Practice Guide for Proposed Electricity Generation Developments.

Hydrology and Hydrogeology

- 8.5.5 Based on baseline conditions described above, it is anticipated that the following potentially significant effects could occur as a result of the Proposed Development:
- There is the potential that, through an increase in impermeable area as a result of the Proposed Development, downstream flood risk could be increased as a result of increased surface water runoff rates;
 - There is the potential to alter in-channel or overland flow regimes through excavations, disruption to artificial drains, exposure of bare earth or rock and the alteration to field drains;
 - There is the potential to increase erosion and transport of sediment to watercourses as a result of construction on or in close proximity to watercourses, vegetation and soil stripping, excavations and dewatering activities. Potential effects include indirect effects on aquatic ecology and fluvial morphology;
 - In the event that PWS are found to be in hydrological or hydrogeological connection to the Proposed Development, there is the potential that the quality or quantity of water supply could be affected. There is the potential for water supply at groundwater or surface water abstraction locations to be impacted;
 - There is the potential to impact on receiving soils, groundwater and watercourse quality through the release of contaminated water and stored chemicals used on-site during construction works or operation of the Site. Potential effects include those on water quality and indirect effects on aquatic ecology;
 - There is potential to permanently alter or disrupt shallow groundwater flow, in particular through the construction of tracks, drainage measures and the development platform; and
 - Excavation of soil and bedrock during the construction phase of the Proposed Development could cause localised disruption and interruption to groundwater flow. Interruption of groundwater flow would potentially reduce the supply of groundwater to GWDTE thereby causing an alteration/ change in the quality or quantity of and/ or the physical or biological characteristics of the GWDTE. Contamination of groundwater may also cause physical or chemical contamination to the GWDTE.
- 8.5.6 Were peatland habitat restoration carried out on the Site to the west of the A859, the restoration of more natural drainage conditions would be integral to 're-wetting' of the landscape. Such measures have the potential to provide a betterment in surface water runoff rates in this area, such that peak runoff rates could be reduced during periods of high rainfall and flows from the peat to watercourses could be maintained during drier periods. Additionally, typical restoration methods (such as the installation of leaky dams and the removal of temporary drainage features associated with activities such as forestry planting) raise the water table within the peat allowing wetland vegetation communities to become reestablished. In hydrological terms this could reduce erosion rates on peat areas and therefore lower sediment load within watercourses.

Geology and Soils

- Potential for loss, disturbance and compaction of peat and carbon rich soils during the construction and operation of the Proposed Development from use of construction plant;
 - Potential for peat instability during the construction and operation of the Proposed Development which could result in peat slides;
 - The peat erosion potential of any peat disturbed may also be exacerbated as a consequence of localised drying of the peat and resultant oxidation;
 - Construction will likely require the excavation of peat during construction which will require sustainable reuse or reinstatement either within the Site or in a suitable location off-site (as detailed in section 2.2); and
 - Potential for contaminated land based on historic and adjacent land uses.
- 8.5.7 Through peatland restoration works to the west of the A859 the quality of peatland habitats could be improved in this area and the reinstatement of carbon rich soils could support sequestration in the future.

8.6 Summary

The scoping exercise has reviewed the hydrological features within the zone of influence of the Proposed Development and has identified those that have the potential to be impacted. Based on review of baseline conditions at the Site the following items have been scoped out of the EIAR:

- A detailed standalone flood risk assessment;
- Detailed PWS risk assessment; and
- The preparation of a watercourse crossing register.

8.6.1 A drainage strategy shall be prepared that will demonstrate how any increase in flood risk as a result of surface water runoff would be avoided, both on the Site and at offsite, downstream locations. Proposals for surface water management would include proposals for the realignment of the drains in the north and east of the Site and proposals would be agreed in consultation with SEPA. A drainage strategy shall be submitted as a technical appendix to the main EIAR.

8.6.2 There is the potential that ecological surveying may identify GWDTE habitats on the Site. Following the completion of ecological surveying, hydrological assessment would be carried out to determine the actual likelihood of groundwater dependency and the sensitivity of such habitats .

8.6.3 With regard to peat management at the Site, an OPMP and a PLHRA (if required) will be undertaken will be produced in accordance with SEPA guidance and included as Technical Appendices to the EIAR.

9. TRAFFIC AND TRANSPORT

9.1 Introduction

- 9.1.1 This chapter will describe the potential effects on Traffic and Transport in relation to the construction phase of the Proposed Development. Traffic associated with the operation of the Proposed Development would be negligible and is therefore not proposed to be included within the EIA process.
- 9.1.2 The assessment will be based on the effect of Heavy Goods Vehicles (HGVs), delivery vehicles and private car movements during the construction of the Proposed Development.
- 9.1.3 The traffic and transport chapter will:
- Describe the current traffic and transport conditions in the area around the Site;
 - Identify and assess the likely environmental effects associated with increased traffic;
 - Identify and describe the mitigation measures proposed to address potential significant effects; and
 - Assess residual effects post mitigation implementation.

9.2 Baseline Conditions

- 9.2.1 Traffic survey data for use in the assessment would be obtained from the UK Department of Transport (DfT) traffic survey database for the following links:
- A859
 - A858
 - A857
- 9.2.2 It is noted that the above links effectively make up the study area for the traffic and transport assessment. The Site lies to the east side of the A859 and all construction traffic will require to use the A859 corridor in order to access the Site. The A859 is the key north-south route on Lewis extending from the settlement and port of Stornoway to the north of the Site and to Harris to the south.
- 9.2.3 The A858 runs in an east-west axis to the west of Stornoway before turning northwards and running to the north end of Lewis. It is likely that some construction materials and site staff will come from origins on this road corridor so a temporary uplift in traffic levels is anticipated during the construction of the Proposed Development.
- 9.2.4 The final road link included within the study area is the A857 through Stornoway. This road links to both the A859 and A858 and provides the link between these roads and the port facilities within Stornoway as well as other commercial areas of settlement where some materials for the Proposed Development are likely to be sourced from. It is also likely that a high proportion of the construction workforce would be drawn from Stornoway.
- 9.2.5 Consultation will be undertaken with CnES Roads and Transportation to inform the assessment of effects in relation to the local road network.

9.3 Sensitive Receptors

- 9.3.1 The main receptors sensitive to increased traffic levels and associated environmental effects are likely to be residents of the isolated dwellings along the road corridors, users of the Lochside Arena Equestrian Centre on the opposite side of the A859 from the Site and those who use the road for leisure and recreational purposes (cyclists etc) as well as the settlement of Stornoway.

9.4 Potentially Significant Effects

- 9.4.1 The main potential effects of the Proposed Development will be increased traffic flows, or changes to the traffic composition, as a result of traffic movements during construction. In particular, there will be HGV movements carrying construction materials to site such as concrete, aggregates, plant and general construction materials as well as the transmission equipment which will be accommodated within the Proposed Development. The

origin of these trips will vary so a number of routes will be used to access Site. These potentially significant traffic effects (and associated environmental effects) may arise during the construction phase and would affect existing road users and those resident along the road corridors that will be used to access the Development. Changes to transport and traffic related to the Proposed Development would be temporary and limited to the construction phase, and as such, a traffic and transport chapter is not proposed as part of the EIAR.

- 9.4.2 An outline Construction Traffic Management Plan (CTMP) will be submitted with the application which will calculate increases to traffic movements and assess potential impacts on local traffic flow.
- 9.4.3 The key issues for consideration as part of the assessment within the outline CTMP for the construction phase will include the following:
- the temporary change in traffic flows and the resultant, temporary effects on the road network during the construction phase for local residents and users of the roads within the study area especially on the A859 corridor which will be used as the key construction route to Site;
 - the design of new access infrastructure from the A859; and
 - the consideration of appropriate and practical mitigation measures to offset any temporary effects. This is likely to include measures such as restricted working hours, designated construction routes to site, workforce travel arrangements, signage arrangements and communication arrangements.

9.5 Assessment Methodology

- 9.5.1 The effect of the increase in construction vehicle traffic movements will be quantified through comparison of existing traffic flows and vehicle composition (baseline data) with the flows predicted as a result of the construction of the Proposed Development.
- 9.5.2 Consideration of the potential effects on other road users will also be undertaken where road links are affected by construction traffic with the following potential effects considered:
- Severance of communities
 - Road vehicle driver and passenger delay
 - Non-motorised user delay / Non-motorised amenity
 - Fear and intimidation on and by road users
 - Road user and pedestrian safety
 - Hazardous/large loads
- 9.5.3 The following rules taken from the guidance would be used as a screening process to define the scale and extent of the assessment:
- Rule 1 - Include highway links where flows are predicted to increase by more than 30% or where the number of HGVs is predicted to increase by more than 30%; and
 - Rule 2 - Include any other specifically sensitive areas where traffic flows are predicted to increase by 10% or more.
- 9.5.4 Where a detailed assessment is required, sensitivity and magnitude criteria will be used in order to determine the significance of effects.
- 9.5.5 In addition, the potential for cumulative effects will be considered with other developments which are proposed to use the same public roads as the Development during construction. This is likely to be restricted to construction of the proposed Stornoway wind farm.

9.6 Mitigation

- 9.6.1 An outline CTMP will be proposed, to mitigate the effects of construction traffic (and associated environmental effects) and the contents of the outline CTMP would be agreed with CnES prior to works commencing on Site. The outline CTMP will include measures under the following categories:
- Construction programme and phasing

- Quantification of construction movements
- Defined working hours
- Measures to minimise construction traffic impacts (delivery control, sustainability, speed limits, designated haul routes, staff induction, workforce travel arrangements, signage etc)
- Communication arrangements (with local community, highway authorities and other construction Sites)

9.7 Issues Scoped Out

- 9.7.1 On the basis of the detailed desktop study, the professional judgement of the EIA team and experience from other relevant projects and policy guidance, the following effects will be scoped out of the traffic and transport assessment:
- 9.7.2 Construction Stage – Construction vehicle traffic movements have the potential to increase traffic flow, change traffic composition and effect local road users and local residents. However, given these changes will be temporary and limited to the construction phase, a traffic and transport chapter is not proposed as part of the EIAR and is therefore scoped out. It is intended that an outline CTMP is submitted with the application which will assess potential impacts on the local traffic networks.
- 9.7.3 Operational Stage - Once the Development is operational, the amount of traffic associated with a converter station and substation is minimal, relating to maintenance only. It is estimated that on average there will be just a small number of vehicles accessing the Site on an infrequent basis. Therefore, the effect of vehicle movements during the operational phase will be negligible. In respect of traffic and transport, the operational phase of the Proposed Development will therefore not be assessed.
- 9.7.4 Decommissioning Stage – At some point in the future, the Development will be decommissioned. Traffic associated with the decommissioning stage is anticipated to be significantly less than that generated during construction. Given the potential timescales involved and the likelihood for changes to the baseline situation during this period, the access, traffic and transport effects of wind farm decommissioning will not be assessed.

9.8 Summary

- 9.8.1 This chapter has set out the proposed approach to the assessment of the potential effects associated with increased construction traffic within the identified study area.
- 9.8.2 Potential effects of the Proposed Development on the existing traffic and transport resource are anticipated to be temporary and limited to the construction phase. As such, traffic and transport is scoped out of the EIAR.
- 9.8.3 Impacts on the local traffic network and transport resource will be assessed as part of an outline CTMP which will be submitted with the application. Where appropriate, the outline CTMP will identify mitigation measures to prevent, minimise and offset any likely significant effects identified. Cumulative effects from the Proposed Development in combination with other proposed developments will also be considered.

