RWE Grimshader Wind Farm EIA Scoping Report

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RWE
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RWE Grimshader Wind Farm

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Acronyms and abbreviations

AIL	Abnormal Indivisible Load
ALARP	As Low As Reasonably Practicable
AOD	Above Ordnance Datum
AWI	Ancient Woodland Inventory
BGS	British Geological Survey
BSBI	Botanical Society of Britain and Ireland
CAA	Civil Aviation Authority
CCT	Coastal Character Type
CEMP	Construction Environmental Management Plan
CIEEM	Chartered Institute of Ecology and Environmental Management
CLVIA	Cumulative Landscape and Visual Impact Assessment
CnES	Comhairle nan Eilean Siar
CRM	Collision Risk Modelling
CTMP	Construction Traffic Management Plan
DfT	Department for Transport
DMRB	Design Manual for Roads and Bridges
DWPA	Drinking Water Protected Area
ECU	Energy Consents Unit
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EMP	Environmental Management Plan
ESO	Electricity System Operator
GDL	Garden and Designed Landscape
GET	Golden Eagle Topographical
GHG	Greenhouse Gas
GLVIA3	Guidelines for Landscape and Visual Impact Assessment Third Edition
GPG	Good Practice Guide
GVA	Gross Value Added
GW	Gigawatt

GWDTE	Groundwater Dependent Terrestrial Ecosystem
HER	Historic Environment Record
HES	Historic Environment Scotland
HGV	Heavy Goods Vehicle
HIAL	Highlands and Islands Airports Limited
HITRANS	Highland and Islands Transport Partnership
HLT	Historic Landscape Type
HND	Holistic Network Design
HRA	Habitats Regulations Appraisal
HSE	Health & Safety Executive
HVDC	High-Voltage Direct Current
IOA	Institute of Acoustics
IEMA	Institute of Environmental Management and Assessment
IPCC	Intergovernmental Panel on Climate Change
JNCC	Joint Nature Conservation Committee
km^2	Square kilometres
LCT	Landscape Character Type
LGV	Light Goods Vehicle
LiDAR	Light Detection and Ranging
LVIA	Landscape and Visual Impact Assessment
MCA	Maritime and Coastguard Agency
MoD	Ministry of Defence
MPA	Marine Protected Area
MW	Megawatt
NATS	National Air Traffic Services
NBN	National Biodiversity Network
NHZ	Natural Heritage Zone
NMPi	National Marine Plan interactive
NPF4	National Planning Framework 4
NSA	National Scenic Area
NVC	National Vegetation Classification

NWSS	Native Woodland Survey of Scotland
OHBR	Outer Hebrides Biological Recording
OHLDP	Outer Hebrides Local Development Plan
OS	Ordnance Survey
PAN	Planning Advice Note
PMF	Priority Marine Feature
RCP	Representative Concentration Pathway
RSG	Raptor Study Group
RVAA	Residential Visual Amenity Assessment
SAC	Special Area of Conservation
SCCAP	Scottish Climate Change Adaptation Programme
SEPA	Scottish Environment Protection Agency
SFCC	Scottish Fisheries Coordination Centre
SIMD	Scottish Index of Multiple Deprivation
SM	Scheduled Monument
SNH	Scottish Natural Heritage
SPA	Special Protection Area
SSEN	Scottish and Southern Electricity Networks
SSSI	Sites of Special Scientific Interest
TMP	Traffic Management Plan
UKCP	UK Climate Projections
VP	Vantage Point
WFD	Water Framework Directive
WLA	Wild Land Area
WTG	Wind Turbine Generator
ZTV	Zone of Theoretical Visibility

1 Introduction

The proposed Grimshader Wind Farm (the 'proposed development') is located on the Isle of Lewis on land to the south/south-west of Stornoway, within the Comhairle nan Eilean Siar (CnES) local authority area. RWE (the 'Developer') proposes to develop a wind farm consisting of up to 19 wind turbine generators (WTGs) of 200m height to tip, resulting in a total site capacity greater than 50 Megawatts (MW). The location of the proposed development is shown on Figure 1.

As the proposed development has a capacity greater than 50MW, the proposed development will require an application under Section 36 of the Electricity Act 1989. This provides consent to construct, extend or operate a generating station and is subject to approval by the Energy Consents Unit (ECU), on behalf of Scottish Ministers. The proposed development constitutes a Schedule 2 development (Regulation 2(1) (1) a generating station) as defined by The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017, hereafter referred to as the 'EIA Regulations'. As such, the application for consent under Section 36 of the Electricity Act 1989 is required to be accompanied by an EIA Report (EIAR) setting out the findings of the EIA.

The EIA scoping presented in this report defines the scope of the EIA and the assessment methodology. As the proposed development will require an application under Section 36 of the Electricity Act 1989, this Scoping Report will be formally issued to the ECU to request a Scoping Opinion.

1.1 The Developer

RWE is a leading global energy producer and provides around 15% of the UK's electricity. RWE generates enough power for 10 million homes through a diverse portfolio of onshore and offshore wind, hydro, biomass and gas across England, Scotland and Wales. To date RWE has approximately 10 Gigawatts (GW) of renewable capacity installed globally.

In Scotland, RWE owns and/or operates around 475MW of installed renewable capacity across 27 hydro, biomass and onshore wind sites, as well as Scotland's first commercial-scale offshore wind farm: Robin Rigg in the Solway Firth.

RWE currently operates ten onshore wind farms in Scotland with a capacity of almost 225MW and has been instrumental in the development, construction and operation of many more of Scotland's onshore wind farms. Within the Highlands RWE operate six onshore wind farms including Bad a'Cheo, Burgar Hill, Bilbster, Camster, Rosehall and Novar 2.

1.2 Objectives of this Report

Undertaking an EIA scoping study is good practice and an important step in the EIA process. It allows all stakeholders to consider the key environmental issues relevant to the proposed development and to agree on the methodology for the assessment. Scoping allows engagement of the determining authority and other stakeholders at an early stage in the development process. It also enables key opinions, often based on local understanding, to be identified and considered in future assessment work.

The specific aims of this Scoping Report are to:

- Identify potential environmental receptors and ascertain whether the anticipated effects are likely to be significant under the EIA Regulations and that may require further assessment.
- Provide a basis to commence the consultation process to agree the scope and content of the EIA with the ECU.
- Provide a basis for agreeing the appropriate methodologies for undertaking the EIA, based upon an understanding of the available baseline data, site characteristics and best practice methodology relevant to the environmental receptors identified for consideration in the EIA.

- Provide statutory consultees and stakeholders with an opportunity to comment on the proposed development at an early stage, and to contribute their views to the EIA process.

In giving its formal Scoping Opinion, under Regulation 12(4) of the EIA Regulations, the ECU is required to engage with consultees and take into account their recommendations within the Scoping Opinion.

Upon receipt of the Scoping Opinion from the ECU, the Developer and their Consultants will progress with the EIA. Preparation of an EIAR and an application under Section 36 of the Electricity Act will follow, taking account of the Scoping Opinion and subsequent consultation undertaken during the EIA.

1.3 Report Content and Structure

In accordance with Part 4, Regulation 12 (2) of the EIA Regulations, when making a scoping request the Developer must ensure it is accompanied by:

(a) a description of the location of the development, including a plan sufficient to identify the land;

(b) a brief description of the nature and purpose of the development and of its likely significant effects on the environment; and

(c) such other information or representations as the developer may wish to provide or make.

Taking into account the EIA Regulations, this Scoping Report is structured as follows:

- Chapter 1: Introduction
- Chapter 2: Description of the Proposed Development
- Chapter 3: Overview of EIA
- Chapter 4: Proposed Approach to EIA
- Chapter 5: Conclusions
- Chapter 6: References
- Appendix A: Figures
- Appendix B: Questions to Consultees
- Appendix C: Ornithology (Confidential)

1.3.1 Scoping Methodology

A desk-based assessment has been undertaken to inform this Scoping Report in addition to the bird survey data which has been collected between 2021 and 2023.

2 Description of the Proposed Development

2.1 Site Description and Context

The proposed development is located on the Isle of Lewis and Harris in the Scottish Outer Hebrides approximately 3.3km to the south/south-west of Stornoway. The A859 runs north-south along the western boundary, and the B897 runs north-south through its centre. It is largely made up of rocky and boggy moorland, with numerous hills and lochans as shown on Figure 1. The site of the proposed development has a varied topography with high points of 106m along the eastern boundary and 98m to the west. In addition, a number of watercourses and lochs, which vary in size, are present within the boundary. Loch Orasaigh is the largest of these and is located approximately in the centre of the site.

2.2 Key Components of Proposed Development

The proposed development, which will have an anticipated 35 year operational period and will comprise the following main elements:

- Up to 19 wind turbines, up to 200m to tip, each with an external transformer, turbine foundation and crane hardstanding. Turbines will be a typical horizontal axis design, comprising three rotor blades, a hub and a nacelle. The tower will be tubular and tapered in design and finished in a light grey semi-matt colour. The blades will be made from fibre-reinforced epoxy and the tower will be constructed from steel;
- an electrical substation and control building, along with potential battery storage facilities;
- underground power cables linking the turbines and the on-site substation, generally laid in trenches alongside access tracks;
- new site access and on-site access tracks, with pipeline and watercourse crossings (if/where required);
- a steel tower anemometer mast for wind turbine performance monitoring
- borrow pit(s) to source material for on-site construction;
- a temporary construction laydown and storage compound;
- required environmental mitigation; and
- off-site works to facilitate the movement of abnormal loads (construction of over-run areas and temporary modifications to street furniture etc).

The exact turbine model (and therefore turbine dimensions) and layout for the proposed development is subject to an iterative design process which takes account of constraints both within the boundary and those outside of it. The key environmental constraints are likely to be ornithology, landscape and visual, and hydrology and peat (refer to Figure 2). The iterative design process will also take into account likely available technologies and their economic viability. An indicative layout of 19 turbines is shown on Figure 3 based on our understanding of the proposed development at this stage in the design process and will be subject to continuous refinement throughout the iterative design process as environmental and technical constraints are further understood.

Table 2-1: Proposed Turbine Locations

Turbine Number	Turbine Location (Grid Reference)
1	NB 408 281
2	NB 416 281
3	NB 418 275
4	NB 427 266
5	NB 427 274
6	NB 426 281
7	NB 422 286
8	NB 418 292
9	NB 411 295
10	NB 404 286
11	NB 396 287
12	NB 385 285
13	NB 381 291
14	NB 373 290
15	NB 379 276
16	NB 366 286
17	NB 373 282
18	NB 370 274
19	NB 408 274

2.2.1 Grid Connection

The grid connection for the project will be the subject of a separate consent process.

In July 2022 the National Grid Electricity System Operator (ESO) published '*The Pathway to 2030*' which includes the Holistic Network Design (HND) (National Grid ESO 2022). This sets out the electricity transmission infrastructure required to meet the 2030 targets for offshore wind, but also a wider programme of reinforcements that have been identified to deliver the 2030 targets. The HND confirmed the need for a new 1.8GW high-voltage direct current (HVDC) link from the Western Isles to the mainland to accommodate the known offshore and onshore wind farms in and surrounding the Western Isles. This new link would also provide additional capacity to support future wind farm developments. SSEN has subsequently commenced work on the Western Isles Connection Project which aims to provide 1.8GW HVDC connection between the Western Isles and the mainland (SSEN 2023).

2.2.2 Decommissioning

At the end of its operational life (anticipated to be 35 years) the proposed development will either be decommissioned, or an application will be submitted to extend the life of the wind farm or to repower the site.

At this stage of the proposed development, the future baseline and regulatory context at the time of decommissioning are difficult to predict. Potential proposals for refurbishment or decommissioning are unknown, therefore, a detailed assessment of the impacts of decommissioning of the proposed development has been scoped out of the EIA. A detailed Decommissioning and Restoration Plan will be agreed with CnES and other relevant regulatory authorities in line with the requirements at the time.

3 Overview of EIA

An EIA provides a systematic analysis of the potential effects of a project in relation to the existing (baseline) environment. The findings of an EIA are presented in an EIAR which will support an application for consent of a proposed development. The purpose of an EIA is to afford developers the opportunity to identify potential impacts and, where possible, eliminate/mitigate them through the iterative design process. EIA also allows decision makers to be fully aware of any significant environmental effects that a development may have (at the local, regional and national level), so that these can be taken into account in the decision-making process. An EIAR is also used by project stakeholders, including the public, to assess the acceptability of the development and to understand the projects potential effects on the environment.

3.1 Assessment Methodology

In accordance with the EIA Regulations (Regulation 4 (2), (3) and (4)), the factors to be considered in the EIA are:

- population and human health;
- biodiversity, and in particular species and habitats protected under Council Directive 92/43/EEC on the conservation of natural habits and wild flora(a) and Directive 2009/147/EC of the European Parliament and of the Council on the conservation of wild birds(b); land, soil, water, air and climate; and
- material assets, cultural heritage and the landscape.

The effects to be identified, described and assessed include the expected effects deriving from the vulnerability of the development to risks, so far as relevant to the development, of major accidents and disasters.

These factors and our proposed approach to assessing them in the EIA are considered in the following sections of this EIA Scoping Report:

- Section 4.1: Planning and Energy Policy
- Section 4.2: Landscape and Visual
- Section 4.3: Geology, Hydrology, Hydrogeology and Peat
- Section 4.4: Ornithology
- Section 4.5: Ecology
- Section 4.6: Noise
- Section 4.7: Access, Traffic and Transport
- Section 4.8: Cultural Heritage
- Section 4.9: Climate Change
- Section 4.10: Socio-Economics
- Section 4.11: Other EIA Topics (Telecommunications and Utilities, Aviation, Shadow Flicker, Major Accidents and Disasters and Human Health)

3.1.1 Baseline Data Collection

The baseline information describes the existing environmental conditions at the proposed development and the wider area where applicable. Baseline data will be collected from a wide range of sources including desk-based studies, field surveys and consultation with statutory and non-statutory consultees. Where data is available, the baseline information will also predict future trends in the absence of the proposed development. Details for specific environmental factors are reported in Section 4 of this report.

3.1.2 Assessment of Impacts and Effects

The relevant environmental specialists will determine the quality and sensitivity of the receiving environment or potential receptor. The criteria for determining sensitivity or importance are based on existing guidance, legislation, statutory designation, existing relevant planning consents and/or professional judgement. Details of sensitivity criteria for each specific assessment are set out within the individual technical chapters (refer to Section 4).

Following the assessment of receptor sensitivity, the potential impact on a receptor and the predicted magnitude of that change or impact will be identified (i.e. the scale or degree to which the environment is affected from the existing situation). Evaluating the environmental sensitivity of a receptor and magnitude of change or impact on a receptor together will allow the determination of a potential effect. Potentially significant effects are then identified for further analysis.

3.1.3 Mitigation and Monitoring

A description of the measures and monitoring required to prevent, reduce and where possible offset any significant adverse effects on the environment will be included within the EIAR.

The following will be considered:

- Embedded mitigation – mitigation which is built in to the proposed development during the design process and avoids or reduces adverse effects e.g. relocation of turbines as part of the design process.
- Specific Mitigation – measures which prevent, reduce or offset significant effects identified during the EIA process e.g. adherence to a construction environmental management plan (CEMP).
- Enhancement – measures that improve the environmental outcomes in the wider area and provide environmental benefits separate to the measures required for mitigation.

The EIA process will enable workable mitigation to be identified. In addition, enhancement measures will be provided wherever possible.

3.1.4 Assessment of Residual Effects

Following the identification of mitigation measures to address significant adverse effects, an assessment of the significance of the residual effects (i.e. those remaining after mitigation) will be undertaken.

3.1.5 Assessment of Cumulative Effects

Cumulative effects are those that may result from the combination of past, present or future actions of existing or planned developments. While a single activity may itself result in an effect that is not significant under the EIA Regulations, it may, when combined with other effects (significant or not significant) in the same geographical area and occurring at the same time, result in a cumulative effect that is significant.

The EIAR will include an assessment of the cumulative effect of the proposed development with other planned developments (those that are operational, those that are already consented and those where an application has been submitted but not yet determined) and between the environmental factors that are assessed. This will be reported in the EIAR and is described more fully in Section 4 of this report.