10. NOISE

10.1 Introduction

This Chapter describes the noise and vibration baseline conditions and proposed scope of assessment and presents the methodology for assessing potential effects on noise sensitive receptors from construction and operation of the Proposed Development to establish if this topic should be scoped into the EIA.

10.2 Baseline Conditions

- 10.2.1 A survey of the background ($L_{A90,15 \text{ mins}}$) ambient noise ($L_{Aeq,15 \text{ mins}}$), and 1/3rd octave band spectrum levels was conducted to determine the existing noise level in the area and at any nearby noise sensitive receptors (NSRs) likely to be affected by the noise in accordance with BS 4142²⁹. To ensure that values are reliable and representative of the outdoor amenity of NSRs, measurements at four properties took place from 5 April 2023 to 10 May 2023.
- 10.2.2 The sound level meters were calibrated to traceable standards within the preceding two years and the portable calibrators within the preceding 12 months. The sound level meters were spot calibrated both prior to and upon completion of the survey. No significant drift was noted to have occurred during the measurement campaign.
- 10.2.3 As the survey is based on long-term unattended measurements, a meteorological station was also set up in the area to monitor for appropriate weather conditions. Meteorological conditions such as wind and rain will affect background noise (BGN) conditions and have possible effects on noise propagation. Measurements were conducted every 15 minutes to coincide with the measured noise data.
- 10.2.4 Detailed ordinance survey maps and satellite imagery have been used to identify the potential NSRs and baseline monitoring locations. A background noise survey was conducted at the locations detailed in Table 10.1; these receptors were chosen as representative of the noise climate for the rural area surrounding the Site, with land uses consisting of moorland and grassland.
- 10.2.5 Baseline noise measurements were filtered for daytime and night-time conditions (night-time defined as between 23:00 and 07:00) where noise is shown to be at its lowest.
- 10.2.6 Periods of rain or windspeeds of 5 m/s or above are removed from the analysis as per BS 4142:2014. A statistical analysis of night-time noise levels was conducted of the histogram distribution of L_{A90} (15 minute) levels. This statistical analysis was conducted for the long-term measurement location to define a representative background noise level at each location. The modal value has been considered alongside the skew of the data set to select the appropriate representative level.

NSR	Easting	Northing	Daytime LA90 (dB(A))	Night time LA90 (dB(A))
BGN 1 – 19 Marybank road	140335	934018	31	20
BGN 2 – 3 Moor Cottages	140602	933501	38	22
BGN 3 – 19B Moor Cottages	140456	933237	35	23
BGN 4– Macauley Farm	140159	932194	38	22

10.3 Sensitive Receptors

- 10.3.1 In general, the background noise levels in the area are relatively low, especially at night. The results of baseline noise survey show that NSRs in the vicinity of the Site have a noise environment quantified between 20 – 23 dB(A) L_{A90} during night periods and around 31 - 38 dB(A) during the day. Given the rural area, the acoustic environment is generally very quiet. The noise environment in the surrounding area is typically rural, with

²⁹ British Standard 4142: Methods for rating and assessing industrial and commercial sound (BS 4142), BSI, 2014, Amended 2019

daytime noise consisting of road traffic noise from the A859 and some industrial noise from quarry and vehicle activity. At night-time there are no dominant noise sources and levels are very low.

10.3.2 Receptors chosen are representative of the closest properties surrounding the Proposed Development, up to approximately 1.5 km. The noise assessment conducted for these properties will have the highest noise impact from the Proposed Development, and therefore if the chosen properties meet noise criteria, then any property at greater distances will also pass the criteria. At the time of writing, the location of the Site suggests the locations presented in Table 10.2 are within range to be considered NSRs.

Table 10.2: NSRs near the Proposed Development				
NSR	Easting	Northing	Daytime L_{A90} (dB(A))	Night time L_{A90} (dB(A))
NSR 1 – Creed Lodge	140482	932606	38*	22*
NSR 2 – Macauley Farm (BGN 4)	140159	932194	38	22

10.3.3 Figure 10.1 shows the location of the Site in the wider environment, the identified NSRs and the background noise monitoring locations listed in Table 10.1.

10.1 Potential Significant Effects

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

- noise and vibration during the construction phase; and
- operational effects of noise from the HVDC converter station and AC substation.

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

Construction Noise and Vibration

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

- Blasting of bedrock
- crushing of rock;
- rotary piling during the construction of foundations;
- excavators, delivery of materials with lorries/dumper trucks, delivery and pumping of concrete; and
- installation of electrical infrastructure equipment.

10.1.4 A construction noise impact assessment will be conducted according to BS 5228³⁰. Initially, as a worst-case assumption at this stage, the phases will be assessed simultaneously, where all the equipment is assumed to be operational for all stages. If it is known what equipment will be used at specific locations and times throughout construction, then a more in-depth construction noise impact assessment can be conducted. If crushing or blasting is to take place, the platform works stage has the potential to cause significant noise effects during construction.

Construction Vibration

10.1.5 There is the potential for construction vibration impacts from blasting activity. The highest levels of vibration on these sites are generally only associated with blasting activities and piling, although at closer range vibrations can be experienced from material processing, transport and the operation of large earthmoving machinery. Measures to control vibration are generally necessary where sites are located in the vicinity of sensitive premises.

³⁰ British Standard 5228-1:2009 +A1:2014 (BS5228), Code of Practice for Noise and Vibration Control on Construction and Open Sites

10.1.6 General formulae have been developed empirically in BS 5228-2 and can be used as a worst-case prediction of vibration levels. The various formulae do not take into account variability of ground strata, the pile-soil interaction process, coupling between the ground and the foundations, etc. Hence these formulae can only provide a first assessment of whether or not the vibrations emanating from a site are likely to constitute a problem. If likely effects are predicted, more detailed assessments are required.

Operational Noise

- 10.1.7 With respect to operational noise, the most significant sources of environmental noise in HVDC converter stations and substations are air handling units (AHUs), valve coolers, reactors, transformers and associated cooling equipment.
- 10.1.8 Transformers and other electrical equipment associated with substation developments emit noise at frequencies of twice the normal operating current frequency due to magnetostriction of the transformer core. In the UK the supply current frequency is 50 Hertz (Hz), which results in 100 Hz and harmonics thereof being produced by the transformer. The nature of the noise generation mechanism results in tonal noise being emitted. The noise is continuous and consistent depending on the electrical load of the equipment, and therefore is not expected to have any impulsive characteristics. Transformers for the Proposed Development are expected to be housed internally in buildings.
- 10.1.9 An initial noise propagation model was constructed for the Proposed Development, with equipment and noise emission levels assumed from similar HVDC projects. A BS 4142:2014³¹ assessment was performed for the Proposed Development to indicate the potential noise impact. The assessment is worst-case assuming all equipment (including standby and backup plant) is running at full output. The worst-case assessment found there is potential for noise impact equipment causing the highest impact included the AHUs and external cooling equipment, which will be mitigated in the design phase.
- 10.1.10 Noise limits are assumed to relate to BS 4142; however due to the low night-time noise levels (below 30 dB(A) LA90), these measurements are outside the validity range of BS4142. Consideration should be had for internal noise levels during night-time periods. An assessment of the indoor noise levels should be conducted according to BS 8233:2014 to analyse the noise reduction due to the insulation of NSR property.

Mitigation

Construction Noise and Vibration

- 10.1.11 If rock crushing should take place, it would be as far from the NSRs as possible. If crushing is to take place and can be managed and reduced to minimise impact, then the construction noise limit of 65 dB is likely to be met.
- 10.1.12 If blasting should take place, then groundborne vibration as a result of the operations shall not exceed a peak particle velocity of [6 mm/sec][10 mm/sec] in 95% of all blasts measured over any period of [6 months] and no individual blast shall exceed a peak particle velocity of [12 - mm/sec] as measured at vibration sensitive buildings. The result will be the maximum of three measurements taken in a perpendicular direction to the ground surface.
- 10.1.13 Best practice measures will be put in place during construction to mitigate impacts from noise and vibration. The measures will be included in the CEMP, to be agreed with CnES and secured by an appropriately worded planning condition, and will include best practice measures as outlined in BS 5228 such as:
- avoiding undertaking noisy activities at the weekends or outside of daytime defined hours as necessary. In setting working hours, consideration is given to the fact that the level of noise through the normal working day is more easily tolerated than during the evening and night-time. Selecting quiet working methods, including the use of inherently quiet plant/equipment, reasonable working hours for noisy operations, and economy and speed of operations. Site work continuing throughout at 24-hour period should be programmed, where appropriate, including scheduling of haulage vehicles during the working day;

- avoidance of vehicles waiting or queuing, particularly on public highways or in residential areas with their engines running; and
- ensuring plant and equipment are regularly and properly maintained. All plant should be situated to sufficiently minimise noise impact at nearby properties.
- particularly, if blasting is to occur, good public relations have been shown to reassure the public of the fact that normal production blasting has not been found to damage property, and that even the most cosmetic of plaster cracking is extremely unlikely. In addition, contacting owners of sensitive properties to advise of imminent blasting can further help promote harmony with the public. It is good practice to publicize times when blasting will occur and to avoid blasting at other times whenever possible. Air overpressure from blasting comprises transient airborne pressure waves which can be heard and felt. Air overpressure can be influenced by meteorological conditions over which operators have no control. Although air overpressure can be affected by the total quantity of explosives deployed in a blast, there is a balance to be struck between a smaller number of large blasts and a larger number of small blasts. Public relations have an important role to play in determining the optimum balance between size and frequency of blasting.

10.1.14 Practical measures, including good blast design, that have been found to reduce air overpressure and/or vibration are:

- taking particular care with the development of faces and with trial blasts as anomalous vibration levels might be produced when there is no free face to relieve the energy produced;
- ensuring appropriate burden to avoid over or under confinement of the charge;
- accurate setting out and drilling;
- appropriate charging
- appropriate stemming with appropriate material such as sized gravel or stone chippings;
- using delay detonation to ensure smaller maximum instantaneous charges (MICs);
- using decked charges and in-hole delays
- blast monitoring to enable adjustment of subsequent charges;
- designing each blast to maximize its efficiency and reduce the transmission of vibration; and
- avoiding the use of exposed detonating cord on the surface in order to minimize air overpressure.

Operational Noise

10.1.15 A detailed noise impact assessment is required to determine the extent of mitigation required for the Site to reduce the impact on NSRs. The main equipment would be housed inside buildings, limiting the noise emissions, although some noise impacts may still be experienced. Potential impacts would be limited to the externally housed equipment of the proposed HVDC site, where mitigation may be required to curtail the noise impact on the critical receptors. This mitigation is likely to be achieved in the design phase, where low-noise cooling systems are specified, otherwise this may come in the form of barriers within the Site, bunds around the Site, or building at lower platform heights, effectively “sinking” the Site to reduce direct noise propagation to NSRs. Further modelling can be conducted to investigate the impact of bunding around the Site, platform height reduction and acoustic barriers and, where appropriate, such additional measures to reduce noise would be incorporated into the detailed design.