3.2 Consultation

The importance of early engagement with stakeholders is recognised as a crucially important aspect of wind farm development. This facilitates the establishment of a positive working relationship with key stakeholders and enables concerns and potential impacts to be addressed during the design stage.

Consultation will be an important aspect of the EIA process and stakeholder engagement will be continued throughout the EIA process where appropriate.

3.2.1 Statutory and Non-Statutory Consultees

Consultation with statutory and non-statutory bodies is a key component of the EIA process and will be reported within the EIAR. Following receipt of the Scoping Opinion, the Developer will seek to undertake specific consultations with the key stakeholders which are ECU, CnES, NatureScot, Scottish Environmental Protection Agency (SEPA), Scottish Water and Historic Environment Scotland (HES) where required.

3.2.2 Public Consultation

A full public consultation exercise will be undertaken which will include at least two public exhibitions to present the proposed development and to identify and discuss the key issues of local concern, in line with the ECU's good practice guidance.

It is considered that by providing clear information about what is proposed, issues can be properly identified, and the proposals critically and properly examined. At the final public event, the Developer will provide feedback on comments received at previous events.

A Pre-Application Consultation Report will be submitted alongside the Section 36 application.

4 Proposed Approach to EIA

The proposed scope of the EIA, including confirmation of environmental factors scoped into and out of the EIA process is set out in the following sections. Where no likely environmental impacts are anticipated or where there are no likely significant effects, factors have been scoped out of the EIA and our reasoning for scoping these specific aspects out of the EIA is provided.

4.1 Planning and Energy Policy

The EIAR will set out the relevant policies that have been considered as part of the assessments undertaken throughout the EIA. A separate Planning Statement will provide a detailed appraisal of the proposed development against the relevant Development Plan policies, national planning and energy policy and other material considerations. These policies are summarised below.

4.1.1 The Statutory Framework

The proposed development will have an installed capacity of over 50MW and will require consent from the Scottish Ministers under the Electricity Act 1989 (the 'Electricity Act'). In such cases the Planning Authority is a statutory consultee in the development management process and procedures.

In an application under Section 36 of the Electricity Act the Development Plan does not have primacy in the decision-making process.

The provisions of Schedule 9 of the Electricity Act are relevant to the assessment of the proposed development and set out a number of features in respect of the environment. These features will be addressed in the EIA process.

The Scottish Ministers will determine the application having regard to the statutory duties in Schedule 9 of the Electricity Act, so far as relevant, and any other relevant material considerations, including the relevant aspects of the statutory Development Plan.

4.1.2 The Renewable Energy Policy Framework: Overview

In recent years United Kingdom (UK) and Scottish Government policies have focussed increasingly on concerns about climate change. Each tier of Government has developed targets, policies and actions to achieve targets to deal with the climate crisis and generate more renewable energy and electricity.

The UK Government retains responsibility for the overall direction of energy policy, although some elements are devolved to the Scottish Government. The UK Government has published a series of policy documents setting out how targets can be achieved. Onshore wind generation, located in Scotland, is identified as an important technology to achieve these various goals.

The Scottish Government has published a number of policy documents and has set its own targets. The most relevant policy, legislative documents and more recent policy statements published by the Scottish Government include:

- The Scottish Energy Strategy (The Scottish Government 2017);
- The Scottish Government's declaration of a Climate Emergency (The Scottish Government 2019a);
- The Scottish Climate Change Plan Update (The Scottish government 2020b);
- The Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 and the legally binding net zero target for 2045 and interim targets for 2030 and 2040;
- The Scottish Government's 'Programme for Government' 2022 to 2023 (The Scottish Government 2022a);

- The Onshore Wind Policy Statement (OWPS) (The Scottish Government 2022b);
- The Draft Energy Strategy and Just Transition Plan (The Scottish Government 2023a); and
- The Scottish Government's 'Programme for Government' 2023 to 2024 (The Scottish Government 2023b).

The proposed development relates to the generation of electricity from renewable energy sources and comes as a direct response to national planning and energy policy objectives.

The proposed development would make a contribution to the attainment of emissions reduction, renewable energy and electricity targets at both the Scottish and UK levels. Detailed reference to the renewable energy policy framework will be provided in the Planning Statement.

4.1.3 National Planning Policy and Guidance

The EIAR will summarise the renewable energy policy framework and associated needs case for renewables, identified as a matter of both law and policy, at international, European and domestic levels.

National Planning Framework 4

National Planning Framework 4 (NPF4) forms part of the statutory development plan (Scottish Government 2023c). Section 13 of the Planning (Scotland) Act 2019 (Scottish Government 2019c) amends Section 24 of the Town and Country Planning (Scotland) Act 1997 Act (the '1997 Act') regarding the meaning of 'development plan'. Such that for the purposes of the 1997 Act, the development plan for an area is taken as consisting of the provisions of:

- The National Planning Framework; and
- Any Local Development Plan (LDP).

NPF4 introduces centralised development management policies which are to be applied Scotland wide, and also provides guidance to Planning Authorities with regard to the content and preparation of LDPs.

NPF4 continues the approach set out in NPF3 of identifying national developments. Proposed National Development 3 (ND3) is entitled 'Strategic Renewable Electricity Generation and Transmission Infrastructure'. The proposed development would therefore have national development status as per these provisions of NPF4. The policies most relevant to the proposed development include the following:

- Policy 1: Tackling the Climate and Nature Crisis;
- Policy 3: Biodiversity;
- Policy 4: Natural Places;
- Policy 5: Soils;
- Policy 6: Forestry, Woodland and Trees;
- Policy 7: Historic Assets and Places;
- Policy 11: Energy;
- Policy 22: Flood Risk and Water management.

For the consideration of onshore wind energy development, Policy 11 is the lead policy. NPF4 will be the key policy consideration for the determination of the proposed development as part of the statutory Development Plan.

National Planning Guidance

National planning guidance and advice are material considerations, which are relevant to the proposed development and will be considered in the EIA Report. These include, but are not limited to, the following documents:

- Planning Advice Note (PAN) 1/2011 Planning and Noise (Scottish Government 2011a);
- PAN 2/2011 Planning and Archaeology (Scottish Government 2011b);
- PAN 1/2013 Environmental Impact Assessment (Scottish Government 2013);
- PAN 51 Planning, Environmental Protection and Regulation (Scottish Government 2006);
- PAN 60 Planning for Natural Heritage (Scottish Government 2008);
- Flood Risk: Planning Advice (Scottish Government 2015);
- PAN 75 Planning for Transport (Scottish Government 2005);
- PAN 79 Water and Drainage (Scottish Government 2006).

4.1.4 The Outer Hebrides Local Development Plan

The Outer Hebrides Local Development Plan (OHLDP) also forms part of the Development Plan. The OHLDP was adopted by CnES in November 2018.

Adoption of a new LDP is expected around Spring/Summer 2027. It is therefore unlikely that there will be any relevant new LDP policy that will be material to the consideration of the proposed development within the anticipated timeframe of the Section 36 application.

In these circumstances, NPF4 will be the most up to date element of the statutory Development Plan for the proposed development to be considered against in terms of the planning policy framework.

Policies relevant to the proposed development within the OHLDP will include the following:

- Policy EI1: Flooding;
- Policy EI2: Water and Waste Water;
- Policy EI3: Water Environment,
- Policy EI4: Waste Management;
- Policy EI5: Soils;
- Policy EI8: Energy and Heat Resources;
- Policy EI11: Safeguarding;
- Policy NBH1: Landscape;
- Policy NBH2: Natural Heritage;
- Policy NBH3: Trees and Woodland;
- Policy NBH4: Built Heritage
- Policy NBH5: Archaeology; and
- Policy NBH6: Historic Areas.

The OHLDP is supported by Supplementary Guidance which will be considered throughout the design development and EIA process. The Supplementary Guidance for Wind Energy Development (2021) is of limited relevance given it was prepared in line with the now revoked Scottish Planning Policy (SPP).

4.1.5 Factors Scoped Out of Assessment

At this stage, all elements of planning and energy policy have been scoped into the EIA.

4.1.6 Consultation and Scoping Questions

No specific questions to consultees with regards to planning and energy policy.

4.2 Landscape and Visual

The proposed development will, by its nature, directly or indirectly impact landscape and visual receptors, primarily on the Isle of Lewis and Harris. In order to understand the extent and nature of potential impacts and effects on these receptors, a Landscape and Visual Impact Assessment (LVIA) will be undertaken in accordance with the Guidelines for Landscape and Visual Impact Assessment; Third Edition (GLVIA3) (Landscape Institute and Institute of Environmental Management and Assessment 2013). The LVIA will also draw from current good practice guidance published by NatureScot and the Landscape Institute in addition to consultation with stakeholders.

The LVIA will be undertaken by suitably experienced Chartered Landscape Architects and be supported by visibility mapping and visualisations.

4.2.1 Existing Conditions and Key Constraints

The proposed development is located approximately 3.2km to the south/south-west of Stornoway on the Isle of Lewis and Harris in the Scottish Outer Hebrides. It is located within a mosaic of rocky and boggy moorland, with numerous hills, lochs and lochans. The area is generally low lying with a varied topography with high points of 106m Above Ordnance Datum (AOD) in the east and 98m AOD in the west. There are watercourses and lochans which vary in size, with Loch Orasaigh the largest, approximately in the centre of the proposed development area. Landcover consists of low moorland vegetation. Several small forests are also present within the boundary, e.g. Druim Linuisg. The A859 runs broadly north-south along the western boundary of the proposed development and is bisected by the B897, which provides local access to the settlements of Grimshader and Crosbost. Three existing wind turbines (less than 11m in height to tip and with a blade diameter of less than 2m) are located at the North Lochs Water Treatment Works between the B897 and Loch Orasaigh.

Landscape Character and Coastal Character

The proposed development sits within three Landscape Character Types (LCT), as defined by NatureScot (2023a). These include the Rocky Moorland - Outer Hebrides (LCT 323) and Cnoc and Lochan (LCT 324), with a small northern section of the area consisting of Boggy Moorland - Outer Hebrides (LCT 322).

The eastern boundary of the proposed development runs along the coastline, with the coastal character type (CCT) defined by NatureScot as CCT 13 - Low Rocky Island Coasts (NatureScot 2010).

Landscape Designations

The proposed development does not fall within any international, national or regional designated landscapes. The South Lewis, Harris and North Uist National Scenic Area (NSA) is located approximately 21km to the south and west.

Lews Castle and Lady Lever Park Garden and Designed Landscape (GDL) is located approximately 2km to the north and various Scheduled Monuments (SM) including the Calanais standing stones (approximately 15km to the west), Arnish Point gun emplacements, duns, forts, brochs, stone circles and historic settlements are located within the surrounding area.

Wild Land Areas

Wild Land Areas (WLAs) are not statutory designations, however WLAs (NatureScot 2014) are recognised as nationally important, with NPF4 noting that development in WLA will only be supported for certain types of development. NPF4 identifies the requirement for a wild land impact assessment to accompany any development proposals which are located within WLA (Scottish Government 2023c).

The proposed development does not fall within a WLA, however there are two WLAs nearby. WLA 30, Harris – Uig Hills, is approximately 2km to the west of the proposed development and WLA 31, Eisgein, is located 14km to the south.

Visual Receptors

Settlements located close to the proposed development include the residential areas of Grimshader, Liúrbost, Crosbost, Achmore, Ranais, Cromore, Melbost, Knock and Garyvard. There is one property within the boundary, however this is not residential. Stornoway is the capital of Lewis and Harris and has a population of 4,800 (National Records of Scotland 2021). It is approximately 3.2km north-east of the proposed development.

Recreational receptors include hillwalkers, visitors to Lews Castle, North Lochs Community Association Centre, Loch School and anglers fishing on rivers and lochs, notably Loch Orasaigh. Other visual receptors include travellers on the Stornoway to Ullapool Ferry, road users on the A859, A858, A866, B8060, B859 and B897 and walkers and cyclists on the long distance route, the Hebridean Way.

4.2.2 Potential Impacts and Effects

Landscape Effects

Given the aerial prominence of wind turbines, the proposed development has potential for significant landscape effects on landscape character and statutory and non-statutory designated landscapes. The landscape assessment will consider the impacts and effects of the proposed development on landscape character and designated landscapes.

There is potential for significant landscape effects on LCTs and CCTs. There would also be potential for localised significant landscape effects on some parts of adjoining LCTs.

The South Lewis, Harris and North Uist NSA, the Harris Uig Hills WLA and the Eisgein WLA may experience landscape effects. There would also be potential for landscape effects upon other designations, including Lews Castle and Lady Lever Park GDL and some SMs including the Calanais standing stones, various brochs and historic settlements.

Visual Effects

Visual receptors who are likely to experience views of the proposed development have been identified following a desk-based exercise using visibility information gained from Zone of Theoretical Visibility (ZTV) mapping (refer to Figure 4). Representative viewpoints have been selected to represent these visual receptors. Visual receptors which have been identified are detailed in the following paragraphs and the selected representative viewpoints are listed in Table 4-1 and shown on Figure 4.

Residents at the nearby settlements of Grimshader, Liúrbost, Crosbost and Ranais, may experience significant visual effects. Residents at Achmore, Marbhig, Cromore, Cabharstadh, Garyvard, Kershader, Habost and Knock may also experience visibility of the proposed development. There is also potential for visual effects on residents in Stornoway.

Visual effects may also be experienced by travellers on the Stornoway to Ullapool Ferry, road users on the A859, A858, A866, B8060, B859 and B897 and walkers and cyclists on the Hebridean Way. Hillwalkers, particularly those on summits and slopes with aspects towards the proposed development, visitors to Lews Castle, North Lochs Community Association Centre, Loch School and anglers fishing on rivers and lochs, notably Loch Orasaigh, may also experience visual effects of the proposed development.

Table 4-1: Representative Viewpoints

Viewpoint No	Viewpoint Name	Location	Receptor Type	Approximate Distance to Proposed Development Boundary (km)
1	Calanais Standing Stones	121323, 933031	Visitor	15.9
2	Stornoway War Memorial	141701, 934360	Visitor	4.9
3	A859 near Liúrbost	135528, 927362	Road User	1.5
4	Knock	149417, 932183	Residents	7.9
5	A858 Achmore	131858, 928754	Road User	4.8
6	A859 Baile Ailein	130063, 921089	Road User	9.4
7	A859 Laxay	134228, 922079	Road User	6.0
8	B8060 near Habost	133143, 919531	Road User	8.8
9	Liuthaid	117625, 913566	Walker	23.8
10	Grimshader (West)	139970, 926347	Residents	1.4
11	Grimshader (East)	141439, 926101	Residents	1.4
12	A859/B897 Junction	138363, 930660	Road User	1.6
13	Cnoc na Croiche (Gallows Hill)	141648, 932337	Visitors	2.9
14	Beinn Mholach	135770, 938416	Walker	9.5
15	Stornoway - Ullapool Ferry	150402, 927152	Traveller	7.6
16	Iolaire Monument	144373, 930765	Visitor	3.0

Proposed Assessment Methodology

The LVIA will be undertaken in accordance with the GLVIA3 and with reference to the following documents:

- Siting and Designing Windfarms in the Landscape (NatureScot 2017a Version 3a);
- Visual Representation of Windfarms: Good Practice Guidance (NatureScot 2017b, Version 2.2);
- Visual Representation of Development Proposals, Technical Guidance Note 06/19 (Landscape Institute 2019a);
- Assessing the Cumulative landscape and visual Impact of Onshore Wind Energy Developments (NatureScot 2021);
- Visual Assessment of Windfarms: Best Practice, prepared by University of Newcastle for (NatureScot 2002);
- Landscape Character Assessments for the study area;
- Assessing impacts on Wild Land Areas - technical guidance (NatureScot 2023d); and
- Draft Supplementary Guidance for Wind Energy Development (CnES 2021).

The LVIA will focus on the likely significant adverse effects (and significant adverse cumulative effects) on key landscape/seascape and visual receptors. It is proposed that the initial study area for the LVIA will cover a radius of 45km from the turbine locations in accordance with current NatureScot guidance in relation to turbines of 150m or taller blade tip height. The assessment will then focus on the key landscape and visual receptors likely to experience significant effects. A sequential visual assessment may also be undertaken from selected routes if deemed necessary.