10.2 Assessment Methodology

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

Construction Noise and Vibration

- 10.2.2 The assessment of construction noise will comply with BS5228, as detailed in section 10.5 above. Guidance on the prediction and assessment of noise and vibration from construction sites is provided in BS5228 – Part 1: Noise, which also provides recommended limits for noise from construction sites.
- 10.2.3 The construction noise impact assessment (CNIA) would be carried out according to the ABC method specified in Table E.1 of BS5228-1, in which noise sensitive receptors (NSRs) are classified in categories A, B or C according to their measured or estimated background noise level. Construction noise limits are related to levels shown in Table 10.2.

Assessment category and threshold value period	Threshold value, LAeq (dB)		
	Category A	Category B	Category C
Night-time	45	50	55
Evenings and weekends	55	60	65
Daytime and Saturdays	65	70	75

- 10.2.4 For best practice, a Construction Noise Management Plan (CNMP) will be detailed regardless of whether limits are met or not according to BS 5228-1. The principal contractor would develop a CNMP prior to starting construction works.
- 10.2.5 Blasting air overpressure is related to the levels shown in Table 10.3.

Wind Speed	Equivalent air overpressure
Constant wind of 5 m/s, Beaufort Scale 3, Gentle Breeze	120 dB
Constant wind of 8 m/s, Beaufort Scale 4, Moderate Breeze	130 dB
Constant wind of 20 m/s, Beaufort Scale 8, Gale	140 dB

- 10.2.6 Part 2: Vibration. BS5228-2 provides recommended limits for vibration from construction sites. The construction vibration impact assessment (CVIA) will be carried out against the guidance on effects of vibration levels specified in Table B.1 of BS5228-2. The level of vibration ranging from 0.14 mm.s⁻¹ to 10 mm.s⁻¹ indicates where vibration may be perceptible however acceptable, or intolerable.
- 10.2.7 Construction activities that induce vibration are likely to be limited to potential blasting and piling activities.
- 10.2.8 Potential of heavy goods vehicle (HGV) vibration on receptors along haul roads will be predicted using the procedures in Transport and Road Research Laboratory (TRL) Research Report 246 – Traffic Induced Vibrations in Buildings.

Operational Noise

- 10.2.9 The assessment of operational noise will comply with the following standards and guidance:
- Planning Advice Note (PAN) 1/2011: '*Planning and Noise*', which provides advice on the role of the planning system in helping to prevent and limit adverse effects of noise and is accompanied by Technical Advice Note (TAN): Assessment of Noise. Neither PAN 1/2011 nor the associated TAN provide specific guidance on the assessment of noise from fixed plant, but the TAN includes an example assessment scenario for 'New noisy development (incl. commercial and recreation) affecting a noise sensitive building', which is based on BS 4142:1997: *Method for rating industrial noise affecting mixed residential and industrial areas*. This British Standard has been replaced with BS 4142:2014: *Methods for rating and assessing industrial and commercial sound*.

- British Standard 4142:2014+A1:2019: *Methods for rating and assessing industrial and commercial sound* (BS 4142), which describes methods for rating and assessing the following:
 - sound from industrial and manufacturing processes.
 - sound from fixed installations which comprise mechanical and electrical plant and equipment.
 - sound from the loading and unloading of goods and materials at industrial and/or commercial premises.
 - sound from mobile plant and vehicles that is an intrinsic part of the overall sound emanating from premises or processes, such as that from forklift trucks, or that from train movements on or around an industrial and/or commercial site.
- The methods use outdoor sound levels to assess the likely effects of sound on people who might be inside or outside a dwelling or premises used for residential purposes upon which sound is incident. In accordance with the assessment methodology, the specific sound level ($L_{Aeq,T}$) of the noise source being assessed is corrected, by the application of corrections for acoustic features, such as tonal qualities and/or distinct impulses, to give a "rating level" ($L_{Ar,Tr}$). The British Standard effectively compares and rates the difference between the rating level and the typical background sound level ($L_{A90,T}$) in the absence of the noise source being assessed. The British Standard advises that the time interval ('T') of the background sound measurement should be sufficient to obtain a representative or typical value of the background sound level at the time(s) when the noise source in question is likely to operate or is proposed to operate in the future.
- Noise Rating Curves. The Noise Rating - NR - curve is developed by the International Organization for Standardization (ISO 1973) to determine the acceptable indoor environment for hearing preservation, speech communication and annoyance. The noise rating graphs for different sound pressure levels are plotted as acceptable sound pressure levels at different frequencies. Acceptable sound pressure level varies with the room and the use of it. Different curves are obtained for each type of use. Each curve is referenced by a NR number; and
- British Standard 8233:2014: *Guidance on sound insulation and noise reduction for buildings provides guidance for the control of noise in and around buildings*. The guidance provided within the document is applicable to the design of new buildings, or refurbished buildings undergoing a change of use, but does not provide guidance on assessing the effects of changes in the external noise levels to occupants of an existing building. The guidance provided includes appropriate internal and external noise level criteria which are applicable to dwellings exposed to steady-state external noise sources. It is stated in the British Standard that it is desirable for internal ambient noise level not to exceed the criteria set out in **Table 10.3**.

Table 10.3: Summary of internal ambient noise level criteria for dwellings from with BS 8233:2014

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

Cumulative Effects

10.2.10 Where required, cumulative noise impacts will be assessed and would consider other developments as listed in section 3.2 above, and would be completed in line with the approach described at section 3.2.

10.3 Issues Scoped Out

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

10.4 Summary

10.4.1 The above section outlines the tasks to be undertaken during the EIA with regards to Noise and Vibration. Any potential impacts likely to have a significant effect on the NSRs with respect to operational noise and construction noise and vibration of the Proposed Development, will be evaluated within the EIA Report.

10.4.2 Mitigation measures will be proposed, where required, for likely significant effects. In this case, it is anticipated the main issues will be operational noise from cooling equipment and air handling units. It is anticipated that the main issues from construction noise will be crushing and blasting activities.

10.4.3 Noise limits (in line with best practice guidance) will be agreed with CnES. Appropriate mitigation measures will be implemented to ensure these limits will be met.

11. SUMMARY OF TOPICS

11.1.1 As explained above, a number of topics are considered to be not significant, and will be scoped out from further consideration within the EIA process. Table 15.1 below lists each topic and the elements scoped out from further assessment; with a summary of the justification for doing so.

Table 11.1: Issues Scoped Out		
Topic	Scoped Out	Justification
Landscape Character and Visual Impact	<ul style="list-style-type: none"> Linear Crofting LCT; Dispersed Crofting LCT; 	The linear crofting and dispersed crofting LCT's have limited theoretical views at distances in excess of 7 km and its unlikely significant effects would occur. Therefore, they are scoped out of further assessment.
	<ul style="list-style-type: none"> The South Lewis, Harris and North Uist NSA; 	The NSA lies almost entirely outwith the wider study area and it is considered that none of the special qualities would experience significant effects. Therefore, it is scoped out of further assessment.
	<ul style="list-style-type: none"> WLA30; WLA33; 	<p>There are no national or regional landscape designations located within the 5 km study area.</p> <p>The nearest designation is WLA30 and 33 which are situated more than 8 km. It is unlikely the WLA would experience significant effects and therefore, the two WLA's have been scoped out of further assessment.</p>
	<ul style="list-style-type: none"> North bound vehicle travellers on the A857; The A858; East bound road users on the A886; North bound vehicle travellers on the B895; Road users travelling south on the B897; Hebridean Way Cycle Route. 	<p>North bound travellers would be travelling away from the Proposed Development and are therefore, scoped out of further assessment.</p> <p>There is no theoretical visibility from the A858 and it is scoped out from further assessment.</p> <p>East bound travellers would be heading away from the Proposed Development and this direction of travel on this route has been scoped out of further assessment.</p> <p>North bound vehicle travellers on the B895 would be heading away from the Proposed Development and this direction of travel on this route has been scoped out of the assessment.</p> <p>Road users travelling south on the B897 would be heading away from the Proposed Development and this direction of travel on this route has been scoped out of the assessment</p> <p>There is no theoretical visibility from the Hebridean Way (Cycle Route) and this receptor has therefore also been scoped out of the assessment.</p>

Table 11.1: Issues Scoped Out		
Cultural Heritage	<ul style="list-style-type: none"> • Battlefields; and • World Heritage Sites; 	There are no assets with those designations within 3 km of the Site and therefore they are scoped out of further assessment.
	<ul style="list-style-type: none"> • Listed buildings within the Stornoway townscape 	The settings of these buildings are characterised by their urban setting and their association with the built environment of the town and would not be affected by the Proposed Development. Therefore they are scoped out of further assessment
	<ul style="list-style-type: none"> • Designated heritage assets that lie outside of the zone of theoretical visibility (ZTV) for the Proposed Development; and • Assessment of settings impacts on designated heritage assets more than 3 km from the Proposed Development 	Assessment of the effect of the Proposed Development on the settings of designated heritage assets more than 3 km from the Site will be scoped out
Ecology and Nature Conservation	<ul style="list-style-type: none"> • Disturbance caused by construction activities 	A Construction Environmental Management Plan (CEMP) will be produced, which will capture all mitigation measures required in respect of ecological features. With the adherence to a CEMP, as overseen by an ECoW, it is not considered that there is potential for significant impacts. Therefore no further assessment is proposed.
	<ul style="list-style-type: none"> • Statutory designated sites within 10 km of the Proposed Development where there is no potential impact pathway 	The closest designated sites, Lewis Peatlands SAC and Tong Saltings SSSI, to the Proposed Development are designated for terrestrial features, predominantly associated with flora. No pathway has been identified for impacts to these features due to the distance they are separated from the Proposed Development and no hydrological connectivity. Therefore it is scoped out of further assessment.
	<ul style="list-style-type: none"> • Reptiles and amphibians; and • Surveys for terrestrial invertebrates. 	<p>Reptiles and amphibians are likely to be present and may be negatively affected by vegetation clearance works associated with the Proposed Development. However, the impacts are considered to be small in scale relative to the extensive habitat that will still remain available for these species.</p> <p>Pre-construction surveys will confirm the presence of sensitive features used for shelter and hibernation and will inform micro-siting of the design.</p> <p>Mitigation measures required to avoid the spread of invasive species are also recommended to be included within the CEMP.</p> <p>Therefore, Reptiles and amphibians and Surveys for terrestrial invertebrates are scoped out of further assessment.</p>