Assessing impacts on Wild Land Areas – technical guidance – Proposed revisions in light of NPF4 (NatureScot 2023d) states that '*guidance should only be applied to proposals whose nature, siting, scale or design are likely to result in a significant effect on the qualities of a WLA. Given this, assessments are more likely for proposals within a WLA, and are less-likely for proposals outwith the WLA. An assessment will only be required where it has been deemed necessary by the competent authority*'. As the proposed development is outwith the WLA, it is proposed that wild land assessment is scoped out, subject to agreement from the competent authority.

In reference to CnES's specific requirement on landscape and visual matters, the proposed development will be assessed for its likely impact on:

- areas of low landscape capacity (Landscape Capacity Study for Onshore Wind Energy Developments in the Western Isles Map 3);
- key characteristics of landscape character types;
- coastal and seascape character;
- designated landscapes, such as NSAs and s GDLs;
- views of the wind farm from within and on approaches to settlements and residential visual amenity from individual properties if appropriate; and
- views from popular public viewpoints, transport routes, the core path network and recognised visitor locations.

ZTV mapping will be used to identify which landscape and visual receptors within the study area require consideration in the assessment and will be verified by a site survey. The LVIA will be informed by visibility mapping for both the tip height (total height) and hub height of the proposed turbines. This will be supported by computer generated photomontage and wireframe views which will be prepared in accordance with NatureScot's publication, the Visual Representation of Windfarms: Guidance, version 2.2 (NatureScot 2017b).

Residential Visual Amenity Assessment

CnES will be consulted on the requirement for a Residential Visual Amenity Assessment (RVAA) as the layout of the proposed development is refined and distances to the nearest residential receptors confirmed. RVAAs are typically undertaken when there is potential for the visual amenity of a dwelling to be compromised by the proximity, size or scale of a given development to such an extent that the impact on residential amenity would be unacceptable.

As the layout of the proposed development is refined and proximity to residential locations is established, a residential visual amenity assessment may be undertaken, if appropriate, for private properties falling within 1.5km to 2km of the nearest turbine in accordance with the guidance provided in Residential Visual Amenity Assessment Technical Guidance Note 2/19 (Landscape Institute 2019b).

Aviation Lighting/Night-time Assessment

Wind turbines with a total height in excess of 150m above ground level require steady, medium intensity (typically 2000 candela) visible lighting in the interests of aviation safety. This lighting is typically housed on the nacelle and must be displayed at night and sited so as to be visible from all directions.

As part of the iterative design process and mitigation of potential impacts, a development specific lighting strategy for the turbines will be developed in collaboration with the Civil Aviation Authority (CAA). Where the need for lighting is unavoidable, the LVIA will include an assessment of the effects of visible aviation lighting on key landscape and visual receptors. It will be supported by visibility mapping and the preparation of dusk/night-time photomontage views from locations agreed with CnES and NatureScot.

Cumulative Effects

The cumulative landscape and visual assessment (CLVIA) will be carried out in accordance with the principles outlined in GLVIA3 and NatureScot guidance (Guidance - Assessing the cumulative landscape and visual impact of onshore wind energy developments (NatureScot 2021)).

The assessment of cumulative effects will include consideration of existing and planned wind farm developments within a 60km radius study area, as recommended by NatureScot guidance. Wind farms considered will include existing developments either built or under construction, consented developments awaiting implementation and proposals awaiting determination within the planning process with design information in the public domain.

A provisional list of developments to be included is detailed in Table 4-2. Should further developments emerge during the EIA process, these will also be considered up to an agreed cut-off date.

Table 4-2: Wind Energy Developments (existing and planned) within 60km

Wind Turbine/Wind Farm	No turbines	Tip height (m)	Approximate Distance from Proposed Development Boundary (km)	Status
North Lochs Water Treatment Works[1]	3	Less than 11	0	Operational
Arnish Moor	3	76	0	Operational
Stornoway	35	156/180	2	Consented 2022
Creed Business Park	1	61.14	2	Operational
Beinn Ghrideag Community Windfarm	3	125	4	Operational
Pentland Road	6	121.2	5	Operational
Bridge Cottages, Newmarket	1	39.9	8	Operational
Uisenis (to replace Muaitheabhal and Muaitheabhal East and South Extensions)	26	225	12	Submitted 2023
Muaitheabhal (Bhein Mhor)*	33	145	12	Consented 2010
Muaitheabhal East Extension*	6	150	12	Consented 2011
Muaitheabhal South Extension*	6	150/130	12	Consented 2015
Lemreway	1	42	13	Operational
Druim Leathann	14	140	20	Consented 2021
North Tolsta	1	81	19	Operational
Horshader	1	81	21	Operational
Baile an Truseil	3	81	23	Operational
Monan Community	3	86	31	Operational

[1]This site has been included, despite its small scale, due to its proximity to the proposed development.
*Uisenis (Application Submitted) is intended to replace Muaitheabhal and Muaitheabhal East and South Extensions. At this stage, all have been included in this list as the consent process of the Uisenis development is ongoing. If Uisenis is consented, we would propose to assess it in place of the Muaitheabhal developments.

Design Optimisation

The design of the proposed development will be informed by the LVIA in combination with other technical and environmental considerations. The design will consider impacts on both landscape and visual receptors and identify opportunities to reduce potentially significant effects where it is viable to do so. As part of the design optimisation process, consultation will be undertaken with NatureScot, however it is recognised that not all adverse significant effects on landscape and visual receptors can be 'designed out' and that residual, adverse significant effects on landscape and visual receptors may be unavoidable.

4.2.3 Mitigation

The primary mitigation for landscape and visual effects, including cumulative effects, is through the iterative design of the layout of the turbines and associated infrastructure. The design of the proposed development will aim to achieve a coherent and balanced turbine layout, in line with guidance provided by NatureScot.

The EIAR will present the rationale behind the final design strategy and document the iterative design process in response to the technical and environmental constraints identified through the EIA process. The objective in designing the wind farm will be to develop a layout that responds to its setting in terms of landform and pattern, presenting a simple visual image and avoiding the clustering of turbines and the isolation of outlying turbines in views from both key locations and sequential routes. It is recognised that the final layout will need to balance a wide range of technical and environmental considerations.

4.2.4 Environmental Factors Scoped Out of Assessment

It is proposed that a Wild Land Impact Assessment is scoped out of the EIAR.

4.2.5 Consultation and Scoping Questions

Consultation, where necessary, will be undertaken and may include, but is not limited to:

- CnES; and
- NatureScot.

This will include confirmation or changes to the location of viewpoints as the design of the proposed development evolves and requirements for night-time and/or residential visual assessments. Consultation will also be undertaken with the local community through public consultation events prior to submission of the application.

Questions for Consultees

The following questions are directed to consultees:

- Do consultees have any comments on the overall methodology proposed to assess effects on landscape and visual receptors?
- Are there additional sources of information which should inform the baseline and assessment of potential effects on landscape/coastal/seascape character and designated landscapes?
- As the proposed development is not located within a WLA are consultees content with scoping out the assessment of effects on Wild Land?
- Could consultees confirm they are content with the 45km initial study area proposed for the LVIA?
- Do consultees have any comments/suggestions on the proposed list of representative viewpoint locations listed in Table 4-1 and shown on Figure 4?
- Do consultees have any comments on the proposed scope of the RVAA?
- Do consultees have any comments on which viewpoints should be used to represent dusk/night-time views?
- Do consultees have any suggestions on routes to be included for sequential route assessment?
- Do consultees have any comments on the overall methodology proposed to assess cumulative effects on landscape and visual receptors?
- Could consultees confirm they are happy with the 60km initial search area proposed for the CLVIA?

- Are there any further wind farms or other developments, existing or within the planning system, in addition to those shown in Table 4-2, that should be included in the CLIVIA?
- Which viewpoints do consultees feel should be included within the CLVIA?

4.3 Geology, Hydrogeology and Hydrology

4.3.1 Existing Conditions and Key Constraints

The proposed development is located approximately 3.2km south-west of Stornoway and is located in heather moorland and rough grassland. The topography of the proposed development has typical elevations of between 60m to 70m AOD, with maximum elevations of 106m AOD along the eastern boundary and 98m AOD to the west of the proposed development. Numerous watercourses and lochs are present which vary in size, with the largest being Loch Orasaigh, located in the centre of the proposed development.

Soils and Peat

Soils found across the proposed development are widespread peaty gleys with dystrophic blanket peat, with pockets of dystrophic blanket peat north of Loch Orasaigh and north of Loch Sanndabhat along the A859 (Scotland's Soils 2023).

According to the NatureScot Carbon and Peatland Map, the proposed development is predominantly categorised as Class 1 ('*Nationally important carbon-rich soils, deep peat and priority peatland habitat. Areas of potentially high conservation value*') (NatureScot 2016). A small area within the south-west and an area skirting the eastern extent of the proposed development along the coast are categorised as Class 2 ('*Nationally important carbon-rich soils, deep peat and priority peatland habitat. Areas of potentially high conservation value and restoration potential*'). There is a very small area skirting the south-east boundary along the coast which is categorised as Class 5 ('*Soil information takes precedence over vegetation data. No peatland habitat recorded. May also include areas of bare soil. Soils are carbon-rich and deep peat*') (NatureScot 2016).

Geology and Hydrogeology

The proposed development is not located within geological or ecological protected areas (NatureScot 2023b).

The bedrock geology within and surrounding the proposed development is identified as the Outer Hebrides Thrust Zone Mylonites Complex, comprising protocataclasite along the eastern edge and west portion, and Lewisian Complex Gneiss to the east (British Geological Survey (BGS) 2023).

Most of the area is mapped by BGS as unknown/unclassified superficial deposits, with an area of superficial deposits consisting of peat within the north-eastern extent of the proposed development (BGS 2023). However, peat is expected to be widespread, typically growing under waterlogged anaerobic conditions and sustained by shallow groundwater.

The proposed development is located within the Lewis and Harris groundwater body (Water Framework Directive (WFD) Water Body ID: 150695) as part of the Scotland River Basin District. It is 2,109km^2 in area and is classified by SEPA as having an overall status of 'Good' under the WFD (SEPA 2020). The BGS classification map (BGS 2023) shows bedrock to be an aquifer of low productivity in which groundwater flow is virtually all through fractures and other discontinuities.

Section 4.5 (Ecology) indicates the likely presence of blanket bog, lochs and wet dwarf shrub heath with smaller areas of rush/acid grassland, rocky outcrops and dry dwarf shrub heath. Blanket bog across the proposed development appears to comprise areas of cutover bog and areas of more intact semi-natural bog. It is therefore expected that wetlands will be present, with blanket bog expected to be sustained by shallow groundwater and the potential for acid grassland and other areas to classify as potential Groundwater Dependant Terrestrial Ecosystems (GWDTE).

Hydrology

Allt na Craoibhe (ID: 20754) traverses the northern boundary of the proposed development, flowing in an easterly direction across the A859 and B895 before discharging into the Gob na Greige to Rubha Raerinis coastal water body (ID: 200188) to the north-east. The Allt na Craoibhe river has a network of tributaries which drain into the multiple lochs within the proposed development and is classified by SEPA as having an overall 'Good' status under the WFD (SEPA 2020).

Loch Orasaigh (ID: 100054) is 0.6km^2 in area and has been designated as heavily modified due to physical alterations that cannot be addressed without a significant impact on water storage for public drinking water. It is classified as having an overall status of 'Good ecological potential' by SEPA (SEPA 2020).

The southern extent of the proposed development is drained by several smaller watercourses and tributaries, including Allt Ben Casgrow located in the south-east.

A review of SEPA flood mapping confirms a medium likelihood of river and surface water flooding within the proposed development, meaning there is a 0.5% (1 in 200) probability of flooding in any year (SEPA 2019). However, river and surface water flood are typically confined to the Allt na Craoibhe watercourse corridor and loch edges.

Review of the NatureScot SiteLink website (NatureScot 2023b) confirms that there are no designated sites with the proposed development area, however, it is within a Drinking Water Protected Area (DWPA) surrounding Loch Orasaigh.

4.3.2 Potential Impacts and Effects

Without mitigation or adherence to best practice, impacts on geology, hydrogeology and hydrology could occur during the lifetime of the proposed development. A summary of the potential effects on ground conditions and the water environment resulting from construction and operation of an onshore wind farm is provided in the following lists. These will be considered in the EIAR.

Potential Construction Impacts

- disturbance and loss of deposits of peat;
- ground instability (including peat slide risk);
- changes in groundwater levels from dewatering excavations;
- potential change of groundwater flow paths and contribution to areas of peat and GWDTEs, where present;
- disturbance and or pollution resulting from borrow pit formation and use;
- impacts on surface water and groundwater quality from pollution from fuel, oil, concrete or other hazardous substances;
- impacts on pre-existing private water abstractions, flow and/or quality;
- discharge of sediment-laden runoff to drainage system and watercourses;
- increased flood risk to areas downstream of the proposed development during construction through increased surface runoff;
- disturbance of watercourse bed and banks from the construction of culverts; and
- potential pollution impacts to public and private water supplies, where present.

Potential Operational Impacts

- increased runoff rates and associated increase in flood risk resulting from increases in impermeable surfaces (access tracks and hardstanding areas at turbines);
- changes in natural surface water or shallow groundwater drainage patterns (which may affect water contribution to areas of peat and GWDTE);
- changes to groundwater levels and groundwater movement;
- longer term impacts on abstraction for water supplies, particularly any supplies dependent on groundwater; and
- pollution impacts on surface water quality from maintenance work.

4.3.3 Proposed Assessment Methodology

The study area will include all the proposed infrastructure and a 1km buffer from the proposed development boundary. The study area for potential cumulative effects will use the catchments within the study area, with a maximum downstream distance of 5km from the proposed development. Beyond 5km, any effect is considered to be so diminished as to be undetectable and therefore not significant. A review of other existing and proposed developments within the proposed study area will be undertaken and potential impacts on hydrology, hydrogeology and geology will be assessed to identify cumulative impacts and effects.

Baseline Desk Study

An initial desk-based study will be undertaken to determine baseline conditions through the review and collation of available and relevant information relating to geology, hydrogeology and hydrology. This will include groundwater supported resources and habitats, licensed and unlicensed groundwater and surface water abstractions, public and private water supplies, surface water flows, flooding, rainfall data, water quality and soil data. A review of published geological maps, Ordnance Survey (OS) maps, aerial photographs and site-specific data such as site investigation data, habitat mapping, geological and hydrogeological reports, digital terrain models and geological literature will also be completed.

The desk study will identify sensitive features which may potentially be affected by the proposed development and will confirm the baseline geological, hydrogeological and hydrological environment.

Baseline Field Surveys

A detailed site visit and walkover survey will be undertaken to:

- verify the information collected during the baseline desk study;
- identify drainage features, areas vulnerable to erosion or sediment deposition, and any pollution risks;
- visit identified GWDTEs (in consultation with the project ecologists and following ecological habitat surveys);
- visually assess primary surface water catchments and verify private water supplies (where appropriate), and any other abstractions that could be affected by the proposed development;
- prepare a schedule of potential watercourse crossings; and
- collect peat and soil information, completed in conjunction with the peat surveys described in the following paragraphs.

Baseline Peat Survey

A Phase 1 peat survey will be carried out across the proposed development in accordance with current guidance (Scottish Government, Scottish Natural Heritage, SEPA 2017). This will comprise peat probing on a 100m grid.

The peat depth data will be used to develop an initial peat depth contour map, which can be used to identify constraints and support a sustainable development which avoids potential impacts on peatlands.

A detailed peat depth survey (Phase 2) will be undertaken across the infrastructure footprints and would be carried out in line with Scottish Government guidance. The Phase 2 survey will comprise peat probing along proposed access tracks at 50m centres with 10m offsets, 10m crosshair probing at each turbine location, and gridded probing across all other infrastructure elements (e.g. compounds, borrow pits and met mast locations). During this phase, peat core samples will be collected at each turbine location, substation, borrow pits and other infrastructure locations. Details of the acrotelm thickness, mineral soil characteristics and the degree of humification (using the Von-Post Scale) will be undertaken on the catotelm. Core samples will be analysed by a laboratory to give information on the fine- and coarse-fibre content, as well as water content.

The collected peat depth and composition information will be used to inform and develop the Peat Slide Risk Assessment and inform the Peat Management Plan.