Table 11.1: Issues Scoped Out		
Ornithology	<ul style="list-style-type: none"> Habitat Loss (Construction and Operational Phase) 	The levels of habitat loss and/or modification associated with construction and operation are low and are not considered to represent a likely significant loss and/or modification of bird habitat. Therefore they are scoped out of further assessment.
	<ul style="list-style-type: none"> Disturbance (Operational Phase) 	While the Proposed Development may result in disturbance arising from noise, the magnitude of this potential impact is considered too low to represent a likely significant effect and is therefore scoped out of further assessment.
Hydrology, Hydrogeology, Geology, and Soils	<ul style="list-style-type: none"> Flood Risk Assessment 	The Site is not located within an area assessed to be at risk of flooding from any sources of flooding identified on SEPA regulatory mapping. Therefore, it is scoped out of further assessment.
	<ul style="list-style-type: none"> Private Water Supplies 	The Site is not located within an area assessed to be at risk of flooding from any sources of flooding identified on SEPA regulatory mapping out of further assessment.
	<ul style="list-style-type: none"> Groundwater dependent terrestrial Ecosystems 	The Site overlies a Low productivity aquifer. If it is identified that potentially groundwater dependent vegetation communities are not supported by groundwater supplies, in consultation with SEPA, it would be sought to scope out this assessment from the EIAR.
	<ul style="list-style-type: none"> Watercourse Crossings. 	It is anticipated that access to the Site will be taken from the A859 to the west and/or from the minor road to Arnish Point, without the need for new watercourse crossings. Therefore, it is not anticipated that a watercourse crossing schedule or detailed assessment of potential impacts on watercourses at crossing locations shall be required. Therefore, it is scoped out of further assessment.
Traffic and Transport	<ul style="list-style-type: none"> Construction Traffic 	<p>Construction vehicle traffic movements have the potential to increase traffic flow, change traffic composition and effect local road users and local residents. However, given these changes will be temporary and limited to the construction phase, a traffic and transport chapter is not proposed as part of the EIAR and is therefore scoped out.</p> <p>It is intended that an outline CTMP is submitted with the application which will assess potential impacts on the local traffic networks.</p>
	<ul style="list-style-type: none"> Operational Traffic 	Once the Development is operational, the amount of traffic associated with a converter station and substation is minimal, relating to maintenance only. Therefore, the effect of vehicle movements during the operational

		phase will be negligible and therefore not assessed further.
	<ul style="list-style-type: none"> Decommissioning Traffic 	Traffic associated with the decommissioning stage is anticipated to be significantly less than that generated during construction and therefore, will not be assessed further.
Noise	<ul style="list-style-type: none"> Vibration 	There are no known vibrational noise issues associated with the operation of the Proposed Development at nearby NSRs. Therefore, it is proposed that vibration is scoped out of the EIA assessment
Land Use	Whole topic	<p>The Scottish Government Soil Map³² classifies the land as being capable of use as improved grassland (Class 5.3). as the Proposed Development is not located on high agricultural quality land, there would be minor potential for impact.</p> <p>Due to the distance of the Site from designated core paths and the River Creed, it is anticipated that the Proposed Development would have a negligible impact on tourism and recreation in the surrounding area, during both the construction and operational phase of the development.</p> <p>No potential significant effects in relation to land use and amenity have been identified. Therefore, it is proposed that all issues relating to land use are scoped out of further assessment.</p>
Socio-economics, Recreation and Tourism	Whole topic	<p>The socio-economic assessment undertaken as part of the needs case for National Developments as defined in National Planning Framework 4 is an established and settled policy in Scotland. Given that the proposed project fits within the provisions of the policy and its supporting framework it is unnecessary to revisit or argue material relevance of socio-economic impact.</p> <p>Furthermore, any socio-economic statement would be best set out as a standalone assessment of socio-economic impacts in the context of evidence of compliance with national and local development policy.</p> <p>Accordingly, a socio economic assessment is scoped out of EIA based on an understanding of the relative scales of individual transmission infrastructure projects proposed in this project where any assessment of impacts is minor and likely not significant. A standalone report will be provided to accompany the EIA Report as part of the application to provide information on this topic to be considered in relation to</p>

³² Scotland's Environment (2021) Scotland Environment Map. https://map.environment.gov.scot/Soil_maps/?layer=5

Table 11.1: Issues Scoped Out		
		wider policy, as part of the determination process.
Population and Human Health	Whole topic	<p>The Proposed Development would be located within a predominantly rural area. The main settlement within the vicinity of the Site is Marybank to the north.</p> <p>The impacts on human health for a development of this nature and scale are limited to increased exposure to noise and changes in amenity value of residential or recreational resources. These will be considered in the Landscape and Visual Impact and Noise and Vibration chapters of the EIA Report and therefore a specific Human Health assessment has been scoped out of the EIA. Based on the above, it is proposed that the Population and Human Health topic (including potential impacts to Socioeconomics, Tourism and Recreation) is scoped out of further assessment in the EIA.</p>
Electric and Magnetic Fields (EMF)	Whole topic	<p>The UK Health Protection Agency (HPA) is the government body responsible for policy and guidance on Electric and Magnetic Fields (EMF). Exposure guidelines have been developed by the International Commission on Non-Ionising Radiation Protection (ICNIRP) to ensure protection of human health in different situations, occupational exposure and public exposure, which have been adopted by the HPA for application in the UK. Whilst substation equipment is known to generate EMFs, these have been observed to drop away to background levels quickly with distance from source. In addition, EMF generated by substation infrastructure has been consistently recorded to be lower than that associated with incoming/outgoing overhead line or underground cables associated with the substation. All EMF generating infrastructure will be set back from the site boundary and accounting for this, the nearest properties to the Site (those immediately south / east of the Proposed Development along Fanellan Road) are unlikely to be located within 150-200 m of any electrical infrastructure. It is therefore anticipated that EMF would be at, or close to background levels at the Project site boundary. The Proposed Development will adhere to the relevant regulations and guidance relating to EMF and no significant effects are likely. It is proposed that EMF is scoped out of further assessment in the EIA.</p>
Major Accidents and Disasters	Whole topic	<p>The EIA Regulations require the consideration of the vulnerability of the Proposed Development to major accidents and disasters.</p>

Table 11.1: Issues Scoped Out		
		<p>Given the nature of the Proposed Development, the potential for effects related to the vulnerability to major accidents and disasters are likely to be limited to those associated with unplanned power outages, due to extreme weather or structural damage.</p> <p>Crisis management and continuity plans are in place across the SSE Group. These are tested regularly and are designed for the management of, and recovery from, significant energy infrastructure failure events. Where there are material changes in infrastructure (or the management of it) additional plans are developed.</p> <p>Potential significant effects on the vulnerability of the Proposed Development to Major Accidents and Disasters has therefore been scoped out of the EIA Report.</p>
Air Quality and Climate	Whole topic	<p>There are no Air Quality Management Areas (AQMAs) in the CnES area, indicating that the area is meeting national air quality objectives and European directives³³ limits and target values for the protection of human health.</p> <p>The Proposed Development has the potential to give rise to some localised and temporary construction related releases associated with dust (foundation construction, passage of vehicles along access tracks) and construction plant and traffic exhaust emissions. However, the nature of the construction activities is that these would be localised, short term for individual activities and intermittent. Any potential for nuisance effects on residential or recreational amenity during construction would be strictly controlled in accordance with a CEMP.</p> <p>In regard to climate, in the context of the EIA process, climate is assessed both in relation to the contribution of the Proposed Development to increasing or decreasing the nature and magnitude of greenhouse gas emissions (GHGs), and the vulnerability of the Proposed Development to climate change.</p> <p>Based on the above, it is therefore proposed that Air Quality and Climate can be scoped out of the EIA Report</p>

³³ Directive 2008/50/EC, Directive 2004/107/EC and 2001/81/EC

12. NEXT STEPS

12.1.1 The Applicant invites consultees to comment on the following:

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

12.1.2 All responses should be addressed to:

Comhairle nan Eilean Siar

12.1.3 When submitting a response to the Scoping Report, the Applicant would be grateful if you could also send a copy of your response to the following email address mairi.rigby@sse.com

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

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

37 38 39 40 41 42 43 44



Legend

Site Boundary



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Project No: LT000014

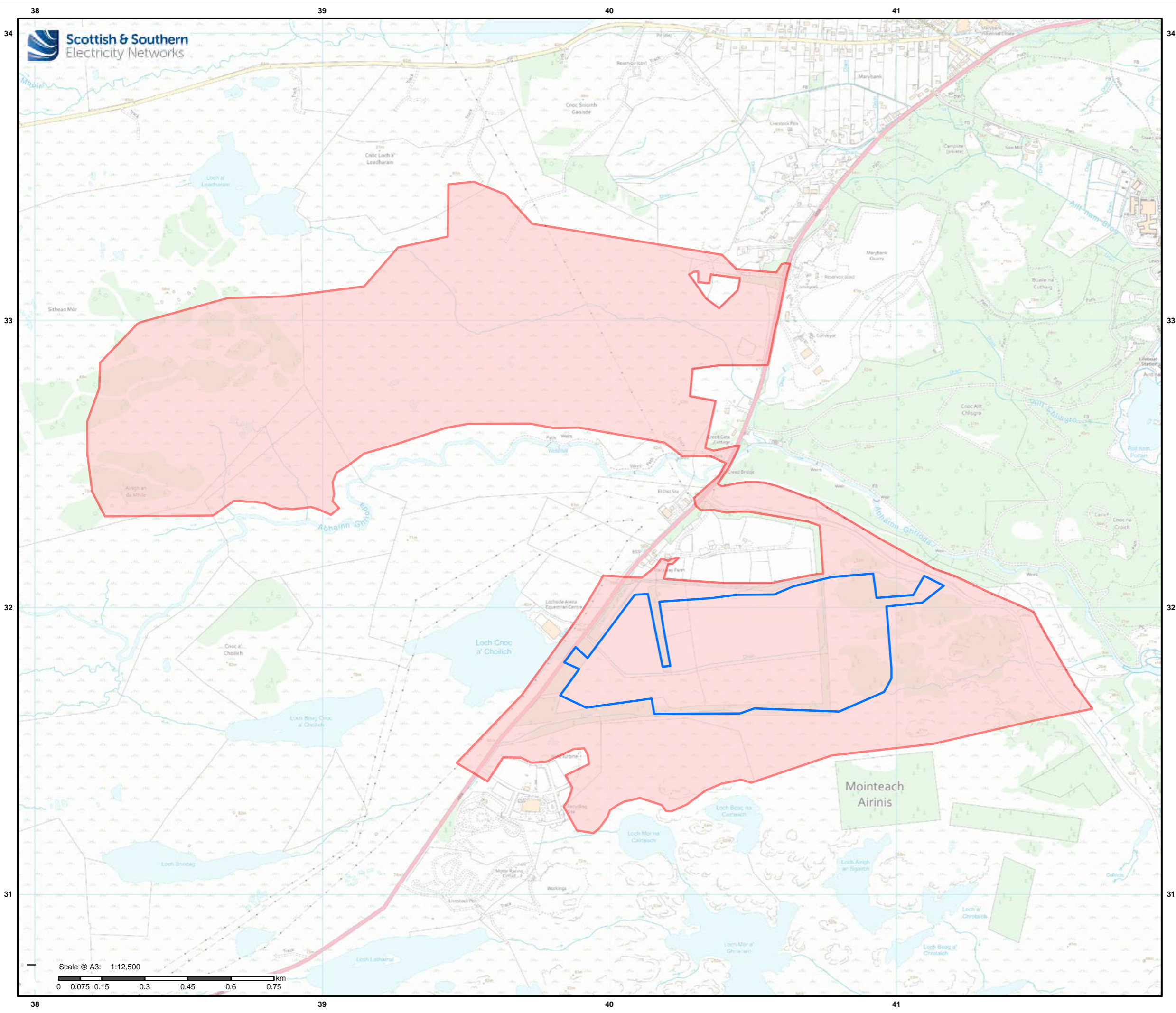
Project: Lewis Substation and Converter Hub

Title:
Figure 1.1: Site Location

Drawn by: AB / CT Date: 02/08/2024

Drawing: 1620015322_Fig1.1_SiteLocation_04

37 38 39 40 41 42 43 44



Legend

- Site Boundary
- Operational Footprint Area



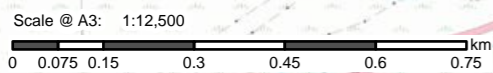
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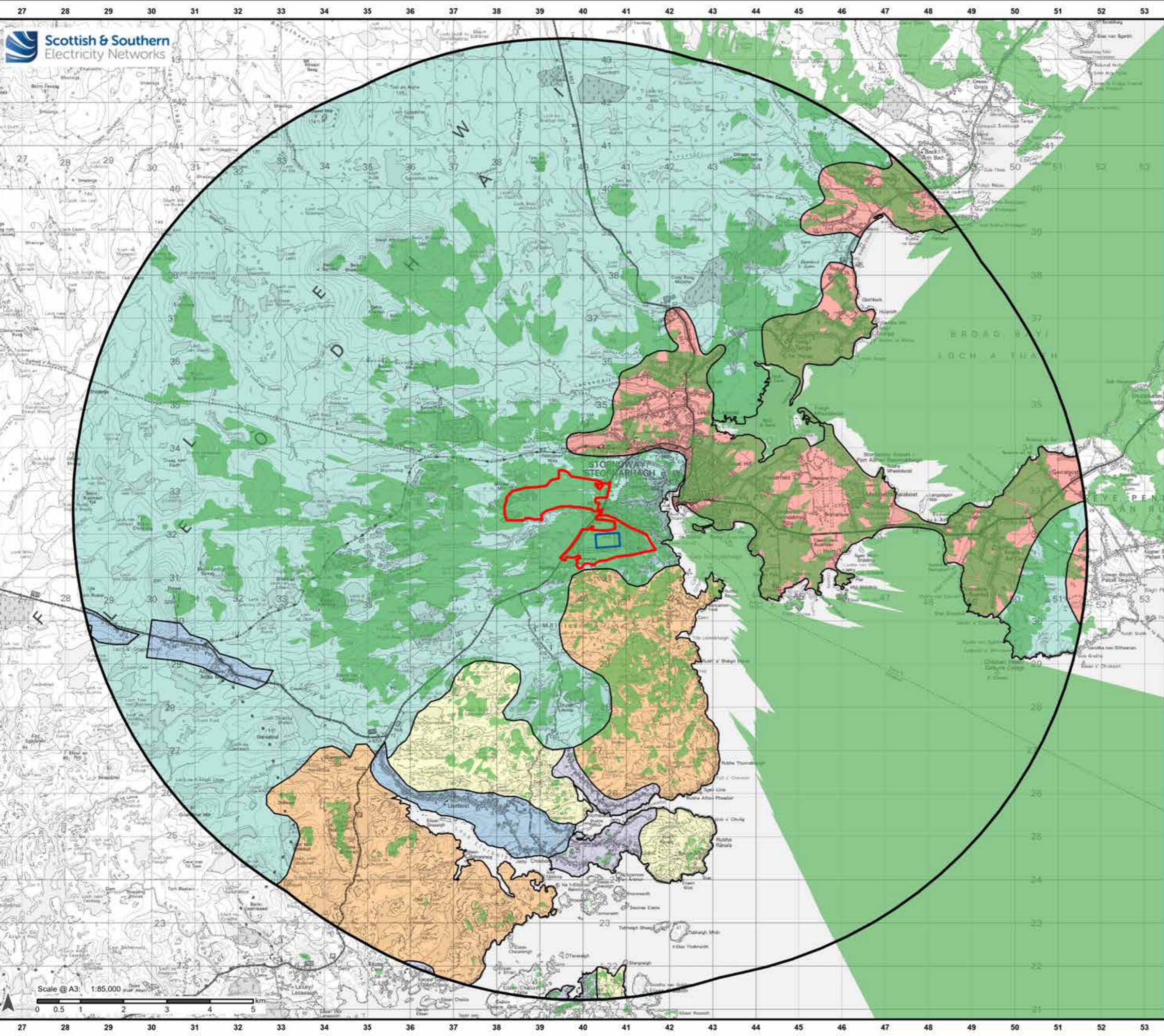
Project No: LT000014
Project: Lewis Substation and Converter Hub

Title:
Figure 2.1: Proposed Development

Drawn by: KB Date: 31/07/2024

Drawing: 1620015322_Fig2.1_ProposedDevelopment_08





Legend

- Site Boundary
- Indicative Footprint Area*
- Study Area (10km)

Landscape Character Types

- Boggy Moorland - Outer Hebrides
- Cnoc and Lochan
- Dispersed Crofting
- Gently Sloping Crofting
- Linear Crofting
- Rocky Moorland - Outer Hebrides

Zone of Theoretical Visibility (ZTV)

- Areas with theoretical visibility

Notes:
* For the purposes of the ZTV



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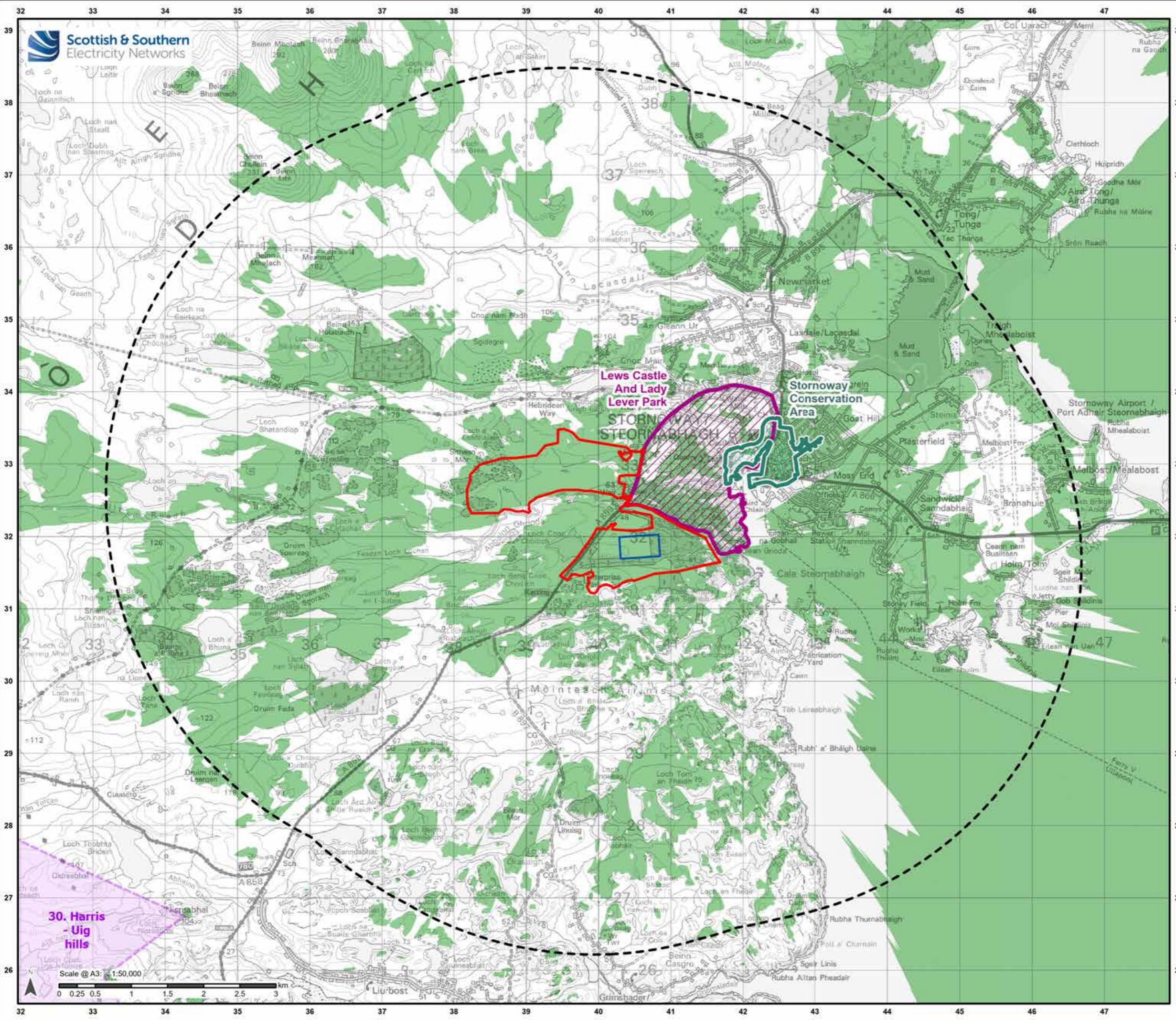
Project No: LT000014
Project: Lewis Substation and Converter Hub

Title:
Figure 4.1: Landscape Character Types overlaid with Zone of Theoretical Visibility (ZTV)

Drawn by: SR Date: 28/08/2024

Drawing: 1620015322_Fig4.1_LCT with ZTV





Legend

- Site Boundary
- Indicative Footprint Area*
- Study Area (5km)
- Designations**
- Wild Land Area 2014
- Garden and Designed Landscapes
- Conservation Areas
- Zone of Theoretical Visibility (ZTV)**
- Areas with theoretical visibility

Notes:
* For the purposes of the ZTV



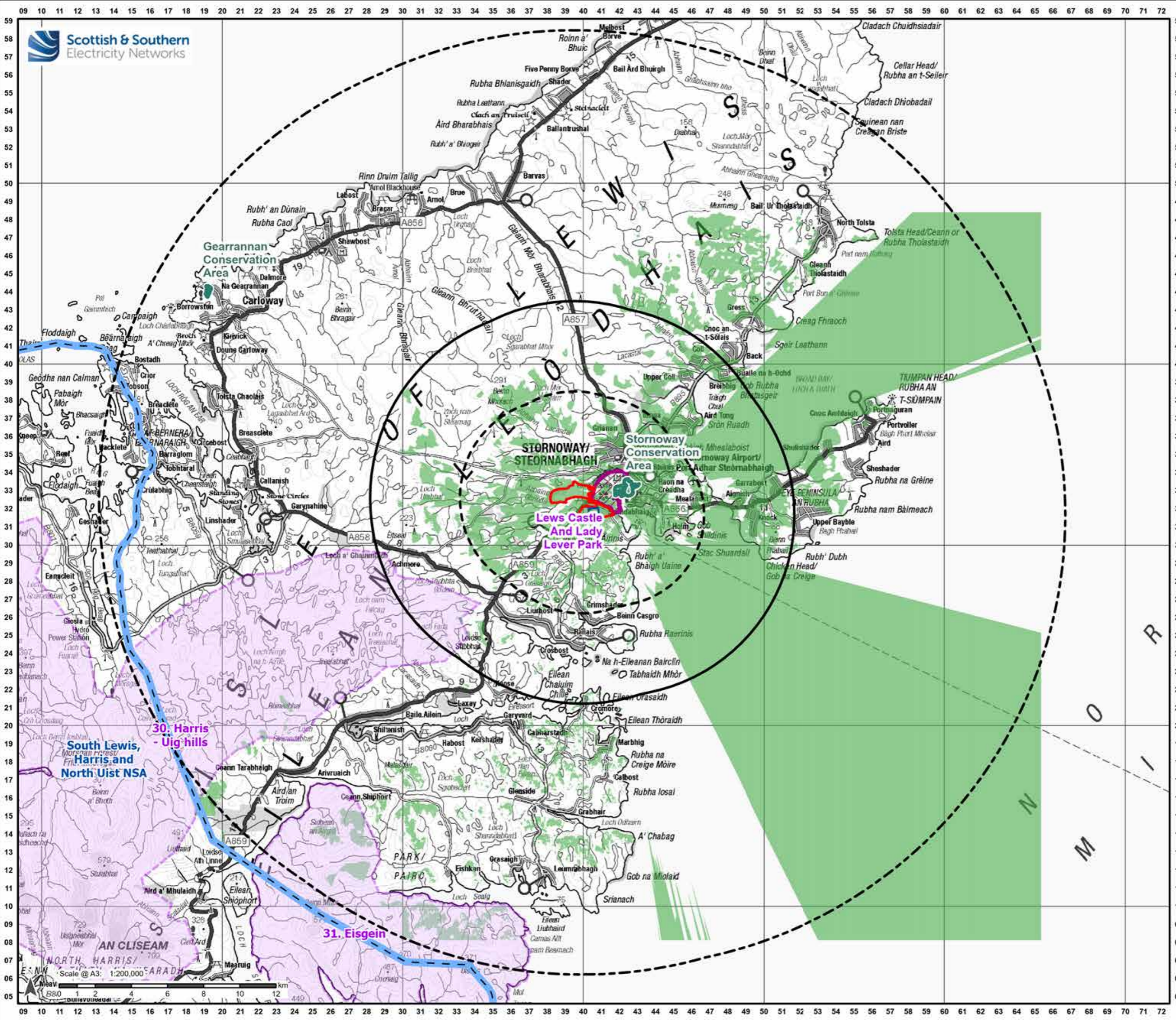
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Title:
Figure 4.2: Designations overlaid with Zone of Theoretical Visibility (ZTV)