Assessment and Reporting

The EIAR chapter for geology, hydrogeology and hydrology will detail assessment methodologies and determination of potential impacts on receptors. The following elements will be undertaken:

- assessment of the baseline hydrological and geological conditions including types of flooding, design flows within watercourses crossed by the development and private water supplies;
- mapping of site hydrological and hydrogeological constraints, to include outline areas for borrow pits based on the site geology and hydrology;
- identification and mapping of site hydrological and hydrogeological constraints;
- identification of potential impacts, these are expected to include reduction in water quality during construction, disruption of hydrological and hydrogeological flow pathways and disturbance to peat deposits;
- evaluation of the significance of the potential impacts; and
- mitigation for potential impacts.

The EIAR chapter would be supported by relevant technical appendices, including but not limited to:

- private water supply risk assessment (if required);
- GWDTE assessment (if required);
- schedule of watercourse crossings;
- peat management plan; and
- peat slide hazard and risk assessment.

4.3.4 Mitigation

The proposed development will undergo design iterations and evolution in response to constraints identified as part of the baseline and field studies so as to avoid and/or minimise potential effects on receptors where possible. For example, it is expected that the following potential mitigation measures will be included in the design of the proposed development:

- a buffer of up to 50m will be applied to watercourses;
- site-specific peat probing will be used to identify areas of potential deep peat and these will be avoided (where feasible);
- a site-specific peat landslide and hazard risk assessment will be prepared, and areas of potential increased peat slide risk will be avoided;

- a peat management plan will be prepared to show how the integrity of peat will be safeguarded; and
- impacts on private water supply sources and areas of GWDTE will be avoided as much as possible.
  - should it not be possible to reasonably avoid an impact on a private water supply source, an alternative source of water will be arranged.
  - should it not be possible to reasonably avoid an impact on a GWDTE, a detailed impact assessment will be undertaken to determine whether compensatory mitigation measures could be put in place.

Best practice guidance has been produced to assist developers minimise the risks associated with wind farm construction and operation and this will be used to develop site specific mitigation measures for the proposed development. Measures will be proposed to control and mitigate, for example, pollution risk (from anthropogenic and geogenic sources), flood risk, watercourse crossings, impacts on surface and groundwater flow paths, and management of peat soils.

Good practice measures will be applied in relation to pollution risk, and management of surface runoff rates and volumes. This will form part of the CEMP to be implemented for the proposed development.

4.3.5 Environmental Factors Scoped Out of Assessment

It is proposed to scope out effects on geology. While there will be effects arising from rock extraction for borrow pits, track construction and for turbine and crane pad areas, these are limited in area and do not extend beyond the immediate development footprint. No sensitive geological features have been identified within the proposed development.

Published mapping confirms that the proposed development is not located in an area of fluvial or coastal flood risk. Therefore, a simple screening of potential flooding sources (fluvial, coastal, groundwater, infrastructure etc.) will be presented in the EIAR alongside measures that would be used to control the rate and quality of runoff. A detailed Flood Risk Assessment will not be undertaken.

Classification data is available from SEPA for the watercourses at the proposed development and there are no known sources of potential water pollution at the proposed development that might give rise to the need for water quality monitoring therefore no additional water quality monitoring is proposed.

4.3.6 Consultation and Scoping Questions

Consultation, where necessary, will be undertaken and may include, but is not limited to:

- CnES;
- SEPA;
- NatureScot;
- Scottish Water;
- Western Isles District Salmon Fisheries Board; and
- Outer Hebrides Fisheries Trust.

Questions for Consultees

The following questions are directed to consultees:

- Published mapping confirms that most of the proposed development area is not identified as being at flood risk. Therefore, it is proposed that a simple screening of potential flooding sources (fluvial, coastal, pluvial, groundwater etc.) is presented in the EIAR. Is this approach acceptable to consultees?
- It is not proposed to prepare a detailed drainage design. Rather, measures that would be used to control the rate and quality of runoff will be specified in the EIAR. Is this approach acceptable to consultees?

- Site investigations, including detailed peat probing and private water survey, will be undertaken as part of the proposed assessment. Should additional investigation or data sources be considered when assessing baseline conditions?
- It is not proposed to undertake any water quality sampling, groundwater monitoring points, surface water monitoring points or leachability trials of any rock as there is published data that can be used to characterise baseline conditions. Is this approach acceptable to consultees?
- Could consultees advise if there are any records of private water supplies held within the study area?
- Could consultees advise if there is any specific information or methodology that should be used/followed as part of the private water supply risk assessment?

4.4 Ornithology

Potential impacts on (non-avian) ecological features is considered separately in Section 4.5 (Ecology).

The ornithological assessment will be undertaken by experienced ecologists/ornithologist (members of the Chartered Institute of Ecology and Environmental Management (CIEEM) or similar professional body).

4.4.1 Existing Conditions and Key Constraints

Bird surveys have been ongoing across the proposed development area since 2021 in parallel with RWE assessing the feasibility of developing a wind farm in this location.

Surveys were started in September 2021 and completed in August 2023 and will provide a comprehensive dataset covering two years and all ornithological surveys were carried out in accordance with NatureScot guidance (SNH 2017). The following surveys covering the proposed development area and a buffer are considered appropriate for the target species associated with each survey:

- Flight activity surveys (vantage points (VPs)) – four VPs; nine hours per VP per month for 24 months (September 2021 to August 2023).
- Moorland bird surveys – four visits per year in 2022 and 2023 between mid-April and early-July; 500m buffer.
- Breeding Schedule 1 raptor surveys – four visits per year in 2022 and 2023 between April and August; 2km buffer.
- Breeding eagle surveys – one visit to each territory between January and mid-March 2022 and 2023 to determine occupancy; a minimum of two further visits each year to determine breeding success; 6km buffer.
- Breeding diver nest surveys – a minimum of three visits to all waterbodies per year between April and August to identify breeding activity; nests were monitored to assess productivity; 1km buffer.
- Breeding diver focal watches – watches followed industry standard VP methods; undertaken during active breeding period per nest until 20 – 30 incoming/outgoing flights recorded.

In addition to site-based surveys, the Lewis and Harris Raptor Study Group (RSG) provided records in 2021. These provided nest site data for golden and white-tailed eagles. A total of three white-tailed and four golden eagle territories fall within 6km of the proposed development.

The following is a summary of the key ornithological features and findings relative to the proposed development.

Designated Sites

Table 4-3 lists the sites designated for birds or bird assemblage within the study area.

Table 4-3: Summary of Sites Designated for Birds or Bird Assemblages*

Site Name	Designation	Approximate distance **	Protected features
Lewis Peatlands	SPA	0.7km west	Black-throated diver (*Gavia arctica*), breeding Dunlin (*Calidris alpina schinzii*), breeding Golden eagle (*Aquila chrysaetos),* breeding Golden plover (*Pluvialis apricaria*), breeding Greenshank (*Tringa nebularia*), breeding Merlin (*Falco columbarius*), breeding Red-throated diver (*Gavia stellata*), breeding
Lewis Peatlands	Ramsar	0.7km west	Black-throated diver, breeding Dunlin, breeding Golden eagle, breeding Golden plover, breeding Greenshank, breeding Merlin, breeding Red-throated diver, breeding
Tong Saltings	SSSI	4.4km north	The site is important for wintering, breeding and feeding birds including terns, waders and wildfowl
Ness and Barvas, Lewis	SPA	19.9km north-west	Corncrake (*Crex crex*), breeding

*non-avian designated sites are listed in Section 4.5 (Ecology)
** taken from closest edge of proposed development boundary

Key Survey Results

Table 4-4 provides a summary of the key species recorded, whether they are associated with a designated site within 20km, whether they are an Annex 1/Schedule 1 species and whether they have been recorded nesting within the proposed development area or survey buffer. Survey buffers change for different species with 6km for eagle species, 2km for Schedule 1 raptors and 1km for diver species.

Table 4-4: Key Findings from Ornithological Surveys

Species	Designated site feature	Annex 1/ Schedule 1	Nesting within proposed development area	Nesting within survey buffer
Breeding Schedule 1				
Golden eagle	Yes	Yes	Yes	Yes (6km buffer)
White-tailed eagle	No	Yes	Yes	Yes (6km buffer)
Red-throated diver	Yes	Yes	Yes	Yes (1km buffer)
Black-throated diver	Yes	Yes	No	Yes (1km buffer)
Hen harrier	No	Yes	No	Yes (2km buffer)
Merlin	Yes	Yes	Yes	Yes (2km buffer)
Peregrine	No	Yes	No	Yes (2km buffer)

Species	Designated site feature	Annex 1/ Schedule 1	Nesting within proposed development area	Nesting within survey buffer
Breeding Wader surveys				
Golden plover	Yes	Yes	Yes	Yes (500m buffer)
Dunlin	Yes	No	Yes	Yes (500m buffer)
Curlew	No	No	Yes	Yes (500m buffer)
Redshank	No	No	Yes	Yes (500m buffer)
Snipe	No	No	Yes	Yes (500m buffer)
Other target species recorded during non-breeding and breeding surveys				
Whooper swan	No	Yes	N/A	N/A
Teal	No	No	No	No (500m buffer)
Goldeneye	No	Yes	No	No (500m buffer)
Greylag goose	No	Yes	No	No (500m buffer)
Pink-footed goose	No	No	N/A	N/A
Osprey	No	Yes	No	No (2km buffer)
Red-breasted merganser	No	No	No	No (500m buffer)
Greenshank	Yes	Yes	No	No (500m buffer)
Arctic tern	No	Yes	No	No (500m buffer)
Great skua	No	No	No	No (500m buffer)
Short-eared owl	No	Yes	No	No (500m buffer)

Initial Desk Study

In addition to bird species recorded during field surveys, a search of publicly available records on the National Biodiversity Network (NBN) Atlas (2023) was completed. Records from the past 20 years (under Creative Commons Attribution (CC-BY Licence) and Open Government Licence (OGL)) indicated the presence of seven bird species within the proposed development area; common gull, curlew, herring gull, lapwing, reed bunting, snipe and twite. A further 49 species within 5km of the proposed development were recorded from the last 20 years. Of these 56 species, ten were recorded during field surveys.

NBN Atlas Schedule 1/Annex 1 bird species recorded within 5km of the proposed development but were not recorded during field surveys include:

- Brambling (*Fringilla montifringilla*), last recorded in 2007.
- Corncrake (*Crex crex*), last recorded in 2021.
- Red Kite (*Milvus milvus*), last recorded in 2004.
- Redwing (*Turdus iliacus*), last recorded in 2004.

4.4.2 Potential Impacts and Effects

The assessment will consider the potential impacts associated with the proposed development in the absence of mitigation. Where required, potential effects on qualifying features of relevant designated sites will be covered in a Habitats Regulations Appraisal (HRA) and cross referenced in the EIAR.

Potential Construction Impacts

- Temporary loss, change or fragmentation of habitats used by bird species including for nesting, roosting and foraging.
- Pollution or sedimentation impacts on freshwater and marine habitats used by birds to forage or nest in.
- Temporary disturbance and displacement due to visual and noise impacts.

Potential Operational Impacts

- Permanent loss or fragmentation of habitats used by bird species including for nesting, roosting and foraging.
- Permanent displacement (barrier effects) of bird species from nesting, roosting and foraging habitat due to disturbance and presence of infrastructure (including lighting and power lines).
- Mortality of bird species due to collision with turbine blades or other permanent infrastructure; in particular soaring birds of prey such as eagles and harriers due to their hunting habits.

Where appropriate, construction and operational impacts will also be considered in a cumulative assessment.

4.4.3 Proposed Assessment Methodology

A thorough desk study will be undertaken to inform the baseline including requests for data or updates from relevant organisations such as the Outer Hebrides Biological Recording (OHBR) and RSG.

Study Areas

The EIAR will refer to the following study areas which will be based on the final design layout:

- Designated sites: sites of international importance within 20km and sites of national importance within 10km of the proposed development area (SNH 2016a).
- Collision risk modelling (CRM): a collision risk analysis area will be created around the outermost proposed turbine locations which will be buffered by 500m (SNH 2017).
- Breeding waders and wintering waders, raptors, owls and wildfowl: proposed development area and a 500m buffer (SNH 2017).
- Scarce breeding birds: the proposed development area and a 2km buffer (SNH 2017).
- Cumulative assessment: as per SNH (2018b), the Natural Heritage Zone (NHZ) level is considered practical and appropriate for breeding species not connected to designated sites – the relevant NHZ is Coll, Tiree and the Western Isles NHZ 3.

Impact Assessment Methodology

The focus of the assessment will be on Schedule 1, Annex 1 and/or priority species as listed in Annex 1 of NatureScot guidance (SNH 2018a); these species will have either been recorded during surveys and/or will be qualifying interests of designated sites within relevant study areas. Other species recorded utilising the proposed development area will also be considered for inclusion depending on their conservation status, how frequently they use the area and/or their susceptibility to impacts.

The assessment of impacts and effects on important ornithological features will be based on current CIEEM Ecological Impact Assessment guidelines (CIEEM 2018; Version 1.2 updated April 2022). It will also draw on other specific guidance (SNH 2018a, 2018b, 2018c) and liaison with other technical specialists as required. The assessment will consider species' reference population, conservation status, range and distribution when evaluating importance and significance of effects. CRM will be undertaken on those target species with sufficient data to provide a robust assessment. Golden Eagle Topographical (GET) modelling will be undertaken to assess impacts on golden eagle territories.

The assessment process will include the following stages:

- determination and evaluation of important ornithological features;
- identification and characterisation of impacts;
- outlining mitigation measures to avoid and reduce significant effects;
- assessment of the significance of any residual effects after such measures; and
- identification of opportunities for ornithological enhancement.

The EIAR will be supported by technical appendices and relevant figures. Sensitive ornithological data will be included within a confidential appendix. This will not be made publicly available but will be issued to NatureScot, CnES and other consultees as required.

In addition to the references and methods reported, the following key references will also be used to inform the impact assessment:

- Our Nature – A Framework for biodiversity Action in the Western Isles; The Western Isles Local Biodiversity Action Plan (CnES 2004.);
- General pre-application and scoping advice for onshore wind farms (NatureScot 2022d);
- Wind farm impacts on birds (NatureScot 2023c); and
- Environmental Statements and Annexes of Environmentally Sensitive Bird Information; Guidance for Developers, Consultants and Consultees Version 2. (Scottish Natural Heritage 2016b).

4.4.4 Mitigation

The iterative design process will consider potential impacts and effects on ornithological receptors and seek to amend the design to avoid impacts where possible; for example, restricting the timing of construction or by changing the location or size of turbines. Where that is not possible, further mitigation or compensation would be proposed, for example, habitat management.

4.4.5 Environmental Factors Scoped Out of Assessment

As stated in SNH (2018) '*there are currently 22 bird species that are widespread across Scotland which utilise habitats or have flight behaviours that may be adversely affected by a wind farm. A further 13 'restricted range' species may be encountered in specific parts of the country*.'

All 35 species are listed in Annex 1 of the 2018 guidance. All species known to be present on Lewis have currently been scoped in to the assessment. The final list of species included in the assessment will be informed by the desk-study and field survey results; where species known to be present on Lewis are scoped out, the reasoning for this will be provided in the EIAR.

4.4.6 Consultation and Scoping Questions

Consultation, where necessary, will be undertaken and may include, but is not limited to:

- CnES: and
- NatureScot.

Questions for Consultees

The following questions are directed to consultees:

- Do consultees agree that the proposed scope and methods with respect to surveys and the assessment is appropriate?
- Could NatureScot provide an up-to-date list of those wind farm developments within the Coll, Tiree and the Western Isles NHZ which should be considered within the cumulative assessment?
- Are consultees aware of any other sources of information, or other organisations that should be consulted, to further inform the ornithological assessment?

4.5 Ecology

The proposed development has the potential to impact biodiversity through habitat loss, mortality of species and disturbance or displacement of fauna and flora. The ecology chapter of the EIAR will set out the baseline ecological conditions regarding (non-avian) ecological features and undertake an assessment of the potential significant effects that could occur as a result of the proposed development. Best practise guidance, national and local planning policies, and consultation with stakeholders will be considered in undertaking the assessment.

Potential impacts on birds are considered separately in Section 4.4 (Ornithology).

The ecology assessment will be undertaken by experienced ecologists (members of CIEEM or similar professional body).