Drawn by: SR Date: 28/08/2024

Drawing: 1620015322_Fig4.2_Designations with ZTV



Legend

- Site Boundary
- Indicative Footprint Area*
- Study Area (5km)
- Study Area (10km)
- Study Area (25km)

Designations

- National Scenic Areas (NSA)
- Wild Land Area 2014
- Garden and Designed Landscapes
- Conservation Areas

Zone of Theoretical Visibility (ZTV)

- Areas with theoretical visibility

Notes:
* For the purposes of the ZTV



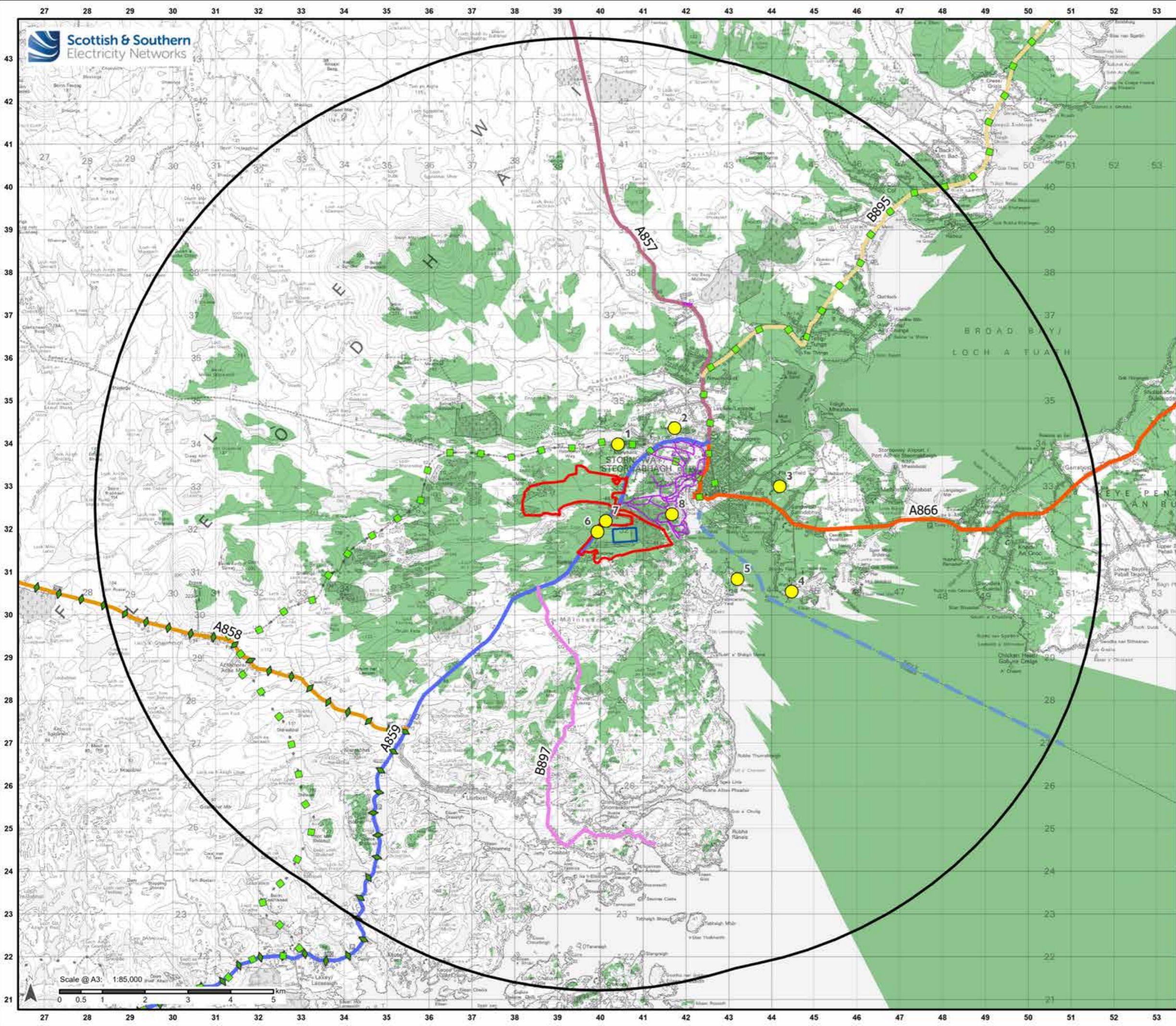
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Project: Lewis Substation and Converter Hub

Title:
Figure 4.3: Designations overlaid with
Zone of Theoretical Visibility (ZTV)
(Wider 25km Study Area)

Drawn by: SR Date: 28/08/2024

Drawing: 1620015322_Fig4.3_Designations with ZTV (25km)



Legend

- Site Boundary
- Indicative Footprint Area*
- Study Area (10km)

Paths and Roads

- Outer Hebrides Core Paths
- Hebridean Way - Walking
- Hebridean Way - Cycling
- A857
- A858
- A859
- A866
- B895
- B897
- Ferry

Candidate Viewpoints

- 1, Residential Area at Marybank
- 2, Lewis War Memorial
- 3, Residential Area at Plasterfield
- 4, Iolaire Memorial
- 5, Rhubha Airnish
- 6, A859 at the Arena
- 7, A859 South of Creed Bridge
- 8, Cnoc na Croic

Areas with theoretical visibility

- Areas with theoretical visibility

Notes:
* For the purposes of the ZTV



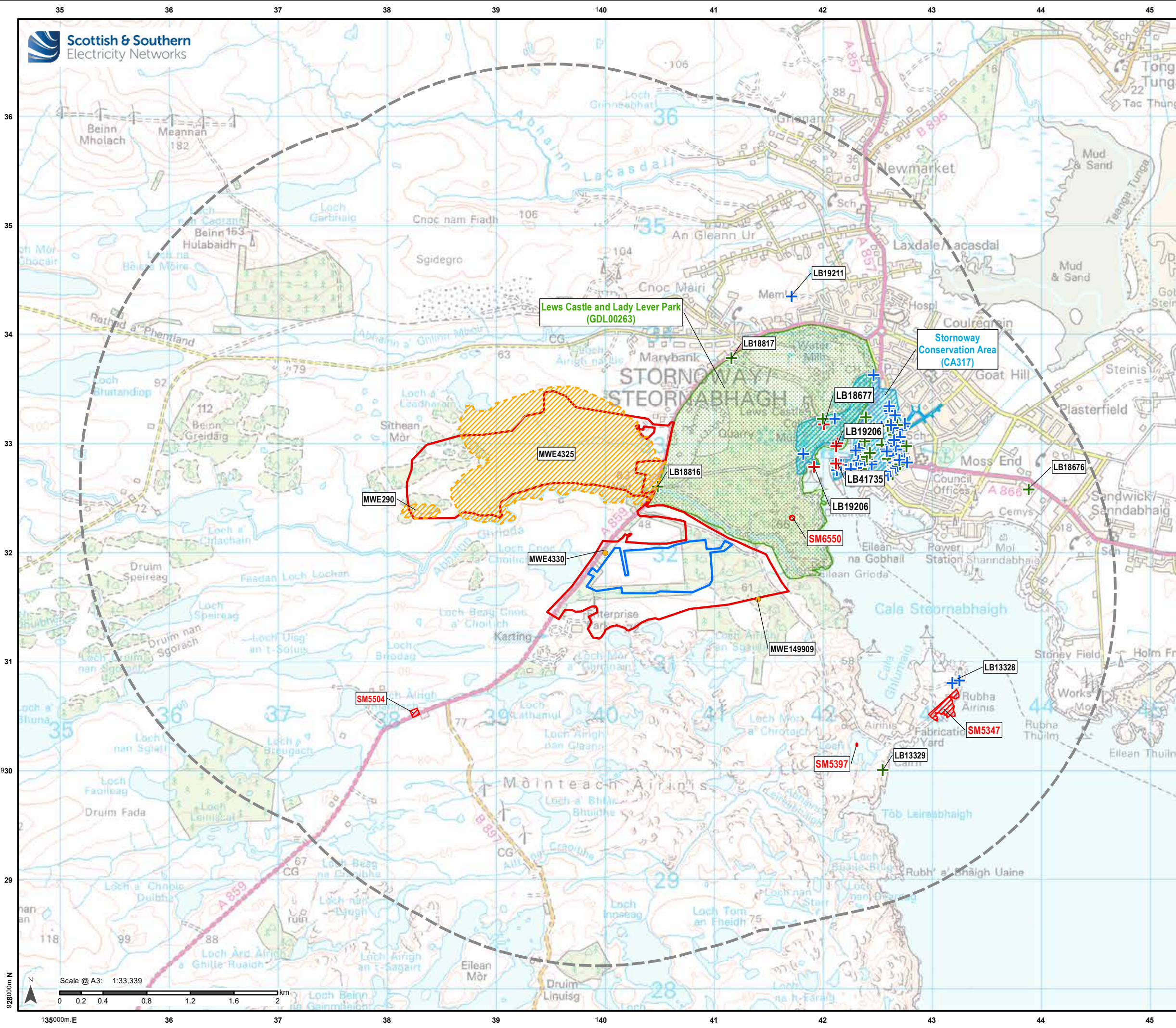
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Title:
Figure 4.4: Candidate Viewpoints and Sequential routes overlaid with Zone of Theoretical Visibility (ZTV)

Drawn by: SR Date: 28/08/2024

Drawing: 1620015322_Fig4.4_Candidate Viewpoints & Sequential Routes with ZTV



- ### Legend
- Site Boundary (Inner Study Area)
 - Operational Footprint Area
 - Outer Study Area (3km buffer)
 - + Category A Listed Building
 - + Category B Listed Building*
 - + Category C Listed Building*
 - Scheduled Monument
 - Garden and Designed Landscape
 - Conservation Area
 - Heritage Asset (area)
 - Heritage Asset (point)

* Category B and C Listed Buildings within Stornoway Conservation Area are not individually labelled due to density of designations.



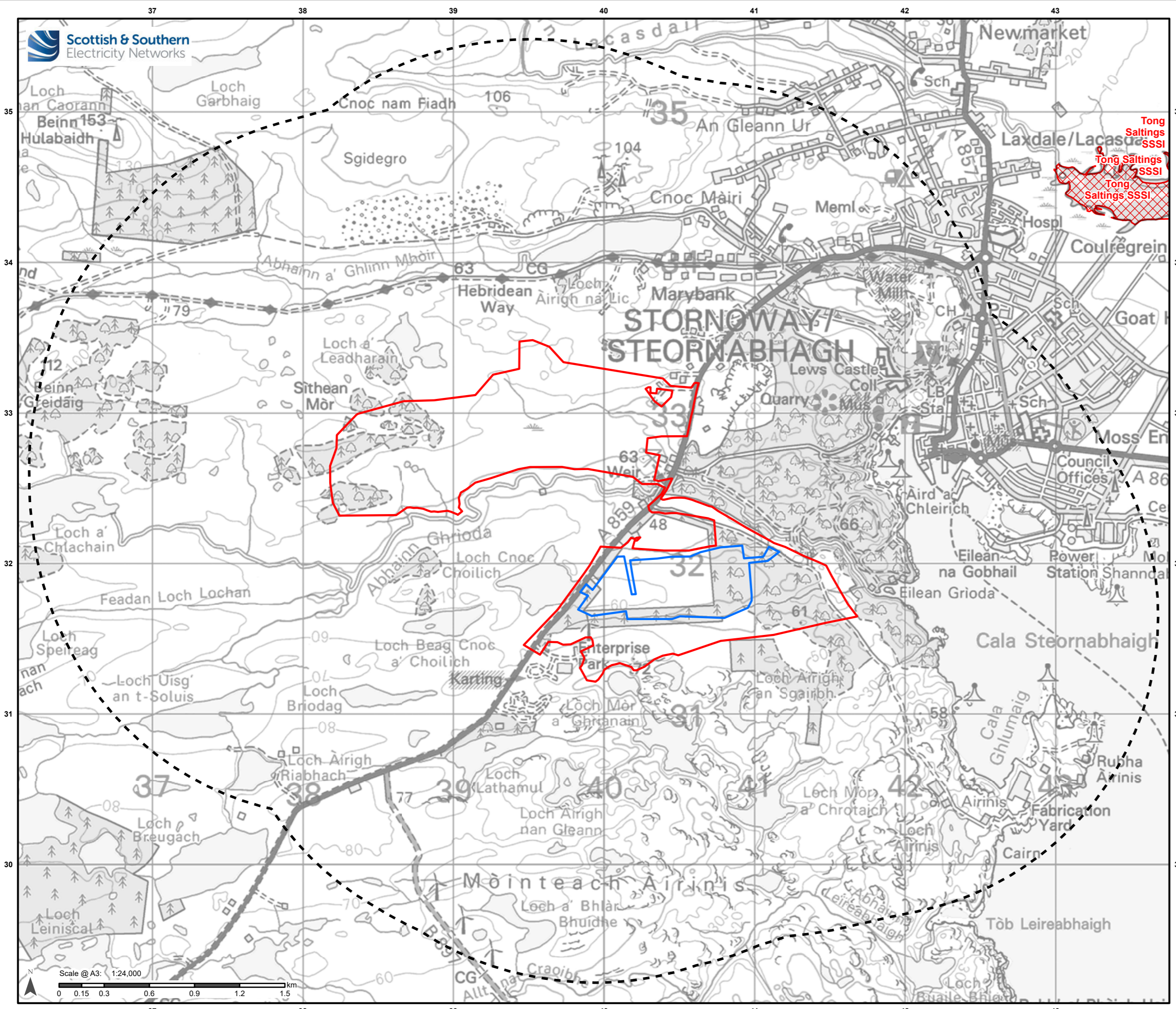
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Project No: LT14
Project: Lewis Substation and Converter Hub

Title:
Figure 5.1: Cultural Heritage

Drawn by: LG
Date: 26/08/2024

Drawing: 4.11



Legend

- Site Boundary
- Operational Footprint Area
- Ecology Desk Study Area (2 km)
- Site of Special Scientific Interest (SSSI)

Ecology Desk Study

Designations

Tong Saltings SSSI

Tong Saltings SSSI

Tong Saltings SSSI



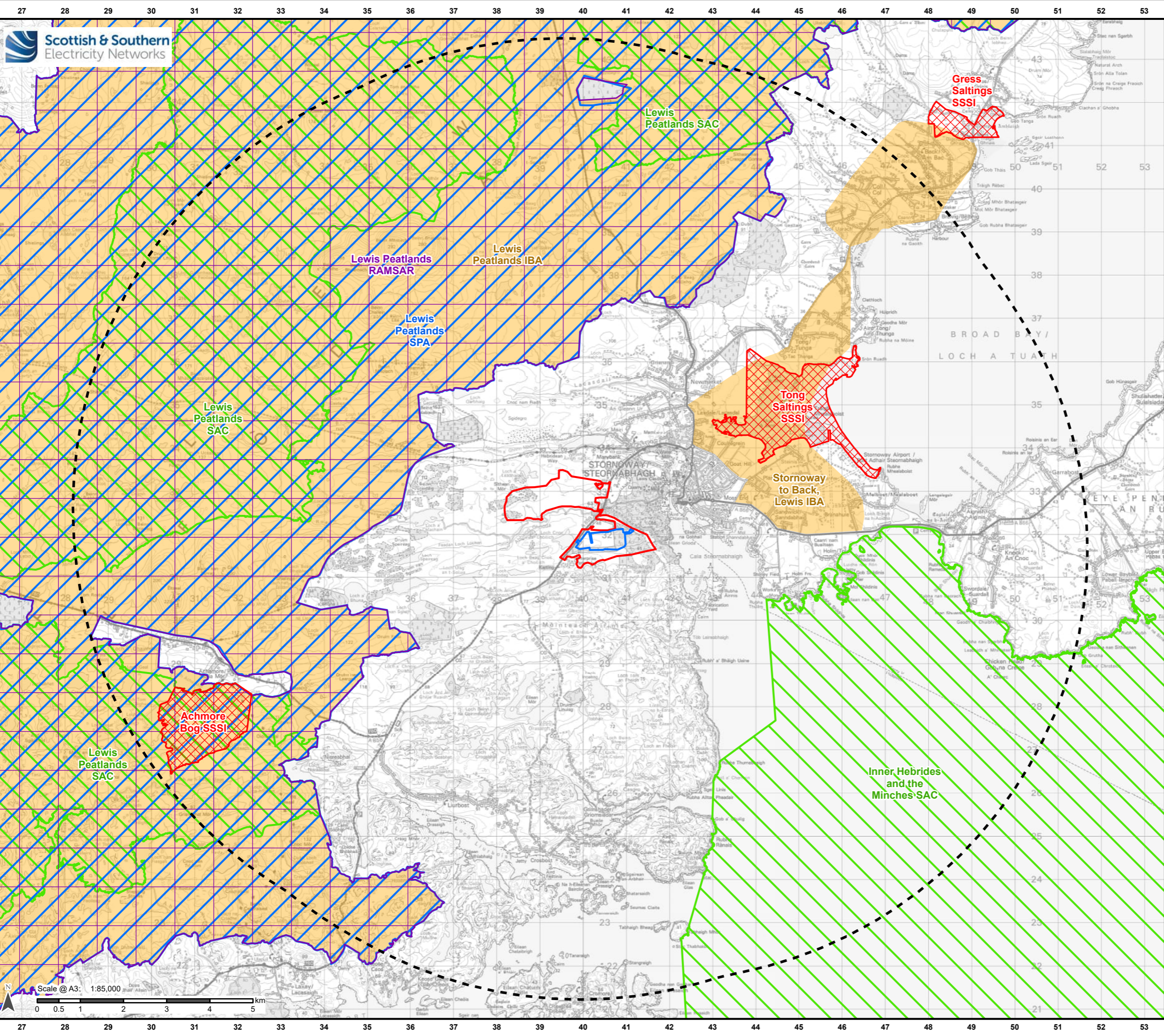
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Project No: LT000014
Project: Lewis Substation and Converter Hub

Title:
Figure 6.1: Ecology Desk Study

Drawn by: AB / CT Date: 02/08/2024

Drawing: 1620015322_Fig6.1_EcologyDeskStudy_05



Legend

- Site Boundary
- Operational Footprint Area
- Ornithology Desk Study**
- Ornithology Desk Study Area (10 km)
- Designations**
- Special Area of Conservation (SAC)
- Site of Special Scientific Interest (SSSI)
- Special Protection Area (SPA)
- RAMSAR
- Important Bird Area (IBA)



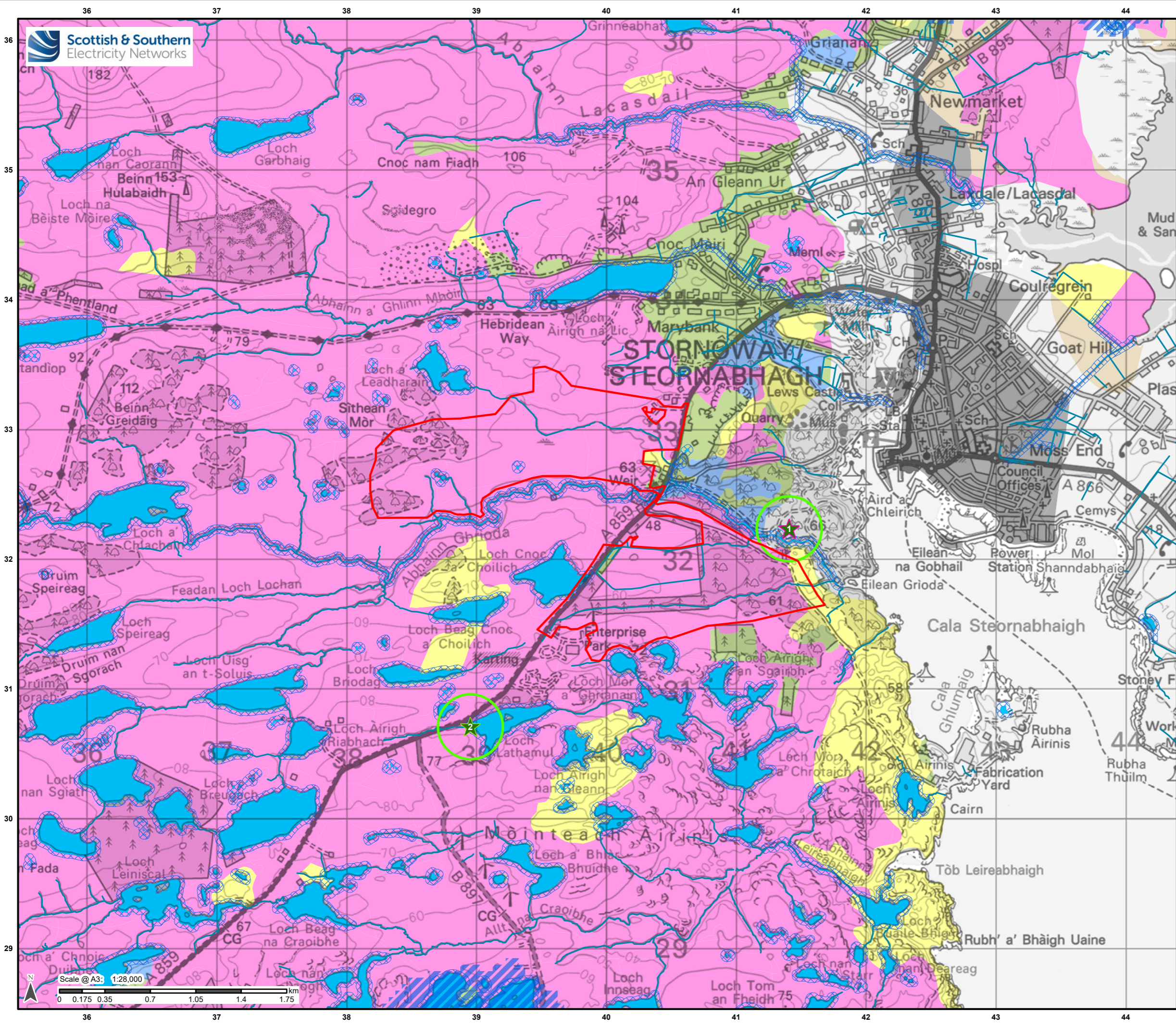
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Project No: LT000014
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Title:
Figure 7.1: Ornithology Desk Study