4.5.1 Existing Conditions and Key Constraints

No formal ecological surveys have been completed for the proposed development site to date. They have been started and are due to be completed in spring 2024. The following baseline conditions overview is provided based on relevant publicly available datasets as follows:

- Open source spatial data available through SpatialData.gov.scots (2023); data sources include Scotland's habitat and land cover map from 2020 and carbon and peat map from 2016 and NatureScot (2022c).
- Native Woodland Survey of Scotland (NWSS) (Scottish Forestry 2023);
- Ancient Woodland Inventory (AWI) of Scotland (NatureScot 2022b);
- Aerial imagery and google street view (Google Maps 2023);
- OS maps (2022);
- The Botanical Society of Britain and Ireland (BSBI 2023);
- NBN Atlas (2023); and
- National Marine Plan interactive (NMPi) (Marine Scotland 2023).

Protected Sites

The proposed development does not overlap with any sites designated for nature conservation. The eastern boundary follows the coastline where the coastline forms the western edge of the North-East Lewis Marine

Protected Area (MPA). A short section of the coastline also forms the western edge of the Inner Hebrides and the Minches SAC.

The proposed development is 0.7km from the Lewis Peatlands SPA and Ramsar site and 1.9km from the Lewis Peatlands SAC. The Lewis Peatlands SPA and Ramsar site supports bird populations of European importance while the Ramsar site and SAC are described as one of the largest and most intact known areas of blanket bog in the world. Two SSSI notified for blanket bog, coastal habitats and breeding birds are also present within 5km of the proposed development. All designated sites within 10km are listed in Table 4-5 and shown on Figure 2.

Table 4-5: Summary of Sites Designated for Nature Conservation

Site name	Designation	Approximate distance *	Protected features
North-east Lewis	MPA	Forms part of the eastern boundary of the proposed development	Risso's dolphin (*Grampus griseus*) Sand eels (*Ammodytes marinus*/*Ammodytes tobianus*)
Inner Hebrides and the Minches	SAC	Forms part of the eastern boundary of the proposed development	Harbour porpoise (*Phocoena phocoena*)
Lewis Peatlands	SPA	0.7km west	Black-throated diver (*Gavia arctica*), breeding Dunlin (*Calidris alpina schinzii*), breeding Golden eagle (*Aquila chrysaetos),* breeding Golden plover (*Pluvialis apricaria*), breeding Greenshank (*Tringa nebularia*), breeding Merlin (*Falco columbarius*), breeding Red-throated diver (*Gavia stellata*), breeding
Lewis Peatlands	Ramsar	0.7km west	Black-throated diver, breeding Dunlin, breeding Golden eagle, breeding Golden plover, breeding Greenshank, breeding Merlin, breeding Red-throated diver, breeding Depressions on peat substrates Blanket Bog Sub-alpine wet heath
Lewis Peatlands	SAC	1.9km west	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 Wet Heathland with cross-leaved heath Otter (*Lutra lutra*)
Tong Saltings	SSSI	4.4km north	Coastal mudflats, saltmarsh and sand dunes Breeding and wintering bird assemblages
Achmore Bog	SSSI	3.4km west	Blanket Bog

* Taken from closest edge of proposed development boundary

Habitats and Plants

Desk based information from publicly available records suggest the proposed development is comprised primarily of blanket bog, lochs and wet dwarf shrub heath with smaller areas of rush/acid grassland, rocky outcrops and dry dwarf shrub heath. Blanket bog across the proposed development appears to comprise areas of cutover bog and areas of more intact semi-natural bog.

The NWSS records two areas of native woodland which fall outside the proposed development boundary. These are located 167m to the south and adjacent to the western boundary. Neither of these areas are listed on the AWI. There is one area of mixed plantation within the proposed development boundary and a further two plantations on the boundary; one mixed woodland to the west of Loch Ard Airigh a'Ghille Ruaidh and another conifer plantation located north of Liúrbost.

Other habitats present within or near the proposed development include scattered residential properties, commercial development, disturbed ground, coastal sea cliffs, maritime grassland and grassland (improved/semi-improved).

The Marine Scotland NMPi records kelp beds as the only Priority Marine Feature (PMF) within 2km of the proposed development.

The NBN Atlas has no records of invasive non-native species within 5km of the proposed development. The BSBI records several notable invasive species within 5km:

- Giant rhubarb (*Gunnera tinctoria);*
- Himalayan balsam (*Impatiens glandulifera*);
- Japanese knotweed (*Fallopia japonica*); and,
- Rhododendron (*Rhododendron ponticum*).

Protected Species

NBN records over the past 20 years (under CC-BY and OGL licences), indicate the presence of the following protected species within 5km of the central point of the proposed development:

- Basking shark (*Cetorhinus maximus*);
- Mountain hare (*Lepus timidus*);
- Eurasian otter (*Lutra lutra);*
- Risso's dolphin (*Grampus griseus*);
- Slow worm (*Anguis fragilis);*
- Common frog (*Rana temporaria*); and
- Common porpoise (*Phocoena phocoena).*

No bat species were found within the desk study search; the presence of bats on Lewis is understood to be limited to common pipistrelle (*Pipistrelleus pipistrelleus*) recorded in the Stornoway area (JNCC 2019).

The presence of red deer (*Cervus elaphus)* within the proposed development area was last recorded in 2009; they are known to be present in the wider landscape.

4.5.2 Potential Impacts and Effects

The assessment will consider the potential impacts associated with construction and operation of the proposed development in the absence of mitigation. Where required, potential effects on qualifying features of relevant designated sites will be covered in the HRA and cross referenced in the EIAR.

Potential Construction Impacts

- Temporary loss, disturbance or fragmentation of habitats of conservation interest.
- Temporary changes to drainage regimes affecting wetland habitats and GWDTEs.
- Pollution or sedimentation impacts on freshwater and marine habitats and species.
- Temporary loss of shelter, breeding or foraging habitat for protected and notable species.
- Temporary displacement of protected species (e.g. otter) due to disturbance.
- Injury or death to protected species from construction activities.

Potential Operational Impacts

- Permanent loss, disturbance or fragmentation of habitats of conservation interest.
- Permanent changes to drainage regimes affecting wetland habitats and GWDTEs.
- Permanent loss of shelter, breeding or foraging habitat for protected and notable species.
- Permanent displacement of protected species (e.g. otter) due to disturbance and presence of infrastructure.
- Injury or death to protected species during operational activities.
- Incidents during operational activities leading to pollution events affecting freshwater and saltwater habitats and species.

Considering the proximity of surrounding statutory designated sites, potential effects pathways, and the ability to avoid impacts on these sites, it is considered unlikely the development would have significant effects on non-avian qualifying interests of the designated sites listed in Table 4-5. Avian qualifying interests are considered separately in Section 4.4 (Ornithology).

Cumulative Effects

Where appropriate, construction and operational impacts will also be considered in a cumulative assessment.

4.5.3 Proposed Assessment Methodology

A thorough desk study will be undertaken to inform the baseline including requests for data from relevant organisations such as the OHBR.

Baseline Surveys

Terrestrial habitats

A JNCC Phase 1 habitat classification survey (JNCC 2010) will be undertaken. As a minimum, the survey will cover all areas within the boundary of the proposed development with potential for infrastructure and a 250m buffer. The survey will be extended where potential effects pathways are identified outwith this buffer. A UK Habitat Classification survey is not intended to be used on the basis that Phase 1, paired with National Vegetation Classification (NVC), is considered sufficiently robust to inform the assessment of impacts on habitats in the type of upland landscape present.

Detailed NVC surveys will be undertaken once a more accurate picture of the layout has been developed and would target the wind farm footprint and up to a 250m buffer. NVC surveys will map vegetation communities to allow identification of habitats of conservation interest (including Annex 1 habitats). Methods will follow the NVC user's handbook (Rodwell 2006) and will focus on potentially important natural/semi-natural habitats. GWDTE surveys would be undertaken in conjunction with, and informed by, NVC surveys.

Protected species

It is anticipated that initial protected species surveys will be completed in spring 2024. Otter will be the focus of protected species surveys and will cover the proposed development area and a 250m buffer along watercourses and the banks of waterbodies to identify otter resting sites; following best practise guidance (Chanin 2003a and 2003b).

Habitat and protected species surveys will also record the presence of, or suitable habitat for, other protected species such as reptile.

Due to the low likelihood of bat activity and limited opportunities for nearby roosts, surveys for bats have been scoped out at this stage. Consultation and detailed desk study is expected to inform whether any targeted bat surveys may be required.

No other terrestrial protected species are known to be present on Lewis within the habitats in the proposed development area; therefore, all other terrestrial protected species have been scoped out of the surveys and assessment at this stage.

Aquatic habitats and fish

An initial assessment of habitat suitability and likely presence of fish will be made by experienced aquatic ecologists using results of the desk study and Phase 1 and otter surveys. Once the layout design has further evolved, it will be used in combination with the desk-based assessment to develop methods for targeted fish surveys. If required, surveys may entail fish habitat assessments undertaken in accordance with Scottish Fisheries Coordination Centre (SFCC) guidance (2007a), electrofishing of watercourses in accordance with SFCC guidance (2007b), and potential eDNA sampling of lochs and lochans.

Methodology

The assessment of impacts and effects on ecological features will be based on current CIEEM guidelines (CIEEM 2018; Version 1.2 updated April 2022) which are endorsed by NatureScot. It will also draw on other specific guidance and liaison with other technical specialists as required.

The impact assessment will:

- determine the importance of ecological features affected, through survey and/or research and with reference to available contextual information;
- assess impacts potentially affecting important features;
- characterise the impacts, e.g. extent, magnitude, duration, reversibility, timing and frequency;
- identify cumulative impacts; and
- identify significant effects of impacts in the absence of any mitigation.

Where significant effects are identified, the following steps will be taken:

- consider alternative turbine location(s) or layouts for the proposed development;
- identify mitigation measures and explain their likely success;
- identify opportunities to achieve positive effects for biodiversity;
- design and agree a monitoring strategy (where required) with statutory consultees; and
- provide sufficient information for mitigation measures to be implemented effectively, e.g. through an Environmental Management Plan (EMP).

Following the application of design changes and mitigation, the potential for significant residual effects will be assessed; where these exist, the EIAR will:

- produce a clear summary of the residual impacts and the significance of their effects following incorporation of avoidance and mitigation measures;
- consider the implications of significant effects on the important ecological features;
- where significant adverse effects cannot be avoided or mitigated, identify compensation measures to be implemented; and
- include mitigation, compensation and enhancement measures in the EMP or similar.

In addition to the references and methods above, the following key references will also be used to inform the impact assessment:

- Our Nature – A Framework for biodiversity Action in the Western Isles; The Western Isles Local Biodiversity Action Plan (CnES 2004.).
- General pre-application and scoping advice for onshore wind farms (NatureScot 2022d).

In line with standard practice, an HRA screening will be undertaken to assess the potential for likely significant effects on the European protected sites listed in Table 4-5. Avian qualifying interests are considered separately in Section 4.4 (Ornithology).

4.5.4 Mitigation

The iterative design process will consider potential impacts and effects on ecological receptors and seek to amend the design to avoid impacts where possible; for example, by changing the location of roads, turbines, and other infrastructure. Where that is not possible, further mitigation or compensation would be proposed such as timing of works, screening, restoration or replacement of habitats.

4.5.5 Environmental Factors Scoped Out of Assessment

Due to the low likelihood of bat activity and limited opportunities for nearby roosts, bats have been scoped out of the assessment.

4.5.6 Consultation and Scoping Questions

Consultation, where necessary, will be undertaken and may include, but is not limited to:

- CnES; and
- NatureScot.

Questions for Consultees

- Do consultees agree that the proposed scope and methods with respect to surveys and the assessment is appropriate?
- Are consultees aware of any other sources of information, or other organisations that should be consulted, to further inform the ecological assessment?
- Do consultees agree that bats can be scoped out of the EIA?

4.6 Noise

4.6.1 Existing Conditions and Key Constraints

A desk study review of maps and aerial images has identified that the proposed development and surroundings comprise a mixture of rocky and boggy moorland, with the A859 road running north to south along the western boundary of the proposed development. Residential properties exist along the A859 and in the settlements of Grimshader and Ranais to the south, North Lochs, Crosbost and Liúrbost to the south-west, and Stornoway to the north.

Based on review of the available information and knowledge of the area it is anticipated that background noise levels in the vicinity of the proposed development will be moderately low. The noise environment is likely to be dominated by the wind, wildlife and livestock. Road traffic and human sources of noise are likely to be a greater contributor to background noise levels along the A859 and B897, and in North Lochs.

4.6.2 Potential Impacts and Effects

The EIAR will consider construction and operational noise associated with the proposed development.

During construction, activities within the boundary of the proposed development with the potential to produce noise include the construction of the turbine foundations, crane hardstanding and site access tracks/cable routes.

Noise from these activities would be temporary, and would be managed, in part, by good practice measures for noise reduction, details of which would be set out in a Construction and Environmental Management Plan (CEMP).

Noise impacts could also occur from the use of borrow pits, included as part of the construction. Additionally, construction-related noise may extend beyond the boundary of the proposed development due to the movement of construction traffic.

The key noise issues are however likely to be operational noise effects, including any likely cumulative noise effects with noise from other proposed, consented and/or existing wind farms in the vicinity.

Potential Construction Impacts

- construction traffic noise (including cumulative traffic noise); and
- noise associated with borrow pit stone extraction.

Potential Operational Impacts

- operational noise from the proposed development;
- cumulative noise, including the proposed development and other proposed, consented and/or existing wind farms.

4.6.3 Proposed Assessment Methodology

Construction noise

Construction noise shall be assessed with reference to BS 5228-1:2009+A1:2014 'Code of practice for noise and vibration control on construction and open sites. Noise', (BSI 2014) for fixed and mobile plant, and with reference to the 'Calculation of Road Traffic Noise' (Department of Transport 1988) for off-site construction traffic movements.

The inclusion of borrow pits may also require the consideration of noise from blasting.

Operational noise

Planning guidance in relation to operational noise from wind farms in Scotland, and other parts of the UK, refers to 'ETSU-R-97 The Assessment & Rating of Noise from Windfarms' (ETSU-R-97 1996) and the associated Good Practice Guide (GPG 2013) published by the Institute of Acoustics (IOA).

These require background noise monitoring to be undertaken at a selection of dwellings (usually the closest and most sensitive to operational noise). These measurements are correlated with the wind speed found at the proposed development, unless it can be demonstrated that operational noise levels will be low enough not to require any survey works (i.e. below 35dB LA90).

Predictions of the operational noise levels are compared with the derived noise limits in order to determine whether compliance with relevant policy on operational noise can be achieved. The limiting values prescribed within ETSU-R-97 apply to the combined (cumulative) impact associated with all wind turbines within a given area.

Noise associated with ancillary facilities such as battery storage is normally required to be assessed in terms BS 4142:2014+A1:2019 'Methods for rating and assessing industrial and commercial sound'. This assessment guidance is different to that provided within ETSU-R-97. The EIAR will provide clear distinction between the various noise sources and the relevant works in each respect.

Baseline Studies

The baseline environment will be evaluated by measuring background sound levels in relation to varying wind speeds at locations representative of the closest noise sensitive receptors.

The locations of the noise monitoring shall be informed by a desk-based study involving operational noise modelling of the proposed development, and other proposed, consented and/or existing wind farms in the vicinity, subject to the agreement of the relevant CnES Environmental Health Officer.

The information obtained as part of the survey will be used to inform the development of appropriate noise limits to be applied at assessed noise sensitive receptors.

Cumulative Effects

The assessment of cumulative effects will include consideration of proposed, consented and/or existing wind farms in the vicinity of the proposed development.

4.6.4 Mitigation

The iterative design process will consider potential noise impacts and effects and seek to amend the design to avoid them for example by changing the location or model of the relevant wind turbines. Where that is not possible, other options would be considered such as noise reduced modes, wind sector control and trailing edge serrations.

4.6.5 Environmental Factors Scoped Out of Assessment

The following environmental effects are scoped out of the assessment:

- construction noise associated with activities within the boundary of the proposed development;
- vibration effects associated with construction traffic; and
- vibration effects during the operation of the proposed development.