Drawn by: AB / CT Date: 02/08/2024

Drawing: 1620015322_Fig7.1_OrnithologyDeskStudy_05



Legend

- Site Boundary
- Hydrology**
- Watercourse
- Waterbody
- Waterbody (30 m Buffer)
- Drinking Water Protected Areas (Catchments)
- Private Water Supply**
- ★ Groundwater - Well
- ★ Surface - Loch
- PWS Buffer (250 m)
- Carbon and Peatland Importance (2016)**
- Unknown Soil Type
- Mineral Soils
- Class 1
- Class 2
- Class 3
- Class 4
- Class 5



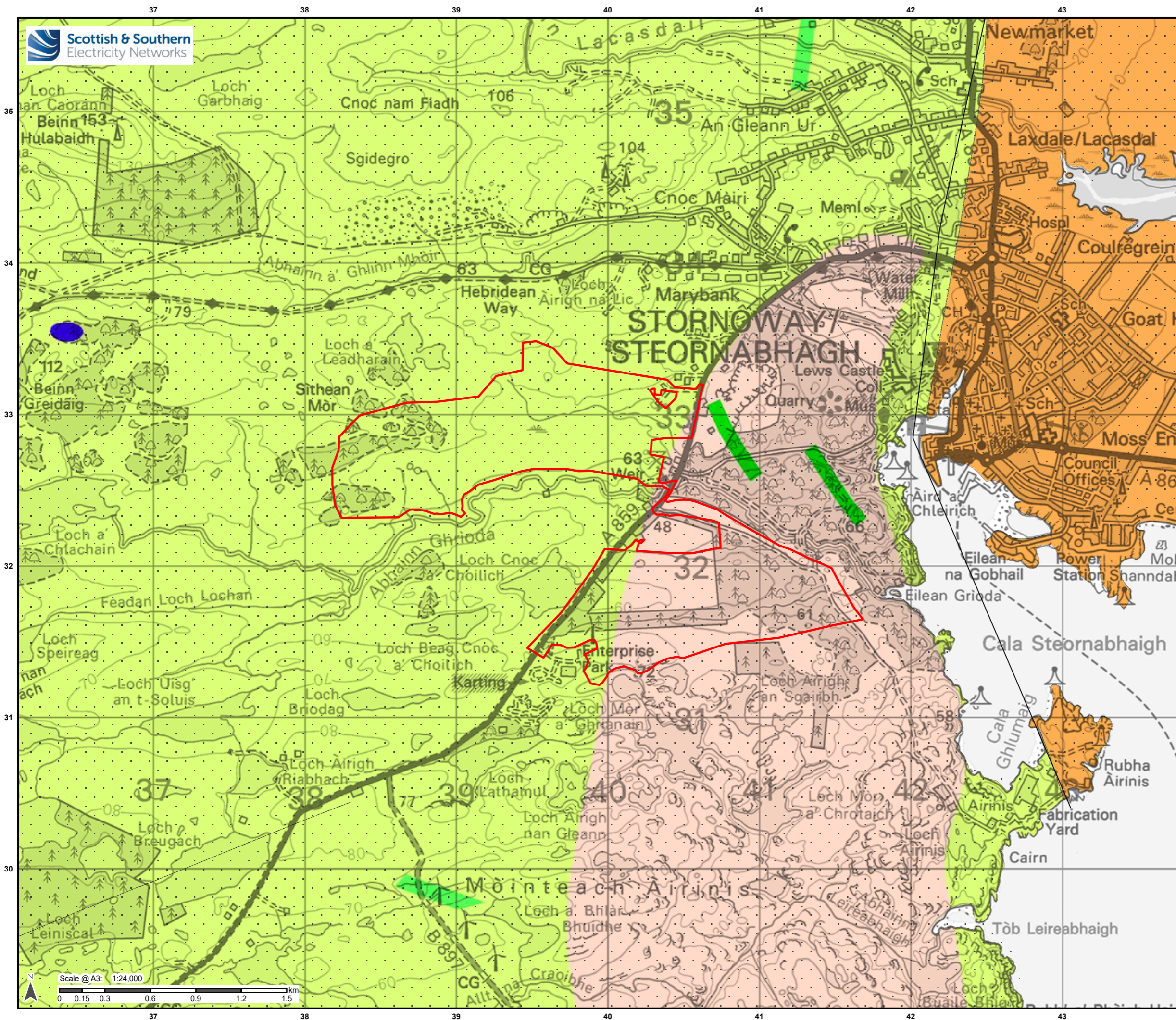
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Title:
Figure 8.1: Hydrological Constraints

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Drawing: 1620015322_Fig8.1_HydrologicalConstraints_05



- ### Legend
- Site Boundary
 - Lithostratigraphical Line, Observed
 - Bedrock Geology (BGS 50k)**
 - Lewisian Complex - Amphibolite
 - Lewisian Complex - Gneiss
 - Lewisian Complex - Ultramafic-Rock
 - Outer Hebrides Thrust Zone Mylonites Complex - Mylonite
 - Outer Hebrides Thrust Zone Mylonites Complex - Protocataclasite
 - Stornoway Formation - Conglomerate
 - Hydrogeology (BGS 625k)**
 - Low Productivity Aquifer



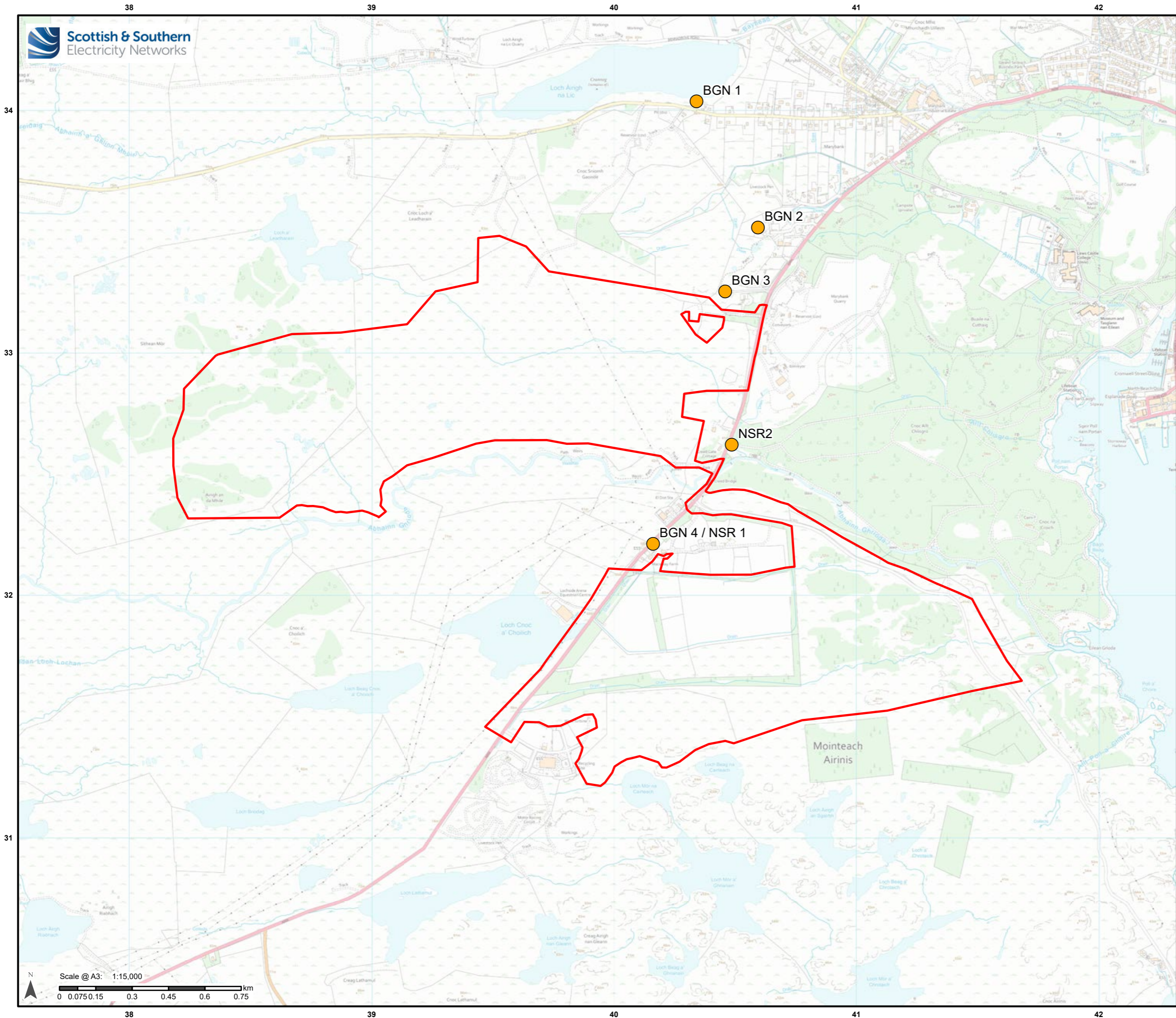
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Title:
Figure 8.2: Geology and Hydrogeology

Drawn by: AB / CT Date: 02/08/2024

Drawing: 1620015322_Fig8.2_Geology&Hydrogeology_05



Legend

- Site Boundary
- Noise Sensitive Receptors

Receptor	Location
BGN 1	19 Marybank Road
BGN 2	3 Moor Cottages
BGN 3	19B Moor Cottages
NSR2	Creed Lodge
BGN 4 / NSR 1	Macaulay Farm



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Title:
Figure 10.1: Noise Sensitive Receptors

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Drawing: 1620015322_Fig10.1_NoiseSensitiveReceptors_02