4.6.6 Consultation and Scoping Questions

Consultation, where necessary, will be undertaken and may include, but is not limited to:

- CnES Environmental Health Officer, and will include the locations of background noise measurements, and the assessment scope and methodology.

Questions for Consultees

- Is the proposed methodology for the noise assessment agreeable to the consultees?
- Should the consultation include any other relevant consultees?
- Is the scope of the noise assessment agreeable to the consultees, namely the effects to be scoped out of the assessment?

4.7 Access, Traffic and Transport

4.7.1 Existing Conditions and Key Constraints

Access to the proposed development will be from the A859 in the west, which links with the A857 and A858 to the north of Stornoway and potentially also from the B897 to access the northern and eastern extents. Construction traffic associated with the development would generally approach from Stornoway and Arnish to the north.

4.7.2 Potential Impacts and Effects

Identification and Assessment of Impacts

The potential sources of impact would be in two development phases: construction and operation. The main potential sources of impact are likely to relate to the impact of construction traffic on the residential areas along the network route. The volume of operational traffic is predicted to be negligible and limited to occasional routine maintenance undertaken in a light vehicle.

The construction phase of the proposed development is predicted to generate the greatest environmental impacts. This is due to the number of Heavy Goods Vehicles (HGVs) and Light Goods Vehicles (LGVs) required to transport the materials; as such there would be traffic impacts associated with the communities and roads along the delivery routes.

The key traffic and transportation issues will be limited to the construction phase of the proposed development and are likely to comprise:

- the identification of suitable temporary construction traffic routes and access restrictions to construction vehicles;
- a temporary increase in the overall volume of traffic on the road network;
- a temporary increase in the proportion of HGVs on the road network;
- temporary public access restrictions;
- geometric constraints to abnormal load and construction vehicles on the local road network;
- improvements or modifications to existing road bridges to accommodate flood defence works, and associated temporary traffic management to accommodate these works; and
- temporary disruption and potential delay to local road users because of construction traffic and temporary traffic management measures that may be required.

The Institute of Environmental Management and Assessment (IEMA) Guidelines: Environmental Assessment of Traffic and Movement (hereafter referred to as IEMA Guidelines) (IEMA 2023) state that it should '*be assumed that projected changes in traffic of less than 10% create no discernible environmental impact*', and as such, the number of operational phase traffic movements will be negligible relative to baseline traffic volumes and normal daily traffic fluctuations. Therefore, it is proposed that the assessment of operational traffic associated with the proposed development be scoped out of the EIA.

4.7.3 Proposed Assessment Methodology

The access, traffic and transport chapter of the EIAR will include a detailed evaluation of the baseline conditions and will focus on assessing the potential impacts of the construction phase. This will include an abridged construction works programme, details of vehicle types and sizes to be used during the construction phase, and an estimate of the number of trips anticipated to be generated by HGVs, LGVs and light vehicles. Mitigation measures to reduce the effects of the construction vehicle movements will be identified.

The study area will be defined as the construction details are established, e.g., construction compound locations, sources of material, construction traffic routes, etc.

It is proposed that the following aspects will be considered when defining the baseline conditions:

- suitable construction traffic routing and any access constraints or restrictions for construction vehicles;
- detailed Swept Path Analysis will be undertaken for the main constraint points on the route from port of entry through to the proposed development site access junction. This will identify any temporary road works which may be required to accommodate the abnormal load delivery vehicles;
- existing traffic flows on the local and strategic road network;
- existing active travel (walking and cycling) and public transport provision;
- road traffic accidents over the previous five-year period (Informed by STATS19 data and data obtained from CnES); and
- potential sensitive receptors.

The identification of baseline conditions will include a desk-based review of available information, and of any information that will need to be obtained, e.g., additional traffic counts to supplement traffic data supplied by CnES.

The assessment of traffic and transportation will consider all transport infrastructure and provision within the study area, including the active travel network, the local road network, and public transport infrastructure and service provision.

Suitable construction vehicle access routes will be identified for each site access and will be informed by road suitability and construction vehicle requirements. Access routes will aim to provide a direct route for construction traffic to minimise the potential for disruption to other road users and to residents and businesses.

All proposed access junctions will be described in the EIAR with an indicative layout plan provided. It should be noted that construction and operational access to the proposed development may differ particularly due to constraint of the B897 being single track with passing places.

Access for abnormal loads associated with turbine component delivery is anticipated to be taken from the same access junctions. The transport route for Abnormal Indivisible Load (AIL) access will be fully considered in the application and will be informed by a site visit, undertaken as part of the AIL route survey. This survey will also review general road infrastructure and other relevant points.

AILs associated with the turbines in addition to swept path assessments and traffic management requirements necessary for the safe and efficient delivery of the loads will be detailed in a Route Survey Report that will be appended to the EIAR.

The impacts within the study area will be reviewed during the construction phase only, with a peak construction period assessment undertaken. This will review the maximum impact and presents a robust assessment of the effects of construction traffic on the local road network. The methods adopted to assess the likely traffic and transportation impacts on traffic flows and transportation infrastructure will comprise the following assessment stages:

- Determination of the baseline and future year traffic and transportation conditions, and the sensitivity of any receptors likely to be affected in proximity of the road network, e.g., carriageway, structures, other road users, and adjacent communities.
- A review of the development proposals to determine the predicted peak construction requirements, by identifying the type and number of vehicles using the identified road network during the construction period, including:
  - numbers of light and heavy vehicles;
  - numbers and dimensions of any abnormal loads; and
  - the duration of construction works.
- An assessment of the significance of predicted effects from these transport requirements considering impact magnitude (before and after mitigation) and baseline environmental sensitivity.

The assessment of environment effects of road traffic will be undertaken in accordance with the guidance set out within the IEMA Guidelines which advise that further assessment should be undertaken on:

- highway links where traffic flows will increase by more than 30% (or the number of HGVss will increase by more than 30%); and
- specifically sensitive areas where the traffic flows will increase by 10% or more.

Traffic impacts and IEMA Guidelines thresholds will be considered for Annual Average Daily Traffic.

The assessment will identify potential traffic and environmental effects on sensitive receptors, including residents and existing users of the transport network. As noted, potential road related environmental effects may include:

- severance;
- driver delay;
- pedestrian delay (incorporating delay to all non-motorised users);
- non-motorised user amenity;
- fear and intimidation; and
- accidents and safety.

Detailed assessment of these environmental effects will be undertaken where the identified IEMA traffic impact thresholds are exceeded, including identification of associated mitigation opportunities.

Impacts associated with the likely construction vehicle access routes, in terms of inadequate vehicle routing or turning facilities, public access restrictions or severance, will be identified at this stage and suitable mitigation measures proposed.

Impacts on walking, cycling and wheeling will also be considered. Mitigation measures will likely be required where any conflict is identified with existing routes incorporated into the design or alternative routes identified, with the objective of minimising delay and optimising safety for users.

Significance of Effects

The assessment of environmental effects can often be subjective. IEMA Guidelines advise that '*for many effects, there are no simple rules or formulae that define appropriate assessment thresholds and therefore there is a need for interpretation and judgement on the part of the competent traffic and movement expert, backed up by data or quantified information wherever possible. Such judgements will include the assessment of the numbers of people experiencing an impact and the sensitivity of those people, as well as the assessment of the damage to various natural or cultural resources*'. Therefore, the magnitude of the potential traffic and transport impacts are proposed to be determined by the following:

- Severance – Application of a percentage impact assessment informed by Design Manual for Roads and Bridges (DMRB) and the IEMA Guidelines, which refer to a range of indicators for determining the magnitude of impact resulting from severance, e.g., the IEMA Guidelines refer to changes in traffic flows of 30%, 60% and 90% as being regarded as producing 'slight', 'moderate' and 'substantial' changes in severance respectively.
- Driver delay – Driver delay impacts are likely to be significant when the traffic on the network surrounding the development is already at, or close to, the capacity of the system. To inform the assessment of driver delay, the theoretical capacity of the roads will be considered by referencing information in DMRB TA 79/99.
- Pedestrian delay (incorporating delay to all non-motorised users) – Pedestrian delay is also likely to be significant when the traffic on the network is already at, or close to, the capacity of the system. To inform the assessment of pedestrian delay, the theoretical capacity of the roads will be considered by referencing information in DMRB TA 79/99. The Department for Transport (DfT) TAG Unit A4-1 Social Impact Appraisal (2022) includes guidance on assessing the hindrance of pedestrian movements and DMRB LA 112 'Population and Human Health' (Standards for Highways 2020) contains sensitivity values for walkers, cyclists and horse riders based on traffic flow thresholds.
- Non-motorised user amenity – The magnitude of the impact on pedestrian amenity will be considered in terms of the 'threshold' described in the IEMA Guidelines, which suggests that a meaningful change in amenity would be where traffic flow (or its HGV component) is halved or doubled.
- Fear and intimidation - The magnitude of the impact on fear and intimidation has been considered in reference to the IEMA Guidelines, which state that any impact is '*dependent on the volume of traffic, its HGV composition, its proximity to people or the lack of protection caused by such factors as narrow pavement widths*' and conclude that there are no commonly agreed thresholds for estimating levels of danger, or fear and intimidation from known traffic and physical conditions. However, the guidelines do present thresholds defining the degree of hazard to pedestrians by average traffic flow, composition, and speed, which could be used as a first approximation of the likelihood of pedestrian fear and intimidation, although other factors are important e.g., proximity to traffic, footway widths etc.
- Accidents and safety – There is no threshold assessment to determine the significance of the effects of the construction related traffic on accidents and safety. Consideration will have to be given to the temporary nature of the increase in traffic volumes associated with the proposed development, as well as mitigation measures employed during the period that the increased traffic will be appreciable. Therefore, a qualitative assessment will be undertaken informed by this consideration.

From these calculations and considerations, the overall significance of effects will be determined based on the combination of receptor sensitivity and impact magnitude using a significance of effect matrix. The matrix will provide a guide subject to professional judgement.

Cumulative Effects

An assessment of foreseeable and committed projects and developments in the vicinity of the proposed development will be carried out. This will be determined taking into consideration the following factors relating to other projects: the proposed size of the development, the likely construction programme, the distance of the development from the proposed development, and any supporting information available from the planning application.

4.7.4 Mitigation

Mitigation measures will be proposed following the completion of the impact assessments. The aim of these measures is to remove, minimise, or compensate any significant effects. These mitigation measures will be agreed with CnES.

Increases in traffic associated with constructing the development will also be managed based on the principles of a Traffic Management Plan (TMP) which will be included with the EIAR. The road condition will be monitored throughout the construction programme with any remedial cleaning and maintenance taking place.

Potential construction traffic routes will be assessed to identify any constraints or restrictions e.g., capacity, height, weight, and width restrictions. Where constrained route sections are unavoidable, impacts and proposed mitigation measures will be clearly defined through swept path analysis and presented within the EIAR.

Construction of the proposed development also has the potential to impact the active travel and public transport networks, although it is assumed that temporary mitigation measures, e.g., path diversions, bus stances and/or traffic diversions etc., will be introduced to address potential temporary disruption. This will be examined further in the EIA, although will unlikely be developed fully until the detailed design stage.

Similarly, the proposed development itself has the potential to permanently impact the road and active travel network. This will also be examined further in the EIAR, and mitigation measures clearly defined.

4.7.5 Environmental Factors Scoped Out of Assessment

It is proposed that the assessment of operational traffic associated with the proposed development be scoped out of the EIA.

4.7.6 Consultation and Scoping Questions

Consultation, where necessary, will be undertaken and may include, but is not limited to:

- CnES;
- Police Scotland;
- Transport Scotland;
- Highland and Islands Transport Partnership (HITRANS); and
- Sustrans.

Discussions will help define the study area and determine the scope of the access, traffic and transport impacts and the assessment of significance.

Consultation with CnES will also be undertaken to assess the potential to realise any key opportunities for the proposed development, where there is potential to incorporate outline plans for the sustainable transport network within the proposed development design. Likewise, any constraints associated with the proposed development will be considered.

Scoping Questions

The following questions are directed to consultees:

- Could consultees confirm the suitability of the proposed development access locations?
- Could consultees confirm the suitability of the proposed study area (A859 – between the proposed development and Stornoway, and the Arnish Road)?
- Could CnES confirm agreement to commission traffic surveys along the delivery route should appropriate existing traffic data not be available from CnES?
- Could consultees confirm that operational traffic is negligible (e.g., occasional routine maintenance) and can therefore be scoped out of the EIA?
- Could consultees confirm the committed developments to be taken into account within the cumulative assessment?

4.8 Cultural Heritage

4.8.1 Existing Conditions and Key Constraints

Two study areas were defined for this Scoping Report to establish the existing conditions for cultural heritage. An inner study area comprising the boundary for the proposed development was used to identify heritage assets, both designated and non-designated, that could potentially be impacted by the proposed development. An outer study area comprising the boundary plus a 10km buffer was used to identify designated heritage assets, the setting of which may be impacted by the proposed development.

The following desk-based sources were consulted:

- Historic Environment Scotland (HES) Portal for information on designated heritage assets comprising World Heritage Sites, SMs, Listed Buildings, Conservation Areas, sites on the Inventory of GDL and sites on the Inventory of Historic Battlefields.
- Statement of Significance - Calanais Standing Stones (HES 2018) for information on the Calanais wider landscape.
- Canmore for information on non-designated heritage assets within the inner study area.
- HLAMap for information on the historic landscape within the inner study area.

Inner Study Area

No designated heritage assets were identified within the inner study area.

A total of 20 non-designated heritage assets were identified within the proposed development boundary. These are characterised largely by the remains of post-medieval sheiling huts, temporary structures for domestic or agricultural use, and associated remains of agricultural activity, including head dykes and cultivation ridges, linked to the traditional pastoral economy of the area. There is also the potential for the presence of previously unrecorded archaeological remains. In addition, seven Historic Landscape Types (HLTs) were identified within the proposed development boundary. These comprise areas of historic peat cutting and common grazing, urban areas and natural resources, such as bodies of water.

Outer Study Area

The following designated heritage assets were identified within the outer study area:

- 16 SMs comprising duns and a broch (SM5365, SM5366, SM5349, SM5397 and SM1670), a standing stone and stone circles (SM4355, SM5336 and SM5504), including one associated with the Calanais complex (SM4355), cairns (SM5330, SM1663 and SM6550), churches and a chapel (SM5333, SM5345 and SM1684), a promontory fort and homestead (SM5253) and the remains of a Second World War emergency coastal battery (SM5347).
- 114 Listed Buildings (nine Category A Listed Buildings, 70 Category B Listed Buildings and 35 Category C Listed Buildings), comprising:
  - Lews Castle (LB18677; Category A Listed Building) and associated estate buildings and structures (LB19206; Category A Listed Building, LB18815, LB18826 and LB19207; Category B Listed Buildings, and LB18816, LB18817 and LB18827; Category C Listed Buildings);
  - Public and municipal buildings (LB41742, LB13327 and LB13335; Category B Listed Buildings, and LB41741; Category C Listed Buildings);
  - Memorials and religious buildings (LB19210; Category A Listed Building, LB19211, LB13330 and LB18671; Category B Listed Buildings, and LB18676, LB13329, LB13333, LB50803 and LB13334; Category C Listed Building);
  - Industrial buildings (LB41695; Category C Listed Building) and lighthouses (LB13328 and LB13328; Category B Listed Buildings);
  - 89 Listed Buildings within Stornoway, including houses and public buildings, comprising (four Category A Listed Buildings, 59 Category B Listed Buildings, and 25 Category C Listed Buildings).
- One Conservation Area (Stornoway; CA317).
- One Inventory GDL (Lews Castle And Lady Lever Park; GDL00263).

No Inventory Historic Battlefields were identified within 10km of the proposed development boundary.

4.8.2 Potential Impacts and Effects

Assessment of impacts on heritage assets was undertaken based on the guidance provided in Appendix 1 of the 'Environmental Impact Assessment Handbook Guidance for competent authorities, consultation bodies, and others involved in the Environmental Impact Assessment process in Scotland' (Scottish Natural Heritage and HES 2018).

Based on the provisional turbine layout, construction of Turbines 11 and 19 may have a direct impact on two known heritage assets (Grimshader township and Arnish Moor lazybeds; Canmore IDs 4230 and 217209). Construction of other elements, for example access roads, also have the potential to impact on known heritage assets. However, given the nature of the proposed development with the micro-siting of turbines and access roads it may be possible to avoid or reduce these impacts on known heritage assets through design. There is also the potential for impacts on previously unrecorded archaeological remains. Where avoidance is not possible, mitigation in the form of archaeological recording may reduce the magnitude and therefore significance of effects. After mitigation, it is therefore unlikely effects would be significant (of Moderate significance or above).

There is also potential for impacts on the setting of non-designated heritage assets during construction and operation and given the scale and visibility of the proposed development, there is the potential for these to have significant effects.

During construction and operation, the proposed development may also have an impact on the setting of designated heritage assets located in the outer study area and within the ZTV of the proposed development.

The design of the proposed development is still being developed and there is the potential to avoid or reduce impacts on setting through design. However, given the sensitivity of these heritage assets and visibility of the proposed development, where this is not possible there is the potential for significant effects.

Cumulative Impacts

There is the potential for cumulative impacts as a result of impact interactions with other developments that may also physically affect heritage assets and/or impact setting. There is the potential for these to be significant.

4.8.3 Proposed Assessment Methodology

Given there is the potential for significant effects, cultural heritage has been scoped in for further assessment in the EIAR. The following sub-sections set out the proposed assessment methodology for cultural heritage.

Study Area

Two study areas will be used for the assessment presented in the EIAR:

- Inner Study Area: The proposed development boundary within which turbines and associated infrastructure are proposed, will form the study area for the identification of heritage assets that could receive direct or indirect impacts arising from the construction of the proposed development.
- Outer Study Area: This will comprise the areas of the ZTV within 10km of the proposed development boundary. Designated heritage assets within the outer study area will also be identified and included in the assessment.

Methodology

Assessment of impacts on heritage assets will be undertaken in line with the guidance provided in the 'Environmental Impact Assessment Handbook Guidance for competent authorities, consultation bodies, and others involved in the Environmental Impact Assessment process in Scotland' (Scottish Natural Heritage and HES 2018) and the following:

- Designation Policy and Selection Guidance (HES 2019);
- Managing Change in the Historic Environment: Setting (HES 2016);
- Outer Hebrides Local Development Plan Supplementary Guidance for Wind Energy Development (CnES 2021);
- Calanais Standing Stones: Setting Document (HES 2017);
- Code of Conduct: professional ethics in archaeology (Chartered Institute for Archaeologists 2022); and
- Standard and Guidance for Historic Environment Desk-based Assessment (Chartered Institute for Archaeologists 2020).

The baseline will be established through:

- consultation of desk-based sources including:
  - HES's Historic Environment Portal for information on designated heritage assets;
  - PASTMAP, Canmore and HLAMap;
  - CnES (Western Isles) Historic Environment Record (HER);
  - historical mapping available online via the National Library of Scotland;
  - published and unpublished archaeological reports and other relevant bibliographic sources;
- analysis of publicly accessible LiDAR data;

- consultation of archive material at Tasglann nan Eilean;
- walkover survey and site inspection; and
- use of visualisations (such as wireframes/photomontages) where these are needed to inform the assessment of impacts on specific heritage assets. These will be defined using the ZTV and a list of visualisations will be agreed with CnES and HES.

The results of the assessment will be presented in the cultural heritage chapter of the EIAR.

4.8.4 Mitigation

Where it is not possible to avoid or reduce physical impacts on heritage assets through design, it may be possible to reduce the magnitude of impact through archaeological recording in advance of or during construction. Mitigation could include archaeological excavation, watching brief, historic building recording and historic landscape recording and the dissemination of the results of these works.

4.8.5 Environmental Factors Scoped Out of Assessment

At this stage, all elements for cultural heritage have been scoped in to the EIA.

4.8.6 Consultation and Scoping Questions

Consultation, where necessary, will be undertaken and may include, but is not limited to:

- CnES; and
- HES.

Questions for Consultees

The following questions are directed to consultees:

- Are consultees content with the proposed approach?
- Are there any specific heritage assets consultees wish to see included in the assessment?

4.9 Climate Change

4.9.1 Existing Conditions and Key Constraints

The IEMA Guide: Assessing Greenhouse Gas Emissions and Evaluating their Significance (2nd edition) states that, with regard to climate impacts, '*any GHG emissions or reductions from a project might be considered to be significant' and 'the significance of a project's emissions should…be based on its net impact over its lifetime, which may be positive, negative or negligible*.' (IEMA 2022).

An initial desk-based review of the proposed development suggests that its remoteness and the lack of existing road access may present a constraint due to the potential requirement for temporary routes for transporting materials and people, which would have a greater carbon impact than using existing assets. The scale of this impact will depend on the precise location of individual turbines, which remains undecided.

As reported in Section 4.3.1, the soil type on-site is predominantly peat-based, meaning that the area is likely to be a significant store of carbon (carbon sequestration) that could be impacted as a result of construction activities and land use change.

4.9.2 Potential Impacts and Effects

The proposed development will potentially impact the climate through the greenhouse gas (GHG) emissions associated with its construction and operation and potential positive impacts from avoided emissions through renewable generation. In addition, there are potential impacts that climate change may have on the proposed development.

The potential impacts and effects of the proposed development on climate change are as follows:

- GHG emissions as a result of land use change: a proportion of the proposed development would be on peat soils, and it is likely the associated construction will disturb or potentially require removal of this material. Peat is a significant and fragile carbon store, therefore there is a risk of releasing that stored carbon during construction and disturbing the existing ecosystem, potentially leaving the remaining peat soils vulnerable to further degradation. Further information on risks to peat are found in Section 4.3.
- GHG emissions as a result of construction and maintenance: it is likely that there will be GHG emissions associated with the proposed development from the embodied carbon in the materials used, the necessity for infrastructure such as access tracks, vehicular emissions from the transportation of workers and materials to and from site, and from the combustion of fuels within on-site construction plant.
- GHG emissions as a result of the operation of the wind farm: wind farms also have the potential to release GHG emissions during their use (operational emissions). These are likely to be small but would still be considered.
- Future GHG emissions reductions: it is likely that there would be a positive impact on climate change over the proposed development's lifespan, as it will provide an alternative to fossil fuel generated energy, thereby supporting Scotland's net zero ambitions.

It should be noted that GHG emissions or emissions reductions may have an impact on both Scotland's and the wider UK's carbon budgets, which would also be taken into consideration.

Climate change may also have an impact on the proposed development due to the potential changes to climate and weather patterns in the region, which may necessitate adaptions, or consideration of climate resilience being integrated into the proposed development design.

Cumulative Effects

These impacts will also be considered in a cumulative assessment.

4.9.3 Proposed Assessment Methodology

Study Area

The boundaries of the study area relate to:

- all construction at the proposed development including wind turbines and associated construction for example, access tracks, foundations and substations;
- the location and area including extant land characteristics and use at the proposed development site;
- the likely source of materials imported to site, supplier distance from the proposed development, and likely transport mode; and
- commute of construction personnel to and from the proposed development.

Methodology

The assessment will focus on the carbon impact of the proposed development, both in relation to GHG emissions associated with construction and operation, and the potential for these emissions to be netted against the avoided emissions from the renewable energy generated replacing current fossil fuel generation (payback period).

Assessment of the potential impact of the proposed development on climate change will include an initial review of relevant legislation and industry regulation and standards, including the 2015 Paris Agreement (United Nations Framework Convention on Climate Change (UNFCCC) 2016), the Climate Change (Scotland) Act 2009, the Climate Change (Emissions Reduction Targets) (Scotland) Act 2019, and the second Scottish Climate Change Adaptation Programme 2019-2024 (SCCAP) (Scottish Government 2019b,d) to ensure compliance and best practice. The most current versions of these guidance documents and legislation will be reviewed at the time of assessment.

The SEPA Carbon Calculator Tool[1] (current version Carbon Calculator Tool v1.7.0) will be used to assess the embodied and operational emissions associated with the proposed development).

Data required for the completion of the SEPA Carbon Calculator Tool will be derived from proposed development design documents and on-site surveys, supplemented where necessary with desk-based research. Information points required will include: wind farm characteristics, such as the number of turbines, the power rating of each turbine and the capacity factor; characteristics of peatland and bog plants before wind farm development; forestry plantation characteristics; counterfactual emission factors; dimensions of expected borrow pits; dimensions of any foundations/hard standings created; details of access tracks used; details of cable trenches used; information regarding any additional peat excavated; and details of carbon sequestration improvements carried out on-site. This will be augmented by additional calculations around the impact of construction personnel movement to and from the proposed development.

Assessment of the potential vulnerability of the proposed development to climate change will include a detailed review of relevant literature including the Intergovernmental Panel on Climate Change (IPCC) AR6 Synthesis Report (IPCC 2023) and the use of the most recent UK climate projections, tools and data, such as those used by the UK Climate Projections (UKCP) (Met Office 2023). The IPCC produces scenarios that reflect potential climatic outcomes as a result of increased atmospheric GHG concentrations, termed Representative Concentration Pathways (RCPs). All RCPs will be considered, and in particular the worst-case scenario (RCP 8.5) will be addressed in order to capture all climatic eventualities.

This research will be synthesised to understand the potential impacts that climate change may have on the proposed development during its life cycle and will inform any suggestions for adaptions and resilience that might be necessary.

4.9.4 Mitigation

The proposed development has potential to result in an adverse impact on climate change due to the GHG emissions associated with its design, construction and operation, and steps will be taken to mitigate this where possible. These steps may include:

- Consideration of embodied carbon of materials at the design stage e.g. low-carbon alternatives for required materials (both in relation to the turbines themselves and any associated infrastructure needed).

[1] https://informatics.sepa.org.uk/CarbonCalculator/

- Maximising efficiency in transportation of materials during construction to reduce associated GHG emissions e.g. logistical planning, development and implementation of a Construction Transport Management Plan, consideration of least carbon-intensive modes of transportation.
- Minimising GHG emissions associated with site staff e.g. undertaking an appraisal to establish the most carbon-efficient method of supporting staff associated with the construction and operation of the wind farm across its lifespan such as housing staff on-site, car-pooling etc.
- Using low-carbon construction plant such as electric plant utilising lowest carbon generated electricity i.e. avoiding diesel generators.
- Managing soil disturbance to minimise loss of stored carbon through development and implementation of a peatland management plan.
- Consideration of options for offsetting carbon emissions where it is not possible to mitigate GHG emissions on-site. These should only be applied to unavoidable, residual emissions.

The proposed development may also be vulnerable to the impact of climate change during its lifespan, such as changes in temperature, precipitation, and the frequency and nature of extreme weather events. To mitigate these impacts, the iterative design development will consider what the climatic changes may be at the proposed development and would use this to inform a roadmap for climate resilience which would be incorporated into the design, construction and operation of the proposed development.

4.9.5 Environmental Factors Scoped Out of Assessment

It is proposed that the following would be scoped out of detailed assessment:

- Maintenance and repair activities of the wind farm would be minimal, with related GHG emission considered to be very small and therefore, this is proposed to be scoped out.
- Only wind speed, precipitation, temperature and related extremes will be considered in the vulnerability of the proposed development to Climate Change, with other climate variables being scoped out, as it is unlikely they would impact the proposed development.
- The construction stage of the proposed development is not considered to be vulnerable to climate change due to their temporary nature and are scoped out of further consideration. Extreme weather events and related response will be addressed in construction management plans.
- Receptors within ecology, ornithology and hydrogeology have been identified as having a potential for the baseline to be modified as a result of climate change. Effects of climate change on ecology, ornithology and hydrogeology are included in those chapters, where appropriate, considering the future baseline, with all other environmental receptors scoped out of further considerations.

4.9.6 Consultation and Scoping Questions

Consultation, where necessary, will be undertaken and may include, but is not limited to:

- CnES.

Questions for Consultees

The following questions are directed to consultees:

- Could consultees confirm the suitability of the proposed methodology?

4.10 Socio-Economics

This section covers the potential effects of the proposed development on socio-economics, recreation and tourism. This includes a consideration of local tourism and recreation activity, employment generation and indirect economic effects from the proposed development.

4.10.1 Existing Conditions and Key Constraints

Study Area

The study areas of the assessment will be selected to meet the interest of key stakeholders and will be made of predefined geographies. It is assumed that these study areas will be:

- Isle of Harris and Lewis, as defined by the electoral wards of;
  - An Taobh Siar agus Nis
  - Loch a Tuath
  - Na Hearadh
  - Sgìre an Rubha
  - Sgìre nan Loch
  - Sgìr' Ùige agus Càrlabhagh
  - Steòrnabhagh a Deas
  - Steòrnabhagh a Tuath
- the Western Isles; and
- Scotland.

The Isle of Harris and Lewis contain the majority of the population and economic activity within the Western Isles. The tourism and recreation assessment will include this study area; however it is proposed that the smallest study area that socio-economic impacts are modelled for is the Western Isles.

Population

The Isle of Lewis and Harris had an estimated population of 20,649 in 2021 (ONS 2023a). This accounted for 78% of the total population of the Western Isles, which was 26,600 in 2021. The age profile of the population of both the Isle of Harris and Lewis, and the wider Western Isles, is older than that of Scotland. The share of the population aged over 65 is 27% in the Western Isles, compared to 20% across Scotland.

Economy and Employment

The Western Isles has one of the highest jobs densities (ONS 2023b) in Scotland, that is the number of jobs divided by the resident working age population.

The top three employment sectors (ONS 2023d) in the Western Isles are:

- Agriculture, forestry and fishing (29% of jobs);
- Human health and Social Work Activities (13% of jobs); and
- Public Administration (11% pf jobs).

Education and Skills

In terms of education, in the Western Isles, 5% of the working age population have no formal qualifications. This is lower than the Scottish average of 8% (ONS 2023c).

Local and National Policy

It is important that the socio-economic and tourism assessment considers the relevant local and national policy objectives. The most relevant objectives for this are expected to be included in the following strategies:

- Scotland's National Strategy for Transformation (The Scottish Government 2022c);
- Scotland's National Performance Framework (The Scottish Government 2023);
- Scotland's National Strategy for Economic Transformation (The Scottish Government 2022);
- Scotland's Energy Strategy (The Scottish Government 2023a);
- Onshore Wind Policy Statement (The Scottish Government 2022);
- Scottish Tourism Alliance (2021), Scotland Outlook 2030; and
- Highlands and Islands Enterprise (2023) Strategy 2023 – 2028.

It is also essential to take into consideration for the assessment the fourth National Planning Framework (NPF4) (The Scottish Government 2023c), the national spatial strategy for Scotland. The document considers:

- Scotland's spatial principles;
- National planning policy;
- National developments; and
- Regional priorities.

In the context of energy generation, Policy 11 is relevant to the socio-economic impact of the proposed development. Paragraph (c) states that '*development proposals will only be supported where they maximise net economic impact, including local and community socio-economic benefits such as employment, associated business and supply chain opportunities*'. To assess the extent to which the proposed development will maximise benefits a stand-alone socio-economic report will also be prepare and submitted as part of the application. This report will consider the actions that the Developer will take, to maximise the benefits and how the wind farm will contribute to community wealth building in the area. The analysis will reach the conclusion on whether the project maximises the net economic impact in the context of this NPF4 Policy 11(c).

Paragraph (d) of Policy 11 sets out a number of impacts that should be addressed during project design and mitigation. This list does not include tourism.

4.10.2 Potential Impacts and Effects

There is no specific legislation or guidance available on the methods that should be used to assess the socio-economic impacts of the proposed development. The proposed method will however be based on established best practice, including that used in UK Government and industry reports on the sector. This assessment will draw from two studies by BiGGAR Economics on the UK onshore wind energy sector, a report published by RenewableUK and the Department for Energy and Climate Change (DECC) in 2012 on the direct and wider economic benefits of the onshore wind sector to the UK economy (BiGGAR Economics 2012) and a subsequent update to this report published by RenewableUK in 2015 (BiGGAR Economics 2015), as well as more recent industry data on the onshore wind sector and its supply chain.

The potential socio-economic effects that will be considered are:

- temporary effects on the identified study areas due to expenditure during the construction phase;
- permanent effects on the identified study areas due to expenditure associated with the on-going operation and maintenance of the proposed development;
- permanent effects on the local economy as a result of any additional public expenditure that could be supported by the additional tax revenue that would be generated by the proposed development during the operational phase; and
- permanent effects on the local economy that could be supported by any community funding that might be provided by the Applicant during the operational.

For recreational assets guidance has been provided by NatureScot (Scottish Natural Heritage 2018c) on how to assess effects on recreational amenity and the approach outlined has been used. This takes into consideration a number of potential effects, including direct effects on facilities, such as limitation or restrictions on access, and effects on the intrinsic quality of the resources enjoyed by people. In general, this guidance would consider recreational and access impacts to potentially be significant if:

- permanent or long-term effects on the resources on which enjoyment of the natural heritage depends, in particular where facilities have been provided by NatureScot or others under statutory powers;
- permanent or long-term change that would affect the integrity and long-term sustainable management of facilities which were provided by NatureScot or others under statutory powers;
- where there are recreational resources for open air recreation pursuits affected by the proposal which have more than local use or importance, especially if that importance is national in significance;
- major constraints on or improvements for access or accessibility to designated natural heritage sites; and
- where mitigation and/or compensatory or alternative recreational provision is considered to be inadequate.

4.10.3 Proposed Assessment Methodology

Methodology

This will primarily be a desk-based study with consultation undertaken by the Developer with the local community to inform any opportunities from the proposed development which arise therein.

The socio-economic and strategic baseline will be expanded on in the EIAR through a review of publicly available data sources. This will include:

- the population characteristics of the local area, including local and national demographic trends;
- fuel poverty statistics set within a national context;
- employment and economic activity in the local area within the context of the national economy;
- wage levels in the local area compared to the national levels;
- the industrial structure of the local economy compared to the national level; and
- the role of the tourism sector in the local economy.

An economic impact analysis will be undertaken using the methodology developed by BiGGAR Economics which has been used to assess over 150 onshore wind farms across the UK. The assessment will consider potential direct and indirect socio-economic impacts of each of the elements of the proposed development.

In order to assess the magnitude of socio-economic impacts, the level of activity/employment supported during the construction and operation phases will be estimated.

Government and industry reports will be used to determine the expected capital and operational expenditure associated with the proposed development, as well as the breakdown of expenditure by different contracts (e.g. turbine, balance of plant). An assumption will then be made based on the share of each type of contract that can be secured regionally and nationally. This increase in turnover will then be used to estimate the economic impact associated with the proposed development.

The method to assess the socio-economic effects will be based on industry best practice and will consider the share of contracts that can be secured in each study area, and the level of employment that can be supported as a result.

The link between onshore wind energy developments and the tourism sector is a well-researched subject and the most recent research (BiGGAR Economics 2021) has found no significant link between the performance of the tourism economy and onshore wind development.

In 2021 this study was updated, and research identified 16 windfarms with a capacity of at least 10MW that became operational between 2015 and 2019. Analysis of trends in tourism employment in the locality of these wind farms (15 km radius) found that 11 of the 16 areas had experienced more growth in tourism employment than for Scotland as a whole. For 13 of the 16 wind farms, trends in tourism employment in the locality had outperformed the local authority in which they were based. This work reflected an update of previous work undertaken by BiGGAR Economics in 2017 that considered 28 wind farms constructed between 2009 and 2015 and the trends in tourism employment in the areas local to these developments. The analysis found that there was no relationship between the development of onshore wind farms and tourism employment at the level of the Scottish economy, at the local authority level nor in the areas immediately surrounding wind farms developments.

Nevertheless, the tourism sector is an important contributor to the Scottish economy, including in the local area surrounding the proposed development (Isle of Lewis and Harris)

Therefore, there is merit in considering whether the proposed development will have any effect on tourism behaviour and tourism economy. This assessment will consider the potential effects that the development could have on tourism following a more focused approach on impacts related to key tourist attractions and recreation assets.

In order to assess effects on tourism and recreation, the features that make the local area distinctive and attractive will be identified and the potential impact of the proposed development on those key features will then be assessed.

Assessing the significance of effects will be based on assessing the sensitivity of an economy/tourism and recreation asset to change and then assessing the potential magnitude of change associated with the proposed development. The sensitivity of each of the socio-economic, tourism and recreation receptors will be defined based on the characteristics identified in the baseline assessment. When sensitivity and magnitude are combined, the significance of effect will be assessed. Major and moderate effects will be considered significant in the context of the EIA Regulations.

Socio-economic assessments do not have a standardised methodology; however, the assessment will follow current best practice guidance as set out in the following documents:

- National Planning Framework 4 (The Scottish Government 2023c);
- Onshore Wind Sector Deal for Scotland (The Scottish Government 2023e)
- Scottish Planning Policy (The Scottish Government 2014);
- Scottish Natural Heritage (2013) A handbook on environmental impact assessment;
- The Scottish Government (2019e) Good Practice Principles for Shared Ownership of Onshore Renewable Energy Developments;

- The Scottish Government (2019f) Good Practice Principles for Community Benefits from Onshore Renewable Energy Developments;
- The Scottish Natural Heritage (2015) Good Practice During Wind Farm Construction; and
- The Scottish Government (2016) Draft Advice on Net Economic Benefit and Planning.

The significance of effects will be based on the sensitivity of the receptor and the magnitude of change associated with the proposed development. Major and moderate effects will be considered significant in the context of the EIA Regulations. The method to assess the socio-economic effects will be based on industry best practice and will consider the share of contracts that can be secured in each study area, and the level of employment that can be supported as a result.

4.10.4 Environmental Factors Scoped Out of Assessment

No aspects of the socio economic assessment are proposed to be scoped out at this stage.

4.10.5 Consultation and Scoping Questions

The assessment will use desk-based information sources to assess the likely effects, supplemented by consultation with stakeholders if relevant. Information to inform the baseline will be sought from various sources, including:

- CnES;
- Local Community Councils;
- Cycling Scotland;
- Scottish Rights of Way and Access Society;
- Sustrans Scotland;
- Visit Outer Hebrides; and
- VisitScotland.

Questions for Consultees

- Do consultees agree with the proposed methodology?
- Do consultees agree with the potential impacts that have been highlighted?

4.11 Other EIA Topics

4.11.1 Telecommunications and Utilities

Tall structures such as buildings and wind turbines can adversely affect the performance of fixed telecommunications links, if positioned close enough to those links. Wind turbines may also affect the quality of television reception if the turbines are located between domestic properties and the television transmitter from which they receive their TV signals.

The assessment will include consultations with telecommunication, television and utility providers to determine the infrastructure crossing the proposed development area and the necessary buffers required from the turbines.

4.11.2 Aviation

The proposed development is located approximately 4km south-west of the Stornoway Airport. The key consultees are Stornoway Airport (operated by Highlands and Islands Airports Limited (HIAL)), National Air Traffic Services (NATS) En-route and the Ministry of Defence (MoD).

Potential impacts and effects from the proposed development may include, but are not limited to:

- physical obstruction;
- distortion to radar; and
- impacts on communications equipment.

Direct consultation will be undertaken with the stakeholders. Where there are impacts of concern, additional analysis may be required, and mitigation solutions would be explored to reduce the impacts to acceptable levels.

A lighting scheme will be developed to minimise the visual effects especially of night-time lighting. Approval for a lighting scheme will be sought from the Civil Aviation Authority (CAA), having consulted with local airspace users such as the Maritime and Coastguard Agency (MCA), Scottish Air Ambulance, Police and HIAL.

4.11.3 Shadow Flicker

Shadow flicker can occur when the blades of a wind turbine cover the sun for brief moments as they rotate. For an observer viewing this phenomenon through a narrow opening (such as a window from within the affected area) it can appear as if the light is being 'flicked' on and off each time a blade passes in front of the sun, which can create a strobe like effect which can be distracting and disturbing for people who are affected. For a fixed observer, the occurrence of shadow flicker from a given wind turbine is generally limited to certain parts of the year and certain times of the affected days. Shadow flicker may be avoided through design, however, if it cannot be avoided, technical mitigation solutions are available, such as shutting down turbines when certain conditions prevail.

Once the final turbine layout and parameters are fixed, the locations of residential properties in proximity to the proposed development will be verified and if any are situated within 10 rotor diameters from the proposed turbine locations, a shadow flicker model will be run to predict potential levels of effect.

4.11.4 Major Accidents and Disasters

Given the nature of the proposed development, and its remote location, the risk of a major accident or disaster is considered to be extremely low. The Principal Designer will ensure a design risk assessment process is followed during the design phase to ensure designers fully assess risks and mitigate to a level deemed as low as reasonably practicable (ALARP) during the design stage as part of the requirements of the Construction (Design and Management) Regulations (2015). During the operational phase of the proposed development, routine maintenance inspections would be completed in order to ensure the safe and compliant operation of all built infrastructure.

As there is limited potential for significant effects, major accidents and disasters have been scoped out of this assessment.

4.11.5 Human Health

The impacts on human health are considered in other topics such as Noise, and Landscape and Visual. It is considered that a separate EIAR chapter on human health is not required.

The renewable onshore wind sector is regulated by the Health & Safety Executive (HSE) and the Developer has robust Health & Safety protocols and procedures in place to ensure that during the construction and operation of developments, all personnel and members of the public are protected.

5 Conclusions

Responses to this scoping report will be considered in the EIAR. A compilation of the 'questions for consultees' is available in Appendix B. A summary of the environmental factors to be scoped in/out of the EIAR is presented in Table 5-1.

Table 5-1: Environmental Factors to be scoped in/out of the EIAR

Environmental Factor	Sub-topic	Scoped in/out
Landscape and Visual	Landscape Character and Coastal Character Landscape Designations Visual Receptors Aviation Lighting/Night-time Assessment Cumulative Landscape and Visual Assessment	**Scoped In**
	Wild-Land Assessment	*Scoped Out*
Geology, Hydrogeology and Hydrology	Soils, Hydrogeology and Hydrology	**Scoped In**
	Geology	*Scoped Out*
	Detailed Flood Risk Assessment	*Scoped Out*
	Water Quality Monitoring	*Scoped Out*
Ornithology	All	**Scoped In**
Ecology	Terrestrial habitats and protected species (otter and reptiles) Aquatic habitats and fish	**Scoped In**
	Bats and terrestrial protected species apart from otter and reptiles	*Scoped Out*
Noise	All	**Scoped In**
Access, Traffic and Transport	Construction traffic and impact on walking, cycling and wheeling. Swept Path Analysis	**Scoped In**
	Operational Traffic	*Scoped Out*
Cultural Heritage	All	**Scoped In**
Climate Change	All	**Scoped In**
Socio-Economics	All	**Scoped In**
Other EIA Topics	Telecommunications and Utilities	**Scoped In**
	Aviation	**Scoped In**
	Shadow Flicker	**Scoped In**
	Major Accidents and Disasters	*Scoped Out*
	Human Health	*Scoped Out*

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6.2 Legislation

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Appendix A. Figures

[Due to file size restrictions, figures are provided in a separate document]

Appendix B. Questions to Consultees

Table B-1: Consultee Questions

Environmental Factor	Consultees	Consultation and Scoping Questions
General Scoping Questions	All consultees	▪ Do consultees agree with the list of factors to be scoped out? ▪ Could consultees confirm whether there any other receptors that consultees wish to be considered in the assessment? ▪ Could consultees confirm whether there are any key issues or potential impacts that have been omitted?
Planning and Energy Policy	▪ CnES	▪ No specific questions to consultees with regards to planning and energy policy.
Landscape and Visual	▪ CnES ▪ NatureScot	▪ Do consultees have any comments on the overall methodology proposed to assess effects on landscape and visual receptors? ▪ Are there additional sources of information which should inform the baseline and assessment of potential effects on landscape/coastal/seascape character and designated landscapes? ▪ As the proposed development is not located within a WLA are consultees content with scoping out the assessment of effects on Wild Land? ▪ Could consultees confirm they are content with the 45km initial study area proposed for the LVIA? ▪ Do consultees have any comments/suggestions on the proposed list of representative viewpoint locations listed in Table 4-1 and shown on Figure 4? ▪ Do consultees have any comments on the proposed scope of the RVAA? ▪ Do consultees have any comments on which viewpoints should be used to represent dusk/night-time views? ▪ Do consultees have any suggestions on routes to be included for sequential route assessment? ▪ Do consultees have any comments on the overall methodology proposed to assess cumulative effects on landscape and visual receptors? ▪ Could consultees confirm they are happy with the 60km initial search area proposed for the CLVIA? ▪ Are there any further wind farms or other developments, existing or within the planning system, in addition to those shown in Table 4-2, that should be included in the CLIVIA? ▪ Which viewpoints do consultees feel should be included within the CLVIA?

Environmental Factor	Consultees	Consultation and Scoping Questions
Geology, Hydrogeology and Hydrology	▪ CnEs ▪ SEPA ▪ NatureScot ▪ Scottish Water ▪ Western Isles District Salmon Fisheries Board ▪ Outer Hebridies Fisheries Trust	▪ Published mapping confirms that most of the proposed development area is not identified as being at flood risk. Therefore, it is proposed that a simple screening of potential flooding sources (fluvial, coastal, pluvial, groundwater etc.) is presented in the EIAR. Is this approach acceptable to consultees? ▪ It is not proposed to prepare a detailed drainage design. Rather, measures that would be used to control the rate and quality of runoff will be specified in the EIAR. Is this approach acceptable to consultees? ▪ Site investigations, including detailed peat probing and private water survey, will be undertaken as part of the proposed assessment. Should additional investigation or data sources be considered when assessing baseline conditions? ▪ It is not proposed to undertake any water quality sampling, groundwater monitoring points, surface water monitoring points or leachability trials of any rock as there is published data that can be used to characterise baseline conditions. Is this approach acceptable to consultees? ▪ Could consultees advise if there are any records of private water supplies held within the study area? ▪ Could consultees advise if there is any specific information or methodology that should be used/followed as part of the private water supply risk assessment?
Ornithology	▪ CnES ▪ NatureScot	▪ Do consultees agree that the proposed scope and methods with respect to surveys and the assessment is appropriate? ▪ Could NatureScot provide an up-to-date list of those wind farm developments within the Coll, Tiree and the Western Isles NHZ which should be considered within the cumulative assessment? ▪ Are consultees aware of any other sources of information, or other organisations that should be consulted, to further inform the ornithological assessment?
Ecology	▪ CnES ▪ NatureScot	▪ Do consultees agree that the proposed scope and methods with respect to surveys and the assessment is appropriate? ▪ Are consultees aware of any other sources of information, or other organisations that should be consulted, to further inform the ecological assessment? ▪ Do consultees agree that bats can be scoped out of the EIA?
Noise	▪ CnES Environmental Health Officer	▪ Is the proposed methodology for the noise assessment agreeable to the consultees? ▪ Should the consultation include any other relevant consultees?

Environmental Factor	Consultees	Consultation and Scoping Questions
		▪ Is the scope of the noise assessment agreeable to the consultees, namely the effects to be scoped out of the assessment?
Access, Traffic and Transport	▪ CnES ▪ Police Scotland ▪ Highlands and Islands Transport Partnership (HITRANS) ▪ Sustrans	▪ Could consultees confirm the suitability of the proposed development access locations? ▪ Could consultees confirm the suitability of the proposed study area (A859 – between the proposed development and Stornoway, and the Arnish Road)? ▪ Could CnES confirm agreement to commission traffic surveys along the delivery route should appropriate existing traffic data not be available from CnES? ▪ Could consultees confirm that operational traffic is negligible (e.g., occasional routine maintenance) and can therefore be scoped out of the EIA? ▪ Could consultees confirm the committed developments to be taken into account within the cumulative assessment?
Cultural Heritage	▪ CnES ▪ Historic Environment Scotland (HES)	▪ Are consultees content with the proposed approach? ▪ Are there any specific heritage assets consultees wish to see included in the assessment?
Climate Change	▪ CnES	▪ Could consultees confirm the suitability of the proposed methodology?
Socio-economics	▪ CnES; ▪ Local Community Councils; ▪ Cycling Scotland; ▪ Scottish Rights of Way and Access Society; ▪ Sustrans Scotland; ▪ Visit Outer Hebrides; and ▪ VisitScotland.	▪ Do consultees agree with the proposed methodology? ▪ Do consultees agree with the potential impacts that have been highlighted?

Appendix C. Ornithology

[This appendix contains information about protected species and is confidential. It will be provided to the relevant regulatory bodies and consultees.]